Brooks Ecological
Grounded advice

Ecological Appraisal
Kingsley Farm,
Harrogate

Report reference: R-1543-01
March 2013

Report Title:	Ecological Appraisal Kingsley Farm, Harrogate
Report Reference:	R-1543-01
Written by	Christopher Shaw BSc(Hons) GradIEEM Assistant Ecologist
Technical review:	Peter James Brooks BSc (Hons) MA MIEEM CEnv Managing Director
QA review:	Peter James Brooks BSc (Hons) MA MIEEM CEnv Managing Director
Approved for issue	Peter James Brooks BSc (Hons) MA MIEEM CEnv Managing Director
Date	19.03.13

High Street House, 2 High Street, Yeadon, Leeds, LS19 7PP
Phone **0113 250 6101**

Email: pjb@brooks-ecological.co.uk

www.brooks-ecological.co.uk

Summary Statement

The majority of the site comprises of land of low ecological value; however, the hedgerows, wet ditches and broadleaf trees have a greater ecological value and as such should be retained and protected from development.

The three stone buildings are deemed to have a moderate bat roost potential and so emergence surveys are recommended during the main activity period (May to September). Many of the mature broadleaf trees support features with bat roost potential and so should be subjected to further surveys if any work to these trees is required.

Nesting bird surveys are also recommended on the hedgerows, trees and buildings, should work to these habitats be required within the nesting season (March to August).

Introduction

1. Brooks Ecological Ltd was commissioned by FDA Landscape to produce an ecological appraisal of Kingsley Farm, Kingsley Road, Harrogate, North Yorkshire, HG1 (SE 320 563).

Figure 1 Survey site boundary (approximate)

Site Proposals

2. The proposals are for the three stone farm buildings to be converted to dwellings and the seven large barns to be demolished to make way for residential development. A proportion of the hay grassland will also be lost to facilitate this development.

Potential impacts

3. The following potential impacts are highlighted and the report which follows sets out the significance of these impacts relative to the ecological value of the site and the potential presence of protected or notable species:

- Clearance of vegetation;
- Demolition of large barns;
- Loss of areas currently occupied by habitat to built development; and
- Effects on adjacent /nearby habitats.

Desk Study

4. A desk study was carried out to identify species or habitats that are considered important in a local context and to identify any species recorded locally that may be associated with the application site. This information can be used to help target groups that need to be considered in more detail in order to identify the ecological baseline for the application site.

Designated Sites

5. A search of the MAGIC website was undertaken. The MAGIC site is a Geographical Information System that contains all statutory (e.g. Sites of Scientific Interest [SSSI's]) as well as many non-statutorily listed habitats (e.g. Ancient woodlands and grassland inventory sites). It is a valuable tool when considering the relationship of a potential development site with nearby important habitats.

6. There are no statutory designated sites within 2km of the application site.

7. Two ancient and semi-natural woodlands are present within the 2km search radius; Spring Wood (1.4km northeast) and Hookstone Wood (1.8km south). Hookstone Wood is also locally designated as a Local Nature Reserve (LNR) and is isolated from the application site by built development. Spring Wood however is loosely connected to the site via the network of field boundary hedgerows and the railway line to the north. However, both are sufficiently distance from the site to remain unaffected by the proposed development.

8. Local record holders North and East Yorkshire Ecological Data Centre (NEYEDC) have confirmed that there are two further non-statutory designated sites within the 2km search boundary. Both are North Yorkshire Sites of Important for Nature Conservation (SINC); Nidd George Woodlands (1.1km northeast) and Bilton Petrol Dump (c.50m north).

9. The current proposals are considered unlikely to have any significant impact on these locally designated sites.

Natural England Natural Area

10. The site falls within *Natural Area 15 Pennine Dales Fringe*

11. This natural area is formed on carboniferous grit stone and limestone rock forming a rolling pastoral landscape between the Pennines and lowland to the east. There are a number of small tributary rivers which feed into the large water courses of the area such as the Wharfe and Tees.

