MIDDLEMARCH

Bat Surveys

John Flamsteed Community School, Denby Village, Derbyshire

A Report To: Tilbury Douglas
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Declaration of Compliance

This study has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of Practice for Planning and Development". The information which we have prepared is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Disclaimer

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Validity of Data

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, it may be necessary to undertake an updated survey to allow any changes in the status of bats on site to be assessed, and to inform a review of the conclusions and recommendations made.

Non-Technical Summary

Project Background

Tilbury Douglas commissioned Middlemarch to undertake dusk bat emergence surveys of the site of a proposed development at John Flamsteed Community School, Denby Village, Derbyshire. These surveys are required to inform a planning application associated with the demolition of Buildings B2 – B4 (EFAB), B5 (prefabricated classroom) and B6 (kiosk), and the construction of a replacement school building and a multi-use games area with associated soft landscaping. It is understood the demolition of Building B1 (EFAA) will be dealt with under a separate application.

Scope of Survey

During the Preliminary Roost Assessment (PRA) Buildings B1 (EFAA) and Buildings B2 – B4 (EFAB) were classified as having high potential to support roosting bats, the retaining walls were classed as having moderate potential to support roosting bats. Tree T7 was classed as requiring further assessment (FAR), all other trees within the development boundary were considered to have negligible potential for roosting bats. Therefore, dusk emergence surveys were required for Buildings B1 - B4 as well as the retaining walls and Tree T7.

Three dusk emergence surveys were undertaken between 9th July 2026 and 20th August 2026. The aim of these surveys was to determine the presence/absence of a roost within the buildings, retaining walls and tree, classify roosts if present and enable a profile of site utilisation by bats to be compiled. These surveys were carried out in line with best practice guidelines with the use of night-vision aids and thermal enabled drones.

Summary of Key Bat Features

During the dusk emergence surveys undertaken at the site, a common pipistrelle maternity roost (Roost A) was confirmed within a section of flat-roofed extension (male toilet-block) to the western end of Building B3 (EFAB). A peak count of 30 individual bats was recorded during the survey conducted on 9th July 2026. Six additional common pipistrelle roost locations (Roosts B – G) were identified within Building B1 (EFAA) during the suite of surveys.

These roosts are currently understood to function as satellite/day roosts for the maternity colony and support low numbers of bats (peak count: five). Building B1 and the flat-roofed section of Building B3 were also found to have potential to support hibernating bats.

No bats were observed emerging from any features associated with Buildings B2 and B4, the main body of Building B3, the retaining walls or Tree T7 during the dusk emergence surveys. However, an additional roost location in the residential property located immediately off-site to the west was also recorded.

Potential Impacts on Bats

In the absence of mitigation, the proposed demolition of Building B3 would result in the permanent destruction of the confirmed common pipistrelle maternity roost and features within which presence of hibernating bats has been assumed (Roost A). Demolition of Building B1 would destroy six provisionally separate common pipistrelle day/satellite roosts (Roosts B – G) (awaiting confirmation through roost characterisation survey) and the potential loss of hibernation roosts (awaiting confirmation through hibernation surveys).

This would therefore result in the loss of a minimum of seven currently identified roost locations used by a colony with a recorded peak count of 38 bats. The number and classification of roosts within Building B1 remain subject to further characterisation because internal connectivity and the extent of loft use have not yet been established.

Without appropriate controls, demolition and site preparation works could injure or kill bats occupying affected features. Construction noise, vibration, dust, additional human activity, additional lighting and any obstruction of access points could also disturb bats whilst in the roosts.

Recommendations

Following the results of the bat activity surveys, the following recommendations have been made (full details are provided in Chapter 5):

R1 **Further Surveys:** Building B1 (EFAA) has been identified as having high potential to support hibernating bats. As such, hibernation surveys are required to establish whether bats are utilising this building during the winter. In addition, although Roosts B – G are currently defined as separate satellite/day roosts due to the distances between the locations however, further assessment including internal inspections of the roof voids are required in order to confirm the characterisation of these roosts.

R2 **Confirmed Bat Roosts - Buildings B1 and B3:** As bat roosts/resting places have been identified in Buildings B1 and B3, no unlicensed work can be undertaken which will contravene the legislation outlined in Appendix 1. Prior to any works being undertaken which would otherwise result in a breach of the legislation, a Bat Mitigation Licence must be obtained from Natural England. The licence application process will include the submission of a method statement detailing the current status of bats on site and how the favourable conservation status of the bat population will be maintained. Prior to a licence being issued, planning permission must be granted and relevant conditions relating to protected species and habitat issues must be discharged.

R3 **Hibernation Roost – Building B3:** The flat-roof section of Building B3 supporting the common pipistrelle maternity roost (Roost A) also has potential to support hibernating bats. Hibernation surveys are not feasible as access to the roof void is not possible and the operational use of the school toilets prevents deployment of the required monitoring equipment. Hibernation presence within this feature is therefore assumed and the mitigation strategy and subsequent licence application must address both functions.

R4 **Buildings B2 and B4, the retaining walls and Tree T7:** Buildings B2 and B4, the retaining walls and Tree T7 have been subject to a full suite of activity surveys in line with best practice guidance, and no bat roosts were identified. The survey data obtained for the site is valid for 12 months from the survey date

R5 **Framework Ecological Mitigation Strategy (FEMS):** A Framework Ecological Mitigation Strategy (FEMS) will be prepared for the site which will detail how impacts on bats (as well as other protected species) will be avoided, mitigated and where necessary compensated for.

R6 **Scheme Design:** The proposed development should be designed to minimise effects on bats in accordance with the ecological mitigation hierarchy as set out in the National Planning Policy Framework (NPPF), and the National Planning Practice Guidance (NPPG).

R7 **Lighting**: In accordance with best practice guidance relating to lighting and biodiversity (Bat Conservation Trust and Institute of Lighting Professionals, 2023[1]; Gunnell et al, 2012[2]), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species.

[1] Bat Conservation Trust and Institute of Lighting Professionals (2023) *Guidance Note 08/23: Bats and artificial lighting at night*. ILP, Rugby

[2] Gunnell, K., Grant, G. and Williams, C. (2012) *Landscape and urban design for bats and biodiversity.* Bat Conservation Trust.

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1. Introduction

1.1 Project Background

Tilbury Douglas commissioned Middlemarch to undertake bat surveys at John Flamsteed Community School, Denby Village, Derbyshire. These surveys are required to inform a planning application associated with the demolition of several buildings on site (Buildings B1 – B6) and the construction of a school building to replace them as well as a new multi-use games area (MUGA) and associated infrastructure. The existing Building B1 (EFAA) on site has been condemned due to structural issues and the presence of asbestos and has not been in use by the school for approx. three years.

In addition, Middlemarch has been commissioned to undertake the following assessments:

- Preliminary Ecological Appraisal: RT-MME-183686-04;
- Badger Surveys: RT-MME-183686-05;
- Preliminary Bat Roost Assessment: RT-MME-183686-06
- Biodiversity Statement and Metric Assessment: RT-MME-183686-07;
- Ecological Management and Monitoring Plan: RT-MME-183686-08.
- Construction Ecological Management Plan: RT-MME-183686-09;
- Preliminary Arboricultural Assessment: RT-MME-183686-01;
- Arboricultural Impact Assessment: RT-MME-183686-02; and,
- Framework Ecological Mitigation Strategy (FEMS): RT-MME-184911-02.

1.2 Previous Bat Data

The data search was carried out on 3rd February 2026 by Derbyshire Biological Records Centre (DBRC). Records of bat species within a 1 km radius of the survey area are summarised below full details available in the Preliminary Ecological Appraisal (RT-MME-183686-04). Records of common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus,* noctule *Nyctalus noctula*, brown long-eared bat *Plecotus auritus*, whiskered bat *Myotis mystacinus*. unidentified bats, *Pipistrellus* sp. and *Myotis* sp. were returned from the desk study. The closest record of a bat was approximately 570 m north-west from 2025.

During the Preliminary Roost Assessment and Ground Level Tree Assessment, undertaken on 13th April 2026 and 6th May 2026, Building B1 (EFAA) was found to have high suitability for roosting and hibernating bats due to the presence of multiple potential roosting features, as well as low ambient temperatures and elevated moisture levels in the basement room.

Buildings B2 – B4 (EFAB) were assessed as having high bat roosting potential due to the presence of multiple potential suitable roost features including gaps beneath roofing materials, lifted lead flashing, gaps leading into soffits, crevices and missing mortar in the brickwork, voids behind cladding and suitable roof voids.

The retaining walls were classed as having moderate potential to support roosting bats due to the presence of narrow 10 – 20 cm deep holes within the brickwork, most of which were at ground level. Buildings B5 and B6 comprised a prefabricated classroom and a kiosk and were deemed to have negligible potential for roosting bats due to their construction and lack of suitable roost features.

Tree T7 was classed as requiring further assessment (FAR) due to the presence of ivy coverage on the stem which could potentially obscure suitable roost features. All other trees within the development boundary were confirmed to have negligible potential for roosting bats. For further details the reader is referred to the Preliminary Bat Roost Assessment (RT-MME-183686-06).

As such, in line with BCT guidelines[3] further dusk emergence surveys were required to establish whether the existing buildings and trees on site support roosting bats, these surveys were undertaken between 9th July 2026 and 20th August 2026. All UK bat species are legally protected and are capable of being material considerations in the planning process. A summary of the legislation protecting bats is included within Appendix 1

1.3 Site Description and Context

Table 1.1 provides a brief summary of the site and its surroundings.

