

kite ecology

Bat Surveys

**Barn at Rowston Farm, New Hedges,
Pembrokeshire**

Hean Castle Estate

Final Report

November 2022

kite ecology

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This report, and the information contained in it, is intended to be valid for a maximum of 12 months from the date of the survey, providing no significant baseline changes have occurred.

Project number	Report number	Revision number	Date of issue
2099	001	Draft	13102022
2099	001	Updated to include draft plans	01112022
2099	001	Final updated to include amended plans	17112022
2099	001	Final updated to include amendment to bat roost door design	21112022
2099	001	Final updates to include amended plans	22112022

1 Executive Summary

- 1.1 Bat surveys of a stone barn at Rowston Farm, New Hedges, Pembrokeshire were commissioned by the Hean Castle Estate in relation to a planning application. Under the proposals, the barn is to be converted into residential to provide manager accommodation for the adjacent caravan park.
- 1.2 A visual inspection of the property was completed on 11th May 2021, with a static detector deployed on the upper floor between 11th – 16th May 2021. An emergence survey was completed on 24th June 2021, with a dawn survey on 9th July 2021. All surveys were completed by, or under the supervision of, a suitably licensed and experienced ecologist.
- 1.3 During the dawn survey, five brown long eared bats re-entered two points between the ground floor wall and internal floor. Two brown long eared bats emerged during the emergence survey, but no bat activity was recorded during the static detector survey. Common pipistrelle and soprano pipistrelle bats were recorded foraging and commuting around the site during the activity surveys.
- 1.4 **Note to client**
Bats are roosting in the barn at Rowston Farm. Prior to any works commencing which would impact on the bat roost, it will be necessary to obtain a bat development licence from Natural Resources Wales. Such licenses can only be applied for once full planning permission has been granted and all conditions relating to bats have been discharged.
- 1.5 As part of any licence application, a mitigation strategy must be designed which allows the bats to roost on site post re-development as is currently the case. In this instance, the barn is to be converted into residential. Based on the survey information, the barn appears to be used as a maternity roost by brown long eared bats. In this instance, the existing barn used by the bats is to be converted, the bat roost would be lost. To mitigate for the loss of the roost, a new dedicated bat loft is to be provided in a new garage building to the south of the existing barn. The new roost will include a double height section to allow the bats to fly around and warm up prior to emergence as is currently the case.
- 1.6 Consideration must also be given to external lighting. All external lighting must be PIR LED's, downward facing and positioned away from the bat roost. All lighting must be clearly marked up on plans that accompany the application.
- 1.7 Swallows are also nesting on site. To ensure nesting sites are maintained on site, the double height section of the bat roost will include swallow nest cups.

2 Introduction and site description

- 2.1 Bat surveys of a stone barn at Rowston Farm, New Hedges, Pembrokeshire were commissioned by the Hean Castle Estate in relation to a planning application. Under the proposals, the barn is to be converted into residential to provide manager accommodation for the adjacent caravan park. The centre of the site is located at OSGR SN13410255.

2.2 The survey relates to a detached stone barn, approximately 25m in length and 6m wide. It has an unlined slate roof which is supported on traditional trusses and includes a ridge board. The ridge runs in a north west to south easterly, with the tops of the northern and southern walls exposed internally. The upper floor is well sealed with a door on the south easterly gable end, while the ground floor has open window and door openings on the westerly aspect, making the ground floor relatively light internally. There is a single storey section on the north western gable end. This has a mono-pitched corrugated metal roof and the door is intact, so lacking any fly in access.



Figure 1. Northern and western elevations of the barn.



Figure 2. Internal view of the ground floor



Figure 3. North eastern elevation of the barn.

2.3 Unless the client indicates otherwise, all species records will be submitted to the relevant biological records centre.

