



**Cambourne to Cambridge Better Public Transport:**

**Stage 1 Bat Inspection Survey 2018-19.**

**FINAL REPORT**

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For:

Greater Cambridge Partnership

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## **0 EXECUTIVE SUMMARY**

- 0.1 On behalf of Greater Cambridge Partnership, Cambridge Ecology Ltd was commissioned to carry out a Stage 1 bat inspection survey of trees on land associated with the Cambourne to Cambridge Better Public Transport Scheme. The survey comprised the sections between Bourn Airfield and Grange Road, Cambridge. This survey aimed to update the results from a comparable survey undertaken in 2018 (Cambridge Ecology 2018).
- 0.2 The results of the bat inspection survey could be used to provide guidance on the need for more detailed Stage 2 bat activity surveys and whether any requirements were necessary for mitigation, to meet legal obligations, including the need to apply for European Protected Species Licences.
- 0.3 The bat surveys were led by a professional licensed and qualified ecologist, Darren Frost (Natural England Bat Survey Class Licence - Registration number 2015-11702-CLS-CLS).
- 0.4 No actual bats were found during the surveys and no signs indicating the presence of roosting/hibernating bats were found in any of the trees or bat boxes that were searched or associated with the bridge over Bin Brook.
- 0.5 However, 50 of the trees surveyed were considered to contain potential roost features suitable to support roosting bats. These comprised the 47 trees that were identified, during the 2017-18 survey, as containing potential roost features and whose suitability had not changed; plus, three additional trees at the western end of the survey area near Bourn Airfield.
- 0.6 In combination, the habitats present; the records of bats in close proximity to the site; and the trees identified as containing potential roost features indicated that there was potential of roosting bats being present within the site.
- 0.7 Biological records obtained in 2017 (Cambridge Ecology 2017) from the last 10 years indicated the presence of seven species of bats including sightings from locations within the survey area. It is noted that one of the species, Western Barbastelle bat, is cited as a key feature of Eversden and Wimpole Woods Special Area of Conservation (SAC), located approximately 7km to the south west of the survey area.
- 0.8 Based on the findings of this survey, Stage 2 bat activity surveys (emergence/re-entry, transects and static surveys) are recommended for the trees containing suitable roost features and the network of hedgerows, lines of trees, woodland edges and field boundaries as they could be important foraging and/or commuting routes for bats. The scheme could bisect a number of these linear features, potentially adversely affecting commuting, foraging and/or roosting bats. The survey would involve a series of transect and static surveys during periods of optimum bat activity.

- 0.9 In addition, mitigation measures would be considered necessary; the detail of these would depend on the actual route of the scheme. The mitigation measures would be necessary to ensure legal compliance pertaining to bats and enable the scheme to proceed without causing a significant adverse effect on the local bat population.
- 0.10 Enhancement measures would be possible that could benefit the local bat population. The inclusion of enhancement measures would help the scheme meet the local and national planning policy. The enhancement measures may be incorporated into the landscape/habitat creation design proposals for the scheme that would aim to result in conservation gain.



## 1 INTRODUCTION

- 1.1 On behalf of Greater Cambridge Partnership, Cambridge Ecology Ltd was commissioned to carry out a Stage 1 bat inspection survey of trees on land associated with the Cambourne to Cambridge Better Public Transport Scheme. The survey comprised the sections between Bourn Airfield and Grange Road, Cambridge. This survey aimed to update the results from a comparable survey undertaken in 2018 (Cambridge Ecology 2018).
- 1.2 The results of a review of biological data from recognised sources of ecological records had already been reported in the Protected Species Constraints survey (Cambridge Ecology 2017). The results of the Protected Species Constraints survey suggested that the survey area was suitable to support bats. Therefore, this survey was required to investigate, the potential for bats (and bat roost sites), which are protected species, to be present along the scheme route and which could therefore potentially be affected by the development, and so could cause a constraint to the scheme. If present, bats would need to be considered further in relation to maintaining compliance with wildlife legislation and planning policy.
- 1.3 For clarity in this report the development site (or 'site') refers to land within survey area including the red line boundary of the Cambourne to Cambridge Better Public Transport Scheme (see Figure 1.1).
- 1.4 The aim of the Stage 1 bat inspection survey and this report were to:
- update the results of the initial Stage 1 Bat Inspection Survey carried out in 2017-18.
  - identify the likely presence of roosting bats in the trees within the site.
  - evaluate the use of the trees by bats, including the status of any roosts if present.
  - provide information to address any constraints caused by bats at the site, including whether additional bat surveys are required and whether a European Protected Species (EPS) licence would be required to ensure legal compliance is maintained.

### Survey Area

- 1.5 The site was located between Grange Road, Cambridge at the eastern end and the Bourn Airfield entrance off the A1303 at the western end (Figure 1.1). To the north the site was bordered by the A428 dual carriageway and to the south mainly by arable land. The site also included potential travel hub sites; adjacent to Scotland Farm and near the water tower adjacent to Madingley Mulch. The total area within the red-line boundary of the development site covers an area of approximately 380 hectares (ha).

- 1.6 The survey area comprised the red line boundary of the Cambourne to Cambridge Better Public Transport Scheme; plus, where possible, a buffer zone up to 250m beyond the red line boundary.
- 1.7 This survey area was chosen because the scheme would be confined to an area within the red line boundary, therefore already providing a buffer zone around the potential route. It was also recognised that the scheme was not a major road and therefore the effects on biodiversity would not be comparable to a road scheme as traffic flows, noise, light and visual disturbance and habitat loss would likely be less therefore less detrimental to biodiversity.
- 1.8 The survey excluded areas where access was not possible and/or areas beyond significant features such as major roads (e.g. A428, A1303), commercial, academic and residential developments. These features were already likely to influence the movement and behaviour of wildlife and beyond which the scheme would be unlikely to exert an adverse effect.
- 1.9 Within the survey area:
- the dominant habitat was arable land,
  - other habitats included amenity and improved grassland, tall ruderal, dense and scattered scrub, ephemeral/short perennial,
  - habitats of conservation value included, semi-improved grassland, broad-leaved lowland deciduous woodland (including plantation woodland), traditional orchards, hedgerows, wet and dry ditches other waterbodies (such as ponds and a lake) and Bin Brook.

## 2 METHODS

### Bat roost inspection survey (daytime search)

- 2.1 A Stage 1 bat inspection survey was carried out on the trees and bridge (over Bin Brook) within the survey area of the scheme.
- 2.2 The aim of the inspection surveys would be to:
- determine whether bats/bat roosts are, have been or considered likely to be in any of the trees within the survey area. If necessary, this would include evaluating the number of bats present, the species involved, and the location of roost and access points.
  - provide advice on the implications if (i) roosting bats are found at the site or (ii) the presence of bat roosts is considered likely, or (iii) trees had potential to support roosting bats.
- 2.3 The survey visits were conducted between December 2018 and February 2019 inclusive, led by a professional licensed and qualified ecologist, Darren Frost (Natural England Bat Survey Class Licence CL18 - Registration number CLS01438) with experience in bat inspection surveys and knowledge of bat ecology.
- 2.4 The time of year was chosen when the trees were devoid of leaf cover, thereby optimising the ability to see features in the tree structure so a visual assessment of the trees potential to support roosting bats could be made.
- 2.5 Weather conditions and visibility at the time of the survey visits were suitable to observe features in the trees that may provide potential bat roost features.
- 2.6 Table 2.1 shows details the actual survey dates and weather conditions.
- 2.7 It recognised that the survey method chosen deviated slightly from the from the Good Practise Guidelines (Collins 2016). The guidelines indicate categorising the trees into low, moderate or high potential to support roosting bats based on the characteristics of the tree and presence of potential roost features. For this survey we did not differentiate between the trees into low, moderate or high potential to support roosting bats. Rather the trees were either categorised as with or without potential to support roosting bats. The trees either had potential roost features or did not have potential roost features.
- 2.8 All those trees that had potential roost features were then subject to an emergence/re-entry survey as if they were of high potential to support roosting bats; that is to say the trees were surveyed three times with a dawn and/or dusk survey. This method provided the best opportunity for any bat roosts in trees to be detected, irrespective of whether the tree had low, moderate or high potential to support roosting bats.

**Table 2.1 Weather conditions recorded during the times of the Bat Inspection Surveys at Cambourne in 2018-2019.**

Diurnal Survey	Time	Summary	Date				Temperature (Ave. °C)	Rain (y/n)
				Cloud Cover %	Wind Direction	Wind Speed (Ave. mph)		
1	0930-1530	Dry/Overcast	14/12/18	90	SE	3	4	N
2	0930-1530	Dry/Overcast	23/01/19	100	NW	5	2	N
3	0930-1500	Dry/Sunny	06/02/19	10	SW	9	10	N

2.10 The bat inspection survey was based on the Bat Survey Good Practice Guidelines (Collins 2016; Mitchell-Jones 2004; Mitchell-Jones & McLeish 2004). The survey comprised a series of comprehensive daytime, external surveys of the trees within the development site where access was safe and achievable.

2.11 The search entailed looking for evidence of bats or their roosts including; droppings and urine staining, fur staining and scratch marks, and live or dead bats. Binoculars, mirrors, endoscope, ladder and a powerful torch (one million candlepower) were used to aid searches of the trees.