Attribute	Description
Site Location	John Flamsteed Community School, Denby Village, Ripley.
National Grid Reference	SK 38585 46806
Site Area (ha)	2.67 Ha
Topography	The buildings within the north-eastern section of the development site are situated on a lower level than the rest of the site. South of these buildings the landform rises progressively through retaining walls and several sloped embankments and plateaus to the highest point along the southern development boundary.
Land Cover (on site)	The northern section of the development area is dominated by the built environment with school buildings and a few scattered trees and the southern section is dominated by modified grassland playing fields. The wider ownership boundary comprises school buildings, modified grassland playing fields and bands of scrub and woodland.
Structures	Buildings B1 – B4 (EFAA and EFAB) were assessed as having high bat roosting potential due to the presence of multiple potential suitable roost features including gaps beneath roofing materials, lifted lead flashing, gaps leading into soffits, crevices and missing mortar in the brickwork, voids behind cladding and suitable roof voids. Buildings B5 and B6 were deemed to have negligible potential for roosting bats due to their prefabricated construction and lack of suitable roost features. Tree T7 located within the courtyard was classed as requiring further assessment (FAR) due to the presence of ivy coverage on the stem which could potentially obscure suitable roost features. All other trees within were considered to have negligible potential for roosting bats due to the lack of suitable roosting features.
Land Cover (site surrounds)	The site is located along a valley, the wider landscape is semi-rural with a mosaic of woodland, watercourses, semi-improved grassland and agricultural land to the north. The residential area of Denby is located immediately south-west and east.

Table 1.1: Summary of Site and Surroundings

[3] Collins, J. (ed). (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Ed.).* The Bat Conservation Trust, London.

1.4 Documentation Provided

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.2.

Document / Drawing Number	Author
Risk Assessment: Entry into Ryknield Rooms Building.	Adam Potter & Harry Segrove, via East Midlands Education Trust.
Topographical and Underground Utilities Plan	Greenhatch Group
Air Quality Report – John Flamsteed School	Wardell Armstrong
John Flamsteed School – Arboricultural Appraisal	1st Horizon
John Flamsteed School Asbestos Survey - Block 2 – 5, 9, 10, 12, 13	M & G Services Ltd
Existing Urban Greening Factor Site Plan - 21176100-WAT-XX-XX-GS-N-750003	Waterman Infrastructure & Environment
Proposed Urban Greening Factor Site Plan - 21176100-WAT-XX-XX-GS-N-750004	Waterman Infrastructure & Environment
Biodiversity Net Gain Feasibility Assessment - 21176100-WAT-XX-XX-RP-N-750001	Waterman Infrastructure & Environment
Extended UK Habitat Classification Report - 21176100-WAT-XX-XX-RP-N-750002_R	Waterman Infrastructure & Environment
Structural Condition Survey Report - 5225702-ATRL-JF-XX-RP-SE-200001_John Flamsteed Condition Building Survey Report	AtkinsRealis
Preliminary Ecological Appraisal (Ref: 9926-R13)	1st Horizon
Flood Risk Assessment (Prelim') (Ref: 9926-R09)	1st Horizon
Levels Strategy - JFSE-BSP-ZZ-XX-D-C-000210_P06_Levels	bsp Consulting
Drainage Strategy - JFSE-BSP-ZZ-XX-D-C-000240_P06_Drainage_Strategy	bsp Consulting
Feasibility Study	Department for Education
Relocated Building Sketch - N1781-ONE-ZZ-ZZ-SK-L-0011-P02_RelocatedBuildingSketch (2)	One Environments
Ground Floor Layout - SRP1244-CPM-01-00-D-A-0001 (1)	CPMG
First Floor Layout - SRP1244-CPM-01-01-D-A-0002	CPMG
Roof Plan - SRP1244-CPM-01-ZZ-D-A-0003	CPMG
Landscaping Plan - SRP1244-ONE-ZZ-ZZ-D-L-0003	One Environments

Table 1.2: Documentation Provided by Client

2. Methods

2.1 Dusk Emergence Surveys

Overview

The buildings, walls and trees were identified as having suitability to support roosting bats during the PRA e.g. Buildings B1 – B4 (EFAA and EFAB) were assessed as having high bat roosting potential due to the presence of multiple potential suitable roost features including gaps beneath roofing materials, lifted lead flashing, gaps leading into soffits, crevices and missing mortar in the brickwork, voids behind cladding and suitable roof voids. The retaining walls were classed as having moderate potential to support roosting bats and Tree T7 located within the courtyard was classed as requiring further assessment (FAR) due to the presence of ivy coverage on the stem which could potentially obscure suitable roost features.

As such, further dusk emergence bat surveys were carried out. The aim of these surveys was to determine the presence/absence of a roost withing the buildings and trees and to classify the roost if present. The surveys would also enable a profile of site utilisation by bats to be compiled.

During all dusk emergence surveys, thermal enabled drones DJI Matrice 4T (piloted by suitably qualified Harper.Eco ecologists) were used to determine the presence/absence of a roost, alongside the ground-based Canon XA 40 with associated infrared illuminators and Pixfra A613 thermal imaging scope.

These surveys were carried out in line with best practice guidelines'[4].

The surveys were undertaken by the following personnel:

- Laura Tindle (Senior Ecological Consultant and Licenced Bat Worker under Bat Class Licence 18)
- Catlin Nightingale (Ecological Consultant)
- Sarah Howe (Principal Ecological Consultant and Licenced Bat Worker under Bat Class Licence 18, 19 and 20)
- Marie Athorn (Field Ecologist and Licenced Bat Worker under Bat Class Licence 18)
- Victoria Oxley (Ecological and GIS Consultant, and Licenced Bat Worker Under Bat Class Licence 18)
- Viktoriya Armstrong (Ecological Project Officer)
- Oliver Huxley (Harper.Eco Ecologist and Qualified Drone Pilot)
- Jonathon Baker (Harper.Eco Ecologist and Qualified Drone Pilot)
- Daniel Adam (Harper.Eco Ecologist and Qualified Drone Pilot)
- Suzanne Thompson (Harper.Eco Ecologist and Qualified Drone Pilot)

The licence numbers of Bat Workers present on the surveys can be provided upon request. The weather conditions were recorded on each survey and are presented in Table 2.1.

[4] Collins, J. (ed). (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Ed.).* The Bat Conservation Trust, London

Date	Time	Sunset time	Parameter			
			Temp. °C	Cloud %	Precip.	Wind (Beaufort Scale)
09/07/2026	Start: 21:15	21:30	28	0	Dry	F0/1
	End: 23:30		24	0	Dry	F2
30/07/2026	Start: 20:48	21:03	17	10	Dry	F2
	End: 22:34		15	5	Dry	F1
20/08/2026	Start: 20:06	20:21	15	90	Dry	F1
	End: 22:00		13	90	Dry	F1

Table 2.1: Weather Conditions During Field Surveys

Dusk Emergence Bat Surveys

In line with the specifications detailed in best practice guidelines[5], the dusk surveys commenced 15 minutes prior to sunset and continued until 90-120 minutes after sunset.

Equipment and Analysis

The dusk emergence surveys were conducted using electronic bat detectors (Echometer Touch 2) and night vision aids (Canon XA 40 with associated infrared illuminators, Pixfra A613 thermal imaging scope and DJI Matrice 4T Thermal drones) to facilitate the detection of bats and to aid in the determination of species of bat using the site.

Subsequent computer analysis of sound and video recordings was undertaken to facilitate the identification of bat species/genera/phonic groups recorded during the surveys. Analysis of infra-red and thermal camera footage was undertaken using DVR-Scan-1.6 (Version 4) and was carried out by Viktoriya Armstrong (Ecological Project Officer) and reviewed by Laura Tindle (Senior Ecological Consultant and Licenced Bat Worker under Bat Class Licence 18). Analysis of thermal drone footage was undertaken using Wildlife Imaging Systems (WIS) and a manual review of recorded movement by Oliver Huxley (Harper.Eco Ecologist and Drone Pilot). Further composite images were produced by NightARC, and analysis was conducted using their platform. Where poor thermal contrast/image quality has been experienced, full manual review has been conducted. All drone footage was also subject to manual review by Laura Tindle (Senior Ecological Consultant and Licenced Bat Worker under Bat Class Licence 18). Additionally, BatSound4 (Version 4.01) was used to analyse all sound recordings captured by the EchoMeterTouch Pro 2.

Some species of bats echolocate at similar frequencies, and the characteristics of their calls can overlap, such that they are acoustically cryptic and separation to species level is not possible. Additionally, measurable call parameters can vary dependant on the bat's environment and behaviour. As such, all identifications were made to the highest resolution (e.g., genus or phonic group) of which certainty was possible. Notwithstanding, identification of overlapping species

[5] Collins, J. (ed). (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Ed.).* The Bat Conservation Trust, London

should always be interpreted with caution. Where calls of acoustically cryptic species were analysed, known geographical species distributions were used to determine recordings to species level where possible.

2.3 Constraints

No significant constraints were recorded during the dusk emergence surveys.

3. Results

3.1 Dusk Emergence Surveys

A total of four species of bat were recorded during the dusk emergence bat surveys:

- Common pipistrelle *Pipistrellus pipistrellus*
- Nathusius' pipistrelle *Pipistrellus nathusii*
- Noctule *Nyctalus noctula*
- Small *Myotis* sp.

The bat activity recorded on site during each survey is summarised below and any emergences detailed in Tables 3.1 – 3.3 and illustrated on Drawings C184911-01-01 – 03.

First Dusk Emergence Survey – 9th July 2026

The first dusk emergence survey commenced 15 minutes prior to sunset and continued until 120 minutes after sunset. Sunset was at 21:30 hrs (BBC Weather Centre Data for Nottingham). Three species of bat were recorded during the survey: noctule, common pipistrelle and Nathusius' pipistrelle.

