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Bat Survey

Pagecroft, Haydon Bridge

July 2023

Mr M Kirkby



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	Name	Position	Date
Report Originator	Jessica Wilson	Senior Ecologist	July 2023
Reviewed	Gemma Cone	Senior Ecologist	July 2023
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Summary

OS Ecology Ltd were commissioned by Mr M Kirkby in May 2023 to undertake a daytime bat risk assessment and bat activity survey work of Pagecroft workshop, Haydon Bridge. The site is proposed for internal refurbishment and conversion to an upgraded workshop.

Summary Table	
Impacts on Designated Sites	No impacts on sites designated for bats are predicted from the development.
Daytime Bat Risk Assessment Findings	The single-storey, random stone workshop was considered to be of moderate bat roosting suitability with potential roosting features associated with the thick stone walls, gaps at wall tops and in slate roof and stone ridge tiles. Internally, the structure is open to the roof underside with a mezzanine floor rather than an enclosed loft space, with a breathable membrane lining. The building is considered to be suitable for hibernating bats within the walls. No field evidence of bats was recorded.
Activity Survey Findings	Two activity surveys were completed supplemented with thermal cameras. A single common pipistrelle day roost was recorded at the eaves of the building on the northern elevation. Moderate to high levels of foraging/commuting activity of common and soprano pipistrelle, noctule and <i>Myotis</i> sp. bats were recorded with the majority of activity associated with the gardens/tree cover of the offsite Pagecroft Cottage.
Nesting Birds	Nesting starling were recorded in the stone walls of the structure and disused nests were also found on the internal wall tops.
Impacts	<ul style="list-style-type: none"> • Destruction of a common pipistrelle day roost through the repointing/sealing of wall tops. • Potential disturbance and harm to roosting bats, should they be present at the time of the works. • Loss of potential roosting features associated with the stonework, roof and ridge tiles. • Increased lighting which may disturb foraging/commuting bats and other nocturnal wildlife. • Potential harm and/or disturbance to nesting birds, should works be undertaken in the breeding bird season (March to August inclusive).
Recommendations	<ul style="list-style-type: none"> • An appropriate Natural England licence will be obtained prior to works impacting on the confirmed day roost. • Should demolition works not take place within 12 months of the date of the most recent survey in this report, additional updating survey work for bats is likely to be required. • Should a bat licence not be obtained before May 2024, updating survey is likely to be required to support the licence application. • Repointing work to the external stone walls and repointing and/or boarding of internal stone walls/wall tops will not be

	<p>completed during the bat hibernation period (November to February inclusive).</p> <ul style="list-style-type: none">• Wildlife sensitive lighting will be used to minimise impacts to nocturnal wildlife.• Wildlife safe timber treatments will be used if required.• Works will be undertaken outside the nesting bird season unless a suitably experience ecologist has confirmed nests are absent.• Bat roosting opportunities will be included within the building in the form of retained crevices (minimum 5) within the external stone walls.• Due to the presence of breathable membrane roof lining and no anticipated re-roofing works, bat roosting opportunities will not be created within the roof.• A single wood-crete type bat box will be erected on a mature tree or retained building (3-4m high, away from windows and 2m from lighting, close to suitable foraging areas) within the landowner's holding.• Two nest boxes, one suitable for starling and one suitable for smaller species, will be erected on a mature tree or retained building (close to vegetation cover, away from windows, north to east facing and at least 2m high) within the landowner's holding.
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1. Introduction

Site Location

1.1 The site is located north of Haydon Bridge at approximate central grid reference of NY 84532 65322. The site location is illustrated within figure 1 in the appendices.

Site Description

1.2 The site comprises a single-storey stone workshop which is infrequently used.

Objectives of the Study

1.3 The objectives of this report are:

- To identify and describe any potential ecological receptors that may be present on site or within an identified zone of influence.
- To identify and assess whether proposals may impact on the identified receptors.
- To identify potential mitigation, compensation or enhancement measures if required.
- To identify and detail further surveys if required.

Development Proposals

1.4 Proposals include:

- Internal refurbishment of workshop
- Installation of new velux roof windows
- Installation of new sash windows
- Repointing stonework

2. Methodology

Scope of Study

- 2.1 The site was surveyed to identify whether the following were present for legislative and planning purposes:
- Habitats of conservation value
 - Priority Habitats
 - Protected and Priority Species
- 2.2 The ecological characteristics of the site were reviewed to identify the scope of the assessment, with the zone of influence determined through professional judgement.
- 2.3 The survey area comprised the "site" defined within figure 2 (Appendix 4) and where access was available an approximate 50m buffer¹.
- 2.4 Access permitting, all potential bat roosting sites within the survey area were assessed.

Desk Study

- 2.5 Desk study was undertaken to assess the nature of the surrounding habitats and included:
- Assessment of aerial imagery and Ordnance Survey mapping.
 - A search of the MAGIC website² for designated sites and European protected species within 2km of the survey area.
 - Data searches submitted to the Local Record Centre.

Field Survey

Habitats/Protected Species

- 2.6 During the preliminary survey the site was checked for evidence of protected species and habitats were assessed for their potential to support such species. For this site, the development site comprises a built structure and as such the assessment focussed on the risk of bats being present within the structure.

¹ The survey buffer may be increased depending on the species present and their identified core sustenance zones.

