

Preliminary Ecological Appraisal Report

**Land off Rockingham Roundabout, Hoyland,
near Barnsley**

Gregory Property Group

Report Reference: R-3806-01 A

March 2019

Report Title:	Preliminary Ecological Appraisal Report Land off Rockingham Roundabout, Hoyland
Report Reference:	R-3806-01 A
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Summary

This report is produced to inform Gregory Property Group of potential ecological constraints associated with the proposed development site.

Methodology

The report is based on a desk study of designated wildlife sites and records of protected or notable species, and an extended Phase 1 Habitat Survey carried out in February 2019.

Findings - Key Points

Additional survey has been recommended in respect of great crested newts, reptiles and bats. These surveys have now concluded and the findings are reported separately.

Parts of the woodland plantation found to the south of the Site are scheduled for removal. This forms part of the Dearne Valley Green Heart Nature Improvement Area (NIA) and adequate mitigation will be required.

A Biodiversity Management Plan should be produced for the Site to show how development accords with the objective of the NIA and does not lead to net loss of biodiversity.

Introduction

1. Brooks Ecological Ltd was commissioned by Gregory Property Group to carry out a Preliminary Ecological Appraisal (PEA) of land off Dearne Valley Parkway, Rockingham near Barnsley (grid reference SE352007).
2. This report is produced with reference to British Standard BS:42020 'Biodiversity Code of Practice for Planning and Development' and the CIEEM (2017) Guidelines for Preliminary Ecological Appraisal.

Purpose of a PEA

3. A PEA is an *initial assessment* of the baseline for a proposed development site and establishes whether the Site is likely to be constrained by ecology, and whether more information is needed to identify the ecological baseline.
4. The subsequent Preliminary Ecological Appraisal Report (PEAR) is intended to give early guidance to a developer and assist with the early stages of project planning and design. Where a site is not complex or constrained, and no additional ecological input is necessary, the PEAR may be sufficient and suitable to support a planning application.

Scope

5. The proposed development site 'the Site' comprises a parcel of land located off the Dearne Valley Parkway. It encompasses the red line boundary as shown in Figure 1 overleaf.
6. The assessment uses a 2km area of search around the Site for records of protected and notable species and locally or nationally designated wildlife sites.

Desk Study

7. The Site is located off the Rockingham Roundabout, immediately south of the A6195 Dearne Valley Parkway just off Junction 36 of the M1 in South Yorkshire.
8. Rockingham Colliery, located immediately north of the Site, opened in 1873 with a reservoir located in the north-east corner of the Site likely providing water for mining operations. Although the colliery closed in 1979, opencast workings then took place on the Site from 1989 to 1993/94. Following cessation of opencast mining operations, this area was infilled.

9. The Site lies with the Hoyland North masterplan cluster. Under the Barnsley MBC local plan, adopted in January 2019, the Site lies within part of the adopted site for Rockingham (code ES14) which has been allocated to support economic growth and employment opportunities. Ecological appraisal of the wider area (of which areas H2 & H5 encompass this Site) was carried out to inform the local plan process in 2013.
10. The Site lays in an area of recent development with recently constructed food outlets to the north, beyond the Site's immediate boundary of the road. Light industrial and residential housing are found to the south of the Site, whilst green space comprising grassland, arable fields and woodland bound the Site to the east and west.
11. Beyond these immediate boundaries, the landscape is typically open farmland with pockets of woodland. This is interspersed with small towns and villages including Birdwell to the north and Hoyland to the east. Further afield, the larger conurbations of Barnsley and Sheffield are found to the north and south-west respectively.

Figure 1 The Site.



Wildlife Corridors

12. The surrounding habitat comprises a mix of agricultural land and woodland set amongst a varied urban landscape of housing, commercial and light industrial units.
13. A minor wildlife corridor runs adjacent to the eastern boundary of the Site, this following the line of a green pathway and ditch system, before passing under the Dearne Valley Parkway to link to a dismantled railway to the north.

Figure 2 Analysis of wildlife corridors and higher value habitat in relation to the Site.



14. Woodland and scrub offer the highest value habitats in the area, these being loosely linked across the landscape by tree belts and hedgerows.
15. The M1 forms a major barrier to the movement of species from west to east, laying c. 600m west of the Site. The Dearne Valley Parkway immediately north of the Site poses less of a barrier, as a pedestrian underpass close to the Site's north-east corner will permit the movement of some species under this barrier.

Water Bodies

16. Three water bodies were identified from mapping and aerial photographs within a 500m radius of the Site:
 - Pond 1 - lies c.35m from the eastern boundary of the Site;
 - Pond 2 - 150m north, on the other side of the Dearne Valley Parkway;
 - Pond 3 - one of a group of three, is found 500m north of the Site.
17. Several small field drains are present within the site boundary, and a larger drain feeding into the nearby pond runs close to the eastern boundary.

Figure 3 Water Bodies and Main Drains within 500m of the Site.



Designated Sites

Statutory Designations

18. A search has been made to identify any nationally designated sites within a 2km radius of the Site, and for internationally designated sites within a 10km radius. The results are shown in the below table.

Table 1 Statutory Designated Sites.

Site Name	Distance from Site	Designation	Summary Interest
Potter Holes Plantation	1km SW	Local Nature Reserve (LNR)	Semi-ancient woodland developed in and around old bell-pits, plus newer, planted woodland adjacent on a reclaimed colliery site.
Worsborough Country Park	2km N	Local Nature Reserve (LNR)	Urban fringe nature reserve with habitats including a reservoir, willow carr, managed grassland/meadowland, reed bed and woodland. Good for water fowl.

