

# A47 Wansford to Sutton Dualling

**Scheme Number: TR010039**

**Volume 6**

## **6.3 Environmental Statement Appendices**

### **Appendix 8.12 – Bat Emergence/Re-entry Survey Report**

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed  
Forms and Procedure) Regulations 2009

July 2021

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning  
(Applications: Prescribed Forms and  
Procedure) Regulations 2009**

**A47 Wansford to Sutton  
Development Consent Order 202[x]**

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**ENVIRONMENTAL STATEMENT APPENDICES**  
**Appendix 8.12 - Bat Emergence/Re-entry Survey Report**

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Sweco

A47 Wansford to Sutton

# Bat Survey Report



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## Drawings

778574-MLM-ZZ-XX-DR-J-0006: Bat Survey Locations

# 1 Non-technical Summary

This bat survey report has been prepared by MLM for Sweco, and relates to proposed dualling of the A47 from Wansford to Sutton.

The existing A47 single-carriageway is to be upgraded to dual-carriageway standard (D2AP). It will be constructed slightly to the north of the existing A47 from the A4/A47 junction for approximately 800m, before crossing the existing A47 where it will be constructed to the south of the existing alignment until it ties into the existing dual-carriageway east of Nene Way.

Surveys undertaken by the Mott MacDonald Sweco Joint Venture in 2018 identified bat roosts associated with four buildings/building complexes and four trees located within 50m of the Development Consent Order (DCO) boundary. The purpose of this report is to present the findings of bat roost emergence/re-entry surveys undertaken by MLM in 2020 to update these findings and identify any additional building/tree roosts, so as to inform a European protected species licence for the scheme.

Six buildings/building complexes and 48 trees were subject to dusk emergence/pre-dawn re-entry survey, in line with the Bat Conservation Trust (BCT) best practice guidelines (ref. 2), during the period May-September 2020.

The purpose of these surveys was to confirm the presence/likely absence of roosting bats associated with the buildings/trees and, where present, quantify the species and number of bats involved.

The surveys identified the following roosts associated with the following structures/trees:

- Old Station House – soprano pipistrelle maternity roost (nine bats)
- Sutton Heath House – two individual soprano pipistrelle day roosts (one bat)
- Sacrewell Farm – four common pipistrelle day roosts (two bats); soprano pipistrelle day roost (one bat)
- A1 River Nene Bridges – Daubenton's bat maternity roost across multiple locations (at least 60 bats)
- Tree OI20 – soprano pipistrelle day roost (two bats)
- Tree OI51 – soprano pipistrelle day roost (one bat)

Given the confirmed presence of the above bat roosts and the nature of the proposed works there is potential for disturbance to these roosts. As such, a European protected species licence from Natural England will be required to enable these works to proceed.

## 2 Limitations and Exceptions

This report and its findings should be considered in relation to the terms and conditions proposed and scope of works agreed between MLM and the client.

Interpretations and recommendations contained in the report represent our professional opinions, which were arrived at in accordance with currently accepted industry practices at the time of reporting and based on current legislation in force at that time.

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This report is prepared and written in the context of the proposals stated in the introduction to this report and should not be used in a differing context. Furthermore, alterations to the initial proposals or changes in conditions on site over time may necessitate an alteration to the report in whole or in part after its submission. Therefore, in the event of any change in proposals or lapse of one year or more from the date of the report, the content of the report should not be relied upon unless referred to MLM for validation and, if necessary, re-appraisal.

Scientific survey data will be shared with local biological records centre in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) professional code of conduct.

This report was prepared only for our client and is not intended to be relied on by any other party. Third parties should not rely on the facts, matters or opinions set out in this report without the express written permission of MLM.

Please note that MLM does not purport to provide specialist legal advice.

Unless stated specifically, drawings and plans are indicative only. As such, the position of features marked on the plans or drawings should not be taken as 100% accurate.

### 2.1 Site-specific Limitations

Access to the underside of the A1 River Nene Bridges was restricted for some of the surveys due to construction works that were underway at the time of the surveys on 5 May and 27 May 2020. These access restrictions meant that most of the survey work at these bridges had to be carried out from on top of the bridges using infra-red and thermal imaging equipment.

It is understood that a European protected species (EPS) licence was in place to enable these works in the vicinity of a known Daubenton's bat (*Myotis daubentonii*) maternity colony of significant size (150-200 individuals recorded by the Mott MacDonald Sweco Joint Venture in 2018). The details of the method statement that accompanied this EPS licence have not been provided to MLM and so we are unable to comment on the effectiveness of any mitigation measures put in place.

Given that MLM recorded large numbers of Daubenton's bats were recorded roosting in association with thermal expansion gaps on both bridges (on both sides of the river) in 2020, and that this is a well-studied bat roost, the fact that an accurate roost count could not be made is considered a minor limitation only. Should the proposed works have any effect on these roosts, any mitigation would need to be designed on the basis of a maternity roost of county importance, and would need to take into account the survey results that informed the most recent EPS licence application as the baseline.

Weather conditions for all surveys are considered to have been suitable for bats to be active, as even where no bats were recorded in certain locations, bats were actively flying at nearby locations where concurrent bat surveys were being undertaken. As such only weather conditions for those surveys where bat roosts have been recorded are provided herein.

## 3 Introduction

### 3.1 Purpose

This bat survey report has been prepared by MLM for Sweco, and relates to proposed dualling of the A47 from Wansford to Sutton.

The existing A47 single-carriageway is to be upgraded to dual-carriageway standard (D2AP). It will be constructed slightly to the north of the existing A47 from the A4 / A47 junction for approximately 800m, before crossing the existing A47 where it will be constructed to the south of the existing alignment until it ties into the existing dual-carriageway east of Nene Way.