² Multi Agency Geographic Information for the Countryside (www.magic.gov.uk)

Bats

Daytime Risk Assessment

- 2.7 Survey effort has been based on that provided by the Bat Conservation Trust Good Practice Survey Guidelines³.
- 2.8 Structures and trees within the site and adjacent to the site, were inspected⁴, where access was available, for potential roosting features (PRFs) and to record any field signs, including bats, if present⁵.
- 2.9 Assessment follows the Bat Conservation Trust Guidelines⁶, which classifies the suitability (negligible, low, moderate or high) of the potential roosting, foraging and commuting habitats within the site. Full details of the classifications are provided within the table in Appendix 1.
- 2.10 Survey was undertaken by Jessica Wilson ACIEEM, an experienced bat surveyor who holds a Class 2 Natural England survey licence (2019-40053-CLS-CLS).
- 2.11 The following equipment was utilised during survey:
- Clulite CB2 high powered torch.
 - High power LED torch.
 - 8x30 binoculars.
 - Digital camera.
- 2.12 The survey was undertaken on the 15th May 2023 in the following weather conditions:

Table 1: Daytime Survey Conditions				
Date	Temperature	Cloud Cover	Precipitation	Wind Conditions
15.05.23	15°C	20%	Dry	F2

Activity Surveys

- 2.13 The daytime risk assessment indicated that the building is of moderate suitability to support roosting bats. Activity surveys were therefore completed in line with the current

³ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

⁴ It should be noted that assessment relates entirely on the structure or tree's suitability to support bats and or other protected species. Assessment must in no way be taken as an assessment of the structure's integrity or safety.

⁵ If bats are recorded during appropriate measures are undertaken to limit any potential disturbance

⁶ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

guidance provided by the Bat Conservation Trust⁷ and comprised two dusk activity surveys.

Table 2: Activity Survey Conditions							
Date	Temperature (°C)		Cloud Cover (%)	Precipitation	Wind Conditions	Sunset/Sunrise Time	Survey Period
	Start	End					
01.06.23	11	10	100	Dry	F2	21:36	21:20-23:06
19.06.23	18	17	10	Dry	F1	21:48	21:30-23:20

- 2.14 Activity surveys were undertaken in suitable weather conditions (no constant rain or high winds and sunset temperature of at least 10°C).
- 2.15 Surveyor locations are chosen to enclose the site to identify whether bats enter or leave the site.
- 2.16 Surveyors are placed where practicable to cover all potential entry/exits sites.
- 2.17 All surveyors are equipped with full spectrum detectors to enable high quality recordings to be taken and analysed following the survey, to allow for any potential surveyor error and to enable the cross referencing of calls.
- 2.18 Detectors enable the surveyors to listen to all activity during the survey.
- 2.19 Thermal cameras were used to provide more robust data.
- 2.20 The activity surveys were undertaken by Jessica Wilson (2019-40053-CLS-CLS) and assistants Bryanna Wilson and Linus Morton.
- 2.21 The following equipment was utilised during survey:
- Anabat Scout.
 - Anabat Walkabout.
 - iRGuide 19 thermal camera.

⁷ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

Limitations to Survey

2.22 There were considered to be no major constraints to survey.

Analysis of Data

2.23 Following the survey, all bat calls are manually assessed and analysed using Analook Insight and or Bat Explorer software, enabling the full spectrum of the call to be assessed.

2.24 Where possible bat calls are identified to species, referencing call parameters as detailed within Russ (2012)⁸, Middleton et al (2014)⁹ and Barataud (2015)¹⁰.

2.25 Bats are identified to species, where possible, though it is noted that there can be a significant overlap in call parameters in some species, particularly the *Myotis* genus.

2.26 *Myotis* bat calls are assessed using a range of indicators, though due their modulated calls a number of external factors can impact the reliability. As such *Myotis* bats will often be identified as *Myotis* sp. where identification to species cannot be confirmed.

2.27 Where possible further detail on the *Myotis* species will be gathered, such as DNA. The use of full spectrum detectors gives a greater success rate in identification. This can also be backed up by computer programmes such as Bat Classify.

2.28 Although a greater certainty can be provided in other species, there is still an overlap in calls between other genera of bats such as *Pipistrellus* and *Nyctalus*, which can be affected by a range of environmental factors. The following table details the parameters utilised by OS Ecology Ltd and are based on “typical” open flight calls.

Table 3: Bat Species Identification Parameters	
Species	Peak Frequency Range (KHz)⁸
<i>Pipistrellus</i>	
Common pipistrelle	>42 and <49
Soprano pipistrelle	≥51
Nathusius' pipistrelle	<39
Common or soprano pipistrelle ('50KHz pip')	≥49 and <51
Common or Nathusius' pipistrelle ('40KHz pip')	≥40 and ≤42
<i>Nyctalus</i>	
Noctule	≥17 and <23.5
Leisler's	≥23.5 and <29.9
<i>Eptesicus</i>	
Serotine	≥24.1 and <32.2
<i>Plectocus</i>	

⁸ Russ, J. (2012) British Bat Calls: A Guide to Species Identification. Pelagic Publishing

⁹ Middleton, N., Froud, A. and French, K. (2014) Social Calls of the Bats of Britain and Ireland. Pelagic Publishing

¹⁰ Barataud, M. (2015) Acoustic Ecology of European Bats – Species Identification, Study of their Habitats and Foraging Behaviour

Brown Long-eared Bat	≥25.5 and <42.1
Barbastellus	
Barbastelle	≥29.2 and <44.7
Rhinolophus	
Greater Horseshoe	77-84
Lesser Horseshoe	107-114

2.29 Where there is uncertainty in species identification species are identified to genus.

Assessment Methodology

2.30 Guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM) is utilised to provide habitat valuations.

2.31 The level of value of specific ecological receptors is assigned using a geographic frame of reference. For, example international value being most important (SACs, SPAs and pSPAs), then national (SSSIs), regional, county (LWS), district (LNR), local and lastly, within the immediate zone of influence of the site only (low).