SSSI Impact Risk Zones (IRZs)

19. The Site does not fall within any IRZ.

Non-Statutory Designations

20. As illustrated overleaf, there are six locally designated sites within 2km of the Site. Three of these lie on the other side of the M1 and are therefore considered to be disconnected from the Site.
21. Of the remaining three, Short Wood and Hay Green lies the closest to the Site, being 700m north. Although separated from the Site by the Dearne Valley Parkway, an underpass provides some connectivity for some species along the green path.
22. It is considered unlikely that the proposed development will impact upon the LWSs.

Dearne Valley Green Heart

23. The Site lies entirely within the Dearne Valley Green Heart Nature Improvement Area (NIA). This aims to help restore and enhance the ecological networks of the river, its floodplain, and its link to habitats on surrounding slopes and hills.

The map shows the area around Worsborough Village. A red dot indicates the proposed development location, situated near the intersection of the M1 motorway and local roads. The map includes a scale bar (0 to 600 metres) and a north arrow. Various land parcels are labeled with numbers and names, such as 653 Rockley Woods, 637 Short Wood and Hay Green, and 1158 Barrow Colliery Site. The M1 motorway is shown running through the area, with junctions and exits marked. Local roads like Worsborough Road, Hayland Road, and Sheffield Road are also visible. The map shows the proximity of the proposed development to the M1 and surrounding land parcels.

Survey

Method

24. The survey was carried out during February 2019¹ and followed Phase 1 habitat survey methodology (JNCC, 2010).

Limitations

25. The survey was carried out in winter when many plant species have died back however the habitat types could still be assessed at this time by the surveyor.
26. Sufficient time was afforded the surveyor to carry out the survey. The survey was not constrained by poor weather.
27. Approximately 25% of the Site is covered by plantation woodland. The southern extent of this is particularly dense with some areas of impenetrable bramble which restricted access along the southern boundary.

Results

28. The Site comprises a vacant plot currently occupied by rank grassland and scattered scrub. Woodland plantation is found along two of the boundaries, and a SUDS pond is located to the east.



Figure 5

Overview of the Site showing the habitats present.

¹ This Report has been prepared during March 2019 following a visit to the site in February 2019 and our findings are based on the conditions of the site that were reasonably visible and accessible at that date. We accept no liability for any areas that were not reasonably visible or accessible, nor for any subsequent alteration, variation or deviation from the site conditions which affect the conclusions set out in this report.

29. The following habitats were identified within the Site and on its immediate boundaries:

- Rank Grassland with Scattered Scrub and Trees
- Bare Earth
- Wet Ditch
- Ephemeral Vegetation
- Semi Natural Woodland
- Water Body
- Hardstanding
- Hedgerow
- Tall Ruderal Vegetation

Rank Grassland

30. Previously grazed by horses, the majority of the Site now comprises rank grassland. The sward contains a number of common species and may be influenced to some degree by adjacent road verges, with grasses present including perennial rye (*Lolium perenne*), cock's-foot (*Dactylis glomerata*), crested dog's tail (*Cynosurus cristatus*), Yorkshire Fog (*Holcus lanatus*) and meadow fescue (*Festuca pratensis*).
31. Forbs noted within the grassland include dandelion (*Taraxacum officinale* agg.), yarrow (*Achillea millefolium*), creeping buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), daisy (*Bellis perennis*), ragwort (*Senecio jacobaea*), ox-eye daisy (*Leucanthemum vulgare*), common mouse ear (*Cerastium fontanum*), broad leaved dock (*Rumex obtusifolius*), thistle (*Cirsium vulgare*; *C. arvense*), vetches (*Vicia* spp.), meadow vetchling (*Lathyrus pratensis*), crane's-bills (*Geranium molle*; *G. dissectum*) and black knapweed (*Centaurea nigra*).
32. The Site is underlain with sandstone however drainage is impeded by compaction and the presence of overlaying slowly permeable seasonally wet loam and clay soils. This has led to large amounts of rushes (*Juncus effusus* and *J. conglomeratus*.) and sedges (*Carex* spp.) in the sward, alongside some teasel (*Dipsacus fullonum*).



Figure 6

Area of dense *Juncus* growth particularly within northern portion of grassland.

33. Scattered scrub is found across much of the Site. This is made up of predominantly willow (*Salix* sp.) but also includes some birch (*Betula* sp.), alder (*Alnus glutinosa*), dog rose (*Rosa canina*) and bramble (*Rubus fruticosus* agg.).
34. Two more distinct areas occur in the southern part of the grassland, these comprising a handful of more mature willow and birch trees.



Figure 7

Small group of maturing willow and birch amongst developing scrub.

Bare Earth

35. Patches of bare earth are found particularly around the northern and western boundaries which lie adjacent to existing roads. Piles of sand and hardcore are found near the entrances to the Site to the west. Species typically found on disturbed ground are starting to recolonise these areas, these including groundsel (*Senecio vulgaris*), yarrow (*Achillea millefolium*), dandelion (*Taraxacum officinale* agg.), sow thistle (*Sonchus* sp.), herb robert (*Geranium robertianum*), broad leaved dock (*Rumex obtusifolius*), ribwort plantain (*Plantago lanceolata*), bristly ox-tongue (*Helminthotheca echioides*), annual meadow grass (*Poa annua*) and creeping bent (*Agrostis stolonifera*).



Figure 8

Bare earth along northern boundary with Dearne Valley Parkway.

Wet Ditches

36. Several wet ditches cut across the Site, these holding shallow amounts of standing water in places. Willow scrub and rushes are found in and around the ditches, though no other species particularly associated with wetland areas are found in the ditches.



Figure 9

Ditch running west-east, draining into SUDS pond.