Surveys undertaken by the Mott MacDonald Sweco Joint Venture in 2018 (ref. 1) identified bat roosts associated with four buildings/building complexes and four trees located within 50m of the development consent order (DCO) boundary:

- Sutton Heath House – soprano pipistrelle day roost (two bats)
- Old Station House – common pipistrelle day roost (two bats)
- Sacrewell Farm – common pipistrelle day roost (one bat) and soprano pipistrelle day roost (one bat)
- A1 River Nene Bridges – Daubenton's bat maternity roost (150-200 bats)
- Tree T24 – soprano pipistrelle day roost (one bat)
- Tree T53 - common pipistrelle day roost (one bat) and soprano pipistrelle day roost (one bat)
- Tree WB8 – common pipistrelle day roost (one bat)
- Tree T101 - soprano pipistrelle day roost (one bat)

The purpose of this report is to present the findings of bat roost emergence/re-entry surveys undertaken by MLM in 2020 to update these findings and identify any additional building/tree roosts, so as to inform a European protected species licence for the scheme.

A total of six buildings/building complexes and 48 trees were subject to dusk emergence/pre-dawn re-entry survey by MLM, in line with the Bat Conservation Trust (BCT) best practice guidelines (ref. 2), during the period May-September 2020. The purpose of these surveys was to confirm the presence/likely absence of roosting bats associated with the building/trees and, where present, quantify the species and number of bats involved.

### 3.2 Site Description

The site is located along the A47 between Wansford and Sutton, Cambridgeshire and is located between Ordnance Survey National Grid Reference TL068997 to the west and TL104991 to the east, a distance of approximately 3.6km.

Land within the DCO boundary comprises the existing A47 road, a petrol filling station, pumping station, residential property off of Sutton Heath Road, farm buildings, agricultural land, grassland including floodplain meadow between the River Nene and the A47, woodland and hedgerows.

The bat roost survey area comprised a 50m buffer around the DCO boundary shown on Highways England drawing 'A47 Wansford to Sutton PCF Stage 3 – Proposed DCO Redline Boundary with Permanent and Temporary Land Take', reproduced in figure 3.1 below.

The location of all buildings and trees where bat roosts were identified is shown in figure 3.2.





Figure 3.1 DCO boundary (red line) – all surveyed buildings and trees fall within a 50m buffer of this boundary.



Figure 3.2 Building and tree locations where roosts were identified. Map data: © 2020 Google.

## 4 Bat Legislation

### 4.1 Current UK Legislation

All species of British bats are legally protected under part 3 (section 43) of the Conservation of Habitats and Species Regulations 2017 (as amended). These Regulations make it an offence to, among other things:

- Deliberately capture, injure, kill or capture a bat;
- Deliberately disturb bats, impairing their ability to survive, breed, reproduce or rear/nurture their young; or
- Damage or destroy a breeding site or resting place used by bats.

All bats and their roosts in England, Scotland and Wales were originally protected under the Wildlife & Countryside Act 1981. Subsequent amendments to the legislation for England and Wales have removed bats from most of the provisions of the Act, however it remains an offence to:

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

Disturbance of bats is covered by both the 2017 Regulations and the 1981 Act, with the magnitude of disturbance being critical. Disturbance that impairs the survival or successful reproduction of the species would be covered by the Regulations, with no legal defence existing. Less significant acts of disturbance may only be covered by the Wildlife & Countryside Act 1981, which includes some legal defences that may be applied in certain circumstances.

Bat roosts are protected throughout the year, regardless of whether or not bats are present at the time. Under the Conservation of Habitats and Species Regulations (as amended), the offence of damaging or destroying a bat breeding site or resting place is not subject to any legal defence ie an offence will have been committed even if the damage or destruction occurs accidentally.

### 4.2 Licensing

Where development proposals would result in an offence under the Habitats and Species Regulations (as amended), a European protected species (EPS) licence needs to be granted by Natural England to permit an act that would otherwise be unlawful. This provides for a specific derogation from the legislation, to prevent an infringement from occurring. To obtain an EPS licence for development, it must be demonstrated that the purpose of the act to be licensed is for:

- “preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment” (Regulation 55(2)(e)).

In addition, Natural England will not grant an EPS licence unless they are satisfied that:

- “There is no satisfactory alternative” (Regulation 55(9)(a)); and
- “The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range” (Regulation 55(9)(b)).

## 5 Methodology

### 5.1 Technical Approach

All survey work has been undertaken in line with the recommendations of the Bat Conservation Trust best practice guidelines (ref. 2).

Any bat roosts identified have been evaluated in line with Wray *et al.* (ref 3.), which provides guidance on assessing the conservation value of bat roosts according to type and species. This guidance is summarised in the following tables.

Table 5.1 Categorising Bats by Distribution and Rarity

Rarity Within Range	Species
Rarest (under 10,000)	Greater mouse-eared ( <i>Myotis myotis</i> ) Greater horseshoe ( <i>Rhinolophus ferrumequinum</i> ) Grey long-eared ( <i>Plecotus austriacus</i> ) Bechstein's ( <i>Myotis bechsteini</i> ) Barbastelle ( <i>Barbastella barbastellus</i> )
Rarer (10,000 – 100,000)	Lesser horseshoe ( <i>Rhinolophus hipposideros</i> ) Whiskered/Brandt's ( <i>Myotis mystacinus</i> ) Nathusius' pipistrelle ( <i>Pipistrellus nathusii</i> ) Serotine ( <i>Eptesicus serotinus</i> ) Leisler's ( <i>Nyctalus leisler</i> )
Common (over 100,000)	Common pipistrelle ( <i>Pipistrellus pipistrellus</i> ) Soprano pipistrelle ( <i>Pipistrellus pygmaeus</i> ) Brown long-eared ( <i>Plecotus auritus</i> ) Noctule ( <i>Nyctalus noctula</i> ) Natterer's ( <i>Myotis nattereri</i> ) Daubenton's