2.32 In terms of species, for example breeding birds, should the population within the site constitute greater than 1% of the geographic population, it would be considered significant at that level. In addition, presence of designated sites, scarce species and or quality¹¹/diversity of habitats are used to guide that valuation

2.33 Assessment methods for bats have been undertaken with reference to Wray et al. (2007)¹², which correlates with the geographic frame of reference. Within which they define the relative rarity of each species based on the known distribution¹³ at the time and the value of the roost type, assuming that roosts such as feeding perches are of lower value that maternity roosts or sites that have a high level of fidelity.

¹¹ Quality can be subjective and vary in different geographic areas. Reasoned professional judgement is therefore used to inform the assessment.

¹² Wray et al (2007) Valuing Bats in Ecological Impact Assessment. In Practice. Based on a presentation at the Mammal Society – Specific Issues with Bats

¹³ It should be noted that there are regular changes to our understanding of distribution as further studies are undertaken.

3. Results

Desk Study

Designated Sites

3.1 A search of the Multi Agency Geographic Information for the Countryside (MAGIC) Website¹⁴ indicated that there are no protected sites designated due to the presence of bats within 2km of the development site.

Table 4: Designated Sites			
Designation	Site Name	Reason for Designation	Distance from Survey Area (Closest point)
SAC	None	N/A	
NNR	None	N/A	
SSSI	None	N/A	
SSSI Impact Risk Zone (IRZ)			
The site lies within an identified SSSI Impact Risk Zone relating to designated sites in the wider area, however development of the nature proposed does not meet the identified impact risk triggers.			
LNR	None	N/A	

European Protected Species Licensing

3.2 A check of the MAGIC website found two granted European Protected Species Applications for bats within 2km of the site:

- 2017-31239-EPS-MIT destruction of common and soprano pipistrelle day roosts
- 2020-45096-EPS-MIT destruction of common pipistrelle day roost

General Land Use

3.3 A review of aerial imagery and Ordnance Survey mapping highlighted that the general land use in the surrounding area is dominated by pastoral and arable fields with Priority Habitat deciduous woodland approximately 75m to the west of site along the Cruel Sike

¹⁴ Multi Agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk (Accessed July 2023)

with an additional area approximately 275m to the east. Pagecroft Cottage is directly north of the site.

Data Search

Local Records Centre

3.4 The table below summarises the records of bat species provided by the local records centre (LRC). The full data search results can be provided on request.

Taxon	Species	No. of Records within Search Area	Closest Record (m)
Bats	Bats	9	623
	Brown Long-eared Bat	5	1024
	Common Pipistrelle	130	350
	Daubenton's Bat	13	944
	Myotis Bat species	13	944
	Natterer's Bat	4	1226
	Noctule Bat	25	944
	Nyctalus Bat species	4	974
	Pipistrelle	1	1542
	Pipistrelle Bat species	11	615
	Soprano Pipistrelle	83	646
	Whiskered Bat	2	1356
	Whiskered/Brandt's Bat	10	1013*

3.5 Of the above records, the closest roost is of whiskered/Brandt's bat more than 1km from site*.

Field Survey

Bats

Daytime Risk Assessment

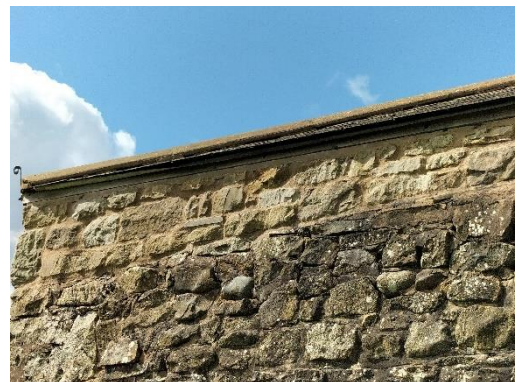
3.6 The results of the bat risk assessment of the structure on site is provided below. A figure is provided within the appendices showing building locations.




Table 6: Bat Risk Assessment Results

Suitability: Moderate

Single-storey random stone detached workshop with potential roosting features associated with the stonework, roof, ridge tiles, wall plate and velux roof lights.

Building Type	Detached workshop
No. of Storeys	1
Roof Type	Hipped
Roof Material	Slate
Ridge Tiles	Stone with sections of missing mortar
Gable Ends	Random stone with numerous crevices
Chimney	None
Skylights/Velux	Yes, with lead flashing, occasionally lifted
Roof Condition	Lifted tiles with gaps
Other Roof Features	Timber wall plate with gaps into stone wall tops
Soffits	None
Fascias	None
Bargeboards	None



Wall - Material and Condition	Random stone with numerous gaps and cracks	
Lintels and Sills – Material and Condition	Stone generally good condition	
Windows – Material and Condition	None	
Doors – Material and Condition	Single large timber door with gaps around frame	
Other Wall Features	Some sections of rebuilt wall tops	
Loft Height	No loft, open mezzanine	
Internal Lining	Breathable membrane	
Support System	Timber rafters	
Internal Gable -Wall Material and Condition	Random stone with numerous cracks and gaps	
Ridge Beams	Timber	
Loft Env. Conditions (light, draughtiness)	Light, moderately draughty with stone cracks, crevices	
Other Features	Gaps through stone walls on wall tops	
Internal Survey Conditions	Open and uncluttered internal space open to void	
Field Signs	None	
<i>Maternity Assessment</i>	<i>Roost</i> Internally open to void so exposed and light, no evidence of maternity use	
<i>Hibernation Assessment</i> Large, deep stone walls with gaps suitable for hibernating bats.		

Assessment Of Foraging/Commuting Habitats

3.7 Pasture fields surrounding building with nearby woodland and watercourse providing foraging opportunities on and near site.

