Charnia Ecology

Bat & Bird Activity Survey Report



'Tittesworth Farm',
Buxton Road, Blackshaw Moor,
Leek, Staffordshire, ST13 8TH

August 2024

Notice to readers

This report has been prepared by Charnia Ecology with all reasonable skill, care and diligence, within the terms of the contract with the client. The actions of the surveyor on site and during the production of the report were undertaken in accordance with the Code of Professional Conduct for the Chartered Institute of Ecology and Environmental Management (www.ieem.org.uk).

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Client Details:
Mr. O Mellor & Ms. H Johnson
Application area:
'Tittesworth Farm, Buxton Road, Blackshaw Moor, Leek, Staffordshire, ST13 8TH / NGR: SK003585
Issue No:
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Author:
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Surveyor capability

The Principle Ecologist overseeing the proposed development is a Natural England licensed bat Ecologist (2019-41525 – Level 2) and member of the Royal Society of Biology (AMRSB). The ecologist has a First-Class Honours degree in Conservation Biology, and Vice Chancellors award for academic excellence. He has undertaken protected species surveys for over ten years, and is actively involved in scoping, presence/absence surveys and Natural England EPS licence applications with regard to planning and the law.

This report has been prepared with due consideration to various best practice guidance and methodologies including those of the Chartered Institute of Ecology and Environmental Management (CIEEM (2012), the emerging BS 42020 and BCT Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn) 2024.

NON-TECHNICAL SUMMARY

- ***Report rationale***

1. A Preliminary Roost Assessment (PRA) survey for bats and birds was undertaken by Charnia Ecology on behalf of Mr O. Mellor & Ms H Johnson, with regard to the proposed restoration and conversion of a former pig sty at Tittesworth Farm, Buxton Road, Blackshaw Moor, Leek, Staffordshire, ST13 8TH (NGR: SK003585) on the 21st September 2023.

- ***Proposed works***

2. Considered a small-scale development, the proposed planning application considers renovation and conversion of a former pig sty to a holiday let.

- ***Structure rating***

3. No evidence of roosting bats was recorded in the building proposed for renovation/conversion, which was considered as having a moderate number of structural features suitable for roosting bats. Subsequently Bat and bird activity surveys (2 x dusk) were carried out during an optimal survey period during May and June 2024 by a qualified ecologist and Natural England class licensed bat workers.

- ***Activity survey results***

4. Activity surveys confirmed no notable bat roosts of conservation concern were currently present within the building subject to renovation/conversion.

- ***Foraging and commuting***

5. Overall, foraging and commuting onsite was found to be moderate with five bat species recorded in the wider landscape in low intermittent numbers. Common pipistrelle /Soprano pipistrelle/ Noctule /Myotis species (considered to be Daubenton's) and brown long-eared bat.

- ***Survey constraints***

6. The first-floor staging was deemed to be unsafe, thus preventing a thorough inspection of this internal compartment region. No other physical survey constraints were encountered during activity surveys and assessment was considered as being robust and representative overall.

- ***Impact and recommendations***

7. Based on a small-scale development with no additional land-uptake intended, no impact to any statutory or non-statutory designated sites within a 1km radius is predicted.

8. In the absence of mitigation, no impact to any bat roost(s) of notable conservation concern is currently considered under the proposed scheme, and it will not be necessary to apply for a bat mitigation licence from Natural England before works can proceed. Site safeguard measures should be adopted during works (see Section 69-71)

9. **In the unlikely event that bats are discovered prior to, and during works, then ALL WORK MUST CEASE IMMEDIATELY, and further consultation with the acting Ecologist of works (ECoW) should be made before any further works can proceed.**

- ***Lighting***

10. No impact to foraging and commuting habitat for bats is predicted under the proposed scheme although consideration should be given to any additional artificial lighting post-development, which should comply to ILP Guidance Notes set out within this report [Section 78 – 80].

- ***Birds***

11. No impact to Schedule 1 listed Barn Owl is predicted under the proposed scheme, albeit this species is known to occur within the wider landscape.

- ***Biodiversity enhancement***

12. In accordance with the Natural Environment and Rural Communities (NERC) Act 2006, developments should seek, where possible, to enhance opportunities for local bat and bird populations.

13. This report outlines further enhancement recommendations for Barn owl and other nesting birds by-way-of additional nest boxes, which should be erected onto suitable mature trees or additional agricultural farm buildings (at height) within the gross land holding area of Tittesworth Farm where appropriate [See section 84].

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1. INTRODUCTION

1. Charnia Ecology was commissioned by Mr O. Mellor & Ms. H. Johnson to carry out bat and bird activity surveys with regard to a proposed building renovation and conversion at Tittesworth Farm, Buxton Road, Blackshaw Moor, Leek, Staffordshire, ST13 8TH (NGR: SK003585).

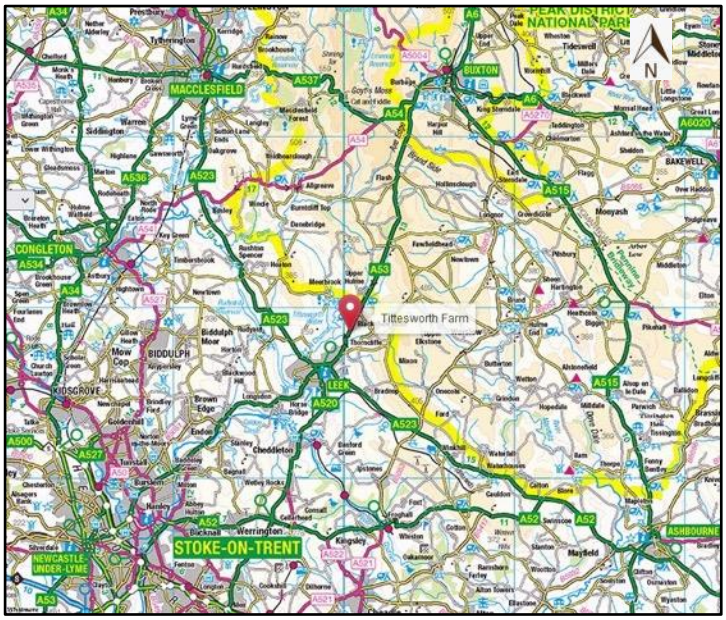

Figure 1. Location of proposed application (red) in context to the surrounding landscape (source:www.gridreferencefinder.com).