Ephemeral Vegetation

37. An area of ephemeral short perennial vegetation occurs in the south-east corner of the Site which appears to have impeded drainage. Plants in this area include mosses and algae, with a low number of forbs. These include such species as dandelion and common centaury (*Centaurea erythraea*). Grasses are starting to re-establish but growth is discontinuous and impacted by the conditions.



Figure 10

Area of low growing ephemeral vegetation in the south-east corner of the Site.

Semi Natural Woodland

38. A wide belt of broad-leaved woodland plantation is found on the eastern boundary. This comprises young to semi-mature trees, many of these having established in the last twenty years. Occasional more mature trees are found within the woodland, though none were seen to demonstrate features suitable for roosting bats.
39. Species found within the area include oak (*Quercus* sp.), willow (*Salix caprea*), birch (*Betula* sp.), hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*), Scot's Pine (*Pinus sylvestris*) and holly (*Ilex aquifolium*). The understorey is not significantly different from the surrounding grassland, with no woodland specialist vegetation noted.
40. The strip of woodland along the southern boundary of the Site is more established with closely growing, semi-mature trees with a few mature specimens. Species in this area include birch, hazel, alder (*Alnus glutinosa*), poplar (*Populus* sp.), oak and willow.
41. A dense understorey has developed in parts of this woodland, comprising scrub species such as elder (*Sambucus nigra*), bramble (*Rubus fruticosus* agg.), holly, dog rose (*Rosa canina*) and rhododendron (*Rhododendron ponticum*). A stand of raspberry (*Rubus ideaus*) is also found here.



Figure 11

Woodland along eastern boundary.

Hardstanding

42. A small area of concrete hardstanding is found in the south west corner of the site, this being the access road off Cross Keys Lane. This is devoid of significant vegetation, however some species typical of woodland edge/verge habitats are present to the edges of the track including annual meadow grass (*Poa annua*), herb robert (*Geranium robertianum*), field speedwell (*Veronica perisca*), bittercress (*Cardamine* sp.) and red dead nettle (*Lamium purpureum*).



Figure 12

Access track from Cross Keys Lane to south-west corner of Site.

Hedgerows

43. The remnants of an outgrown hawthorn hedge are found to the south-west of the Site, lining a narrow earth track into the woodland plantation. Many of the stems are ivy covered and the ground underneath is shaded and barren.



Figure 13

Remnant hedgerow lining earth track in south-west corner of Site.

Tall Ruderal Vegetation



Figure 14

Triangular field of tall ruderal vegetation to south-west of Site.

44. A public footpath passes along the southern boundary of the Site, running through a small triangular field of tall ruderal vegetation. In addition to tall grasses such as cock's-foot, this area hosts species including stinging nettle (*Urtica dioica*), willowherbs (*Epilobium* spp.), ragwort (*Senecio jacobaea*), chickweed (*Stellaria media*), field speedwell (*Veronica persica*), cow parsley (*Anthriscus sylvestris*) and red dead nettle (*Lamium purpureum*). Bracken (*Pteridium aquilinum*) and bramble are also present.

Off Site Habitats

Water Bodies

45. A large pond is found beyond the eastern boundary, fed from the Site and draining southwards. The edges are covered with common reed (*Phragmites australis*) although at least half of the pond surface is open towards the centre. Reed mace (*Typha latifolia*) and willowherbs (*Epilobium* spp.) are found around the edges of the pond, along with scrub growth of alder (*Alnus glutinosa*). Forbs such as weld (*Reseda luteola*) and creeping thistle (*Cirsium arvense*) are present along with soft rush (*Juncus effuses*) particularly on the eastern side of the pond.



Figure 15

Looking east across Pond 1 towards off-site woodland.

SUDS Pond

46. A large SUDS pond is located north of the Dearne Valley Parkway. There is no apparent hydrological connectivity between this and the on-site pond.



Figure 16

SUDS pond (Pond 2) situated on northern side of Dearne Valley Parkway.

Ancient / Veteran Trees

47. None of the trees on the Site show characteristics used to define 'ancient' or 'veteran' trees.

Fauna

Badger

- 48. Of the five records returned for badger for the search area, only two occur in the last decade. Both of these are located > 1km from the Site.
- 49. No active or inactive Badger setts were noted on the Site during the walkover survey.
- 50. The waterlogged conditions on the Site means this is less likely to be used by badgers, this species favouring well-draining sandy soils more compatible with sett building.
- 51. The Site is considered to be of low value to this group compared to more mature woodland in the landscape, and the current likely absence of badgers is concluded.

Bats

- 52. 54 records of bats have been returned for the search area, many relating to unknown species of bat. There records do however include most of the locally found species of bat, including common and soprano pipistrelle, Natterers, noctule, whiskered/ Brandt's, Leisler and brown long-eared.
- 53. 20 of the records relate to roosts, with several of these occurring within 1km of the Site, in areas around Tankersley and Birdwell.
- 54. The interior of the Site is considered to be of low suitability to commuting and foraging bats. Grassland provides fewer foraging opportunities than more structured vegetation, and street lighting and traffic noise from the adjacent dual carriageway may deter bats, particularly affecting levels of activity along the north and western boundaries of the Site.
- 55. Trees, shrubs and water bodies all attract insect prey and provide greater foraging opportunities for bats. For this reason, the woodland plantation and pond habitats are considered to be of higher value to bats and increased activity would be expected along the southern and eastern boundaries.
- 56. The eastern boundary of the Site is well connected to additional high value foraging habitat in the wider landscape, with further areas of woodland laying within green space to the east.

57. There are no buildings on the Site and none of the trees present offer features that might be suitable for roosting bats.

