

Brooks Ecological
Grounded advice

Preliminary Ecological Appraisal Report

Goldthorpe Market Site, Barnsley

Barnsley Metropolitan Borough Council

Report Reference: ER-5735-01

12/10/2021

Report Title:	Preliminary Ecological Appraisal Report Goldthorpe Market Site, Barnsley
Report Reference:	ER-5735-01
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Date:	12/10/2021

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Summary

This report is produced to inform Barnsley Metropolitan Borough Council of potential ecological constraints associated with their proposed redevelopment site and the need for further reporting or output to support a planning application.

This 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 September 2021.

Key Findings

The Site comprises hardstanding and two buildings and is of negligible ecological value.

The Site is assessed as having a biodiversity metric score of 0.06 Habitat Units and 0.25 Hedgerow Units.

Further survey of the toilet block for bats is recommended.

Introduction

1. Brooks Ecological Ltd was commissioned by Barnsley Metropolitan Borough Council to carry out a Preliminary Ecological Appraisal (PEA) of land at Goldthorpe Market Site, Barnsley (grid reference SE 463 043).
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 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.
5. Biodiversity Accounting metrics are used to quantify the value of a Site in Biodiversity Units - which helps in the later stage of assessing the ecological impacts of the proposed development.
6. Biodiversity Units can help to inform avoidance, or on-site mitigation levels required; or as a last resort can translate to a direct monetary value where compensation (off-site) is required. Please be aware that they *can* significantly impact on costs and viability.

The Site

7. The application site 'the Site' comprises a market site, tarmacked car park, toilet block and substation.
8. 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.

Figure 1 The Site.



Desk Study

Landscape

9. The Site is located in the village of Goldthorpe, 12km east of Barnsley.

10. To the north, east and south, the Site is bordered by houses and private gardens. The western boundary is formed by Market Street. The immediate surroundings are largely residential, with the closest area of farmland 500m south.

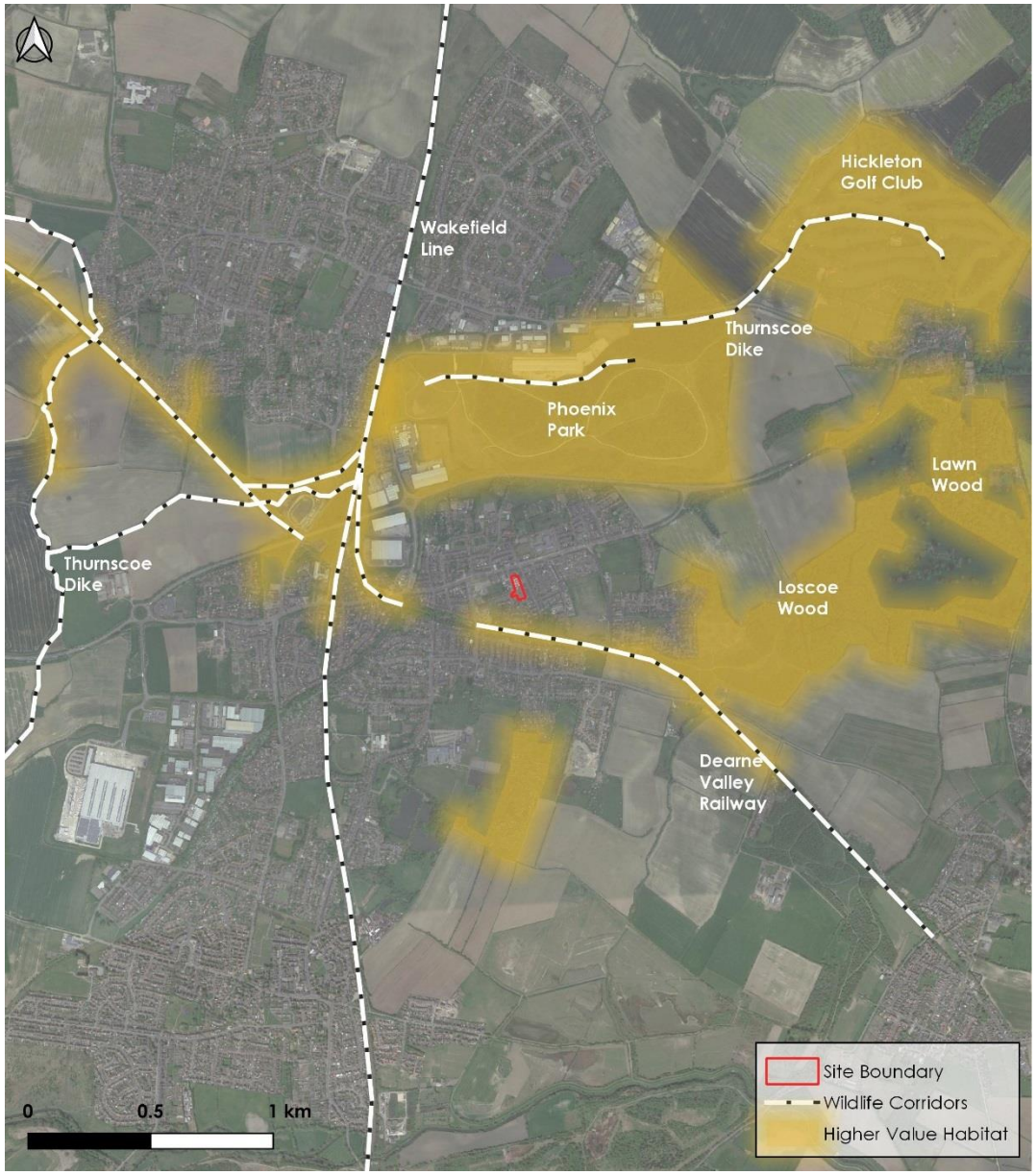
11. Goldthorpe adjoins the villages of Thurnscoe to the north and Bolton upon Dearne to the south, but beyond this, it is surrounded by arable farmland.