Details of bat activity and emergences recorded within the survey area are provided in Table 3.1. Survey results are plotted on Drawing C184911-01-01 in Chapter 6.

Prior to the survey an external inspection of potential roost features was undertaken. During this inspection approximately 30 fresh droppings resembling those of *pipistrellus* sp. were present on the brick wall, fascia board and ground beneath a warped fascia board on the southern aspect of Building B3 (EFAB) which was later confirmed during the survey to be the location of Roost A.

Time	Species	Count	Activity	Roost Location
21:32 - 22:33	Common pipistrelle	30	34 x emergences 4 x re-entries	Roost A – Building B3 (EFAB) Gap behind wooden fascia board on flat felt-roofed section of building. Likely leads to larger void beneath flat roof and/or parapet wall. Swarming behaviour around roost entrance and re-entries as well as tandem flying observed suggests maternity roost with juveniles on first flights SK 38638 46980
21:31 – 22:22	Common pipistrelle	5	5 x emergences	Roost B – Building B1 (EFAA) Holes in brickwork/missing mortar immediately adjacent to the window on the southern gable wall/elevation. SK 38629 47041

Table 3.1: Emergences recorded during the first dusk emergence survey (9th July 2026) (continues)

Time	Species	Count	Activity	Roost Location
21:45	Common pipistrelle	1	1 x emergence	Roost D – Building B1 (EFAA) Area of missing mortar at the gable end on northern aspect of southernmost loft space. SK 38621 47047
21:59	Common pipistrelle	1	1 x emergence	Roost E – Building B1 (EFAA) Eaves of dormer window on northern elevation. SK 38630 47054
22:26	Common pipistrelle	1	1 x emergence	Roost C – Building B1 (EFAA) Under roof tiles at southern corner of roof at the gable end of building. SK 38627 47039

Table 3.1 (continued): Emergences recorded during the first dusk emergence survey (9th July 2026)

Second Dusk Emergence Survey – 30th July 2026

The second dusk emergence survey commenced 15 minutes prior to sunset and continued until 120 minutes after sunset. Sunset was at 21:03 hrs (BBC Weather Centre Data for Nottingham). One species of bat was recorded during the survey: common pipistrelle.

Details of bat activity and emergences recorded within the survey area are provided in Table 3.2. Survey results are plotted on Drawing C184911-01-02 in Chapter 6.

Time	Species	Count	Activity	Roost Location
21:36	Common pipistrelle	1	1 x emergence	Roost F – Building B1 (EFAA) Eaves of dormer window on northern elevation. SK 38640 47061

Table 3.2: Emergences recorded during the second dusk emergence survey (30th July 2026)

No bats were recorded emerging from the known maternity roost location (Roost A) during this survey; however an external inspection of the roost was undertaken and approximately 50 fresh bat droppings were observed on the ground below the roost, on the walls and fascia boards suggesting recent use.

During the dusk emergence survey, a surveyor located adjacent to the south-west elevation of Building B1 (EFAA) observed approximately five common pipistrelle bats emerging from the residential house located immediately off-site to the west. Due to access constraints, this building could not be fully surveyed or included in subsequent surveys.

Third Dusk Emergence Survey – 20th August 2026

The second dusk emergence survey commenced 15 minutes prior to sunset and continued until 120 minutes after sunset. Sunset was at 20:21 hrs (BBC Weather Centre Data for Nottingham). A minimum of two species of bat were recorded during the survey: common pipistrelle and small *Myotis* sp.

Details of bat activity and emergences recorded within the survey area are provided in Table 3.3. Survey results are plotted on Drawing C184911-01-03 in Chapter 6.

An inspection of the known maternity roost (Roost A) was undertaken and approximately 50 fresh bat droppings were observed on the ground below the roost, on the walls and fascia boards suggesting recent use. In addition, the small gap behind the warped fascia board was inspected with an endoscope and a single common pipistrelle bat was identified within the roost. This bat later emerged during the dusk emergence survey.

Time	Species	Count	Activity	Roost Location
20:37	Common pipistrelle	1	1 x emergence	Roost F – Building B1 (EFAA) Eaves of dormer window on northern elevation. SK 38640 47061
20:39	Common pipistrelle	2	2 x emergences	Roost A – Building B3 (EFAB) Gap behind wooden fascia board on flat felt-roofed section of building. Likely leads to larger void beneath flat roof and/or parapet wall. SK 38638 46980
20:40	Common pipistrelle	1	1 x emergence	Roost B – Building B1 (EFAA) Holes in brickwork/missing mortar immediately adjacent to the window on the southern gable wall/elevation. SK 38629 47041
21:27	Common pipistrelle	1	1 x re-entry	Roost D – Building B1 (EFAA) Area of missing mortar at the eaves at northern aspect of gable end of southernmost loft space. SK 38621 47047
21:34	Common pipistrelle	1	2 x bats in tandem flight exhibiting swarming behaviour. 1 x bat re-entered, 1 x bat continues flight	Roost G – Building B1 (EFAA) Eaves on north-western gable end of northernmost loft space. Potentially using the roof void. SK 38646 47068

Table 3.3: Emergences recorded during the third dusk emergence survey (20th August 2026)

Foraging and Commuting Activity

A total of four species of bat were recorded during the dusk emergence surveys including noctule, common pipistrelle, Nathusius' pipistrelle and small *Myotis* sp.

Noctules were only recorded briefly during the first survey, with individuals observed flying high over the site. Additionally, Nathusius' pipistrelle were only recorded on the first survey and activity occurred later in the evening after the usual emergence time for this species. Surveyors recorded a brief period of foraging behaviour along the line of mature trees located immediately off-site along the northern boundary suggesting that this bat had entered the site to opportunistically forage.

Common pipistrelle was the most frequently detected and observed species throughout the surveys. A range of social calls and behaviour associated with maternity roosts such as tandem-flying, swarming, foraging and commuting was observed throughout the site. Foraging and commuting activity was particularly prevalent around the line of mature trees located immediately off-site to the north and the residential gardens and scrub located immediately west of Buildings B3 and B4 (EFAB). During the first survey the on-site activity was much higher than the subsequent two surveys and behaviour observed was indicative of juveniles on first flights with some adults returning to the roost.

During the third dusk emergence survey, a period of constant foraging activity was recorded along vegetation and under the streetlights adjacent to the western end of Building B3 by an individual small *Myotis* sp. bat. This bat entered from off-site and stayed to forage for approximately 25 minutes flying close to the ground between 30 – 50 cm high.

4. Impact Assessment

4.1 Summary of Proposals

Proposed plans indicate that Buildings B1 – B6 (EFAA and EFAB) will be demolished to facilitate the development works, it is currently understood that only Tree T9 will be lost to the development and that all trees (T1 – T8) within the courtyard of Buildings B2 – B4 (EFAB) will be retained. The retaining walls located south of Buildings B2 and B3 (EFAB) may also be impacted by works. Soft landscaping is proposed throughout, and a new multi-use games area (MUGA) will be created in the southern portion of the site, and it is understood that this area will not be subject to new lighting. The blocks of woodland immediately adjacent to the development boundary will also be retained and protected from direct impacts of the development. At the time of writing, a detailed lighting strategy was not available for the scheme.

Building B1 (EFAA) has been condemned and has remained vacant and unheated for approximately three years. It is understood that the demolition of this building will be considered under a separate application to the remainder of the site. Nevertheless, this building was included in the dusk emergence surveys during 2026 and therefore has been included in this report to allow for the implications of the wider programme to be taken into consideration. Although likely, it cannot be confirmed whether the demolition works for the whole site will be undertaken within the same time period and demolition of Building B1 (EFAA) may occur at a later point. The remaining buildings within the survey area (Buildings B2 – B4, EFAB) are still occupied, remain in daily use and are regularly heated.

The school wider ownership boundary extends beyond the red line development boundary and as such, the other school buildings and trees around the site were also subject to a high-level assessment and many of the trees and buildings contained suitable potential roost features. It is understood that although some minor renovation works will be undertaken to these buildings, these will be internal, small-scale and cosmetic and will not impact the roofs, doors, walls, windows or loft spaces. Given that these buildings and the trees will be retained without impacts, they are considered to lie outside the scope of this assessment, and the sections below focus only on the buildings and trees that have potential to be directly or indirectly impacted by the proposals. Nevertheless, if any renovation works are considered likely to impact the fabric of the other buildings, then further survey works may be required.

4.2 Summary of Key Bat Features

Roosting Bats

During the dusk emergence surveys undertaken at the site, a common pipistrelle maternity roost (Roost A) was confirmed within a section of flat-roofed extension (male toilet-block) to the western end of Building B3 (EFAB). A peak count of 30 individual bats was recorded during the survey conducted on 9th July 2026. Six additional common pipistrelle roost locations (Roosts B – G) were identified within Building B1 (EFAA) during the suite of surveys.

These roosts are currently understood to function as satellite/day roosts for the maternity colony and support low numbers of bats (peak count: five). The peak colony count, which has been defined as the total number of bats emerging from the buildings during one survey, was 38 bats. The details of these findings are summarised in Table 4.1 below and Drawing C184911-01-04.