2. The objective of this report is to provide the client with information on any known or potential bat roosts and nesting birds nesting within the application area, and to outline any recommendations on how to proceed with the works in a legal and ecologically sensitive manner, should bats and/or birds be present.

3. A Preliminary Roost Assessment (PRA) for bats and birds was initially undertaken during the daytime on the 21st September 2023 by a suitably experienced bat licensed ecologist (in dry weather, cloud cover was approximately 25% / Temp: > 8 degrees Celsius).

4. No evidence of roosting bats was recorded. However, the building was considered as having a moderate number of structural features suitable for roosting bats. Subsequently Bat and bird activity surveys were carried out during an optimal survey period during May and June 2024 by a qualified ecologist and Natural England class licensed bat workers.

- ***Proposed works***

5. Considered a small-scale development, the proposed planning application considers the renovation and conversion of a former pig sty to a holiday let.

- ***Site description***

7. Tittesworth Farm is located in the rural area of Blackshaw Moor which is approximately 2 miles north-east of the town of Leek and in close proximity to the Peak District National Park. The building is of stone construction with a pitched roof of Staffordshire blue clay tiles.

14. The site is located at elevation and commands views across the Staffordshire Moorlands. The surrounding habitats are considered as providing high ecological value for foraging and commuting bats and birds, with excellent connectivity to the wider landscape; comprising of agricultural farmland, moorland, and woodland blocks with the large water body of Tittesworth reservoir to the North-West.

- ***Legislation and policy guidance***

15. All species of bat are listed in Schedule 5 of The Wildlife and Countryside Act (1981) 1981 (as amended) and/or the Conservation (Natural Habitats, &c.) Regulations 1994 (2); including species listed in the UK and local Biodiversity Action Plans (BAPs) (See Appendix 5).

16. In Britain, all bat species and their roosts are legally protected, by both domestic and international). This means a criminal offence will be committed if you:

    - *Deliberately capture, injure or kill a bat;*
    - *Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;*
    - *Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);*
    - *Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat;*
    - *Intentionally or recklessly obstruct access to a bat roost.*

17. A bat roost is interpreted as 'any structure or place, which any wild bat uses for shelter or protection (i.e. buildings, trees, bridges, tunnels etc.). Bats tend to show a high fidelity to roosts; subsequently, legal opinion regards a roost to be protected whether or not the bats are present at the time. There are many types of roost used by temperate bats during their annual cycle: Any structures found having evidence of bats will be further evaluated to assess which of the following roost categories may be present onsite (if any):

Roost status	Description
Maternity / Nursery Roost	*Used by breeding bats, where pups are born and raised to independence (Anecdotal evidence may support this prospect despite sub-optimal survey period).*
Hibernation Site	*Where bats may be found during the winter. (This is assessed within the context of this report).*
Daytime Summer Roost	*Used by males and/or non-breeding females (Seasonal limitations prevent robust analysis of this).*
Night Roost	*Where bats rest between feeding bouts during the night but are rarely present during the day.*
Feeding Roost	*Where bats temporarily utilize feeding perches and stations to eat an item of prey.*
Transitional / Swarming site	*Where bats may be present during the spring or autumn (This cannot be assessed within the context of this report).*

Table 1. Bat roost status definitions

18. The survey protocol also considers all common wild birds that are protected under the Wildlife and Countryside Act 1981 (and as amended). This protection extends to bird nests during the breeding season, which makes it an offence to damage or destroy nests or eggs.

- *Establish if birds are using the site.*
- *Locate nest sites, if present.*
- *Assess what types of activities were shown within the redevelopment site.*
- *Assess suitable food resources and habitat requirements.*
- *Provide an impact assessment, if nests are found.*

19. Certain rare breeding birds such as Barn Owl *Tyto alba*, are listed on Schedule One of The Wildlife and Countryside Act 1981 (and as amended). Under this legislation they are afforded the same protection as common wild birds and are also protected against disturbance whilst building a nest or on or near a nest containing eggs and unfledged young. Survey protocol considers the following:

- *Establish presence onsite.*
- *Establish potential nest sites (PNS).*
- *Locate any active roost sites (ARS).*
- *Locate any temporary roost sites (TRS)*
- *Assess potential feeding and dispersal habitats (PFH)*
- *Provide an impact assessment, should barn owl(s) be present*

- ***Planning policy***

20. As defined in Planning Policy Statement 9 (ODPM, 2005) (now superseded by the National Planning Policy Framework (NPPF, 2012 revised 2018), Biodiversity and Geological Conservation sites of biodiversity conservation value and protected species are material considerations in the planning process In March 2012, the National Planning Policy Framework (NPPF) was published and replaces the previous detailed Planning Policy Statement 9 (PPS9) although the guidance document 'Planning for Biodiversity and Geological Conservation: A Guide to Good Practice' ODPM 06/2005 has not been replaced by the Framework.

21. The NPPF promotes plan-making and decision-taking with a presumption in favour of sustainable development. In terms of biodiversity, sustainable development should not only achieve no net loss of biodiversity but incorporate proposals that achieve net gains for nature alongside the other social and economic needs of society.