Trees

2.12 The exterior of the trees was surveyed from ground level to identify potential roost features (such as woodpecker holes, rot holes; hazard beam, cracks, splits, knot holes, flaking bark, bat boxes etc.), through which bats could gain access and use as roost sites.

2.13 Where possible the inside of the trees and crevices (where these were reachable within 5m of the ground), were searched for bats and evidence of bats. All ledges and surfaces were checked for use by roosting bats. The area around these features, was searched for bat droppings, feeding remains, scratch marks and fur and urine staining.

2.14 All trees considered to contain potential roost features capable of supporting roosting bats were recorded and plotted on a map for future reference.

2.15 Photographs (see Photographs section) were taken to authenticate any evidence of bat species and record the character of the trees containing potential roost features.

2.16 If trees/structures were found showing evidence of bats, these would be assessed to determine the type of bat roost considered to be present (Collins, 2016): The types of bat roost considered were as follows:

- Maternity or Nursery Roost
- Hibernation Roost
- Daytime Summer Roost
- Night Roost
- Feeding Roost
- Transitional Roost

2.17 Based on the characteristics of the trees and features being inspected and the surrounding habitat, an assessment of their suitability to roosting bats was made. This involved the consideration of the following factors:

- Light levels.
- Temperature regime and protection from the weather.
- Access to the interior of the building and other roost sites.
- Potential roost sites.
- Tree/Bridge characteristics/construction.
- Habitat context.

### 3 RESULTS

#### Bat Inspection Survey

- 3.1 At the time of the survey no actual bats or signs indicating the presence of roosting bats were found during the searches made of the trees within the survey area.
- 3.2 Of the trees surveyed, 50 were considered to contain potential roost features suitable for roosting bats as defined by the Bat Conservation Trust survey guidelines (Collins 2016).
- 3.3 The suitable features included cracks, splits and crevices in major tree limbs, hollow cavities and holes created by woodpeckers and/or as a result of diseased parts of the tree.
- 3.4 Seven of the trees (Nos 1, 25, 26, 27, 28, 29, and 42) were found to have bat boxes fitted. One of the trees (No 1) was located near the entrance to Bourn Airfield, the other six trees (25, 26, 27, 28, 29 and 42) were located on trees in woodland blocks on the West Cambridge (academic/commercial research) Site. As observed in 2017-18, none of these boxes contained any signs to indicate that they had been used by roosting bats.
- 3.5 In comparison to the previous survey in 2017-18 (Cambridge Ecology 2018), three additional trees were considered to contain potential roost features suitable for roosting bats. These were located at the western end of the survey area near Bourn Airfield just north of the roundabout on the A1303 at grid reference TL354597.
- 3.6 It was also noted that the residential properties in this location had the potential to contain roost features suitable for bats. However, access to these properties was not available at the time of the survey and hence a formal assessment could not be carried out.
- 3.7 The 47 trees that were identified during the winter 2017-18 survey, still showed similar characteristics and were still considered to contain potential roost features suitable for bats.
- 3.8 Tables 3.1 to 3.13 provide a description of the 50 trees considered to contain potential roost features capable of supporting roosting bats.
- 3.9 Figures 3.1 to 3.6 shows the indicative location of the 50 trees with bat roost potential; and the Photographs section contains images of the 50 trees.
- 3.10 A search of the bridge over Bin Brook did not find any features suitable to support roosting bats. The structure of the bridge comprised a combination of metal frame and girders with brick and was well maintained. The bridge was therefore currently considered to have negligible potential to support roosting bats.

### General Habitats

- 3.11 The habitats within the survey area were still considered to provide a range of features suitable to support roosting and foraging bats and commuting routes across the site.
- 3.12 The presence of mature trees containing features suitable for roosting bats were present. In addition, the mature trees, hedgerows, linear tree planting, tall ruderal, waterbodies (such as ponds, Bin Brook and ditches with flowing water) and semi-improved grassland habitat provided good foraging opportunities for bats. The grassland areas and woodland edges in particular would be expected to provide foraging opportunities for bats as they would likely support a variety of invertebrate species on which the bats could feed.
- 3.13 Most bat species utilise linear features and use preferred flight routes. The matrix of these features such as the hedgerows and field boundaries would be expected to provide suitable foraging opportunities and sheltered commuting links between potential roost site and foraging areas.
- 3.14 In addition to the features observed, the biological record search as part of the initial ecology investigation (and subsequently updated), indicated the presence of seven species of bats (Brown Long-eared Bat *Plecotus auritus*, Common Pipistrelle *Pipistrellus pipistrellus* and Soprano Pipistrelle *Pipistrellus pygmaeus*, Daubenton's *Myotis daubentonii*, Noctule *Nyctalus noctula*, Serotine *Eptesicus serotinus* and Western Barbastelle *Barbastella barbastellus* from at least 15 sites, including within the survey area during the last 10 years. (Cambridge Ecology 2017).
- 3.15 Most of the area in the site was dominated by the arable land, commercial, academic and residential areas and therefore provided relatively poor habitat for bats. However, there were a few significant sections of woodland and network of hedgerows located mostly between Bin Brook to the east of the M11 motorway, across through Coton village and up to Long Road near Hardwick. These could be considered to form a recognisable network linking different habitats, although it was recognised that the M11 motorway bisected these networks resulting in some fragmentation.
- 3.16 To the east of the M11 motorway, field boundaries were often marked by farm tracks, drainage/irrigation ditches and well-established network of mature hedgerows (e.g. Coton Path Hedgerow County Wildlife Site). Arable field margins, conservation headlands and game cover crops were also present here. Foraging habitat for bats and commuting routes between potential foraging areas and roost sites were therefore available. A similar network of hedgerows and field boundaries and woodland areas were present around Coton village to Long Road up towards Hardwick. However, from the field boundaries to the west of the M11 motorway were more often marked by farm tracks, drainage/irrigation ditches but few mature hedgerows. There were few arable field margins and conservation

headlands. Foraging habitat for bats and commuting routes between potential foraging areas and roost sites was therefore limited.

### **Survey Constraints**

- 3.17 It was considered that the Stage 1 Bat Inspection Survey of the land within and adjacent to the site provided a representative assessment of the trees and their potential to support roosting bats within the areas searched at the site. A thorough search was made of all accessible habitats within the survey area.
- 3.18 The survey was considered to have been carried out methodically and all accessible areas searched thoroughly to locate signs indicating the presence of bats and inspection of the trees potential to contain potential roost features.
- 3.19 It was acknowledged that some areas were inaccessible during the survey; due to lack of access to private land (mostly residential and commercial). For instance, the three residential properties just north of the roundabout on the A1303 at grid reference TL354597. Therefore, the presence/absence of trees/buildings and an assessment of their suitability to support roosting bats, by containing potential roost features, could not be verified in these areas.
- 3.20 It is recognised that there would always be a risk that bats and their signs could be over-looked, either owing to the timing (both time of day and time of year) of the survey, the in-accessibility to some areas, the scarcity of the species at the site or the ability of bats to move to new roost sites periodically and therefore move into an area after the survey had been carried out.



**Table 3.1: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		1	2	3	4
1	Tree Type	Oak	Ash	Ash	Oak
2	Age/Trunk size (dia)	>500mm	<500mm	<500mm	<500mm
3	Aspect (isolated/in a woodland)	Isolated	Line of trees	Line of trees	Line of trees
4	Surrounding habitat type	Arable land and main road	Arable land and main road and residential	Arable land and main road and residential	Arable land and main road and residential
5	Presence of natural holes	Yes	Yes	Yes	Yes
6	Presence of woodpecker holes	Yes	Yes	Yes	Yes
7	Presence of cracks/splits in major limbs	Yes	Yes	Yes	Yes
8	Presence of loose bark	Yes	Yes	Yes	Yes
9	Presence of Ivy clad trunks and/or limbs	No	Yes	No	No
10	Presence of hollows/cavities	Yes	Yes	No	No
11	Presence of epicormic growth	No	No	No	No
12	Presence of bat or bird boxes	Bat boxes	No	No	No
13	Evidence of work or disturbance to tree	No	No	No	No
14	Overall condition of tree	Fair	Fair	Fair	Fair
15	Light sources nearby illuminating tree	None	None	None	None
16	Bats found	None	None	None	None
17	Signs of bats	None	None	None	None
18	Suitability for roosting bats	High	High	High	High
19	Comments	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18

**Table 3.2: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		5	6	7	8
1	<b>Tree Type</b>	Oak	Ash	Oak	Beech
2	<b>Age/Trunk size (dia)</b>	<500mm	<500mm		<500mm
3	<b>Aspect (isolated/in a woodland)</b>	Mature woodland shelter belt	Mature woodland shelter belt	Mature woodland shelter belt	Mature woodland shelter belt
4	<b>Surrounding habitat type</b>	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road
5	<b>Presence of natural holes</b>	Yes	Yes	Yes	Yes
6	<b>Presence of woodpecker holes</b>	Yes	Yes	Yes	Yes
7	<b>Presence of cracks/splits in major limbs</b>	Yes	Yes	Yes	Yes
8	<b>Presence of loose bark</b>	Yes	Yes	Yes	Yes
9	<b>Presence of Ivy clad trunks and/or limbs</b>	No	No	Yes	No
10	<b>Presence of hollows/cavities</b>	Yes	Yes	Yes	Yes
11	<b>Presence of epicormic growth</b>	No	No	No	No
12	<b>Presence of bat or bird boxes</b>	No	No	No	No
13	<b>Evidence of work or disturbance to tree</b>	No	No	No	No
14	<b>Overall condition of tree</b>	Fair	Fair	Fair	Fair
15	<b>Light sources nearby illuminating tree</b>	None	None	None	None
16	<b>Bats found</b>	None	None	None	None
17	<b>Signs of bats</b>	None	None	None	None
18	<b>Suitability for roosting bats</b>	High	High	High	High
19	<b>Comments</b>	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18