Table 5.2 Valuation of Roosts

Geographic Frame of Reference	Roost Type
International	SAC sites
National	Sites meeting SSSI guidelines Maternity sites of rarest species
Regional	Large swarming sites Mating sites for rarer/rarest species Maternity sites of rarer species Significant hibernation sites for rarer/rarest species, or all species assemblages
County	Feeding perches of rarer/rarest species Small numbers of rarer/rarest species (not maternity sites) Hibernation sites for small numbers of common/rarer species Maternity sites of common species
Local (Parish or District)	Feeding perches Individual bats of common species Small numbers of common species (not maternity sites) Mating site of common species

## 5.2 Dusk Emergence/Pre-dawn Re-entry Surveys

MLM was appointed to survey all of the buildings and trees listed in table 5.3 below.

### 5.2.1 Survey Approach

All surveys in relation to bats are undertaken in accordance with the Bat Conservation Trust's 'Bat Surveys for Professional Ecologists – Good Practice Guidelines', 3rd edition (ref. 2).

One low roost suitability building (The Pumping Station) was subject to a single pre-dawn re-entry survey. One moderate suitability building (Deep Springs House) was subject to a single dusk emergence survey and a single pre-dawn re-entry survey. Three buildings and one building complex (Sacrewell Farm) were all of high roost suitability and therefore subject to three dusk emergence/pre-dawn re-entry surveys.

One tree (T24) was subject to a single dusk emergence survey prior to it being re-assessed and down-graded to low roost suitability. 32 trees of moderate roost suitability were each subject to two dusk emergence/pre-dawn re-entry surveys. 14 trees of high roost suitability and one tree in which a roost was identified (tree 51, originally categorised as moderate) were subject to three dusk emergence/pre-dawn re-entry surveys.

The roost suitability of all buildings and trees was assessed by others and provided to MLM prior to undertaking the survey work. MLM was not appointed to undertake roost assessments of any building or tree.

### 5.2.2 Survey Method

A summary of all the buildings and trees surveyed by MLM in 2020 is provided below in table 5.3.

Dusk emergence surveys started 15 minutes before sunset and ended a minimum of 1.5 hours after sunset, continuing up to two hours after sunset where late-emerging bat species were anticipated. Pre-dawn re-entry surveys started at least 1.5 hours before dawn and ended at dawn or shortly after (depending on bat activity).

For the buildings, surveyors were each equipped with a full spectrum bat detector and were strategically positioned around the building so as to maximise visual coverage. The number of surveyors utilised at each building was as follows:

- Pumping Station – 2 surveyors
- Old Station House – 4 surveyors
- Sutton Heath House – 4 surveyors
- Deep Springs House – 4 surveyors
- Sacrewell Barns – 6 surveyors (covering two groups of buildings on different dates)
- A1 River Nene Bridges – 4 surveyors

Surveyor numbers were varied depending on the degree of survey effort considered necessary to identify the location of suspected roosts.

An additional pre-dawn re-entry survey of the eastern A1 River Nene Bridge was undertaken on 28 July 2020, using only an infra-red video camera rig positioned to record bats returning to roost via the main roost access point identified on this bridge during a previous survey on 24 July 2020. The purpose of this additional survey was to attempt to obtain a more accurate count of the number of individuals making use of this roost.

All trees were surveyed by two surveyors equipped with full spectrum bat detectors, save for those trees which were sufficiently close to one another to allow two surveyors to survey multiples trees.

A record was made of all bats emerging from or re-entering each building/tree, along with the time, direction of travel and suspected species. Details of general bat activity observed or heard during each survey were also noted down, to gather additional information about the local bat assemblage.

Where specific potential roost features were present, surveyors were supported by an infra-red video camera rig and/or a recording thermal imaging scope capable of filming bats flying in or out of these features in complete darkness.

Post-survey, all bat calls were downloaded from the detectors and analysed using the BatExplorer software. Video footage was analysed using the PlayMemories Home software from Sony.

Table 5.3 Summary of all Buildings and Tree Surveyed by MLM in 2020

Building/Tree ID <sup>†</sup>	Description	Roost Suitability	Survey Dates (2020)*
Pumping Station	Stone and breeze block pumping station with metal sheet roof	Low	R1 – 29 July
Old Station House	Stone-built building with pitched slate roofs. Garage and outbuilding to north.	Confirmed roost in 2018 (Confirmed roost in 2020)	E1 – 6 May R1 – 22 May E2 – 27 July
Sutton Heath House	Two-storey stone-built house with slate-tiled roof.	Confirmed roost in 2018 (Confirmed roosts in 2020)	E2 – 20 May R1 – 15 June R2 – 2 September
Deep Springs House	Rendered brick bungalow with concrete-tiled roof.	Moderate	R1 – 27 May E1 – 28 July
Sacrewell Farm	Complex of stone-built farm buildings/stables with slate roofs.	High/confirmed roosts in 2018 (Confirmed roosts in 2020)	E1 – 5 May (building group A) R1 – 18 May (building group B) E2 – 19 May (building group A) R2 – 4 June (building groups A & B) E3 – 14 July (building group B)
A1 River Nene Bridges	Two concrete bridges spanning the River Nene.	Confirmed roost in 2018 (Confirmed roosts in 2020)	R1 – 5 May E1 – 27 May R2 – 24 July R3 – 28 July (infra-red camera only)
5	Willow	High	E1 -12 May R1 – 26 May R2 – 9 June
11	Ash	High	R1 – 19 May E1 – 9 June R2 – 10 July

