NOCTUA ECOLOGY

Bat and Bird Assessment

Ruslin Farm, Butcombe

12th December 2023

Document Control Sheet

Client	Mr & Mrs Vaughan
Project	Ruslin Farm, Butcombe
Report title	Bat and Bird Assessment
Report reference	F024-1r
Version	1.0
Date issued	12th December 2023
Lead surveyor	Lewis Hillier, Director and Principal Ecologist, BSc (Hons), ACIEEM

Role	Version	Name	Date
Author	1.0	Lewis Hillier, Director and Principal Ecologist, BSc (Hons), ACIEEM	12/12/2023

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Executive Summary

Planning permission has been granted for the site to undertake a series of demolition and conversion works to a series of barns located at Ruslin Farm, Rusling Lane, Butcombe, North Somerset, BS40 7XQ, centred on national grid reference ST 51287 62756. In order to inform the planning permission, previous bat survey and assessment work has been undertaken by Crossman Associates in 2017, 2019, 2020, and 2021. The surveys identified a total of nine bat roosts across the Farmhouse, Coal Store, Main Barn, Single Storey Barns, and Wagon House.

Given that the survey data is now out of date, Noctua Ecology Ltd were commissioned to undertake a bat and bird assessment of the site by Mr and Mrs Vaughan to update the previous survey results; and produce an updated mitigation and compensation plan to enable compliance with planning policy and wildlife legislation.

The desk study identified no statutory designated sites relating to bats within a 2km radius of the site. The site is located within Band C of the Bat Consultation Zone for the North Somerset and Mendip Bats SAC. A total of four granted European Protected Species Licence applications relating to bats were identified within a 2km radius of the site.

The bat surveys confirmed the presence of previously identified bat roosts and identified three new bat roosts within the site. The site supported a total of 12 bat roosts within the Farmhouse, Coal Store, Main Barn, Single Storey Barns, and Wagon House comprised of lesser horseshoe bat maternity, satellite, day, and night roosts; greater horseshoe bat day and night roosts; brown long-eared bat day roosts; and common pipistrelle day roosts. The Main Barn, Single Storey Barns, and Wagon House were considered to have moderate potential to support classic hibernation roosts, and the Farmhouse and Coal Store were considered to have moderate potential to support non-classic hibernation roosts. The Dutch Barn and Garage were confirmed to have negligible potential for roosting bats.

The bird surveys identified that the Main Barn and Single Storey Barns were support nesting barn swallow, and the Wagon House support a tawny owl roost. All buildings were considered to be suitable for nesting birds.

The assessment identified that the proposed development could proceed with minimal long-term ecological impact. In addition, the previous mitigation and compensation scheme was considered to be excessive and dis-proportionate for the bat roosts identified within the site. As such, the following mitigation, compensation, and enhancement plan is proposed for the site:

- A Natural England bat mitigation licence will be required prior to any works commencing;
- The licensable works which impact bat roosts will be undertaken during suitable time periods for each building;
- Lesser horseshoe bat will not be left without a suitable maternity roost during the maternity period (May – September inclusive);
- Horseshoe bats will be excluded from relevant buildings prior to the proposed works;
- A pre-works inspection will be undertaken by the Named Ecologist or Accredited Agent;
- A toolbox talk will be provided by the Named Ecologist or Accredited Agent;
- Soft demolition techniques will be adopted (and supervised by the ecologist);

- Provision of a minimum of three alternative bat roosts during the works;
- Provision of compensation and enhancement bat roosts including two bespoke bat roof voids, retention and enhancement of the Coal Store, a new cool roost area, hibernation features, and features for crevice dwelling bats throughout;
- Avoidance of external lighting, or design of a bat sensitive lighting scheme if necessary;
- Installation of tinted windows in discrete locations to reduce light spill;
- Exclusion of barn swallows from relevant buildings prior to nesting bird season;
- Nesting bird survey if works are required during the nesting bird season; and
- Provision of two barn swallow nest bowls within the Coal Store and two Tawny Owl Nest Boxes located on nearby trees to compensate for the loss of nesting bird habitat.

Further advice from an ecologist should be sought if the scope of the proposed work changes, or if the works are delayed by more than 18 months from the date of the most recent survey.

1.0 Introduction

1.1 Site location

1.1.1 The site comprises a series of buildings associated with Ruslin Farm, Rusling Lane, Butcombe, North Somerset, BS40 7XQ, centred on national grid reference ST 51287 62756 (Figure 1).

1.2 Background to the activity

1.2.1 Planning permission is granted for the "*Demolition of existing dwelling (with retention of part of building as bat roost) and erection of 1no. replacement dwelling; Conversion of barn to form home office space and bat roost. Demolition of remaining barns*" (North Somerset Council (NSC) reference number: 22/P/0080/FUL) and for the "*Conversion and extension of existing barn (Sui gerneris use) to create 1no. dwelling (Use Class C3)*" (NSC reference number: 22/P/0079/FUL). The combined proposals include:

- Demolition of the Farmhouse, Garage, and Dutch Barn;
- Conversion of the Main Barn and Single Storey Barns into a new residential dwelling;
- Conversion of the Wagon House into an office annexe;
- Retention of the Coal Store as a bat roost; and
- Construction of a new extension to the western elevation of the Main Barn.

1.2.2 In order to inform the planning permission, previous bat survey and assessment work has been undertaken by Crossman Associates in 2017, 2019, 2020, and 2021 (Crossman Associates 2021 & 2021). The surveys identify a total of nine bat roosts within the site and the reports include detailed mitigation and compensation plans for the site.

1.2.3 Given that the survey data is now out of date, Noctua Ecology Ltd were commissioned to undertake a bat and bird assessment of the site by Mr and Mrs Vaughan to update the previous survey results from 2017, 2019, 2020, and 2021; and produce an updated mitigation and compensation plan to enable compliance with planning policy and wildlife legislation.

1.2.4 At the time of writing, the report was based on the following plans produced by Hill.Reading Architects:

- *Detail,Elevations* (Drawing number: H6817 204 A);
- *Elevations* (Drawing number: H6817 203 A); and
- *Ecological Details, Office Annex and Coal Store* (Drawing number: H6817 220 A).

1.3 Survey objectives

1.3.1 The survey objectives were as follows:

- Search for the presence of, and evidence of, species of bat and bird within the buildings;
- Assess the potential for the presence of species of bat and bird within the buildings;
- Provide recommendations for further surveys, if required;

- Characterise any bat roosts that are present;
- Assess the potential impact of the works on species of bat and bird;
- Inform the design of a mitigation strategy to avoid or minimise potential impacts on species of bat and bird; and
- Advise on any ecological compensation or enhancement requirements.

2.0 Legislation

2.1 Wildlife legislation

2.1.1 The core legislation relating to bats and birds in England is:

- The Wildlife & Countryside Act 1981 (as amended).
- The Conservation of Habitats and Species Regulations 2017 (the "Habitats Regulations").

2.1.2 This legislation provides strict protection for all species of bat and their roosts in England. The legislation states that it is illegal to deliberately capture, injure or kill bats. In addition, it includes protection of bat roosts from damage, destruction and obstruction, and intentionally disturbing bats while they are occupying a roost. A bat roost is defined as any place that a bat regularly uses for rest, shelter or protection. A bat roost is protected regardless of whether bats are present at the time.

2.1.3 The legislation protects wild birds from being intentionally killed, injured or captured from the wild. In addition, it protects active bird nests and eggs from being destroyed, damaged or taken. Birds listed on Schedule 1 are afforded extra protection from intentional disturbance while they are nest building or using a nest, and from disturbing their young while they are dependant.

2.2 Planning policy

2.2.1 The National Planning Policy Framework (NPPF) (MHCLG 2021) sets out the UK Government's planning policies for England and explains how these are expected to be applied. The NPPF specifies that when determining planning applications, local planning authorities should refuse applications that would cause significant harm to biodiversity if the project does not provide adequate mitigation or compensation.

2.2.2 The North Somerset Council (NSC) local policy framework comprises a number of elements, the most relevant to this assessment being:

- Core Strategy (January 2017) (NSC 2017); and
- Supplementary plans and guidance.

2.2.3 Policy CS4 (Nature Conservation) states that NSC will seek to ensure that new development is designed to maximise benefits to biodiversity, incorporating, safeguarding and enhancing natural habitats and features and adding to them where possible. A net loss of biodiversity interest should be avoided, and a net gain achieved where possible. It also emphasises the importance of undertaking ecological surveys and planning to protect, retain and manage existing habitats and species.

2.2.4 Policy CS9 (Green Infrastructure) states that the existing network of green infrastructure will be safeguarded, improved, and enhanced. This policy emphasises the protection of existing green spaces and biodiversity.

2.2.5 Special measures to protect bats are set out in the North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development: Supplementary Planning Document (SPD) (NSC 2018). This was adopted by NSC in January 2018. The SPD focuses on the landscapes surrounding the SAC's component sites, as they are considered important in providing the foraging and commuting habitat needed to maintain the favourable conservation status of horseshoe bat (*Rhinolophus* spp.) populations supported by the SAC.

3.0 Methodology

3.1 Desk study

3.1.1 The desk study comprised a compilation of ecological information relating to the site and the area within a 2km radius of the site. The following information was gathered:

- The Multi-Agency Geographic Information for the Countryside (MAGIC) website was consulted on the 10th December 2023 to identify statutory designated sites of conservation importance relating to bats and previously granted European Protected Species Licence applications. Where European Protected Species Licence applications had modifications, only the most recent licence was listed unless previous licences were considerably different;
- The Natural England website was used to obtain citation details of the statutory designated sites;
- MAGIC and the Google Earth websites were used to assess the connectivity of the site to local habitats;
- Previous bat survey and assessment work undertaken by Crossman Associates in 2017, 2019, 2020, and 2021 (Crossman Associates 2021 & 2021) was analysed to understand the known bat roost assemblage within the site.

3.2 Bats

3.2.1 The bat surveys were completed in accordance with the following best practice guidance:

- Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition).* The Bat Conservation Trust, London;
- Mitchell-Jones A. and McLeish A. (2004). *Bat Workers Manual (3rd Edition).* Joint Nature Conservation Committee, Peterborough; and
- Mitchell-Jones A. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

Preliminary update bat assessment

3.2.2 A preliminary update bat assessment survey was undertaken on the 25th September 2023 by Lewis Hillier, Bachelor of Science (BSc) with Honours (Hons), associate member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) and holder of a Natural England Class Licence CL18 (Bat Survey Level 2).

3.2.3 The survey involved systematically inspecting the buildings for any evidence of bat activity in the form of live or dead bats, droppings, feeding remains, perch abrasions, staining or marks from grease secretions attributable to bats. In addition, the buildings were assessed for potential roosting features of value to bats including crevices, perches, and access points. The buildings were then categorised as having either confirmed, high, moderate, low, or negligible potential to support roosting bats according to best practice guidance based on the evidence gathered during the survey. In addition, ad-hoc inspection surveys to search for the presence of roosting bats were undertaken within the Main Barn, Single Storey Barns, and Coal Store before and after each bat roost survey.

Bat roost surveys

3.2.4 Two dusk bat roost surveys of the buildings were undertaken to provide an update and revalidate the previous survey results. The surveys were led by Lewis Hillier, BSc (Hons), ACIEEM, and holder of a Natural England Level 2 Bat Licence (CL18). Surveys were undertaken on the 24th August 2023 and 25th September 2023 in suitable weather conditions for bats to be active.