**Table 3.3: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		9	10	11	12
1	<b>Tree Type</b>	Oak	Ash	Ash	Ash
2	<b>Age/Trunk size (dia)</b>	<500mm	<500mm	<500mm	<500mm
3	<b>Aspect (isolated/in a woodland)</b>	Mature woodland shelter belt	Mature woodland shelter belt	Mature woodland shelter belt	Mature woodland shelter belt
4	<b>Surrounding habitat type</b>	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road
5	<b>Presence of natural holes</b>	Yes	Yes	Yes	Yes
6	<b>Presence of woodpecker holes</b>	Yes	Yes	Yes	Yes
7	<b>Presence of cracks/splits in major limbs</b>	Yes	Yes	Yes	Yes
8	<b>Presence of loose bark</b>	Yes	Yes	Yes	Yes
9	<b>Presence of Ivy clad trunks and/or limbs</b>	No	Yes	No	No
10	<b>Presence of hollows/cavities</b>	Yes	Yes	Yes	Yes
11	<b>Presence of epicormic growth</b>	No	No	No	No
12	<b>Presence of bat or bird boxes</b>	No	No	No	No
13	<b>Evidence of work or disturbance to tree</b>	No	No	No	No
14	<b>Overall condition of tree</b>	Fair	Fair	Dead	Fair
15	<b>Light sources nearby illuminating tree</b>	None	None	Security lighting from Madingley Mulch	None
16	<b>Bats found</b>	None	None	None	None
17	<b>Signs of bats</b>	None	None	None	None
18	<b>Suitability for roosting bats</b>	High	High	High	High
19	<b>Comments</b>	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18

**Table 3.4: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		13	14	15	16
1	<b>Tree Type</b>	Elm	Oak	Ash	Ash
2	<b>Age/Trunk size (dia)</b>	>500mm	>500mm	<500mm	<500mm
3	<b>Aspect (isolated/in a woodland)</b>	Line of Trees	Line of Trees	Line of Trees	Line of Trees
4	<b>Surrounding habitat type</b>	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road
5	<b>Presence of natural holes</b>	Yes	Yes	Yes	Yes
6	<b>Presence of woodpecker holes</b>	Yes	Yes	Yes	Yes
7	<b>Presence of cracks/splits in major limbs</b>	Yes	Yes	Yes	Yes
8	<b>Presence of loose bark</b>	Yes	Yes	Yes	Yes
9	<b>Presence of Ivy clad trunks and/or limbs</b>	No	No	No	No
10	<b>Presence of hollows/cavities</b>	Yes	Yes	Yes	Yes
11	<b>Presence of epicormic growth</b>	No	No	No	No
12	<b>Presence of bat or bird boxes</b>	No	No	No	No
13	<b>Evidence of work or disturbance to tree</b>	No	No	No	No
14	<b>Overall condition of tree</b>	Fair	Fair	Fair	Fair
15	<b>Light sources nearby illuminating tree</b>	None	None	Road light at nearby roundabout	None
16	<b>Bats found</b>	None	None	None	None
17	<b>Signs of bats</b>	None	None	None	None
18	<b>Suitability for roosting bats</b>	High	High	High	High
19	<b>Comments</b>	TPO number 0429 No change in the tree characteristics from winter 2017-18	TPO number 0430 No change in the tree characteristics from winter 2017-18	TPO number 0424 No change in the tree characteristics from winter 2017-18	TPO number 0436 No change in the tree characteristics from winter 2017-18

**Table 3.5: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		17	18	19	20
1	<b>Tree Type</b>	Ash	Ash	Ash	Ash
2	<b>Age/Trunk size (dia)</b>	<500mm	<500mm	<500mm	500mm
3	<b>Aspect (isolated/in a woodland)</b>	Line of Trees	Isolated	Line of Trees	Hedgerow standard
4	<b>Surrounding habitat type</b>	Arable land, grassland, woodland and main road	Mature residential garden and main road	Mature residential garden and main road	Arable land and Hedgerows
5	<b>Presence of natural holes</b>	Yes	Yes	Yes	Yes
6	<b>Presence of woodpecker holes</b>	Yes	No	No	Yes
7	<b>Presence of cracks/splits in major limbs</b>	Yes	No	No	Yes
8	<b>Presence of loose bark</b>	Yes	No	No	yes
9	<b>Presence of Ivy clad trunks and/or limbs</b>	No	No	No	yes
10	<b>Presence of hollows/cavities</b>	Yes	Yes	Yes	Yes
11	<b>Presence of epicormic growth</b>	No	No	No	No
12	<b>Presence of bat or bird boxes</b>	No	No	No	No
13	<b>Evidence of work or disturbance to tree</b>	No	No	Yes	Yes
14	<b>Overall condition of tree</b>	Fair	Fair	Fair	Dead
15	<b>Light sources nearby illuminating tree</b>	None	Residential security lighting	Residential security lighting	None
16	<b>Bats found</b>	None	None	None	None
17	<b>Signs of bats</b>	None	None	None	None
18	<b>Suitability for roosting bats</b>	High	High	High	High
19	<b>Comments</b>	TPO number 0671 No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18

**Table 3.6: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		21	22	23	24
1	<b>Tree Type</b>	Ash	Oak	Ash	Ash
2	<b>Age/Trunk size (dia)</b>	<500mm	>500mm	<500mm	<500mm
3	<b>Aspect (isolated/in a woodland)</b>	Tree shelter belt	Tree shelter belt	Tree shelter belt	Tree shelter belt
4	<b>Surrounding habitat type</b>	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road	Arable land, grassland, woodland and main road
5	<b>Presence of natural holes</b>	Yes	Yes	Yes	Yes
6	<b>Presence of woodpecker holes</b>	No	Yes	Yes	Yes
7	<b>Presence of cracks/splits in major limbs</b>	Yes	Yes	Yes	Yes
8	<b>Presence of loose bark</b>	Yes	Yes	Yes	Yes
9	<b>Presence of Ivy clad trunks and/or limbs</b>	No	No	No	No
10	<b>Presence of hollows/cavities</b>	Yes	Yes	Yes	Yes
11	<b>Presence of epicormic growth</b>	No	No	No	No
12	<b>Presence of bat or bird boxes</b>	No	No	No	No
13	<b>Evidence of work or disturbance to tree</b>	No	No	Yes, top cut off	No
14	<b>Overall condition of tree</b>	Fair	Fair	Poor	Fair
15	<b>Light sources nearby illuminating tree</b>	None	None	None	None
16	<b>Bats found</b>	None	None	None	None
17	<b>Signs of bats</b>	None	None	None	None
18	<b>Suitability for roosting bats</b>	High	High	High	High
19	<b>Comments</b>	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18

**Table 3.7: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		25	26	27	28
1	Tree Type	Oak	Oak	Scots Pine	Scots Pine
2	Age/Trunk size (dia)	<500mm	<500mm	<500mm	<500mm
3	Aspect (isolated/in a woodland)	In woodland shelter belt	In woodland shelter belt	In woodland shelter belt	In woodland shelter belt
4	Surrounding habitat type	Arable land, woodland and commercial research park	Arable land, woodland and commercial research park	Arable land, woodland and commercial research park	Arable land, woodland and commercial research park
5	Presence of natural holes	Yes	Yes	Yes	Yes
6	Presence of woodpecker holes	No	No	No	No
7	Presence of cracks/splits in major limbs	Yes	Yes	Yes	Yes
8	Presence of loose bark	Yes	Yes	Yes	Yes
9	Presence of Ivy clad trunks and/or limbs	No	No	No	No
10	Presence of hollows/cavities	Yes	Yes	Yes	Yes
11	Presence of epicormic growth	No	No	No	No
12	Presence of bat or bird boxes	Bat Box	Bat Box	Bat Box	Bat Box
13	Evidence of work or disturbance to tree	No	No	No	No
14	Overall condition of tree	Fair	Fair	Fair	Fair
15	Light sources nearby illuminating tree	None	None	None	None
16	Bats found	None	None	None	None
17	Signs of bats	None	None	None	None
18	Suitability for roosting bats	High	High	High	High
19	Comments	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18