22. Protected sites and species are a material consideration in determining planning applications, therefore all information relating to protected sites and species must be submitted with planning submissions for determination of the whole application. The NPPF promotes the approval of plans where applications can demonstrate that they are in accordance with up-to-date Local Plans and have addressed material considerations. Part of the NPFF core strategy aims to ensure "development where appropriate produces a net gain in biodiversity, and ensuring that any unavoidable impacts are appropriately mitigated for.

2. SURVEY METHODOLOGY

- ***Aims of survey***

23. Stage 2 bat and bird activity surveys serve to provide initial advice at the pre-acquisition stage with regards to any potential ecological impacts through development regarding protected bat and bird species under the Wildlife and Countryside Act 1981 (as amended) and/or the Conservation (Natural Habitats, &c.) Regulations 1994 (2); including species listed in the UK and local Biodiversity Action Plans (BAPs).

24. The aims of the survey are as follows:
    - *Probability of bats and their roost sites being present at the proposed development site i.e. buildings and trees;*
    - *To assess the roost status should bats be present;*
    - *To assess potential commuting and foraging habit that may be subject to impact from the proposed development*
    - *To provide an overall impact assessment in the absence of mitigation*

25. The scope of this appraisal has been determined in line with the proportional approach to ecological survey, assessment and subsequent recommendations for avoidance and mitigation of impacts, which is encouraged in the emerging 'BS 42020: Biodiversity – Code of practice for planning and development'.

26. Survey methodology adopted various best practice guidance and methodologies including those of the Chartered Institute of Ecology and Environmental Management (CIEEM (2012)1, the emerging BS 42020 and BCT Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition 2024).

- ***Pre-survey data search***

27. Pre-survey data search provided historical records of any protected bat and bird species found within a 1km radius of the application area. Additional ecological data has been sourced to understand any constraints that the proposed planning application may have on species and habitat in the wider landscape. The National (UK) and local (Staffordshire) Biodiversity Action Plans (BAPs) were also scrutinized for protected habitats and species relevant to the application area. A number of electronic sources sites were also consulted including; www.magic.gov.uk; www.naturalengland.org.uk; Google Earth and www.ordinancesurvey.co.uk.

- ***Walkover survey***

28. A walkover survey, including visual inspection of building and any trees, was undertaken to determine the availability of required resources for the protected species in the immediate area. The building was inspected both externally and internally for:

    - *Presence or absence of bats onsite (i.e. hibernating bats)*
    - *Evidence and/or potential of bat roosts onsite (i.e. summer roosts)*
    - *Whether additional surveys are required.*

- ***Field surveys***

29. Phase 2 bat and bird activity surveys were conducted during an optimal survey period when bats are known to be in summer maternity or bachelor roosts (see Table below). Surveys incorporated the use of both heterodyne and real time bat detectors, night-vision binoculars, torch, endoscope and ladders when necessary.

Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Inspection of Hibernation roosts- semi optimal survey			Limited activity-sub optimal	Summer roost emergence & re-entry surveys - Optimal survey period					Limited activity -sub optimal	Hibernation roosts - semi optimal survey	
Internal roost surveys are possible / Trees are best surveyed during Winter											

Table 2. Annual survey optimality for bats.

30. Bat ultrasound data was gathered using a number of heterodyne units (SSF Bat2) and real-time recording devices (2 x Wildlife Acoustics EMT 2 Pro). Real time recordings were subsequently analysed using Kaleidescope and Elekon BatExplorer software.

31. Following the recently published and updated Best Practice Guidelines by the Bat Conservation Trust (BCT 2024) and supported by the Statutory Nature Conservation Body (SNCB) mammal specialists, all professional bat surveys should now be supported infrared and/or thermal imaging night visions aids (NVA). Subsequently, all activity surveys were aided using infrared optics with HD Video Recorders (3 x Nightfox Whisker night vision 1-10x Optical zoom with additional infrared lighting).



Figure 2. Western infrared camera view.



Figure 3. Eastern infrared camera view.



Figure 4. North-eastern infrared camera view.

- ***Weather conditions and timing***

32. All surveys were carried out during optimal conditions (Dry / >8^{0}C), with a minimum interval of three weeks between each survey to allow for stochastic events over space and time.

- ***Habitat survey***

33. The survey assessed habitat onsite in context to the wider landscape with regard to any important bat roosts, commuting/foraging areas that may be affected by the proposed development.

Habitat quality	Description
Optimal	Presence of optimal habitat features such as unlit woodland, scrub, hedgerows, grassland and open water with excellent linkage to similar habitats within the wider landscape. Presence of high potential buildings/trees and/or known roosts within immediate landscape. Sites are generally rural in character.
Moderate	Presence of optimal habitat features such as woodland, scrub, hedgerows, grassland and open water with reasonable linkage to similar habitats within the wider landscape. Limiting factors may include size of site.
Low	Presence of some limited habitat features such as scrub or hedgerows, with minimal linkage to suitable habitats within the wider landscape.
Negligible	No suitable habitat present or, if present, highly degraded/fragmented. Minimal unlit areas with no linkage to suitable habitat beyond site. Generally urban in character.

Table 3. Habitat assessment criteria.

- ***Roost survey***

34. All potential roost structures (i.e. buildings) onsite or within the Zone of Influence of the proposed development were assessed, based on standard methodologies set out by Natural England, the Bat Conservation Trust (BCT) and the Joint Nature Conservation Committee (JNCC). External inspection considered suitable ingression points where species such as bats and birds could enter any structures to roost and/or nest.