Amphibians

58. There are 151 records of amphibians in the search area, comprising common frog, common toad, smooth newt and great-crested newt.
59. 32 of the records relate to great-crested newt, with the majority of records for this species occurring west of the M1. Two of the records do occur within 500m of the Site, with larvae being recorded in Pond 1 and an assumed adult record relating to Pond 2 north of the Dearne Valley Parkway.
60. Pond 1 presents a waterbody that is suited to amphibian breeding within close proximity to the Site. This is surrounded by wide areas of suitable terrestrial habitat in the form of rank tussocky grassland, scrub and woodland. There is feasibly some connectivity between this pond and Pond 2 via the pedestrian underpass.
61. According to local records, Pond 1 also supports common frog, smooth newt and common toad, a national BAP species.
62. A Habitat Suitability Index (HSI) survey carried out on Pond 1 returned a score of 0.85 indicating that this pond represents 'excellent' GCN breeding habitat.

Table 2 Habitat Suitability Index (HSI) scores for Pond 1.

Ref.	S1 Location	S2 Pond area	S3 Drying	S4 Water Quality	S5 Shade	S6 Waterfo wl	S7 Fish	S8 Pond count	S9 Terestri al	S10 Macrophyt es	HSI Score
Pond 1	1	0.95	1	0.33	1	1	1	0.75	1	0.8	0.85

HSI		Pond suitability
< 0.5	=	poor
0.5-0.59	=	below average
0.6-0.69	=	average
0.7-0.79	=	good
> 0.8	=	excellent

63. Although there is a record of GCN larvae dating from 2013, an eDNA carried out in June 2018 as part of a nearby development returned a negative result (BWB Consulting, 2018).
64. Updating GCN survey carried out by Brooks Ecological in 2019 and returned a negative result (see report R-3806-03).

Birds

65. 3000+ records have been returned for the search area, many of these being for common urban and woodland bird species.
66. Within the 1km grid square encompassing the Site, 61 records are returned. Species in the area include BAP listed birds such as reed bunting and yellow hammer, and red/amber listed birds including meadow pipit, skylark, willow warbler, fieldfare and goldfinch.
67. Whilst the grid reference resolution is imprecise, there are records of ground nesting birds breeding in the area, with a recent (2013) record of skylark breeding on a site described as 'Rockingham'.
68. As such, all parts of the Site – open grassland, scrub/trees and reed beds around the pond - provide potentially suitable breeding habitat for birds as well as feeding opportunities.
69. As with most sites the standard precaution in relation to birds would apply. To prevent the proposed works impacting on nesting birds, any clearance of vegetation will need to be undertaken outside of the breeding bird season which is 1st March – 31st August inclusive. Any clearance 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. At this Site, this guidance applies to ground nesting birds in addition to those that may be nesting in trees/scrub.

Hedgehogs

70. There are 23 records of hedgehog within the search area. Hedgehogs are listed under Section 41 of the NERC Act and are declining in our countryside.
71. The woodland boundaries provide suitable habitat for over-wintering hedgehogs and they may use the grassland for foraging. Suitable precautions should be put in place to ensure this species is not impacted during construction work.

Reptiles

72. There are 18 records of grass snake in the search area, the closest of these being c.750m north-east of the Site. All the records lie to the north of the Dearne Valley Parkway or west of the M1.

- 73. There is a single adder record dating from the 1980s, being located at Potters Hole Plantation LNR, 2km south-west.
- 74. Surveys carried out by AES for the Hoyland North masterplan revealed no evidence of grass snake.
- 75. Survey carried out by Brooks Ecological in 2019 demonstrated a likely absence of reptiles from the Site (see report R-3806-02).

Brown Hare

- 76. There are 14 records of brown hare within the search area. This species prefers open arable farmland and may be deterred by the presence of the adjacent main road.
- 77. The proposals are considered to have a minimal impact on this species, with preferential habitat being found beyond the confines of local urban areas.

Water Voles

- 78. There are 11 records of water vole within the search area, pre-dating the sighting of an American mink in the area in 2000.
- 79. Give a lack of sightings within the last 25 years, and the presence of a known predator within the area, it is likely that water voles are locally absent from the area. Water vole are considered unlikely to be present on the Site or within the ditch.

Invasive Non-Native Species (INNS)

80. INNS are species listed on Schedule 9 of the Wildlife and Countryside Act (1981), for which it is an offence to cause or allow it to grow in the wild. The following species were noted on the Site and its boundaries², and are marked indicatively on plan D-3806-01.1 (Appendix 1).

- Rhododendron (*Rhododendron ponticum*)
- Japanese Rose (*Rosa rugosa*)

Rhododendron

81. Young growth of rhododendron was present within the southern area of woodland. This is believed to be *Rhododendron ponticum*, which is listed on Schedule 9. Although this species is common and widespread, we would encourage its removal. This plant thrives on acid soils in woodland settings, where it can outcompete native species and decimate ground layers.

Japanese Rose

82. Several bushes of *Rosa rugosa* were noted along the footpath on the far side of the SUDS pond, a short distance outside the Site's boundary. This species can be problematic in sand dune habitats but poses less of a risk in a woodland setting. However, we would encourage its removal through liaison with the appropriate landowner to prevent it from spreading.

Figure 17 *Rhododendron* in woodland.



Figure 18 Japanese rose near Pond 1.



² Note while our ecologists are trained in the identification of invasive species this report is not a dedicated invasive species survey. Detectability of invasive plant species is seasonally variable so, whilst every effort is made, conclusive determination of presence or absence is not always possible through preliminary survey. As the presence of invasive species can generate significant costs to development the client may wish to instruct a dedicated invasive species survey prior to entering into contracts.