**Table 3.8: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		29	30	31	32
1	<b>Tree Type</b>	Oak	Ash	Field Maple	Ash
2	<b>Age/Trunk size (dia)</b>	<500mm	<500mm	<500mm	<500mm
3	<b>Aspect (isolated/in a woodland)</b>	In woodland shelter belt	Hedgerow standard	Hedgerow standard	Hedgerow standard
4	<b>Surrounding habitat type</b>	Arable land, woodland and commercial research park	Arable land and hedgerow	Arable land and hedgerow	Arable land and mature residential garden
5	<b>Presence of natural holes</b>	Yes	Yes	Yes	Yes
6	<b>Presence of woodpecker holes</b>	No	Yes	Yes	Yes
7	<b>Presence of cracks/splits in major limbs</b>	Yes	Yes	Yes	Yes
8	<b>Presence of loose bark</b>	Yes	Yes	Yes	Yes
9	<b>Presence of Ivy clad trunks and/or limbs</b>	No	No	No	Yes
10	<b>Presence of hollows/cavities</b>	Yes	Yes	Yes	Yes
11	<b>Presence of epicormic growth</b>	No	No	No	No
12	<b>Presence of bat or bird boxes</b>	Bat Box	No	No	No
13	<b>Evidence of work or disturbance to tree</b>	No	No	No	No
14	<b>Overall condition of tree</b>	Fair	Fair	Fair	Fair
15	<b>Light sources nearby illuminating tree</b>	None	None	None	None
16	<b>Bats found</b>	None	None	None	None
17	<b>Signs of bats</b>	None	None	None	None
18	<b>Suitability for roosting bats</b>	High	High	High	High
19	<b>Comments</b>	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18



**Table 3.9: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		33	34	35	36
1	<b>Tree Type</b>	Ash	Ash	Ash	Ash
2	<b>Age/Trunk size (dia)</b>	<500mm	<500mm	<500mm	<500mm
3	<b>Aspect (isolated/in a woodland)</b>	Hedgerow standard	Hedgerow standard	Hedgerow standard	Woodland shelter belt
4	<b>Surrounding habitat type</b>	Arable land and mature residential garden	Arable land and mature residential garden	Arable land, scrub and woodland	Arable land, scrub and woodland
5	<b>Presence of natural holes</b>	Yes	Yes	Yes	Yes
6	<b>Presence of woodpecker holes</b>	Yes	Yes	Yes	Yes
7	<b>Presence of cracks/splits in major limbs</b>	No	No	No	No
8	<b>Presence of loose bark</b>	Yes	Yes	Yes	No
9	<b>Presence of Ivy clad trunks and/or limbs</b>	Yes	Yes	Yes	Yes
10	<b>Presence of hollows/cavities</b>	Yes	Yes	Yes	Yes
11	<b>Presence of epicormic growth</b>	No	No	No	No
12	<b>Presence of bat or bird boxes</b>	No	No	No	No
13	<b>Evidence of work or disturbance to tree</b>	No	No	No	No
14	<b>Overall condition of tree</b>	Fair	Fair	Fair	Fair
15	<b>Light sources nearby illuminating tree</b>	None	None	None	None
16	<b>Bats found</b>	None	None	None	None
17	<b>Signs of bats</b>	None	None	None	None
18	<b>Suitability for roosting bats</b>	High	High	High	High
19	<b>Comments</b>	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18

**Table 3.10: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		37	38	39	40
1	<b>Tree Type</b>	Poplar	Poplar	Poplar	Poplar
2	<b>Age/Trunk size (dia)</b>	<500mm	<500mm	<500mm	<500mm
3	<b>Aspect (isolated/in a woodland)</b>	Line of trees	Line of trees	Line of trees	Line of trees
4	<b>Surrounding habitat type</b>	Arable land, scrub, grassland and woodland	Arable land, scrub, grassland and woodland	Arable land, scrub, grassland and woodland	Arable land, scrub, grassland and woodland
5	<b>Presence of natural holes</b>	Yes	Yes	Yes	Yes
6	<b>Presence of woodpecker holes</b>	Yes	Yes	Yes	Yes
7	<b>Presence of cracks/splits in major limbs</b>	Yes	Yes	Yes	Yes
8	<b>Presence of loose bark</b>	No	No	No	No
9	<b>Presence of Ivy clad trunks and/or limbs</b>	No	No	No	No
10	<b>Presence of hollows/cavities</b>	Yes	Yes	Yes	Yes
11	<b>Presence of epicormic growth</b>	No	No	No	No
12	<b>Presence of bat or bird boxes</b>	No	No	No	No
13	<b>Evidence of work or disturbance to tree</b>	No	No	No	No
14	<b>Overall condition of tree</b>	Fair	Fair	Fair	Fair
15	<b>Light sources nearby illuminating tree</b>	None	None	None	None
16	<b>Bats found</b>	None	None	None	None
17	<b>Signs of bats</b>	None	None	None	None
18	<b>Suitability for roosting bats</b>	High	High	High	High
19	<b>Comments</b>	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18

**Table 3.11: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		41	42	43	44
1	<b>Tree Type</b>	Poplar	Ash	Ash	Ash
2	<b>Age/Trunk size (dia)</b>	<500mm	<500mm	<500mm	<500mm
3	<b>Aspect (isolated/in a woodland)</b>	Line of trees	Line of trees	Hedgerow standard	Hedgerow standard
4	<b>Surrounding habitat type</b>	Arable land, scrub, grassland and woodland	Arable land, woodland and commercial research park and motorway	Arable land and hedgerow	Arable land and hedgerow
5	<b>Presence of natural holes</b>	Yes	No	Yes	Yes
6	<b>Presence of woodpecker holes</b>	Yes	No	Yes	Yes
7	<b>Presence of cracks/splits in major limbs</b>	Yes	No	Yes	Yes
8	<b>Presence of loose bark</b>	No	No	Yes	Yes
9	<b>Presence of Ivy clad trunks and/or limbs</b>	No	No	No	No
10	<b>Presence of hollows/cavities</b>	Yes	No	Yes	Yes
11	<b>Presence of epicormic growth</b>	No	No	No	No
12	<b>Presence of bat or bird boxes</b>	No	Bat Box	No	No
13	<b>Evidence of work or disturbance to tree</b>	No	No	No	No
14	<b>Overall condition of tree</b>	Fair	Good	Fair	Fair
15	<b>Light sources nearby illuminating tree</b>	None	None	None	None
16	<b>Bats found</b>	None	None	None	None
17	<b>Signs of bats</b>	None	None	None	None
18	<b>Suitability for roosting bats</b>	High	High	High	High
19	<b>Comments</b>	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18

**Table 3.12: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		45	46	47	48
1	<b>Tree Type</b>	Oak	Poplar	Poplar	Oak
2	<b>Age/Trunk size (dia)</b>	<500mm	<500mm	<500mm	<500mm
3	<b>Aspect (isolated/in a woodland)</b>	Hedgerow standard	Line of trees	Line of trees	Garden boundary, line of trees
4	<b>Surrounding habitat type</b>	Arable land and hedgerow	Arable land, scrub, grassland and woodland	Arable land, scrub, grassland and woodland	Roads, Gardens Arable land
5	<b>Presence of natural holes</b>	Yes	Yes	Yes	Yes
6	<b>Presence of woodpecker holes</b>	Yes	Yes	Yes	Yes
7	<b>Presence of cracks/splits in major limbs</b>	Yes	Yes	Yes	Yes
8	<b>Presence of loose bark</b>	Yes	No	No	Yes
9	<b>Presence of Ivy clad trunks and/or limbs</b>	No	No	No	Yes
10	<b>Presence of hollows/cavities</b>	Yes	Yes	Yes	No
11	<b>Presence of epicormic growth</b>	No	No	No	No
12	<b>Presence of bat or bird boxes</b>	No	No	No	No
13	<b>Evidence of work or disturbance to tree</b>	No	No	No	No
14	<b>Overall condition of tree</b>	Fair	Fair	Fair	Good
15	<b>Light sources nearby illuminating tree</b>	None	None	None	Yes
16	<b>Bats found</b>	None	None	None	None
17	<b>Signs of bats</b>	None	None	None	None
18	<b>Suitability for roosting bats</b>	High	High	High	High
19	<b>Comments</b>	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	No change in the tree characteristics from winter 2017-18	

**Table 3.13: Details of the trees considered to have potential to support roosting bats**

No	Feature	Tree Identification Code			
		49	50		
1	Tree Type	Field Maple	Horse Chestnut		
2	Age/Trunk size (dia)	<500mm	500mm		
3	Aspect (isolated/in a woodland)	Garden boundary, line of trees	Garden		
4	Surrounding habitat type	Roads, Gardens Arable land	Roads, Gardens Arable land		
5	Presence of natural holes	Yes	Yes		
6	Presence of woodpecker holes	Yes	No		
7	Presence of cracks/splits in major limbs	Yes	Yes		
8	Presence of loose bark	Yes	Yes		
9	Presence of Ivy clad trunks and/or limbs	No	No		
10	Presence of hollows/cavities	Yes	No		
11	Presence of epicormic growth	No	No		
12	Presence of bat or bird boxes	No	No		
13	Evidence of work or disturbance to tree	No	No		
14	Overall condition of tree	Some dead branches	Good		
15	Light sources nearby illuminating tree	No	Yes		
16	Bats found	No	No		
17	Signs of bats	No	No		
18	Suitability for roosting bats	High	High		
19	Comments				

