



THE
ENVIRONMENT
PARTNERSHIP



SMITHY BRIDGE ROAD ROCHDALE BAT SURVEY TECHNICAL REPORT - 2024

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Drawing D8776.009A – Bat Tree Location Plan

1.0 Executive Summary

1. The Environment Partnership (TEP) Ltd was commissioned in May 2021 by Taylor Wimpey Strategic Land to undertake bat surveys at the Smithy Bridge Road site in Rochdale and subsequent updates in 2024. This technical report details the bat surveys undertaken, which involved preliminary roost assessment and further nocturnal roost surveys of a single tree with bat roost habitat suitability that may be impacted during development.
2. Four trees within the site were identified as having bat roost habitat suitability ranging from low to moderate suitability in 2021. Following the release of new Bat Conservation Trust (BCT) Good Practice Guidelines in late 2023 and the updated 2024 bat surveys only one tree was assessed as having PRF-M (previously moderate) bat roost habitat suitability and was carried forward for nocturnal roost surveys, as it may be directly impacted by development proposals. The remaining three trees were assessed as having PRF-I bat roost habitat suitability.
3. In July 2021, nocturnal roost surveys revealed two common pipistrelles *Pipistrellus pipistrellus* emerging and re-entering tree T2 during Visit 1 and another individual emerging during Visit 2. The roosts were characterised as a day roost which are defined as a place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer.
4. No roosting activity was recorded during the updated surveys of tree T2 in 2024. Despite this, given that roosting was confirmed in 2021, the bat roost suitability of T2 remains unchanged, and due to the transient nature of bat roosts, particularly in trees, tree T2 is still considered as having roost status.
5. Tree T2 is currently scheduled to be removed to make way for development. Therefore, there will be a requirement to obtain a Mitigation Licence from Natural England with regard to the common pipistrelle day roost which will be lost as a result of the proposals.
6. Where works on the three trees with PRF-I bat roost habitat suitability are required (including removal or pruning) a Precautionary Working Method Statement (PWMS) will be produced and implemented. The PWMS will include details of precautionary soft felling measures to be implemented whilst removing or pruning trees with bat roost habitat suitability. Precautionary soft felling measures will include pre-commencement checks of any potential roost features (PRFs) prior to tree removal under supervision of a licensed bat ecologist via aerial inspection, if feasible.
7. Mitigation and compensation for any future removal of tree roost habitat within the site will need to ensure no net loss of roost habitat for bats. Roost habitat loss due to the removal of trees, will be negated via the provision of replacement roost boxes.
8. Loss of trees within the site will result in a loss of foraging and commuting habitat for bats. Where linear features are removed such as hedgerows and treelines, replacement of these features must be provided within the development

landscaping. Additional planting and management of the green infrastructure must enhance and maintain the foraging and commuting habitats within the site in regard to bats.

9. A sensitive lighting scheme must be included within development proposals. Artificial lighting may be required during construction, for example, where working hours extend beyond daylight hours (particularly during winter) or where security lighting is required. Lighting should only be used where and when necessary and should be appropriate, i.e. at levels that are visible and serve the intended function but that do not light excessive areas or provide light at times beyond the functional requirement.

2.0 Introduction

- 2.1 The Environment Partnership (TEP) Ltd was commissioned in May 2021 by Taylor Wimpey Strategic Land to undertake bat surveys at the Smithy Bridge Road site in Rochdale, hereafter referred to as 'the site'.
- 2.2 TEP was later commissioned in July 2024 to undertake updated bat surveys due to the time elapsed since the initial surveys in 2021.
- 2.3 This technical report details the bat surveys undertaken during 2021 and the subsequent 2024 updates to inform and support a planning application for the proposed residential development of the site.
- 2.4 All bat species and their roosts are protected under The Conservation of Habitats and Species Regulations 2017 (HabRegs2, as amended 2019) and identified as European Protected Species (EPS). All bat species and their roosts are also protected under Schedule 5 of the Wildlife and Countryside Act 1981, as amended (WCA5). Bat species recorded within the survey area are also protected as species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006 (S41) and are identified as notable species listed under the Local Biodiversity Action Plan (LBAP).
- 2.5 The objectives of this report are to:
 - Identify if bats are roosting within the tree identified during the GLTA that may be impacted by development proposals;
 - To confirm roosting species, roost locations and roost characteristics, if roosts are present;
 - Advise of mitigation requirements that may be needed prior to works within the site, including further bat surveys and licensing if relevant; and
 - Provide appropriate recommendations for avoidance, compensation and enhancement measures that will be required to maintain the Favourable Conservation Status (FCS) of local bat populations and net biodiversity value within the site.

3.0 Site Description

- 3.1 The site is located at Smithy Bridge Road, Rochdale (approximate central grid ref. SD 9205 1535). Agricultural land immediately bounds the site to the south, with areas of residential development to the north, east and west.
- 3.2 The habitats present within the site include semi-improved neutral grassland, acid grassland, areas of scrub and the River Roch that runs along the southern boundary of the site. There are several mature trees scattered throughout the site, though mainly along field boundaries.
- 3.3 Figure 1 shows the site in the context of the wider landscape.



Figure 1. Site location within the context of the wider landscape.

Background Information

- 3.1 An extended Phase 1 habitat survey was undertaken at the site in June 2021 by Associate Ecologist, Anne Pritchard.
- 3.2 A total of four trees with bat roost habitat suitability were found to be present within the site, as shown on the Phase 1 Habitat Map Drawing G8776.007A during the GLTA. Three trees were identified with low bat roost habitat suitability and one with moderate bat roost habitat suitability. The results of these are outlined below.