    - *Condition of roof i.e. missing or raised roof tiles;*
    - *Condition of windows and doors i.e. broken panes;*
    - *Potential ingression points around ridges and apex of the buildings;*
    - *Any anecdotal evidence of bats I.e. droppings, grease marks, feeding remains;*
    - *Any evidence of birds i.e. nest material, droppings.*

35. The external inspection incorporated visual assessment with the use of torch, endoscope and ladders to ascertain the following:

    - *Any potential internal roost features i.e. non-illuminated areas, joints, crevices, beams and cavities.*
    - *To locate potential roost/nest sites;*
    - *To listen for any bats and birds;*
    - *To examine floors, walls and structural elements for anecdotal evidence i.e. droppings, urine stains, corpses and feeding remains.*

- ***External inspection of structure***

36. A visual assessment during daylight hours is initially undertaken to locate potential ingression points that bats and birds (including Barn owl) could use to gain access into the structure to roost and/or nest, and assessed using the following criteria:

    - *Type and age of building;*
    - *Type of construction;*
    - *Condition of roof i.e. missing or raised roof tiles;*
    - *Condition of windows and doors i.e. broken panes;*
    - *Potential ingression points around ridges and apex of the buildings;*
    - *Evidence of bats (i.e. presence of live or dead bats, droppings, grease marks, urine stains, characteristic smell of bats;*
    - *Any evidence of birds i.e. nest material, droppings.*

- ***Internal inspection of structure***

37. An internal inspection of the structure considers areas which provide appropriate features and environmental conditions for bats and birds, and considers the following criteria:

    - *To look for warm dark areas, joints, crevices, beams and cavities for possible bat roost sites and nests.*
    - *To locate roost/nest sites.*
    - *To listen for bats and birds.*
    - *To examine floors, walls and structural elements for physical evidence of bats and birds;*
    - *To record any anecdotal evidence (i.e. presence of live or dead bats, droppings, grease marks, urine stains, feeding remains and characteristic odour of bats.*

- ***Building rating***

38. The rating is based on the number and type of features suitable for use by bats (such as crevices, gaps, entry holes, roof materials), location of the structure in the surrounding landscape and surveyor's experience (e.g. a structure with a high level of regular disturbance with few opportunities for access by bats, that is in a highly urbanized area with few or no mature trees, parkland, woodland or wetland would generally equate to having negligible potential. Conversely, a pre 20th century or early 20th century building with many features suitable for use by bats close to good foraging habitat would have high potential).

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

Table 4. Bat roosting habitat assessment criteria.

- ***Activity surveys***

39. Under new BCT best practice guidelines (2023), the number of prescribed activity surveys are based on initial overall building rating and suitability to support roosting bats:

Low roost suitability or PRF-I	Moderate roost suitability	High roost suitability or PRF-M
May to August (structures)	May to September[a], with at least one of surveys between May and August[b]	May to September[a], with at least two of surveys between May and August[b]

a September surveys are both weather and location dependent. Conditions may become more unsuitable in these moths, particularly in more northerly latitudes, which may reduce the length of the survey season. September surveys are likely to miss maternity roost due to dispersal before this time, but may pick up mating roosts.

b Multiple survey visits should be spread out to sample as much of the recommended survey period as possible; it is recommended that surveys are spaced at least three weeks apart, preferably more. Survey timings should consider the prevailing conditions in the year of survey, which will vary geographically. In years with a cold spring, the surveys should not be started in early May or all completed in May. The surveys should maximise the possibility of detecting maternity roosts, which can switch roosts between pregnancy and lactation, and the optimum coverage includes the pre-parturition, post parturition and mating periods.

Table 5. Roost suitability / survey effort criteria.

40. All activity surveys were undertaken in accordance with the guidelines published by the BCT 4th edition 2023 to ascertain the following:

- *Determine the presence/absence of species, i.e. the species present in a given area*
- *Determine the intensity of bat activity both spatially and temporally*
- *Determine the type of activity i.e. foraging (by feeding buzzes); commuting (by high directional pass rates); mating (by mating social calls)*
- *Find roosts by tracking back bat flight paths or observing commuting range*

- ***Dusk emergence survey***
    - *Being at the site 1 hour before sunset.*
    - *Listening for social calls at potential roost sites.*
    - *Standing at different transect points around the buildings, to record any emerging bats and egress points.*
    - *Standing at different transect points to assess foraging/commuting areas.*
    - *Carrying out survey up to 1.5 - 2 hours after sunset to holistically consider interspecific differences between*
    - *different bat species.*

- ***Dawn re-entry survey*** *(if applicable)*
    - *Being at the site 2 hours before sunrise.*
    - *Listening for social calls at potential roost sites.*
    - *Standing at different transect points around the buildings, to record any swarming behaviour around potential re-entry points.*
    - *Standing at different transect points to assess foraging/commuting areas.*

- ***Valued Ecological Receptors***

41. Assessment also considers potential effects on Valued Ecological Receptors (VERs) and Zones of Influence (ZoI) during pre-and post-development, both onsite and off- site. The term Zone of Influence is used to describe the geographic extent of potential impacts of a proposed development.

42. Should a likely significance of negative impacts to bats and/or birds be identified during the survey period, then further surveys, mitigation and enhancement measures may be necessary to prevent, offset or reduce the degree of impact that may occur should development commence.

- ***Mitigation***

43. Should a likely significance of negative impacts to bats be identified during the survey period, then a European Protected Species (EPS) development license issued by Natural England (NE) may be required prior to any works taking place, in-order to maintain the Favourable Conservation Status of species onsite.

44. The purpose of this report will only provide a preliminary outline of a bat mitigation strategy. A detailed method statement will need to be determined through consultation with an appropriately qualified and experienced bat ecologist thereafter, to fully support the aforementioned license application.