#### 4 KEY POINTS AND FINDINGS

- 4.1 Between December 2018 and February 2019 inclusive, a Stage 1 Bat Inspection Survey was successfully carried out on land between Grange Road, Cambridge at the eastern end and the Bourn Airfield entrance off the A1303 at the western end.
- 4.2 The information gathered from the Stage 1 bat inspection survey was considered to provide a representative assessment of the trees within the site/survey area, to contain potential roost features suitable to support roosting bats.
- 4.3 No actual bats were found during the surveys and no signs indicating the presence of roosting/hibernating bats were found in any of the trees and/or bat boxes found on seven of the trees. There was no sign of roosting bats associated with the bridge over Bin Brook. The bridge was considered to have negligible potential to support roosting bats.
- 4.4 Of all the trees surveyed 50 were now considered to contain potential roost features suitable to support roosting bats. These comprised the 47 trees that were identified, during the 2017-18 survey, as containing potential roost features and whose suitability had not changed; plus, three additional trees at the western end of the survey area near Bourn Airfield.
- 4.5 During the surveys seven trees were found to have bat boxes attached. These bats boxes were likely to have been installed as part of mitigation and/or biodiversity enhancement measures associated with the West Cambridge Site expansion. However, as found during the 2017-18 survey, none of the boxes showed any signs of having accommodated any roosting bats.
- 4.6 Most of the habitat in the survey area comprising arable land and therefore of limited benefit to bats. However, it was recognised that there were habitats within the survey area considered to provide a range of features suitable to support roosting sites, foraging area and commuting routes for bats.
- 4.7 Mature trees containing features suitable for roosting bats were present. In addition, the mature trees, hedgerows, linear tree planting, tall ruderal, waterbodies and semi-improved grassland habitat provided good foraging opportunities for bats and the network of hedgerows and linear features provided suitable commuting routes for bats.
- 4.8 Biological records obtained in 2017 (Cambridge Ecology 2017) from the last 10 years indicated the presence of seven species of bats (Brown Long-eared Bat, Common and Soprano Pipistrelle, Daubenton's, Noctule, Serotine and Western Barbastelle) from at least 15 locations, including within the survey area. However, there were no recent records of bat roosts of any species along the potential route of the scheme. The only record of a bat roost within the survey area was of a bat species roosting at

Keyneside, Clare Hall, Herschel Road (one of the potential routes through to Grange Road), in 1995. It is noted that Western Barbestelle bat, is cited as a key feature of Eversden and Wimpole Woods Special Area of Conservation (SAC), located approximately 7km to the south west of the survey area. It is therefore possible that the survey area has the potential to include key foraging and commuting routes for this species.

- 4.9 In combination, the habitats present, the records of bats in close proximity to the site and the trees identified as containing potential roost features indicated that there was a possibility of roosting bats being present within the site.
- 4.10 Based on the findings of the Stage 1 bat inspection survey, Stage 2 bat activity surveys (emergence/re-entry and static surveys) are recommended for the trees containing suitable roost features and the network of hedgerows, lines of trees, woodland edges and field boundaries as they could be important foraging and/or commuting routes for bats. The scheme could bisect a number of these linear features, potentially adversely affecting commuting, foraging and/or roosting bats. The survey would involve a series of static surveys during periods of optimum bat activity.
- 4.11 In additional, the findings of this survey, indicate that mitigation measures would be necessary; the detail of these would depend on the actual route of the scheme. The mitigation measures would be necessary to ensure legal compliance pertaining to bats and enable the scheme to proceed without causing a significant adverse effect on the local bat population.
- 4.12 Enhancement measures would be possible that would benefit the local bat population. The inclusion of enhancement measures would help the scheme meet the local and national planning policy. The enhancement measures may be incorporated into the landscape/habitat creation design proposals for the scheme that would aim to result in conservation gain.

**5 BIBLIOGRAPHY**

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- Mitchell-Jones. A.J., (2004). Bat Mitigation Guidelines. English Nature. Peterborough.



## 6 FIGURES

Figure 1.1: Plan showing the red line boundary of the scheme and the boundary of the Stage 1 Bat Inspection Survey.

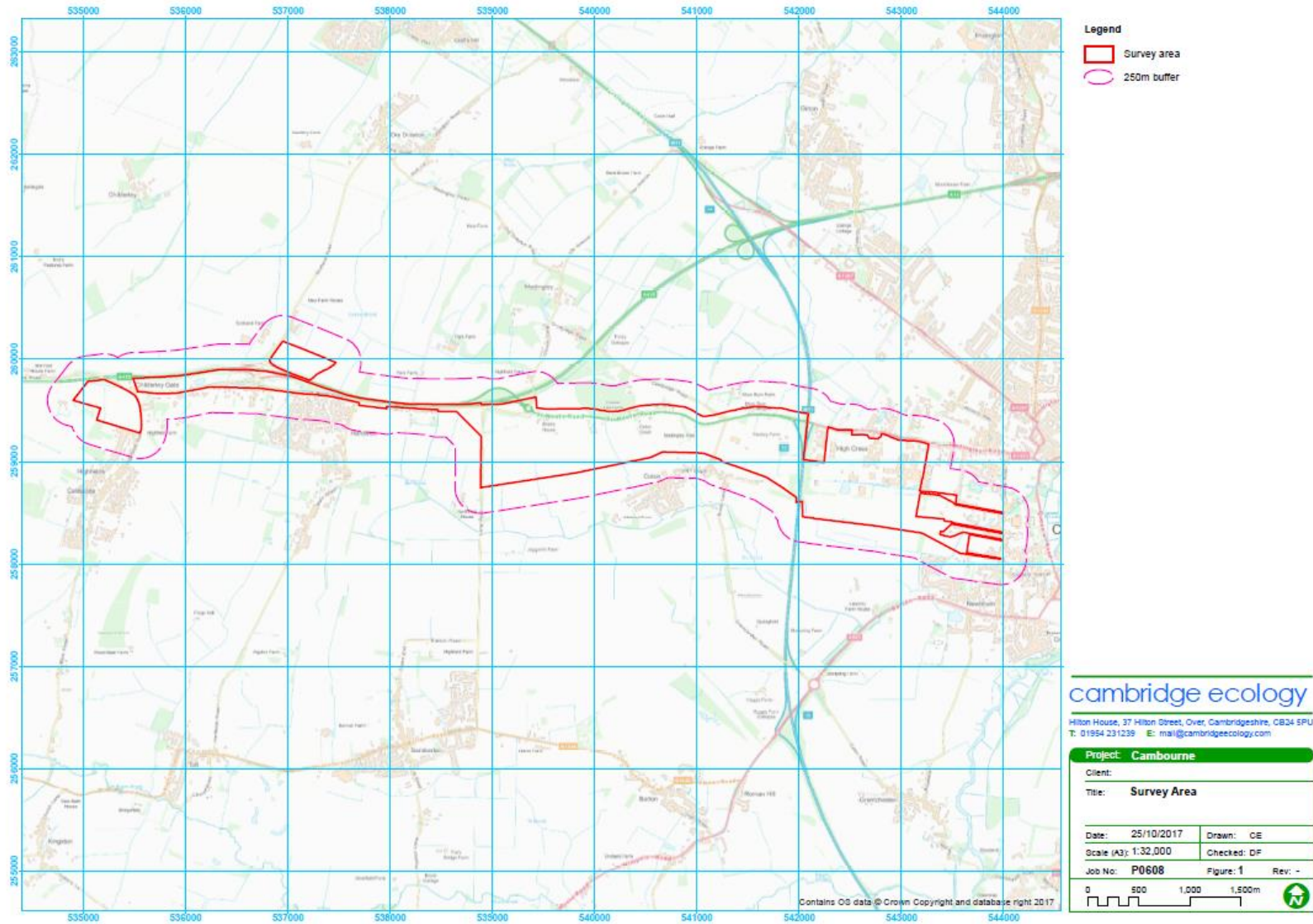


Figure 3.1: Plan showing the indicative location of the trees considered to have potential to support roosting bats (sheet 1 of 6)