12. Nationally important conservation priorities are;

    - Earth heritage
    - Rivers and streams

13. Local conservation priorities for the area are;

    - Fen, marsh and swamp
    - Lowland wood pasture and parkland
    - Neutral grassland
    - Standing open water and canals
    - Upland mixed ash woods

14. The application site does not present any good examples of these habitat types; the neutral grassland habitat has been improved for agriculture, resulting in it being species-poor and of low ecological value.

Local Biodiversity Action Plan

15. Consideration is given to the Local Biodiversity Action Plan (LBAP), which for this site is the 'Harrogate Biodiversity Action Plan'.

16. Table 1 lists the local Species Actions Plans and, with reference to the field study presented later in this report, assesses a) whether the species potentially have any degree of dependence on the site, and b) if so whether development would be likely to have a <u>significant</u> bearing on the objectives of the UK/LBAP.

Table 1: Species Action Plans

Species/group	Potentially on site	Could development impact significantly on BAP objectives
Otter	No	-
Water Vole	No	-
Hen Harrier	No	-
Great Crested Newt	No	-
Thistle Broomrape	No	-
Chestnut click beetle	No	-
Bats	Yes	Yes

17. Table 2 lists local Habitat Action Plans and assesses a) whether habitats on site could represent valuable examples of the habitat type within the spirit of the BAP and b) whether loss of the habitat would have a significant bearing on the objectives of the BAP.

Table 2: Habitat Action Plans

Habitat	Present on site	Could development impact significantly on BAP objectives
Blanket Bog	No	-
Upland Heathland	No	-
Moorland Edge	No	-
Woodland	No	-
Wood Pasture and Parkland	No	-
Upland Calcareous Grassland and Calaminarian Grassland	No	-
Magnesian limestone Grassland	No	-
Lowland Meadows and Floodplain Grassland	Yes	No
Fens	No	-
Reedbeds	No	-
Standing Water	No	-
Flowing Water	Yes	No
Arable Farmland	No	-
Hedgerows	Yes	Yes
Gardens and Urban Wild Space	Yes	No

Aerial Photography and Detailed Map Study

18. Aerial photographs published on commonly used websites were studied to place the site in its wider context and to look for ecological features that would not be

evident on the ground during the walkover survey. This approach can be very useful in determining if a site is potentially a key part of a wider wildlife corridor or an important node of habitat in an otherwise ecologically poor landscape. It can also identify potentially important faunal habitat (in particular ponds) which could have a bearing on the ecology of the application site. Ponds may sometimes not be apparent on aerial photographs so we also refer to close detailed maps that identify all ponds issues and drains. We use Promap Street + scale maps for this purpose.

19. The application site is an area of farmland, supporting a collection of stone farm buildings and large block / corrugated metal barns, surrounded by hay fields, hedgerows and field drains. The site is immediately surrounded on all sides by similar grassland fields. However, in the wider landscape the site is surrounded by several train lines and woodland pockets to the north, and built development to the southeast and southwest.

20. A small number of field drains are present around the site boundaries, draining into the Star Beck, c.140m northeast. From this point Star Beck then flows southeast through an underground channel system for roughly 1.8km.

21. To the north, three railway lines merge together, each bordered by trees and significant vegetation. These railway lines can be seen as green corridors across the wider landscape, radiating away from the site to the southeast, southwest and northwest. Bordering the railway lines c.50m north and 440m northwest are two small areas of woodland and roughly 180m northeast is a large pond.

22. The River Nidd passes close to the site, flowing from west to east and surrounded by a large continuous band of broadleaf woodland. The adjacent railway line forms a strong link from the site to the woodland c.1.7km northwest. The woodland is also loosely connected to the site by the surrounding network of field hedgerows to the northeast.

23. The site can therefore be seen as being well connected to surrounding high value habitats.

Records

24. North and East Yorkshire Ecological Data Centre (NEYEDC) has been asked to provide information on protected or notable species and locally designated sites within 2 km of the application site. The records include the following which are of relevance to this assessment:

    - Three species of amphibian, including great crested newt (gcn). A single gcn record was returned relating to a site on Forest Moor Road, roughly 1.7km southeast. This site is separated from the application site by built development.