Ecological Constraints and Opportunities

Constraints

The Client's Initial Design

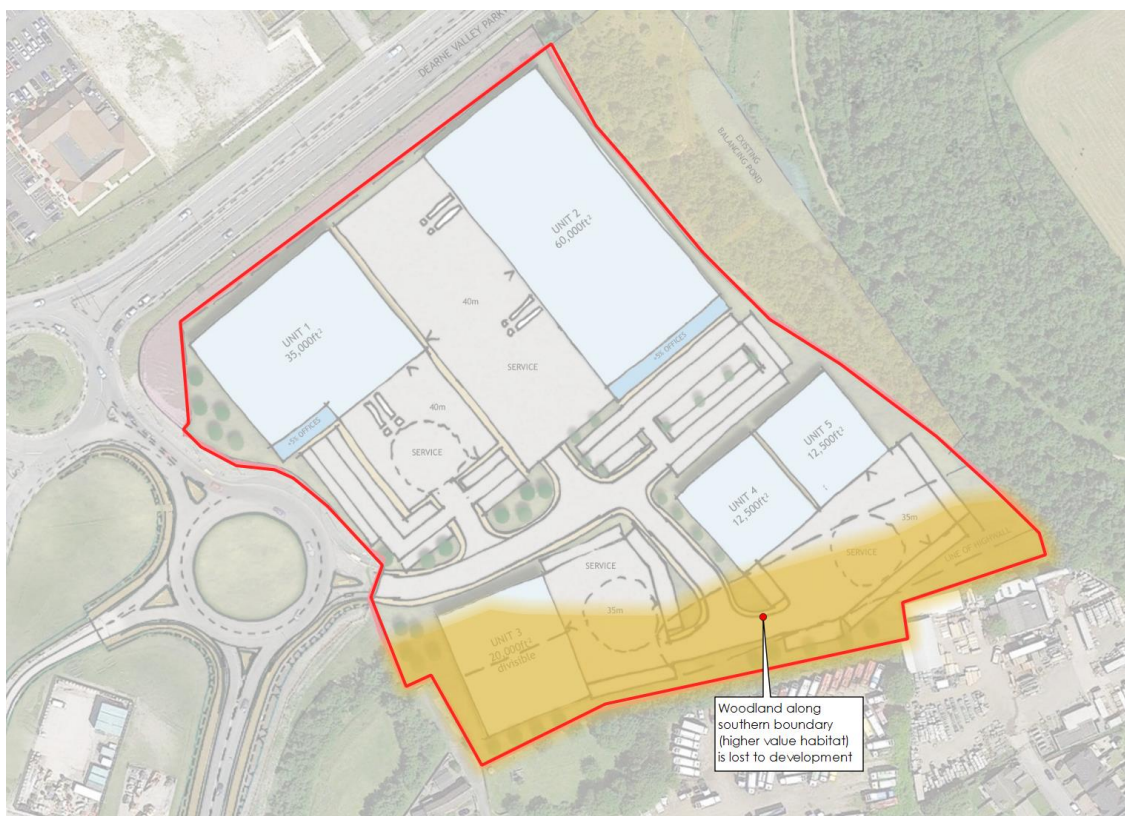
83. The client's initial indicative layout for an industrial development of five units is shown below.

Figure 19 Proposed development taken from The Harris Partnership - Drawing Reference 15315-SK05-Sketch Plan (December 2019).



84. The design has been developed to retain the green buffer along the eastern boundary of the Site, maintaining a wildlife corridor along the existing pathway and minimising potential impacts on amphibians and foraging bats.

Figure 20 Constraints identified during preliminary assessment.



Woodland

85. Woodland that has established along the southern boundary of the Site will be lost to development.
86. Whilst most trees within this woodland are less than 20 years old, the area offers higher value habitat that is part of the Dearne Valley Green Heart NIA. The woodland offers habitat and foraging opportunities for local bird populations, though has been demonstrated to be poorly used by bats. A suitable mitigation strategy will be required to address this impact.
87. Precautions will need to be put in place to ensure that nesting birds are not disturbed during clearance works.

Opportunities

88. The following suggestions are made to assist the Site in delivering no net loss net for biodiversity. These may be incorporated into a Biodiversity Management Plan for the Site.
- **Use soft landscaping around car parking areas.** These can incorporate native species that flower and fruit at varied times of the year to support pollinating insects, foraging bats and feeding birds.
 - **Installation of bat and bird boxes.** If appropriate, these might be installed onto the eastern elevation of Units 2 and/or 5, otherwise within and along the woodland edge on the eastern boundary.
 - **Wildflower planting.** In areas of green open space, use a wildflower mix in preference to amenity grassland to provide foraging for pollinating insects. Short-sward mixes are available if such areas are to be mown.

Recommendations

89. Protected species surveys for great-crested newt, reptiles and bats were recommended following the preliminary ecological survey and have now been carried out.

Recommendation	Why	When
Presence/absence surveys for great crested newt .	To confirm the likely presence of GCN on site .	Completed – see report R-3806-03.
3 x seasonal bat activity surveys should be carried out to demonstrate typical patterns of use of the site by the local bat populations ³ .	To demonstrate that our habitat-based assessment in this report is correct and to fully inform avoidance/mitigation measures required.	Completed – see report R-3806-04.
Presence/absence surveys for reptiles .	To confirm the likely presence of grass snake on site to inform appropriate method statement or mitigation.	Completed – see report R-3806-02 A.
Prepare Biodiversity Management Plan for the Site	To outline measure to minimise impacts on wildlife, such as artificial lighting on bats. It can also detail how the site could lead to no net loss for biodiversity.	Submit with Planning

³ See Appendix 3 for our rationale in reference to the Bat Conservation Trust survey guidelines.

