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NYMNPA

28/09/2023

Thorpe Hall, Middlewood Lane, Fylingthorpe

Bat Survey, August 2023.

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1.0 EXECUTIVE SUMMARY

1.1 In August 2023, Wold Ecology was commissioned by Mr & Mrs Coop to undertake a bat survey and assessment at Thorpe Hall, Fylingthorpe. The site is located at approximate National Grid Reference NZ 94392 04947, in North Yorkshire.

1.2 The field surveys during August 2023 identified the following bat roosts:

Structure/reference	Species	Count/estimate	Roost location	Site status assessment	Conservation significance of roost	Use and importance of the site throughout the year
Thorpe Hall Roost 1	Common pipistrelle	2	Beneath a ridge tile	Day roost	LOW	No evidence to suggest a maternity roost or significant numbers of bats. Summer use. All roosts will remain post development.
Thorpe Hall Roost 2	Common pipistrelle	1	Beneath a tile			
Thorpe Hall Roost 3	Common pipistrelle	4	Above the eaves			
Thorpe Hall Roost 4	Whiskered	2	Above the eaves			
Thorpe Hall Roost 5	Whiskered	6	Beneath a tile			

1.3 The field survey results are summarised below:

		Application Site Status
Method Statement approach (Section 7.0) – Thorpe Hall	Bats	<p>As the proposed works will not destroy any of the bat roosts and works within 5m of a roost have been programmed for October and November 2023, new guttering, the small area of re-roofing and solar panels <u>would not</u> require a Natural England development licence. However, as the building contains roosting bats and has features that could support roosting bats in other locations. The procedures highlighted in Section 7.2 should be implemented during the site works. Section 7.2 identifies working practices or precautions necessary to avoid injury or death to any bats that may be present in the building.</p> <p>Any works that will disturb, modify or permanently lose the roosts <u>will</u> require a development licence from Natural England.</p>
Proceed with caution, timing constraints	Birds	<p>Birds are afforded various levels of protection and levels of conservation status on a species by species basis. The most significant general legislation for British birds lies within Part 1 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation, it is an offence to, kill, injure or take any wild bird, take, damage or destroy the nest of any wild bird while that nest is in use or being built, take or destroy an egg of any wild bird. All nests should remain undisturbed and intact until after the breeding bird season – mid February to early September. Planning consent for a development does not provide a defence against prosecution under this act.</p> <p>No bird's nests were observed in the building (refer to section 8.0).</p>
No constraints	Barn owl	<p>There was no evidence of barn owls <i>Tyto alba</i> roosting in the building. There was no suitable access for barn owls to roost in the building. No further surveys recommended.</p>

- 1.4 Bat roosts are protected throughout the year, whether bats are present or not.**
- 1.5 All bats and their roosts are fully protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and are further protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Should any bats or evidence of bats be found prior to or during development, work must stop immediately, and Natural England contacted for further advice. This is a legal requirement under the aforementioned acts and applies to whoever carries out the work.
- 1.6 Planning consent for a development does not provide a defence against prosecution under this act.
- 1.7 Habitat enhancement for bats should be implemented as outlined in section 7.0, in order to improve foraging opportunities to bats in the local area.
- 1.8 The data collected to support the output of this report is valid for one year. This report is valid until **August 2024**. After this time, additional surveys need to be undertaken to confirm that the status of the building, as a bat roost, has not changed.
- 1.9 Species list within this report will be forwarded to the local biodiversity records centre to be included on their national database. No personal information will be sent. Please contact Wold Ecology if you do not wish the species accounts and 10 figure grid references to be shared.

Date	Taxon Name	Common Name	Location	County	Grid reference	Record Type	Abundance
09/08/23	Pipistrellus pipistrellus	Common Pipistrelle	Thorpe Hall	N. Yorkshire	NZ 94392 04947	Day x 2	3
09/08/23	Myotis mystacinus	Whiskered	Thorpe Hall	N. Yorkshire	NZ 94392 04947	Day	2
09/08/23	Myotis mystacinus	Whiskered	Thorpe Hall	N. Yorkshire	NZ 94392 04947	Day	6
29/08/23	Pipistrellus pipistrellus	Common Pipistrelle	Thorpe Hall	N. Yorkshire	NZ 94392 04947	Day x 2	5
29/08/23	Myotis mystacinus	Whiskered	Thorpe Hall	N. Yorkshire	NZ 94392 04947	Day	4

2.0 INTRODUCTION

2.1 Background Information

2.1.1 In August 2023, Wold Ecology was commissioned by Mr & Mrs Coop to undertake a bat survey and assessment at Thorpe Hall, Fylingthorpe. The site is located at approximate National Grid Reference NZ 94392 04947, in North Yorkshire.

2.1.2 The Application Site comprises the following building:

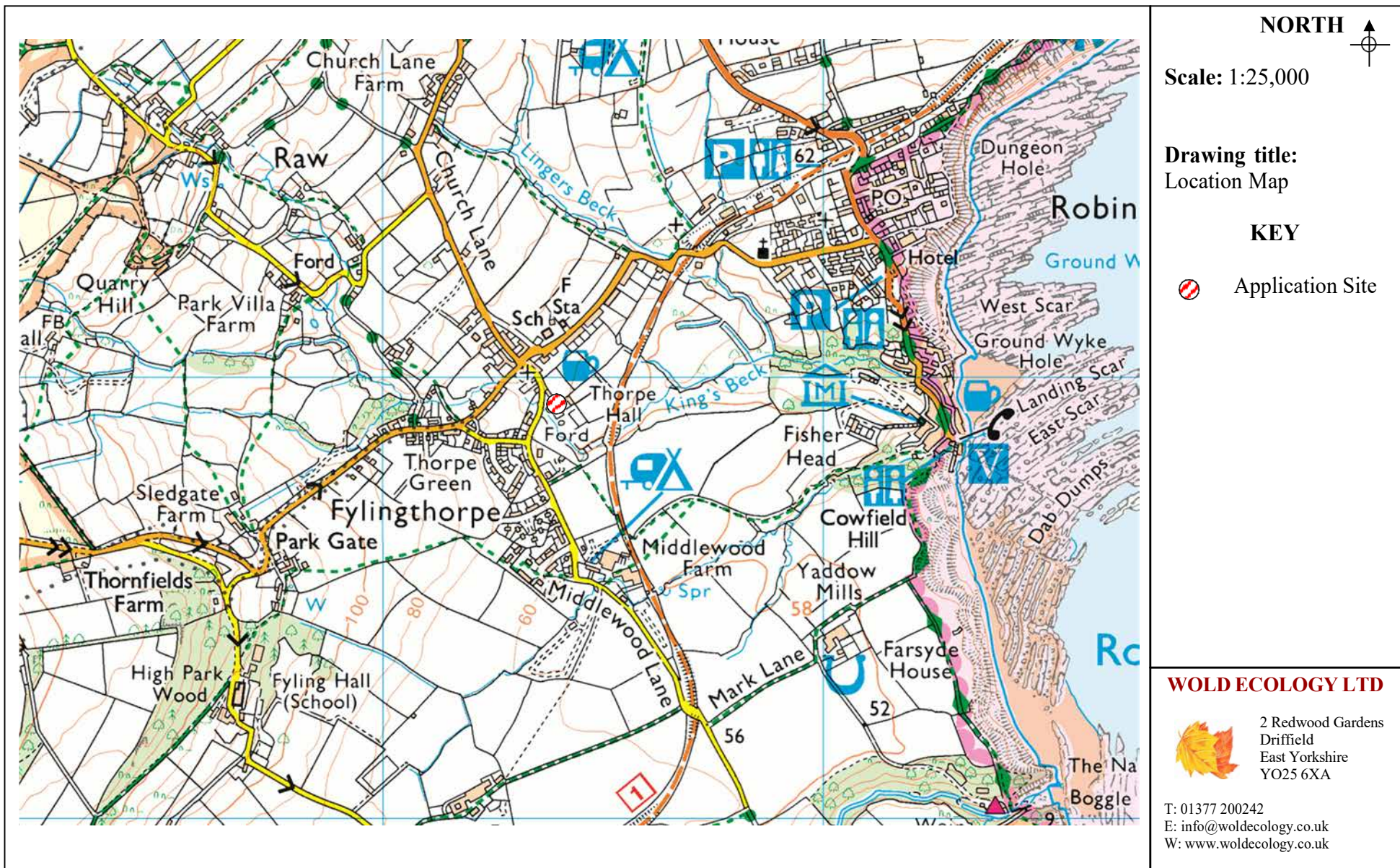
- Thorpe Hall

2.1.3 The proposed development includes the replacement of gutters around the property, installation of solar panels and a small section of roof being refurbished.

2.2 Survey Objectives

2.2.1 The site was visited and assessed on 9th August 2023 and 29th August 2023; this was to determine whether the building on site contained bat roosts. The work involved the following elements:

Survey objective	Yes/No	Comments
Determine presence/absence of roosting bats	Yes	A daytime, visual inspection for bat roosts and roosting bats. An assessment of the on-site potential for bats and the likelihood of their presence. Desktop study.
Determine bat usage e.g. maternity roost, summer roosts	Yes	An assessment of whether bats are a constraint to the development. Emergence (dusk) survey. Return (dawn) survey. Endoscope survey (where accessible)
Identify swarming, commuting or mating sites	Yes	The survey looked at commuting routes from the roost to foraging grounds to ensure works did not impact these.
Other	Yes	The production of a non-technical summary of the legal implications behind bat presence. Report the findings of the field survey work and identify recommendations for a potential mitigation strategy.