4.0 Methods

Preliminary Roost Assessment Surveys

- 4.1 All trees within and adjacent to the development area were subject to daytime ground level tree assessment (GLTA) for their suitability to support roosting bats. The GLTA was completed by Associate Ecologist Anne Pritchard in June 2021.
- 4.2 The trees were subject to an updated GLTA in 2024 due to the time elapsed between surveys and the release of updated BCT guidelines.
- 4.3 Trees were viewed from the ground with the aid of binoculars and a high-powered torch (fitted with a red filter) where necessary. Where accessible from the ground, potential roost features (PRF) were closely inspected using an endoscope and torch as aids.
- 4.4 Based on the PRF characteristics, trees were initially categorised in 2021 for their roost suitability according to the 2016 BCT criteria summarised in Table 1. The updated GLTA categorised the trees based on their roost suitability according to the newer 2023 BCT criteria summarised in Table 2.

Table 1: Categorisation of trees for bat roost suitability under 2016 BCT Guidelines

Suitability	Potential Roost Features (PRF)
High	A tree with one of more PRF that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time (e.g., maternity/hibernation) due to their size, shelter, protection, conditions, and surrounding habitat.
Moderate	A tree with one or more PRF that could be used by bats, but which are unlikely to support a roost of high conservation status (i.e., not suitable for maternity or hibernation use).
Low	One or more PRF that could be used by individual bats opportunistically, but which is not suitable to be used on a regular basis or by larger numbers of bats.
Negligible	No PRF present.

Table 2: Categorisation of trees for bat roost suitability under 2023 BCT Guidelines

Tree Habitat Categorisation	Description	PRF Categorisation (Estimated or Confirmed)	
PRF (Potential Roost)	A tree with at least one PRF	PRF-M	PRF is suitable for multiple bats and may therefore be used by a

Tree Habitat Categorisation	Description	PRF Categorisation (Estimated or Confirmed)	
Feature)	present.		maternity colony.
		PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
FAR (Further Assessment Required)	Further assessment (at height) required to establish if PRFs are present in the tree.		
None	Either no PRFs in the tree or highly unlikely to be any.	No PRFs are present.	

Survey Constraints

- 4.5 Some PRFs could not be fully categorised from the ground due to the angle of view or elevation of the PRF. In these instances, trees were categorised based on the ground-based view of the PRF.
- 4.6 The inspection was undertaken outside the optimal survey season, and so foliage may have been present which would obscure any potential PRFs. In this case, trees were categorised using a precautionary approach. At the time of the GLTA the weather conditions were dry and bright.

2021 Nocturnal Roost Surveys

- 4.1 Once the GLTA was completed any trees with moderate or high roost habitat suitability to be impacted by the site development proposals were subject to nocturnal roost surveys. Nocturnal roost surveys were undertaken within the bat active season (May to September inclusive), in July.
- 4.2 Only one tree (T2) identified from the GLTA as having moderate roost habitat suitability regarding bats may be impacted by the development proposals. The tree was therefore subject to two nocturnal roost surveys in accordance with the roost habitat suitability categorisation (moderate or high suitability receiving two or three nocturnal surveys, respectively) and the Bat Conservation Trust 2016 Good Practice Guidelines (Collins, 2016).
- 4.3 Nocturnal roost surveys were scheduled with a minimum of one week apart and were undertaken during optimum weather conditions comprising dusk temperatures of $\geq 10^{\circ}\text{C}$ and no rain or strong winds (>4 on the Beaufort Scale).

- 4.4 A pair of surveyors were positioned at tree T2. The nocturnal roost surveys were led by experienced TEP subcontractors AB Ecology.
- 4.5 Surveyors used a full spectrum (e.g., Batlogger M) detector to continuously record bat activity during the nocturnal roost surveys. Additional equipment included walkie-talkies to enable surveyors to communicate about potential roosting behaviour and activity.
- 4.6 Dusk emergence surveys commenced 15 minutes prior to sunset and finished 1.5-2.0 hours after sunset (depending on bat activity levels or reduced visibility).
- 4.7 The details of the nocturnal roost surveys including start and finish times, weather conditions and sunset times are provided in Table 3 below.

Table 3: Summary of nocturnal roost survey dates, start and end times and weather conditions for Visit 1 and 2 of tree T2 completed in 2021.

Tree Ref.	Date	Start Time	End Time	Sunset Time	Moon Phase ¹	Weather Conditions				
							Temp °C	Rain	Cloud ²	Wind ³
T2	22/07/21	21:05	22:50	21:20	Full Moon	Survey Start	24	None	4	2
						Survey End	19	None	2	3
T2	29/07/21	20:55	22:40	21:10	Waning Gibbous	Survey Start	17	None	6	1
						Survey End	13	None	4	1

Limitations

¹ Moon Phase: New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Third Quarter, Waning Crescent.

² Cloud cover is reported in oktas or eighths (i.e. 0 oktas represents the complete absence of cloud, 1 okta cloud cover of 1 eighth or less, and so on to 8 oktas which represents full cloud cover), with the additional convention that 9 oktas represents sky obscured by fog or mist.

³ Wind strength is reported using the Beaufort Scale of Wind Force, this scale runs from 0 to 12, information on the conditions denoted by scores are as follows: 0 – Calm (vertical smoke); 1 - Light Air (slight smoke drift); 2 - Light Breeze (leaves gently rustle); 3 - Gentle Breeze (small twigs constantly move); 4 - Moderate Breeze (small branches begin to move) and 5 - Fresh breeze (small trees in leaf begin to sway).

Detector Failure

- 4.1 One of the Batlogger M units used during the dusk emergence nocturnal roost survey of tree T2 on 22nd July 2021 did not record any data due to an SD card failure. This limitation did not significantly constrain the survey as surveyors had made observational records and a further Batlogger M unit used by the other surveyor positioned nearby continued to record for additional verification of species present when required. The data loss represents only a small proportion of the overall survey effort and does not significantly impair confidence in the interpretation of the baseline data.