Wildlife Corridors

12. The track of the disused Dearne Valley Railway provides a corridor running northwest-southeast across the landscape within 135m of the Site, while the in-use Wakefield Line runs north-south. The stream of Thurnscoe Dike runs northeast-southwest, with some interruptions where it is culverted. These then connect to various areas of woodland within the vicinity, including Phoenix Park and Hickleton Golf Club to the north, and Loscoe and Lawn Woods to the east.

13. All of these wildlife corridors are considered separated from the Site by dense urban development.

Figure 2 Analysis of wildlife corridors and structured habitat visible on mapping in relation to the Site.



Designated Sites

Statutory Designations

14. A search has been made to identify any nationally designated sites within a 2km radius of the Site, or 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
Dearne Valley Wetlands	1.2km south	Site of Special Scientific Interest (SSSI)	Breeding ducks, bittern, black-headed gull, willow tit; non-breeding gadwall and shoveler.

15. Direct and indirect impacts on this site as a result of this development are unlikely due to the Site's separation and distance, and lack of connectivity to watercourses which could carry pollutants into the SSSI.

SSSI Impact Risk Zones (IRZs)

16. The Site lies within the 2km IRZ for the Dearne Valley Wetlands SSSI but does not fall into any of the highlighted categories which require the LPA to consult with Natural England in relation to potential impacts.

Non-Statutory Designations

17. There is one Local Wildlife Site in the search area: Bolton upon Dearne Wetlands, located 900m south-west. This is a Barnsley Local Wildlife Site (no. 39) and is designated for its ponds, floodplain and grazing marsh.
18. Direct and indirect impacts on this site as a result of this development are unlikely due to the Site's separation and distance.

Nature Improvement Area

19. The Site lies within the Dearne Valley Green Heart Nature Improvement Area (NIA), and development will have to comply with the relevant policies.

Wildlife Habitat Network

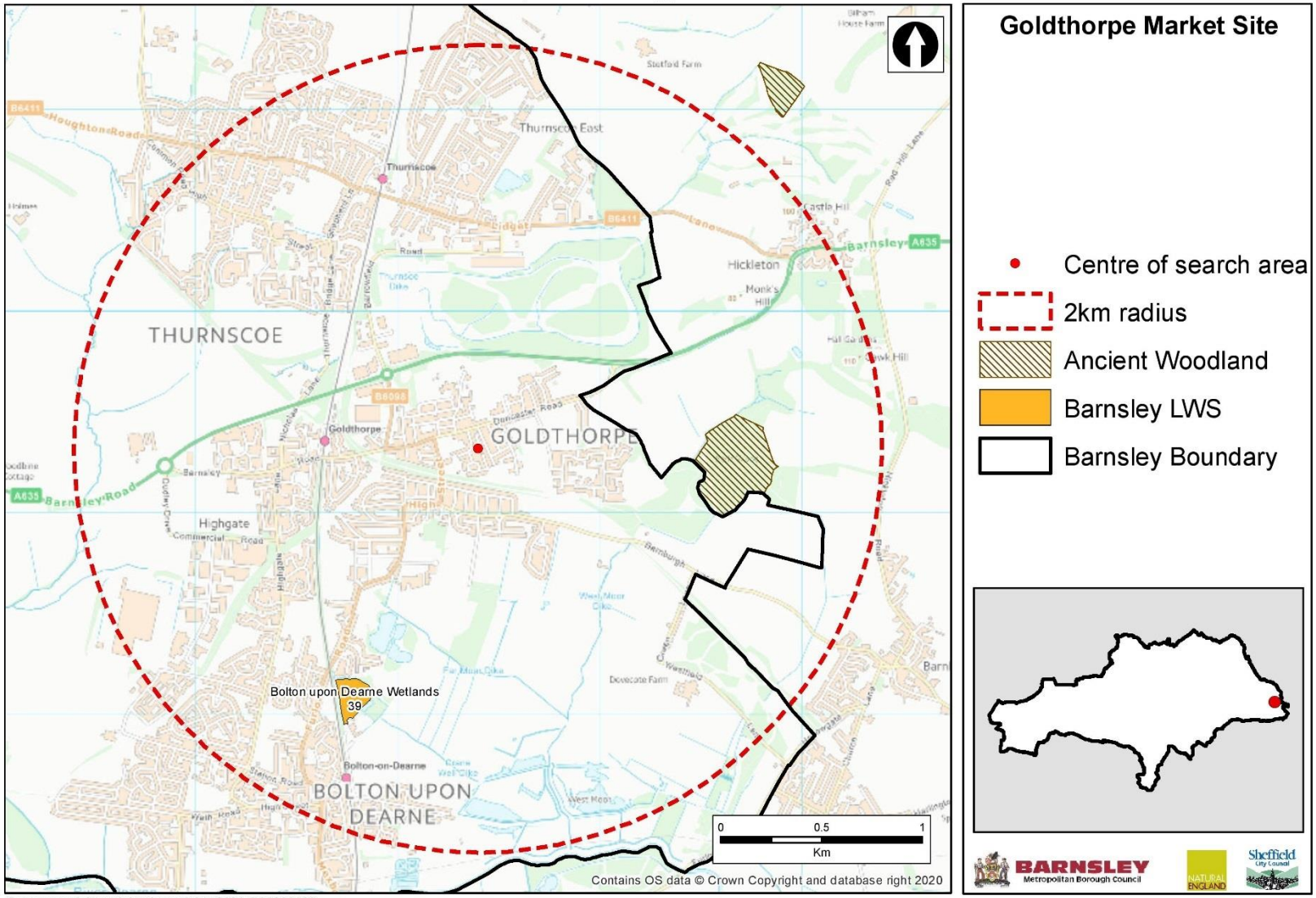
20. The Site is not part of a Wildlife Habitat Network.