- A wide range of bird records, including several species listed under the LBAP, UKBAP and Schedule 1 of the Wildlfie and Countryside Act (1981), Schedule 1 birds include; goshawk and kingfisher.
- Several notable and UKBAP insect species.
- Three water vole records relating to Oak Beck, situated roughly 2.4km northwest of the site.
- A single badger record relating to a site approximately 2km from the application site.
- A large number of bat records relating to brandt's, whiskered, natterers, common pipistrelle and brown long-eared. The nature of these records is not specified. The closest records are c.1km southeast and 1.2km northwest.

Part 1: Phase 1 Habitat Survey

Survey Method

25. The survey was carried out on the 13th March 2013 by an experienced field ecologist who is a member of the Institute of Ecology and Environmental Management (IEEM).

26. The survey followed a Phase 1 habitat survey methodology (JNCC, 1993) and was extended to assess faunal potential. This involves walking the site, mapping and describing different habitats (for example: woodland, grassland, scrub). Evidence of fauna and faunal habitat is also recorded (for example droppings, tracks or specialist habitat such as ponds for breeding amphibians). This modified approach to the Phase 1 survey is in accordance with the approach recommended by the Guidelines for Baseline Ecological Assessment (IEA, 1995).

Results

27. The application site is an area of farmland, supporting a collection of stone farm buildings and large block / corrugated metal barns, surrounded by hay fields, hedgerows and field drains. The site supports the following habitat types:

- Neutral grassland;
- Tall competitive vegetation;
- Hedgerows & field drains;
- Standard trees, and;
- Buildings & hard standing.

Neutral Grassland

28. The majority of the site comprises of species-poor neutral grassland, divided into several fields by hedgerows and dry stone walls. The management and species assemblage of these fields vary across the site:

29. The eastern field is frequently mown and looks to be used as a private garden area (figure 2). A large number of young to semi mature trees have been planted within the grassland. The grassland is species poor and dominated by perennial rye grass (*Lolium perenne*), with occasional creeping buttercup (*Ranunculus repens*) and common sorrel (*Rumex acetosa*).

Figure 2

Amenity grassland to east.

30. An area of species-poor, rough neutral grassland is present towards the north-western corner of the site. This looks to have once been managed for hay cropping, but has since been left unmanaged allowing a number of rank grass species to establish. The grassland is dominated by Yorkshire fog (*Holcus lanatus*), with occasional perennial rye grass, cocks-foot (*Dactylis glomerata*) and false oat grass (*Arrhenatherum elatius*). Only a small number of forbs are scattered throughout this grassland including curly dock (*Rumex crispus*), cow parsley (*Anthriscus sylvestris*) and creeping buttercup. The field margins also support nettle (*Urtica dioica*), broadleaved dock (*Rumex obtusifolius*), cleavers (*Galium aparine*) and spear thistle (*Cirsium vulgare*).

Figure 3

Rough neutral grassland to the northeast.

31. The four fields towards the southern and western ends of the site look to be used for hay cropping (figure 4). At the time of the site visit, the sward was only 2 to 3cm high, having been cropped the previous autumn. The most abundant grass here is

perennial rye grass, with frequent Yorkshire and occasional common bent (*Agrostis capillaris*). Forbs present include occasional creeping buttercup, broad leaved dock and dandelion (*Taraxacum agg.*).

32. A rough field boundary is present between the hay field and hedgerows, comprising of dominant cocks foot, with occasional cleavers, creeping thistle (*Cirsium arvense*), bramble (*Rubus fruticosus*) and nettle.

Figure 4

Hay field to the west.

Tall competitive vegetation

33. Several large areas of tall competitive vegetation are present on site to the northeast and north (figure 5). This vegetation comprises primarily of nettle, with abundant cleavers, locally abundant field bindweed (*Convolvulus arvensis*), occasional creeping buttercup, common sorrel, cow parsley, broadleaved dock and hedge mustard (*Sisymbrium officinale*).