Data Analysis and Species Identification

- 4.1 Recorded data was used for subsequent sonogram analysis following nocturnal roost surveys. Recorded call sonograms were analysed using Kaleidoscope software by an experienced TEP Ecologist.
- 4.2 Not all calls can be attributed to species level, owing to the overlapping call parameters of some species, particularly in cluttered habitats. *Myotis* species have overlapping call characteristics and it is therefore not possible to identify these bats to species level with good confidence (at least 80%). However, *Myotis* data represent a small proportion of the activity recorded and therefore for the purposes of meaningful data presentation, *Myotis* species have been grouped.
- 4.3 Detectability of some bat species e.g. *Plecotus* is lower than others e.g. *Nyctalus* and *Pipistrellus* as a consequence of echolocation and hunting strategies. Careful interpretation has been applied when comparing across species.
- 4.4 In such cases, calls are attributed only to genus or as 'Unconfirmed' to allow transparency in the interpretation of each dataset.

2024 Nocturnal Roost Surveys

- 4.1 Only tree T2 was assessed as having PRF-M roost habitat suitability, with a previously confirmed roost in 2021. Despite the shift in late 2023 towards aerial inspections over nocturnal roost tree surveys as outlined in the BCT Good Practice Guidelines, this tree was unsuitable to climb due to surrounding waterlogged habitat and because it is dead and therefore potentially unstable. The tree was therefore subject to three nocturnal roost surveys in accordance with its PRF-M (and confirmed roost) categorisation in 2024.
- 4.2 Nocturnal roost surveys were undertaken within the bat active season (May to September inclusive) in August and September and were also three weeks apart, albeit a day short of the recommended three weeks between visits one and two. This is not considered to have impacted upon the assessment due to surveys being otherwise adequately spaced and the previous data captured during 2021.
- 4.3 A pair of surveyors were positioned at tree T2 for each survey visit. The nocturnal roost surveys were led by experienced TEP subcontractors Ecology Services Ltd.

- 4.4 Night Vision Aid (NVA) camera recording equipment paired with infra-red lights were also used to support the survey effort, with one NVA per survey visit employed. Video footage was later watched back for possible emerging bats using VLC media player.
- 4.5 Surveyors used a Batbox Duet heterodyne detector in combination with Anabat Express (frequency division) detectors, set to continuous recording during the nocturnal surveys.
- 4.6 During each survey, observations such as bat species, the number of bats entering or leaving the tree, the location of entry and exit points, behaviours such as close interest in the tree or its features, commuting or passing bats and weather conditions were recorded.
- 4.7 Dusk emergence surveys commenced 15 minutes prior to sunset and finished 1.5 hours after sunset. They were primarily undertaken during optimum weather conditions comprising dusk temperatures of $\geq 10^{\circ}\text{C}$ and no prolonged rain or strong winds (>4 on the Beaufort Scale).
- 4.8 The details of the nocturnal roost surveys including start and finish times, weather conditions and sunset times are provided in Table 4 below.

Table 4: Summary of nocturnal roost survey dates, start and end times and weather conditions for Visit 1 and 2 of tree T2 completed in 2024.

Tree Ref.	Date	Start Time	End Time	Sunset Time	Moon Phase	Weather Conditions				
							Temp °C	Rain	Cloud	Wind
T2	07/08/24	20:37	22:22	20:52	Waxing Crescent	Survey Start	18	None	7	2
						Survey End	14	None	8	2
T2	27/08/24	19:54	21:39	20:09	Waning Crescent	Survey Start	20	Light drizzle	8	1
						Survey End	14	None (Light spots)	8	0
T2	19/09/24	18:58	20:43	19:13	Waning Gibbous	Survey Start	15	None	7	1
						Survey End	13	None	5	1

Limitations

Equipment Issues

- 4.1 During the second survey the NVA camera deployed ran out of battery with 25 minutes of the survey remaining. This limitation did not significantly constrain the survey as surveyors made observational records throughout.
- 4.2 During the third survey visit one of the infra-red lights failed and therefore only one was used to light the NVA camera. This limitation did not significantly constrain the survey as the remaining light was sufficient to light the tree and surveyors made observational records alongside the NVA.
- 4.3 The data loss represents only a small proportion of the overall survey effort and does not significantly impair confidence in the interpretation of the baseline data as the PRFs were constantly monitored by surveyors throughout the survey.

Weather Conditions

- 4.1 During the second survey, light drizzle occurred at survey start and lasted 10 minutes. Bat activity was recorded occurring after this and therefore the conditions did not have adverse effects on the survey.

Data Analysis

- 4.1 Recorded data was subject to subsequent sonogram analysis with NVA data being watched back following nocturnal roost surveys. Analysis was undertaken by TEP subcontractor Ecology Services Ltd.

5.0 Results

Preliminary Roost Assessment

- 5.1 The locations of the trees within the site that were subject to GLTA are illustrated in the Phase 1 Habitat Survey map G8776.007 and on the Bat Tree Location Plan G8776.009A.
- 5.2 Tree descriptions and roost suitability categorisations assigned from the GLTA are summarised in Table 5 below. Both the 2021 GLTA assessed bat suitability under the 2016 BCT guidelines and the updated 2024 GLTA assessed bat suitability under the new 2023 BCT guidelines are included.