Granted EPSM Licenses

21. No granted licenses show up within 1km of the Site.

Figure 3 Species and Designated Sites

Boundaries of Statutory and Local Wildlife Sites (non-statutory) Within the Search Area



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Survey

Method

22. The survey was carried out during September 2021[1] and followed the principles of Extended Phase 1 Habitat Survey methodology (JNCC, 2010).

Limitations

23. Enough time was afforded the surveyor to carry out the survey. The survey was not constrained by poor weather.

Habitat Appraisal

Habitats Identified

24. The Site's habitats are described in order on the following pages. In line with the requirement to provide information on **Biodiversity Net Gain (BNG**), habitats are named in accordance with the UK Habitats classification system - we have used the relevant UK Habs guidance referenced at the back of the report in identifying habitats. Habitat descriptions are divided into the 'distinctiveness' categories used in the calculations - with more weight being afforded the more distinctive / important habitats.

25. Generally, the following apply to each tier of distinctiveness; although some authorities might highlight some lower distinctiveness habitats as having a higher importance locally. Where relevant we have highlighted these.

Very Low Distinctiveness Habitats

26. Habitats of little or no habitat value i.e., lacking any significant native vegetation, but could still provide supporting habitat for protected or notable fauna such as birds or bats. In the context of BNG - their areas are included in calculation, but mitigation or compensation is not required.

Low Distinctiveness Habitats

27. Habitats which are ubiquitous, often which have been created or modified by man. They tend to lack diversity of species and structure. They are unlikely to support notable flora but could still provide supporting habitat for protected or notable fauna. In the context of BNG they are included in calculations, but compensation / mitigation needs only to provide habitat of similar or higher distinctiveness.

Moderate Distinctiveness Habitats

28. Habitats which are common but provide a higher level of structural and species diversity, though unlikely to support more notable assemblages, species of interest could be present here and they are more likely to be important supporting habitat to fauna. In the context of BNG mitigation needs to provide habitat of the same broad habitat type, or that of higher distinctiveness.

[1] This Report has been prepared during October 2021 following a visit to the site in September 2021 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.

High Distinctiveness Habitats

29. These are habitats which are more natural and by definition contain more important assemblages of plants and potentially species which are rare in their own right. They will provide good supporting habitat for fauna. These habitats are likely to be targeted as conservation priorities and will be the subject of additional policy guidance or legislation. In the context of BNG whilst mitigation or compensation for loss or damage is possible, provision of more of the same type of habitat would be required – which (with a few exceptions) is likely to be difficult.

Very High Distinctiveness Habitats

30. These are the UKs rarest / best habitats. They will be present in very particular locations and a range of rare or important plant and animal species will depend on the particular conditions they provide. These habitats will be the subject of restrictive policy guidance or legislation. Whilst the BNG metric does not preclude mitigation or compensation in respect of these habitats, creation of the same habitat type would be required and this would range between very difficult/expensive and impossible.

31. Each habitat is mapped and an area for each type is provided in the format of the DEFRA Biodiversity Metric 3.0 Calculation Tool. The areas can be used to quantify the impacts of development in an Ecological Impact Assessment if this is required by the Local Planning Authority.

Condition Assessment

32. Our condition assessment for each habitat described references where available the criteria set out in DEFRA (2021) Biodiversity Metric 3.0 Technical Supplement (1).

33. Habitats in the Very Low Distinctiveness tier do not require a condition assessment.

34. Habitats in the Low Distinctiveness tier tend to fall into the poor condition category by default. Where we feel this is not the case, we have explained our reasoning.

35. Habitats within the other higher tiers can fall into a range of conditions. We set out our reasoning based on the given criteria and guidelines.