3.0 BACKGROUND TO SPECIES

3.1 Ecological overview

3.1.1 There are seventeen species of bat that currently breed in the UK. There is a wide variety of roost type and ecological characteristics between species and for this reason it is necessary to determine the species of bat and the type of roost resident in a structure prior to development. Roosts are utilised by different species of bat, at different times of year for different purposes i.e. summer, breeding, hibernating, and mating etc. (for more detailed information see section 9.0).

3.1.2 Bat populations have undergone a significant decline in the latter part of the 20th century; the main factors cited for causing loss and decline include:

- A reduction in insect prey abundance, due to high intensity farming practice and inappropriate riparian management.
- Loss of insect-rich feeding habitats and flyways, due to loss of wetlands, hedgerows, and other suitable prey habitats.
- Loss of winter roosting sites in buildings and old trees.
- Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.

3.2 Legal Framework

3.2.1 A bat survey is required prior to planning permission being granted for a development, in order to prevent the potential disturbance, injury and /or death of bats and the disturbance, obstruction and/or destruction of their roosting places. This is in compliance with the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, provision 41 states an offence is committed if a person:

- (a) Deliberately captures, injures, or kills any wild animal of a European protected species (i.e. bats),
- (b) Deliberately disturbs wild animals of any such species,
- (c) Deliberately takes or destroys the eggs of such an animal, or
- (d) Damages or destroys a breeding site or resting place of such an animal.

3.2.2 Section 9 of the Wildlife and Countryside Act (1981) states:

- It is an offence for anyone without a licence to kill, injure, disturb, catch, handle, possess or exchange a bat intentionally. It is also illegal for anyone without a licence to intentionally damage or obstruct access to any place that a bat uses for shelter or protection.

3.2.3 Bat roosts are protected throughout the year, whether or not bats are occupying a roost site.

3.3 Planning Policy Guidance

3.3.1 A bat survey is a requirement of the Local Planning Authority (LPA), as part of the planning application process. This is specified in the following government policy:

- National Planning Policy Framework (NPPF): Conserving and Enhancing the Natural Environment.

- 3.3.2 To protect and enhance biodiversity and geodiversity, plans should:
- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation.
 - b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.
 - c) Protect and enhance valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan).
 - d) recognise the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland.
 - e) Minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
 - f) Prevent new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.
- 3.3.3 When determining planning applications, local planning authorities should apply the following principles:
- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
 - b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted.
 - c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists; and
 - d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
- 3.3.4 The LPA has to assess whether the development proposal would breach Article 12(1) of the Habitats Directive. If Article 12(1) would be breached, the LPA would have to consider whether Natural England was likely to grant a European protected species licence for the development; and in so doing the LPA would have to consider the three derogation tests:

- a) ‘Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment’.

In addition, the LPA must be satisfied that:

- (b) ‘That there is no satisfactory alternative’
(c) ‘That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range’.

3.3.5 Relevant Case Law

- Woolley v Cheshire East Borough (2009).
- R. (Morge) v Hampshire County Council (2011).
- Prideaux v. Buckinghamshire County Council and Fcc Environmental UK Limited (2013).

3.3.6 The rulings summarise that if it is clear or perhaps very likely that the requirements of the Directive cannot be met because there is a satisfactory alternative or because there are no conceivable ‘other imperative reasons of over-riding public interest’ then the authority should act on that and refuse permission.’

3.3.7 The conclusion of the judgement is that LPAs must ensure that the option/alternative that best takes into account all the relevant considerations (not just EPS) should be the preferred option assuming that the other two tests specified in Article 16 (1) are also met.

3.3.8 The judgements also clarified that it was not sufficient for planning authorities to claim that they had discharged their duties by imposing a condition on a consent that requires the developer to obtain a licence from Natural England. Natural England considers it essential that appropriate survey information supports a planning application prior to the determination. Natural England does not regard the conditioning of surveys to a planning consent as an appropriate use of conditions.

4.0 ASSESSMENT METHODOLOGY

4.1 Status of species present in Yorkshire

Bat Specie	UK Status	UK Distribution	Yorkshire Distribution
Common Pipistrelle	Not threatened	Common & widespread	Common & widespread.
Soprano pipistrelle	Not threatened	Common & widespread	Less common than common pipistrelle but fairly widespread.
Nathusius's pipistrelle	Rare	Restricted. Throughout British Isles.	Scarce, bat detector records only.
Brown long-eared	Not threatened	Widespread	Widespread.
Daubenton's	Not threatened	Widespread	Widespread.
Natterer's	Not threatened	Widespread (except N & W Scotland)	Present
Brandt's	Endangered	England and Wales	Few confirmed records.
Whiskered	Endangered	England, Wales, Ireland & S Scotland.	Present.
Noctule	Vulnerable	England, Wales, S Scotland.	Widespread
Leisler	Vulnerable	Widespread throughout the British Isles, except N Scotland.	Rare (locally common in West Yorkshire).
Barbastelle	Rare	England.	No records since 1950's.

Source - <http://www.yorkbats.freeserve.co.uk/bats.htm>

4.2 Data Review and Desk Study

4.2.1 Currently, there is no pre-existing information on bats at the site.

4.2.2 Wold Ecology employees, field surveyors and network of associate ecologists have recorded brown long-eared *Plecotus auritus*, noctule *Nyctalus noctula*, whiskered *Myotis mystacinus*, soprano pipistrelle *Pipistrellus pygmaeus* and common pipistrelle *Pipistrellus pipistrellus* within 5km of the Application Site. Wold Ecology bat records date from 2006 and include over 1000 bat activity surveys.

4.2.3 The following Natural England development licenses are located within 2km of the Application Site (source - magic.gov.uk):

Specie	Distance from site	Destruction of a breeding site	Destruction of a resting site
Soprano pipistrelle	1km: SW	Y	N
Common pipistrelle Brown long-eared	1km: NW	N	Y

4.3 Daytime and Visual Inspection

4.3.1 The daytime assessment identified whether the building within the red line boundary had any signs of occupancy, bat roosts and/or bat usage. This took the form of a methodical search, both internally and externally, for actual roosting bats and their signs. Specifically, the visual survey involved:

- Assessment for droppings on walls, windowsills and in accessible roof spaces.
- Scratch marks and staining on beams, other internal structures and potential entrance and exit holes.
- Wing fragments of butterfly and moth species underneath beams and other internal structures.
- The presence of dense spider webs at a potential roost can often indicate absence of bats.
- Assessment of crevices and cracks to assess their importance for roosting bats.

4.3.2 Summary of daytime inspection and visual survey

Date of each survey visit	Structure reference/location	Equipment used/available	Weather
09/08/23	Thorpe Hall	Cluson CB2 lamp Dart endoscope Dewalt Laser Measure. 3.9m telescopic ladders Binoculars	16°C, 100% cloud. Beaufort 1, S. No recent rain.
Comments (to include # of surveyors used for each visit): 2 surveyors undertook the visual inspection.			
Personnel: Daniel Lombard (Class 1 bat licence – 2015-11490-CLS-CLS) – 9 th August 2023 Abi Catherall (Class 1 bat license 2022-10667-CL17-BAT) – 9 th August 2023			

4.4 Activity Surveys

4.4.1 Emergence surveys are used to determine bat presence in a building and can also give a good estimate of the numbers present. Bats can emerge up to 15 minutes before sunset and 2 hours after sunset. The survey times ensured that bats would have emerged from their roost sites and would be foraging (see section 9.4 and 9.5).

4.4.2 Summary of emergence survey(s)

Date of each survey visit	Start/end times and times of sunset	Structure reference/location	Equipment used/available	Weather
09/08/23	Sunset: 2047 Start: 2030 Finish: 2245	Thorpe Hall	Cluson CB2 lamp Digital thermometer Anabat Walkabout Wildlife Acoustics EM Touch 2 PRO EM3 Anabat Express Pulsar Helion thermal imaging scope Reolink 4K PoE IP Camera Nightfox Red Night vision camera	16°C - 15°C, 100% cloud. Beaufort 1, S. No recent rain.
Comments (to include # of surveyors used for each visit): 5 surveyors were positioned around the site so that all potential access points, identified in the daytime, visual inspection, could be observed.				
Personnel: Daniel Lombard (Class 1 bat licence – 2015-11490-CLS-CLS) – 9 th August 2023 Abi Catherall (Class 1 bat license 2022-10667-CL17-BAT) – 9 th August 2023 Craig Hullah, Lyndsey Crawford Darwell and David Aitken – 9 th August 2023				

4.4.3 Return surveys conducted at sunrise are particularly useful as bats tend to swarm outside their roosts for up to 2 hours before entering, thus allowing the surveyor more time to identify the bat and entrance locations. Bats will return to roosts approximately 90 minutes before sunrise and 15 minutes after. The timing of the survey ensured that returning bats would be recorded (see section 9.4 and 9.5).

4.4.4 Summary of return survey(s)

Date of each survey visit	Start/end times and times of sunrise	Structure reference/location	Equipment used/available	Weather
29/08/23	Sunrise: 0603 Start: 0400 Finish: 0620	Thorpe Hall	Cluson CB2 lamp Digital thermometer Anabat Walkabout Wildlife Acoustics EM Touch 2 PRO EM3 Anabat Express Pulsar Helion thermal imaging scope Reolink 4K PoE IP Camera Nightfox Red Night vision camera	13°C, 95% cloud. Beaufort 1, SW. No recent rain.

Comments (to include # of surveyors used for each visit): 3 surveyors were positioned around the site so that all potential access points, identified in the daytime, visual inspection, could be observed.