3. RESULTS

- ***Designated sites***

45. Tittesworth Farm is located in a semi-rural Green belt area under the character types of "Settled Plateau Farmland Slopes" and "Ancient Slope and Valley farmlands".

Table 6. Statutory protected conservation sites in a 1km radius		
Site ID	**Status**	**Status**
SK010649	South Pennine / Leek Moors	SPA & SAC (in part) / SSSI
SK019584	Thorncliffe Moor (west of)	SSSI / LWS

46. The site falls under a SSSI risk impact zone residing within a 2km radius of the South Pennine Moors Special Conservation Area (SAC) and Special Protection Area (SPA) which covers an area of approximately 66,000ha from Ilkley Moor in the north to the Leek Moors in the south. These designated habitats are of European importance including a range of dry heath communities, impoverished blanket bogs and sessile oak (*Quercus petraea*) woodlands along with wet heath and transition mires.

47. Leek Moors SSSI is subsumed within the designated South Pennine Moors SPA and SAC, comprising of extensive tracts of semi-natural upland and upland fringe vegetation, typical of the Southern Pennines, and supports several plants and animals at the southern limits of their English distribution. The primary habitat types of interest are blanket mire, dwarf shrub heath and unenclosed acidic grassland.

48. A number of non-statutory designated sites also occur within a 1-2km radius, the closest to the proposed application area being that of Anzio Training Camp Local Wildlife Site (LWS) which resides ca. 0.6km north north-east [SK009590].

49. The surrounding landscape contains a mosaic of broadleaved and deciduous woodland blocks of the lower fringes of an upper moorland topography, that are audited under The Forestry Commission National Inventory of Woodland and Trees. A number of other BAP Priority Habitats (England) also occur within a 1km radius and include: than lowland heath, Ancient and Semi-natural woodlands / deciduous woodlands (listed under the National Forest Inventory 2014), Wood pasture and Parkland.

- ***Bats***

50. Pre-survey data finds seven British bat species are currently given UK BAP (2007) Priority Species Status. National Biodiversity Network and Staffordshire Wildlife Trust (SWT) records show that 11 of the 17 resident UK bat species occur in the county.

51. Pre-survey data show twelve records of three species of bat within a 1km radius between 1989-2010; Common pipistrelle, Brown Long-eared bat and Whiskered bat. All records would indicate single field sightings. No records of notable bat roosts were found onsite or within a within a 1km radius of the site, whilst the following UK BAP / non-UK BAP species are recorded within 2km (highlighted in orange):

UK BAP Common name	Species	Recorded within 2km
BROWN LONG-EARED BAT	*Plecotus auritus*	YES
BARBASTELLE BAT	*Barbastella barbastellus*	NO
BECHSTEIN'S BAT	*Myotis bechsteinii*	NO
NOCTULE	*Nyctalus noctula*	YES
GREATER HORSESHOE BAT	*Rhinolophus ferrumequinum*	NO
LESSER HORSESHOE BAT	*Rhinolophus hipposideros*	NO
LEISLER'S BAT	*Nyctalus leiseri*	NO
SOPRANO PIPISTRELLE	*Pipistrellus pygmaeus*	YES

Table 7. UKBAP Bat species recorded in a 2km radius.

52. SER data show a further four/five bat species that are not currently given UK BAP consideration present within a 1km radius of the site (highlighted in orange):

Non UK BAP Common name	Species	Recorded within 2km
NATTERER'S BAT	*Myotis Nattereri*	YES
DAUBENTON'S BAT	*Myotis daubentonii*	YES
WHISKERED / BRANDT'S	*Myotis mystacinus/brandtii*	YES
COMMON PIPISTRELLE	*Pipistrellus pipistrellus*	YES

Table 8. Non UKBAP Bat species recorded in a 2km radius.

- ***Birds***

53. The surrounding landscape & SPA's are noted under Article 4.1 of the Birds Directive (79/409/EEC) for supporting a number of endangered, upland bird populations of European importance during the breeding season which are listed on Annex I of the Directive and classified according to their Red, Amber and Green listed Birds of Conservation Concern (BoCC) in the UK (see Appendix), UKBAP and Schedule 1 listed status:

Asio flammeus	Short-eared Owl		*Falco columbarius*	Merlin	Schedule 1
Numenius arquata	Curlew	UKBAP	*Falco peregrinus*	Peregrine	Schedule 1
Caprimulgus europaeus	Nightjar	UKBAP	*Milvus milvus*	Red Kite	Schedule 1
Circus aeruginosus	Marsh Harrier	Schedule 1	*Pluvialis apricaria*	Golden Plover	
Circus cyaneus	Hen Harrier	Schedule 1	*Galinago galinago*	Snipe	
Falco tinnunculus	Kestrel		*Alauda arvensis*	Skylark	UKBAP
Sturnus vulgaris	Starling	UKBAP	*Carduelis cabaret*	Linnet	UKBAP
Accipiter gentilis	Goshawk	Schedule 1	*Alcedo atthis*	Kingfisher	Schedule 1
Buteo buteo	Buzzard		*Falco subbuteo*	Hobby	Schedule 1
Numenius arquata	Curlew	UKBAP	*Fringilla montifringilla*	Brambling	Schedule 1
Corvus corone	Carrion Crow		*Loxia curvirostra*	Common Crossbill	Schedule 1
Corvus corax	Raven		*Plectrophenax nivalis*	Snow Bunting	Schedule 1
Prunella modularis	Dunnock		*Turdus iliacus*	Redwing	Schedule 1
Turdus pilaris	Fieldfare	Schedule 1	*Tyto alba*	Barn Owl	Schedule 1
Lagopus lagopus	Willow Ptarmigan		*Lagopus lagopus*	Red Grouse	
Motacilla cinerea	Grey Wagtail		*Phylloscopus trochilus*	Willow Warbler	
Vanellus vanellus	Lapwing	UKBAP	*Tetrao tetrix*	Black Grouse	
Cuculus canorus	Cuckoo		*Anthus pratensis*	Meadow Pipit	
Acanthis cabaret	Lesser Redpoll		*Delichon urbicum*	House Martin	