Table 5: Results for ground level tree assessments for 2021 and 2024 update

Tree ID	Description and Photograph	Suitability	
		2021	2024
T1	Mature sycamore of approximately 10m in height located on the site boundary in the north, adjacent to the residential estate. Potential roost features include dense ivy cover which may also mask other features. A snapped branch is present but does not extend or provide roosting opportunities and several branches have been cut. Precautionary categorisation was made based on what can be assessed from ground level. 	Low	PRF-I
T2	Dead tree, of approximately 12m in height. Located next to P4. Potential roost features include a large fissure in central vertical upper branch and a broken branch on the western aspect (approx. 7-10m high) that could lead to a cavity. 	Moderate	PRF-M (Unsafe to climb)
T3	Mature sycamore of approximately 20m in height located on the southeastern boundary of the site, adjacent to Smithy Bridge Road and the river. Potential roost features include a broken branch (Approx. 5m high on the southern aspect) and a knot hole. 	Low	PRF-I
T4	Mature sycamore of approximately 25m in height	Low	PRF-I

Tree ID		Suitability	
	Description and Photograph located on the southeastern boundary of the site, adjacent to Smithy Bridge Road and the river.		
	Potential roost features include a split branch (Approx. 4-5m high on the western aspect). 		

2021 Nocturnal Roost Surveys

- 5.1 Tree T2 was carried forward for nocturnal roost surveys as it was categorised as having moderate roost habitat suitability and, due to its positioning within the site, has the potential to be impacted by the development (Figure 2). Aerial inspections were not possible as the tree is surrounded by great reedmace *Typha latifolia*, and so close access was difficult and unsafe.



Figure 2. Tree T2 - Dead tree with fissure on main central vertical upper branch (approx. 7-10m height) and a broken branch on the western aspect of the tree.

- 5.2 T1, T3 and T4 do not require further survey due to their categorisation as having low potential to support roosting bats.

2021 Confirmed Roosts

- 5.1 Two common pipistrelles were observed emerging from two PRFs during the dusk emergence survey on 22nd July 2021 at 21:49hrs (sunset +29mins) and at 22:03 (sunset +43mins) recorded by both Mark and Ashley Powell, two common pipistrelles were then recorded re-entering the PRFs at 22:07 and 22:17. The first bat emerged from a broken fissure hole on the main vertical column branch of the tree (Figure 2), this was recorded by both surveyors due to the visual aspect of their positions. The bat was noted flying within the locality across the field to the rear of the surveyors following emergence. Sonogram analysis of the data recorded during the survey identified the first pipistrelle contact at 21:49hrs with the surveyor noting that this was the same pipistrelle which had emerged from the tree. This timing would correlate with a bat emerging from tree T2 at 21:49hrs.
- 5.2 The second bat emerged from a broken branch on the western aspect of the tree (Figure 3), and this was only recorded by the surveyor who was positioned at the west vantage point during the survey. A call identified during sonogram analysis identifies a common pipistrelle at 22:03 which correlates with the second emergence from T2.



Figure 3 - Broken branch on western aspect of the tree

- 5.3 A single common pipistrelle was observed emerging from a PRF during the dusk emergence survey on the 29th of July 2021 at 21:40hrs (sunset +45 mins) by one surveyor. The bat emerged from the broken branch on the western aspect of the tree (Figure 3). Sonogram analysis of the data recorded during the survey identified a contact with a common pipistrelle at 21:40hrs, correlating with a bat emerging from the tree.

- 5.4 Due to only single individuals being recorded in separate PRFs during the July survey visits, the two roosts have been characterised as day roosts, a place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer. It is likely that the bats recorded emerging during visit 1 were the same individuals then returning after having spent some time foraging.
- 5.5 No other bat roosts were identified during the nocturnal bat roost surveys.

2021 General Activity

- 5.1 During the nocturnal roost surveys two bat species were recorded foraging and commuting around tree T2 and nearby habitats. Bat species recorded during nocturnal roost surveys included:
- Common pipistrelle (LBAP, WCA5, HabRegs2); and
 - Noctule *Nyctalus noctula* (S41, WCA5, HabRegs2).
- 5.2 For more details regarding first and last times of bat contacts recorded during the dusk emergence surveys see the results table presented at Appendix A.
- 5.3 In general, foraging and commuting activity was frequently recorded along the scrub/grassland edge habitats, as well as near to the pond, where invertebrate prey abundance and diversity is likely to be higher than within open grassland fields.

2024 Nocturnal Roost Surveys

- 5.1 In contrast to the 2021 results, no emergences were recorded across the three survey visits.

2024 General Activity

- 5.1 During the nocturnal roost surveys only one bat species, common pipistrelle, was recorded foraging and commuting around the tree T2 and nearby habitats.
- 5.2 For more details regarding first and last times of bat contacts recorded during the dusk emergence surveys see the results table presented at Appendix A.
- 5.3 In general, foraging activity was frequently recorded around the tree, near to the pond and along habitat edges. Commuting activity occurred primarily across the field between the pond area and Smithy Bridge Road.
- 5.4 First and last contact times for bat species recorded during nocturnal roost surveys can be indicative of potential distance of trees from roost sites for individual bats recorded. Typical emergence times for the species recorded during nocturnal surveys include:
- Noctule typically emerge 5-10 minutes after sunset (occasionally just before); and
 - Common and soprano pipistrelle typically emerge 20-30 minutes after sunset (occasionally just before).

- 5.5 Bats are likely to use a variety of roost sites within the wider landscape depending on variables such as their age, sex and roost habitat preferences and the season. Timings of first and last contacts for all bat species recorded by surveyors during the nocturnal roost surveys, as detailed at Appendix A, indicate bats are roosting within the surrounding locality.