3 Desk study and survey methodology

3.1 General

A visual inspection of the barn was completed on 11th May 2021, with a static detector deployed in the upper floor between 11th – 16th May 2021. An emergence survey was completed on 24th June 2021, with a dawn survey completed on 9th July 2021. The weather during the surveys is summarised in Table 1. All surveys were undertaken by a suitably licensed ecologist who is a full member of the Chartered Institute of Ecology and Environmental Management and a Chartered Environmentalist. Surveys and reports have been completed following accepted guidelines and in accordance with CIEEM Guidelines for Ecological Report Writing (2015) and BS 42020:2013 *Biodiversity. Code of practice for planning and development.* (2013).

Table 1. Summary of weather conditions during the surveys

Date	Type of survey	Wind speed	Wind direction	Temperature	Cloud cover	Other
11.05.2021	Visual	0-1	South westerly	14°C	0%	-
11/12.05.2021	Static	0-1	South westerly	12°C	10%	-
12/13.05.2021	Static	0-1	South westerly	12°C	0%	-
13/14.05.2021	Static	0-1	South westerly	13°C	70%	-

14/15.05.2021	Static	0-1	South westerly	12°C	50%	-
15/16.05.2021	Static	0-1	South westerly	12°C	50%	-
24.06.2021	Emergence	2-3	South westerly	14°C	100%	-
09.07.2021	Dawn	0-1	South westerly	14°C	100%	Heavy mist

3.2 Desk study

3.2.1 Local Records Centre Data Search

A data search was not commissioned in this instance due to the experience and local knowledge of Kite Ecology in this particular area.

3.2.2 Aerial photographs

Google Earth was used to identify any important landscape features surrounding the site.

3.2.3 Designated sites

The Multi-Agency Geographic Information website (www.magic.gov.uk) was used to identify the presence of any protected sites within 5km of the survey area.

3.3 On site surveys

3.3.1 Bats

3.3.1.1 Visual inspection

An initial internal inspection of the building was undertaken using a ladder and powerful torch. Binoculars, a LUX meter and an endoscope were also available. The building was searched thoroughly for any signs of bats including droppings, feeding remains, staining and the bats themselves. Any potential bat access points were also recorded. Average LUX levels within the building were measured using a handheld light meter. All sections of the buildings were accessible during the survey and the buildings had not been cleaned prior to the surveys being undertaken.

3.3.1.2 Static detector survey

An Anabat Express detector was placed in the upper floor of the barn for 5 consecutive nights. Any calls were analysed using Analook software.

3.3.1.3 Emergence survey

During this, two surveyors using Anabat Walkabout and Echometer Touch Pro bat detectors, monitored potential bat access points identified during the initial inspection for emerging bats. One surveyor was positioned on the north western corner and the other on the south eastern corner of the barn, with the third on the southern elevation of the stables to ensure adequate coverage. The survey commenced 15 minutes before sunset and continued for over an hour after sunset.

3.3.1.4 Dawn survey

During this, two surveyors using Anabat Walkabout and Echometer Touch Pro bat detectors, monitored potential bat access points identified during the initial inspection for emerging bats. One surveyor was positioned on the north western corner and the other on the south eastern corner of the barn, with the third on the southern elevation of the

stables to ensure adequate coverage. The survey commenced two hours before sunrise and continued until sunrise itself, or 10 minutes after the last bat was recorded depending on which was latest.

3.3.2 Other species

Incidental records of any other species seen or heard on site during the survey were also recorded.

4 Results

4.1 Desk study

4.1.1 Aerial photographs

Situated to the east of the village of New Hedges, the barn has large open sided barns immediately to the south west, with the farm house to the east. There is plantation woodland to the west, with agricultural farmland in the wider context. The site in relation to the surrounding landscape are shown in the aerial in Figure 4.