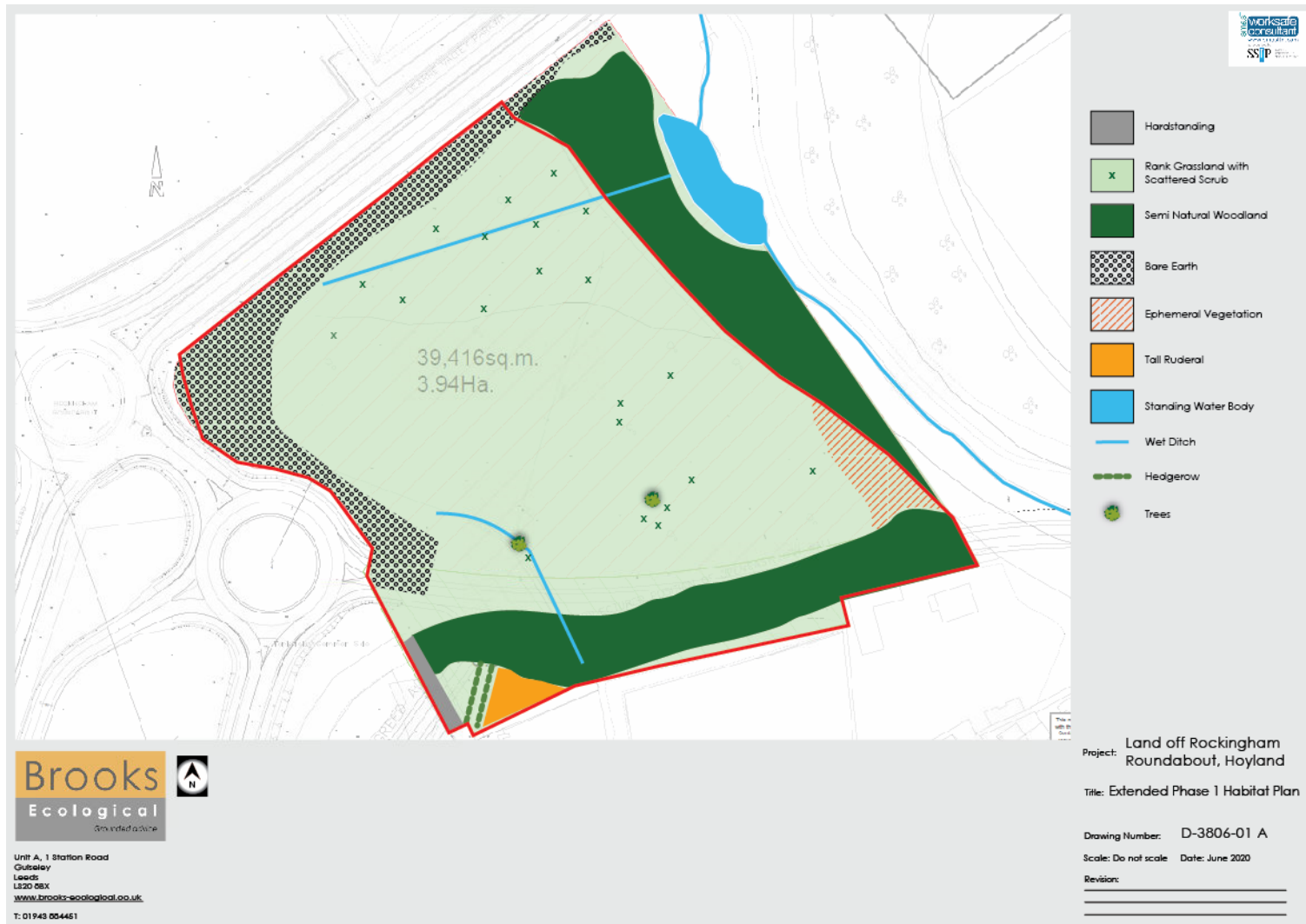
Appendices

1. Extended Phase 1 Habitat Plan
2. Explanatory Notes and Resources
3. Bat Activity Survey Rationale
4. Information on Legislation/Protection

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Appendix 1 Extended Phase 1 Habitat Plan



Appendix 2 Explanatory Notes and Resources Used

Site Context

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.

Designated Sites

A search of the MAGIC (Multi-Agency Geographic Information for the Countryside) website was undertaken. The MAGIC site is a Geographical Information System that contains all statutory (e.g. Sites of Special Scientific Interest [SSSI's]) as well as many non-statutory 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. In addition, information from the local record holders was referred to on locally designated sites.

Functional linkage with off-Site habitats

When assessing these we consider whether the Site could be functionally linked to them, considering links such as;

- Hydrological links - is the Site upstream downstream, or could ground water issues affect it?
- Physical links - is the site in close proximity and could it be directly or indirectly affected by construction and operational effects? Conversely it may be that despite proximity major barriers separate the two.
- Recreational links - do footpaths and roads make it likely that increased recreational pressure could be felt?
- Habitat links - is the site part of a network of similar habitat types in the wider area? These could be joined by linear corridors or could simply be 'stepping stones of habitat of similar form or function.

Method

Phase 1 habitat survey methodology (JNCC, 2010). This involves walking the site, mapping and describing different habitats (for example: woodland, grassland, scrub). The survey method was "Extended" in that evidence of fauna and faunal habitat was 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) and Guidelines for Preliminary Ecological Appraisal (CIEEM 2017).

Faunal Appraisal

This section first looks at the types of habitat found on Site or within the sphere of influence of potential development, then considers whether these could support protected, scarce or NERC Act 2006 Section 41 species (referred to collectively as 'notable species').