3.2.5 The surveys were undertaken with four or five suitably experienced surveyors and five infrared cameras. Surveyors and infrared cameras were positioned to observe all elevations with features of potential value for bats. The dusk bat roost surveys commenced 15 minutes before sunset and continued for a minimum of 90 minutes after sunset. Surveyors and infrared cameras were equipped with either an Anabat Scout, Peersonic RPA3, Pettersson M500-384u, or Echo Meter Touch 2 Pro bat detector. Surveyors were in radio contact with each other throughout the surveys. Surveyors recorded bat activity with the objective of observing any bats that entered or emerged from the buildings. Any incidental observations of bat activity were also recorded. The infrared cameras used were four Canon XA11 camcorders and one Saance CCTV system supported by and infrared floodlight and infrared torch. The infrared cameras were used as to cover an elevation, apart from one which was used as a Night Vision Aid (NVA) to a surveyor on the first survey. Recordings of bats were analysed using Kaleidoscope Pro and identified with the aid of the most recent literature (Middleton *et al.* 2014, Russ 2021, Russ 2012). Infrared camera recordings were reviewed using VLC Media Player.

3.2.6 A dawn bat roost survey was not considered necessary because bat roosts and access points were known from previous surveys, and infrared cameras were used to enhance the survey effort. This is considered to be acceptable in light of the *Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys* released by the Bat Conservation Trust (BCT 2022).

3.3 Birds

3.3.1 A preliminary bird assessment survey was undertaken on the 25th September 2023 by Lewis Hillier, BSc (Hons), ACIEEM.

3.3.2 The survey involved systematically searching for evidence of nesting birds within the buildings in the form of live and dead birds, feeding remains, pellets, active and inactive nests, eggs, eggshells, droppings, and feathers.

3.4 Constraints

3.4.1 The bat and bird surveys provide a snapshot of bat and bird activity associated with the site on the dates of the surveys. The surveys were not an exhaustive investigation of the use of the buildings by species of bat and bird.

3.4.2 With regard to the acoustic detection of bats, it should be noted that the wide ranges of echolocation intensity exhibited between individual bat species makes it probable that echolocation sampling will favour those species with high intensity echolocation calls. Furthermore, some bat species cannot be identified with absolute certainty from their

ultrasonic calls. Therefore, bat sonogram recordings are identified to the most accurate level appropriate based on the information available.

3.4.3 The south-eastern roof void of the Farmhouse was inaccessible owing to a very small access hatch in an awkward location which was sealed shut by paint. In addition, the northern roof void was only accessed from the access hatch, the combination of small height and thick layers of insulation made it unsafe to access fully. This was not considered to be a major constraint given the extensive survey effort over recent years, and that access was possible into the other roof void within the Farmhouse.

3.4.4 The first-floor areas of the Main Barn were constructed with deteriorating timbers which were considered unsafe to access. As such, these areas were assessed from the edge of the floors by ladder and using binoculars only. This was not considered to be a major constraint given that bat evidence could clearly be seen using this method.

3.4.5 The Wagon House was in a state of disrepair and considered unsafe to access. As such, an assessment was undertaken externally, and from the open southern elevation only. This was not considered to be a major constraint given the extensive survey effort over recent years.

3.4.6 Acoustic recordings of brown long-eared bat (*Plecotus auritus*) can be difficult to distinguish from the rarer grey long-eared bat (*Plecotus autriacus*). However, previous surveys included DNA analysis of bat droppings which confirmed the presence of roosting brown long-eared bat, and the site is not located within range of known grey long-eared bat populations. As such, all recordings of long-eared bat species (*Plecotus* sp.) were assumed to be brown long-eared bat given the historic DNA analysis evidence. It was not considered to be proportionate to undertake further DNA analysis.

3.4.7 Owing to the date of commission, it was not possible to undertake a survey during peak maternity season. However, this was not considered to be a major constraint given the historic survey data available for the site, and the known presence of a lesser horseshoe bat maternity roost.

4.0 Results

4.1 Site context

4.1.1 The site is located to the north of the village of Butcombe, North Somerset (Figure 1). The site comprises a series of dilapidated buildings associated with Ruslin Farm.

4.1.2 The landscape surrounding the site is dominated with arable and pastoral farmland interspersed with small patches of woodland. In addition, there are occasional villages throughout the landscape. There are some small streams and ponds within the local landscape, and notably Blagdon Lake is located approximately 2km to the south of the site. The habitats throughout the landscape are well-connected to the site with an extensive network of hedgerows.

4.2 Statutory designated sites

4.2.1 The data search identifies no statutory designated sites relating to bats within a 2km radius of the site.

4.2.2 The site is located within Band C of the Bat Consultation Zone for the North Somerset and Mendip Bats Special Area of Conservation (SAC). This classification is based on the North Somerset Council's supplementary guidance which aims to: (1) deliver a clear approach to considering impacts of development on the SAC; and (2) provides a consistent basis for understanding how horseshoe bats (*Rhinolophus* spp.) use the wider landscape around the SAC (NSC 2018). For sites located within Band C, there is a requirement for a heightened survey effort if the proposal has the potential to impact the foraging and commuting habitat of horseshoe bats. Given that the proposal does not include any changes to potential foraging and commuting habitats associated with horseshoe bats, this is not considered further in this report.

4.3 Bat records

4.3.1 A total of four granted European Protected Species Licence applications relating to bats were identified within a 2km radius of the site (Table 1).

Table 1. Records of granted European Protected Species Licence applications relating to bats within 2km of the site (table continues).

Case reference	Species	Licence start – end year	Approx. Distance / direction from site	Licenced activity
EPSM2010-2194	Common pipistrelle, soprano pipistrelle, brown long-eared bat	2010-2012	1.1km / North-east	Damage of a breeding site and resting place

Case reference	Species	Licence start – end year	Approx. Distance / direction from site	Licenced activity
2020-49442-EPS-MIT	Brown long-eared bat, soprano pipistrelle	2020-2025	1.7km / South	Damage of a resting place
2020-48580-EPS-MIT	Brown long-eared bat, common pipistrelle	2021-2026	1.8km / North-east	Destruction of a resting place
EPSM2011-2821	Common pipistrelle	2011-2013	1.9km / South-east	Destruction of a resting place

4.3.2 Analysis of historical bat survey data of the site is provided in section 4.5.

4.4 Building descriptions

Farmhouse

4.4.1 The Farmhouse was a two storey building constructed with rendered walls supporting an M-shaped roof covered with clay double Roman roof tiles and sealed clay ridge tiles (Photos 1-2, Figure 2). Stone parapets were present at the gable ends, along with three chimneys constructed with red brick lined with lead flashing. A fascia was present on the northern elevation, and PVC gutters were present on the northern and southern elevations. There was a lean-to single storey extension covered with clay pantiles located on the western elevation, which extended further into a breezeblock garage structure to the south. The Coal Store adjoined the northern elevation of the single storey extension.

4.4.2 Internally, the Farmhouse supported three roof voids with exposed collar beam timber truss systems and the roofs were lined with bitumen roofing felt (Photos 3-4, Figure 2). The gable ends supported bare stone and mortar walls, and the floors were lined with fibreglass insulation. The south-eastern roof void was inaccessible but was considered likely to be similar to the other roof voids. The internal conditions in both accessible roof voids were recorded as dark, warm, dry, still, uncluttered, and heavily cobwebbed.

Photo 1. The eastern and southern elevations of the Farmhouse.

Photo 2. The northern and western elevations of the Farmhouse.

Photo 3. The south-western roof void of the Farmhouse.

Photo 4. The northern roof void of the Farmhouse.

Coal Store

4.4.3 There was a small Coal Store adjoining the northern elevation of the single storey extension of the Farmhouse (Photo 5, Figure 2). The walls were a combination of breezeblock and stone and mortar, supporting a monopitched roof covered with clay pantiles. There was PVC gutters and a timber door which was permanently ajar on the western elevation. Internally, there were exposed roof timbers present and the roof was lined with bitumen roofing felt (Photo 6). The walls comprised exposed stonework and blockwork and the floor was bare earth. Internal conditions were recorded as cool, humid, still, uncluttered, and lightly cobwebbed.

Photo 5. The western elevation of the Coal Store.

Photo 6. An internal view of the Coal Store.

Main Barn

4.4.4 The Main Barn was two storeys tall and located to the west of the Farmhouse (Photos 7-8, Figure 2). It was constructed with traditional thick stone and mortar walls supporting a double pitched roof covered with clay double Roman roof tiles and sealed clay ridge tiles. Stone parapets were present at the northern and southern gable ends, and timber fascias were present on the eastern and western elevations. The northern elevation was heavily clad with ivy. There was a single storey lean-to extension on the western elevation with a corrugated metal roof, and a single storey garage structure, both of which were open-sided. There were timber barn doors on the eastern and western elevations which were left open or had large gaps allowing access into the Main Barn at all times. The Main Barn adjoined the Single Storey Barns at the southern elevation.

4.4.5 Internally, the Main Barn had a large open space to the apex, which supported an exposed timber collar beam truss system and was lined with bitumen roofing felt (Photos 9-10, Figure 2). The walls were bare stone and mortar, and the floors were bare. There were two timber platforms within the northern and southern thirds of the barn creating a first floor "hay loft". The northern platform was open below. The southern platform had a breezeblock wall separating it as an enclosed room from the other areas which could be accessed from a door from the outside of the barn on the eastern elevation. There was a hole on the first floor of the southern section allowing permanent access to the room below. The internal conditions in both accessible roof voids were recorded as dark, cool, dry, draughty, uncluttered, and not cobwebbed.

Photo 7. The northern elevation of the Main Barn.

Photo 8. The eastern elevation of the Main Barn.

Photo 9. An internal view of the Main Barn.

Photo 10. An internal view of the Main Barn showing the floor and northern platform area.

Single Storey Barns

4.4.6 The Single Storey Barns were located to the south-west of the Main Barn and adjoined the southern elevation. The walls were constructed with stone and mortar supporting a double pitched roof covered with clay pantiles and sealed ridge tiles (Photos 11-12, Figure 2). Timber bargeboards were present at the gable ends, and PVC gutters were present on the northern and southern elevations. There were open doorways and windows throughout the barns.

4.4.7 Internally the Single Storey Barns were open to the apex and supported exposed timber collar beam truss systems lined with timber sarking (Photos 13-14, Figure 2). The walls comprised white-washed stone and mortar, and the floors were bare and dirty concrete. There was continuous access between the two Single Storey Barns via an open doorway. The internal conditions were recorded as light, cool, dry, draughty, uncluttered, and not cobwebbed.

Photo 11. The southern and eastern elevations of the Single Storey Barns (eastern section).

Photo 12. The southern and eastern elevations of the Single Storey Barns (western section).

Photo 13. An internal view of the western section of the Single Storey Barns (photo taken at night).

Photo 14. An internal view of the western section of the Single Storey Barns (photo taken at night).

Wagon House

4.4.8 The Wagon House was located to the north-east of the Farmhouse. It was two storeys high and constructed with thick stone and mortar walls supporting a double pitched roof covered with clay double Roman roof tiles and sealed clay ridge tiles (Photos 15-16, Figure 2). The entire structure was heavily clad with ivy and was in a state of disrepair with large holes in the roof structure. The Wagon House was built into a bank which rose to the north. There was a permanently open window on the first floor at the northern elevation, and the southern elevation was open at the ground level.