Habitats & Linear Features of Low/Very Low Distinctiveness

Figure 4 Approximate location and extent of these habitats



Table 2 Summary - Habitats of Low / Very Low Distinctiveness

Habitat Code / Name	Summary Description	Condition
u1b, 17- Developed land, sealed surface with tall ruderal / short ephemeral	This habitat comprises two buildings (Toilet Block and Sub-station), alongside the market stall area and carpark. The majority of the habitat is devoid of any significant vegetation. The market stall area has been unused for a short period of time and short ephemeral and tall ruderal species have colonised gaps between the concrete paving slabs (identified by '17' secondary habitat). A variety of species were noted throughout including buddleia, knot grass, narrow-leaved ragwort, red valerian, gallant-solider, black nightshade, broad-leaved dock, wall barley, false oat grass, and Yorkshire fog alongside saplings of sycamore and ash. A small amount of mature buddleia has established in the north-eastern corner.	N/A
1160- Introduced shrub	A small sparse shrub bed which for most part is pare soil with tall ruderal vegetation. Species here comprise buddleia, broom and currant alongside knotgrass, poppy, greater plantain and willowherbs.	Automatically assigned 'Poor'
h2a	H1- A short section of hedgerow along the boundary with neighbouring housing. The hedgerow is very well managed at approximately 1m in height and 1m in width and comprises a mix of hawthorn, maple, elder.	Moderate
	H2- This hedgerow is H1 but has been left uncut and is now c.6m in height and c.2m in width. Hawthorn dominates this section, with smaller amounts of elder, ash, bramble and bindweed.	Good
h2b	Along part of the southern boundary is a laurel hedgerow- this is rooted off-site behind fencing but overhangs the boundary slightly.	N/A

Figure 5 View of u1b



Figure 6 View of u1b with 17



Figure 7 View of 1160



Figure 8 View of H1



Figure 9 View of H2



Figure 10 View of H3



Hedgerow DEFRA Metric Condition assessment

Hedgerow without trees- H1		
	Pass/Fail	**Condition**
A1	Fail	No more than 2 failures, no more than 1 in any letter = Good
A2	Fail	
B1	Pass	
B2	Pass	No more than 4 failures, does not fail both attributes for more than 1 letter = Moderate
C1	Fail	
C2	Fail	
D1	Pass	
D2	Pass	More than 4 failures, or fails both attributes in more than 1 letter = Poor
	= Moderate	

Hedgerow without trees- H2		
	Pass/Fail	**Condition**
A1	Pass	No more than 2 failures, no more than 1 in any letter = Good
A2	Pass	
B1	Pass	
B2	Pass	No more than 4 failures, does not fail both attributes for more than 1 letter = Moderate
C1	Fail	
C2	Fail	
D1	Pass	
D2	Pass	More than 4 failures, or fails both attributes in more than 1 letter = Poor
	= Good	

DEFRA Metric (Baseline)[2]

38. This metric sets out the baseline for the Site - proposals should seek to **Avoid** areas of higher value, **Mitigating** any loss on-Site through retention and enhancement, or habitat creation.

Goldthorpe Market Site, Goldthorpe

A-1 Site Habitat Baseline

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

	Habitats and areas			Distinctiveness	Condition	Strategic significance	Suggested action to address habitat losses	Ecological baseline
Ref	Broad habitat	Habitat type	Area (hectares)	Distinctiveness	Condition	Strategic significance		Total habitat units
1	Urban	Developed land; sealed surface	0.27	V.Low	N/A - Other	Within area formally identified in local strategy	Compensation Not Required	0.00
2	Urban	Vacant/derelict land/ bareground	0.01	Low	Moderate	Within area formally identified in local strategy	Same distinctiveness or better habitat required	0.05
3	Urban	Introduced shrub	0.007	Low	Poor	Within area formally identified in local strategy	Same distinctiveness or better habitat required	0.02
4								
5								
			0.29					0.06

[2] Our report provides an estimate of the sites value in Biodiversity Units. This is based on thorough assessment at the time of survey and using the information available at this time. In this assessment we have used the latest version of DEFRA's Biodiversity Metric Tool, the UK Habitats Classification and relevant guidance. This assessment requires subjective judgments to be made in terms of habitat type and condition and could be open to other interpretations. Reliance on the Unit Score, or conversion of this into a monetary value, would be at the developer's own risk.

B-1 Site Hedge Baseline

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

	UK Habitats - existing habitats			Habitat distinctiveness	Habitat condition	Strategic significance	Suggested action to address habitat losses	Ecological baseline
Baseline ref	Hedge number	Hedgerow type	Length KM	Distinctiveness	Condition	Strategic significance		Total hedgerow units
1	1	Native Hedgerow	0.01	Low	Moderate	Within area formally identified in local strategy	Same distinctiveness band or better	0.05
2	2	Native Hedgerow	0.03	Low	Good	Within area formally identified in local strategy	Same distinctiveness band or better	0.21
3								
4								
5								
			0.04					0.25

Faunal Appraisal

39. The following pages discuss only the groups and species that could be reasonably expected to be found on the type of habitats present on, or adjacent to, the site.

Amphibians

Desk evidence

40. There is a single pond within 500m of the Site, located 460m northwest.

41. There are four records of great crested newt (GCN) returned for the area, the closest relating to West Moor Croft, 500m southeast and recorded in 2018. Records of common toad, common frog and smooth newt have also been returned, located >800m from the Site.