Figure 5

Area of tall competitive vegetation to the northwest.

Hedgerows & wet field drains

34. A large number of hedgerows are present on site, primarily along the site boundaries, but also separating hay fields to the south.

35. The northern boundary supports two parallel hedgerows running either side of a drainage ditch, which at the time of the site visit supported flowing water. Both hedgerows have been left unmanaged and so have merged together forming one large hedgerow roughly 4-5m high and 3-4m wide (figure 6). These comprise primarily of hawthorn (*Crataegus monogyna*) and holly (*Ilex aquifolium*), with occasional elder (*Sambucus nigra*), hazel (*Corylus avellana*) and bramble and mature standards of ash (*Fraxinus excelsior),* oak (*Quercus robur*) and sycamore *(Acer pseudoplatanus*) scattered along its length. The ground layer comprises a mix of cleavers, lesser celandine (*Ranunculus ficaria*), bluebell (*Hyacinthoides non-scripta*), foxglove (*Digitalis purpurea*), ivy (*Hedera helix*) and cow parsley. The wet ditch is roughly 30cm wide and 2-5cm deep and for most of its length is completely shaded by the surrounding hedgerows (figure 7). This ditch is only thought to hold water following heavy or persistent rainfall.

Figure 6

Northern boundary hedgerow.

Figure 7

Wet drainage ditch running through the centre of the northern boundary hedgerow.

36. A similar hedgerow and wet ditch is present along part of the southern boundary and running through the centre of the site. Here the hedgerow comprises primarily of hawthorn, with occasional holly, elder and bramble and a ground layer of lesser celandine, ivy and cow parsley. The drainage ditch is the same as that of the northern boundary, but where there is a break in the hedgerow to the south, a shallow pool of water has collected that supports brooklime (*Veronica beccabunga*) (figure 8). This is likely to remain damp for most of the year, holding water only following periods of heavy rain or persistent rainfall.

Figure 8

Shallow pool of water towards the southern boundary.

37. The hedgerows along the western and southern boundaries comprise primarily of hawthorn, with locally abundant patches of blackthorn (*Prunus spinosa*), hazel, oak, holly and elder. All of these hedgerows are unmanaged, with a ground layer of rank neutral grassland as described above.

38. A newly planted hawthorn hedgerow is present along the north-western boundary, with a mix of mature standards of ash and sycamore, and newly planted standards of field maple (*Acre campestre*), bird cherry (*Prunus padus*) and oak.

Standard trees

39. A large number of young to mature broadleaf trees are present on site; with the mature specimens being primarily as standards within the boundary and field hedgerows. A large number of trees have been planted along the entrance road and within the garden to the east (figure 9). A wide range of species have been planted, including lime (*Tilia sp*.), sycamore, ash, oak, apple (*Malus sp*.), leylandii (*Cupressus* x leylandii), horse chestnut (*Aesculus Hippocastanum*), birch (*Betula sp*.) and sessile oak (*Quercus petraea*).

Figure 9

Planted trees to the east.

Buildings & hard-standing

40. A collection of stone farm buildings and large block/corrugated metal barns are present within the centre of the site, surrounded by tarmac hard standing. These buildings are described in greater detail later on in Section 2 of this report.

Fauna

Bats

41. Please see Section 2 of this report.

Amphibians

42. No amphibian breeding habitat is present within the site and only a single large pond is present within a 500m radius. This pond is c.180m north and is separated from the site by a road. The pond is considered unsuitable for breeding great crested newt, due to the likely presence of fish and waterfowl. Only a single record

of great crested newt was returned, relating to a site over 1.7km southeast. The risk of great crested newt entering the site is therefore considered to be low.

Birds

43. Set within an agricultural / urban fringe landscape, the site is likely to support a range of common farmland species. The value of the site to birds would be limited to the boundary hedgerows, buildings and trees.