Personnel:

Daniel Lombard (Class 1 bat licence – 2015-11490-CLS-CLS) – 29th August 2023

Abi Catherall (Class 1 bat license 2022-10667-CL17-BAT) – 29th August 2023

Sean Sellers – 29th August 2023

4.5 Summary of personnel

Daniel Lombard MCIEEM	Experienced bat surveyor since 2008, Daniel has assisted with over 500 bat surveys for Wold Ecology and is currently working towards his bat handling license.	2015-11490-CLS-CLS
Abi Catherall	Experienced bat surveyor, Abi has conducted over 100 bat activity surveys including bat monitoring with the North Yorkshire Bat Group.	2022-10667-CL17-BAT
Craig Hullah	Experienced Wold Ecology Ltd bat surveyor with over 3 years of bat activity survey experience undertaken under the tuition of Wold Ecology licensed bat ecologists. Craig has undertaken over 100 bat activity surveys.	N/A
Lyndsey Crawford Darwell David Aitken Sean Sellers	Wold Ecology Ltd associates with bat activity survey experience undertaken under the tuition of Wold Ecology licensed bat ecologists.	N/A

5.0 RESULTS

5.1 Habitat description

5.1.1 The Application Site is located within the village of Fylingthorpe, in a rural location. The Application Site is less than 0.5ha and the studied building is immediately surrounded by mature private garden with trees and a driveway. There are no other structures within the red line boundary which have bat roosting potential.

5.1.2 Adjacent and surrounding landscapes

5.1.2.1 The village of Fylingthorpe is surrounded by mixed agricultural land dominated by arable with grazed pastures. Woodland cover within 2km is low and occurs as shelterbelts adjacent to farms and small holdings, semi natural woodland, and plantations. Whilst the Application Site is not directly connected to any optimum bat foraging habitat, connectivity within 500m is provided by hedgerows that bound most arable fields and woodland cover. In addition, a former railway line, Thorpe Beck, King's Beck and associated riparian woodlands provide habitat connectivity to the wider countryside.

5.1.3 Habitat Summary

5.1.3.1 A summary of the surrounding habitat is (radius of 2 - 3km from the site):

- Buildings – farm buildings and residential properties
- Hedgerow
- Hedgerows with trees
- Mature trees and woodland
- High Park Wood
- Disused railway
- Arable
- Mature private gardens
- Ponds and watercourses
- Grazed pasture
- Low Moor
- Ramsdale Beck
- Mill Beck
- King's Beck
- Lingers Beck
- Stoupe Beck
- High Park Wood
- Butcher Close Wood
- Allison Head Wood
- Oak Wood
- Carr Wood
- Lodge Plantation

5.1.4 Core sustenance zones

5.1.4.1 The following tables ascertain bat species (typical of the locality) core sustenance zone and which habitats are of primary importance for foraging to support the roost

Species	CSZ radius (km)
Brown long-eared bat <i>Plecotus auritus</i>	3
Daubenton's bat <i>Myotis daubentonii</i>	2
Natterer's bat <i>Myotis nattereri</i>	4
Whiskered/Brandt's/Alcathoe bat <i>Myotis mystacinus/brandtii/alcathoe</i>	1
Common pipistrelle <i>Pipistrellus pipistrellus</i>	2
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	3
Nathusius pipistrelle <i>Pipistrellus nathusii</i>	3
Noctule <i>Nyctalus noctula</i>	4
Leisler's bat <i>Nyctalus leisleri</i>	3

5.1.5 Wold Ecology concludes that the immediately adjacent habitats (within the developments zone of influence and up to 50m from the Application Site boundary) could be used by small numbers of commuting and foraging bats. These habitats are not extensive and are similar to surrounding village habitats and consequently, the Application Site and surrounding habitats are not considered to be integral to the favourable conservation status of local bat populations and are considered to have low suitability for commuting and foraging bats.

5.1.6 Wold Ecology concludes that habitats within 3km primarily comprise fragmented sub optimum and secondary habitats features which are relatively isolated.

5.1.7 Primary and secondary bat habitats in relation to core sustenance zones

Bat species	Primary habitats/features	Secondary habitats
Noctule		Found in a range of habitats foraging in the open or often over trees, pasture and water
Leisler's	Sympathetically managed pasture appears to be a preferred foraging habitat in both Great Britain and Ireland (Shiel and Fairley, 1999; Waters et al., 1999), Use is also made of woodland edges and tree-lined roads (Waters et al., 1999; Russ and Montgomery, 2002).	Drainage channels, lakes, rivers, canals, coniferous forests, parkland
Common pipistrelle	The common pipistrelle bat forages over sympathetically managed grazed pasture and deciduous woodland.	
Soprano pipistrelle	The soprano pipistrelle bat is frequently reported to make particular use of riparian habitat (Davidson-Watts and Jones, 2006; Nicholls and A. Racey, 2006; Lintott et al., 2016	In woodlands edges
Nathusius pipistrelle	Riparian habitats, large freshwater lakes, estuaries and canals. Broad-leaved & mixed woodland edges and parkland.	Managed gardens and fields around lakes
Whiskered bat	Studies indicate a preference for, mixed or broadleaved woodland, hedgerows, Sympathetically grazed pasture riparian vegetation and wetlands.	Orchards
Brandt's bat	Woodland, particularly damp areas close to water (Taake, 1984).	Sympathetically grazed pasture.
Brown long-eared bat	The species is strongly associated with trees, particularly broadleaved preferring woodland with a cluttered understorey, (Murphy <i>et al</i> , 2012)	Will forage in mixed woodland and also forages around trees in more open habitats, including parks, orchards and gardens (Dietz and Keifer, 2016).
Natterer's bat	The species is commonly associated with trees, particularly broadleaved woodland, but also makes use of tree-lined river corridors, trees in parkland, and hedgerows adjacent to pasture (Parsons and Jones, 2003; Smith and Racey, 2008; Zeale et al., 2016).	It also forages over grassland
Daubenton's bat	The species is strongly associated with riparian habitats. It prefers large waterways with abundant woodland in the local environment (Langton et al., 2010) and, at least in upland riverine environments, it appears to select locations with trees on both banks (Warren et al., 2000)	Also forages in woodland
Alcathoe bat	Little evidence on its habitat preferences in Great Britain. However, the species is usually captured in areas with extensive semi-ancient woodland ((Jan et al., 2010; Daniel Whitby, pers. comm.); Daniel Whitby, pers. comm.).	No specific needs known



Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image © 2023 TerraMetrics


Google Earth

NORTH 

Scale: 1:25,000

Drawing title:
Aerial Photograph

KEY

 Application Site

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5.2 Building description

- 5.2.1 The bat survey and assessment targeted the following (see section 5.5):
- a. **Thorpe Hall** – is three storeys and comprises local stone walls and a pitched roof covered with slates and clay tiles. The majority of building has vaulted ceilings. The dwelling is occupied.
- 5.2.2 **Thorpe Hall** (see 5.5 plates 1 - 4) - the following roosting opportunities were present within the fabric of the building:
- Gaps beneath the ridge tiles where mortar has been displaced.
 - There are no missing ridge tiles.
 - Loose fitting tiles with gaps beneath.
 - Gaps beneath slates.
 - Gaps below lead flashing.
 - Gaps beneath coping stones.
 - Gaps above the eaves.
 - Small amount of missing mortar in the external stonework.
 - The door and window frames were tight fitting.
 - There was no open doors/window bat access into the building.
 - No evidence of bats was observed.
 - Thorpe Hall has been assessed as having a MODERATE SUITABILITY to support bats.

5.3 Based on the field survey and the criteria in table 4.1 (Bat Surveys for Professional Ecologists – 3rd Edition, p35. Bat Conservation Trust, 2016), the Application Site and studied building has the following suitability for bats:

	Negligible	Low	Moderate	High
Application Site habitats (<3km)		X		
Thorpe Hall			X	

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^a and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation ^b). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. ^c	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^a and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ^a and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Source - Bat Surveys for Professional Ecologists – 3rd Edition, p35. Bat Conservation Trust, 2016.

5.3 Justification of activity surveys

5.3.1 The level of survey to give confidence in a **negative result** is summarised as (Bat Surveys for Professional Ecologists, 3rd Edition. Bat Conservation Trust, 2016):

Low Roost Suitability	Moderate Roost Suitability	High Roost Suitability
One survey visit. One dusk emergence or dawn re-entry survey.	Two separate survey visits. One dusk emergence survey and a separate dawn re-entry survey.	Three separate survey visits. At least one dusk emergence survey and a separate dawn re-entry survey. The third visit could either be dusk or dawn.
May to August.	May to September with at least one survey between May to August.	May to September with at least two surveys between May to August.

Activity surveys should be at least 2 weeks apart. Moderate buildings will be assessed according to site location and habitats within the locality and if there is a possibility that late emerging bats are present, a dawn survey will be more appropriate.

5.3.2 The Application Site requires the following surveys between May and late September:

	Emergence (dusk)			Re-entry (dawn)		
	LOW	MOD	HIGH	LOW	MOD	HIGH
Thorpe Hall		x 1			x 1	

5.4 Results of Activity Surveys

5.4.1 Emergence Survey

5.4.1.1 9th August 2023

- The first noctule bat was detected at 2044. This was close to the anticipated (< 30 minutes after sunset) emergence time and suggests that the bat emerged from a roost close by. The bat was detected but not observed.
- Common pipistrelle, Daubenton's, whiskered and noctule bats were detected and/or observed foraging and commuting around the site in high numbers.
- The following bat roosts were observed:
 - **Roost 1** – common pipistrelle roost located in a gap beneath a ridge tile. The roost contains 2 bats (see 5.5 plate 2).
 - **Roost 2** – common pipistrelle roost located in a gap beneath a tile on the west elevation. The roost contains 1 bat (see 5.5 plate)
 - **Roost 4** – whiskered roost located in a gap above the eaves on the west elevation. The roost contains 2 bats (see 5.5 plate 3)
 - **Roost 5** – whiskered roost located in a gap below a slate on the dormer window on the west elevation. The roost contains 6 bats (see 5.5 plate 3)

5.4.1.2 For survey results see appendix 9.4 and 9.5.

5.4.2 Return Survey

5.4.2.1 29th August 2023

- Bat activity was constant throughout much of the survey with the site used by common pipistrelle, Daubenton's, whiskered, noctule and brown long-eared bats.
- The following bat roosts were observed:
 - **Roost 2** – common pipistrelle roost located in a gap beneath a tile on the west elevation. The roost contains 1 bat (see 5.5 plate)
 - **Roost 3** – common pipistrelle roost located in a gap above the eaves on the west elevation. The roost contains 4 bats (see 5.5 plate 4)
 - **Roost 5** – whiskered roost located in a gap below a slate on the dormer window on the west elevation. The roost contains 4 bats (see 5.5 plate 3)

5.4.2.2 For survey results see appendix section 9.4 and 9.5.

5.5

Photographs of key features – August 2023

Plate 1 – Thorpe Hall, east and north elevation



Plate 2 – Thorpe Hall, north elevation



Roost 1 – common pipistrelle day roost x 2 bats.