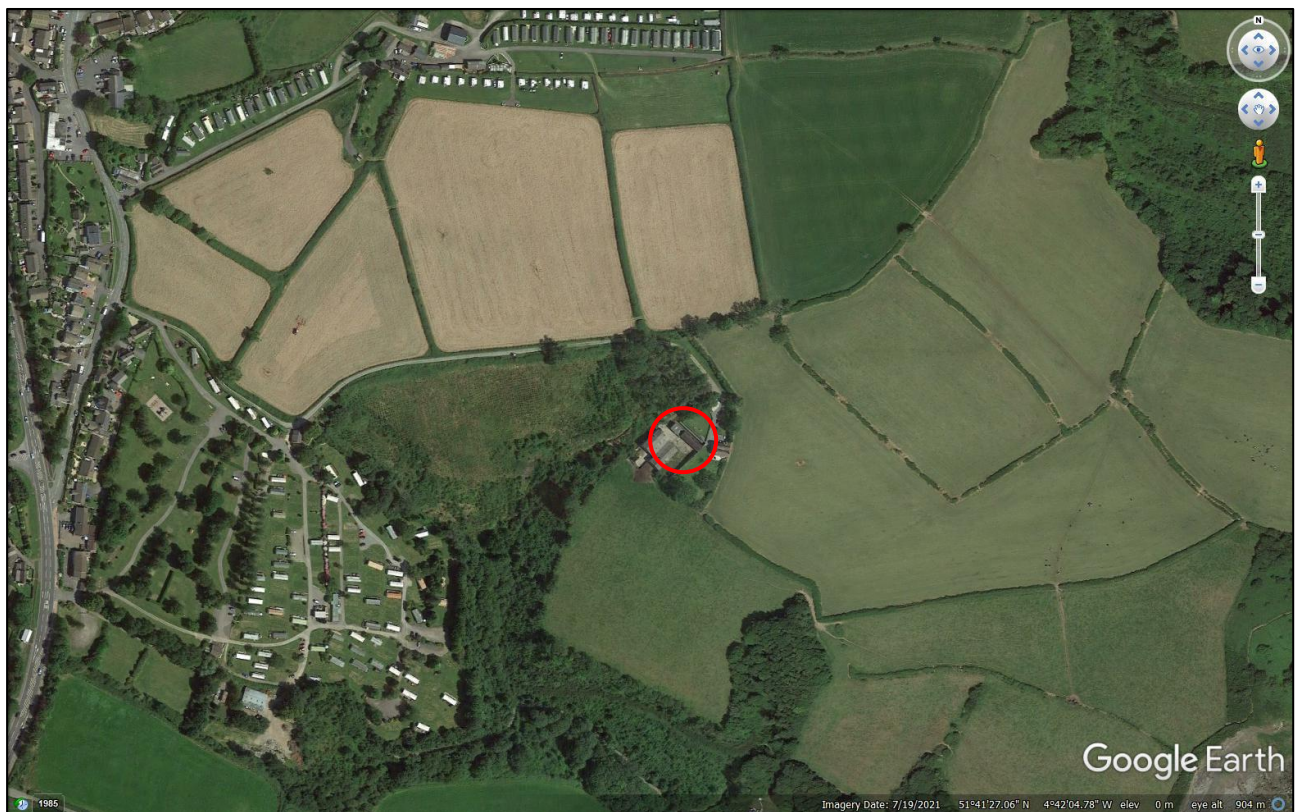


Figure 4. Aerial photograph of the site in relation to the surrounding habitat.

4.1.2 Designated sites

There are numerous designations within 5km of the survey area. The most relevant to the site is Beech Cottage Site of Special Scientific Interest which lies 400m to the south. This SSSI also forms part of the Pembrokeshire Bat Sites and Bosherton Lakes Special Area of Conservation. The site is also 500m to the west of Waterwynch Bay to Saundersfoot Harbour SSSI, Tenby Cliffs and St Catherine's Island SSSI, Carmarthen Bay and Estuaries SAC, Carmarthen Bay Special Protection Area and Bristol Channel Approaches c.SAC. The site is also within the Pembrokeshire Coast National Park.

4.2 On site surveys

4.2.1 Bats

4.2.1.1 Visual inspection

No evidence of bats was found in the barn, either on the upper or ground floor. The upper floor lacks any fly in access and the windows and doors are intact. There are skylights on the eastern elevation making it relatively light with an average LUX level of 100 (see Table 2 for light levels). The ground floor is very light internally as all windows and doors on the western elevation are uncovered. It has an average LUX level of 180, so making this section too light to be used by roosting horseshoe bat species.