6.0 Conclusions

- 6.1 Bats are legally protected under The Conservation of Habitats and Species Regulations 2017 (HabRegs2, as amended 2019). All bats and their roosts are also protected under the Wildlife and Countryside Act (1981) as amended. Under this legislation, it is an offence to:
- Disturb a bat or groups of bats in their roost;
 - Damage or destroy a bat roosting place, even if there are no bats present at the time;
 - To obstruct access to a bat roost; and
 - To capture, injure or kill a bat or possess, advertise, sell or exchange a bat, or part of a bat dead or alive.
- 6.2 During nocturnal roost surveys in 2021 two common pipistrelle day roosts were confirmed in tree T2. However, no roosting activity was recorded during the updated surveys in 2024. Despite this, given that roosting was confirmed in 2021, the bat roost suitability of T2 remains unchanged, and due to the transient nature of bat roosts, particularly in trees, tree T2 is still considered as having roost status.
- 6.3 No other trees with bat roost suitability will be impacted by the proposals.
- 6.4 Bats are transitional in their use of tree roost habitat and also roost opportunistically when seeking shelter or refuge. The Core Sustainment Zones (CSZ) for species recorded during nocturnal roost surveys as cited in the BCT Guidelines include:
- Common pipistrelle - 2km
 - Noctule - 4km
- 6.5 The trees and habitats within the site therefore fall within the CSZ for likely roost sites within the wider landscape and bats within these populations could use the four trees identified as having bat roost habitat suitability as part of their wider roost habitat resource.
- 6.6 Pipistrelles generally use tree roosts for smaller roosts such as for mating, day, or night roosts, with maternity colonies found mainly in buildings. However, soprano pipistrelle nursery roosts have been located within tree holes, in addition to these habitats being used for mating roosts. Soprano pipistrelles are also frequently found hibernating within tree roosts (Dietz and Keifer, 2016).
- 6.7 Noctule roosts are almost exclusively found in tree holes, but sometimes found in bat boxes or buildings (Altringham, 2003). For summer roosts, woodpecker holes have been found to be heavily favoured (Dietz and Keifer, 2016). Tree roosts can also be used for hibernation during the winter. Noctule nursery roosts can also frequently be changed between trees within areas up to 200ha.

- 6.8 Where trees identified as having suitability for roosting bats require removal or pruning, this could impact bats. Bat roost habitat may be destroyed or roost functionality impacted by severance of commuting routes and indirect disturbance from external lighting.

7.0 Recommendations

- 7.1 This section sets out the recommendations for appropriate further survey, mitigation and enhancement based on the potential impacts set out in Section 6.0.

Confirmed Roosts

- 7.1 There will be a requirement to obtain an EPS Mitigation Licence from NE regarding the common pipistrelle day roosts recorded in T2 as felling cannot be avoided. EPS Mitigation Licence Applications require survey data from the most current survey season. If an EPS Mitigation Licence is required after September 2025, repeated nocturnal roost surveys will be required to inform the EPS Mitigation Licence Application.
- 7.2 Following submission of an EPS Mitigation Licence Application, NE aim to process licences and return the outcome of the application in 30 working days (this can vary at peak times). This should be taken into consideration in line with the proposed programme of works.

Trees with Bat Roost Habitat Suitability

- 7.1 Trees with bat roost habitat suitability should be retained within proposals if possible. The mitigation hierarchy requires that potential impacts are first avoided and where this is not possible, are minimised before mitigation is considered.
- 7.2 Trees with bat roost habitat suitability that are retained within proposals should be protected by implementing a buffer zone around the trees. The buffer zone around retained trees must as a minimum adhere to the root protection area in accordance with BS5837: 2012 Trees in Relation to Design Demolition and Development. Buffer zones around retained trees will assist in maintaining the health of the tree and minimising impacts on bats roosting within the locality.
- 7.3 Where works on the three trees with PRF-I bat roost habitat suitability (T1, T3 and T4) are required (including removal or pruning) a Precautionary Working Method Statement (PWMS) will be produced and implemented. The PWMS will include details of precautionary soft felling measures to be implemented whilst removing or pruning trees with bat roost habitat suitability. Precautionary soft felling measures will include pre-commencement checks of any PRFs prior to tree removal under supervision of a licensed bat ecologist via aerial inspection where possible.

Maintaining Net Roost Habitat Availability

- 7.1 Mitigation and compensation for any removal of tree roost habitat within the site will need to be provided. Loss of roost habitat for bats due to the removal of trees, should be negated via the provision of replacement roost boxes and appropriate mitigation during felling. Replacement roost boxes should be incorporated onto retained trees adjacent to areas where tree loss will occur prior to any works to allow for bats within the locality to find these resources.

- 7.2 Bat roost habitat enhancement should also be provided by incorporating additional roosting resources for bats within the site through placement of bat boxes on buildings and retained trees within the site.
- 7.3 Bat boxes should be positioned in areas where conditions such as temperature and humidity will be maintained by surrounding vegetation structure e.g. on trees sheltered by surrounding tree or scrub cover. Roost boxes should include a variety of designs that will support a variety of species and roost types.
- 7.4 Bat boxes should act to replicate the size, height and aspects of any tree roosts lost. Boxes should be sited in a variety of locations, ideally with multiple boxes on trees to provide a range of roost conditions. Boxes should also be situated near features to provide suitable flight-lines such as linear scrub and hedgerow features and should have an entrance close to appropriate foraging habitat.
- 7.5 Most bat species prefer to fly in dark areas straight into vegetation. All bat boxes must be positioned away from sources of external lighting or where light spillage may influence use of a box.
- 7.6 At this site, to mitigate for the loss of the two roosts in tree T2, two Schwegler 2F bat boxes (or similar) should be installed on retained trees. With respect to enhancement opportunities, one Schwegler 2FN and one Schwegler 1FD bat box (or similar) should be installed on retained trees and three Beaumaris Woodstone bat Boxes (or similar) for installation on buildings.