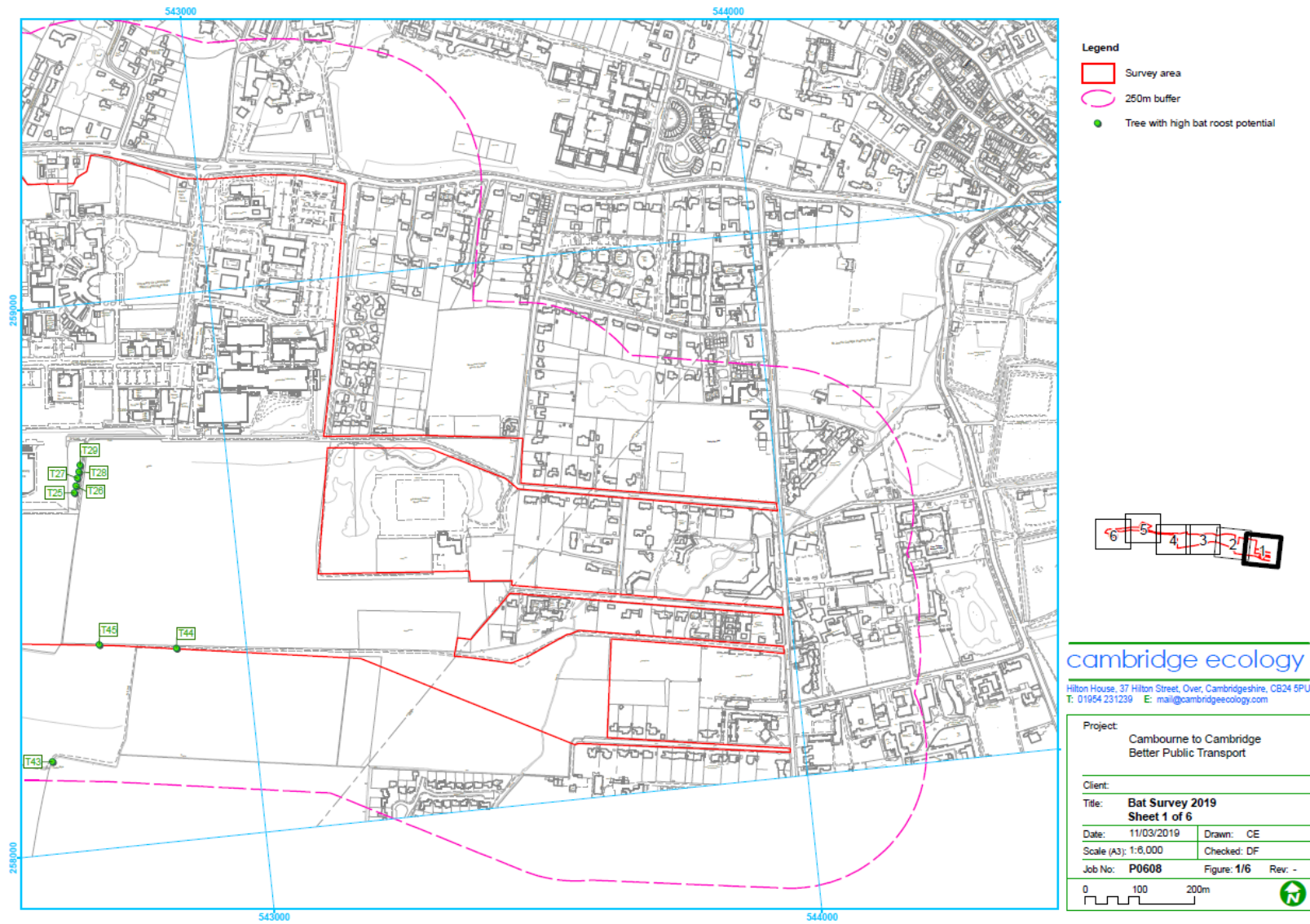


Figure 3.2: Plan showing the indicative location of the trees considered to have potential to support roosting bats (sheet 2 of 6)

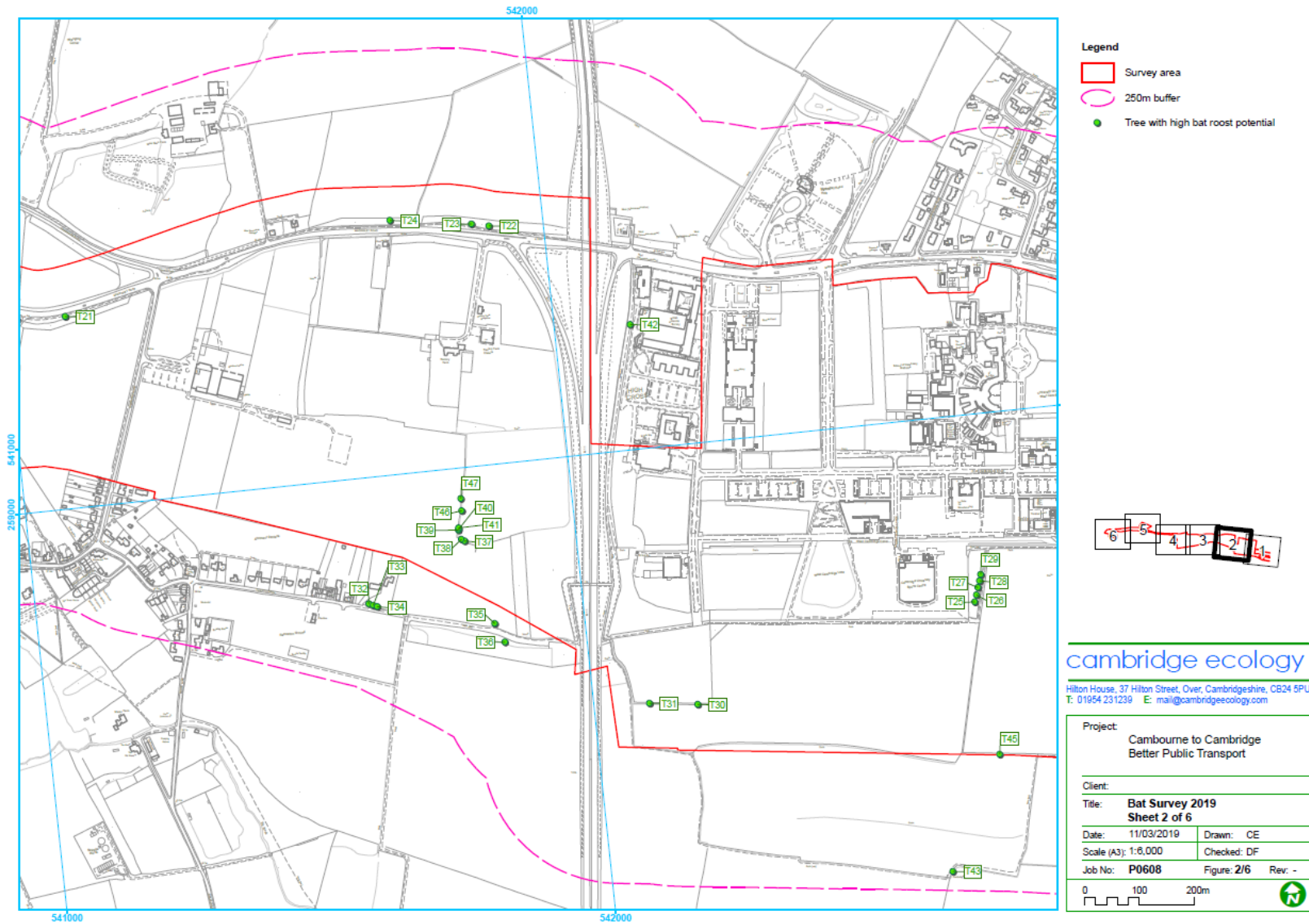


Figure 3.3: Plan showing the indicative location of the trees considered to have potential to support roosting bats (sheet 3 of 6)

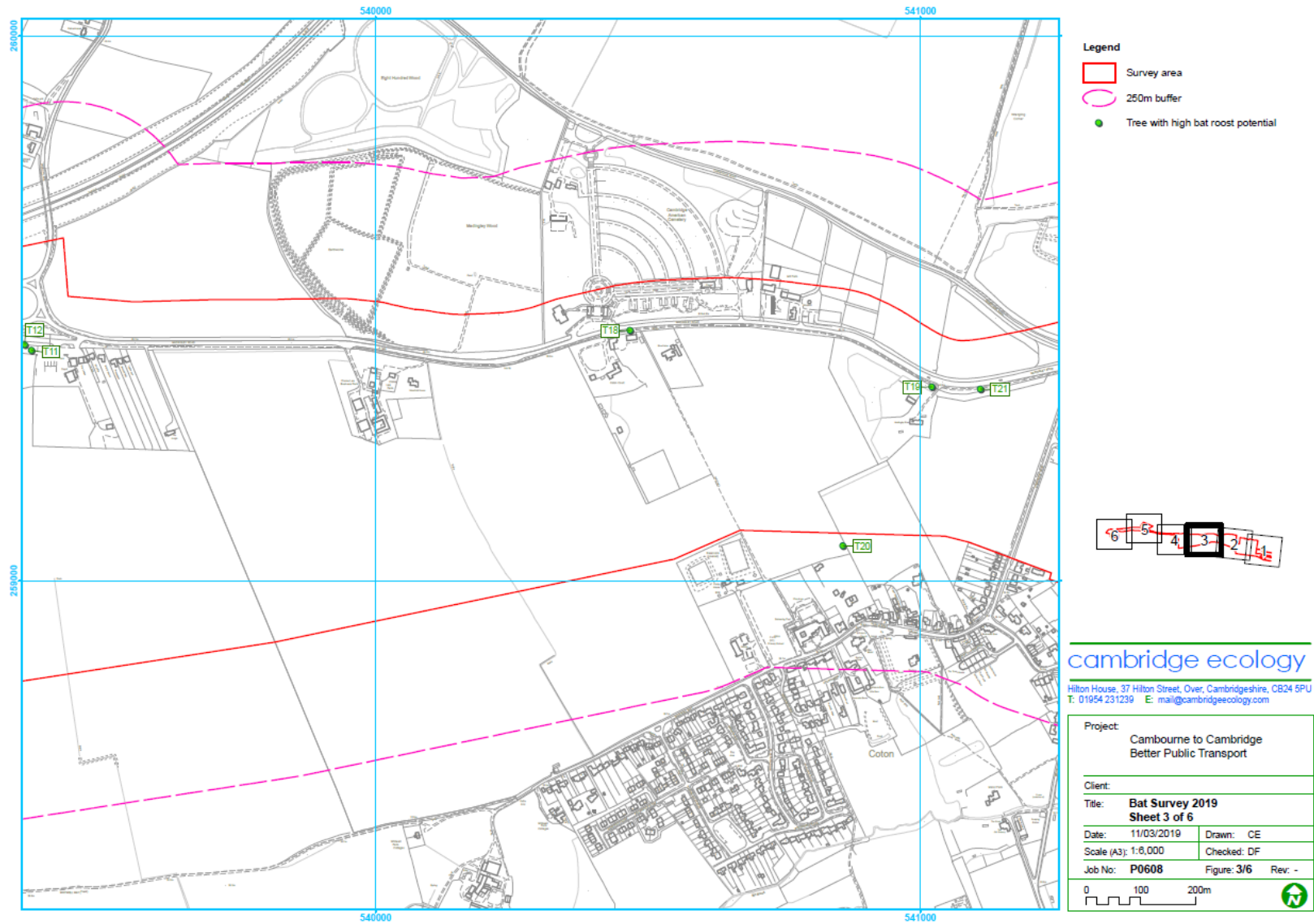


Figure 3.4: Plan showing the indicative location of the trees considered to have potential to support roosting bats (sheet 4 of 6)