Table 2. Chart of example lux levels (taken from Bats and artificial lighting in the UK).

Lighting conditions	Lux levels
British sunshine	50,000
Overcast sky	5,000
Well lit office	500
Minimum for easy reading	300
Passageway or outside working area	50
Good main road lighting	5-20
Sunset	10
Typical road lighting	5
Minimum security lighting	2
Twilight	1
Clear full moon	0.25 to <1
Typical moonlight/cloudy sky	0.1
Typical starlight	0.001
Poor starlight	0.0001

4.2.1.2 Static detector survey

No bat calls were recorded during the static detector survey.

4.2.1.3 Emergence survey

During the emergence survey, two brown long eared bats *Plecotus auritus* were seen warming up on the ground floor of the barn. The bats were observed within the barn from 2136 until emerging out of the door at 2226 (sunset was at 2142). Three soprano pipistrelles *Pipistrellus pygmaeus* were observed commuting past the south eastern gable end of the barn, close to the farm house. All bats flew in a south to north direction. The bat activity is summarised in Table 3.

Table 3. Summary of bat activity during the emergence survey.

Time	Species	No. of bats	Activity	Other information
2136	Brown long eared	2	Warming up inside the ground floor section of the barn	-
2152	Soprano pipistrelles	1	Commuting	South to north
2157	Soprano pipistrelle	1	Commuting	South to north
2206	Soprano pipistrelle	1	Commuting	South to north

2226	Brown long eared	2	Emerged from door on ground floor	-
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4.2.1.4 Dawn survey

During the dawn survey, a total of five brown long eared bats re-entered two gaps between the wall and internal wooden floor (Figures 5 and 6). The first bat arrived back in the ground floor at 0402 (sunrise at 0515) and by 0440, five bats were flying around the ground floor. The bats began re-entering the roosts at 0455 and all were in the roosts by 0459. The bat activity recorded during the dawn survey is recorded in Table 4.



Figure 5. Gap between wall and floor used by three brown long eared bats on north western gable end wall.



Figure 6. Gap between floor and wall used by 2 brown long eared bats on south eastern gable end.

Table 4. Summary of bat activity during the dawn survey.

Time	Species	No. of bats	Activity	Other information
0402	Brown long eared	1	Flying around inside ground floor	-
0440	Brown long eared	5	Inside ground floor flying around	Constant social calling
0455	Brown long eared	1	Re-entered roost	-
0459	Brown long eared	4	Re-entered roost	All activity ceased

4.2.2 Other species

Three active swallows *Hirundo rustica* nests were seen on the ground floor.

5 Limitations to surveys

5.1 The results and recommendations of the report are based on findings as they were at the time of the survey. Kite Ecology cannot be held responsible for any base line changes to the site that have occurred since the survey was carried out that may have any effect on the results and recommendations.

6 Legislation and planning policy

6.1 Designated sites

Special Areas of Conservation and Sites of Special Scientific Interest are strictly protected through the Conservation of Habitats and Species Regulations 2017.

6.2 Bats

All species of bat and their breeding sites or resting places (roosts) are protected under the Conservation of Habitats and Species Regulations 2017 which transcribes the EC Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna) into UK law. Bats are also protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended). It is an offence for anyone intentionally to kill, injure or handle a bat, to possess a bat (whether live or dead), disturb a roosting bat, or sell or offer a bat for sale without a licence. It is also an offence to damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not. Licences are available from Natural Resources Wales to allow actions that would otherwise be unlawful. Further information on licences is included in Appendix 1.

6.3 Birds

All birds, their nests and eggs are protected under Part 1 of the Wildlife and Countryside Act 1981 (as amended).

6.4 Well Being of Future Generations (Wales) Act 2015

The Well-being of Future Generations (Wales) Act is about improving the social, economic, environmental and cultural well-being of Wales. The Act places a duty on public bodies listed in the Act to carry out sustainable development.