Plate 3 – Thorpe Hall, north and west elevation

Roost 5 – whiskered day roost x 6 bats.

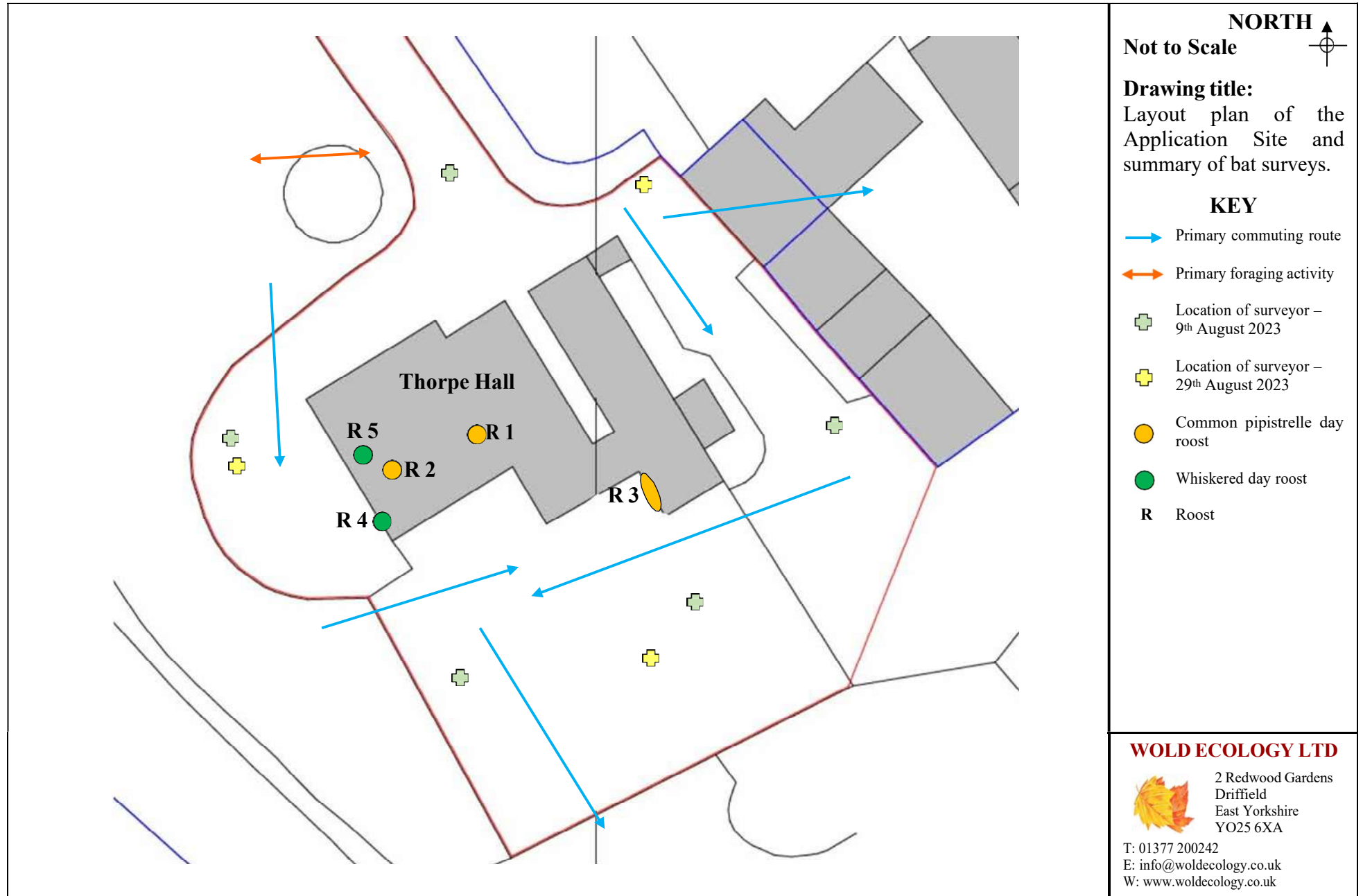


Roost 4 – whiskered day roost x 2 bats.

Plate 4 – Thorpe Hall, south elevation



Roost 3 – common pipistrelle day roost x 4 bats.



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5.6 Summary of field surveys conducted in 2023

Date	Type of survey	Results				
09/08/23	Habitat assessment	Wold Ecology concludes that the immediately adjacent habitats (within the developments zone of influence and up to 50m from the Application Site boundary) could be used by small numbers of commuting and foraging bats. These habitats are not extensive and are similar to surrounding village habitats and consequently, the Application Site and surrounding habitats are not considered to be integral to the favourable conservation status of local bat populations and are considered to have low suitability for commuting and foraging bats.				
09/08/23	Visual inspection.	<i>Thorpe Hall</i> There were no signs of roosting bats or bat activity inside the building, but due to the presence of features with potential to provide roosting opportunities for bats, the building has been assessed as having a MODERATE SUITABILITY to support roosting bats (see 5.5 plates 1 - 4).				
Date	Spp.	Roost type	Structure Reference	Roost Location	Access points (including #)	Dimension of roost or explanation where the roost is
09/08/23 (emergence)	Common pipistrelle x 2 bats	Day	Thorpe Hall Roost 1	Located in a gap beneath a ridge tile.	External roost x 1 access point	Gap approximately 20mm x 40mm
	Common pipistrelle x 1 bat	Day	Thorpe Hall Roost 2	Located in a gap beneath a tile on the west elevation	External roost x 1 access point	Gap approximately 20mm x 30mm.
	Whiskered x 2 bats	Day	Thorpe Hall Roost 4	Located in a gap above the eaves on the west elevation	External roost x 1 access point	Gap approximately 30mm x 40mm
	Whiskered x 6 bats	Day	Thorpe Hall Roost 5	Located in a gap beneath a tile on the dormer window on the west elevation	External roost x 1 access point. Vaulted ceiling below.	Gap approximately 30mm x 40mm
29/08/23 (return)	Common pipistrelle x 1 bat	Day	Thorpe Hall Roost 2	Located in a gap beneath a tile on the west elevation	External roost x 1 access point	Gap approximately 20mm x 30mm.
	Common pipistrelle x 4 bats	Day	Thorpe Hall Roost 3	Located in a gap above the eaves on the west elevation	External roost x 1 access point	Gap approximately 20mm x 2m
	Whiskered x 4 bats	Day	Thorpe Hall Roost 5	Located in a gap beneath a tile on the dormer window on the west elevation	External roost x 1 access point. Vaulted ceiling below.	Gap approximately 30mm x 40mm

5.7 Interpretation and Evaluation of Survey Results

5.7.1 Presence/absence

5.7.1.1 The site has been visited twice by Wold Ecology during 2023. The data provides an insight into how bats utilise the site during the mid and late summer months. The surveys were conducted in optimum conditions with fine weather for a period of 48 hours prior to the surveys. Therefore, bat activity would not have been affected by adverse weather conditions i.e. not emerging or returning to the roost site earlier than usual. The confidence in the results is therefore high.

5.7.1.2 Based on activity surveys conducted during August 2023, it has been determined that Thorpe Hall contains the following bat roosts (see 9.3):

Structure/reference	Species	Count/estimate	Roost location	Site status assessment	Conservation significance of roost	Use and importance of the site throughout the year
Thorpe Hall Roost 1	Common pipistrelle	2	Beneath a ridge tile	Day roost	LOW	No evidence to suggest a maternity roost or significant numbers of bats. Summer use. All roosts will remain post development.
Thorpe Hall Roost 2	Common pipistrelle	1	Beneath a tile			
Thorpe Hall Roost 3	Common pipistrelle	4	Above the eaves			
Thorpe Hall Roost 4	Whiskered	2	Above the eaves			
Thorpe Hall Roost 5	Whiskered	6	Beneath a tile			

5.7.2 Site Status Assessment

5.7.2.1 Based on a building inspection, an emergence and return survey, it has been determined that Thorpe Hall supports:

- Three separate common pipistrelle roosts.
- Two separate whiskered roosts.

5.7.2.2 All roosts are located within 1km of surrounding favourable foraging habitat which will have a role in the ecology of the local bat populations.

5.7.2.3 The survey results are based on survey work conducted in August. The building on site has features which have moderate suitability to support roosting bats, there remains the possibility that bats could roost in other parts of the site at various times of the year.

5.7.2.5 Wold Ecology considers that the site is unlikely to support hibernating bats for the following reasons:

- The body temperature of hibernating bats is near the ambient temperature. The composition of the building will not ensure that consistent temperatures of between 0°C and 5°C will be maintained.
- The stone and slate/clay tile structure of the building ensures that fluctuating temperatures occur; this can result in shorter bouts of hibernation or temperatures too cold for bats survive. Arousals represent 80–90% of the

total cost of hibernation, because bats must raise their body temperature to euthermic levels (Thomas et al. 1990).