Records of notable species supplied from a 2km area of search by Sheffield Biological Records Centre are used to inform this appraisal.

We discuss further only notable species or groups which could be a potential constraint due to the presence of suitable habitat and their presence (or potential presence) in the wider area. We screen out and do not present accounts of notable species or groups which do not meet these criteria – in some cases it may be necessary to explain this reasoning.

Bat roosting potential is classified according to the following criteria set out below, taken from the Bat Conservation Trust Good Practice Guidelines (2016).

Bat Roosting Suitability of Buildings and Trees

Suitability	Criteria
<i>Negligible</i>	Negligible habitat features on site likely to be used by roosting bats.
<i>Low</i>	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 a larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
<i>Moderate</i>	A structure or tree with one or more potential roost sites that could be used due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only - the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
<i>High</i>	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, protections, conditions and surrounding habitats.

Evaluation

In evaluating the Site, the ecologist will take into account a number of factors in combination, such as;

- the baseline presented above,
- the site's position in the local landscape,
- its current management and
- its size, rarity or threats to its integrity.

There are a number of tools available to aid this consideration, including established frameworks such as Ratcliffe Criteria or concepts such as Favourable Conservation Status. Also of help is reference to Biodiversity Action Plans in the form of the Local BAP and Section 41 of the NERC Act (2006) to determine if the site supports any Priority habitats or presents any opportunities in this respect.

The assessment of impacts considers the generic development proposals from which potential effects include:

- Vegetation and habitat removal
- Direct effects on significant faunal groups or protected species
- Effects on adjacent habitats or species such as disturbance, pollution and severance
- Operation effects on wildlife such as noise and light disturbance

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

Priority Species	Priority Habitats
Hedgehog	Upland Oakwood
Bats	Lowland Mixed Deciduous Woodland
Water Vole	Wet Woodland
Otter	Wood Pasture and Parkland
Grey Partridge	Hedgerows
Bittern	Arable Field Margins
Kestrel	Floodplain Grazing Marsh
Little Ringed Plover	Lowland Meadows
Lapwing	Lowland Dry Acidic Grassland
Barn Owl	Lowland Heathland
Skylark	Upland Heathland
Tree Sparrow	Blanket Bog
Twite	Purple Moor Grass and Rush Pasture
Great Crested Newt	Reedbeds
Salmon	Ponds
Bullhead	Rivers
White-clawed Crayfish	Open Mosaic Habitats on Previously Developed Land
Glow Worm	
Dingy Skipper	
Bluebell	

Appendix 3 – Bat Activity Survey Rationale

The Bat Conservation Trust Guidelines (BCTG) (Collins 2016) is now widely accepted as providing a basis and rationale for scoping and conducting bat surveys. It is acknowledged that the guidelines provide a wealth of background and are a very useful tool in standardising approaches to survey, it is also felt that an over reliance on some of the guidelines within this document can result in the provision of complicated surveys where they have significant consequences for the cost, or timescale of a large project, but could never deliver positives for bat conservation.

Taking the BCTG document as a whole, Chapter 2 helps the reader understand whether or not surveys are required, and that in the context of planning and development survey is required in relation to ensure;

- the avoidance of legal offences, and;
- the provision of a sufficient level of information - such that will allow the Local Planning Authority to make an informed decision on the proposals and their potential impacts on the Favourable Conservation Status (FCS) of bats.

Attendance at seminars presented by, and discussions with, those involved in production of the BCTG document has emphasised the point that it is within the remit of the consultant ecologist to make a decision on the necessity and scope of surveys - they will use the guidelines in doing so but are not in any way bound by them: this is reflected in Section 1.1 of the guidelines -

'The Guidelines do not aim to either override or replace knowledge and experience. It is accepted that departures from the guidelines (e.g. either decreasing or increasing the number of surveys carried out or using alternative methods) are often appropriate. However, in this scenario an ecologist should provide documentary evidence of (a) their expertise in making this judgement and (b) the ecological rationale behind the judgement. '

Such decisions require a consideration of the potential of the project to impact on bat habitat, alongside analysis of the value of habitat on and around the site and of local records and the likelihood that bats might occur in significant numbers. Our reports aim to present information on how we have arrived at our decision on the site, what assumptions we have based this on, and where further survey is recommended we indicate what the objective of this survey should be and how best this would be achieved.

At this site, the woodland plantation to the south and east and the standing water body provide opportunities for foraging bats, which are felt likely to be using the green corridor immediately east of the site for commuting.

Collection of baseline data on the assemblage of bats using the site is recommended through seasonal (spring, summer and autumn) transects and remote monitoring of key features.

Objectives of these surveys should be:

- confirm levels of use and the assemblage of bats present on the site generally
- confirm patterns of activity and identify key features
- identify levels of use of the affected foraging or commuting features to be and inform levels of mitigation require (if any).

Appendix 4 Wildlife Legislation, Policy and Guidance

This is not an exhaustive list but sets out briefly the relevance of Legislation, Policy and Guidance in terms of planning applications and this assessment.

Legislation

Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (EC Habitats Directive).

Provides framework at an international (EU) level for the consideration / protection of European Protected Species (EPS), and habitats through the designation of sites.

Council Directive 79/409/EEC on the Conservation of wild birds (EC Birds Directive) and The Ramsar Convention on Wetlands of International Importance (1971)

Provides framework at an international (EU) level for the consideration / protection of important bird populations and the sites on which they are dependant.

The Conservation of Habitats and Species Regulations (2010)

This transposes 1) into UK law and provides the basis on which all EPS are protected and impacts on them can be licensed in the UK.