4.4.9 Internally, there was a first floor which was fully open at the southern extent from the ground floor to the apex (Photos 17-18). No roof voids were present, and the roof supported an exposed timber truss system lined with timber sarking. The first floor was not accessible owing to health and safety concerns. The ground floor supported bare stone and mortar walls with a bare earth floor, and various farming machinery was stored within the building. The internal

conditions were recorded as slightly dark, cool, damp, draughty, uncluttered, and slightly cobwebbed.

Photo 15. The eastern elevation of Wagon House.

Photo 16. The southern elevation of the Wagon House.

Photo 17. An internal view of the first floor of the Wagon House (photo taken at night).

Photo 18. An internal view of the ground floor of the Wagon House (photo taken at night).

Dutch Barn

4.4.10 The Dutch Barn was located to the west of the Main Barn, it was open-sided with a metal frame structure supporting a rounded corrugated metal roof (Figure 2). There were no enclosed areas within the building. The internal conditions were recorded as bright, cool, damp, very draughty and exposed, uncluttered, and not cobwebbed.

Garage

4.4.11 The Garage adjoined the western elevation of the Single Storey Barns (Figure 2). It was constructed with breezeblock walls supporting a corrugated metal roof. The northern and southern elevations were open. The internal conditions were recorded as light, cool, damp, very draughty and exposed, uncluttered, and not cobwebbed.

4.5 Bat survey

Analysis of previous survey data

4.5.1 Previous bat survey and assessment work undertaken by Crossman Associates in 2017, 2019, 2020, and 2021 was analysed (Crossman Associates 2021 & 2021). Survey effort included bat scoping surveys and dusk bat roost surveys (emergence surveys) (Table 2). Given that the most recent dusk bat roost surveys were undertaken in 2019, it was considered that updated surveys were required in 2023.

Table 2. Previous bat survey effort.

Building	Survey effort per year			
	2017	**2019**	**2020**	**2021**
Farmhouse	1x Bat scoping survey 2x Dusk bat roost survey	1x Bat scoping survey 5x Dusk bat roost survey	1x Bat scoping survey	1x Bat scoping survey
Coal Store	1x Bat scoping survey 2x Dusk bat roost survey	1x Bat scoping survey 5x Dusk bat roost survey	1x Bat scoping survey	1x Bat scoping survey
Main Barn	1x Bat scoping survey 2x Dusk bat roost survey	1x Bat scoping survey 5x Dusk bat roost survey	1x Bat scoping survey	1x Bat scoping survey
Single Storey Barns	1x Bat scoping survey 2x Dusk bat roost survey	1x Bat scoping survey 5x Dusk bat roost survey	1x Bat scoping survey	1x Bat scoping survey
Wagon House	1x Bat scoping survey 2x Dusk bat roost survey	1x Bat scoping survey 3x Dusk bat roost survey	1x Bat scoping survey	1x Bat scoping survey

4.5.2 The previous bat survey work identified a total of nine bat roosts throughout the site for lesser horseshoe bat (*Rhinolophus hipposideros*), greater horseshoe bat (*Rhinolophus ferrumequinum*), brown long-eared bat, and common pipistrelle (*Pipistrellus pipistrellus*) (Table 3). The presence of brown long-eared bat was confirmed with DNA analysis. The assessments determined that all buildings had negligible potential for bat hibernation roosts.

Table 3. Known bat roosts within the site identified by previous survey work.

Building	Species	Roost type	No. of bats	Roost location	Access point
Farmhouse	Brown long-eared bat	Day	≤3	Unknown - Likely to be perched within the exposed timber truss system and/or within crevices between roof tiles and roof lining	Unknown – Likely to be via gaps below lifted tiles
	Common pipistrelle	Day	≤3	Unknown - Likely to be between roof tiles and roof lining	Lifted tiles at the eaves on the southern elevation
Coal Store	Lesser horseshoe bat	Satellite	≤20	Perched within the exposed timber truss system	A gap in the doorway located on the western elevation
Main Barn	Lesser horseshoe bat	Maternity	≤20	Perched within the exposed timber truss system	Open doorway located on the eastern elevation
	Brown long-eared bat	Day	≤3	Perched within the exposed timber truss system and likely within crevices between roof tiles and roof lining	Unknown – Likely open doorway located on the eastern elevation
Single Storey Barns	Common pipistrelle	Day	≤3	Unknown - Likely to be between roof tiles and roof lining	An open window located on the southern elevation
Wagon House	Greater horseshoe bat	Day	≤3	Perched within an old chimney located in the north-eastern corner	A hole located within the eastern roof pitch
	Lesser horseshoe bat	Day	≤3	Perched within an old chimney located in the north-eastern corner	A hole located within the eastern roof pitch
	Brown long-eared bat	Day	≤3	Perched within the exposed timber truss system and likely within crevices between roof tiles and roof lining	Unknown – Likely one of the holes in the roof or open windows/elevations

Preliminary update bat assessment

4.5.3 The preliminary update bat assessment survey identified evidence of bats through the presence of roosting bats and bat droppings (Table 4, Photos 19-22, Figure 2). No DNA analysis of bat droppings was undertaken given that historic surveys included DNA analysis. The results of previous DNA analysis were used along with surveyor judgement to determine which species produced the identified bat droppings. Bat droppings identified were mostly in expected locations and appeared to be from expected species. The only new evidence was

lesser horseshoe bat and brown long-eared bat droppings located within the Single Storey Barns which were not previously recorded.

Table 4. Summary of evidence of roosting bats identified (Figure 2).

Building	Feature	Species	Description of evidence identified
Farmhouse	South-western roof void	Brown long-eared bat	A cluster of approximately 100-200 fresh droppings below the apex (Photo 19), and occasional scattered droppings throughout roof void. There was also thousands of small rodent droppings and a large inactive wasp nest.
Coal Store	Internal space	Lesser horseshoe bat	Scattered fresh droppings throughout the Coal Store. No notable clusters were identified, however the floor was damp and dirty making detection of droppings difficult.
Main Barn	Exposed timber truss system	Lesser horseshoe bat	One active bat was observed roosting perched within the northern portion of the Main Barn.
	First floor floors	Lesser horseshoe bat	A cluster of approximately hundreds of thousands of droppings was located below the apex in the northern portion of the Main Barn (Photo 20). There were two other clusters of approximately tens of thousands of droppings located below the apex in the southern portion of the main barn.
	Ground floor	Lesser horseshoe bat	A cluster of approximately 500-1000 fresh droppings was located within the northern portion of the ground floor.
	Ground floor southern room	Lesser horseshoe bat	A cluster of approximately 500-1000 fresh droppings and insect feeding remains were located within the ground floor southern room (Photo 21).
Single Storey Barns	Eastern section	Lesser horseshoe bat	A scattering of approximately 10 fresh droppings were located below the apex (Photo 22).
	Eastern section	Brown long-eared bat	A scattering of approximately 10 fresh droppings were located below the apex (Photo 22).
	Western section	Pipistrelle species	A cluster of approximately 10 fresh pipistrelle species droppings were located on the windowsill.
Wagon House	Ground floor	Lesser horseshoe bat	Scattered fresh droppings at a low density were located in the southern section (the only area which could be viewed safely).
	Ground floor	Brown long-eared bat	Scattered fresh droppings at a low density were located in the southern section (the only area which could be viewed safely).

Photo 19. The cluster of brown long-eared bat droppings within the south-western roof void of the Farmhouse.

Photo 20. The large cluster of lesser horseshoe bat droppings within the northern portion of the Main Barn.

Photo 21. The cluster of lesser horseshoe bat droppings and insect feeding remains within the ground floor southern room.

Photo 22. The scattering of lesser horseshoe bat and brown long-eared bat droppings within the Single Storey Barns.

4.5.4 No other evidence attributable to roosting bat was identified. The survey confirmed that the Farmhouse, Coal Store, Main Barn, Single Storey Barns, and Wagon House were active bat roosts. The Garage and Dutch Barn were both considered to be too exposed and light, with a lack of crevice features suitable for roosting bats. Given that no evidence of roosting bat was identified within the Garage and Dutch Barn, the two buildings were considered to have negligible potential to support roosting bats.

4.5.5 The Main Barn, Single Storey Barns, and Wagon House were traditionally built barns with thick stone walls and all support known bat roosts. However, it was considered that temperatures would fluctuate regularly during the winter given the open nature of these barns, reducing the likelihood of producing the stable cool conditions typically required for hibernation. As such, these buildings were considered to have moderate suitability to support classic bat hibernation roosts, particularly for vespertilionid bats within crevices in the stone and mortar walls. The Farmhouse and Coal Store were not considered to support typical features of hibernation roosts. However, the presence of known bat roosts indicated that the two

buildings had moderate potential to support non-classic hibernation roosts. The Garage and Dutch Barns were considered to have negligible potential for bat hibernation roosts.

Bat roost surveys

4.5.6 The bat roost survey results were detailed within Tables 8-9 in Appendix A and were shown within Figure 3. The surveys confirmed the presence of the majority of the previous bat roosts identified within the site, and also identified two new night roosts for greater horseshoe bat and lesser horseshoe bat, and one day roost for brown long-eared bat within the Single Storey Barns. See Table 5 below for a summary of all bat roosts within the site, including all bat roosts identified by previous surveys. The site supports a total of 12 bat roosts.

Table 5. Summary of bat roosts identified from previous and current survey work (table continues).

Building	Species	Roost type	No. bats	Roost location	Access point (Figure 3)
Farmhouse	Brown long-eared bat	Day	≤3	Unknown - Likely to be perched within the exposed timber truss system and/or within crevices between roof tiles and roof lining	Lifted tiles on the southern pitch of the roof (Access point 1)
	Common pipistrelle	Day	≤3	Unknown - Likely to be between roof tiles and roof lining	Lifted tiles at the eaves on the southern elevation (Access point 2)
Coal Store	Lesser horseshoe bat	Satellite	≤20	Perched within the exposed timber truss system	A gap in the doorway located on the western elevation (Access point 3)
Main Barn	Lesser horseshoe bat	Maternity	≤20	Perched within the exposed timber truss system	Open doorway located on the eastern elevation (Access point 4) and western elevation (Access point 5)
	Brown long-eared bat	Day	≤3	Perched within the exposed timber truss system and likely within crevices between roof tiles and roof lining	Unknown – Likely open doorway located on the eastern and/or western elevation (Access points 4 and 5)
Single Storey Barns	Common pipistrelle	Day	≤3	Unknown - Likely to be between roof tiles and roof lining	An open window located on the southern elevation (Access point 9), and lifted tiles on the southern roof pitches (Access points 7 and 8)
	Greater horseshoe bat	Night	≤3	Perched within the exposed timber truss system	An open doorway located on the eastern elevation (Access point 6)

Building	Species	Roost type	No. bats	Roost location	Access point (Figure 3)
	Lesser horseshoe bat	Night	≤3	Perched within the exposed timber truss system	An open doorway located on the eastern elevation (Access point 6), and open window located on the southern elevation (Access point 9)
	Brown long-eared bat	Day	≤3	Perched within the exposed timber truss system and likely within crevices between roof tiles and roof lining	An open doorway located on the eastern elevation (Access point 6)
Wagon House	Greater horseshoe bat	Day	≤3	Perched within an old chimney located in the north-eastern corner	A hole located within the eastern roof pitch, and an open window located on the northern elevation (Access point 11)
	Lesser horseshoe bat	Day	≤3	Perched within an old chimney located in the north-eastern corner	A hole located within the eastern roof pitch, and the open southern elevation (Access point 10)
	Brown long-eared bat	Day	≤3	Perched within the exposed timber truss system and likely within crevices between roof tiles and roof lining	Unknown – Likely one of the holes in the roof or open windows/elevations

4.5.7 General commuting and foraging bat activity was considered to be moderate throughout the surveys and was comprised of common pipistrelle, soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat, serotine (*Eptesicus serotinus*), noctule (*Nyctalus noctula*), greater horseshoe bat, and Myotis species (*Myotis* spp.) (Appendix A). Bats were seen commuting through the site, but many recordings of general bat activity were heard but not seen. No significant foraging areas were identified.