Building/Tree ID <sup>†</sup>	Description	Roost Suitability	Survey Dates (2020)*
21	Oak	High	R1 – 7 July R2 – 5 August E1 – 29 September
22	Oak	High	R1 – 7 July R2 – 5 August E1 – 29 September
29	Ash	High	E1 – 29 June R1 – 16 July R2 – 5 August
39	Ash	High	R1 – 2 July E1 – 16 July R2 – 4 August
40	Ash	High	R1 – 2 July E1 – 16 July R2 – 4 August
41	Ash	High	R1 – 2 July E1 – 16 July R2 – 4 August
42	Ash	High	R1 – 2 July E1 – 16 July R2 – 4 August
43	Oak	High	R1 – 20 May E1 – 8 June R2 – 21 July
44	Black poplar	High	R1 – 3 July E1 – 5 August E2 – 28 September
49	Willow	High	E1 – 18 May R1 – 2 June R2 – 23 June
T101	Scots pine	High	R1 – 27 May E1 – 27 July R2 – 2 September
T86	Willow	High	E1 – 30 June R1 – 17 July E2 – 3 August
T24	Ash	Low	E1 – 20 May
2	Willow	Moderate	E1 – 9 September R1 – 30 September
3	Willow	Moderate	E1 – 9 September R1 – 30 September
4	Ash	Moderate	E1 – 9 September R1 – 30 September
6	Ash	Moderate	E1 – 27 May R1 – 21 July



Building/Tree ID <sup>†</sup>	Description	Roost Suitability	Survey Dates (2020)*
7	Ash	Moderate	E1 – 27 May R1 – 21 July
8	Ash	Moderate	R1 – 10 July E1 – 4 August
9	Ash	Moderate	E1 – 6 May R1 – 22 May
10	Ash	Moderate	E1 – 6 May R1 – 22 May
12	Ash	Moderate	E1 – 6 May R1 – 22 May
13	Ash	Moderate	E1 – 23 June R1 – 14 July
15	Ash	Moderate	E1 – 23 June R1 – 14 July
16	Ash	Moderate	E1 – 23 June R1 – 14 July
17	Ash	Moderate	R1 – 7 July E1 – 21 July
18	Ash	Moderate	R1 – 7 July E1 – 21 July
19	Ash	Moderate	R1 – 7 July E1 – 21 July
20	Ash	Moderate (Confirmed roost 2020)	R1 – 7 July E1 – 21 July R2 – 5 August E2 – 17 September
23	Oak	Moderate	R1 – 24 June R2 – 17 September
24	Ash	Moderate	R1 – 24 June R2 – 17 September
25	Oak	Moderate	R1 – 24 June R2 – 17 September
27	Oak	Moderate	R1 – 24 June R2 – 17 September
28	Sycamore	Moderate	E1 – 29 June R1 – 16 July
30	Ash	Moderate	E1 – 29 June R1 – 16 July
32	Ash	Moderate	E1 – 23 July R1 – 6 August
33	Ash	Moderate	E1 – 23 July R1 – 6 August

Building/Tree ID <sup>†</sup>	Description	Roost Suitability	Survey Dates (2020)*
34	Ash	Moderate	E1 – 23 July R1 – 6 August
35	Ash	Moderate	E1 – 23 July R1 – 6 August
37	Ash	Moderate	E1 – 23 July R1 – 6 August
38	Ash	Moderate	E1 – 23 July R1 – 6 August
45	Black poplar	Moderate	R1 – 3 July E1 – 5 August
51	False acacia	Moderate (Confirmed roost 2020)	E1 – 2 July R1 – 9 September E2 – 28 September
54	Ash	Moderate	E1 – 2 July R1 – 8 September
56	Ash	Moderate	E1 – 16 July R1 – 9 September
T26	Willow	Moderate	R1 – 10 July E1 – 4 August

\* E = dusk emergence survey; R = dawn re-entry survey;

<sup>†</sup> Tree ID numbers reflect those assigned to trees following the re-assessment made by Sweco in 2020 apart from those that begin with a T, which are the original ID numbers assigned prior to re-assessment.

The location of all buildings and trees surveyed are shown on MLM drawing ref. 778574-MLM-ZZ-XX-DR-J-0006.



Figures 5.1-5.6 below show the locations of surveyors and, where applicable, the infra-red camera and/or thermal imaging scope during the building surveys.



Figure 5.1 Survey positions for the Pumping Station (R1 - yellow circles). Map data: © 2020 Google.



Figure 5.2 Survey positions for Old Station House (E1 and E2 – yellow circles), (R1 – red circles; red arrows show walked transect routes). Map data © 2020 Google.





Figure 5.3 Survey positions for Sutton Heath House (yellow circles). Map data © 2020 Google.



Figure 5.4 Survey positions for Deep Springs House (yellow circles). Map data © 2020 Google.