Maintaining Habitat Connectivity

- 7.1 Loss of habitats within the site will result in a loss of foraging and commuting habitat used by bats. A landscape masterplan (Ref: P21-2628.100B) has been designed to compensate and mitigate for any loss of trees and hedgerows within the site and to maintain habitat connectivity with the surrounding landscape. This includes habitats such as native mixed hedgerows, tree planting, wildflower meadow planting, and the enhancement of wetland meadows. These habitats will provide a foraging resource to help replace the loss of existing habitats. Connectivity through the site is maintained by inclusion of two green corridors leading north from the southern boundary of the site, and the main area of Public Open Space concentrated alongside the River Roch which incorporate these habitats. These alongside inclusion of a sensitive lighting scheme (see below) will ensure that habitat connectivity throughout the wider landscape does not become fragmented by the development.

Sensitive Lighting Design

- 7.1 Maintenance of dark corridors during construction works along retained treelines, scrub, ditches, streams, and hedgerows will minimise impacts on foraging and commuting bats. Artificial lighting can prevent bats from using commuting routes and using roosts due to disturbance. Artificial lighting can also cause congregation of prey under lighting therefore reducing availability for more light sensitive species such as *Myotis* species and brown long-eared *Plecotus auritus*. Dark corridors can be maintained through the implementation of a sensitive lighting scheme.

- 7.2 Direct lighting around trees must be avoided as light falling on any potential roosts would make bats unlikely to use them and disturb bats if already present.
- 7.3 A sensitive lighting scheme must be included within works proposals and should adopt the following principals:
- Contractors should avoid night-time working during key bat active hours particularly during post-dusk and pre-dawn hours;
 - Avoid lighting on key habitat and important features altogether;
 - Where lighting is required, dark buffer zones between habitats and lighting should be used with illuminance limits and zonation;
 - Narrow spectrum bulbs should be used, that do not emit UV light (peaking higher than 550nm) e.g. warm white spectrum lights (<2700Kelvin) or LED luminaires;
 - Downward directional luminaires should be used to retain darkness above and using only luminaires with an upward light ratio of 0% and with good optical control; and
 - Any external security lighting should be set on motion-sensors and short (1min) timers.
- 7.4 Artificial lighting may be required during construction, for example, where working hours extend beyond daylight hours (particularly during winter) or where security lighting is required. Lighting should only be used where and when necessary and should be appropriate, i.e. at levels that are visible and serve the intended function but that do not light excessive areas or provide light at times beyond the functional requirement.

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assessment, mitigation and compensation for developments affecting bats*. CIEEM, Romsey.

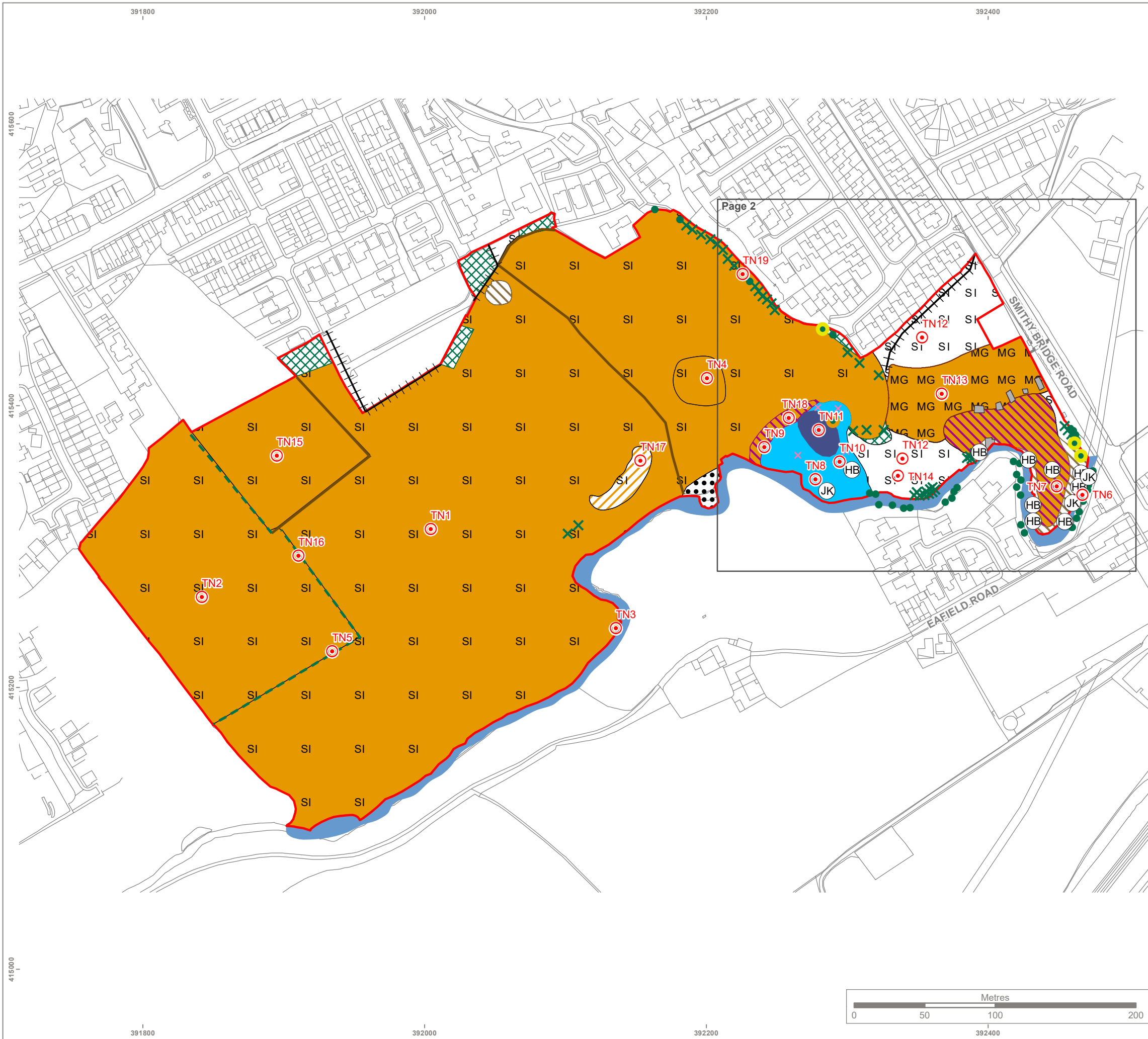
APPENDIX A: Recordings and Observations of Bat Activity during Nocturnal Roost Surveys for 2021 and 2024.