4.6 Bird survey

4.6.1 The preliminary bird assessment survey identified many inactive barn swallow (*Hirundo rustica*) nests within the Main Barn and Single Storey Barns (Photo 23, Figure 2). It was considered likely that the Wagon House also supported nesting barn swallow. In addition, all of the buildings within the site contained crevices, cavities, and ledges which could support nests of other bird species capable of nesting within buildings.

4.6.2 The surveys on the 24th August 2023 and 25th September 2023 also identified a roosting tawny owl (*Strix aluco*) within the Wagon House (Photo 24, Figure 2).

Photo 23. Two inactive barn swallow nests located within the Single Storey Barns.

Photo 24. The tawny owl roosting within the Wagon House on the 24th August 2023.

5.0 Discussion

5.1 Bats

5.1.1 The bat surveys indicate that the site supports a total of 12 bat roosts within the Farmhouse, Coal Store, Main Barn, Single Storey Barns, and Wagon House. The conservation status of the identified bat roosts within the site ranges from importance at the site to country level. The proposed works will result in the destruction of the majority of bat roosts identified within the site, and in the absence of mitigation could result in harm to individual bats (Table 6, Figure 4). As such, a Natural England bat mitigation licence will be required along with a suitable mitigation and compensation plan in order to undertake the proposed works lawfully.

Table 6. Summary of all bat roosts identified within the site and the impact of the proposed works.

Building	Species	Roost type	No. bats	Conservation status	Impact
Farmhouse	Brown long-eared bat	Day	≤3	Site	Roost will be destroyed
	Common pipistrelle	Day	≤3	Site	Roost will be destroyed
Coal Store	Lesser horseshoe bat	Satellite	≤20	County	Roost will be modified
Main Barn	Lesser horseshoe bat	Maternity	≤20	County	Roost will be destroyed
	Brown long-eared bat	Day	≤3	Site	Roost will be destroyed
Single Storey Barns	Common pipistrelle	Day	≤3	Site	Roost will be destroyed
	Greater horseshoe bat	Night	≤3	Site	Roost will be destroyed
	Lesser horseshoe bat	Night	≤3	Site	Roost will be destroyed
	Brown long-eared bat	Day	≤3	Site	Roost will be destroyed
Wagon House	Greater horseshoe bat	Day	≤3	Local	Roost will be destroyed
	Lesser horseshoe bat	Day	≤3	Local	Roost will be destroyed
	Brown long-eared bat	Day	≤3	Site	Roost will be destroyed

5.1.2 The Main Barn, Single Storey Barns, and Wagon House are considered to have moderate suitability to support classic hibernation roosts, particularly within the crevices in the masonry. The Farmhouse and Coal Store are considered to have moderate potential to support non-classic hibernation roosts. Further hibernation surveys are considered likely to be inconclusive because the features suitable for hibernation would be impossible to search thoroughly. In addition, due to the open nature of the buildings, any internal static bat detector recordings would be difficult to define as bat roosting activity. As such, works should avoid the winter period to avoid potentially impacting hibernating bats, and compensation for hibernating bats should be included as a precaution.

5.1.3 The Garage and Dutch Barn are considered to have negligible potential to support roosting bats. Therefore, no further survey or licence considerations are required for these buildings.

5.1.4 It is unknown whether there will be any additional external lighting of the site following the proposed development. General commuting and foraging bat activity within close proximity of the site was moderate throughout the surveys. As such, any new external lighting will require careful consideration to ensure there will be no negative impacts on bat activity, or

any bat roosts. It is particularly important to avoid increased light spill on the hedgerow located to the north of the buildings and any bat roost access points.

5.1.5 The granted planning permissions for the site include a bat mitigation, compensation, and enhancement scheme which was approved by North Somerset Council. However, this is considered to be over and above what is necessary, dis-proportionate for the bat roosts identified within the site, and drastically limits the available living space available for new tenants. As such, the site has been re-designed and a new mitigation, compensation, and enhancement scheme is provided which is considered to provide the same conservation benefits for bats, but also provide more liveable space to the tenants.

5.1.6 Overall, the site is considered to have a conservation significance in relation to bats at the county level, owing to the presence of a maternity roost of a rarer species (lesser horseshoe bat), along with other bat roosts. Provided that suitable mitigation and compensation is included within the design, it is considered unlikely that the works will have a negative impact on bats at the county level in the long-term.

5.2 Birds

5.2.1 The Main Barn and Single Storey Barns are known to support nesting barn swallow, and the Wagon House is known to support a tawny owl roost. In addition, all buildings within the site are considered to support features suitable for nesting birds. The proposed works have the potential to destroy bird nests if they are present within the buildings. Therefore, providing suitable mitigation measures are adhered to ensure that no active bird nests are impacted by the proposed works, and compensatory nesting and roosting habitat is provided, it is considered unlikely that the proposed development would have a negative impact on birds.

6.0 Mitigation, Compensation, and Enhancement Plan

6.1 Bats

6.1.1 To undertake the works lawfully, a Natural England bat mitigation licence will be required prior to any works commencing. The licence must include provisions for lesser horseshoe bat maternity, satellite, day, and night roosts; greater horseshoe bat day and night roosts; brown long-eared bat day roosts; and common pipistrelle day roosts. In addition, provision of hibernation features for all species should be provided as a precaution. The licence must ensure that lesser horseshoe bat is not left without a suitable maternity roost during the maternity period (May – September inclusive).

6.1.2 An application for a mitigation licence will only be considered by Natural England if all consents necessary for the proposed works are in place and any conditions relating to wildlife have been discharged.

6.1.3 Natural England usually have a 30 working day turnaround time for licence applications, and some licence applications are charged according Natural England's fees.

6.1.4 The licensable works which impact bat roosts will be restricted to certain times of the year per building to reduce impacts on bats (Table 7).

Table 7. Timing restrictions for licensable works.

Building	Dates licensable works will be undertaken	Dates licensable works will avoid
Farmhouse	March – October	November – February*
Coal Store	March – April, or Mid-September – October	May – mid-September, and November – February*
Main Barn	March – April, or October	May – September, and November – February
Single Storey Barns	March – October	November – February
Wagon House	March – October	November – February
Garage	Any time of year	N/A
Dutch Barn	Any time of year	N/A

** If this is not possible, works to the main roof will only be undertaken when temperatures have exceeded 8°C at sunset for a minimum of three consecutive days, and during dry and calm weather conditions. This is allowed for certain buildings only which have potential for non-classic hibernation roosts. Buildings which have potential for classic hibernation roosts must avoid the main hibernation period.*

6.1.5 As mitigation to avoid direct harm to bats, the proposed works will be undertaken according to the following method statement as a minimum:

- Works will be undertaken in suitable weather conditions for bats to be active when temperature exceeds 8°C and there is minimal wind and rain;
- For buildings which support horseshoe bat roosts, suitable permanent exclusion methods will be used to exclude horseshoe bats prior to undertaking licensable works;

- Prior to any works affecting the bat roosts, a pre-works inspection will be undertaken by the Named Ecologist or Accredited Agent (hereafter referred as "ecologist"). Torch light and an endoscope will be used to search for any bats present in suitable features;
- A toolbox talk will be provided by the ecologist to all workers involved with the licensable works before any works commence. The toolbox talk will detail where bats are likely to be found within the site, the legislation relevant to bats, the method statement that must be followed in order to protect bats, and the procedure to follow in the event that a bat is found. A record of the attendees will be kept by the ecologist;
- Soft demolition techniques will be used to dismantle sections of the building where bats may be found (as advised by the ecologist). The ecologist will search for the presence of bats as works proceed. Roof tiles will be removed with a lifting motion rather than sliding to avoid injuring any bats beneath them. Roof tiles will be carefully inspected for the presence of bats prior to discarding them. Roof battens, roof lining, fascias, bargeboards and soffits will all be removed carefully with the potential for bats to be present in mind;
- A minimum of three alternative bat roosts should be provided for common pipistrelle and brown long-eared bat in the form of two crevice-style bat boxes (or similar), and a cavity-style bat box (or similar) placed on a suitable nearby tree; and
- In the event that a bat is discovered, the ecologist should capture the bat. The bat should be assessed for its condition, if it is healthy, it should be placed inside an alternative roost. If the bat is assessed as in a poor condition or is injured, the bat should be promptly taken into care by an experienced bat carer and later released when it is healthy. Note that horseshoe bats cannot be captured by hand and must be excluded prior to works.

Converted Main Barn and Single Storey Barns compensation provisions

6.1.6 The converted Main Barn will include a bespoke bat roost within a roof void located in the northern portion of the building which is specifically aimed at retaining the lesser horseshoe bat maternity roost and provide roosting opportunities for brown long-eared bat and common pipistrelle (Appendix B). It is understood that the existing roof material and structure will be retained. The roof void will measure a minimum of 4.5m long, 4.7m wide at the eaves, and 2.1m high from the floor to the apex. Internally, the roof structure will support exposed timber trusses for perching and will be lined with bitumen roofing felt. There will be two fly-in access points located on the northern gable end and the eastern roof pitch. The entrances will measure 300mm wide by 200mm high and will feature an internal chute to prevent water and light ingress. Internally, there will be a plywood (or similar) baffle wall set back approximately 1.5m from the gable end to further reduce the impact of light spill and wind into the void. The baffle wall will have an opening of 300mm wide by 300mm high to allow bats access, and there will be a lockable access door for surveyor access. There will be a plywood (or similar) hot box constructed within the southern extent of the roof void, it will measure a minimum of 1m long by 1m high and will span the width of the roof at that point. There will be a 300mm wide by 300mm long access point on the bottom of the hot box, and the apex will be lined with a plastic mesh or bitumen felt for bats to perch on. The floor of the roof void will be lined with insulation with boarding above, and there will be a lockable surveyor access hatch for future monitoring (see Appendices B and C for details).

6.1.7 To provide further crevice opportunities, two ridge access tiles will be created by opening a gap of 40mm by 40mm in the mortar to allow bats access between the ridge tiles and roof lining (Appendices B and C). In addition, a total of four bat access tiles will be created on the eastern and western roof pitches by using mortar to lift individual roof tiles and create a permanent gap below measuring a minimum of 40mm by 40mm to allow bats access between the roof tiles and roof lining. Finally, two Beaumaris Woostone Midi Bat Boxes (or similar) will be installed, one at the apex on the northern gable end of the converted Main Barn, and one on the eastern gable end of the converted Single Storey Barns. Bat boxes will be installed as high as possible with a clear flight path to the entrance (see Appendices B and C for details).

Coal Store compensation provisions

6.1.8 The Coal Store will be retained and enhanced with the aim of retaining the lesser horseshoe bat satellite roost and provide hibernation opportunities for bats (Appendix B). In addition, compensation for barn swallow will be provided (see section 6.2). The building is in a state of disrepair, so it will be re-roofed like-for-like using bitumen 1f roofing felt and existing roof tiles. The door will be replaced with a permanent half-open door to allow bats (and barn swallows) access. Set back from the door will be an internal plywood (or similar) wall with a doorway sized cut-out to allow bats access to the rear and reduce light and wind ingress. As an enhancement for hibernating bats, a "*Colin Morris Cool Tower*" will be constructed in the north-eastern corner of the Coal Store measuring 1350mm wide by 1350mm deep by 1800mm high (see Appendix B for details).