Field Evidence

42. The Site does not support any standing waterbodies and offers suboptimal terrestrial habitat for amphibians.

Summary Evaluation

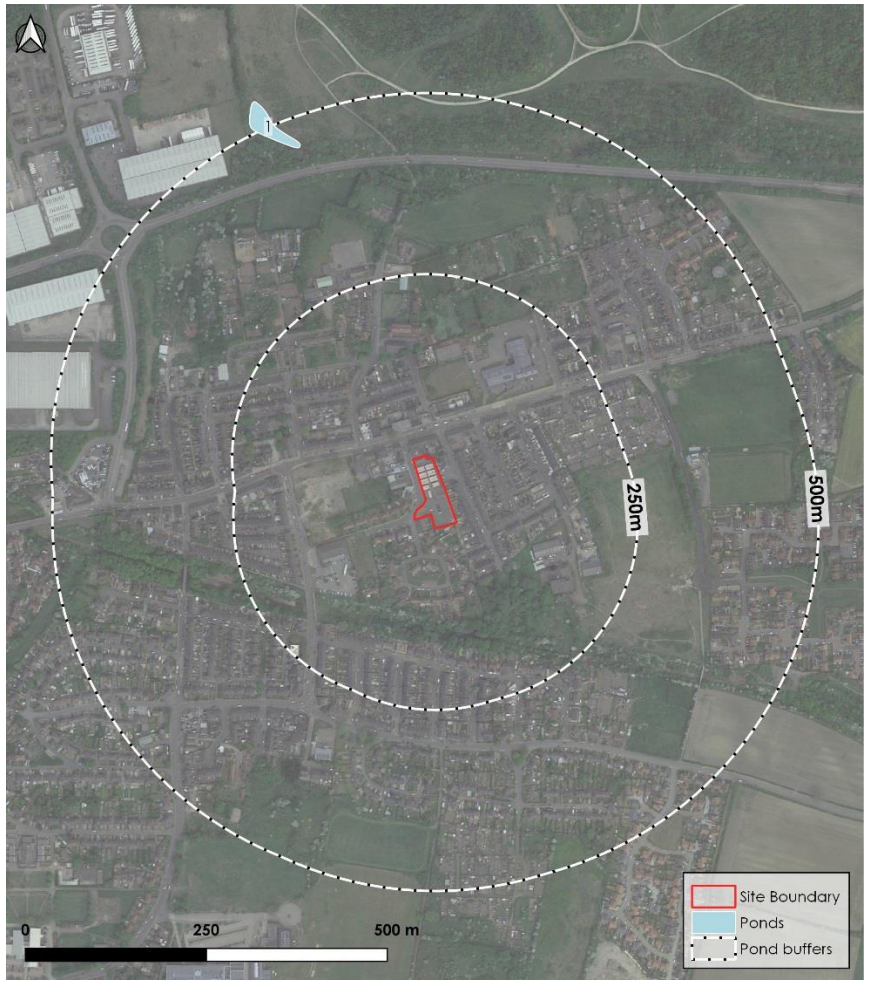
43. Based on the lack of records, and standing waterbodies within the ecological zone of influence, the likely absence of the protected great crested newt is reasonably concluded.

44. The general area may be used by common toad and common frog, however, the absence of significant amphibian populations within the Site is also discounted.

Further Surveys and Recommendations

45. No further surveys or precautions are considered necessary.

Figure 11 Ponds in relation to the Site.



Bats

Desk evidence

46. There are 18 records of bats within the search area, mostly relating to common pipistrelle, but with occasional records of noctule and whiskered bat. The closest records relate to a pipistrelle roost in Dearne Goldthorpe Primary School, 140m west, demolished in 2016.

47. Other roost records are located 975m and 1.9km northwest, all relating to common pipistrelle.

Field Evidence

Potential Roost Sites

Buildings: Two buildings are present within the Site. The first is a Toilet Block in the north-western corner. This building is single-storey with cavity brick walls, a hipped roof fitted with plastic, corrugated tiles, metal panelling around the ventilation chimney and under the bottom tile course and bitumen flashing. Wooden panelling is fitted under the porch.

The walls are in good repair. The panelling under the porch is damaged and access / egress is available into the cavity above. Whilst the roof is in good repair throughout, gaps are available under individual tiles and under the ridge tiles throughout and could potentially lead to further cavities. Based on the potential roost features and the location, the building is assessed as offering low roosting suitability.

A sub-station is also located to the north-east, constructed of red-brick with a concrete roof and is very well sealed. The sub-station offers negligible roosting suitability.

Trees: None of the trees (those within H2) supported any roost features.

Foraging and Commuting Habitat

48. The Site supports very limited foraging and commuting features, being dominated by hardstanding and buildings.

Summary Evaluation

49. The Toilet Block offers low roosting suitability. The sub-station and trees do not offer any roosting suitability.

50. The Site is likely to be of low value to foraging and commuting bats.

Further Surveys and Recommendations

51. Further survey of the Toilet Block is recommended.

Figure 12 View of Toilet Block- south-eastern elevation



Figure 13 View of Toilet Block- north-western elevation



Figure 14 View of boarding under porch



Figure 15 Potential gaps under tiles and ridge- noted throughout



Figure 16 View of ventilation chimney



Figure 17 View of Substation



Birds

Desk Evidence

52. There are over 5,000 records of birds returned for the search area. The closest record is of a house sparrow on the former Goldthorpe Primary site, 160m east, in 2019.

Field Evidence

53. A small number of common bird species were noted during the survey comprising black bird and wood pigeon.

54. The Site offers very limited foraging and nesting habitat for birds. No active or historic nesting activity was noted across the buildings.

Summary Evaluation

55. The Site will support a very small number of bird territories, with the buildings, and hedgerows offering potential for foraging and nesting by common urban birds. However, the Site is unlikely to support key species and will not be important to local populations.

Further Surveys and Recommendations

56. No further surveys are considered necessary to demonstrate current baseline in respect of birds.

57. Standard precautions apply in respect of restrictions on clearing the buildings and any hedgerows during the nesting season.