Table A. Summary of nocturnal roost survey recordings and observations of bat activity for Visits 1-2 of tree T2

Tree Ref.	Date	Sunset	Time of First Contact	Minutes After Sunset for Bat Contacts	Species	Commuting/Foraging Activity Noted.
T2	22/07/21	21:21	21:49	Sunset +28 minutes	Common Pipistrelle	General foraging activity across field to rear of surveyors.
T2	29/07/21	21:10	21:37	Sunset +27 minutes	Noctule	Noctule heard not seen, likely commuting over the site.
			21:41	Sunset +31 minutes	Common Pipistrelle	Common Pipistrelles foraging over pit/pond to the rear of the surveyor.
T2	07/08/24	20:52	21:14	Sunset +22 minutes	Common Pipistrelle	Generally high foraging activity around the tree albeit no interaction with the tree itself. Constant foraging occurred between 21:30 and 22:22. Commuting across the field in various directions but primarily towards Smithy Bridge Road
T2	27/08/24	20:09	20:25	Sunset +16 minutes	Common Pipistrelle	Generally high foraging and commuting activity throughout the survey. The pond area acted as a foraging hotspot.
T2	19/09/24	19:13	19:44	Sunset +31 minutes	Common Pipistrelle	Repeated passes observed over the field by the pond and behind surveyors. Commuting across the field. Low foraging activity around the tree.

DRAWINGS

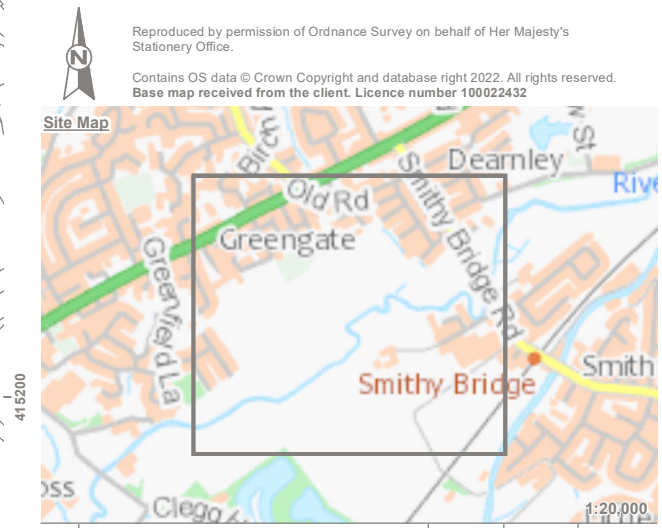
Drawing G8776.007 - Phase 1 Habitat Survey Map
Drawing D8776.009A - Bat Tree Location Plan



- KEY**
- Site boundary
 - Page and page number
 - Target note
 - Himalayan balsam
 - Japanese knotweed
 - Scattered scrub
 - Scattered broad-leaved tree
 - Broad-leaved tree with low bat potential
 - Broad-leaved tree with moderate bat potential
 - Scattered saltmarsh plants
 - Species-poor defunct hedge
 - Fence
 - Wall
 - Dense/continuous scrub
 - Semi-improved acid grassland
 - Semi-improved neutral grassland
 - Modified neutral grassland
 - Marsh/marshy grassland
 - Poor semi-improved grassland
 - Tall ruderal
 - Swamp
 - Standing water
 - Running water
 - Bare ground
 - Hardstanding

Note:
The locations of habitats and habitat features are indicative.

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Rev	Description	Drawn	Approved	Date