6.5 Environment (Wales) Act 2016

The Environment (Wales) Act has been designed to complement the Wellbeing of Future Generations (Wales) Act by applying the principles of sustainable development to the management of Wales' natural resources. The Act puts the ecosystem approach into statute through a set of Sustainable Management of Natural Resources (SMNR) principles, which are based on the 12 principles (Ecosystem Approach principles) contained in the UN Convention on Biological Diversity (CBD).

6.6 Natural Environment and Rural Communities Act 2006

Section 40 of the NERC Act places a 'Biodiversity Duty' on local planning authorities as far as is consistent with the proper exercise of their functions.

6.7 Technical Advice Notes 5

TAN 5 gives advice to local authorities on development control issues for Special Protection Areas (SPAs), Special Areas of Conservation (SACs), and Sites of Special Scientific Interest (SSSIs). It also covers the selection and designation of non-statutory nature conservation sites, such as local nature reserves, and the protection of species, commons and greens.

6.8 Local Development Plan

Policy 11 (Protection of Biodiversity) of the Pembrokeshire Coast National Park Authority Local Development Plan states that:

'Development that would disturb or otherwise harm protected species or their habitats or the integrity of other habitats, sites or features of importance to wildlife and individual species including Local Biodiversity Action Plan species and habitats will only be permitted where the effects will be acceptably minimised or mitigated through careful design, work scheduling or other measures.'

also of relevance is Policy 15 of the LPD, 'Conservation of the Pembrokeshire Coast National Park', which states that:

Development will not be permitted where this would adversely affect the qualities and special character of the Pembrokeshire Coast National Park by:

- a) causing significant visual intrusion; and/or,*
- b) being insensitively and unsympathetically sited within the landscape; and/or*
- c) introducing or intensifying a use which is incompatible with its location; and/or*
- d) failing to harmonise with, or enhance the landform and landscape character of the National Park; and/or*
- e) losing or failing to incorporate important traditional features.*

6.9 Additional Regulations

Local Authorities also have a duty under Regulation 9 (Parts 1 and 5) of the Habitat Regulations to have regard for the requirements of the Habitat Directive which includes a requirement to maintain the populations of Protected Species in a 'favourable Conservation Status'.

7 Discussion and key recommendations

7.1 Designated sites

7.1.1 *Pembrokeshire Bat Sites and Bosherton Lakes Special Area of Conservation*

Brown long eared bats are a secondary feature of the Pembrokeshire Bat Sites and Bosherton Lakes SAC. As a mobile feature of the designation these species are included in it, even when away from the site itself. The barn is to be converted so in the absence of mitigation, such roosting opportunities would be lost which may lead impact on the behaviour of individual bats, so may have a minor impact on the designated site.

7.1.2 *Other designations*

The development relates to the conversion of existing building, surrounded other additional buildings. The re-development of outbuilding is very unlikely to impact on these designations.

7.2 Bats

7.2.1 Note to client

Bats are roosting in the barn at Rowston Farm. Prior to any works which would impact on the bat roost it will be necessary to obtain a bat development licence from Natural Resources Wales. Such licenses can only be applied for once full planning permission has been granted and all conditions relating to bats have been discharged.

7.2.2 Summary of bat use

A total of five brown long eared bats were recorded using the barn during July. As brown long eared bats are known to form small maternity roosts, it is likely that this is a maternity roost for this species.

7.2.3 Summary of mitigation

As part of any licence application, a mitigation strategy must be designed which allows the bats to roost on site post re-development as is currently the case. In this instance, the existing barn used by the bats is to be converted, so the bat roost would be lost. To mitigate for the loss of the roost, a new, dedicated bat roost is to be provided in a loft space over a new garage. The proposed mitigation is discussed in more detail in Section 8.

7.2.4 Note to client

Mitigation strategies for protected species licenses need to be considered before any planning application as it may affect designs submitted for planning approval.

7.2.5 Note to client and architect

All mitigation must be clearly marked up on plans submitted as part of the planning application as this is a requirement of the licence application.