Hedgehogs

Desk evidence

58. Hedgehogs are recorded within the search area.

Field Evidence

59. No evidence of hedgehogs was found on site.

Summary Evaluation

60. The Site provides suboptimal habitat for this species, however they may pass through as they travel between the surrounding gardens.

Further Surveys and Recommendations

61. Presence assumed no further surveys are considered necessary.

Invasive Non-Native Species (INNS)

62. 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. No species were identified[3]:

Survey constraints

63. Although no INNS have been identified in this preliminary survey it is not always possible to conclude absence from preliminary survey alone due to factors such as season, accessibility, 3rd party attempts to hide evidence or undisclosed treatment programmes. For this reason, this report should not be relied upon as definitive evidence of absence of INNS.

64. This site presents a medium risk of supporting undetected INNS based on the following factors:

- Suboptimal survey season
- Potential for recent earthworks or management which may have obscured viable material
- Proximity to nearby potential sources of infection
- Potential for tipping of material

65. Should further assurances be needed in relations to INNS, a dedicated Invasive Weed Survey should be commissioned.

[3] Whilst our ecologists are trained in the identification of invasive species this report is not a dedicated invasive species survey. Detectability of invasive plant species can be affected by several factors, and conclusive determination status, or extent, is not possible through preliminary survey alone. 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 & Opportunities

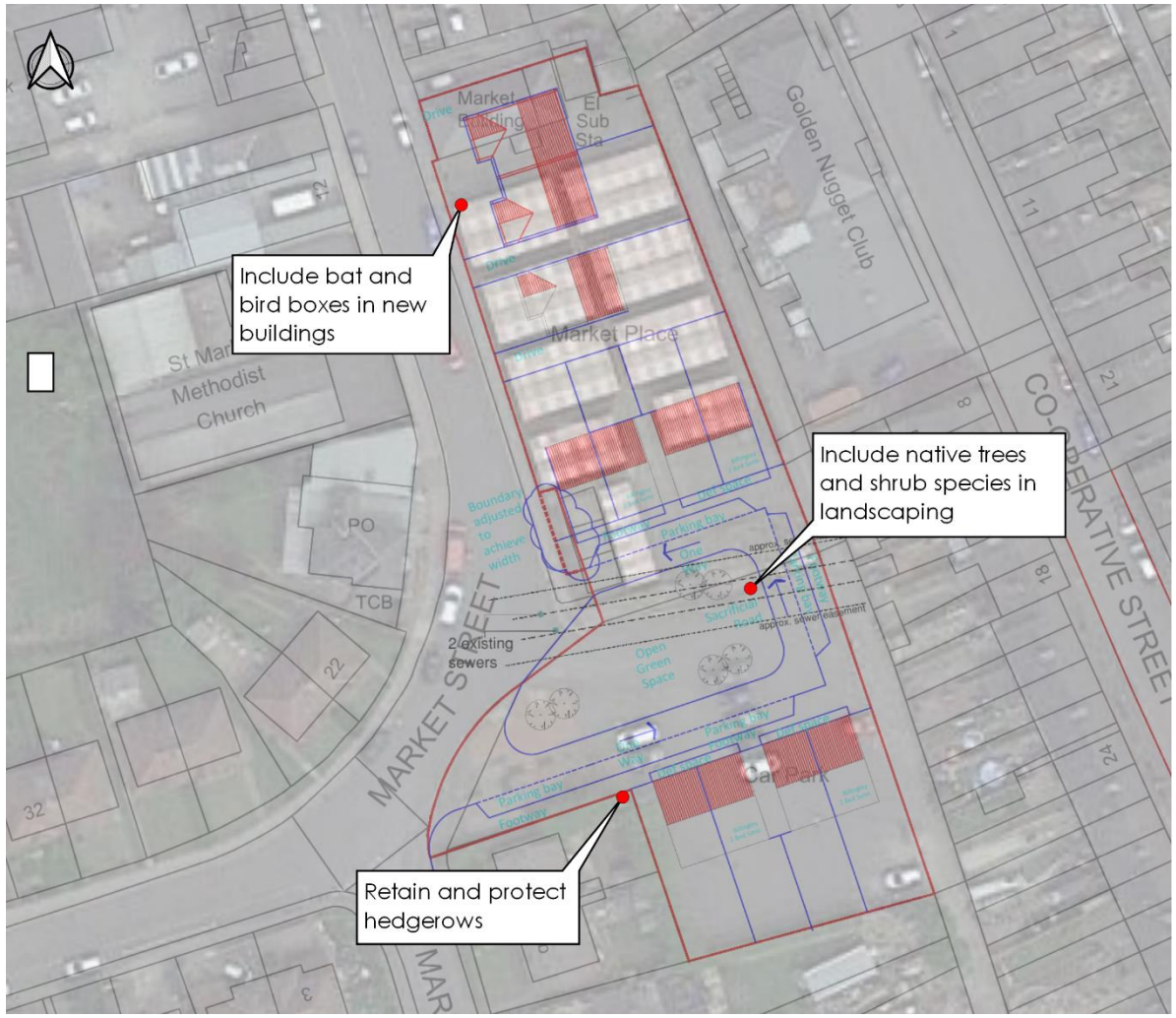
66. Most LPAs now require developments to demonstrate a 'no net loss' in biodiversity, or in some cases a 10% net gain. The Site has been assessed as having a Biodiversity Metric score of 0.06 Habitat Units and 0.25 in Hedgerow Units. A net gain in Habitat Units seems likely based on the current proposals.