Based on current understanding, the roost locations recorded within Buildings B1 and B3 are considered likely to be separate but functionally linked components of the same wider maternity colony. During the first survey, the majority of bats were observed emerging from the flat-roofed section of Building B3 (Roost A) and surveyors observed frequent tandem flying, swarming behaviour around the access point, and juvenile bats undertaking first flights supporting the interpretation that this feature represented the principal maternity roost location during the 2026 survey season. The additional roost locations recorded within Building B1 (Roosts B – G) and during the subsequent surveys are considered likely to represent satellite and day roosts used by bats dispersing from or associated with the maternity colony given their close proximity to the maternity roost. Common pipistrelle bats were also observed emerging from a residential property immediately adjacent to the site and to the west of Building B1, although further survey effort was not possible for this location due to access constraints, it is considered likely that this roost may also form part of the wider maternity roost network/colony.

Within Building B1, bats were observed emerging and re-entering features beneath roof tiles and at the eaves, it remains unclear whether the associated loft spaces are also being used as full internal access to these areas has not been possible due to their height and health and safety concerns. Although the maternity roost was identified in Building B3 (EFAB) during 2026, the presence and availability of multiple suitable roosting features with differing environmental and climatic niches in Building B1 (EFAA) means that bats may move between features and internal roof voids in subsequent seasons. As such, further investigation of the loft spaces within Building B1 is required to better understand the extent of usage and to confirm the classification and function of the roosts that are present.

Buildings B2 and B4 (EFAB) were assessed as having high bat roosting potential due to the presence of multiple potential suitable roost features including gaps beneath roofing materials, lifted lead flashing, gaps leading into soffits, crevices and missing mortar in the brickwork, voids behind cladding and suitable roof voids. However, no bats were observed emerging from any features associated with these buildings during the dusk emergence surveys.

The retaining walls were classed as having moderate potential to support roosting bats due to the presence of narrow 10 – 20 cm deep holes within the brickwork, most of which were at ground level. No bats were observed emerging from any of the features associated with these structures during the dusk emergence surveys.

Buildings B5 and B6 were deemed to have negligible potential for roosting bats due to their construction and lack of suitable roost features and as such were scoped out of further survey effort.

Recommendations are provided in Chapter 5.

Hibernating Bats

Building B1 (EFAA) has been condemned, as such it has been vacant and unheated for a period of approximately three years. The large loft spaces and cellar/boiler room offer dark, undisturbed areas with the potential to maintain cool and relatively stable conditions over winter. This building is therefore considered to provide opportunities for hibernating bats. Further survey effort to establish whether bats are using this building for hibernation is therefore required. These surveys have been commissioned and will be undertaken in Winter 2026/2027.

The flat-roof void in the western end of Building B3 (EFAB) which supports the maternity roost (Roost A) is currently in use as a toilet-block. Although this building remains in daily use, heating is limited and the flat-roof void is therefore likely to remain relatively cool and subject to limited

temperature fluctuations during the winter. On this basis, the flat-roof section is considered to have potential to support hibernating bats. Adequate investigation of winter use is not feasible due to the inability to access the flat roof void, and the operational use of the school toilets prevents deployment of the required monitoring equipment. Therefore, in line with guidelines, a precautionary approach has been adopted, and hibernation presence is assumed when assessing potential impacts and for mitigation purposes. As such, loss of this roost will consequently need to address both confirmed maternity and assumed hibernation functions.

All remaining buildings are in regular daily use and are routinely heated, including areas used for classrooms, offices and other occupied spaces. As such, internal temperatures are subject to regular heating and greater fluctuations of temperature, additionally, levels of human disturbance are much higher in these buildings. Therefore, Building B2, the main body of Building B3 and Building B4 were considered to have negligible potential to support hibernating bats.

Recommendations have been provided in Chapter 5

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Building Reference	Species	Roost Status	Peak Count	Roost Location	Conservation Significance of Roost
Building B1 (EFAA)	Common pipistrelle	Day/Satellite Roost	5	Roost B - Holes in brickwork/missing mortar immediately adjacent to the window on the southern gable wall/elevation. 	Low
		Day/Satellite Roost	1	Roost C - Under roof tiles at southern corner of roof at the gable end of building. 	Low
		Day/Satellite Roost	1	Roost D - Area of missing mortar at the eaves at northern aspect of gable end of southernmost loft space. 	Low
		Day/Satellite Roost	1	Roost E - Eaves of dormer window on northern elevation. 	Low
		Day/Satellite Roost	1	Roost F - Eaves of dormer window on northern elevation. 	Low
		Day/Satellite Roost	1	Roost G - Eaves on north-western gable end of northernmost loft space. Potentially using the roof void. 	Low
Building B3 (EFAB)	Common pipistrelle	Maternity Roost & Assumed Hibernation Presence	30	Roost A - Gap behind wooden fascia board on flat felt-roofed section of building. Likely leads to larger void beneath flat roof and/or parapet wall.  	High

Table 4.1 Overview of bat survey results

Trees

Tree T7 located within the courtyard was classed as requiring further assessment (FAR) due to the presence of ivy coverage on the stem which could potentially obscure suitable roost features. Three dusk emergence surveys were undertaken, and no bats were observed emerging or re-entering any features associated with this tree. Therefore, it was concluded that Tree T7 does not contain a bat roost.

All other trees within the development boundary were considered to have negligible potential for roosting bats due to the lack of suitable roosting features. It is currently understood that all trees (except T9) will be retained, not directly impacted by the proposals and protected from indirect impacts. Details of the protection measures should include how impacts related to increased noise, vibration, dust and lighting will be reduced at the site and be included within a Framework Ecological Mitigation Strategy (FEMS). Should the proposed plans change then this assessment should be reviewed and if impacts cannot be avoided then further survey effort may be required to establish whether roosting bats are present.

Recommendations to this effect are provided in Chapter 5.

Commuting/Foraging Bats

A total of four species of bat were recorded during the dusk emergence surveys including noctule, common pipistrelle, Nathusius' pipistrelle and small *Myotis* sp.

Common pipistrelle was the most frequently recorded species. Foraging and commuting activity was predominantly associated with the line of mature trees located immediately off-site to the north and the residential gardens and scrub west of Buildings B3 and B4 (EFAB). Activity during the first survey was higher than during the subsequent visits and included behaviour associated with the maternity colony.

Within the development boundary, foraging and commuting habitat is limited to modified grassland, hardstanding and buildings, with some linear walls and fencelines. However, directly adjacent to the development boundaries are mature trees, gardens and linear pockets of woodland which have high suitability for bats. Activity from other species was limited to brief periods of foraging and commuting along dense pockets of vegetation located around the peripheries of the survey area. Within the wider ownership boundary, the linear pockets of woodland, scrub and hedgerows provide good connectivity both across the site and into the wider landscape, as well as a range of good quality habitats for foraging. Additional soft landscaping proposed for the development site will increase availability of a range of suitable foraging and commuting features.

Likely to be of particular importance in the wider area are the pockets and belts of woodland and the mosaic of regenerated habitats around the former quarry and tar pits associated with Cinderhill and Bottle Brook (approx. 840 m north-east). These habitats in combination with surrounding woodland, hedgerows, watercourses and railway corridors are likely to provide a valuable commuting and foraging network.

4.3 Potential Impacts on Bats

This section of the assessment considers the potential impacts of the proposals in the absence of mitigation. Detailed avoidance, mitigation and compensation measures will be detailed within the FEMS which will be provided for the site and informed by the confirmed development programme, lighting proposals and further survey work for Building B1 (EFAA). Further details on recommendations are provided in Chapter 5.

Initial Impacts.

In the absence of mitigation, the proposed demolition of Building B3 would result in the permanent destruction of the confirmed common pipistrelle maternity roost and features within which presence of hibernating bats has been assumed (Roost A). Demolition of Building B1 under would destroy six provisionally separate common pipistrelle day/satellite roosts (Roosts B – G) (awaiting confirmation through roost characterisation surveys) and the potential loss of hibernation roosts (awaiting confirmation through hibernation surveys).

This would therefore result in the loss of a minimum of seven currently identified roost locations used by a colony with a recorded peak count of 38 bats. The number and classification of roosts within Building B1 remain subject to further characterisation because internal connectivity and the extent of loft use have not yet been established.

Without appropriate controls, demolition and site preparation works could injure or kill bats occupying affected features. Construction noise, vibration, dust, additional human activity, temporary lighting and any obstruction of access points could also disturb bats while occupied roosts remain on site.

The timing and sequence of demolition also require consideration; if Building B3 is demolished while Building B1 remains available, bats displaced from Roost A could relocate into suitable features within Building B1. Its subsequent demolition could then affect a different level or type of occupation from that recorded in 2026. The two applications therefore require a coordinated mitigation approach that considers the colony's use of the wider roost network.

Avoidance through retention of Roost A will be considered however, where retention is not feasible, like-for-like replacement provision will be required. The detailed approach will address the confirmed roost functions, assumed hibernation presence and the relationship between the features across the site, and will be addressed within the FEMS.

No direct loss of confirmed roosts is anticipated from works affecting Buildings B2, B4, B5 or B6, the retaining walls or Tree T7, based on the assessment and survey findings.

Other Impacts

The loss of multiple functionally linked roost locations could reduce the range of roosting opportunities available to the colony within the wider landscape. This includes the loss of alternative features that may be used in response to seasonal conditions, changes in temperature or disturbance.

The roost located within the adjacent property will be retained and its separation from the works is sufficient to avoid physical obstruction of access points and direct interference from construction activities. Low levels of indirect disturbance from construction noise and dust nevertheless remain possible and will be addressed within the FEMS.

Fragmentation and Isolation

The proposals are not anticipated to sever important commuting routes or materially fragment the retained foraging habitat. With the exception of Tree T9, the existing trees, woodland and boundary vegetation will be retained, maintaining connections to adjacent gardens and the wider landscape.

Additional soft landscaping throughout offers potential to improve foraging opportunities and connectivity across the site. The extent of this benefit will depend on the planting design, establishment and subsequent management.