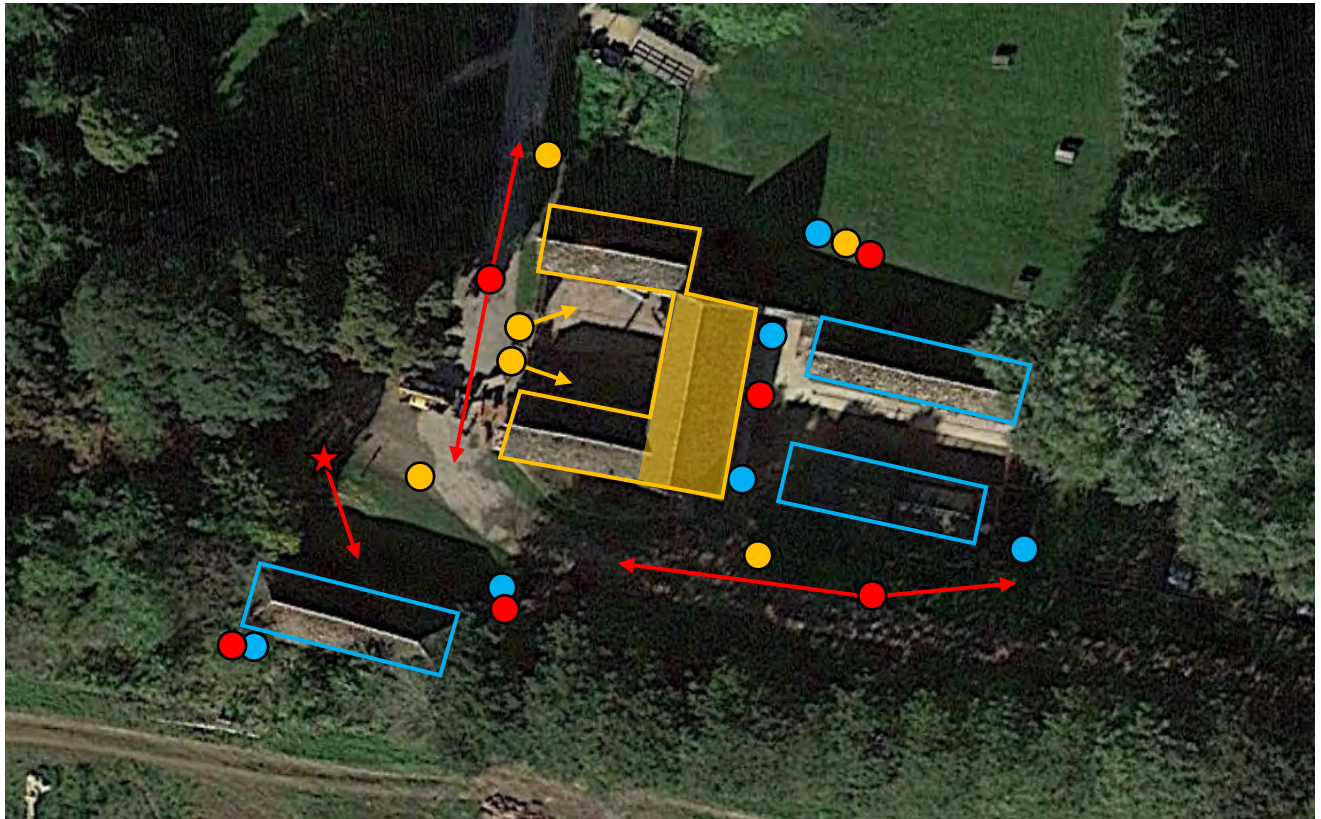


Figure 5.5 Surveyor positions for Sacrewell Barns (E1 & E2 – yellow circles, arrows show focal area), (E3 & R1 – blue circles), (R2 – red circles, arrows show transect routes; thermal imaging scope shown by red star, arrow shows focal area). Building group A outlined in yellow (main barn shaded yellow). Building group B outlined in blue. Map data © 2020 Google.

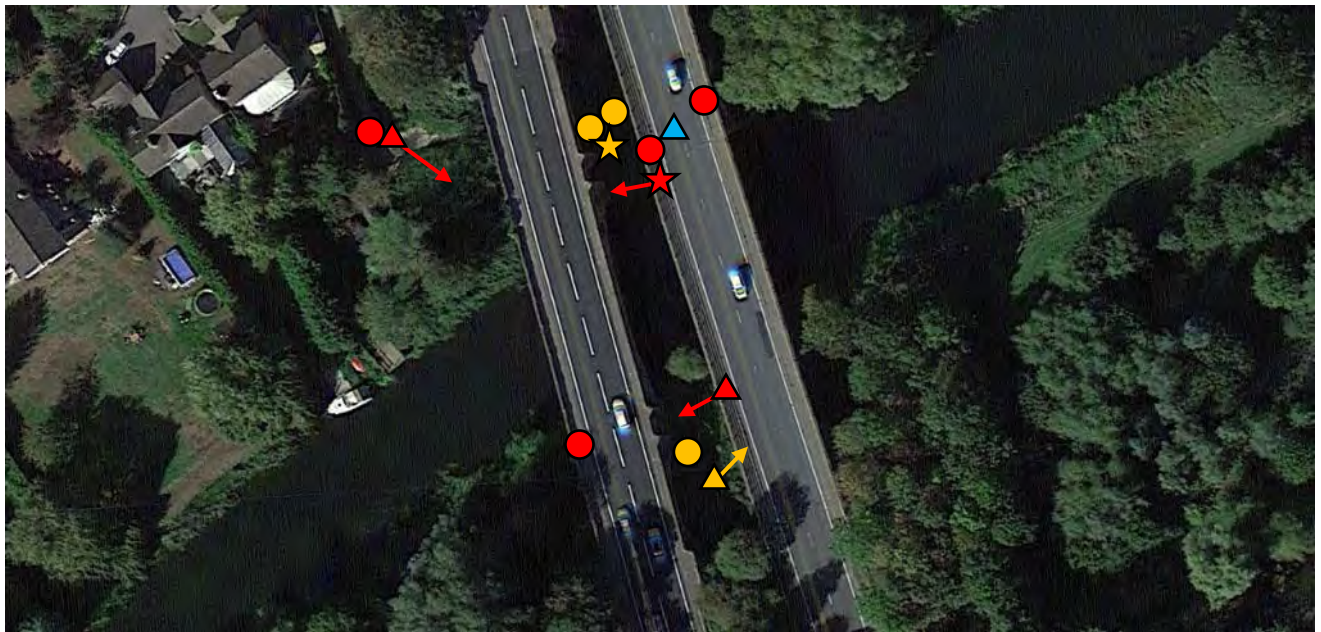


Figure 5.6 Surveyor positions for A1 River Nene Bridges (R1 & E2 – red circles show positions on top of bridges/behind Heras fencing; red triangle shows infra-red camera rig position; red star shows thermal imaging scope position), (R2 – yellow circles show position beneath bridges; yellow triangle shows infra-red camera rig position; yellow star shows thermal imaging scope position), (R3 – blue triangle shows infra-red camera position beneath roost access on underside of eastern bridge). Map data © 2020 Google.