67. The boundary hedgerows to the south should be retained and protected.

68. The key ecological opportunities here would be to improve connectivity across the Site through the planting of native hedgerows and trees along the boundaries and across the Site's centre. Any new landscape planting could be native or pollinator friendly. Installing roosting or nesting features on new buildings will also be beneficial

69. A suitable Biodiversity Management Plan would be useful in defining these enhancements and can be secured by standard condition.

Figure 18 Constraints and Opportunities Plan



Conclusions and Recommendations

Planning considerations		
Recommendation	**Rationale**	**When**
R1 Additional Surveys	Single bat emergence / re-entry survey of the Toilet Block	May - September
R2 Produce a layout which minimises loss of biodiversity.	Engage with the Constraints and Opportunities set out above, involve your ecologist in designs at an early stage. The proposals will need to consider the NPPF hierarchy of Avoid - Mitigate – Compensate in minimising any loss of biodiversity. The LPA is likely to be seeking at least a no-net-loss situation and could request that a contribution is made to address any residual loss here, off-Site. Your layout may need to change to accommodate your findings from R1 surveys.	During the design process
R3 Biodiversity Net Gain Strategy (BNS)	Engage an ecologist to work with the design team to maximise available Biodiversity Units on site.	During the design process
R4 Landscape Design	Make sure your landscape architect follows ecological advice or the BNS to maximise Biodiversity Units on site and make sure there are no design conflicts.	During the design process
R5 Calculate final Biodiversity Impact Score	Using DEFRA metric to quantity net gain/loss of biodiversity.	After a fixed design is agreed.
R6 Produce a Biodiversity Management Plan	To specify in detail how the development will cater for biodiversity on site and to show how habitats incorporated through the Biodiversity Net Gain Strategy be maintained in the condition that the Biodiversity Calculations were based on.	**Delivery report** Suitable for planning condition.
Other considerations (managing legal or financial risks)		
Issue	**Rationale**	**When**
R7 Nesting bird management (if not produced and committed to in the CEMP)	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 required during the breeding bird season should be preceded by a nesting bird survey to ensure that the law 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.	Pre- and during -clearance

Outline Biodiversity Net Gain (BNG) Implications

99. The NPPF and most aligned local policies require that development achieves a 'no net loss' or unquantified 'net gain' situation for biodiversity. The forthcoming (2020/21) Environment Bill is likely to mandate a 10% net gain position and many LPA's have pre-empted this with revised policies and SPG's, some are providing a means of developers contributing to strategic off off-Site enhancement where BNG can't be secured on Site.

100. Pre-application discussions with the LPA should aim to identify their approach to BNG from an early stage.

101. Outline BNG Implications at this Site have been calculated below. This is based on *outline calculation from the Site Layout (07-01-106436) which shows the majority of the Site to fall into the category 'developed land sealed surface' with a small area of landscape planting. Figures are provided for habitat area units only.

102. **This is not the final calculation** but provides what is hoped is a useful illustration to work forward from. Proposals will still be required to work within the NPPFs mitigation hierarchy of Avoid, Mitigate, Compensate and by doing so losses are likely to reduce. Similarly, high quality landscaping proposals and provision of natural green space would also help to reduce any deficit.

Pre-development Baseline Units	Post Development Units *	Units still required to achieve No Net Loss	Units still required to achieve 10% Net Gain
0.06	0.066	0	0

103. BNG is very much an evolving situation and the importance of pre-application discussions is again emphasised. For purely illustrative purposes if this project was in our home district of Leeds the 'backstop' position of achieving BNG through the LPA's contribution scheme would incur a cost of £20,000 /unit plus 20% facilitation and monitoring fees https://www.leeds.gov.uk/planning/conservation-protection-and-heritage/achieving-net-gain-in-biodiversity-guidance-for-developers

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Appendix 1 Habitats and Ecological Features



1160 - Introduced shrub
u1b - developed land. sealed surface
Ruderal/ ephemeral
h2a- Native hedgerow
h2b- Ornamental non-native hedgerow

Project: Goldthorpe Market Site, Goldthorpe
Title: Extended Phase 1 Habitat Plan

Drawing Number: D-5735-01.1
Date: October 2021
Revision: -

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Appendix 2 Condition Assessment Criteria

Hedgerow

UKHab Habitat Type
Native hedgerow Native hedgerow - associated with bank or ditch Native hedgerow with trees Native hedgerow with trees - associated with bank or ditch Native species rich hedgerow Native species rich hedgerow - associated with bank or ditch Native species rich hedgerow with trees Native species rich hedgerow with trees - associated with bank or ditch
Habitat Description
See Chapter 8 of User Guide
Condition Assessment Criteria
A series of ten attributes, representing key physical characteristics, are used for this assessment. The attributes, and the minimum criteria for achieving a favourable condition in each, are defined. The attributes use similar favourable condition criteria to the Hedgerow Survey Handbook and the handbook is the recommended source of reference for assessing individual hedgerow attributes.