Converted Wagon House compensation provisions

6.1.9 The converted Wagon House will include a bespoke bat roost within the entire roof void which is specifically aimed at retaining the greater horseshoe bat, lesser horseshoe bat, and brown long-eared bat day roosts and provide roosting opportunities for common pipistrelle (Appendix B). In addition, a bespoke "cool roost area" will be created on the ground floor to provide hibernation opportunities.

6.1.10 The existing building is in a state of disrepair and requires a full re-roof and re-pointing works. The roof will be replaced with traditional bitumen 1f roofing felt and suitable roof tiles with a traditional wet ridge system. The roof void will measure a minimum of 10m long, 4.6m wide at the eaves, and 2.8m high from the floor to the apex. Internally, the roof structure will support exposed timber trusses for perching and bitumen 1F roofing felt. There will be two fly-in access points located on the northern gable end and the eastern roof pitch. The entrances will measure 400mm wide by 300mm high and will feature an internal chute to prevent water and light ingress. Internally, there will be a plywood (or similar) baffle wall set back approximately 3m from the gable end to further reduce the impact of light spill and wind into the void. The baffle wall will have an opening of 400mm wide by 400mm high to allow bats access, and there will be a lockable door for surveyor access. There will be a plywood (or similar) hot box constructed within the southern portion of the roof void, it will measure a minimum of 2m long by 1m high and will span the width of the roof at that point. There will be a 400mm wide by 400mm long access point on the bottom of the hot box, and the apex will be lined with a plastic mesh or bitumen felt for bats to perch on. The floor of the roof void will be lined with

insulation and covered with boarding, and there will be a lockable surveyor access hatch for future monitoring. A minimum of two Kent style bat boxes will be installed internally to provide crevice opportunities (see Appendices B and C for details).

6.1.11 To provide further crevice opportunities, four ridge access tiles will be created by opening a gap of 40mm by 40mm in the mortar to allow bats access between the ridge tiles and roof lining (Appendices B and C). In addition, a total of four bat access tiles will be created on the eastern and western roof pitches by using mortar to lift individual roof tiles and create a permanent gap below measuring a minimum of 40mm by 40mm to allow bats access between the roof tiles and roof lining (see Appendices B and C for details).

6.1.12 A cool roost area will be created at the northern extent of the ground floor of the converted Wagon House. This area is set within a bank and will naturally be cooler. A room will be separated outside of the warm envelope of the building, it will measure a minimum of 4.6m long by 1.5m wide and will be the height of the ground floor. As part of the conversion works, a new drainage channel will be dug around the perimeter. A fly-in access point for bats will be created on the western elevation measuring 400mm wide by 300mm high and will feature an internal chute to prevent water and light ingress. There will be a plywood (or similar) baffle wall set back approximately 2m from the access point and approximately half the height of the room to further reduce the impact of light spill and wind into the room. A minimum of two internal Kent style bat boxes (or similar) will be installed on the walls. A lockable surveyor access door will be installed on the eastern elevation (see Appendices B and C for details).

Lighting considerations

6.1.13 New external lighting will be avoided if possible. If any new external lighting is necessary, it will follow the advice set out by the Institution of Lighting Professionals (ILP) (ILP 2023). If the lighting is shown to be minimal, utilise LEDs with a warm-white spectrum, be downward facing, pointing away from any bat roost entrances, and controlled by short timers triggered by motion sensors, then impacts will be reduced. Prior to the instillation of new external lighting, the proposed light specification should be reviewed by a suitably experienced ecologist to ensure there will be no negative impacts to bats.

6.1.14 To reduce the impacts of internal light spill, windows located on the northern elevation of the converted Main Barn will be tinted (Appendix B).

6.2 Birds

6.2.1 Permanent exclusion efforts to prevent barn swallow access to relevant buildings will be made prior to nesting season in line with the bat mitigation measures. In addition, the proposed works will avoid the bird nesting season where possible (March to August inclusive). If this cannot be avoided, a nesting bird survey will be undertaken in the 24 hour period prior to the proposed works. The survey will take place in suitable weather conditions and between sunrise and 10:00 or between 15:00 and sunset. The survey will be undertaken by a suitably experienced ecologist and adhere to the following protocol:

- The building will be observed for a minimum of 30 minutes for evidence of nesting bird behaviour from a discrete vantage point;

- If no evidence of nesting bird behaviour is observed, an inspection survey will be undertaken to ensure there are no active nests present. If full access is not possible, the initial observation period will be extended to 60 minutes;
- If there are no signs of nesting activity, the proposed works will commence within the 24 hour period following the nesting bird survey; and
- If the initial observation and inspection is inconclusive, a phased demolition approach will be adopted as advised by the ecologist.

6.2.2 If an active nest is discovered, the nest will remain undisturbed by a buffer of at least 5m until the young have fledged.

6.2.3 Compensation will be provided for barn swallow within the Coal Store by installing two Vivara Pro WoodStone Swallow Bowls (or similar) within the exposed timber truss system of the western portion (Appendices B and C). The positioning of the swallow bowls will be advised by a suitably experienced ecologist.

6.2.4 Compensation will be provided for tawny owl by installing two RSPB Tawny Owl Nest Boxes (or similar) within nearby suitable mature trees (Appendix C).

6.3 Survey updates

6.3.1 This report is valid for 18 months from the date of the most recent survey. Further advice from an ecologist should be sought if the scope of the proposed works changes, or if the works are delayed by more than 18 months.

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7.1.18 Schofield, H.W. (2008). *The Lesser Horseshoe Bat Conservation Handbook*. Vincent Wildlife Trust, Ledbury.

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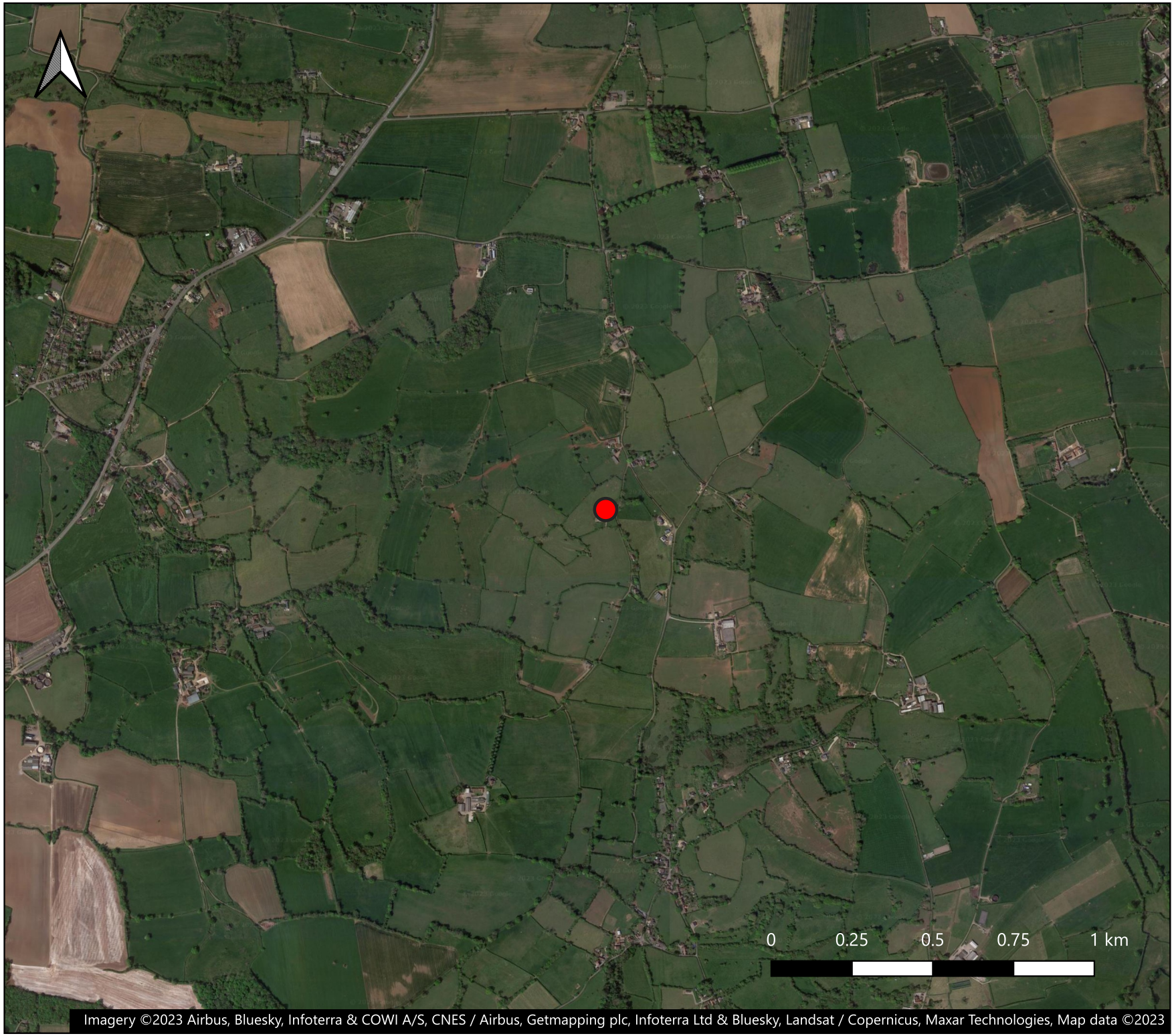
7.2.4 www.routecalculator.co.uk/elevation

8.0 Figures



REFERENCE

Figure 1

TITLE

Site location plan

LEGEND

Site location

DRAWING INFORMATION

Project: Ruslin Farm, Butcombe
Project reference: F024
Date drawn: 02/12/2023
Drawn by: Lewis Hillier
Version: 1.0
Scale: 1: 25,000 @ A4
Notes: Locations and distances are approximate only. Base layer provided by Google Maps.

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DRAWING INFORMATION
Project: Ruslin Farm, Butcombe
Project reference: F024
Date drawn: 10/12/2023
Drawn by: Lewis Hillier
Scale: 1: 500 @ A4
Version: 1.0
Notes: Locations and distances are approximate only. Base map provided by Google Maps.