Activity Surveys

3.8 Full details of the bat activity survey results are provided in the appendices.

3.9 Survey on the 1st June 2023 recorded moderate to high levels of foraging and commuting activity of individual common and soprano pipistrelles with a single noctule pass. No confirmed roosts were recorded within the workshop building. Activity was

concentrated in the north of the building largely associated with the offsite cottage and associated gardens and tree cover. The first bat was recorded commuting near the site approximately 15 minutes after sunset from the direction of the cottage. A remote detector was placed inside the workshop building during the survey with no bats recorded. A possible roost, likely pipistrelle, may be present in the offsite Pagecroft Cottage.

- 3.10 Survey on the 19th June 2023 recorded slightly less activity than the first survey but similar activity patterns with most foraging/commuting activity to the north of the building. The first bat was recorded 1 minute after sunset but was not seen as it was behind the northern surveyor in the direction of the cottage. A single common pipistrelle bat was recorded emerging from the eaves of the northern elevation. Whilst the exact location could not be determined, gaps are present under the timber wall plate into the stone wall tops along the eaves. Common and soprano pipistrelle, noctule and *Myotis* sp. bats were also recorded during the survey.

Additional Species Groups

Birds

- 3.11 Disused nests were recorded on the wall tops inside the workshop building and nesting starling were using the external stone walls to nest on the northeast corner of the building.

Other Protected Species

- 3.12 The priority species hedgehog is likely to be present on site on occasion.

4. Site Assessment

Assessment of Survey Findings

4.1 The assessment is based on survey effort undertaken to date.

Bats

4.2 The initial risk assessment identified the property as being of moderate suitability for use by roosting bats.

4.3 The site supports a common pipistrelle day roost with a single bat emerging from the eaves of the building.

4.4 No evidence of maternity use was recorded during the survey.

4.5 The building contains features which could be used by hibernating bats.

4.6 The site is considered to be of local value to foraging/commuting bats.

Nesting Birds

4.7 The site provides opportunities for nesting birds, with nesting starling recorded in the stone walls and disused nests recorded inside the building.

4.8 Tawny owl were recorded flying over site but no evidence of owl use of the building was recorded.

Other Protected Species

4.9 Hedgehog are likely to be present on site occasionally.

Designated Sites

4.10 There are no designated sites for bats within 2km of site.

5. Impacts

5.1 The following impacts are based on the survey work to date and the understanding that the Client wishes to undertake the following:

- Internal refurbishment of workshop
- Installation of new velux roof windows
- Installation of new sash windows
- Repointing stonework

5.2 As a result of the assessment completed and the nature of the proposed works, the likely impacts, without appropriate avoidance measures, mitigation and/or compensation scheme, are:

- Destruction of a common pipistrelle day roost through the repointing/sealing of wall tops.
- Potential disturbance and harm to roosting bats, should they be present at the time of the works.
- Loss of potential roosting features associated with the stonework, roof and ridge tiles.
- Increased lighting which may disturb foraging/commuting bats and other nocturnal wildlife.
- Potential harm and/or disturbance to nesting birds, should works be undertaken in the breeding bird season (March to August inclusive).

6. Recommendations

Further Survey

- 6.1 Should demolition works not take place within 12 months of the date of the most recent survey in this report, additional updating survey work for bats is likely to be required.
- 6.2 Should a bat licence not be obtained before May 2024, updating survey is likely to be required to support the licence application.
- 6.3 Based on the nature of the site and the proposed works, no further survey work for other protected species or habitats (other than pre-commencement checks detailed below) are considered necessary for this site.

Avoidance Measures

- 6.4 The following measures should be incorporated into the design of the scheme to avoid impacts on wildlife:
 - External lighting that may affect the site's suitability for bats will be avoided. If required this will be limited to low level, avoiding use of high intensity security lighting. Lighting will not within 2m of retained potential roosting features.
 - Alternatives to timber treatments that are injurious to mammals will be sought and used on site (see http://www.jncc.gov.uk/pdf/batwork_manualpt4.pdf).
 - Works will not be undertaken during the nesting bird season (March to August inclusive) unless the site is checked by an appropriately experienced ecologist and nests are confirmed to be absent.

Mitigation Strategy

- 6.5 An appropriate Natural England licence will be obtained prior to works impacting on the confirmed day roost.
- 6.6 Repointing work to the external stone walls and repointing and/or boarding of internal stone walls/wall tops will not be completed during the bat hibernation period (November to February inclusive).

Compensation Scheme

- 6.7 A detailed compensation scheme cannot be completed until the further survey work, highlighted above is completed however elements of this strategy could include:
 - Bat roosting opportunities will be included within the building in the form of retained crevices (minimum 5) within the external stone walls (see figure in Appendix 4).
 - Due to the presence of breathable membrane roof lining and no anticipated re-roofing works, bat roosting opportunities will not be created within the roof.

- A single wood-crete type bat box will be erected on a mature tree or retained building (3-4m high, away from windows and 2m from lighting, close to suitable foraging areas) within the landowner's holding.
- Two nest boxes, one suitable for starling and one suitable for smaller species, will be erected on a mature tree or retained building (close to vegetation cover, away from windows, north to east facing and at least 2m high) within the landowner's holding.

Appendix 1 – Bat Suitability and Survey Effort

Classifications of suitability are based on those provided within the Bat Conservation Trust Good Practice Survey Guidelines¹⁵, with the table below taken from page 35 of the guidelines (table 4.1).

Table 7: 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 and foraging bats
Low	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically.</p> <p>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).</p> <p>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.</p>	<p>Habitat that could be used by small numbers of commuting bats such as gappy hedgerow or unvegetated stream, but isolated, i.e not very well connected to the surrounding landscape by other habitat.</p> <p>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.</p>
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).	<p>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.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>
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	<p>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.</p> <p>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 watercourse and grazed parkland.</p>

¹⁵ Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

		Site is close to and connected to known roosts.
<p>a. For example in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.</p> <p>b. Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2015). This phenomenon requires some research in the UK but ecologists should be aware of potential for larger numbers of this species to be present during the autumn and winter in larger buildings in highly urbanised environments.</p> <p>c. The system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015)</p>		

The classification of the suitability relates to the level of further survey recommended.