Short-eared owl *(Asio flammeus)*	SER provide 176 records of this species and PDNPA provided a further 268 records, with an estimated 25 pairs present within the Peak District, representing at least 2.5% of the breeding population in Great Britain.
Golden plover *(Pluvialis apricaria*	SER provide 30 records of this species / PDNP consider ca. 752 pairs representing at least 3.3% of the breeding population in Great Britain (count as at 1990) occur in the Peak District.
Merlin *(Falco columbarius)*	SER provide 44 records of this species, estimated 77 pairs in the region, representing at least 5.9% of the breeding population in Great Britain;
Peregrine Falcon *(Falco peregrinus)*	SER provide 15 records of this species / PDNP considers 16 pairs present within region representing at least 1.4% of the breeding population in Great Britain;
Red Kite *(Milvus milvus)*	SER provide 6 records of this species
Hen Harrier *(Circus cyaneus)*	SER provide 46 records of this species;

Table 9. Birds species recorded in 1-2km radius.

54. The following amber and green listed bird species were observed or heard during the survey period:

Tyto alba	Barn owl		*Erithacus rubecula*	Robin	
Troglodytes troglodytes	Wren		*Phoenicurus phoenicurus*	Redstart	
Parus major	Great tit		*Corvus corone*	Carrion crow	

Table 10. Birds recorded onsite during May - Jun 2024.

55. SERC provide records of Barn owl within a 1-2km radius, although no records of breeding sites are recorded within the zone of influence of the proposed application area.

- ***Building assessment***

- ***External inspection***

56. The condition of the building was found to be in a poor to moderate state of repair around all external elevations, with missing mortar in some areas of existing stonework and damage to the north east corner of the building. Various door apertures and ventilation holes were noted. The roof was found to be in overall poor condition, with no underfelt and the timber frame in poor condition, with tiles lifted or missing. All doors and windows were found to be in poor condition or absent thus providing a number of open apertures for bats to fly-through.



Figure 5. North-east/Northwest elevations.



Figure 6. South-east/north-east elevations.



Figure 7. South-west/south-east elevations.



Figure 8. North-west/south-west elevations.

- ***Internal inspection***

57. Internally, there is a small ground-floor area (approx. 4.5 x 3 Metres) and open from floor level to the roof apex with the exception of a small "mezzanine" area used for storage. A disused access door to the mezzanine in the east elevation, the small "vent" window in the southern elevation and the main door all provided ingress points for bats and birds. The stone walls were partially rendered or pointed, but with some stonework still fully exposed.



Figure 9. Internal ground-floor area.



Figure 10. Internal view of roof.



Figure 11. Mezzanine and access door.



Figure 12. Entrance doorway.

58. Albeit no evidence of roosting bats was recorded inside the building, the building proposed for conversion does however pertain to a moderate number of structural features for roosting bats, with numerous openings around elevations providing ingress potential for both bats and birds.

59. The building was confirmed as having high potential for breeding Swallow *Hirundo rustica* and Wren *Troglodytes troglodytes* with old and of active nests confirmed.

60. No trees considered suitable for roosting bats were found to occur within the zone of influence of the proposed development.

- ***Activity survey results***

61. Based on structure rating and proposed renovation/conversion of the building, 2 x dusk emergence activity survey (15min start before sunset to 2hrs after) were initially carried out at an optimal period during suitable weather conditions.

- ***Surveyor capacity***

62. Bat and bird activity surveys were conducted by Mark Weston (2019-41525 – Level 2 / and Barn owl Licence registration number CL29/00586) & Ian Myatt (CLS 37098 – Level 1 / Barn owl Licence registration number CL29/00424).

Survey 1 - Dusk emergence					DATE: 06/05/2024
SUNSET:	21:01hrs	TEMP START	14°C	CLOUD COVER START	63%
START TIME	20:45hrs	TEMP FINISH	13.5 °C	CLOUD COVER FINISH	38%
FINISH TIME	22:50hrs	WIND SPEED	2	PRECIPITATION	NIL

Survey 2 – Dusk emergence					DATE: 15/06/2024
SUNSET:	21:28hrs	TEMP START	11.5°C	CLOUD COVER START	100%
START TIME	21:10hrs	TEMP FINISH	10.5 °C	CLOUD COVER FINISH	100%
FINISH TIME	23:30hrs	WIND SPEED	2	PRECIPITATION	L. Shower

- ***Main highlights***

63. Activity surveys confirmed no bat roosts of conservation concern were currently present within the building subject to renovation/conversion. Bat Activity was found to be moderate overall, with five species recorded foraging and commuting in the immediate landscape.

- ***Foraging and commuting***

64. Overall, foraging and commuting onsite was found to be moderate to low with five bat species recorded in the wider landscape in low, intermittent numbers. Common pipistrelle was found to be the most dominant species around site (Total no. bat passes recorded: N51 / 100%), followed by Soprano pipistrelle (N11 / 100%); with Noctule (N6 / 100%), Myotis species (Daubenton's N2 / 63%), and brown long-eared bat (N1 / 98%) occasionally recorded.

65. No evidence of schedule 1 listed birds including Barn Owl was recorded within the development area, albeit a single barn owl was observed on adjacent land during the dusk emergence 2 survey period.

4 IMPACTS & RECOMMENDATIONS

- ***Survey constraints***

66. The small, first-floor staging was deemed to be unsafe, thus preventing a thorough inspection of this internal compartment region.