REFERENCE
Figure 2

TITLE
Preliminary bat and bird assessment survey plan

LEGEND
- Farmhouse
- Coal Store
- Main Barn
- Single Storey Barns
- Wagon House
- Dutch Barn
- Garage
- Buildings
- Area inaccessible
- Brown long-eared bat - droppings
- Lesser horseshoe bat - droppings
- Pipistrelle species - droppings
- Lesser horseshoe bat - active
- Tawny owl - active
- Barn swallow - inactive nest

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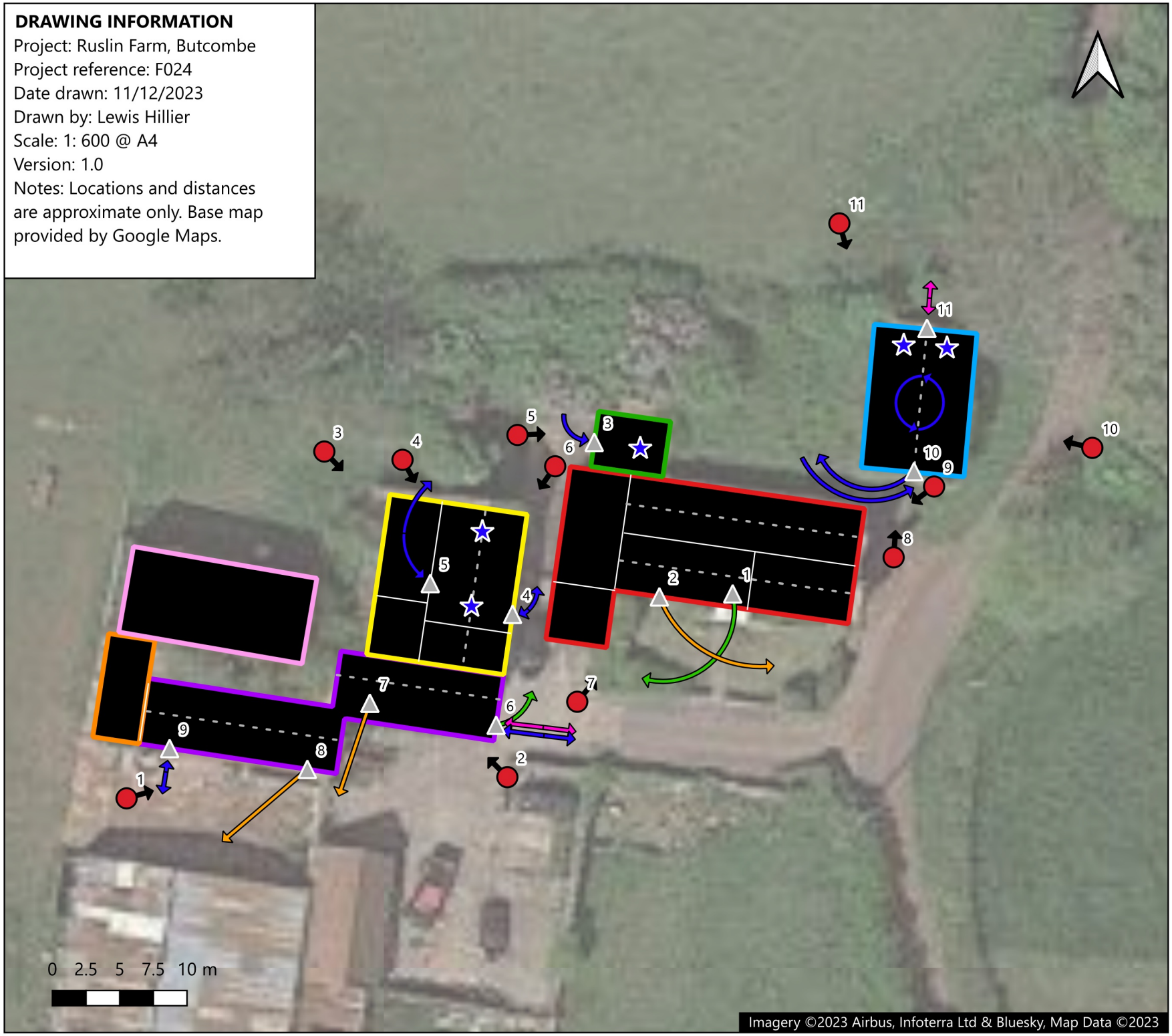
DRAWING INFORMATION
Project: Ruslin Farm, Butcombe
Project reference: F024
Date drawn: 11/12/2023
Drawn by: Lewis Hillier
Scale: 1: 600 @ A4
Version: 1.0
Notes: Locations and distances are approximate only. Base map provided by Google Maps.



REFERENCE
Figure 3

TITLE
Bat roost survey plan

LEGEND
- Farmhouse
- Coal Store
- Main Barn
- Single Storey Barns
- Wagon House
- Dutch Barn
- Garage
- Buildings
- Surveyor location
- Bat access point
- Lesser horseshoe bat - active
- Brown long-eared bat - flight path
- Common pipistrelle - flight path
- Greater horseshoe bat - flight path
- Lesser horseshoe bat - flight path

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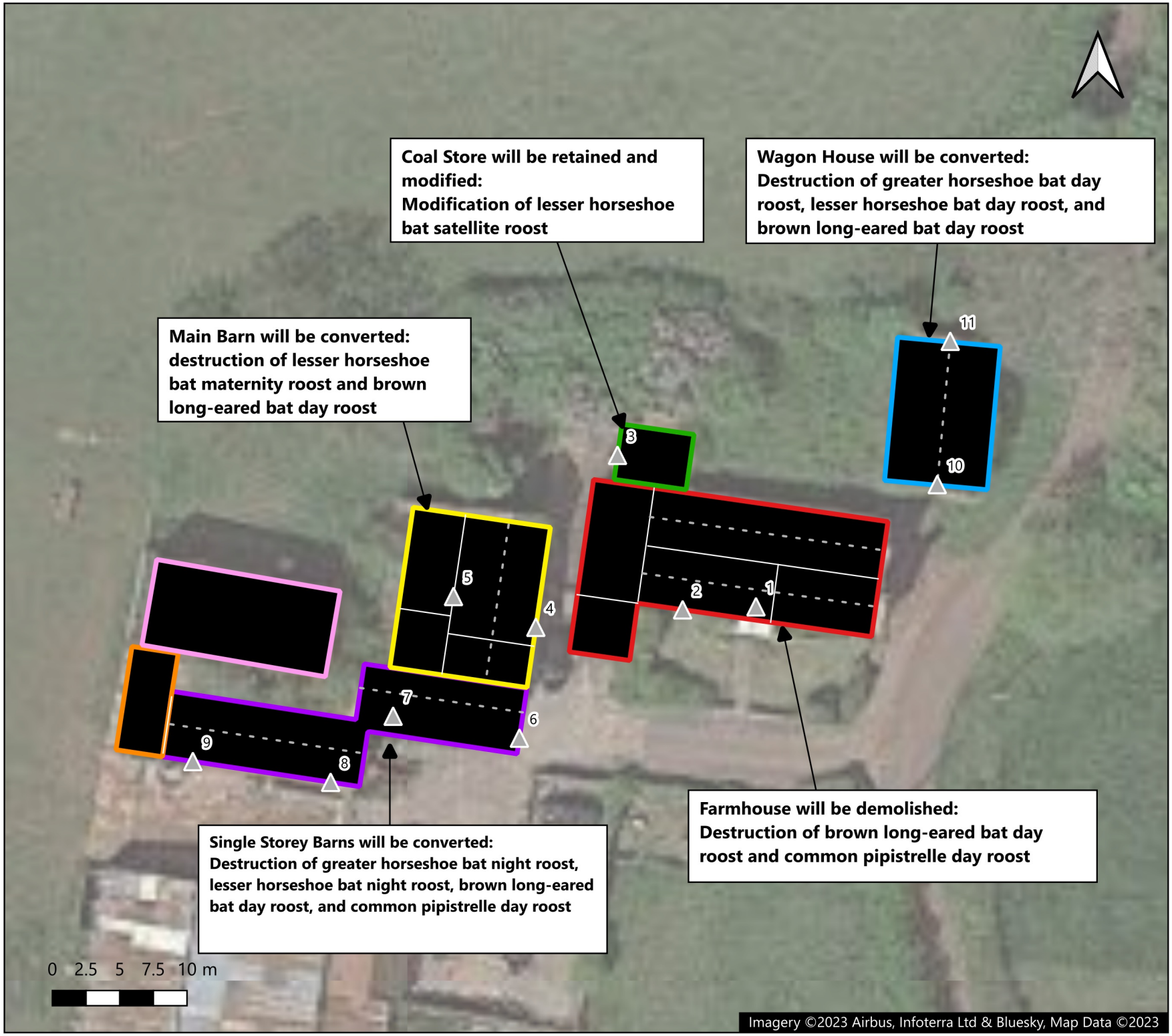

REFERENCE

Figure 4

TITLE

Bat roost impact plan

LEGEND

- Farmhouse
- Coal Store
- Main Barn
- Single Storey Barns
- Wagon House
- Dutch Barn
- Garage
- Buildings
- Bat access point

DRAWING INFORMATION

Project: Ruslin Farm, Butcombe
Project reference: F024
Date drawn: 11/12/2023
Drawn by: Lewis Hillier
Scale: 1: 600 @ A4
Version: 1.0
Notes: Locations and distances are approximate only. Base map provided by Google Maps.

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Appendix A. Bat Roost Survey Results

Table 8. Dusk bat roost survey results on the 24th August 2023 (Figure 3).

SURVEY DETAILS					
Date	24/08/2023	**Temperature start – finish (°C)**	18 - 17	**Precipitation description**	None
Sunset time	20:15	**Wind range (mph)**	7 - 9		
Survey duration	20:00 – 21:45	**Cloud cover range (%)**	30 - 40		

OBSERVATIONS OF INTEREST				
Time	**Species**	**Building**	**No. bats**	**Description of observations**
20:35	Common pipistrelle	Single Storey Barns	1	Emerged from underneath a lifted roof tile at the eaves of the southern pitch of the western barn (Access point 8).
20:36-20:40	Lesser horseshoe bat	Wagon House	2	Light sampling and emergence of two bats from the open southern elevation (Access point 10).
20:37-20:41	Lesser horseshoe bat	Main Barn	2	Light sampling and emergence of two bats from open doorways on the eastern and western elevations (Access points 4 and 5).
20:58	Greater horseshoe bat	Single Storey Barns	1	Entered the eastern barn via an open doorway on the eastern elevation, then immediately emerged again (Access point 6).
21:03-21:45	Lesser horseshoe bat	Wagon House	2	Entered building via the open southern elevation (Access point 10). Bats emerged and re-entered throughout the survey. Bats were seen foraging and perching inside ground floor of building.
21:06	Lesser horseshoe bat	Coal Store	1	Entered through the door left ajar located on the western elevation (Access point 3).
21:07	Brown long-eared bat	Farmhouse	1	Emerged from underneath a lifted tile located on the southern pitch of the roof of the Farmhouse (Access point 1).
21:32	Brown long-eared bat	Single Storey Barns	1	Emerged the eastern barn via an open doorway on the eastern elevation (Access point 6).

SUMMARY

- **The survey identified several bat roosts within the Farmhouse, Coal Store, Main Barn, Single Storey Barns, and Wagon House.**
- Before the survey, two lesser horseshoe bats were observed roosting within the Main Barn.
- General bat activity levels within the site were considered to be moderate, and the survey recorded the following species active around the site: common pipistrelle, soprano pipistrelle, serotine, lesser horseshoe bat, greater horseshoe bat, and Myotis species. Most activity comprised bats commuting and foraging around the buildings and through the site. Many of the records were heard not seen.
- Surveyors were located in positions 1, 2, 3, 9, and 10; and infrared cameras were located in positions 2, 5, 6, 7, and 8 (Figure 3).

Table 9. Dusk bat roost survey results on the 25th September 2023 (Figure 3).