Table 8: Survey effort and timing depending on suitability of the structure or tree (Tables 7.1-7.3 in the BCT Guidelines)			
	Low roost suitability	Moderate suitability	High roost suitability
Survey Effort	One survey visit One dusk emergence or dawn re-entry survey	Two separate visits One dusk emergence and a separate dawn re-entry survey	Three separate visits At least one dusk emergence and a separate dawn re-entry survey. The third can be either dusk or dawn.
Timings	May-August (structures) No further survey (trees)	May to September. At least one must be in the optimum period (May to August)	May to September. two must be in the optimum period (May to August)
If bats are recorded	If bats emerge during surveys, the survey schedule will be adjusted to increase the survey effort so that enough information can be collected to characterise the roost and provide data should a Natural England Licence be required.		

Appendix 2 – Policy and Legislation

Planning Policy

National Planning Policy Framework (NPPF)¹⁶

The revised National Planning Policy Framework sets out the government's planning policies for England and how these are expected to be applied. It provides a framework within which locally prepared plans for housing and other development can be produced. Planning law requires that applications for planning permission be determined in accordance with the development plan. The key paragraphs from the relating to the natural environment are detailed below.

Paragraph	Statement
8	Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives): a) an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure; b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities’ health, social and cultural well-being; and c) an environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy
174	Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing 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); b) recognising 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; c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate; d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; e) preventing 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; and f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate
175	Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries
179	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; and

¹⁶ National Planning Policy Framework July 2021
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

Table 9: Ecologically Relevant Paragraphs of the NPPF	
Paragraph	Statement
	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.
180	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. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; 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 ⁶³ and a suitable compensation strategy exists; and d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.
181	The following should be given the same protection as habitats sites: a) potential Special Protection Areas and possible Special Areas of Conservation; b) listed or proposed Ramsar sites ⁶⁴ ; and c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites
182	The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

Government Circular ODPM 06/2005 Biodiversity and Geological Conservation¹⁷ (England only)

This Circular provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England.

Part IV - Conservation of Species protected by Law details that the presence of a protected species is a material consideration when considering a development proposal that may result in harm to the species or its habitat and that planning authorities must have regard to species protected under the Habitat Regulations.

It goes on to say that: *it is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should*

¹⁷ODPM Circular 06/2005 Office of the Deputy Prime Minister Eland House, Bressenden Place, London SW1E 5DU
Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System

therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted.

Natural Environment and Rural Communities (NERC) Act 2006^{18 19}

Section 40 – To conserve biodiversity

Section 40 puts a duty on public authorities to conserve biodiversity when undertaking its duties and functions,

Section 41 – Biodiversity list and Action

Section 41 – Requires the Secretary of State to *publish a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity. They must also take such steps as appear to the Secretary of State to be reasonably practicable to further the conservation of the living organisms and types of habitat included in any list published under this section or promote the taking by others of such steps.*

The 2007 lists were superseded by the UK Post-2010 Biodiversity Framework.

Table 10: UK Priority Habitats (excl. marine habitats)²⁰

UK BAP broad habitat	UK BAP priority habitat
Rivers and Streams	Rivers
Standing Open Waters and Canals	Oligotrophic and Dystrophic Lakes
	Ponds
	Mesotrophic Lakes
	Eutrophic Standing Waters
	Aquifer Fed Naturally Fluctuating Water Bodies
Arable and Horticultural	Arable Field Margins
Boundary and Linear Features	Hedgerows
Broadleaved, Mixed and Yew Woodland	Traditional Orchards
	Wood-Pasture and Parkland
	Upland Oakwood
	Lowland Beech and Yew Woodland
	Upland Mixed Ashwoods
	Wet Woodland
	Lowland Mixed Deciduous Woodland
	Upland Birchwoods
Coniferous Woodland	Native Pine Woodlands
Acid Grassland	Lowland Dry Acid Grassland
Calcareous Grassland	Lowland Calcareous Grassland

¹⁸ <https://www.legislation.gov.uk/ukpga/2006/16/section/40>

¹⁹ <https://www.legislation.gov.uk/ukpga/2006/16/section/41>

²⁰ <http://jncc.defra.gov.uk/page-5706>

	Upland Calcareous Grassland
Neutral Grassland	Lowland Meadows
	Upland Hay Meadows
Improved Grassland	Coastal and Floodplain Grazing Marsh
Dwarf Shrub Heath	Lowland Heathland
	Upland Heathland
Fen, Marsh and Swamp	Upland Flushes, Fens and Swamps
	Purple Moor Grass and Rush Pastures
	Lowland Fens
	Reedbeds
Bogs	Lowland Raised Bog
	Blanket Bog
Montane Habitats	Mountain Heaths and Willow Scrub
Inland Rock	Inland Rock Outcrop and Scree Habitats
	Calaminarian Grasslands
	Open Mosaic Habitats on Previously Developed Land
	Limestone Pavements
Supralittoral Rock	Maritime Cliff and Slopes
Supralittoral Sediment	Coastal Vegetated Shingle
	Machair
	Coastal Sand Dunes

Protected Species Legislation

European Protected Species

European Protected Species (EPS) are species of plants and animals (other than birds) protected by law throughout the European Union. They are listed in Annexes II and IV of the European Habitats Directive and receive full protection under The Conservation of Species and Habitats Regulations 2017 (as amended). This make it an offence to:

- deliberately capture, injure or kill any European Protected Species (EPS)
- to deliberately disturb any European Protected Species (EPS);
- to damage or destroy a breeding site or place of rest or shelter used by any European Protected Species (EPS).