Protected mammals

44. No evidence of badgers could be found on the site and despite close inspection of the adjacent watercourse no evidence of riparian species such as water vole was apparent at the time of the survey. Due to the drains isolation from surrounding water networks, the presence of riparian mammals on site is considered unlikely.

White clawed crayfish

45. The watercourse on site does not present good habitat for this species in terms of likely drying out and given the absence of records for it in the local area its presence on or near the site can be reasonably ruled out.

Reptiles

46. The site does present some good reptile habitat; however, the absence of records in the area suggests that it is highly unlikely to be of value to this group.

Invasive species

47. No invasive species were encountered within the site.

Part 2: Bat Roost Potential Survey

1. Due to the presence of farm buildings within the proposed development footprint a bat roost potential survey was carried out.

Box 1 *Legal background*

Bats are afforded full protection under The Wildlife and Countryside Act (1981) plus amendments, and the Conservation of Habitats and Species Regulations 2010. Under these Acts it is an offence among others, to recklessly kill, injure or disturb bats. It is also an offence to destroy or obstruct a roost even if bats are not in occupancy at the time of the action.

There are no defences against contravention of the Conservation of Habitats and Species Regulations 2010 which means that it is important for detailed and well designed bat surveys to be carried out, prior to carrying out activities that may impact upon bat roosts such as demolition of buildings or removal of trees.

Where bats are found within a potential development site, a license from Natural England may need to be secured if works that could otherwise contravene legislation are to be carried out. These licences are only issued where Natural England is satisfied that works are unavoidable and would not have a negative impact on the favourable conservation status of bats. A Natural England license requires that the potential development site has full planning permission and that bats were a material consideration of the planning permission.

Box 2 *Bat roosts*

Bats roost in buildings and trees in different locations depending upon time of year and environmental factors such as position of the sun, proximity to heat sources and feeding grounds. The following types are commonly referred to:

Transitional roosts:

Bats frequently gather early in the season (March to April) before dispersing to summer roosts. Bats can be found in high numbers in these roosts for a very short period. Transitional roosts can also be found shortly before hibernation in August to October when bats (depending upon species) can gather is roosts not used earlier in the season.

Maternity roosts:

These are among the most important roosts and are normally occupied from May to August. Depending on the species involved, some maternity roosts can contain a very significant proportion of the local population.

Summer (non-breeding) roosts

Small groups of non-breeding female and male bats can gather in these roosts or bats from a local population may choose to roost individually. There are normally a large number of suitable locations for summer non-breeding roosts and these may be routinely used or used only on an occasional basis. Irregularly used summer roosts can be very hard to find without unreasonable survey effort.

Mating roosts

Around September bats will gather in roost to mate; these are often in different locations than summer or breeding roosts.

Hibernation roosts

As bats in hibernation roosts are highly vulnerable to disturbance and bats can be present in large numbers these are considered to be among the most important bat roosts. Many species of bats roost in large and nationally important hibernation roosts associated with underground sites, many of which are well known and protected. However, the most common bat in the UK (the common pipistrelle) is largely unaccounted for in winter but thought to disperse and roost individually or in small groups in thermally stable cracks and crevices in thick walls or trees.

Local Status

2. The application site is within the natural range of species of bats listed in Table 3.

Table 3: Bat species recorded within 100km of the application site

Species	National status
Pipistrelles (*Pipistrellus pipistrellus* and *P. pygmaeus*)	widespread/common
Nathusius' Pipistrelle (*Pipistrellus nathusii*)	Widespread/rare
Noctule (*Nyctalus noctula*)	widespread/frequent
Leisler's (*Nyctalus leisleri*)	widespread/rare
Brown long-eared (*Plecotus auritus*)	widespread/common
Natterer's (*Myotis nattereri*)	widespread/frequent
Daubenton's (*Myotis daubentonii*)	widespread/common
Whiskered/Brandt's (*Myotis mystacinus* and *M. brandtii*)	widespread/scarce
Alcathoe's (*Myotis alcathoe*)	Local/unknown

Method

3. A thorough daytime inspection of the site was made in March 2012 in order to look for evidence of bats and assess bat roosting potential. Evidence of bats may take the form of droppings, feeding remains, live bats, dead bats, stains on masonry or timber from the oils in bats' fur and claw marks made by bats regularly roosting in the same location.