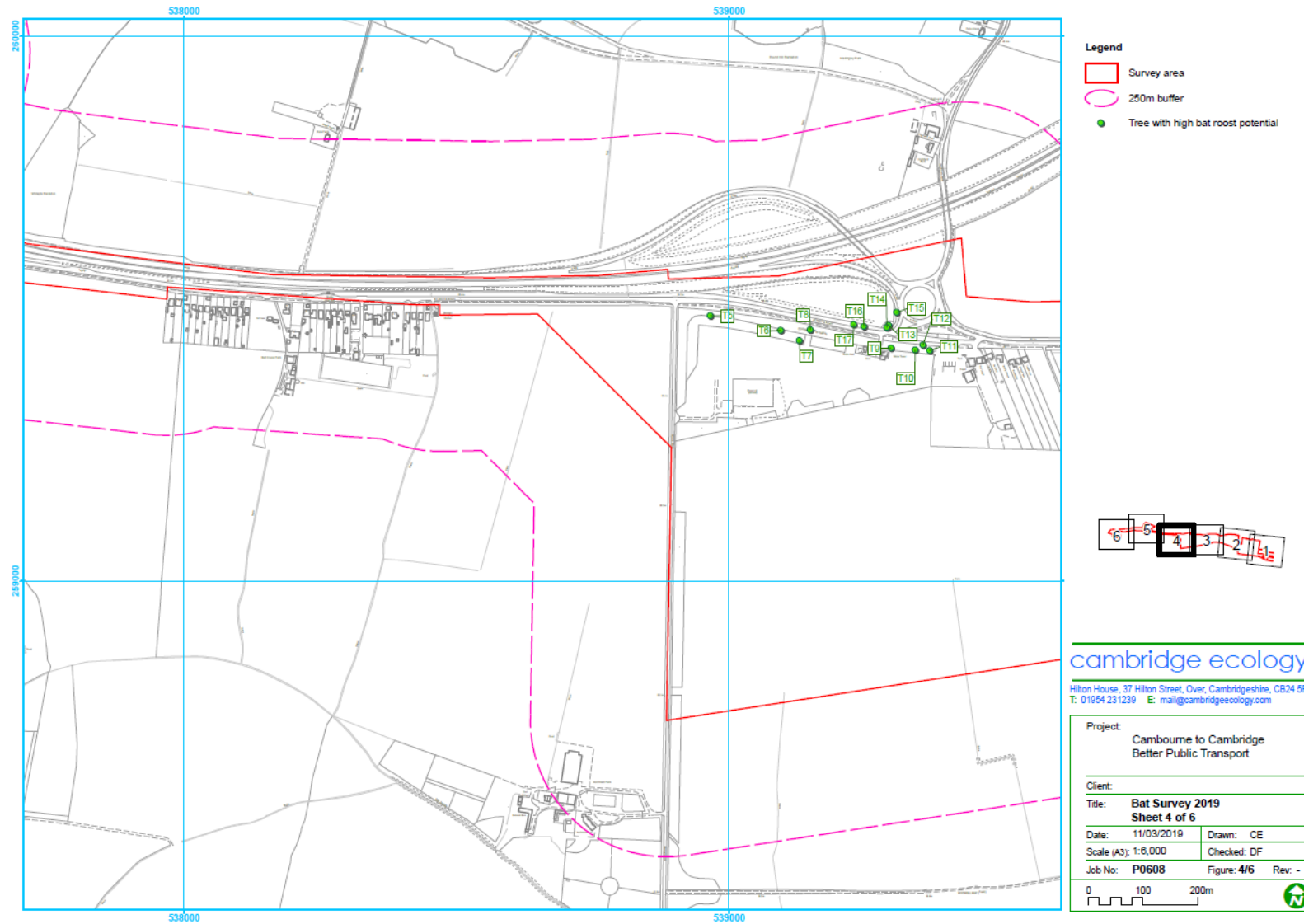


Figure 3.5: Plan showing the indicative location of the trees considered to have potential to support roosting bats (sheet 5 of 6)

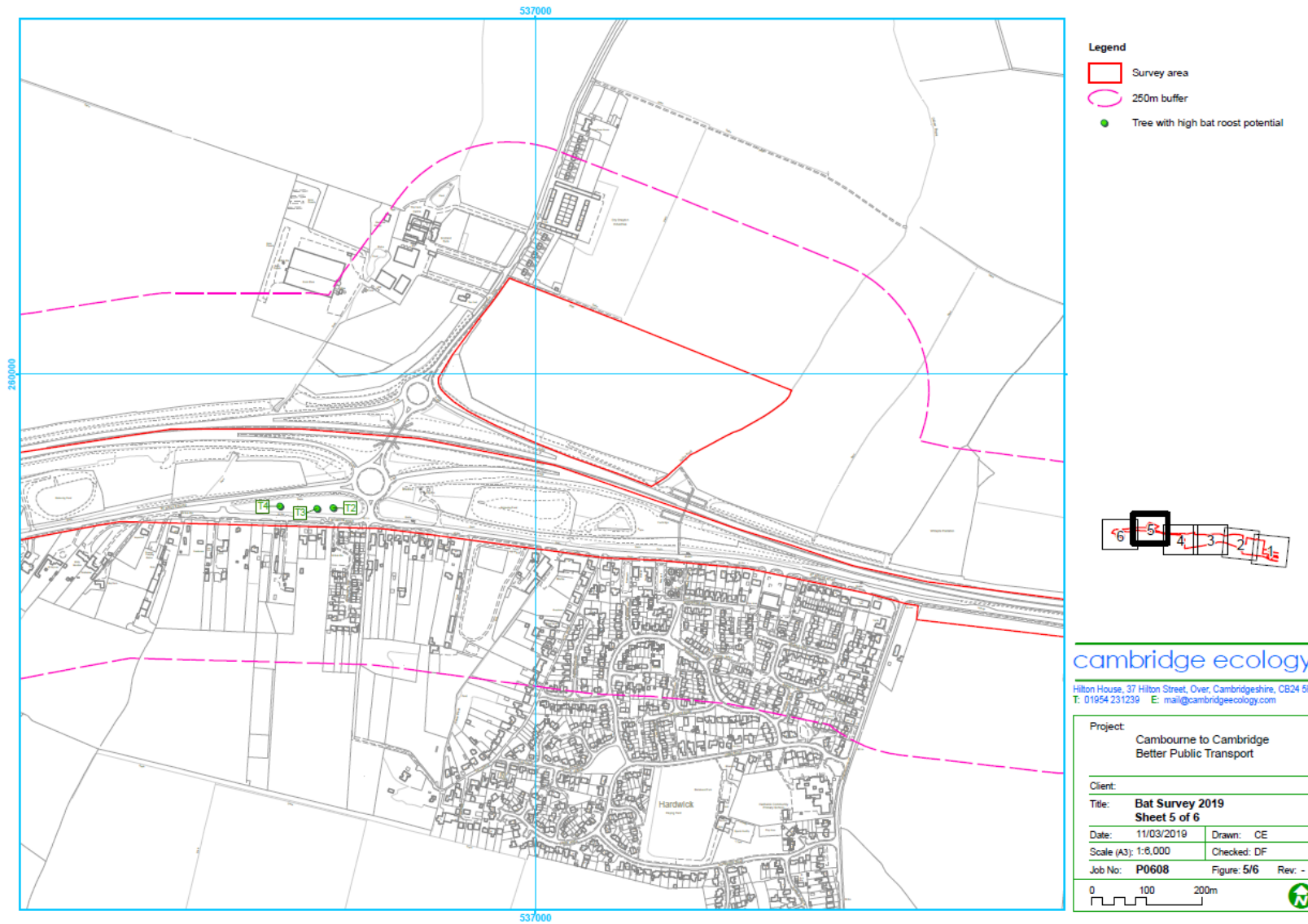
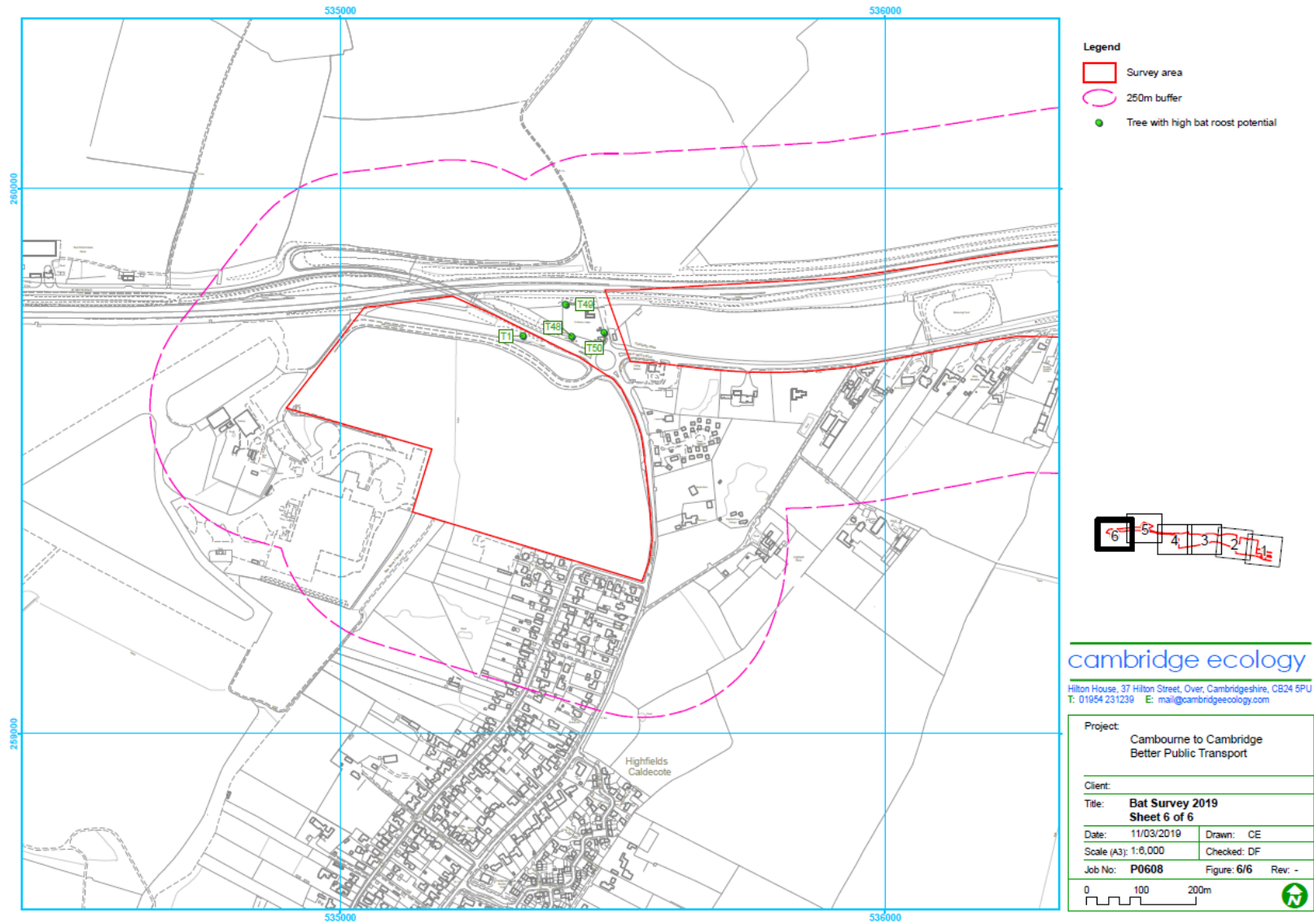