### 5.2.3 Personnel

The survey work was led by Dr Martin Brammah PhD MA (Cantab) BA (Hons) CEcol MCIEEM MRSB (Bat Level 2 (Class Licence): 2015-14077-CLS-CLS), with assistance from the following experienced bat surveyors:

- Beck Harrington-Harding BSc (Hons) MCIEEM (Bat licences held: 2020-49364-CLS-CLS, 2020-49369-CLS-CLS and 2016-26239-SCI-SCI)
- Alanna Cooper BSc (Hons) CEnv CSci C.WEM MCIEEM MCIWEM
- Richard Webber-Salmon BSc (Hons) MCIEEM
- Gemma Linacre MRes BSc (Hons) MCIEEM
- Hayley Farnell MSc (Hons) BSc (Hons) MCIEEM
- Jonathan Durward BSc (Hons) CEnv MCIEEM
- Rachel Bates BSc (Hons) ACIEEM
- Sam Wilson BSc (Hons) ACIEEM
- Joshua Stafford BSc (Hons) Grad CIEEM
- Sophie Barrell MEdol (Hons) Grad CIEEM
- Alexandra Jackson MZool (Hons)
- Jordan Hurst MRes BSc (Hons)
- Johnnie Johnson BSc (Hons)

### 5.2.4 Weather Conditions

All of the surveys took place during suitable weather conditions of no rain, no strong winds and an air temperature above 10°C at dusk.

Detailed weather conditions for those surveys where bat roost were identified are provided in table 5.4 below.

Table 5.4 Weather Conditions When Roosts Were Identified

Building/Tree	Date (2020)	Start temp. (°C)	End temp.	Start cloud (oktas)	End cloud	Start wind (Beaufort)	End wind	Rain
Old Station House	6 May	10	9	1	0	0	0	None
Old Station House	22 May	17	17	8	8	1	1	None
Old Station House	27 July	16	14	8	0	3	1	None
Sutton Heath House	20 May	23	19	1	1	1	1	None
Sutton Heath House	15 June	13	13	8	8	0	0	None
Sutton Heath House	2 September	10	8	4	1	0	0	None
Sacrewell Farm (A)	5 May	13	9	0	0	2	4	None
Sacrewell Farm (B)	18 May	14	14	8	8	3	2	None
Sacrewell Farm (A)	19 May	21	17	1	0	1	1	None
Sacrewell Farm (A&B)	4 June	16	16	8	8	4	4	None
Sacrewell Farm (B)	14 July	14	13	1	0	1	1	None
A1 River Nene Bridges	5 May	6*	4	1	1	3	3	None
A1 River Nene Bridges	27 May	17	15	4	0	3	2	None
A1 River Nene Bridges	24 July	16	15	8	5	0	0	None

Building/Tree	Date (2020)	Start temp. (°C)	End temp.	Start cloud (oktas)	End cloud	Start wind (Beaufort)	End wind	Rain
A1 River Nene Bridges	28 July	13	11	3	3	3	2	None
Tree 20	7 July	15	16	8	8	0	0	None
Tree 20	21 July	10	10	0	0	0	0	None
Tree 20	5 August	17	17	3	2	1	3	None
Tree 20	17 September	17	16	1	1	2	1	None
Tree 51	2 July	16	16	8	9	1	1	None
Tree 51	9 September	16	15	7	6	3	2	None
Tree 51	28 September	19	15	4	4	0	0	None

\* Air temperature was above 10°C the evening before the survey on 5 May 2020.



## 6 Survey Findings

### 6.1 Building Roosts

Table 6.1 provides a summary of the building roosts identified by MLM in 2020 and their geographic importance according to Wray *et al.* (ref. 3).

Table 6.1 Summary of Building Roosts

Building (and survey*)	Survey Date (2020)	Description of Roosting Activity	Roosts Identified	Geographic Importance
Old Station House – E1	6 May	Four soprano pipistrelles seen to emerge from gap under eaves on west side of northern chimney of main house (photo 1) at 20:49, 20:53, 20:58, 20:59 and 21:03.  Possible fifth soprano pipistrelle emergence from the same location at 20:55.	Soprano pipistrelle maternity roost (nine bats)	County
Old Station House – R1	22 May	Nine soprano pipistrelles observed swarming to and from roost location under eaves to west of northern chimney from 04:05. All nine bats back in roost by 04:49.		
Old Station House – E2	27 July	No emergence recorded.		
Sutton Heath House – E1	20 May	Soprano pipistrelle seen to emerge from apex of north-facing second story gable at 21:09.	Two soprano pipistrelle day roosts (maximum one bat seen to emerge/re-enter during any one survey)	Local
Sutton Heath House – R1	15 June	Soprano pipistrelle flying to and from roost access/egress location between tiles and fascia board on south side of west-facing gable (photo 2), approximately 30cm from end of fascia board, from 04:18. Bat re-entered the roost at 04:22		
Sutton Heath House – R2	2 September	No re-entry recorded.		
Sacrewell Farm – E1	5 May	Common pipistrelle emerged from weatherboarding at apex of west gable end of northernmost stable block, to east of main barn, at 20:53.  Common pipistrelle emerged from western pitch of main barn roof at 21:04.	Four individual common pipistrelle day roosts (maximum two bats seen to emerge/re-enter during any one survey) and soprano pipistrelle day roost (one bat)	Local