5.7.3 Constraints

5.7.3.1 A detailed internal inspection of all roof voids was not undertaken due to access restrictions.

6.0 IMPACT ASSESSMENT

6.1 Thorpe Hall supports common pipistrelle and whiskered day roosts. The proposed development to Thorpe Hall will involve the replacement of gutters around the building, installation of solar panels and a small section of roof being replaced. Unsupervised erection of scaffolding, removal of slates, re-roofing and replacement of gutters may result in major disturbance to the roosts. Bats are susceptible to disturbance as a result of a development affecting a roost site. The pre-construction period of the development may result in significant alterations and disturbance to the roost sites.

6.2 **Initial impacts: disturbance** (human presence, noise, vibration, dust, lighting, access obstruction due to scaffolding and plastic sheeting etc.)

- The construction of scaffolding against the roof of the building which will cause an obstruction to the access points. Gutter replacement adjacent to roosts 3 and 4 will be undertaken during October and November 2023 when bats are inactive. There will be no scaffolding within 5m of a roost prior to November 2023 = neutral impact at a site level.
- Roof stripping could kill/injure bats if they are resting between slates/tiles and the contractor steps on the slates/tiles to gain higher access. There are no plans to re-roof any roofs which support roosting bats. The small section of roof to be replaced did not contain roosting bats = neutral impact at a site level.
- Lighting during night working could lead to disturbance of emerging and foraging bats, potentially leading to roost abandonment in the short term. There will be no night time works = neutral impact at a site level.
- Vibration, noise and dust from the works may impact on roosting bats that may be present and this may lead to roost abandonment. There will be no works within 5m of a bat roost prior to November 2023 when bats will become inactive and not present in the roosts = neutral impact at a site level.

6.3 **Long-term impacts: roost modification**

6.3.1 No modification of roosts will occur.

6.3.2 The replacement gutters will be like for replacement of existing. The majority of existing gutter mounts will remain in situ and re-used. This will ensure that the gap between the wall and gutter remains identical and allows identical bat access into the eaves = neutral impact at a site level.

6.4 **Long-term impacts: roost loss**

- Based on current information, the works to Thorpe Hall will not involve the permanent or temporary loss of any bat roosts.

6.5 **Long term impacts: fragmentation and isolation of roost**

6.5.1 There are no plans to alter the habitat on site and consequently, there will be no fragmentation and isolation during the development as the surrounding, supporting habitat will not be affected.

6.6 Post development: interference impacts

6.6.1 An increase in lighting through the installation of security lighting on the external walls of buildings will affect bat activity in the location of the roost sites. There are no current plans to install new lighting that will shine into the adjacent/surrounding foraging habitat or bat box locations.

6.6.2 Based on current data, there are no plans for new lighting and the impact from lighting to bat species foraging and commuting around the Application Site is likely to be **negligible**.

6.7 Predicted scale of impacts

6.7.1 The current information obtained is based on a desk top study, visual inspection and activity surveys conducted in August.

6.7.2 The common pipistrelle and whiskered day roosts at Thorpe Hall are of low conservation significance to Yorkshire. The roosts each contain less than 7 individual bats and are most probably occupied by male bats or none breeding females. Male summer roosts of a common and widespread species are of low conservation significance and therefore, the loss of the roosts will not have a significant impact at a local, regional or national level.

6.8 Summary of predicted scale of impacts - in the absence of mitigation

Species and numbers	Roost type	Predicted Scale of Impact			Notes
		Site	County	Regional	
Common pipistrelle x 7	Day x 3	X			Summer use. None of the roosts will be lost. No works will be undertaken within 5m of a roost prior to November 2023 when bats are inactive.
Whiskered x 8	Day x 2	X			

6.8.1 Based on the survey data, assessment and guidance from the Bat Mitigation Guidelines (page 39, English Nature 2004) the overall accumulative impact of the development on bat populations is considered to be **negligible**.

6.8.2 Bat activity surrounding the building was also high, with a total of 5 species of bats observed foraging and commuting.

7.0 MITIGATION & COMPENSATION

7.1 Legal Protection

7.1.1 Legal obligations towards bats are generally concerned with roost protection. All developments, known to contain bat roosts, require a development licence from Natural England. Under the Wildlife and Countryside Act (1981) and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, it is an offence for anyone without a licence to:

- Deliberately take, injure or kill a wild bat
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.
- Damage or destroy a place used by bats for breeding or resting (roosts) (even if bats are not occupying the roost at the time)
- Possess or advertise/sell/exchange a bat of a species found in the wild in the EU (dead or alive) or any part of a bat.
- Intentionally or recklessly obstruct access to a bat roost.

7.1.2 **Planning consent for a development does not provide a defence against prosecution under these acts.**

7.1.3 **Bat roosts are protected throughout the year, whether bats are present or not.**

7.1.4 **As Thorpe Hall supports common pipistrelle and whiskered day roosts, any works that will disturb, modify or permanently lose the roosts will require a development licence from Natural England.**

7.1.5 As the proposed works will not destroy any of the bat roosts and works within 5m of a roost have been programmed for October and November 2023, new guttering, the small area of roofing and solar panels would not require a Natural England development licence. However, as the building contains roosting bats and has features that could support roosting bats in other locations. The following procedures highlighted in Section 7.2 should be implemented during the site works. Section 7.2 identifies working practices or precautions necessary to avoid injury or death to any bats that may be present in the building.

7.2 Method Statement

7.2.1 **This statement should be copied to contractors and all those involved with slate removal, timber treatment, re-roofing, replacement gutter works, whose work may affect bats and their roosts on site. All works should occur as though bats could be present.**

7.2.2 Timing

7.2.2.1 The re-roofing and solar panel works will commence in October 2023. Replacement gutters within 5m of roosts 3 and 4 will commence after 1st November 2023.

7.2.3 Locating Bats

7.2.3.1 Bats are by nature highly secretive, mobile mammals, therefore bats and their roosts can be very difficult to detect. A pipistrelle bat is capable of roosting in a crack measuring 20mm. In order to reduce any unnecessary disturbance, injury or death

of any late discoveries of individual bats roosting in the buildings the following procedures should be implemented. Common roosts locations must be checked. These include:

- Underneath slates and tiles
- Mortise joints in roof timbers
- Above the eaves and internal wall plates
- Under lead flashing
- Roof timbers including ridge beams and rafters

7.2.4 Working Approach

7.2.4.1 Careful removal by hand of all fittings and fixtures as describe in 7.2.3.

7.2.4.2 Remove roof coverings by hand. Only half of the roof should be removed on the first day and the second half 24 hours later. This will create unfavourable conditions for any bats still roosting within the roof structure and encourage the bats to leave on their own accord.

7.2.4.3 The new guttering adjacent to roosts 3 and 4 will be carefully removed and replaced under the supervision of a bat ecologist. The ecologist will ensure that the access to the roosts above the eaves remains unaltered and identical

7.2.4.4 In the unlikely event that bats are discovered:

- Immediately stop the work that you are undertaking.
- Do not expose the bat or cause it to fly out of the roost on its own accord.
- Contact Wold Ecology on 01377 200242 or 07795 071504 for advice.
- Advise colleagues in the vicinity of your work why you have stopped and advise them to be aware of the potential for bats being disturbed, injured or killed.
- Immediately report the matter to your site manager/line manager who will inform relevant personnel.
- Grounded bats must be carefully placed in a lidded, ventilated box with a piece of clean cloth and a small shallow container with some water. The box must be kept in a safe and quiet location.
- Any underweight or injured bats must be taken into temporary care by an experienced bat carer and looked after until such time that the bat can be transferred to a suitable replacement roost at the same site, or weather conditions are suitable for release at the same site.

7.2.4.5 Bats will only be handled by a licensed bat ecologist, wearing gloves, who has received a rabies vaccination. The bat will be placed either into a holding box, with water provided, and re-released close to the farm at dusk, or placed into a bat box located on site.

7.2.4.6 Injured bats will be taken into care (as directed by the Bat Workers Manual, section 7.3, pages 64 – 66: 3rd edition 2004) and fed and cared for until such time when conditions are suitable (night time temperature are $>6^{\circ}\text{C}$) for them to be released at dusk in the mitigation area.

7.2.5 Bat boxes

7.2.5.1 Specially designed bat boxes can be located on site. Schwegler Bat Boxes are recommended and well tested boxes. The following bat boxes provide additional roost habitats and are available from Wold Ecology:

- The **2FN** bat box has two entrances - one at the front and one at the rear against the tree. Bats often creep into the rear entrance but leave by the front. It has a domed roof to allow the bats to form roosting clusters for warmth and this bat box is also designed to be effective against small predators and excludes draughts and light. Due to the opening on the bottom, this bat box does not require cleaning.

7.2.5.2 The majority of these boxes are self-cleaning as they are designed so that the droppings fall out of the entrance. This reduces the possibility of smell during the summer months. For more information on designs and installation of bat boxes see: www.schwegler-natur.de and www.bct.org.uk.

7.2.5.3 Wold Ecology recommends that at least 2 bat boxes are sited on trees within the grounds of Thorpe Hall. Bat boxes should be erected on south, east or west elevations/aspects; 3-5 metres above ground level or close to roof lines.

7.2.6 Lighting

7.2.6.1 Lighting has a detrimental effect on bat activity; many bats will actually avoid areas that are well lit. Lighting can cause habitat fragmentation by preventing bats from commuting between roosts and foraging grounds (A.J Mitchell-Jones 2004).

7.2.6.2 It is recommended that a lighting consultant is employed to design a lighting plan based on the following principles:

- Luminaire and light spill accessories - Lighting should be directed to where it is needed, and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.
- If applicable, the height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting, this can take the form of low level lighting that is as directional as possible and below 1 lux at ground level.
- Aim for lighting column of 5m or less, hooded and cowed to prevent light spill, for main lighting columns.
- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.

- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.
- Light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding

7.2.6.3 At this site, any future lighting design will ensure lights will **not** be mounted where they will shine directly on to bat boxes, bat roosts or the surrounding tree cover habitat used by foraging and commuting bats. A light intrusion lux level besides bat boxes trees along the site boundaries will be 1 lux or below.

7.2.7 Timber treatment

7.2.7.1 It is good practice, where bats may come into contact with roof timbers, to carry out timber treatment using Permethryn type chemicals on the Natural England list of approved safe chemicals. New pre-treated timbers i.e. tanalised timber will be allowed to dry thoroughly before use, if applicable. A list of Natural England approved paints and timber treatments is available at <https://www.gov.uk/guidance/bat-roosts-use-of-chemical-pest-control-products-and-timber-treatments-in-or-near-them>

8.0 BIRDS

8.1 Birds are afforded various levels of protection and levels of conservation status on a species by species basis. The most significant general legislation for British birds lies within Part 1 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation, it is an offence to, kill, injure or take any wild bird, take, damage or destroy the nest of any wild bird while that nest is in use or being built, take or destroy an egg of any wild bird.

8.2 The daytime assessment identified whether the studied building had any signs of residency and/or barn owl usage. Specifically, the visual survey involved:

- An assessment of the suitability of buildings or stone feature to enable access for breeding barn owls.
- A thorough check for pellets, feathers or signs of old nest remains in the form of pellet debris and/or old broken egg shells.

8.3 The visual inspection also recorded any other visible active/disused nests and bird activity within the building.

8.4 Field survey results

8.4.1 There was no evidence of barn owls *Tyto alba* roosting in the building and there was no suitable access for barn owls to roost in the building. No further surveys are recommended.

8.4.2 No birds' nests were observed in the building.

8.5 Biodiversity Gains and Recommendation

8.5.1 All nests should remain undisturbed and intact until after the breeding bird season – mid February to early September. Any destructive building works (e.g. demolition, roof stripping, internal conversion, pointing of masonry etc.) and removal of trees, shrubs, scrub and tall vegetation should be undertaken outside of the bird nesting season which is between the months of mid-September and early February inclusive or be carefully checked by an ecologist to confirm no active nests are present. If nesting birds are found during the watching brief, destructive works will need to stop until the young have fledged.

8.5.2 In order to increase nesting opportunities for birds, it is recommended that Schwegler bird boxes are erected throughout the site. Local Authority guidance recommends that 25% of houses within a development should contain a bird box.

8.5.3 Bird boxes will target species of conservation concern. A summary of recommended bird boxes are listed below:

Name	Description	Number
Schwegler nest box 1B	Tree box	2

8.5.4 Boxes should be placed so that the entrance does not face the prevailing wind, rain and strong sunlight. The sector from north to south east should be used, with south facing boxes positioned in more shaded areas. Boxes should be positioned away

from the damp side of the tree trunk, usually told by algae, lichen and moss growth. Boxes should also be angled downwards to stop rain blowing into them.

- 8.5.5 Many species will use boxes at a wide variety of heights however to give the box protection in areas with a lot of human or mammalian predator activity they should be placed approximately 3-4 metres above ground level. A clear flight path should be available to and from the nest box.

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www.bats.org.uk

10.0 APPENDICES

10.1 Background to Bats - Bat Biology.

- 10.1.1 Bats roost in a variety of places such as caves, mines, trees, and buildings. Woodlands, pasture, ponds and slow flowing rivers or canals provide suitable feeding areas for bats as they support an abundance of suitable insect forage. Bats tend to feed during the first two to three hours after sunset and again before dawn, when insect activity is at its most intense (JNCC 2004).
- 10.1.2 Bat activity over the course of a year reflects the seasonal climate and the availability of food as follows (The Bat Conservation Trust, undated):
January - March - insect prey is scarce, and bats will hibernate alone or in small groups.
April - May - insects are more plentiful and bats will become active. They may become torpid (cool and inactive) in bad weather. Females will start to form groups and will roost in several sites.
June - July - females gather in maternity roosts and give birth to young, which are suckled for several weeks. Males roost alone nearby.
August - September – mothers leave the roost before the young. Bats mate and build up fat for the winter.
October - December – Bats search for potential hibernacula. They become torpid for longer periods and then hibernate.
- 10.1.3 Bats do not stay in the same roost throughout the year. They have different requirements of roosts at different times of the year. During late April/May the bats leave their winter roosts and the females come together to form ‘nursery roosts’, these usually consist of pregnant females along with a few non-breeding and immature females. At this time, the males roost either singly or in small numbers. The single offspring is born during late June early July and can fly within 3-5 weeks.
- 10.1.4 Typical roost sites are cracks and crevices in buildings and other structures but more typically under hanging tiles, slates, soffits and cavity walls of fairly modern buildings or holes and splits in trees.
- 10.1.5 The conditions needed by bats for hibernation require the maintenance of a relatively stable low temperature (2 – 6^o). Suitable sites include; old trees, caves, cellars, tunnels, and icehouses.
- 10.1.6 Whilst the summer roosts consist of single species (although 2 – 3 species can be found within one large structure but occupying separate roost sites), winter sites often consist of 4 – 6 different species of bat, although there is often niche separation.
- 10.1.7 Bats have a complex social structure based on ‘meta populations’ and also utilise other transitional or intermediate roost sites. The several different types of roost, which bats occupy throughout the year, are as follows:
- **Day roost:** 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.
 - **Night roost:** a place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.

- **Feeding roost:** a place where individual bats or a few individuals rest or feed during the night but are rarely present by day.
- **Transitional/occasional roost:** used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
- **Swarming site:** where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites
- **Mating sites:** sites where mating takes place from later summer and can continue through winter.
- **Maternity roost:** where female bats give birth and raise their young to independence.
- **Hibernation roost:** where bats may be found individually or together during winter. They have a constant cool temperature and high humidity. These have to be cold and free from any temperature fluctuation with high humidity. The coldness enables bats to lower their body temperature and become torpid. This saves a lot of energy, enabling them to survive on the fat stores within their bodies that they have built up throughout the summer.
- **Satellite roost:** an alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

10.1.8 The main threats to bats include:

- Habitat loss (e.g. deforestation)
- Loss of feeding areas as a result of modern forestry and farming practices.
- Use of toxic agrochemicals and remedial timber treatment chemicals.
- Disturbance and damage to bat roosts.

10.1.9 Bats have been in decline both nationally and internationally during the latter part of the 20th Century. Bats require a variety of specific habitats in order to meet the basic needs of feeding, breeding, and hibernating and are therefore extremely vulnerable to change such as the loss of flight lines through the removal of hedgerows. It is thought that even the two most common and widespread bats, the common pipistrelle and the soprano pipistrelle, have declined by an estimated 70% (1978-1993 figures). There are a number of bat species, which are now considered seriously threatened with one species, the greater mouse-eared bat being classed as extinct as it is no longer breeding in the U.K.

10.1.10 All European bats are listed in Annex IV of the EC Directive 92/94/EEC ‘The Conservation of Natural Habitats and of Wild Fauna and Flora’ as needing “strict protection”. This is translated into British Law under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. British bats are included under Schedule 5 of the Wildlife & Countryside Act 1981. They can therefore be described as a ‘fully protected’ or ‘protected’ species.

10.1.11 A summary of the legal protection afforded to bats under both European and British law is provided by the Bat Conservation Trust (BCT, 2010): ‘All European bat species and their roosts are listed in Annex IV of the EC Directive 92/94/EEC ‘The Conservation of Natural Habitats and of Wild Fauna and Flora’ as needing “strict protection”. This is implemented in Britain under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. In summary, in the UK, it is an offence to:

- Deliberately capture, injure, or kill a bat;

- Deliberately disturb a bat in a way that would affect its ability to survive, breed or rear young, hibernate or migrate or significantly affect the local distribution or abundance of the species;
- Damage or destroy a roost (this is an absolute offence); and
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.’

10.1.12 The species is also listed in Appendix II of the Bonn Convention (and its Agreement on the Conservation of Bats in Europe) and Appendix II of the Bern Convention (and Recommendation 36 on the Conservation of Underground Habitats). Although these are recommendations and not statutory instruments.

10.1.13 Natural England is the Government body responsible for nature conservation. Local planning authorities must consult them before granting planning permission for any work that would be likely to result in harm to the species or its habitat. Natural England issue “survey” licenses for survey work that requires the disturbance or capture of a species for scientific purposes. They also issue “conservation” licenses that are required for actions that are intended to improve the natural habitat of a European protected species or to halt the natural degradation of its habitat.

10.1.14 ‘Development’ licences are issued by Natural England for any actions that may compromise the protection of a European protected species, including bats, under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. This includes all developments and engineering schemes, regardless of whether or not they require planning permission.

10.1.15 The UK Biodiversity Action Plan states that although the pipistrelle is one of the most abundant and widespread bat species in the UK, it is still thought to have undergone a significant decline in the latter part of this century. The main factors cited for causing loss and decline include:

- A reduction in insect prey abundance, due to high intensity farming practice and inappropriate riparian management.
- Loss of insect-rich feeding habitats and flyways, due to loss of wetlands, hedgerows, and other suitable prey habitats.
- Loss of winter roosting sites in buildings and old trees.
- Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.

10.2 Significance of bat roosts, appraising the nature conservation value;

10.2.1 The significance of bat roosts should be appraised against the following table. Where the extent of the bat roost is unclear a precautionary approach should be taken in evaluating the significance of the roost and the highest potential category should be selected.

Table 10.2.1 Appraisal of significance of bat roosts.