Lighting could affect the continued use of otherwise retained habitats. The conclusion regarding maintained connectivity is therefore subject to review of the detailed lighting strategy.

Post-development Impacts

A detailed lighting strategy was not available at the time of writing and as such the impacts of lighting on roosting, foraging and commuting bats cannot be fully assessed at this stage. Once a lighting strategy is completed it will need ecological review to establish whether light spill could affect key features and ensure that proposed lighting of the site is ecologically sensitive. Mitigation measure to prevent indirect impacts of lighting at the site will be detailed within the FEMS.

The proposed development will also provide opportunities for ecological enhancement through the creation of additional soft landscaping, particularly within the northern section of the site. The consolidation of the built area towards the central part of the development area rather than extending into the northern corner of the site is anticipated to reduce the overall extent of hardstanding and buildings and increase the availability and range of soft landscaping and suitable foraging and commuting habitat for bats. The proposed soft landscaping has the potential to strengthen connectivity both across the site and into the wider landscape.

Recommendations are provided in Chapter 5.

5. Recommendations

All recommendations provided in this section are based on Middlemarch's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

R1 **Further Surveys:** Building B1 (EFAA) has been identified as having high potential to support hibernating bats. As such, hibernation surveys are required to establish whether bats are utilising this building during the winter. Hibernation surveys should be undertaken in accordance with the specifications of Collins (2023) and should involve a combination of close and systematic inspections of suitable features and deployment of static detectors between November – March.

In addition, although Roosts B – G are currently defined as separate satellite/day roosts due to the distances between the locations however, further assessment including internal inspections of the roof voids are required in order to confirm the characterisation of these roosts.

R2 **Confirmed Bat Roosts - Buildings B1 and B3:** As bat roosts/resting places have been identified in Buildings B1 and B3, no unlicensed work can be undertaken which will contravene the legislation outlined in Appendix 1. Examples of works which will breach this legislation include:

- Demolition;
- Roof modifications/repairs/removal;
- Asbestos removal;
- Timber treatment;
- Noise, vibrations, dust and use or storage of odorous and dangerous chemicals;
- Alterations to bat entrance/exit points;
- Investigations works in the roof; and,
- Works in the main body of the building.

N.B. This is not an exhaustive list and a bat worker should be consulted to determine if the works are likely to breach any legislation.

Prior to any works being undertaken which would otherwise result in a breach of the legislation, a Bat Mitigation Licence must be obtained from Natural England. The licence application process will include the submission of a method statement detailing the current status of bats on site and how the favourable conservation status of the bat population will be maintained. Prior to a licence being issued, planning permission must be granted and relevant conditions relating to protected species and habitat issues must be discharged.

To ensure that the data submitted are current and appropriate for assessment by Natural England, surveys need to be carried out during the peak bat activity season closest to the start date of the proposed development. The peak bat activity season extends from May to August. An appropriate level of survey work has been undertaken within this study in 2026; however, should any delays occur in the planning process which results in a delay in the bat licence application beyond August 2027, the bat activity surveys may need to be updated.

R3 **Hibernation Roost – Building B3:** The flat-roof section of Building B3 supporting the common pipistrelle maternity roost (Roost A) also has potential to support hibernating bats. Hibernation surveys are not feasible as access to the roof void is not possible and the operational use of the school toilets prevents deployment of the required monitoring equipment. Hibernation presence within this feature is therefore assumed for the purposes of assessment of impacts and mitigation. The mitigation strategy and subsequent licence application must address both the maternity and hibernation functions and if the roost cannot be retained then like for like compensation will be required. Detailed measures will be provided within the FEMS.

R4 **Buildings B2 and B4, the retaining walls and Tree T7:** Buildings B2 and B4, the retaining walls and Tree T7 have been subject to a full suite of activity surveys in line with best practice guidance, and no bat roosts were identified. The survey data obtained for the site is valid for 12 months from July 2026. Due to the high suitability of the buildings, wall and tree, and the presence of bat roosts in the adjacent buildings, a pre-works check of the features will be required prior to works commencing. If development works to the surveyed buildings and tree have not commenced within this timeframe (by July 2027) it will be essential to update the survey effort to establish if bats have colonised the buildings and tree in the interim. Updated Preliminary Roost Assessments can be undertaken at any time of year. Updated surveys requiring nocturnal assessment will need to adhere to the best practice guidance with the surveys undertaken between May to August inclusive. In the unlikely event that a bat is found during site works all works in that area must immediately cease and a suitably qualified ecologist should be contacted.

R5 **Framework Ecological Mitigation Strategy (FEMS):** A Framework Ecological Mitigation Strategy (FEMS) will be prepared for the site which will detail how impacts on bats (as well as other protected species) will be avoided, mitigated and where necessary compensated for. The FEMS will consider Buildings B1 and B3 as functionally linked components of the wider maternity colony's roost network. It should include as a minimum:

- Consideration of retention of the maternity and hibernation roost or where retention is not feasible, like-for-like replacement;
- Measures to address the satellite/day roosts within Building B1 (and hibernation roost if applicable);
- Detailed programme of demolition and construction works, including timings and methodologies and consideration of cumulative impacts regarding the phased demolition of Buildings B1 and B3;
- Measures to minimise construction disturbance including noise, vibration, dust and any temporary impacts to the bat roosts on site;
- Protection of retained habitats and consideration of indirect disturbance to the retained roost in the adjacent residential property;
- Ecological supervision, responsibilities and procedures should bats be encountered; and,
- Appropriate monitoring and maintenance measures.

The FEMS should be informed by the final scheme design, development programme and further survey findings. It should provide sufficient information to demonstrate that the proposed mitigation approach is feasible to maintain the favourable conservation status of the local bat population.

R6 **Scheme Design:** The proposed development should be designed to minimise effects on bats in accordance with the ecological mitigation hierarchy as set out in the National Planning Policy Framework (NPPF), and the National Planning Practice Guidance (NPPG). The ecological mitigation hierarchy requires all development schemes to apply the following principles:

- *Avoidance and Mitigation* – the proposed development has been designed to avoid/minimise losses of features with bat potential, in the first instance and incorporate these features in the landscaping layout of the scheme accordingly. Similarly, protection measures for retained features such as the trees and boundary vegetation and surrounding habitats will be considered to prevent incidental damage or disturbance during the construction phases. These measures will help to reduce the likelihood of impacting bats and minimise losses of suitable bat roosts and habitat. Where significant harm cannot be wholly or partially avoided, adverse impacts should be minimised by design or through the use of effective mitigation measures such as minimising light spill (see below).
- *Mitigation* – where mitigation is required as loss of a bat roost is unavoidable, the following working measures will be required:
  - Works will be timed to avoid hibernation and maternity season.
  - Pre-works checks will be undertaken by a Natural England Bat Level 2 Class licensed ecologist (or an accredited agent).
  - A tool box talk will be delivered to onsite personnel.
  - Supervision of the removal of bat roost features by hand will be undertaken.
- *Compensation* – where unavoidable losses occur and mitigation cannot be provided, compensation for significant residual harm will be required as a last resort or planning permission could be refused. Where there is a significant effect on a bat roost, a compensation strategy sufficient to obtain a Bat Mitigation Licence from Natural England will also be required.

R7 **Lighting:** In accordance with best practice guidance relating to lighting and biodiversity (Bat Conservation Trust and Institute of Lighting Professionals, 2023[6]; Gunnell et al, 2012[7]), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species. Examples of good practice include:

- Avoiding the installation of new lighting in proximity to key ecological features, such as hedgerows and woodland edges.
- Using modern LED fittings rather than metal halide or sodium fittings, as modern LEDs emit negligible UV radiation.
- The use of directional lighting to reduce light spill, e.g., by installing bespoke fittings or using hoods or shields. For example, downlighting can be used to illuminate features such as footpaths whilst reducing the horizontal and vertical spill of light.
- Where the use of bollard lighting is proposed, columns should be designed to reduce horizontal light spill.
- Implementing controls to ensure lighting is only active when needed, e.g., the use of timers or motion sensors.

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[6] Bat Conservation Trust and Institute of Lighting Professionals (2023) *Guidance Note 08/23: Bats and artificial lighting at night*. ILP, Rugby

[7] Gunnell, K., Grant, G. and Williams, C. (2012) *Landscape and urban design for bats and biodiversity.* Bat Conservation Trust.

- Use of floor surface materials with low reflective quality. This will ensure that bats using the site and surrounding area are not affected by reflected illumination.
- For internal lights, recessed light fittings cause significantly less glare than pendant type fittings. The use of low-glare glass may also be appropriate where internal lighting has the potential to influence sensitive ecological receptors.