SURVEY DETAILS					
Date	25/09/2023	**Temperature start – finish (°C)**	16 - 16	**Precipitation description**	None
Sunset time	19:03	**Wind range (mph)**	6 - 8		
Survey duration	18:48 – 20:33	**Cloud cover range (%)**	80 - 100		

OBSERVATIONS OF INTEREST				
Time	**Species**	**Building**	**No. bats**	**Description of observations**
19:21-19:34	Lesser horseshoe bat	Main Barn	3	Light sampling and emergence of from open doorways on the eastern and western elevations (Access points 4 and 5).
19:21 - 19:25	Lesser horseshoe bat	Single Storey Barns	1	Entered via open doorway on eastern elevation and light sampled through windows on the southern elevation before emerging again (Access points 6 and 9). Bat is likely to have originated from a roost within the Main Barn.
19:28	Common pipistrelle	Single Storey Barns	1	Emerged from underneath a lifted roof tile located on the southern pitch of the eastern barn (Access point 7).
19:28 - 19:31	Lesser horseshoe bat	Wagon House	1	Entered via open southern elevation, emerged from the same location and then finally re-entered again (Access point 10).
19:30	Greater horseshoe bat	Wagon House	1	Light sampling and emergence of one bat from the open window located on the northern elevation (Access point 11).
19:33	Common pipistrelle	Farmhouse	1	Emerged from behind the guttering located on the southern elevation of the Farmhouse (Access point 2).
19:37 and 20:15	Lesser horseshoe bat	Main Barn	3	Entered and exited the roost from open doorways on the eastern and western elevations (Access points 4 and 5).
19:39	Lesser horseshoe bat	Coal Store	1	Emerged through the door left ajar located on the western elevation (Access point 3).
20:49	Lesser horseshoe bat	Coal Store	1	Entered through the door left ajar located on the western elevation (Access point 3).

SUMMARY

- **The survey identified several bat roosts within the Farmhouse, Coal Store, Main Barn, Single Storey Barns, and Wagon House.**
- Before the survey, one lesser horseshoe bat was observed roosting within the Main Barn. After, one lesser horseshoe bat was observed roosting within the Main Barn, and one within the Coal Store.
- General bat activity levels within the site were considered to be moderate, and the survey recorded the following species active around the site: common pipistrelle, soprano pipistrelle, serotine, noctule, lesser horseshoe bat, greater horseshoe bat, and Myotis species. Most activity comprised bats commuting and foraging around the buildings and through the site.
- Surveyors were located in positions 1, 2, 4, and 9; and infrared cameras were located in positions 5, 6, 7, 8, and 11 (Figure 3).

Appendix B. Mitigation, Compensation, and Enhancement Design

See following pages for architectural drawing produced by Hill.Reading Architects

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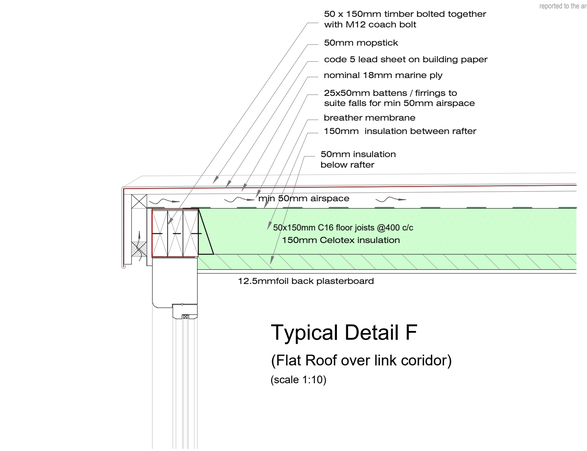
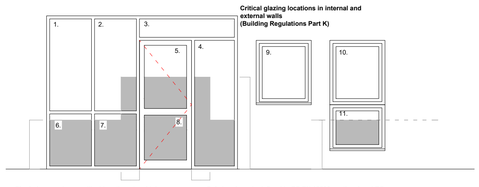
EAST ELEVATION
Scale 1:50



Typical Detail F
(Flat Roof over link coridor)
(scale 1:10)



Shaded areas shows critical locations to which requirement K4 applies (ie areas 2, 4, 5, 6, 7, 8, 9, 11)

In Critical locations, comply with one of the following
a. Ensure that the glazing, if it breaks, will break safely, and,
b. Choose glazing that is one of the following:
(i) Robust
(ii) In small panes

c. Permanently protect glazing

Safe breakage is defined in BS EN 12600 section 4 and BS 6206 clause 5.3. In an impact test, a breakage is safe if it creates one of he following.

a. A small clear opening only, with detached particals no larger than the specified maximum size
b. Disintegration, with small detached particles
c. Broken glazing in separate pieces that are sharp or pointed

A glazing material would be suitable for a critical location if it complies with one of the following:
a. It satisfies the requirements of class 3 of BS EN 12600 or Class C of BS 6202
b. It is installed in a door or in a door side panel and has a pane width exceeding 900mm and it satisfies the requirements of class 2 of BS EN 12600 or Class B of BS 6202.

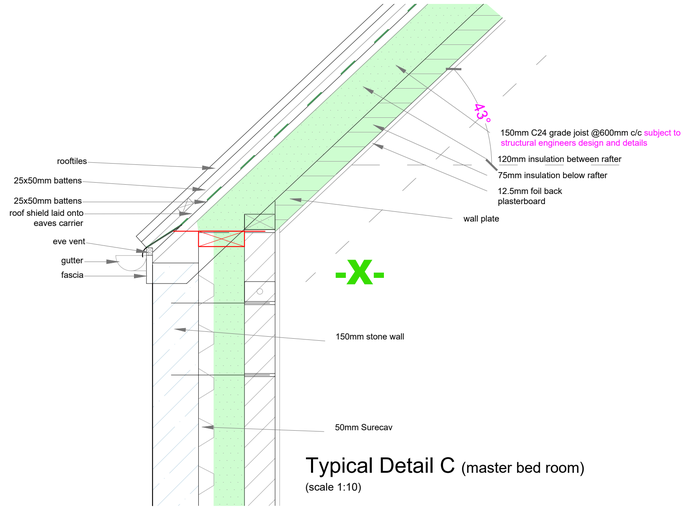
RISKS FOR BUILDING ELEMENTS:

Stair Opening:-
Risk of falling appropriate safety gear and method of access to be used;
Roof:-
Risk of falling appropriate safety gear and method of access to be used;
Risk of collapse from roof trusses;
Windows:
Risk of falling from window opening appropriate safety measures to be implemented;
Lifting hazard of lintels and windows appropriate lifting equipment to be used;
Risk of access obstruction from ground floor bay windows to elements at higher levels,suitable method of access to be used;
Walls:
Risk of wall collapse, suitable propping to be used where required

KEY OF SYMBOLS
RISK OF FALLING
RISK OF COLLAPSE
BIO HAZARD
LIFTING HAZARD
GENERIC CAUTION

KEY OF SYMBOLS
RISK OF EXPLOSION
TOXIC SUBSTANCES
GENERAL HEALTH DANGER
RISK OF ELECTROCUTION
HEAT MAY CAUSE A FIRE
RADIOACTIVE

-X-	**Lateral Restraint:** Fit 'Simpson' or similar approved bent galvanized straps down external wall and across min three trusses.
-X-	**Lift Restraint :** Simpson 'wall plate straps' @ 1800mm centers, (avoiding all openings)



Typical Detail C (master bed room)
(scale 1:10)

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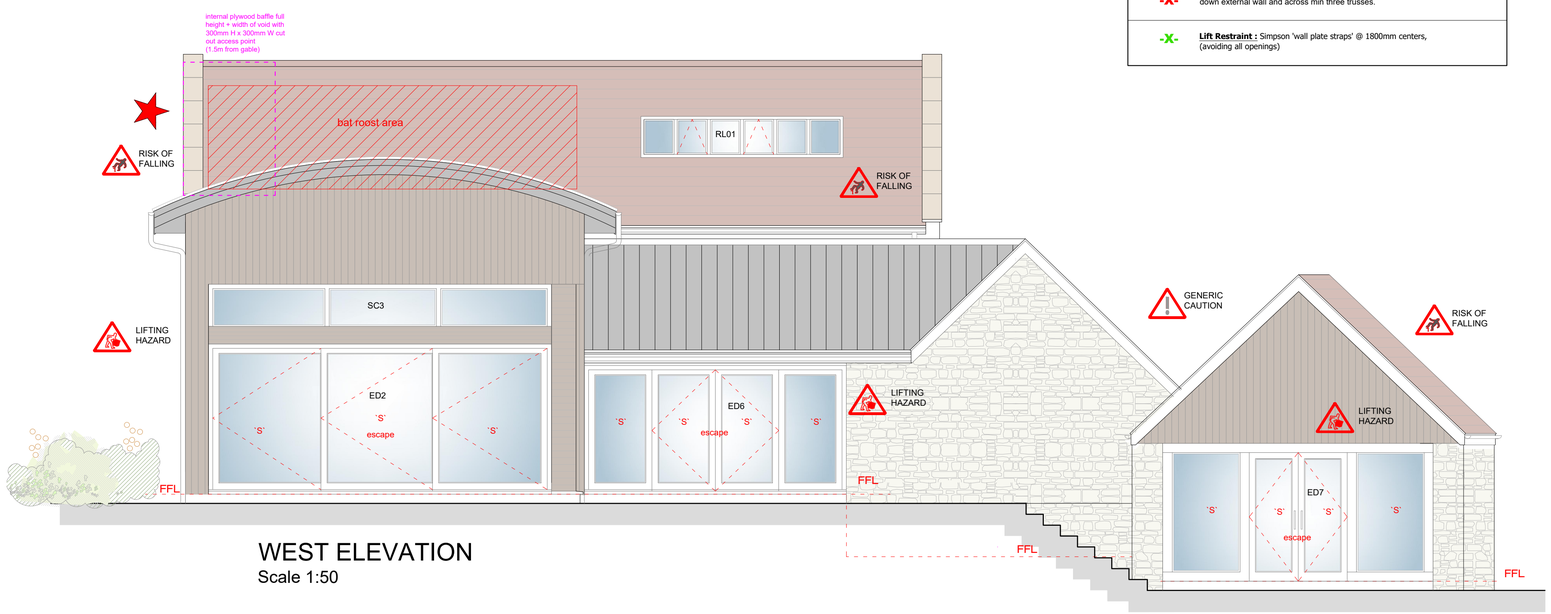
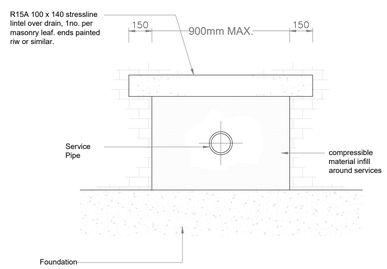
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE STRUCTURAL ENGINEERS DRAWINGS,



WEST ELEVATION
Scale 1:50



Typical Service Bridge Detail
(1:20)