The Wildlife and Countryside Act 1981 (as amended) adds further protection by making it an offence to intentionally or recklessly²¹ disturb an EPS while it is occupying a structure or place which it uses for shelter or protection, or to obstruct access to any structure or place the species uses for shelter or protection.

²¹ Under the Countryside and Rights of Way Act 2000 (CROW Act) extended the protection to cover reckless damage or disturbance

Table 11: European Protected Species relevant to the UK			
Animals		Plants	
All bat species	Great Crested Newt	Shore dock	Creeping marshwort
Large blue butterfly	Otter	Killarney fern	Slender naiad
Wild cat	Smooth snake	Early gentian	Fen Orchid
Dolphins, porpoises and whales (all species)	Sturgeon fish	Lady's slipper	Floating-leaved water plantain
Dormouse	Natterjack toad	Yellow marsh saxifrage	
Sand lizard	Pool Frog		
Fisher's Estuarine Moth	Snail, Lesser Whirlpool Ram's-horn		
Marine turtles			

Other Protected Species

Table 12: Other Protected Species		
Species	Legislation	Level of Protection
Red Squirrel	Wildlife and Countryside Act 1981 (as amended) Wild Mammals (Protection) Act 1996	<p>The species is listed on Schedule 5 of the Wildlife and Countryside Act (1981) makes the following actions offences:</p> <ul style="list-style-type: none"> intentionally killing, injuring, or taking red squirrels intentionally or recklessly damaging, destroying or obstructing access to any structure or place used for shelter or protection disturbing red squirrels whilst they are using any structure or place used for shelter or protection <p>Under the Wild Mammals (Protection) Act, squirrels are protected from unnecessary suffering by a number of methods.</p>
Birds	Wildlife and Countryside Act 1981 (as amended)	<p>Under the Wildlife and Countryside Act (1981) it is an offence if any person:</p> <ul style="list-style-type: none"> intentionally kills, injures or takes any wild bird intentionally takes, damages or destroys the nest of any wild bird whilst that nest is in use of being built; intentionally takes, damages or destroys eggs of any wild bird; <p>Wild birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are protected from:</p> <ul style="list-style-type: none"> intentional or reckless disturbance whilst it is building a nest or is in, on or near a nest containing eggs or young; disturbance of dependent young
White-clawed Crayfish	Wildlife and Countryside Act 1981 (as amended)	<p>Under the Wildlife and Countryside Act (1981) it is an offence if any person:</p> <ul style="list-style-type: none"> intentionally takes a white-clawed crayfish sells, offers or exposes for sale, or has in his possession or transports for the purpose of sale, any live or dead white clawed crayfish or any part of, or anything derived from, such an animal

<p>Badger</p>	<p>Protection of Badgers Act 1992 Wild Mammals (Protection) Act 1996</p>	<p>The Protection of Badgers Act (1992) makes it an offence to wilfully or attempt to:</p> <ul style="list-style-type: none"> • kill or injure a badger • possesses a dead badger or any part of, or anything derived from a dead badger; • digs for badgers; • damages a badger sett or any part of it; • destroys a badger sett • obstructs access to, or any entrance of, a badger sett; • causes a dog to enter a badger sett; • disturbs a badger whilst it is occupying a badger sett. <p>Under the Wild Mammals (Protection) Act, badgers are protected from unnecessary suffering by a number of methods.</p>
<p>Slow-worm Adder Grass Snake Common Lizard</p>	<p>Wildlife and Countryside Act 1981 (as amended)</p>	<p>Under the Wildlife and Countryside Act (1981) it is an offence if any person:</p> <ul style="list-style-type: none"> • intentionally kill or injures these slow-worms, adders, grass snakes or common lizards • sells, offers or exposes for sale, or has in his possession or transports for the purpose of sale, any live or dead slow-worm, adder, grass snake or common lizard or any part of, or anything derived from, such an animal
<p>Freshwater Pearl Mussel</p>	<p>Wildlife and Countryside Act 1981 (as amended)</p>	<p>The species is listed on Schedule 5 of the Wildlife and Countryside Act (1981) makes the following actions offences:</p> <ul style="list-style-type: none"> • intentionally killing, injuring, or taking freshwater pearl mussels • intentionally or recklessly damaging, destroying or obstructing access to any structure or place used for shelter or protection • disturbing freshwater pearl mussels whilst they are using any structure or place used for shelter or protection