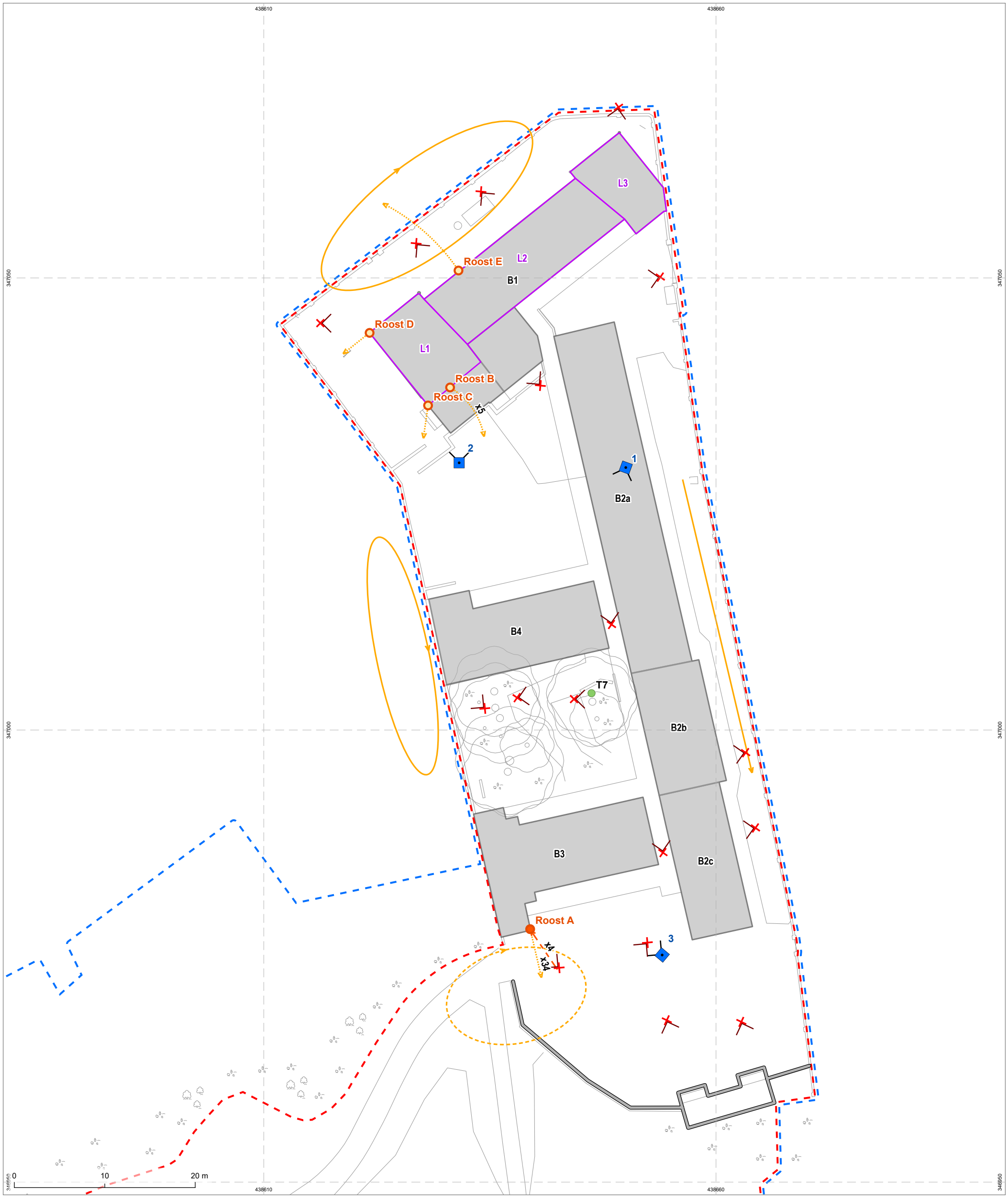
6. Drawings

Drawing C184911-01-01 – First Dusk Emergence Survey

Drawing C184911-01-02 – Second Dusk Emergence Survey

Drawing C184911-01-03 – Third Dusk Emergence Survey

Drawing C184911-01-04 – Overview of Bat Roosts



Legend

- Site boundary
- Ownership boundary
- Tree surveyed
- Retaining wall surveyed
- Buildings surveyed
- Loft space
- Surveyor location and field of view
- Thermal drone location with field of view

Bat activity

- Common pipistrelle emergence point
- Common pipistrelle emergence/re-entry point - maternity roost
- Common pipistrelle foraging and commuting
- Common pipistrelle foraging tandem flying and swarming behaviour
- Common pipistrelle emerging
- Common pipistrelle re-entering

Notes:
3x thermal enabled drones were utilised throughout the survey in addition to ground based NVAs.

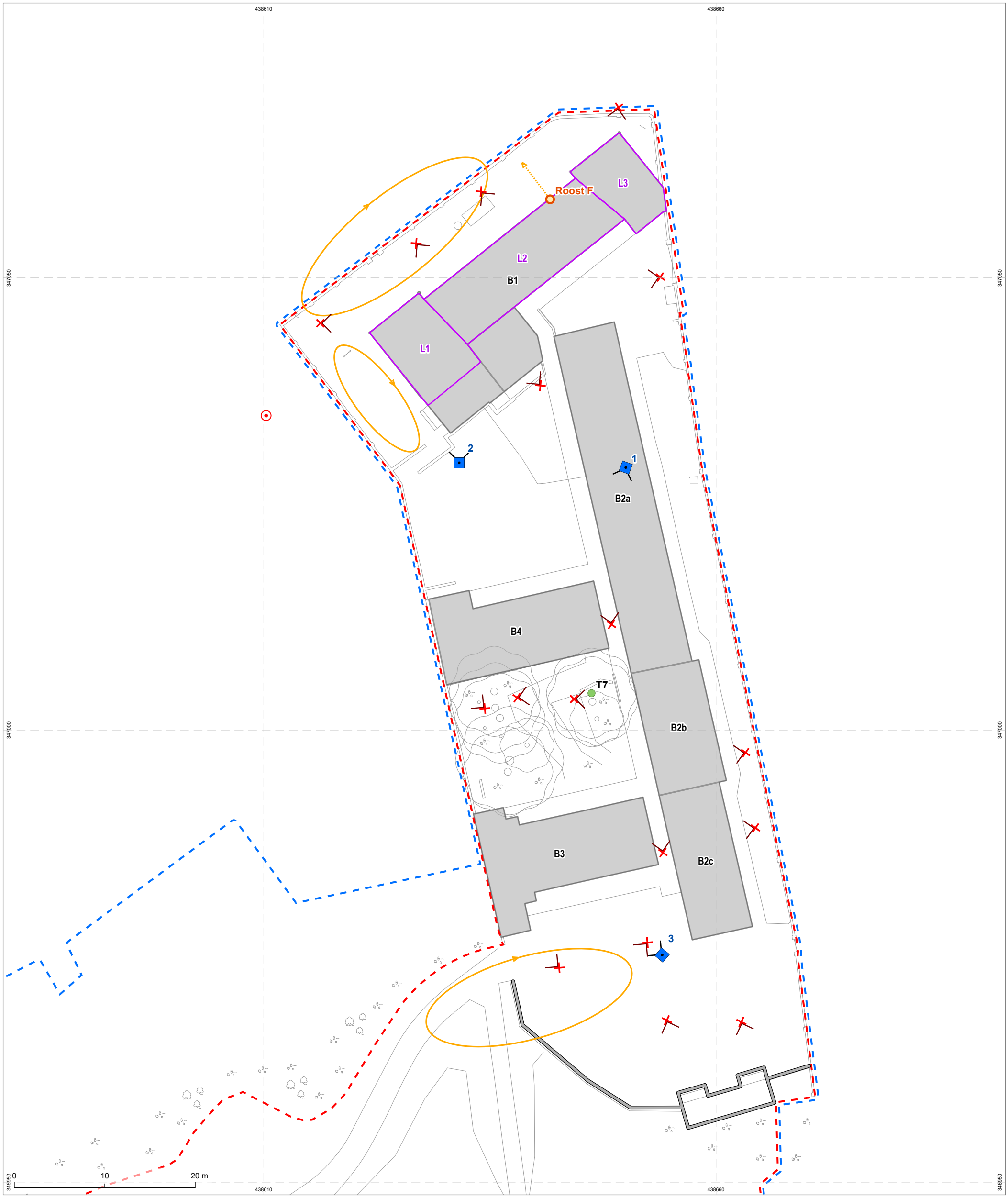
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Drawing	First Dusk Emergence Survey (09/07/2026)
Client	Tilbury Douglas
Drawing Number	C184911-01-01
Revision	00
Scale @ A3	1:400
Date	October 2026
Approved By	VA
Drawn By	BD

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C184911-01-01



Legend

- Site boundary
- Ownership boundary
- Tree surveyed
- Retaining wall surveyed
- Buildings surveyed
- Loft space
- Surveyor location and field of view
- Thermal drone location with field of view

Bat activity

- Common pipistrelle emergence point
- Common pipistrelle emerging from roost location at eaves adjacent residential building (no access).
- Common pipistrelle foraging and commuting
- Common pipistrelle emerging

Notes:
3x thermal enabled drones were utilised throughout the survey in addition to ground based NVAs.