7.2.6 Note to client

Bat development licenses from Natural Resources Wales take approximately 40 working days to process. When timetabling works, it is recommended that between 8-10 weeks be allowed for obtaining the licenses. Such licenses can only be applied for once full planning permission has been granted and any conditions relating to bats must be discharged.

7.3 Lighting

Some species of bats (particularly brown long eared) are susceptible to disturbance from lighting and will actively avoid heavily lit areas. Any new external lighting must be hooded, downward facing and positioned to avoid shining directly onto the features such as hedgerows. The lighting should also be PIR sensitive LED type which have a much more directional lighting range. An example is shown in Figure 7.



Figure 7. Example of different PIR LED lighting.

7.4 Birds

As swallows are nesting on site, it is vital that an open fronted building be retained on site to ensure that this species can continue to nest on site as is currently the case. In this instance, the bat loft is to include a double height section with fly in access, so swallow cups (as shown in Figure 8), will be included in this.



Figure 8. Example of a swallow nesting cup.

8 Proposed mitigation strategy

8.1 Location

The proposed new garage will be positioned to the north west of the existing barn, immediately adjacent to the wooded area (Figure 9).

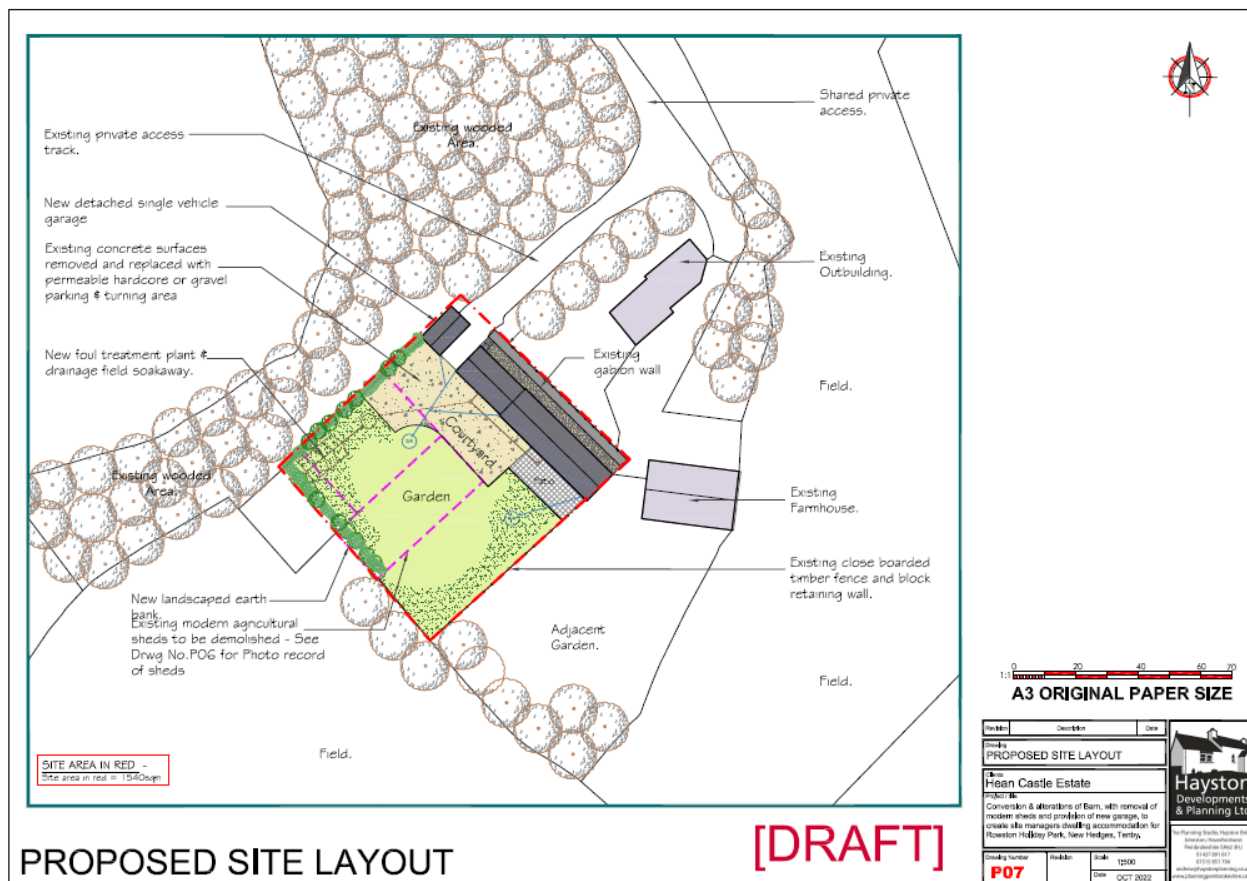


Figure 9. Location of new garage with bat mitigation.

8.2 Size

The building itself will be a garage with a 7m by 4m and a drop from ridge to internal ceiling of at least 2m. The roof space will be 5m by 4m, with the remaining 2m double height to allow the bats to fly around inside as is currently the case. The ridge will run in a north west to south east direction, similar to the existing building.

8.3 Access

The bats are currently flying in through an open doorway, so to mimic the access that the bats are currently using (large opening), the ground floor section of the new bat house will have a 2m section portioned off for use by the bats. This will include an opening 1m by 1m (to allow the bats to access it) on the northern end of the western elevation (facing onto the adjacent woodland). The opening will be formed by the inclusion of a door, 2m high by 1m wide. The bottom 1m of the door will be solid while the top 1m will be grilled. The openings on the grilled section will be 300mm across and 150mm high to allow bat access. This elevation is also furthest away from the barn and any light spill. The bats will have access to the full height of the northern end of the new bat house, with this section open to the roof void over the whole of the new building.