Revision:
A 23.11.08 JM updated following client

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Date October 2023

Drawn JM Checked LJM

Drg No H6817 203 A

PROVISIONAL
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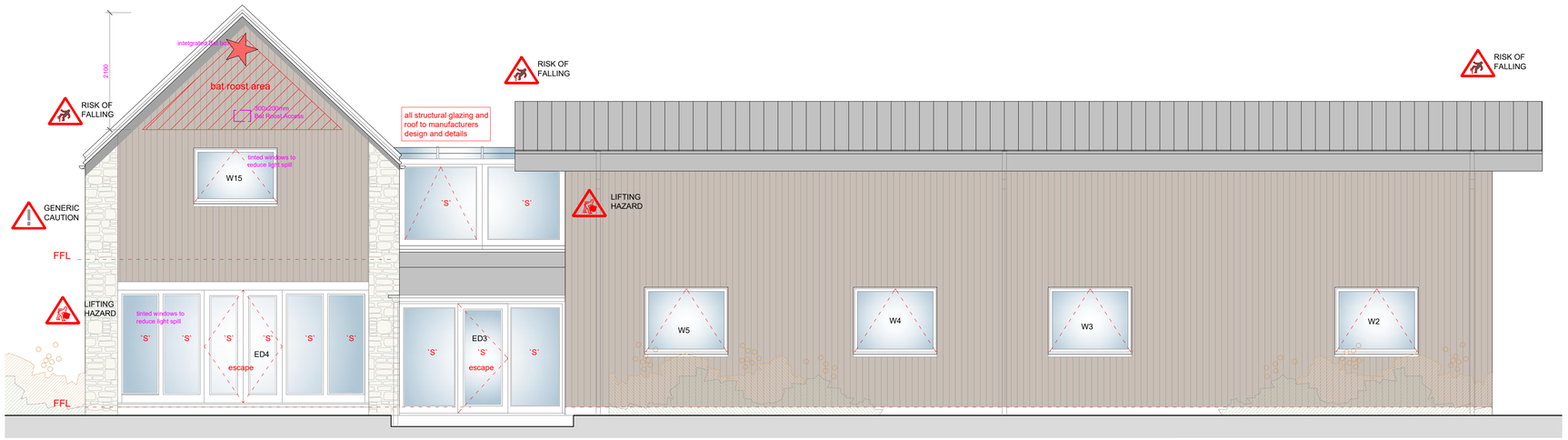
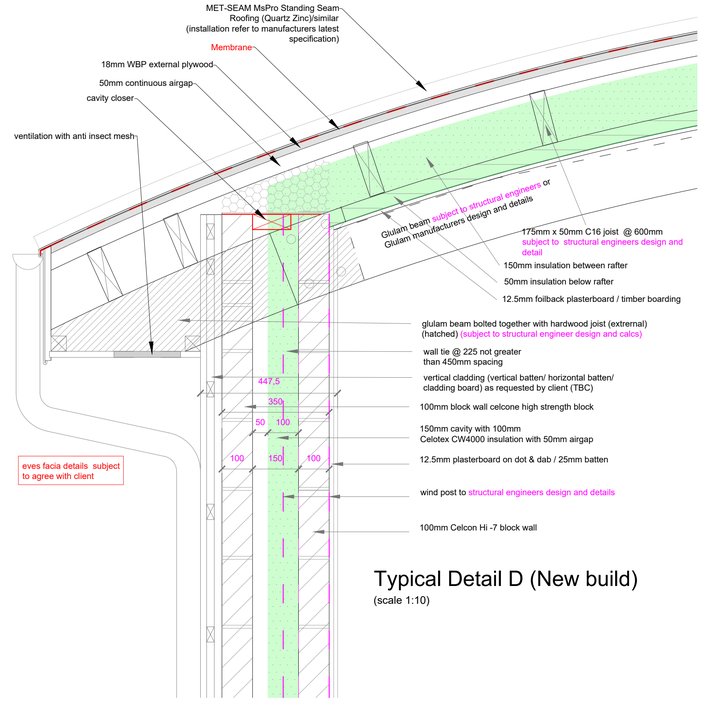
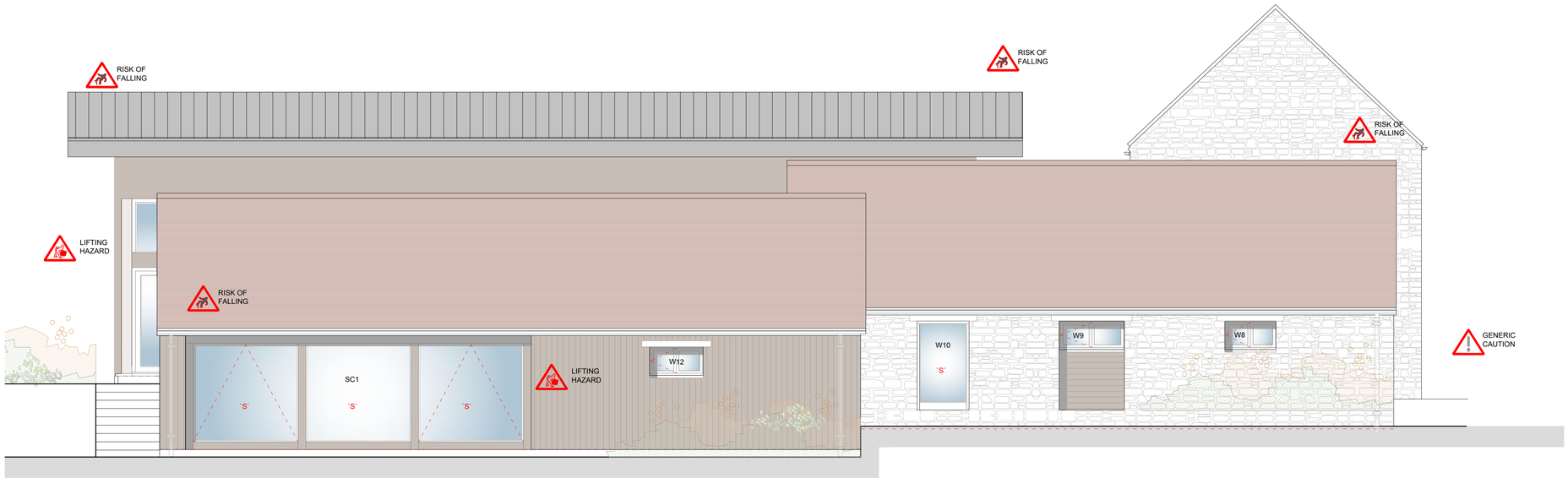


NORTH ELEVATION
Scale 1:50



Typical Detail D (New build)
(scale 1:10)



SOUTH ELEVATION
Scale 1:50

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Revision:
A 23.11.08 JM updated following client

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Title Detail,Elevations
Scale 1:10,1:50 @ A1
Date October 2023
Drawn JM
Checked JJM
Drg No H6817 204 A

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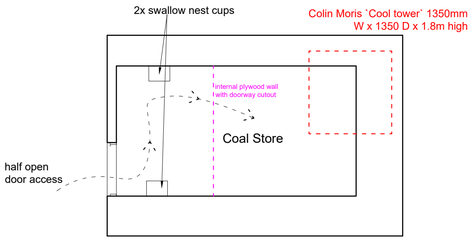
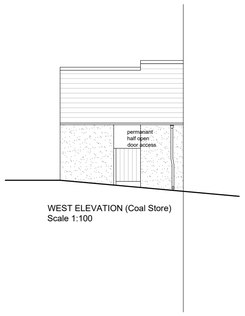
3. Third party drawing



New Coal Store for Bats and Barn Swallows
Scale 1:50



WEST ELEVATION (Coal Store)
Scale 1:100

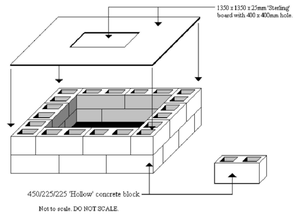


Fig 1 BASE.The floor/ground need to be flat and level. Sterling board has been suggested as it has a 'rough' surface, enabling lesser horseshoe bats to grip. In my original 'tower' I fixed nylon netting to the underside of the boarding.

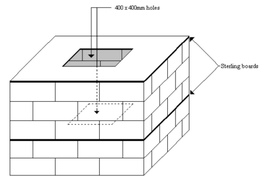


Fig 2 CENTRAL SECTION. 400x 400mm holes cut centrally through boarding.

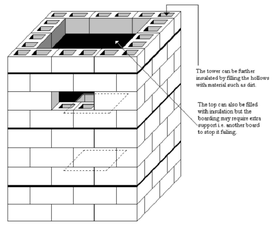
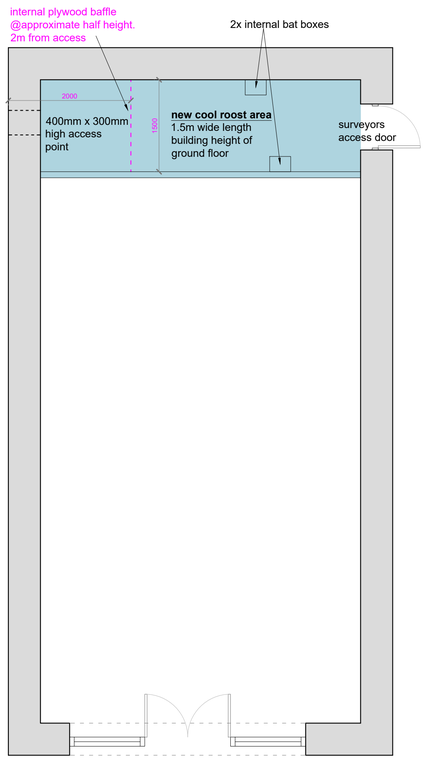
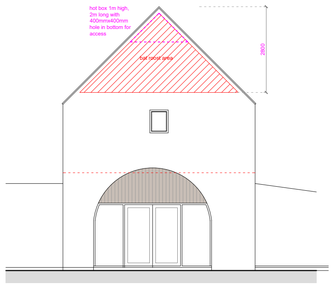


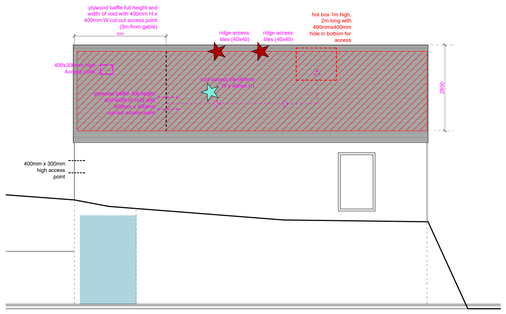
Fig 4. FULL TOWER. Insulation can be increased by filling the hollow sections and covering the roof with suitable material, i.e. earth.



GROUND FLOOR PLAN(Annex Office)
Scale 1:50

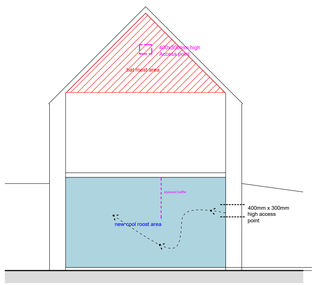


SOUTH ELEVATION(Annex Office)
Scale 1:100

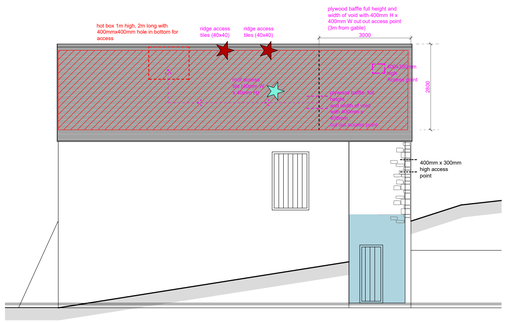


EXISTING NORTH ELEVATION (Annex Office)

Scale 1:100



NORTH ELEVATION (section through)(Annex Office)
Scale 1:100



EAST ELEVATION (Annex Office)
Scale 1:100

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Revision:
A 23.11.14 A updated following client comments

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Title Ecological Details, Office Annex & Coal Store

Scale 1:50,1:100 @ A1

Date October 2023

Drawn JM Checked JM

Drg No H6817 220 A

Appendix C. Mitigation, Compensation, and Enhancement Specifications

Example of a hot box:

Example of a fly-in access point and internal chute. Note that the back plate is missing from this photo:

Bat access tile example:

Bat ridge access tile example:

Beaumaris Woostone Bat Box – Midi size (image courtesy of www.nhbs.com):

NHBS Kent Bat Box (image courtesy of www.nhbs.com):

Vivara Pro WoodStone Swallow Bowl (image courtesy of www.nhbs.com):

RSPB Tawny Owl Nest Box (image courtesy of shopping.rspb.org.uk):