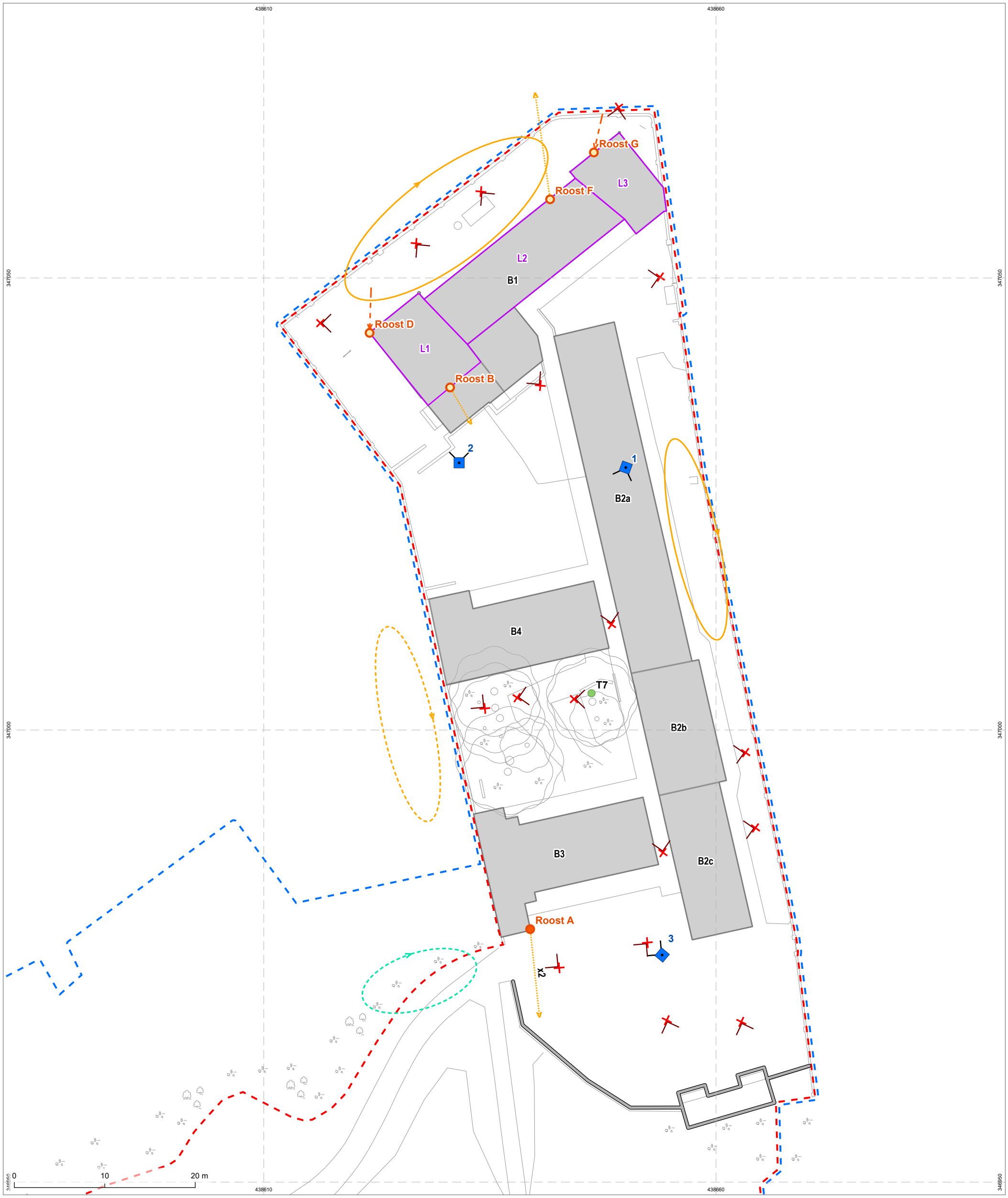
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Project	John Flamsteed Community School
Drawing	Second Dusk Emergence Survey (30/07/2026)
Client	Tilbury Douglas
Drawing Number	C184911-01-02
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Scale @ A3	1:400
Date	October 2026
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Drawn By	BD

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C184911-01-02



Legend

- Site boundary
- Ownership boundary
- Tree surveyed
- Retaining wall surveyed
- Buildings surveyed
- Loft space
- Surveyor location and field of view
- Thermal drone location with field of view

Bat activity

- Common pipistrelle emergence/re-entry point
- Common pipistrelle emergence point - maternity roost
- Common pipistrelle foraging and commuting
- Common pipistrelle foraging
- Common pipistrelle emerging
- Common pipistrelle re-entering
- Myotis species foraging

Notes:
3x thermal enabled drones were utilised throughout the survey in addition to ground based NVAs.

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Project: John Flamsteed Community School

Drawing: Third Dusk Emergence Survey (20/08/2026)

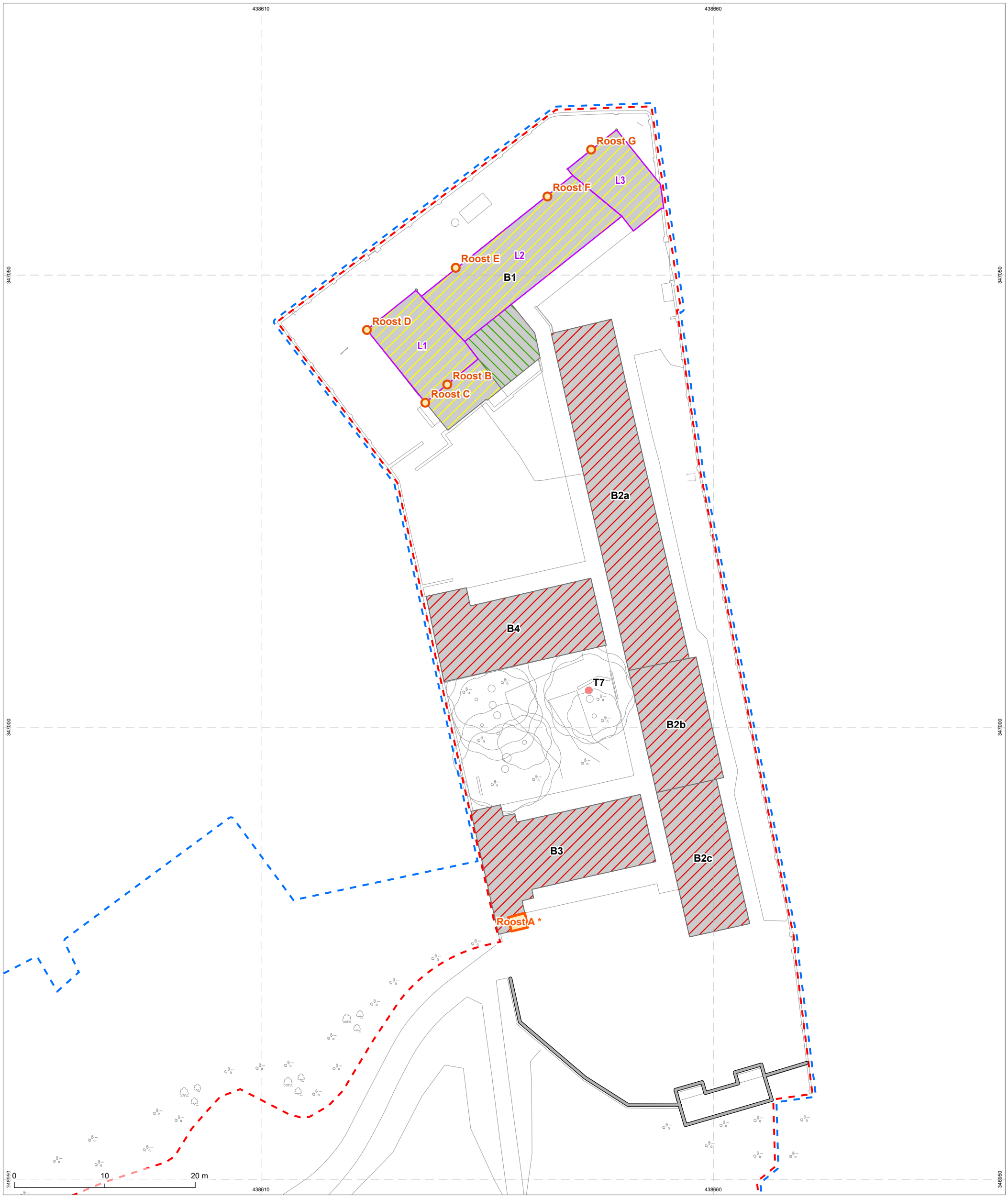
Client: Tilbury Douglas

Drawing Number	Revision
C184911-01-03	00
Scale @ A3: 1:400	Date: October 2026
Approved By: VA	Drawn By: BD

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C184911-01-03



Legend

- Site boundary
- Ownership boundary
- Tree subject to 3 dusk emergence surveys in 2026 – no roosts present
- Tree with negligible roost potential
- Common pipistrelle roost
- Retaining wall surveyed - no roosts present
- Loft space
- Basement with bat hibernation potential
- Building with high suitability to support roosting bats
- Building with high suitability to support roosting and hibernating bats
- Building with negligible potential to support roosting bats
- Common pipistrelle maternity roost