- ***Designated sites***

67. Based on a small-scale development with no additional land-uptake intended, no impact to any statutory or non-statutory designated sites within a 1km radius is predicted.

- ***Bats***

68. In the absence of mitigation, no impact to any bat roost(s) of notable conservation concern is currently considered under the proposed scheme. Subsequently, no offences under Regulation 41 or 4 is predicted, and it will not be necessary to apply for a bat mitigation licence from Natural England before works can proceed.

- ***Timing of works***

69. While no time avoidance measures are stipulated, It is recommended that all roofing works are best carried out over autumn/winter to early spring period (late Sept to March), during dry weather periods and when the temperatures have not dropped below 8°C , over four consecutive nights, and outside the bird breeding season (March to August inclusive). No impact to any Schedule 1 listed bird species, including Barn Owl is predicted.

- ***Site Safeguard Measures***

70. Unsupervised care and vigilance should be adopted as part of site safeguard measures by all contractors on site during the removal of the building. A 'soft demolition' approach should be adopted around any works that encroach into the roof sections or around upper brick/stonework (where crevices may be present).

71. **In the unlikely event that any bats are discovered during works, or suspicions arise about the possible presence of bats (i.e., between gable-end cavities and intermediate layers obscured by roofing membrane), the ALL WORKS MUST CEASE IMMEDIATELY, and further consultation with a suitably qualified ecologist should be made.**

- ***Foraging and commuting habitat***

72. Based on the size and nature of the proposed development, with the existing footprint(s) being retained, and no alteration to existing landscape / habitat proposed, negligible to low impact on foraging and commuting habitat for bats is predicted.

- ***Lighting***

73. The proposed application site is located within a semi-rural area being of low district brightness (E2). Should any additional, artificial lighting be intended post-development, then it is important to consider potential light-spill / increased sky-glow around site can affect the foraging and commuting strategy of local bat species and should be avoided onto nearby trees and hedges/shrubs at all times.

74. The use of any artificial lighting should therefore follow the protocols outlined in the Institute for Lighting Engineers document "*Guidance for the Reduction of Obtrusive Lighting*" (ILP, 2005) and Bat Conservation Trust's "*Artificial Lighting and Wildlife Interim Guidance: Recommendations to Help Minimise the Impact of Artificial Lighting*" (BCT, 2014).

Zone	Surrounding	Lighting Environment	Examples
E0	Protected	Dark	UNESCO Starlight Reserves, IDA Dark Sky Parks
E1	Natural	Intrinsically dark	National Parks, Areas of Outstanding Natural Beauty etc.
E2	Rural	Low district brightness	Village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Small town centres or suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night- time activity

Table 11. Environmental Zones.

Environment al Zone	Sky Glow ULR [Max %](1)	Light Intrusion (into Windows) Ev [lux] (2)		Luminaire Intensity I [candelas] (3)		Building Luminance Pre-curfew (4)
		Pre- curfew	Post- curfew	Pre- curfew	Pre- curfew	Post- curfew
E0	0	0	0	0	0	0
E1	0	2	0 (1*)	2,500	0	0
E2	2.5	5	1	7,500	500	5
E3	5.0	10	2	10,000	1,000	10
E4	15	25	5	25,000	2,500	25
E0	0	0	0	0	0	0

ULR = Upward Light Ratio of the Installation is the maximum permitted percentage of luminaire flux that goes directly into the sky.
Ev = Vertical Illuminance in Lux - measured flat on the glazing at the centre of the window.
I = Light Intensity in Candelas (cd)
L = Luminance in Candelas per Square Metre (cd/m2)
Curfew = the time after which stricter requirements (for the control of obtrusive light) will apply;
often a condition of use of lighting applied by the local planning authority. If not otherwise stated - 23.00hrs is suggested.
* = Permitted only from Public road lighting installations

Table 12. Obtrusive Light Limitations for Exterior Lighting Installations – General Observers.

75. Any lighting schemes should comply to ILP Guidance Notes GN01:2011 and GN8/18. In general, the use of low energy LED lighting and/or low-pressure sodium lamps (SOX) should be used and fitted with hoods to direct the light below the horizontal plane to minimize light-spill. Any additional security lighting will be less than 200 lumens (150 watts) and placed on a timer setting and faced down to reduce sky glow. Height of any columns around the development will not exceed eight metres. Under no accounts should lighting be directed towards proposed bat roost locations.

- ***Birds***

76. Should any active bird nests be encountered during works, then nests should be left undisturbed until offspring have fully fledged. If necessary, an exclusion work zone of 5m should be adopted to reduce disturbance and minimize potential displacement of nesting birds.

77. Mitigation will need to consider loss of nesting habitat for breeding European Swallow *Hirundo rustica*. At this stage, the building proposed for development should be sealed-off during the winter period, to prevent and exclude nesting Swallow taking-up summer residency inside the building during works.

78. It is recommended that a minimum of eight (8no,) pre-formed "cup-shaped nests" (or alternative timber box fixtures) are integrated into alternative agricultural farm buildings within the curtilage of Tittesworth Farm, being fitted internally onto beams or walls within existing on site and spaced at least 1m apart. Given the number of farm cats present on site, it is imperative that all additional bird nesting boxes are strategically fitted at height.



Figure. 14. Schwegler 10 swallow nest



Figure 15. Alternative timber box wall design for nesting swallow.

- ***Enhancements***

79. In accordance with the Natural Environment and Rural Communities (NERC) Act 2006, developments should seek to enhance opportunities to maintain the Favourable Conservation Status of local bat and bird populations. The following bat box and bird nesting boxes are recommended, which should either be erected either onto suitable mature trees or building structures (at height) within the gross land holding area of Tittesworth Farm accordingly.