Figure 3.6: Plan showing the indicative location of the trees considered to have potential to support roosting bats (sheet 6 of 6)







**7 PHOTOGRAPHS**



Photo No.	Photograph	Description
1		<p>Oak Tree (No 1) with bat box suitable to support roosting bats.</p> <p>Photograph from 2018</p>
2		<p>Ash Tree (No 2) suitable to support roosting bats</p> <p>Photograph from 2018</p>







<p>3</p>		<p>Ash Tree (No 3) suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>4</p>		<p>Oak Tree (No 4) suitable to support roosting bats</p> <p>Photograph from 2018</p>



5		<p>Oak Tree (No 5) suitable to support roosting bats</p> <p>Photograph from 2018</p>
6		<p>Ash Tree (No 6) suitable to support roosting bats</p> <p>Photograph from 2018</p>



7		<p>Oak Tree (No 7) suitable to support roosting bats</p> <p>Photograph from 2018</p>
8		<p>Beech Tree (No 8) suitable to support roosting bats</p> <p>Photograph from 2018</p>

<p>9</p>		<p>Oak Tree (No 9) suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>10</p>		<p>Ash Tree (No 10) suitable to support roosting bats</p> <p>Photograph from 2018</p>



11		<p>Dead Ash Tree (No 11) suitable to support roosting bats</p> <p>Photograph from 2018</p>
12		<p>Ash Tree (No 12) suitable to support roosting bats</p> <p>Photograph from 2018</p>



<p>13</p>		<p>Elm Tree (No 13) suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>14</p>		<p>Oak Tree (No 14) suitable to support roosting bats</p> <p>Photograph from 2018</p>



<p>15</p>		<p>Ash Tree (No 15) suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>16</p>		<p>Ash Tree (No 16) suitable to support roosting bats</p> <p>Photograph from 2018</p>



<p>17</p>		<p>Tree No 17 suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>18</p>		<p>Ash Tree (No 18) suitable to support roosting bats</p> <p>Photograph from 2018</p>





<p>19</p>		<p>Ash Tree (No 19) suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>20</p>		<p>Dead Ash Tree (No 20) suitable to support roosting bats</p> <p>Photograph from 2018</p>



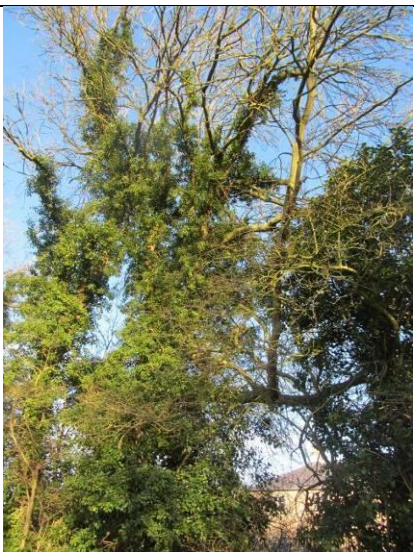
<p>21</p>		<p>Ash Tree (No 21) suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>22</p>		<p>Oak Tree (No 22) suitable to support roosting bats</p> <p>Photograph from 2018</p>




<p>23</p>	 A photograph of a tall, slender ash tree with a smooth, grey trunk. The tree is surrounded by other trees with some autumn-colored leaves. The ground is covered in fallen leaves.	<p>Ash Tree (No 23) suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>24</p>	 A photograph of a large, mature ash tree with a thick, gnarled trunk and bare branches. The tree is set against a clear blue sky. The ground is covered in grass and some fallen leaves.	<p>Ash Tree (No 24) suitable to support roosting bats</p> <p>Photograph from 2018</p>

<p>25</p>	 A photograph of a tall oak tree with green and yellowing leaves, viewed from a low angle looking up. A small white bat box is visible on a branch in the upper part of the tree.	<p>Oak Tree (No 25) with bat box suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>26</p>	 A photograph of a tall oak tree with yellowing leaves, viewed from a low angle looking up. A small white bat box is visible on a branch in the upper part of the tree.	<p>Oak Tree (No 26) with bat box suitable to support roosting bats</p> <p>Photograph from 2018</p>




<p>27</p>		<p>Scots Pine Tree (No 27) with bat box suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>28</p>		<p>Scots Pine Tree (No 28) with bat box suitable to support roosting bats</p> <p>Photograph from 2018</p>




<p>29</p>	 A photograph of a mature oak tree with yellowing autumn leaves. A small, dark bat box is mounted on the trunk of the tree. The background shows a clear blue sky and other trees.	<p>Oak Tree (No 29) with bat box suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>30</p>	 A photograph of an ash tree with bare, dark branches against a blue sky with light clouds. The tree is surrounded by green undergrowth and other trees in the background.	<p>Ash Tree (No 30) suitable to support roosting bats</p> <p>Photograph from 2018</p>




<p><b>31</b></p>		<p>Field Maple Tree (No 31) suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p><b>32</b></p>		<p>Tree No 32 suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p><b>33</b></p>		<p>Tree No 33 suitable to support roosting bats</p> <p>Photograph from 2018</p>



<p><b>34</b></p>		<p>Tree No 34 suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p><b>35</b></p>		<p>Tree No 35 suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p><b>36</b></p>		<p>Tree No 36 suitable to support roosting bats</p> <p>Photograph from 2018</p>







<p>37</p>		<p>Tree No 37 suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>38</p>		<p>Tree No 38 suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>39</p>		<p>Tree No 39 suitable to support roosting bats</p> <p>Photograph from 2018</p>

40		Tree No 40 suitable to support roosting bats  Photograph from 2018
41		Tree No 41 suitable to support roosting bats  Photograph from 2018
42		Tree No 42 with bat box suitable to support roosting bats  Photograph from 2018

43		Tree No 43 suitable to support roosting bats  Photograph from 2018
44		Tree No 44 suitable to support roosting bats  Photograph from 2018
45		Tree No 45 suitable to support roosting bats  Photograph from 2018

<p>46</p>		<p>Tree No 46 suitable to support roosting bats</p> <p>Photograph from 2018</p>
<p>47</p>		<p>Tree No 47 suitable to support roosting bats</p> <p>Photograph from 2018</p>

<p>48</p>		<p>Tree No 48 suitable to support roosting bats</p>
<p>49</p>		<p>Tree No 49 suitable to support roosting bats</p>

<p>50</p>		<p>Tree No 50 suitable to support roosting bats</p>
<p>51</p>		<p>Bridge over Bin Brook</p>