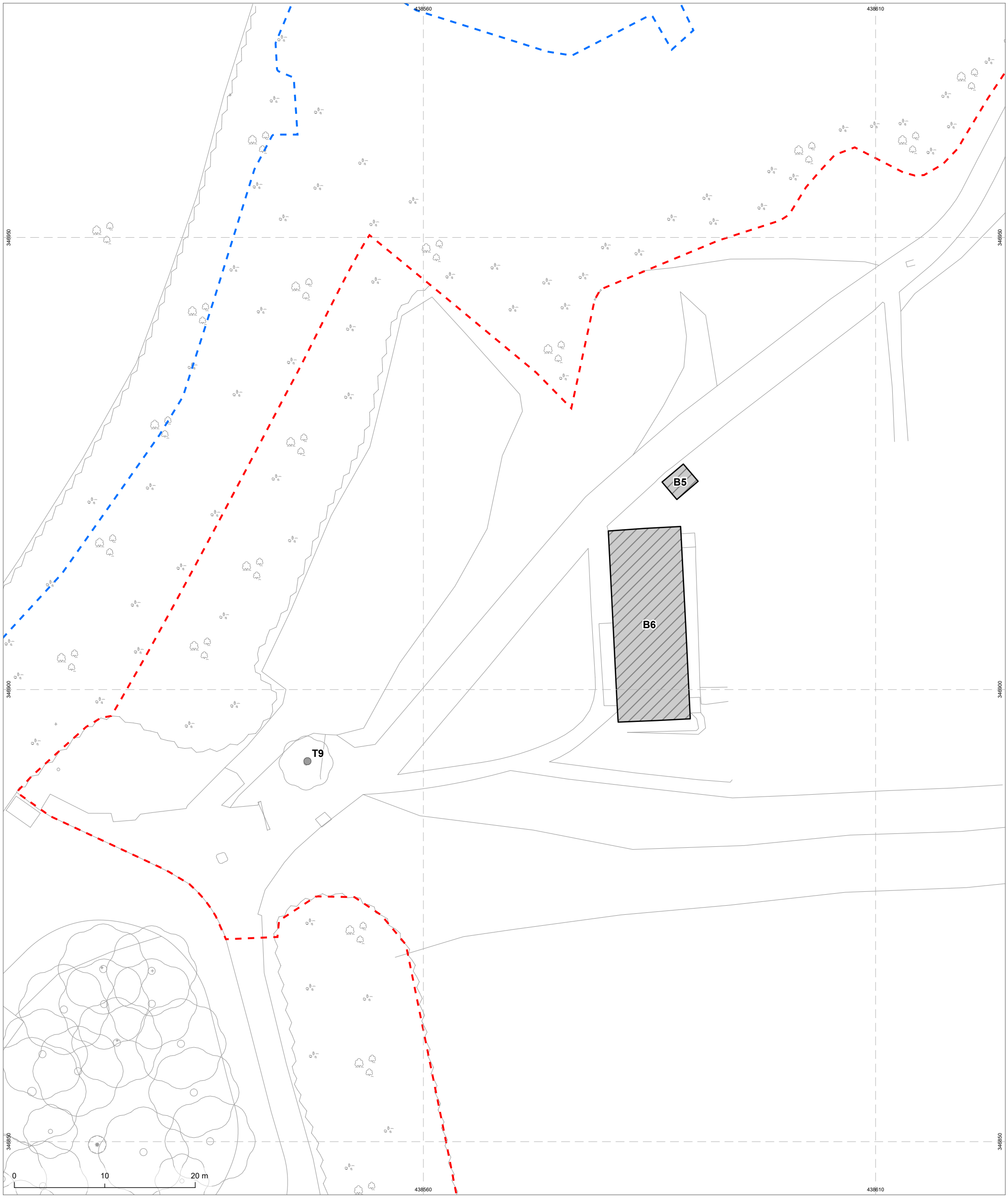
** Roost A - Assumed common pipistrelle hibernation presence*

Project	John Flamsteed Community School
Drawing	Overview of Bat Roosts - Page 1 of 2
Client	Tilbury Douglas
Drawing Number	C184911-01-04
Revision	00
Scale @ A3	1:400
Date	October 2026
Approved By	LT
Drawn By	VG

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C184911-01-04



Legend

- Site boundary
- Ownership boundary
- Tree subject to 3 dusk emergence surveys in 2026 – no roosts present
- Tree with negligible roost potential
- Common pipistrelle roost
- Retaining wall surveyed - no roosts present
- Loft space
- Basement with bat hibernation potential
- Building with high suitability to support roosting bats
- Building with high suitability to support roosting and hibernating bats
- Building with negligible potential to support roosting bats
- Common pipistrelle maternity roost

** Roost A - Assumed common pipistrelle hibernation presence*

N

Project: John Flamsteed Community School

Drawing: Overview of Bat Roosts - Page 2 of 2

Client: Tilbury Douglas

Drawing Number	Revision
C184911-01-04	00
Scale @ A3	Date
1:400	October 2026
Approved By	Drawn By
LT	VG

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C184911-01-04

Appendix 1

Relevant Legislation

Bats and the places they use for shelter or protection (i.e., roosts) receive legal protection under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1st January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, *or obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CRoW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

The reader should refer to the original legislation for the definitive interpretation.

The following bat species are Species of Principal Importance for Nature Conservation in England: barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*. Species of Principal Importance for Nature Conservation in England are material considerations in the planning process. The list of species is derived from Section 41 list of the Natural Environmental and Rural Communities (NERC) Act 2006.

Appendix 2

First Dusk Emergence Survey

Figures 1 to 11, demonstrate the illumination levels at the start and end of the first dusk emergence survey.



Figure 1: Drone 1

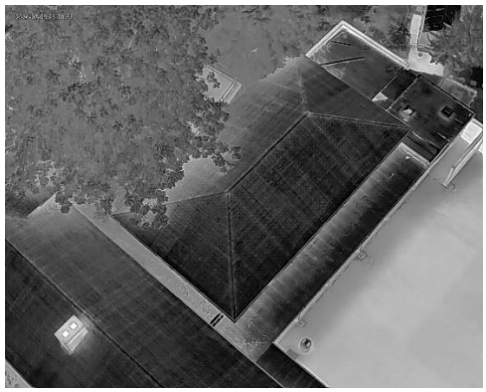


Figure 2: Drone 2



Figure 3: Drone 3

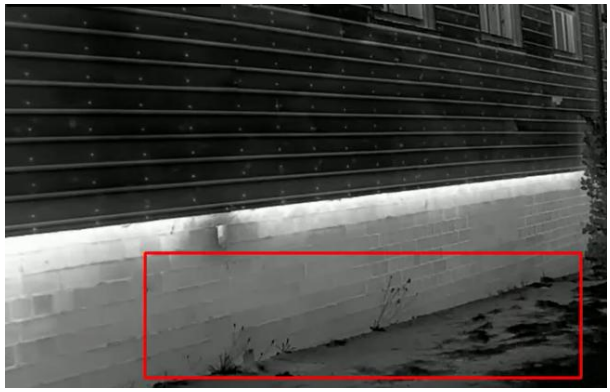


Figure 4: Thermal 1 End of Survey



Figure 5: Camera 1 start of Survey



Figure 6: Camera 1 End of Survey



Figure 7: Camera 2 Start of Survey



Figure 8: Camera 2 End of Survey



Figure 8: Camera 3 Start of Survey



Figure 9: Camera 3 End of Survey

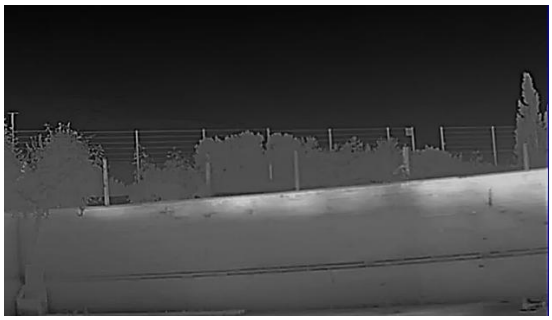


Figure 10: Thermal 2



Figure 11: Thermal 3

Second Dusk Emergence Survey

Figures 12 to 16 demonstrate the illumination levels at the start and end of the second dusk emergence survey.



Figure 12: Drone 1

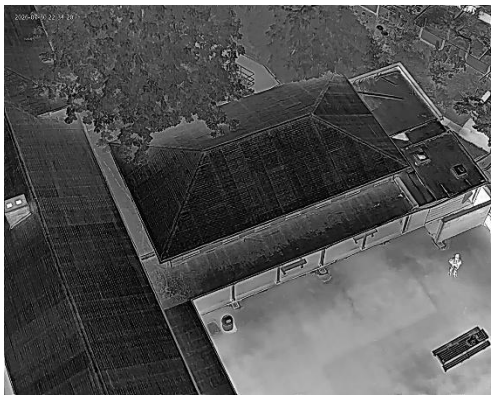


Figure 13: Drone 2



Figure 14: Drone 3



Figure 15: Thermal 1



Figure 16: Thermal 2



Figure 17: Thermal 3

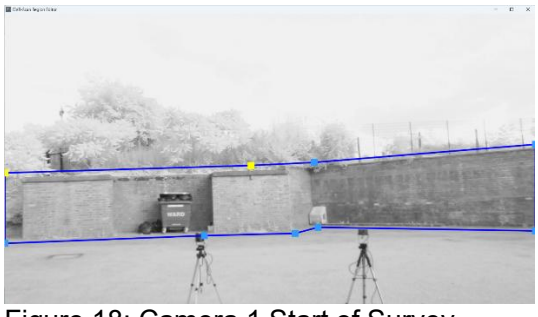


Figure 18: Camera 1 Start of Survey



Figure 19: Camera 1 End of Survey



Figure 20: Camera 2 Start of Survey



Figure 21: Camera 2 End of Survey



Figure 22: Camera 2 Start of Survey



Figure 23: Camera 2 End of Survey



Figure 24: Camera 3 Start of Survey



Figure 25: Camera 3 End of Survey

Third Dusk Emergence Survey

Figures 26 to 37, demonstrate the illumination levels at the start and end of the third dusk emergence survey.



Figure 26: Drone 1



Figure 27: Drone 2



Figure 28: Drone 3



Figure 29: Thermal 1



Figure 30: Thermal 2

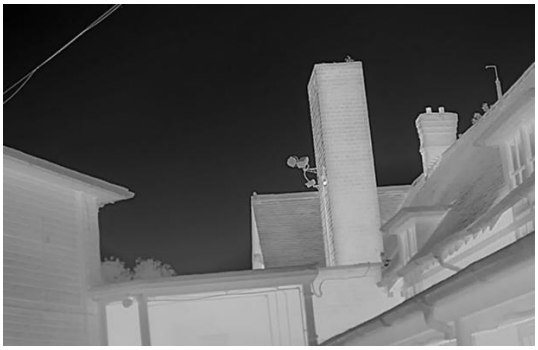


Figure 31: Thermal 3



Figure 32: Camera 1 Start of Survey



Figure 33: Camera 1 End of Survey



Figure 34: Camera 2 Start of Survey



Figure 35: Camera 2 End of Survey



Figure 36: Camera 3 Start of Survey



Figure 37: Camera 3 End of Survey