4. Bat roosting potential of the building was classified according to the following criteria set out in Table 2, developed with reference to the Bat Mitigation Guidelines (2004), Bat Workers Manual (2004) and the Bat Conservation Trust Good Practice Guidelines (2012).

Table 4: Bat roosting potential in buildings

Roosting potential	Criteria
Good	Buildings that have many areas suitable for roosting with a large number of potential access points. These are normally in sheltered locations, subject to low variation in temperature. Buildings with good potential could be used for a whole range of roosts including maternity roosts.
Moderate	Buildings with a smaller number of areas suitable for roosting, but still supporting features that could be attractive to bats and potentially support maternity roosts.
Limited	Buildings with limited roosting opportunities. These may be in locations that are subject to wide temperature fluctuations and drafts. They could be used as occasional or transient roosts, but are unsuitable for maternity roosts. Buildings that would otherwise be moderate to good potential but have reduced value due to other factors such as exposed location, separation from nearby foraging, or presence of strong lighting.
Very Limited	Buildings that have no obvious places for bats to roost, but could be used on a sporadic or occasional basis for feeding or solitary day roosting.
None	Buildings which appear unsuitable for roosting bats due to clear lack of roosting spaces such as voids etc and/or absence of suitable access points.

5. Survey and assessment was directed by Peter Brooks BSc (Hons) MA, MIEEM CEnv. Peter has over 15 years experience of carrying out bat surveys in a professional capacity and holds a Natural England license in respect of bats and is a Natural England Roost Warden.

Records

6. North and East Yorkshire Ecological Data Centre was asked to provide all records within 1km of the application site.

7. A large number of bat records where returned, relating to brandt's, whiskered, natterers, common pipistrelle and brown long-eared. The nature of these records is not specified. The closest records are c.1km southeast and 1.2km northwest.

Results

8. The application site supports three stone buildings; a semi-detached house, a barn that has been converted to offices and an unused building. In addition to this, seven large barns of breeze block and corrugated metal construction are present on site.

9. For ease of reference these have been labelled buildings 1 to 10 in figure 10 and are described below:

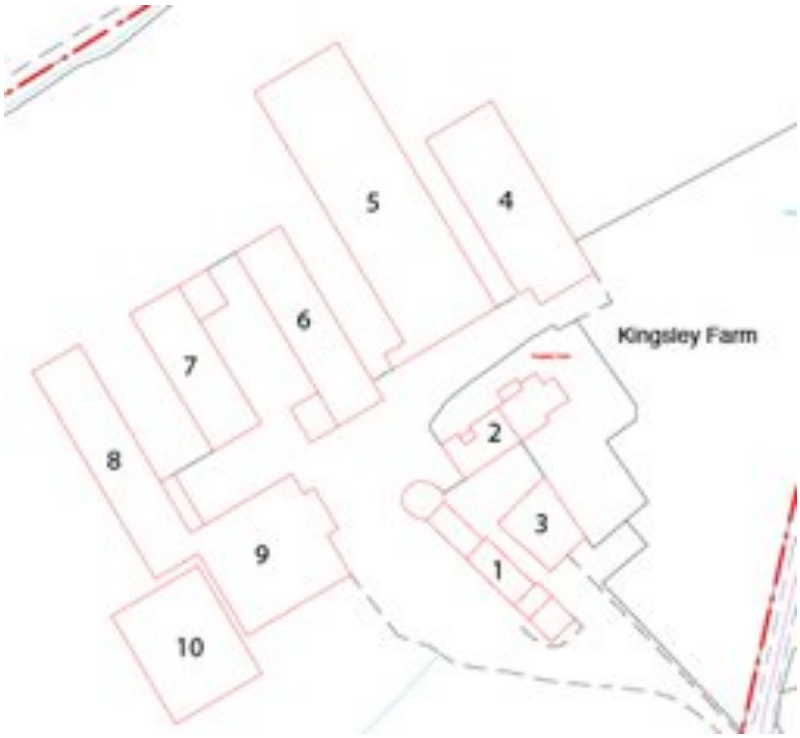

Figure 10

Building plan of Kingsley Farm.