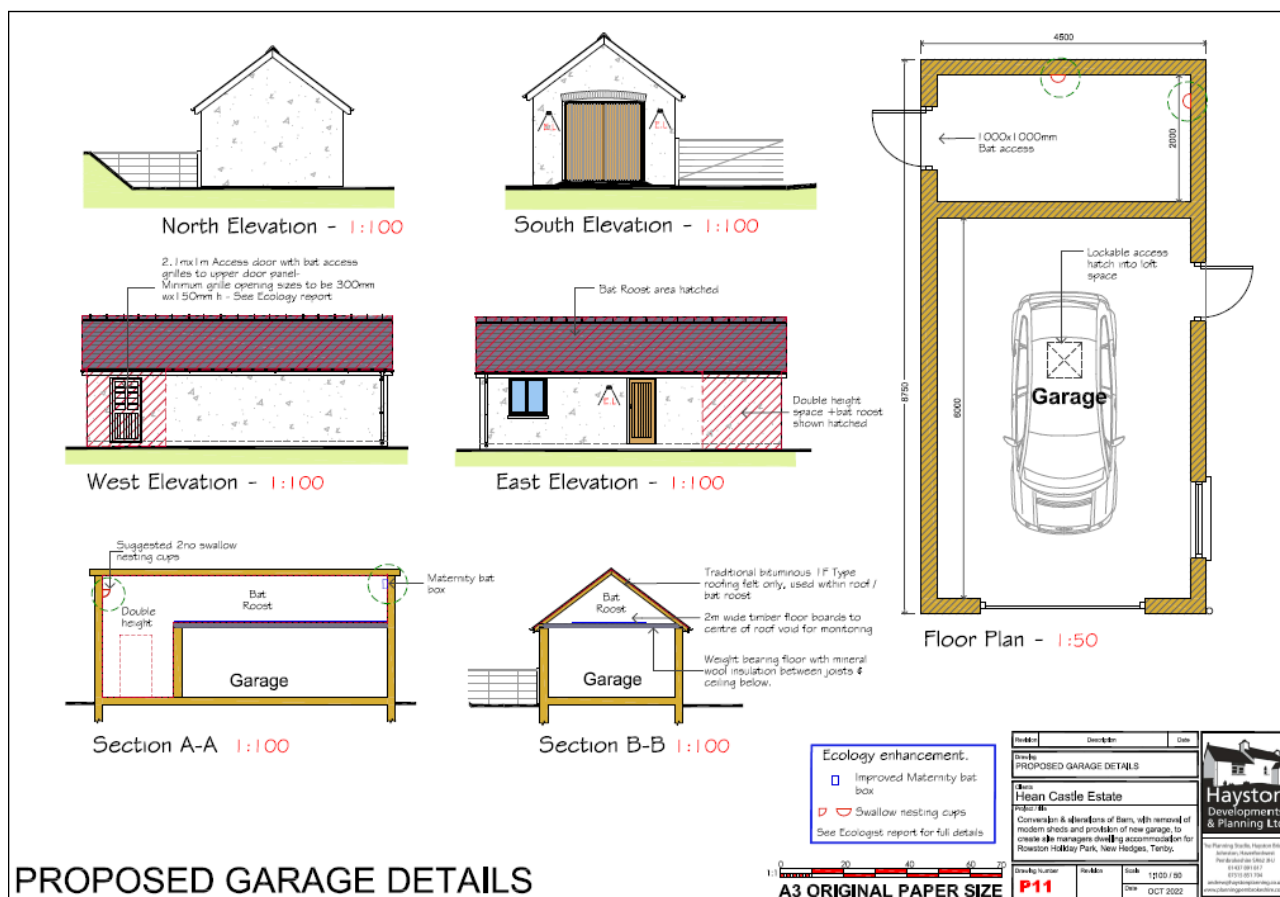


Figure 10. Drawing of new bat roost.

8.4 Materials

The building itself will have block walls and be concrete rendered to blend in with other buildings on the proposed development. It will have a pitched slate roof (ridge running from north east to south west) and lined with traditional bituminous 1F type felt (modern, breathable membranes are not permitted in bat roosts due to problems with bat entanglement in the fibres). The roof will be of traditional build, i.e. 'cut roof' (no trusses) to provide the uncluttered flying space required by certain species (particularly long eared and horseshoe bat species). Internally, a ceiling will be installed over the whole of the storage area to isolate the bats from any disturbance below. Access into the loft space for monitoring purposes will be via a lockable hatch. The roof space will have a weight bearing floor installed to assist with monitoring.

8.5 Other features

The bats currently roost in gaps between the floor and walls. To mimic this feature, an improved roost maternity bat box, or similar (Figure 11) will be installed on the internal southern gable wall. This will ensure a range of roosting opportunities are retained within the one roost.



Figure 11. Example of an improved roost maternity bat box.

8.6 Timing

As the roost is most likely maternity, work to destroy the existing roost must avoid the breeding season between April and September in any year.

9 Conclusions

Bats are roosting in the barn at Rowston Farm. Prior to any works commencing which would impact on the bat roost, it will be necessary to obtain a bat development licence from Natural Resources Wales. Such licenses can only be applied for once full planning permission has been granted and all conditions relating to bats have been discharged.

10 References

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

Pembrokeshire County Council (2013) Local Development Plan.

Mitchell- Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Welsh Assembly Government (2009) Technical Advice Note 5, Nature Conservation and Planning.

APPENDIX 1

Further information on European Protected Species licences from Natural Resources Wales

The Welsh Ministers, in exercise of the powers conferred under regulation 44(2)(e-g) & 44(3)(a-b) of the Conservation (Natural Habitats &c.) Regulations (as amended), has authority to issue licences for the following purposes:

- Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;
- Preventing the spread of disease;
- Preventing serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber or any other forms of property or to fisheries; to allow people to carry out activities which would otherwise be illegal;

Provided that:

- that there is no satisfactory alternative; *and*
- that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Although the licence is applied for and, if successful, issued in the name of the developer, a suitably experienced and licensed ecologist must assist with the completion of the forms and the design of the accompanying method statement.

It should be noted that Natural Resources Wales licenses are legally binding documents, and the method statement will be attached to any licence issued. It is the responsibility of the licence holder to ensure that the method statement is adhered to.