Hedgerow favourable condition attributes		
Attributes and functional groupings (A, B, C, D & E)	**Criteria (the minimum requirements for 'favourable condition'**	**Description**
Core groups – applicable to all hedgerow types		
A1. Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height).
A2. Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice[4]).
B1. Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).
B2. Gap - hedge canopy continuity	· Gaps make up <10% of total length and · No canopy gaps >5 m	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate).
C1. Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · measured from outer edge of hedgerow, and · is present on one side of the hedge (at least)	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate).
C2. Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles (Urtica spp.), cleavers (Galium aparine) and docks (Rumex spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.
D1. Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.
D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting).
Additional group - applicable to hedgerows with trees only		
E1. Tree age	At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	This criterion addresses if there are sufficient mature trees (within the scope of planning timescales) which are of higher value to biodiversity.
E2. Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.

Each attribute is assigned to one of five functional groups (A – E), as indicated in Table TS1-2 and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria according to the approach set out in Table TS1-3.

The hedgerow condition assessment generates a score ranging from 1-3, which is used within the biodiversity metric 3.0. The scores for each are set out in tables TS1-3 and TS1-4 below.

Condition categories for hedgerows without trees		
Category	**Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-2**	**Metric Score**
Good	No more than 2 failures in total; AND No more than 1 in any functional group.	3
Moderate	No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition).	2
Poor	Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	1
Condition categories for hedgerows with trees		
Category	**Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-2**	**Metric score**
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.	3
Moderate	No more than 5 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1, C2 & E1 = Moderate condition).	2
Poor	Fails a total of more than 5 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	1

Appendix 3 List of species recorded

Sycamore	*Acer pseudoplatanus*
Maple	*Acer sp.*
False oat grass	*Arrhenatherum elatius*
Rosebay willowherb	*Chamerion angustifolium*
Fat hen/ goosefoot	*Chenopodium album*
Creeping thistle	*Cirsium arvense*
Hawthorn	*Crataegus monogyna*
Broadleaved willowherb	*Epilobium montanum*
Ash	*Fraxinus excelsior*
Cleavers	*Galium aparine*
Herb robert	*Geranium robertianum*
Common ivy	*Hedera helix*
Yorkshire fog	*Holcus lanatus*
Pineapple weed	*Matricaria discoidea*
Ribwort plantain	*Plantago lanceolata*
Rat's tail/ greater plantain	*Plantago major*
Meadow grass	*Poa sp.*
Knotgrass	*Polygonum aviculare*
Bramble	*Rubus fruticosus*
Elder	*Sambucus nigra*
Dandelion	*Taraxacum officinale agg.*
Soft brome	*Bromus hordeaceus*
Butterfly bush/buddleia	*Buddleia davidii*
Red valerian	*Centranthus ruber*
Meadow bindweed	*Convolvulus arvensis*
Common broom	*Cytisus scoparius*
Greater willowherb	*Epilobium hirsutum*
Wall barley	*Hordeum murinum*
Laurel	*Laurus sp.*
Poppy	*Papaver rhoeas*
Redcurrant	*Ribes rubrum*
Broad leaved dock	*Rumex obtusifolius*
Narrow-leaved ragwort	*Senecio inaequidens*
Black nightshade	*Solanum nigrum*
Prickly sowthistle	*Sonchus asper*

Appendix 4 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 Barnsley Metropolitan Borough Council 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.

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

Priority Species	**Priority Habitats**
Hedgehog	Mixed deciduous woodland
Bats	Upland oakwood
Water vole	Wet woodland
Otter	Parkland and veteran trees
Grey partridge	Traditional orchard
Bittern	Scrub
Kestrel	Coniferous woodland
Little ringed plover	Hedgerows
Lapwing	Arable field margins
Barn owl	Acid grassland
Skylark	Neutral grassland
Tree sparrow	Floodplain grazing marsh
Twite	Amenity grassland
Great crested newt	Upland heathland
Salmon	Lowland heath
Bullhead	Reedbeds
White-clawed crayfish	Lowland fen
Glow worm	Upland flushes, fens, and swamps
Dingy skipper	Rush pasture
Bluebell	Blanket bog
	Standing water and ponds
	Running water, rivers, and streams
	Open Mosaic Habitats on Previously Developed Land
	Built environment and gardens

Bats

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
Negligible	Negligible habitat features on site likely to be used by roosting 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 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.
Moderate	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).
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, 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

Appendix 5 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 of 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.

Bat activity is easy to predict at this Site, given the majority if the Site is occupied by very low value habitats- hardstanding and buildings. Loss of the Site is unlikely to impact on the local bat populations given the availability of similar / greater value habitat outside of the redline boundary and it is not considered necessary to undertake further survey to support this.

Appendix 6 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, watervole 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 form 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 2021. 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 "*protect and enhance our natural, built and historic environment*", including "*improving 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 many functions, such as for wildlife*" (P120).

Section 15 details conserving and enhancing the natural environment; policies and decisions should be "*protecting and enhancing valued landscape [and] 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 (P174). Allocations of land for development should, "*allocate land with the least environmental or amenity value, where consistent with other policies in this Framework*" and "*take a strategic approach to maintaining and enhancing networks of habitats*" (P175).

The Framework sets out ways to minimise the impacts on biodiversity through plans which "*identify, map and safeguard components of local wildlife rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity*" and promote the "*conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity*" (P179).

It is made clear in P180 that local planning authorities should apply a set of principles when determining planning applications. Planning permission should be refused "*if significant harm to biodiversity resulting from 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 improve biodiversity in and around developments should be integrated as part of their design, 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.