Building (and survey*)	Survey Date (2020)	Description of Roosting Activity	Roosts Identified	Geographic Importance
Sacrewell Farm – R1	18 May	<p>A common pipistrelle returned to roost beneath a tile on the eastern pitch of the main barn (photo 3) at 04:32.</p> <p>A soprano pipistrelle returned to roost beneath weatherboarding on the west gable end of the southernmost stable block, to the east of the main barn (photo 4), at 04:33.</p>		
Sacrewell Farm – E2	19 May	<p>Common pipistrelle emerged from northern part of eastern pitch of main barn roof at 21:20.</p> <p><i>Pipistrellus</i> sp. bat seen flying from somewhere near northern gable of main barn at 21:25 (suspected second emergence).</p>		
Sacrewell Farm – R2	4 June	Common pipistrelle returned to roost within mortar gap to bottom right corner of window on east side of main barn at 03:55 (photo 3).		
Sacrewell Farm – E3	14 July	Two common pipistrelle bats seen to emerge from eastern pitch of main barn at 21:40 and 21:41 respectively.		
A1 River Nene Bridges – R1	5 May	<p>Six Daubenton's bats seen via thermal imaging scope repeatedly flying to and from thermal expansion gap at apex of second archway back from river edge on north side of western bridge (photo 5) – assumed re-entry, as no access possible beneath bridge.</p> <p>Single Daubenton's bat seen via infra-red camera repeatedly flying to and from thermal expansion gap at apex of second archway back from river edge on south side of western bridge – assumed re-entry, as no access possible beneath bridge.</p> <p>All Daubenton's bats had re-entered roost locations by 04:50.</p>	Daubenton's bat maternity colony using thermal expansion gaps at apex of outer archways either side of the river on the western bridge; and thermal expansion gap beneath north side of eastern bridge (at least 60 bats)	County
A1 River Nene Bridges – E1	27 May	Emergence of single Daubenton's bat observed from archway beneath south side of western bridge at 22:59.		

Building (and survey*)	Survey Date (2020)	Description of Roosting Activity	Roosts Identified	Geographic Importance
		Possible emergence of single Daubenton's bat observed from archway beneath north side of western bridge at 22:40.		
A1 River Nene Bridges – R2	24 July	Two Daubenton's bats re-entered thermal expansion gap at apex of archway under south side of western bridge at 04:28.  26 Daubenton's bats re-entered thermal expansion gap at apex of archway under north side of western bridge between 04:20 and 04:37.  Additional bats observed returning to roost within thermal expansion gap under north side of eastern bridge (photo 6).		
A1 River Nene Bridges – R3	28 July	60 Daubenton's bats recorded by infra-red video camera re-entering roost via thermal expansion gap below northern portion of eastern bridge. All bats had re-entered the roost by 04:40.		

\* E = dusk emergence survey; R = dawn re-entry survey

The locations of the majority of the roost access/egress points at each of the buildings are depicted in photos 1-6 below.



**Photo 1.** Old Station House – Location of soprano pipistrelle maternity roost (returning bat circled in red).



**Photo 2.** Sutton Heath House – Location of soprano pipistrelle roost under tile on western gable.





**Photo 3.** Sacrewell Farm – Red arrow shows location of common pipistrelle roost under tile on eastern pitch of main barn roof (returning bat circled in red). Yellow arrow shows location of window above mortar gap roost location.



**Pip re-entry at 04:35.  
Sacrewell barns**

**Photo 4.** Sacrewell Farm – Location of soprano pipistrelle roost beneath weatherboard on west gable of southern stable block (annotated surveyor photo from morning of survey).



**Photo 5.** A1 River Nene Bridges – Primary Daubenton's bat roost location in thermal expansion gap in archway under western bridge (three bats circled in red). Image from thermal imaging scope on east side of bridge.



**Photo 6.** A1 River Nene Bridges – Primary roost access/egress location in thermal expansion gap under northern end of eastern bridge (dotted line). Red arrows indicate two bats re-entering roost. Image from infra-red video camera.

## 6.2 Tree Roosts

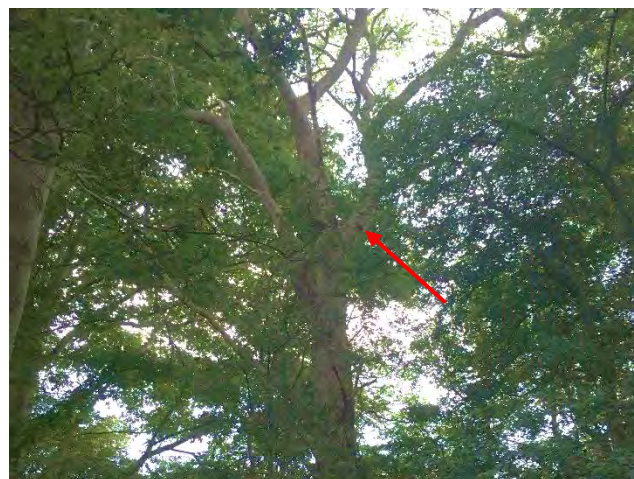
Table 6.2 provides a summary of the results of the surveys of trees 20 and 51 (photos 7 and 8) undertaken by MLM in 2020.