The Wildlife and Countryside Act (1981) as amended

This provides the basis on which UK species are legally protected or restricted and confers protection on Sites of Special Scientific Interest SSSIs. It contains annexes of plants and animals which are legally protected as well as those which are considered to be invasive or harmful. It provides the basis on which impacts on such species can be licensed in the UK and provides controls on work on or near SSSIs.

The Countryside and Rights of Way Act 2000 (CRoW)

Provides a statutory basis for nature conservation, strengthens the protection of SSSIs and UK protected species and requires the consideration of habitats and species listed on the UK and Local Biodiversity Action Plans (UKBAP / LBAP).

Natural Environment and Rural Communities Act 2006 (NERC)

Sets out the responsibilities of Local Authorities in conserving biodiversity. Section 41 of the Act requires the publishing of lists of habitats and species which are "of principal importance for the purpose of conserving biodiversity". At present these largely reflect those making up the UKBAP lists.

Hedgerows Regulations (1997)

Define and provide protection for Important Hedgerows.

Protection of Badgers Act (1992)

Protects badgers from persecution, this includes excavation / development in the proximity of setts.

Protected Sites

Statutory EU / International Protected Sites

Special Areas of Conservation (SACs); and Special Protection Areas (SPAs) and Ramsar Sites contain examples of some of the most important natural ecosystems in Europe. Work on or near these sites is strictly protected and Local Authorities will be expected to carry out 'Appropriate Assessment' of development in proximity of them. In this case there is often an increased burden on the developer in relation to provision of information and assessment.

Statutory UK Protected Sites

Local Nature Reserves (LNRs); National Nature Reserves (NNRs); Sites of Special Scientific Interest (SSSIs) all receive strict protection under UK legislation. Work in or in proximity to these sites would be restricted with any needing to be agreed with Natural England. Natural England now provide guidance on the nature of development which could impact on SSSIs through Impact Risk Zones.

Locally Protected Sites

Local Authorities have a variety of protected wildlife sites designated at a local or regional level. These are gradually being brought under the banner of Local Wildlife Sites (LWS) but at present a plethora of different designations exist - all subject to local policy.

Protected Species

European Protected Species

A number of species (most relevantly bats, great crested newts [GCN], and otters) receive strict protection from killing, injury and disturbance under The Conservation of Habitats and Species Regulations (2010). Protection is also conferred on the habitats on which they rely such as roost space in the case of bats and ponds and fields etc. in the case of GCN.

UK Protected Species

A number of species (including bats, GCN, water vole and white clawed crayfish) are strictly protected under The Wildlife and Countryside Act (1981) as amended, from killing, injury, disturbance and damage or destruction of their resting places etc. Certain species (such as reptiles) and some birds (such as barn owl) receive partial protection e.g. at certain times of the year or from certain activities only. All nesting bird species are protected from damage or destruction of their nests - whilst active.

Invasive species

Schedule 9 of the Wildlife and Countryside Act (1981) as amended, lists these species and makes it an offence to cause or allow their spread in the wild. This often has impacts on development and planning in relation to the presence of invasive plant species such as: himalayan balsam (*Impatiens glandulifera*), japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*).

Planning Policy / Guidance

The National Planning Policy Framework (NPPF)

The National Planning Policy Framework was updated in July 2018. The most relevant paragraphs from the NPPF are set out below.

The approach to assessing the natural environment is now embedded within the definition of what 'sustainable development' is and this falls under one of three objectives of the planning system – the 'environmental objective' applying in this case. Paragraph 8c (P8c) of the NPPF states that sustainable development should *"contribute to protecting and enhancing our natural environment"* and *"help to improve biodiversity"*. P10 sets out the Framework's presumption in favour of sustainable development.

Section 11 of the NPPF details making effective use of land. The Framework states that planning policies and decisions should *"take opportunities to achieve net environmental gains – such as developments that would enable new habitat creation"* and should *"recognise that some undeveloped land can perform functions for wildlife"* (P118).

Section 15 details conserving and enhancing the natural environment; policies and decisions should be *"protecting and enhancing sites of biodiversity value"*, *"recognise the intrinsic character and beauty of the countryside"* and contribute to conserving and enhancing the natural environment and reducing pollution (P170). Allocations of land for development should, *"prefer land of lesser environmental value, where consistent with other policies in this Framework and take a strategic approach to maintaining and enhancing networks of habitats"* (P171).

The Framework sets out ways to minimise the impacts on biodiversity through *"identifying, mapping and safeguarding components of local wildlife rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity"* and the *"conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and (the need to) identify and pursue opportunities for securing measurable net gains for biodiversity"* (P174).

It is made clear in P175 that local planning authorities should apply principles when determining planning applications. Planning permission should be refused *"if significant harm to biodiversity resulting in development cannot be avoided, adequately mitigated, or, as a last resort, compensated for"*. Development should not normally be permitted where an adverse effect on a SSSI is likely and *"opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity"*.

Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services.

This strategy builds on the Natural Environment White Paper (June 2011) - Setting out the current UK Government's approach to nature conservation. It promotes a more coherent and inclusive approach to conservation and the valuing in economic and social terms of economic resources.

The strategy promotes initiatives such as Biodiversity Offsetting, Nature Improvement Areas and a focus on well-connected natural networks and introduces the concept of securing a 'no net loss' situation with regard to UKBAP / Section 41 habitats and species.

ODPM circular 06/05 (2005) Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System

Provides guidance to Local Authorities on their obligations to biodiversity – particularly in relation to assessing planning applications and ensuring the adequacy of information.

BSI (2013) British Standards Institute BS 42020:2013 Biodiversity — Code of Practice for Planning and Development.

Provides a standard for the biodiversity assessment and development industries and decision makers such as Local Planning Authorities to work to.