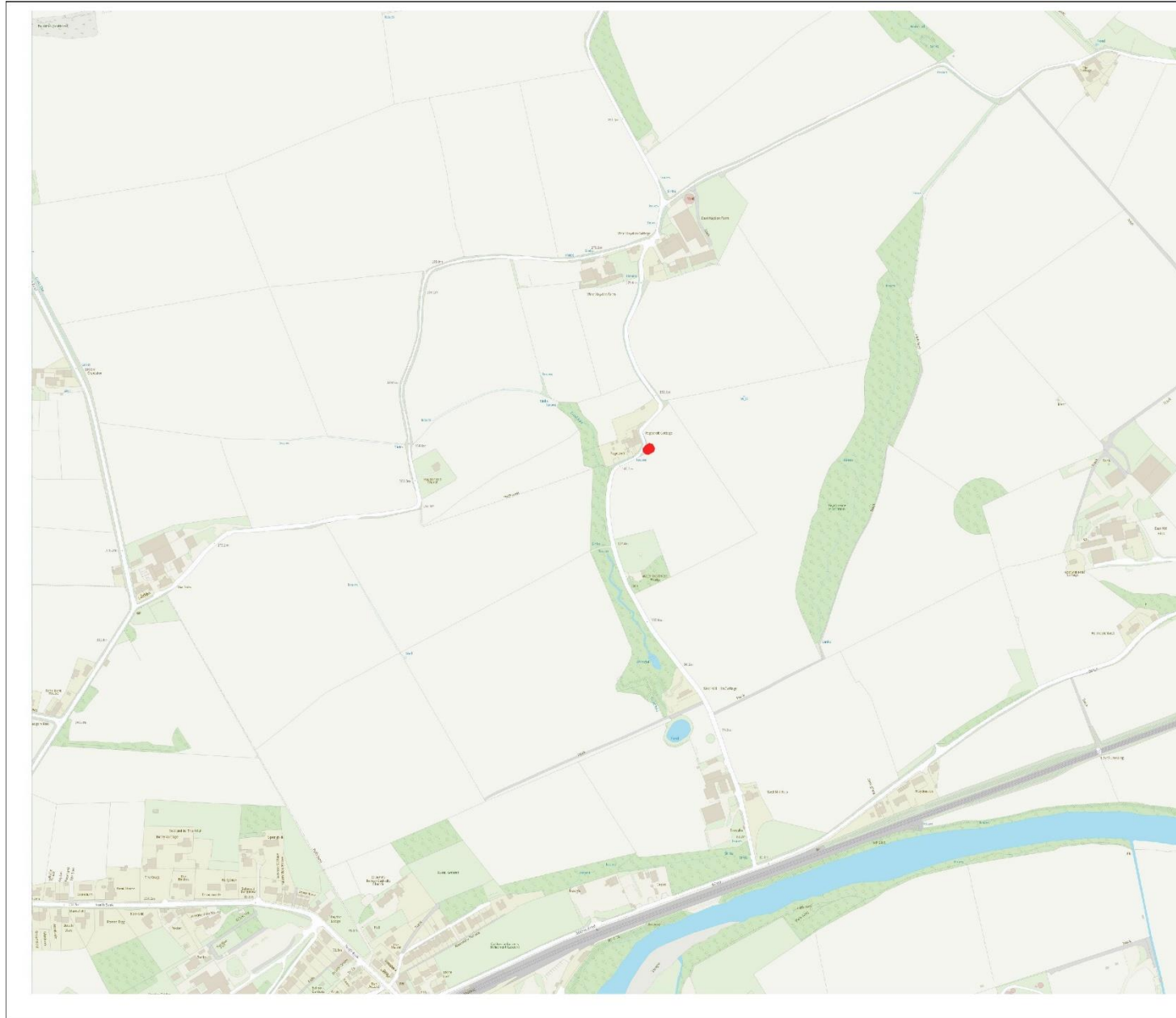
Appendix 3 – Bat Activity Survey Data Tables

Date	1st June 2023	Sunset	21:36
Start Time	21:20	End Time	23:06
Time	Surveyor 1 Jessica Wilson	Surveyor 2 Linus Morton	
21:20:00			
21:25:00			
21:30:00			
21:35:00			
21:40:00			
21:45:00			
21:50:00	21:50:55 45 commuting		
21:55:00			
22:00:00	22:03:54 55 commuting		
22:05:00	22:06:38 Silent bat as above 21:08:00 Silent bat as above - possible roost in off-site house 22:09:30 45 commuting		
22:10:00	22:10:18 55 commuting 22:10:37 55 bat commuting 22:11:19 45x2 chasing 22:14:45 45 commuting	22:10:40 55 commuting 22:14:30 45 HNS	
22:15:00	22:15:41 45 commuting 22:17:15 Silent bat commuting 22:18:41 Noc HNS	22:15:50 45 foraging	
22:20:00	22:22:07 45 foraging 22:23:12 45 foraging		
22:25:00	22:26:05 55 commuting	22:25:50 55 HNS 22:29:10 45 HNS	
22:30:00		22:30:08 Noc HNS	
22:35:00			
22:40:00	22:44:40 45 commuting	22:44:50 45 HNS	
22:45:00			
22:50:00			
22:55:00			
23:00:00		23:00:05 55 foraging 23:04:20 55 foraging	
23:05:00			
23:10:00			
Flight Activity	Species		
Potential Emergence	39 = Nathusius' pipistrelle	Myo = Myotis sp.	
Confirmed Emergence	45 = Common pipistrelle	55 = Soprano pipistrelle	
HNS	50 pip = Common/Soprano pipistrelle		
SNH	Noc = Noctule	BLE = Brown long-eared bat	

Date	19th June 2023	Sunset	21:48	
Start Time	21:30	End Time	23:20	
	Surveyor 1 Jessica Wilson		Surveyor 2 Bryanna Wilson	
Time	Scout and iRGuide 19 thermal camera		Scout and iRGuide 19 thermal camera	
21:30:00				
21:35:00				
21:40:00				
21:45:00				
21:50:00				
21:55:00	21:49 45 HNS			
22:00:00				
22:05:00				
22:10:00				
22:15:00	22:17:27 Noc commuting 22:19:47 45 emerged from eaves			
22:20:00				
22:25:00				
22:30:00	22:30:02 45 HNS 22:33:28 45 commuting 22:34:04 45 HNS			
22:35:00				
22:40:00	22:35:25 45 commuting		22:43:09 45 foraging	
22:45:00	22:38-23:00 45 and 55 HNS frequent foraging			
22:50:00	22:45:10 45 commuting		22:50:16 45 commuting 22:52:16 45 HNS	
22:55:00	22:46:46 Noc HNS		22:55:30 45 foraging 22:59:36 45 commuting'	
23:00:00				
23:05:00	23:07:38 Noc HNS		23:05:15 45 commuting	
23:10:00			23:10:41 45 commuting 23:12:14 45 foraging 23:12:44 55 foraging	
23:15:00	23:15:01 Myo HNS		23:18:30 45 HNS 23:19:14 45 foraging	
23:20:00			23:21:40 55 HNS	
	Flight Activity	Species		
	Potential Emergence	39 = Nathusius' pipistrelle	Myo = Myotis sp.	
	Confirmed Emergence	45 = Common pipistrelle	55 = Soprano pipistrelle	
HNS	Heard Not Seen	50 pip = Common/Soprano pipistrelle		
SNH	Seen Not Heard	Noc = Noctule	BLE = Brown long-eared bat	



Appendix 4 – Figures




Key

 Site Boundary

North 

Figure No: 1
Figure Name: Site Location
Project Name: Pagecroft
Project Ref. No: 23135
Date: July 2023
Author: JW

0 100 200 m






NORTH



SOUTH



EAST



WEST

General Notes:

North view:
No alterations to building, front door to remain.