Table 6.2 Summary of Tree Roosts

Tree (and survey)	Survey Date (2020)	Description of Roosting Activity	Roosts Identified	Geographic Importance
Tree 20 – R1	7 July	No re-entry recorded.	Soprano pipistrelle day roost (two bats)	Local
Tree 20 – E1	21 July	No emergence recorded.		
Tree 20 – R2	5 August	Three soprano pipistrelle bats observed swarming to and from hole on underside of limb extending to south by surveyor positioned at nearby tree. Two bats filmed entering roost at 05:15, one bat flew off-site.		
Tree 20 – E2	17 September	One soprano pipistrelle seen to emerge from same roost location identified on previous survey at 19:20.		
Tree 51 – E1	2 July	One soprano pipistrelle seen to emerge from roost feature where the trunk forks at 21:36.	Soprano pipistrelle day roost (one bat)	Local
Tree 51 – R1	9 September	No re-entry recorded.		
Tree 51 – E2	28 September	Possible emergence of soprano pipistrelle from tree at 19:07 - bat suddenly appeared and was seen circling under canopy.		



**Photo 7.** Tree 20 – Location of soprano pipistrelle roost access/egress point (returning bat circled in red).



**Photo 8.** Tree 51 – Location of soprano pipistrelle roost access/egress point.

## 6.3 Other Bat Activity Recorded During Surveys

In addition to the common pipistrelle, soprano pipistrelle and Daubenton's bats described above (with regular passes by all three species where roosts were identified), occasional passes by noctule, brown long-eared, Myotis sp. and barbastelle bats were also recorded by surveyors across the various survey locations. Barbastelle are classified as 'rare bats', however, it should be noted that only three individuals on three different days, at three separate locations and therefore this species is assumed to be part of the wider bat assemblage and is not considered a concern.

## 7 Mitigation

### 7.1 European Protected Species Licence

Given the presence of the roosts identified above and their proximity to the proposed works, the proposals are likely to result in the illegal disturbance of multiple bat roosts. As such a European protected species (EPS) licence from Natural England is required. The method statement of this licence will include appropriate measures to mitigate the impact on bats as a result of the proposed works.

An EPS licence can only be issued once full planning consent has been achieved and all relevant conditions have been discharged.

## 8 Conclusion

Six buildings/building complexes and 48 trees were subject to dusk emergence/pre-dawn re-entry survey in line with the Bat Conservation Trust (BCT) best practice guidelines (ref. 2), during the period May-August 2020.

The purpose of these surveys was to confirm the presence/likely absence of bat roosts associated with these building/trees, to better understand the likelihood of any significant effect to any roosts as a result of the proposed dualling of the A47 between Wansford and Sutton.

The surveys identified the following roosts associated with the following structures/trees:

- Old Station House – soprano pipistrelle maternity roost (nine bats)
- Sutton Heath House – two individual soprano pipistrelle day roosts (one bat)
- Sacrewell Farm – four common pipistrelle day roosts (two bats); soprano pipistrelle day roost (one bat)
- A1 River Nene Bridges – Daubenton's bat maternity roost across multiple locations (at least 60 bats)
- Tree OI20 – soprano pipistrelle day roost (two bats)
- Tree OI51 – soprano pipistrelle day roost (one bat)

Given the presence of the roosts identified above and their proximity to the proposed works, the proposals are likely to result in the illegal disturbance of multiple bat roosts without appropriate mitigation. As such a European protected species licence from Natural England is required.

## 9 References

- 1 Mott MacDonald Sweco Joint Venture (2018) A47 Wansford To Sutton Bat Report PCF STAGE 3 (Document Ref. HE551494-MMSJV-EBD-000-RP-LB-00004)
- 2 Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
- 3 Wray S., Wells D., Long E., Mitchell-Jones T. (2010) Valuing Bats in Ecological Impact Assessment, IEEM In-Practice p 23-25.

# Drawings

778574-MLM-ZZ-XX-DR-J-0006: Bat Survey Locations





LEGEND

INDICATIVE SITE BOUNDARY

BAT SURVEY LOCATIONS (TREE OR BUILDING REF/NAME):

- NO ROOST IDENTIFIED (2020)
- ROOST IDENTIFIED (2020)



THIS DRAWING IS INDICATIVE ONLY

COORDINATE SYSTEM: BRITISH NATIONAL GRID  
UNITS: METRE  
SCALE: 1:4500  
BASEMAP SOURCE: IMAGERY ©2020 BLUESKY, CNES/AIRBUS, GETMAPPING PLC, INFOTERRA LTD & BLUESKY, LANDSAT/COPERNICUS, MAXAR



REV	DATE	DESCRIPTION	MADE	CKD



DRAWING STATUS:	FINAL			DRAWING TITLE: BAT SURVEY LOCATIONS PAGE 1 OF 3					
CLIENT:	HIGHWAYS ENGLAND			DRAWN/DESIGN:	SW	DATE:	19/01/2021	STATUS:	S2
				CHECKED:	MB	APPROVED:	MB	REVISION:	C01
PROJECT:	A47 WANSFORD TO SUTTON			DRAWING NO: 778574-MLM-ZZ-XX-DR-J-0006a					





LEGEND

INDICATIVE SITE BOUNDARY

BAT SURVEY LOCATIONS (TREE OR BUILDING REF/NAME):

- NO ROOST IDENTIFIED (2020)
- ROOST IDENTIFIED (2020)



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COORDINATE SYSTEM: BRITISH NATIONAL GRID  
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				CHECKED:		MB		APPROVED:		MB		REVISION:		C01	
PROJECT:		A47 WANSFORD TO SUTTON		DRAWING NO:				778574-MLM-ZZ-XX-DR-J-0006b							





BAT SURVEY LOCATIONS (TREE OR BUILDING REF/NAME):

- NO ROOST IDENTIFIED (2020)

- ROOST IDENTIFIED (2020)



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DRAWING TITLE:

BAT SURVEY LOCATIONS PAGE 3 OF 3

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DATE:

19/01/2021

STATUS:
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S2

CHECKED:

MB

APPROVED:

MR

REVISION:

C01

DRAWING NO:

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