    - ***2 no. External Beaumaris bat boxes (fitted onto gable ends of larger agricultural barn buildings adjacent to the proposed development - Avoid siting under artificial lights).***



Figure 13. Beaumaris Woodstone Bat Box

- ***4no. General bird nest boxes for various small passerine bird species:***

  Sited onto Trees / walls >3m above the ground. Sheltered from strong winds and exposed to the sun for part of the day (usually south, south-east or south-west). Nesting sites should not be illuminated, and ideally be cleaning out between 1st September and 1st January).

- ***2no. '1SP Schwegler Sparrow Terrace' box:***

  Sited onto non-illuminated structures in close association to hedgerows.

  - Further information regarding nest boxes can found at: www.rspb.org.uk/advice/helpingbirds/nestboxes/smallbirds/siting.aspx

- ***1no. Barn Owl nest box:***
  Sited with an opening, visible hole at least 3-4 metres above ground level which overlooks open countryside.

  - Further information with regard to sourcing and sighting of nest boxes can be found at: https://www.rspb.org.uk/birds-and-wildlife/advice/how-you-can-help-birds/nestboxes/nestboxes-for-small-birds/making-and-placing-a-bird-box/

  - www.barnowltrust.org.uk/barn-owl-nestbox/tawny-owl-nestbox/Information on Indoor

- ***Landscaping***

80. Should any additional landscaping be considered at a later date, then it is recommended that only native tree and shrub species are planted. NO plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 should be planted during any landscaping around the conversions. For further details of Schedule 9 plants visit the Defra website: www.defra.gov.uk/wildlife-pets/non- native.

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6. APPENDICES

- ***Maps & forms***

No architectural plans or drawings were available at the time of report writing.

- ***Policy guidelines***

PAS 2010	The published 'PAS 2010' 'Planning to halt the loss of biodiversity' which is the government's new policy aimed at all authorities and developers involved in the planning process in the UK to halt biodiversity decline by 2010 and deliver net biodiversity gains as part of the green infrastructure provisions.
National Planning Policy Framework, Section 11:	The recently published framework in 2012, replaces the previous Planning Policy Statement 9. Section 11: Conserving and enhancing the natural environment, reaffirms the Government's commitment to maintaining protections and preventing urban sprawl, retains the protection of designated sites and preserves wildlife, aims to improve the quality of the natural environment, and halt declines in species and habitats, protects and enhances biodiversity and promotes wildlife corridors.
Article 10 of the EC Habitats Directive:	The published Article requires government to develop features such as 'stepping stones' on the landscape, such as clusters of ponds, tracts of rough grassland or scrubland and vegetated railway line embankments.
Wildlife and Countryside Act 1981:	All species of bat are fully protected under the Wildlife and Countryside Act 1981, the European Conservation (Natural Habitats etc.) Regulations 1994, and the Countryside and Rights of Way Act 2000. This legislation makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.
Conservation of Habitats and Species Regulations (2010)	The Conservation of Habitats and Species Regulations 2010 consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994, in respect of England and Wales. It is an offence to possess, sell or offer, or transport for sale any European species of bat or any part derived from such a species. These Regulations also remove the 'incidental result defence'. In other words, it is no longer a defence to show that the killing, capture or disturbance of a species covered by the Regulations or the destruction or damage of their breeding sites or resting places was the incidental and unavoidable result of a lawful activity. Natural England can grant European Protected Species (EPS) licences in respect of development to permit activities that would otherwise be unlawful.
Natural Environment and Rural Communities Act (2006)	Under Section 40 of the Natural Environment and Rural Communities Act (2006), public bodies, including Local and Regional Planning Authorities, have a duty to 'have regard' to the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. In compliance with Section 41 of the Act, the Secretary of State has published a list of species considered to be of principal importance for conserving biodiversity in England. This is known as The England Biodiversity List, all of which make up the UK BAP Priority Species. Regional Planning Bodies and Local Planning Authorities will use it to identify the species that should be afforded priority to maintain, restore and enhance species and
Bird legislation	Most resident nesting birds are protected under the Wildlife and Countryside Act 1981, which protects birds, nests, eggs and nestlings. Some rarer species, such as barn owls, are afforded extra protection.

Annual life cycle of a temperate bat



JANUARY: *Bats spend most of their winter hibernating, a state of inactivity characterized by lowering their body temperature, slower breathing and lower metabolic rate.* ***FEBRUARY:*** *Bats are still hibernating. They have little fat reserves left to live on now. They may leave the roost on warmer nights to find food and drink water.* ***MARCH:*** *Bats may begin to emerge and signs of limited activity can be seen. There are small numbers feeding it gets warmer. In bad weather, they may become torpid.*



APRIL: *Bats have mainly come of hibernation and are hungry and active on most nights. They may be moving between several roost sites. They may become torpid (cool and inactive) again when cold.* ***MAY:*** *Bats are fully active and feeding. Females start forming maternity colonies and looking for suitable nursery sites, such as buildings or trees. Males will roost on their own or in small groups.* ***JUNE:*** *Female bats usually give birth to a single pup, which feed on their milk. Young bats are very small (less than an inch) with thin, slightly grey fur. Adult bats will catch thousands of insects each in a night.*



JULY: *Mothers continue to suckle young. Some young are growing fast and almost full-size; others are still very small. At around three weeks old, young bats are sometimes found on the ground as they learn to fly.* ***AUGUST:*** *At six weeks old, the young bats begin to disperse and bats move to mating roosts.* ***SEPTEMBER:*** *Mating season begins, with males of most species using special mating calls to attract females, which can include purrs, clicks and buzzing. Bats are also concentrating to storing up fat reserves for the coming months.*

7. CONDITIONS AND DISCLAIMERS

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