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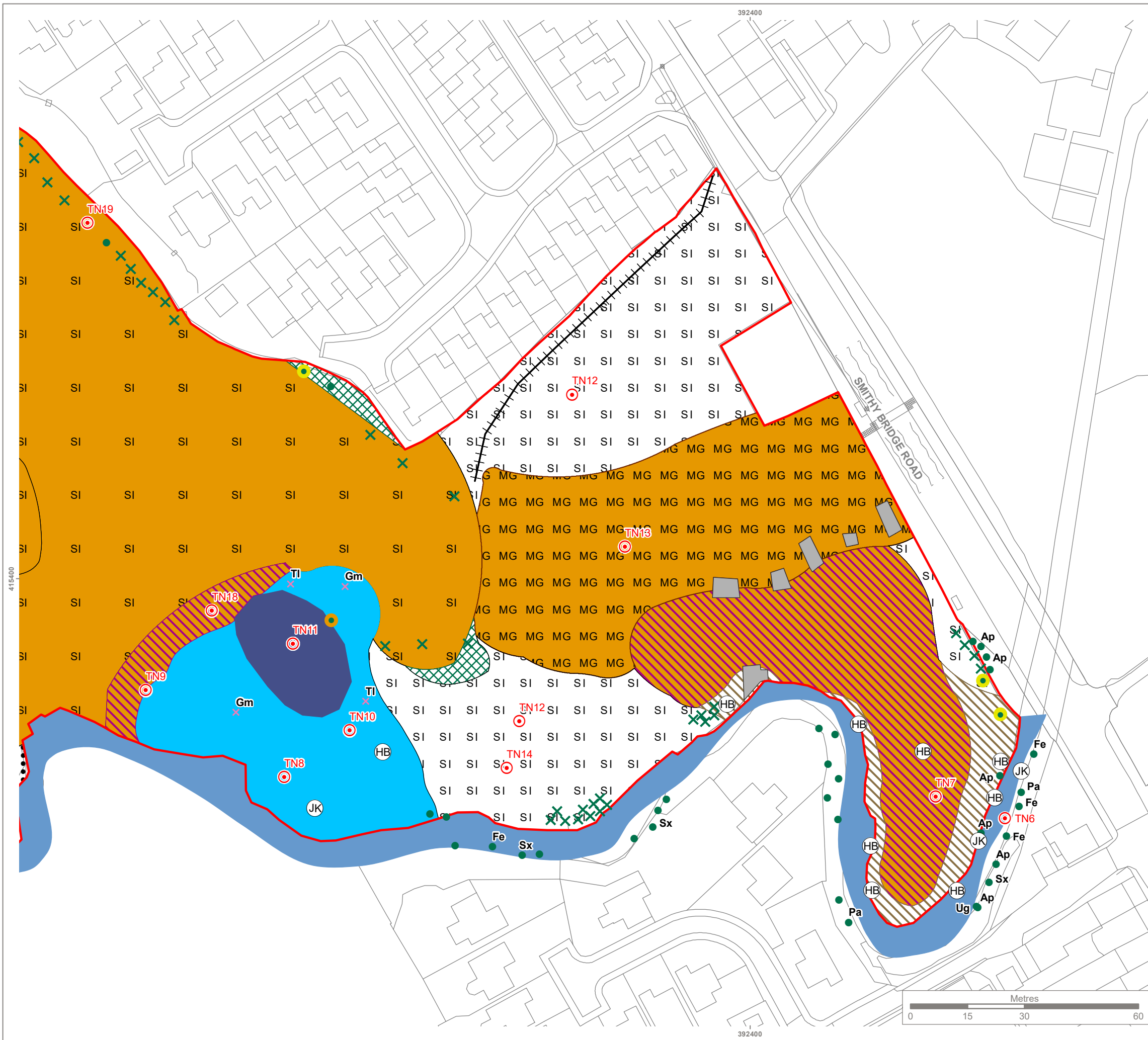
Project
Smithy Bridge Road, Rochdale

Title
Phase 1 Habitat Survey

Drawing Number
G8776.007.1

Sheet 1 of 2

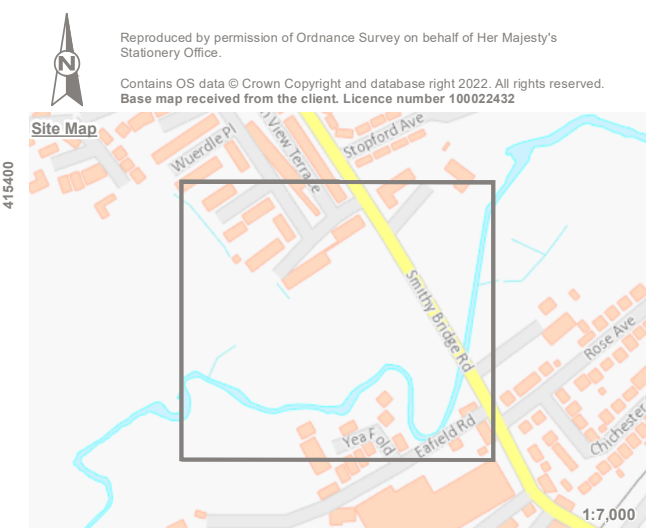
Drawn	Checked	Approved	Scale	Date
CW	SA	ACP	1:2,700 @ A3	13/06/2022



KEY

- Site boundary
- Target note
- Himalayan balsam
- Japanese knotweed
- Scattered scrub
- Scattered broad-leaved tree
- Broad-leaved tree with low bat potential
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- Scattered saltmarsh plants
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- Modified neutral grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Tall ruderal
- Swamp
- Standing water
- Running water
- Bare ground
- Hardstanding
- Species Codes**
 - Ap Sycamore
 - Fe Ash
 - Gm Reed sweet grass
 - Pa Wild cherry
 - Sx Willow species
 - TI Great reedmace
 - Ug Western gorse

Note:
The locations of habitats and habitat features are indicative.



Rev	Description	Drawn	Approved	Date

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Title:
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Drawing Number G8776.007.2	Sheet 2 of 2
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Drawn CW	Checked SA	Approved ACP	Scale 1:1,000 @ A3	Date 13/06/2022
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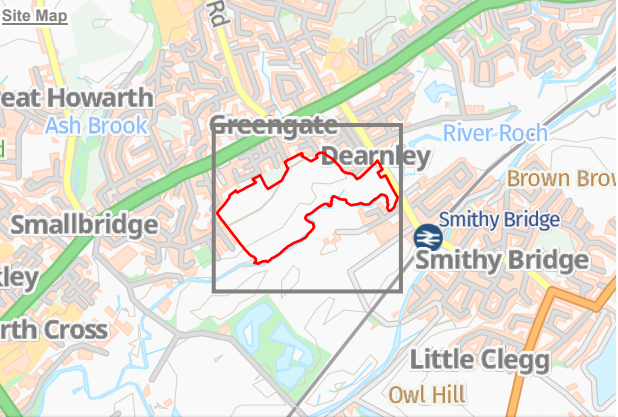


KEY

- Site boundary
- PRF-I: Tree with potential roost feature suitable for individual/very small numbers of bats
- PRF-M: Tree with potential roost feature suitable for multiple bats

Note:
The locations of habitats and habitat features are indicative.

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A	Updated bat suitability	SP	CN	18/10/2024
Rev	Description	Drawn	Approved	Date

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Title
Bat Tree Location Plan

Drawing Number
G8776.009A

Drawn	Checked	Approved	Scale	Date
SP	CW	ACP	1:2,500 @ A3	28/10/2024



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