10. Building 1 is a row of stone barns which have in the recent past been converted into offices. The building is two stories and the roof alternates between slate and stone tiles. Overall the building is in an excellent state of repair, with most of the external walls having been re-pointed and so are completely sealed. However, two of the walls towards the north-western end of the building contain a large number of masonry gaps, which lead directly into the cavity walls (figure 11). Most of the gaps appear to lead into large wall cavities and during the survey a single pair of house sparrows was observed nesting in one of these gaps.

Figure 11

Gaps within the external walls of building 1 leading into cavity walls.

11. The eaves of building 1 are well sealed with a course of breeze blocks and the roof tiles are in an excellent state of repair. The loft has been converted into office space and the void beneath the tiles has been filled with insulation.

12. Building 2 is a large two storey stone building, with a slate tile roof, currently split into two separate houses (figure 12). The north-eastern half is the older original farm house, with the south-western half being a newer extension. Both halves are of similar design and construction.

Figure 12

Building 2; semi-detached house.

13. The walls of this building are in a good state of repair; however a relatively large number of small masonry gaps are scattered throughout both halves of the building; all of which are thought to lead directly into the cavity wall spaces. Guttering is fixed below all of the eaves, which obscures the view of the wall tops. It is therefore unknown whether the wall tops are sealed, or whether they lead into the cavity walls or beneath the roof tiles. The verges are all well sealed and the roofs are all in an excellent state of repair.

14. The loft space within the south-western half of the building has been converted into a living space and the resulting small void beneath the roof tiles have been filled with insulation. A loft space is still present within the older north-eastern half of the house, which is left largely undisturbed (figure 13). The roof is unlined and in a very dirty condition, with cobwebs covering the underside of the roof. A full inspection of this loft space was not undertaken on grounds of safety.

Figure 13

Loft space in the north-eastern half of the building.

15. Building 3 is a large single storey stone building, with a mix of slate roof tiles and corrugated concrete/asbestos. This building is in a poorer state of repair with numerous large masonry gaps within the external walls (figure 15), and gaps along the eaves and verges (figure 14); all leading into the wall cavities. The roof is in a similarly poor state of repair, with pointing missing along the ridge tiles (figure 15), and slipped and missing tiles leading into the building's interior.

Figure 14

Building 3 southeast gable end wall showing gaps in walls and along verge.

Figure 15

Typical masonry gap within the exterior walls of building 3.

Figure 16

Roof of building 3 showing an area of missing mortar along ridge tiles.

16. Building 3 is unoccupied and supports no loft spaces. Several of the corrugated asbestos roof sheets have fallen away, resulting in a well light and damp internal space.

17. Buildings 4-10 are a mix of single storey and two storey barns, all of very similar design and construction. The external walls are a mix of single skin breeze block, single skin wooden slats, corrugated metal sheeting and corrugated asbestos (figures 17 & 18).

Figure 17

Figure 18

18. The roofs are primarily corrugated asbestos, with ventilation holes running below the ridge tiles. Most of the barns have large open interiors, with no loft space and unlined roofs supported by steel beams (figure 19).

Figure 19

Interior of building 5.

19. Barnes 8, 9 and 10 are connected together and are currently used for sorting, package and storing eggs. The interior walls and undersides of the roofs within these barns are boarded, creating a small wall and roof cavity (figure 20).

Figure 20

Interior of building 8.

20. A large number of mature broadleaf trees are present on site, mostly located within the boundary hedgerows. Many of these trees support at least one or more features which have the potential to support roosting bats (figure 21).

Figure 21 Several examples of features within trees on site that have bat roost potential.

48. Most of the site comprises of common species poor habitats reflecting the effect man has had here in the past. However, the hedgerows, wet ditches and mature broadleaf trees represent habitats of higher ecological value.