Scale	Summary	Examples
International	Any significant roosting sites for European Annex 2 species	Barbastelle bat roosts are only known applicable feature in East Anglia.
National	Any roosts qualifying as SSSI under the EN criteria.	Details of criteria are given in

		9.1.2 Site Selection Guidelines for Biological SSSI's.
Regional	Any significant bat roosts and features, equivalent in interest to qualifying a site as a Country Wildlife Site.	Breeding and hibernation roosts of most species.
Local	All other sites supporting feeding bats as Wildlife and Countryside Act protected species.	Bats foraging within a structure, night roosts and minor transition roosts.

10.3 Summary of conservation significance of roost types (Bat Mitigation Guidelines, 2004).

Roost type	Development effect	Scale of impact		
		Low	Medium	High
Maternity	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Temporary disturbance outside breeding season	✓		
	Post-development interference			✓
Major hibernation	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction; modification		✓	
	Temporary disturbance outside hibernation season	✓		
	Post-development interference			✓
Minor hibernation	Destruction			✓
	Isolation caused by fragmentation			✓
	Partial destruction, modification		✓	
	Modified management		✓	
	Temporary disturbance outside hibernation season	✓		
	Post-development interference		✓	
	Temporary destruction, then reinstatement	✓		
Mating	Destruction		✓	
	Isolation caused by fragmentation		✓	
	Partial destruction	✓		
	Modified management	✓		
	Temporary disturbance	✓		
	Post-development interference	✓		
	Temporary destruction, then reinstatement	✓		
Night roost	Destruction	✓		
	Isolation caused by fragmentation	✓		
	Partial destruction	✓		
	Modified management	✓		
	Temporary disturbance	✓		
	Post-development interference	✓		
	Temporary destruction, then reinstatement	✓		

NB This is a general guide only and does not take into account species differences. Medium impacts, in particular, depend on the care with which any mitigation is designed and implemented and could range between high and low.

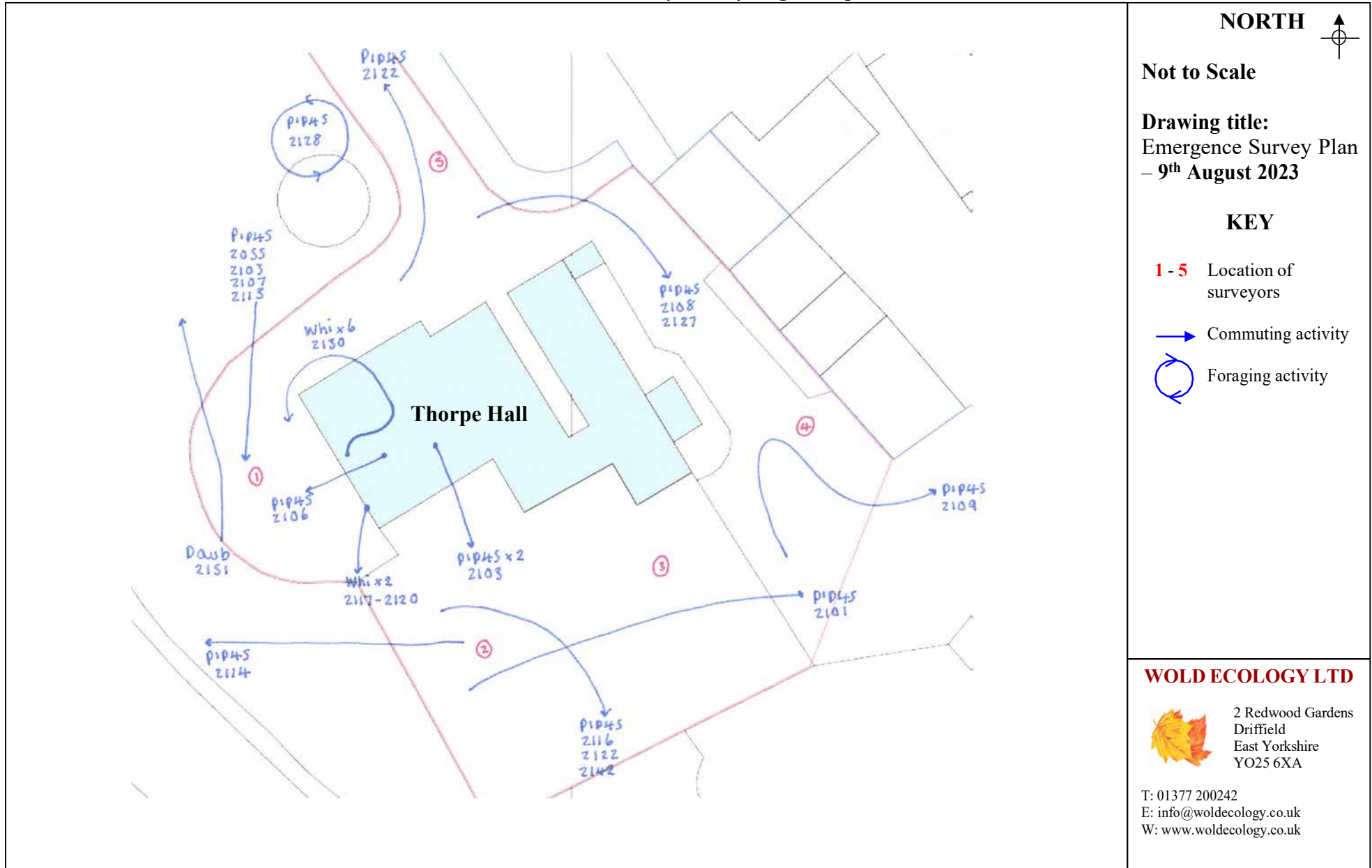
10.4 Bat records for activity surveys conducted in 2023

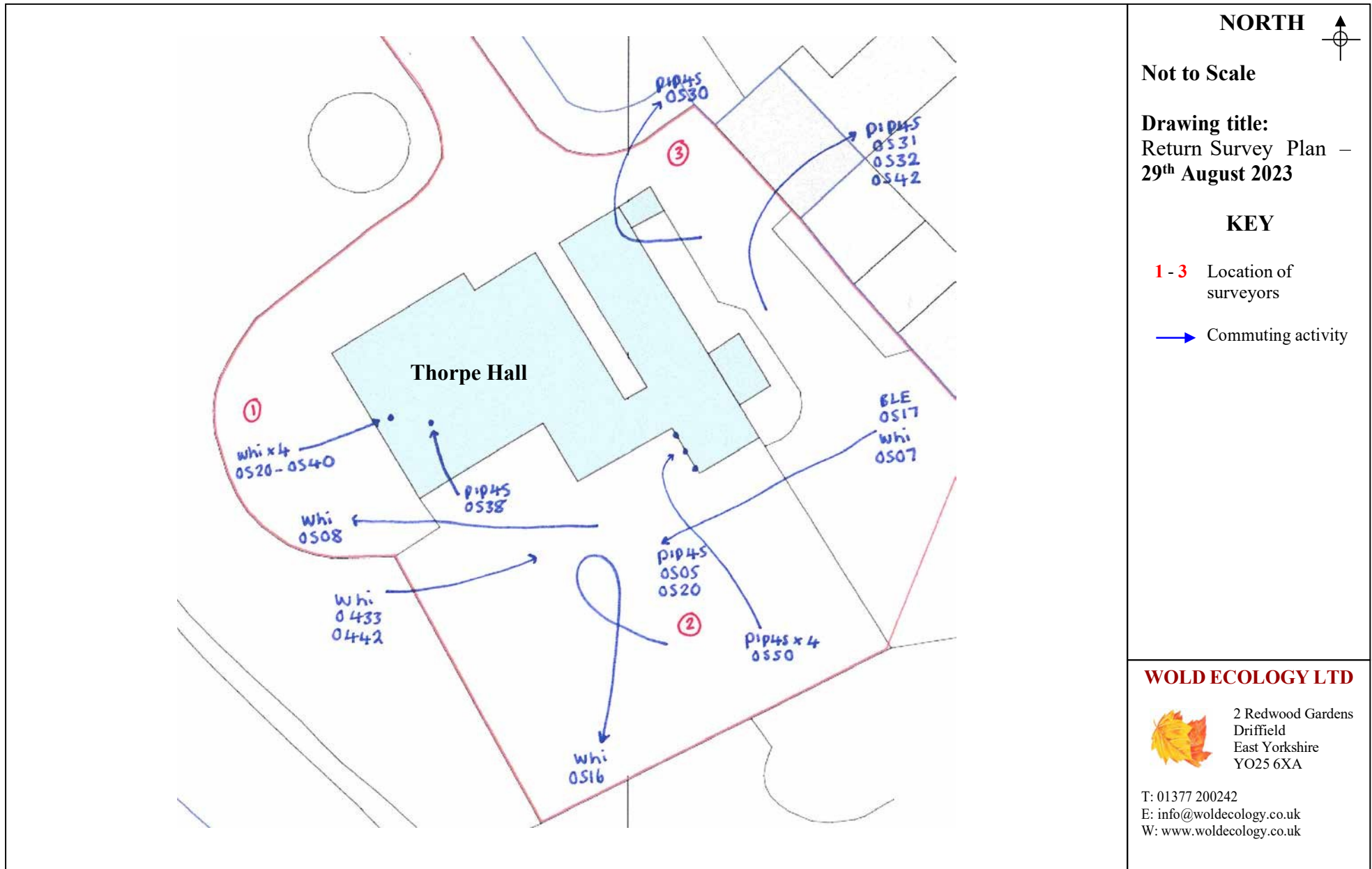
Date – 9 th August 2023					
Loc.	Time	Species	kHz	Direction	Comment
2	2044	Noctule	20		Audible
5	2055	C. Pipistrelle	45	S	Commuting
2	2057	C. Pipistrelle	45		Audible
1	2101	C. Pipistrelle	45		Audible
2	2101	C. Pipistrelle	45	E	Commuting
2	2103	C. Pipistrelle x 2	45	S	Emerged from a gap above the ridge on the south elevation – Roost 1
1	2103	C. Pipistrelle	45	S	Commuting
1	2106	C. Pipistrelle	45	W	Emerged from a gap below a tile on the west elevation – Roost 2
1	2107	C. Pipistrelle	45	S	Commuting
2	2107	C. Pipistrelle	45		Audible
5	2108	C. Pipistrelle	45	S	Commuting
1	2109	C. Pipistrelle	45	S	Commuting
4	2109	C. Pipistrelle	45	E	Commuting
2	2111 – 2116	C. Pipistrelle	45		Audible
1	2113	C. Pipistrelle	45	S	Commuting
1	2114	C. Pipistrelle	45	W	Commuting
2	2116	C. Pipistrelle	45	S	Commuting
1	2117 – 2120	Whiskered x 2	47	S	Emerged from a gap above the eaves on the west elevation – Roost 4
2	2119	C. Pipistrelle	45		Audible
1	2121	C. Pipistrelle	45		Audible
2	2122	C. Pipistrelle	45	S	Commuting
5	2122	C. Pipistrelle	45	N	Commuting
2	2124 – 2129	C. Pipistrelle	45		Audible
5	2127	C. Pipistrelle	45	S	Commuting
5	2128	C. Pipistrelle	45		Foraging
1	2130 – 2140	Whiskered x 6	47	S	Emerged from a gap below a slate on the dormer window – Roost 5
2	2133	C. Pipistrelle	45		Audible
2	2135	C. Pipistrelle	45		Audible
1	2139	C. Pipistrelle	45		Audible
2	2142	C. Pipistrelle	45	S	Commuting

2	2144	Whiskered	47		Audible
2	2147	C. Pipistrelle	45		Audible
1	2149	C. Pipistrelle	45		Audible
2	2149	Noctule	20		Audible
1	2151	Daubenton's	51	N	Commuting
2	2152	Whiskered	47		Audible
1	2154	C. Pipistrelle	45		Audible
2	2155	Whiskered	47		Audible
1	2159	C. Pipistrelle	45		Audible
2 & 5	2201	C. Pipistrelle	45		Audible
5	2204	C. Pipistrelle	45		Audible
1 & 2	2206	C. Pipistrelle	45		Audible
1	2211	Whiskered	47		Audible
5	2211	C. Pipistrelle	45		Audible
2	2213	C. Pipistrelle	45		Audible
2	2216	C. Pipistrelle	45		Audible
2	2223	C. Pipistrelle	45		Audible
2	2227	C. Pipistrelle	45		Audible
1	2229	C. Pipistrelle	45		Audible
2	2232	C. Pipistrelle	45		Audible
2	2236	C. Pipistrelle	45		Audible
Date – 29th August 2023					
1 & 3	0429	C. Pipistrelle	45		Audible
1	0431	Whiskered	47		Audible
3	0432	C. Pipistrelle	45		Audible
2	0433	Whiskered	47	NE	Commuting
3	0433	C. Pipistrelle	45		Audible
3	0435	C. Pipistrelle	45		Audible
3	0437	Noctule	20		Audible
1 & 3	0441	C. Pipistrelle	45		Audible
2	0442	Whiskered	47	NE	Commuting
3	0442	Brown long-eared	39		Audible
1	0443	Whiskered	47		Audible
3	0448	C. Pipistrelle	45		Audible
3	0449	Brown long-eared	39		Audible
3	0452	C. Pipistrelle	45		Audible
1	0456	Whiskered	47		Audible
1	0503	Whiskered	47		Audible
2	0505	C. Pipistrelle	45	SW	Commuting
1	0506	C. Pipistrelle	45		Audible
1	0507	Whiskered	47		Audible

2	0507	Whiskered	47	SW	Commuting
3	0508	Daubenton's	51		Audible
1	0508	Whiskered	47	W	Commuting
3	0509	Whiskered	47		Audible
3	0512	Daubenton's	51		Audible
2	0516	Whiskered	47	S	Commuting
2	0517	Brown long-eared	39	SW	Commuting
2	0520	C. Pipistrelle	45	SW	Commuting
1	0520 – 0540	Whiskered x 4	47		Returned to a gap below a slate on the dormer window – Roost 5
3	0529	C. Pipistrelle	45		Audible
3	0530	C. Pipistrelle	45	NE	Commuting
3	0531	C. Pipistrelle	45	NE	Commuting
3	0532	C. Pipistrelle	45	NE	Commuting
1	0538	C. Pipistrelle	45		Returned to a gap below a tile on the west elevation – Roost 2
3	0542	C. Pipistrelle	45	NE	Commuting
1	0549	C. Pipistrelle	45		Audible
2	0550	C. Pipistrelle x 4	45		Returned to a gap above the eaves on the west elevation – Roost 3

10.5 Bat Activity Survey Flight Maps



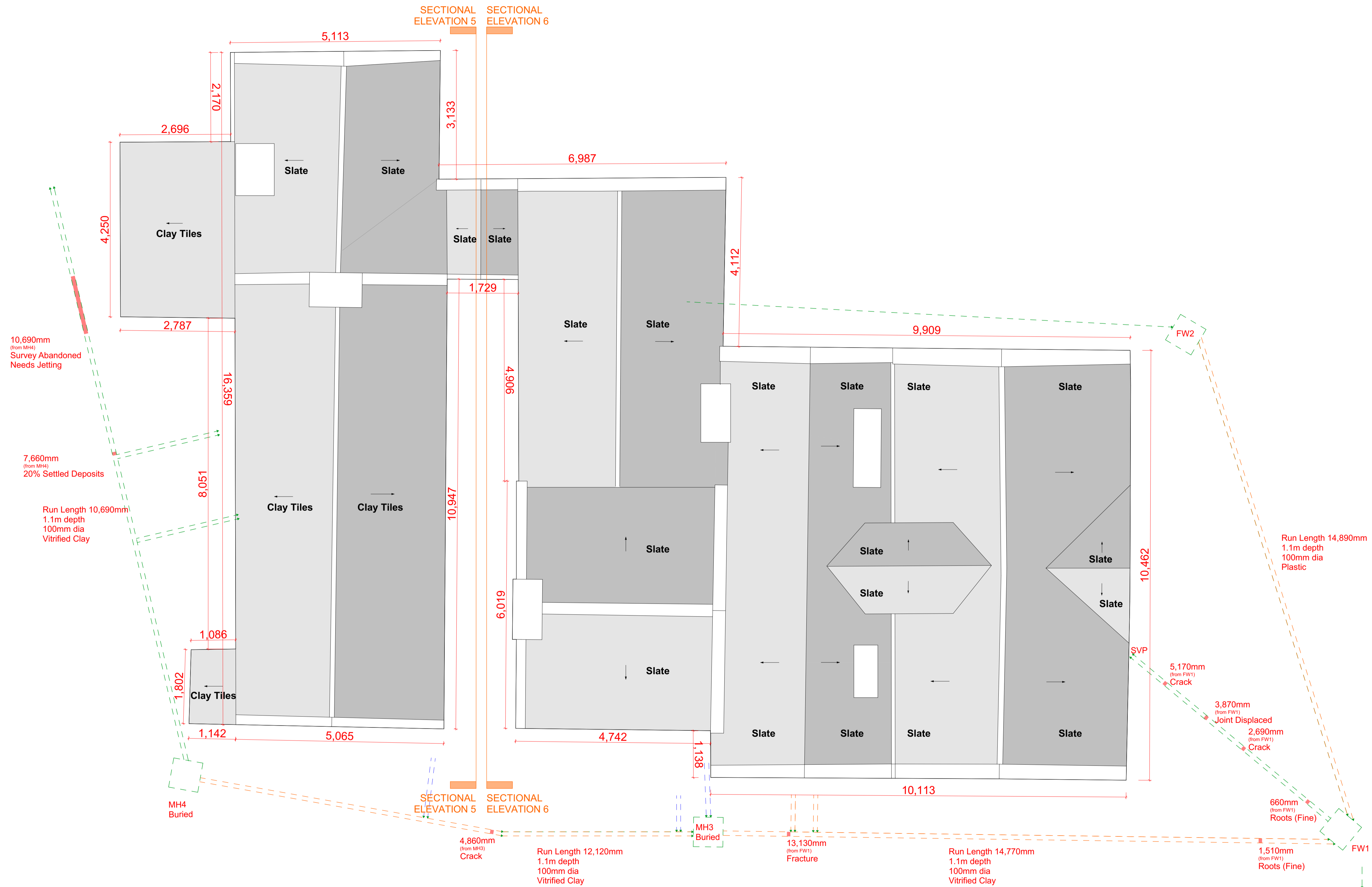
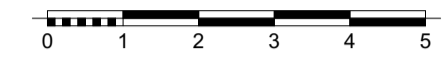
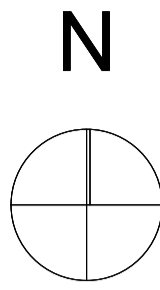


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EXISTING

Existing drainage survey information taken from on site survey conducted by Lanes Rental.

Rev	Date	Drawn	CHK'd	Description

(M - Employer change to brief; C - Client change to brief; E - Consultant; B - Building; ST - Change required by Statutory Authority)



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Address: Middlewood Ln, Fylingthorpe, Whitby YO22 4TT
Client: Mr and Mrs Coop
Drawing: Existing drainage layout

Scale	First Issue Date	Drawn	Checked
1:50	26.06.23	ejd	

Dwg: Type or Client Code Sheet No. Revision Sheet Size

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