South view:
Two Velux conservation style windows
Two main sliding sash windows toughened safety glass (to lower half)

East view:
1 main sash window with toughened glass to lower half
Two new conservation style Velux windows
One new fire escape window
New Air Source Heat Pump

West view:
One new toilet window

Stonework to be made good where damage and cracks are. See engineers drawing and Bat roosting positions.

All stone work to be re-pointed. No re-painting to be carried out between November and February.

Openings for new windows and doors to be made with dressed stone similar to existing stone. See stone detail drawing.

Renew all existing guttering.

Heritage Rose Vertical uPVC Sliding Sash windows – white

Existing roof windows to be replaced with low level conservation style Velux windows.

PLANNING

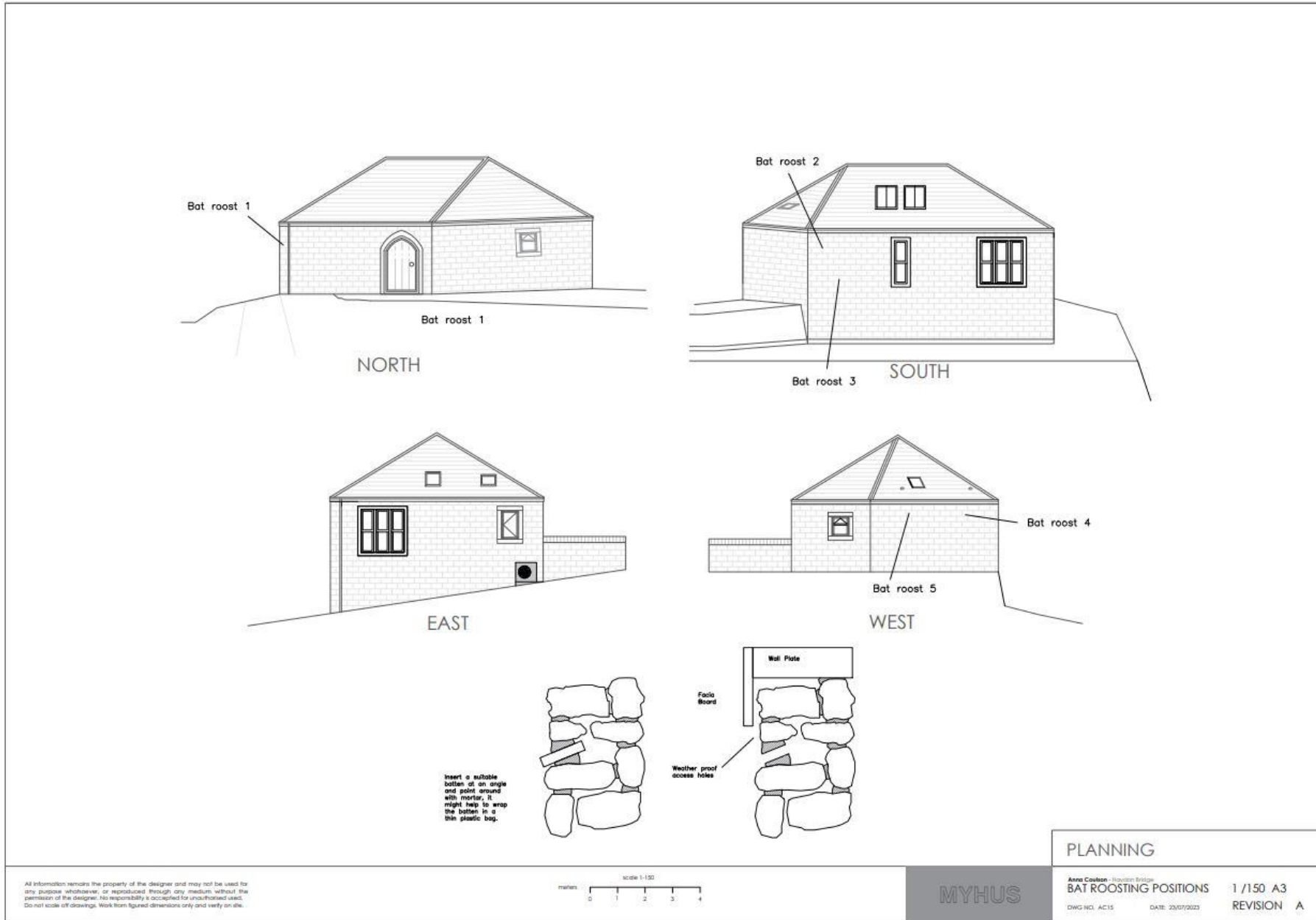
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MYHUS

Anna Coulson - Haydon Bridge
PROPOSED ELEVATIONS
DWG: HCL_A235 DATE: 23/07/2023

1 / 150 A3
REVISION A



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PLANNING	
Anna Coulson - Raydon Bridge	
BAT ROOSTING POSITIONS	1 / 150 A3
DWG NO. AC15	DATE: 29/07/2023 REVISION A