49. The proposed development presents minimal risk of significant impacts on protected or designated wildlife sites.

50. With the exception of bats and nesting birds, the proposed development presents minimal risk of significant impacts on legally protected or otherwise valued species.

51. The following precautions are considered necessary in relation to the site's development:

Bats

52. The three stone buildings (labelled 1 to 3 in figure 10) are considered to have *moderate bat roosting potential*, in accordance with table 4. This is due primarily to the presence of masonry gaps leading into the cavity wall spaces. These cavities have the potential to support a range of bat species and roost types. It is therefore recommended that emergence surveys are undertaken on these three buildings during the main summer activity period, which is May to September.

53. The seven large barns (labelled 4 to 10 on figure 10) are deemed to have a very limited bat roost potential and no further surveys of these buildings are considered necessary.

54. Many of the mature broad-leaved trees contain features which have the potential to support roosting bats. Therefore, any of the mature broadleaf trees that require removal to facilitate development should be subjected to further bat surveys prior to removal.

55. The boundary hedgerows and standard trees form strong linear features in the landscape which have the potential to support foraging and commuting bats. These should therefore be retained and protected from development. Consideration should also be given to artificial light, i.e. directing street lights away from hedgerows and reducing the amount of light spillage.

Higher value habitats

56. The hedgerows, wet ditches and broadleaf trees have the highest ecological value on site and so should be retained and protected from development. This can be

achieved by erecting tree protection fencing around the tree and hedgerow root protection zones during the construction phase of development.

Nesting birds

57. To prevent the proposed works impacting on nesting birds, any vegetation clearance and building demolition will need to be undertaken outside of the breeding bird season which is 1st March – 31st August inclusive. Any clearance and demolition that is required during the breeding bird season should be preceded by a nesting bird survey to ensure that the Wildlife and Countryside Act (1981) is not contravened through the destruction of nests and that any active nests are identified and adequately protected during the construction phase of the development.

Enhancement

58. In line with planning guidance now outlined in the National Planning Policy Framework (NPPF) development should take account of the value of ecosystem services and enhance ecological networks.

59. The existing hedgerows should be retained and protected from the development, and new species-rich hedgerows planted around the site, connecting existing hedgerows together. New hedgerows could be planted along the north, east and western boundaries of the proposed development area. Suitable species include hawthorn, blackthorn, holly, hazel, oak and field maple.

60. A suitable landscaping scheme should be produced using mostly native tree and shrub species.

61. Consideration should be given to creating areas of species rich grassland where appropriate.

62. The site for benefit greatly from the creation of a pond. This could be built in an area of public open space and surrounded by species rich grassland. A number of log piles could be created around the pond using any material resulting from tree felling/pruning.

63. A selection of bird and bat boxes could be fixed onto some of the existing stone buildings or mature trees; or built into some of the new proposed buildings.

References

IEA. (1995). *Guidelines for Baseline Ecological Assessment*. Chapman and Hall

Nature Conservation Committee (1990). *Handbook for Phase 1 Habitat Survey: A technique for environmental audit*. NCC

Bat Conservation Trust (2012) Bat Surveys – Good Practice Guidelines

English Nature (2004) Bat Mitigation Guidelines. English Nature, Peterborough.

JNCC (2004) The Bat Workers Manual. 3rd Edition.

ODPM circular 06/05 (2005) Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System
http://www.communities.gov.uk/publications/planningandbuilding/circularbiodiversity

Conservation of Habitats and Species Regulations 2010
http://www.legislation.gov.uk/uksi/2010/490/contents/made

Neutral grassland

Buildings & hard-standing

Tall ruderal

Hedgerows

Wet field drains

Standard trees

N

Brooks Ecological

Grounded advice

Unit A,
Station Road,
Guiseley,
LEEDS
LS20 8BX

Tel: 01943 884451 / 01943 879129

Site: Kingsley Farm

Title: Ecological Features Plan

Drawing Number: D-1543-01

Scale: Do not scale

Date: 15.03.13

Revision: