

Preliminary Ecological Appraisal

Land Adjacent to
Hoylandswaine, Penistone



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Field Investigations and Data

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work. Where any data supplied by the client or from other sources have been used it has been assumed that the information is correct. No responsibility can be accepted by Wildscapes CIC and Sheffield and Rotherham Wildlife Trust for inaccuracies in the data supplied by any other party.

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Summary

Purpose of the report

1. This report presents a Preliminary Ecological Appraisal of the Land adjacent to Hoylandswaine, a grass field bordered by a hedge, dry stone walls and post and wire fencing. Located by the A628 Barnsley Road to the south-east, and Barnsley Road with the Lord Nelson pub and associated car park to the south-west. The site is bordered by grassed and arable fields with hedgerows to the north.
2. The report identifies the main ecological characteristics of the site and, using both field survey and desk survey data, makes a preliminary assessment of the habitats and species of interest present. The report includes an assessment of potential ecological impacts of development on this site, along with advice on ways to avoid, minimise or mitigate potential impacts. Recommendations for further surveys and for enhancement of the site are made where appropriate.

Methodology

3. A desk survey was undertaken on data obtained from Barnsley Biological Record Centre (received from the Sheffield ecology unit) and using the MAGIC website. A field survey was undertaken on 15th February 2018, where the following habitats and species were assessed:
 - Habitats – using Phase 1 methodology
 - Invasive Species – using Phase 1 methodology
 - Bats – habitat suitability assessment
 - Amphibians – habitat suitability following NARRS
 - Reptiles – habitat suitability following NARRS
 - Badgers – presence/absence assessment
 - Birds – habitat suitability assessment
 - Other species as required

Conclusions

4. The habitats present consist of improved grassland and post arable, bordered by hedgerows, dry stone walls and post and wire fences.
5. No evidence of the use of the site by protected species was found.
6. A suitably qualified arborist must be appointed to determine the root protection zones of any trees to be affected by works, this is of particular importance with regard to the mature ash tree and hedgerow to the north-east of the site.
7. Any work to the hedgerows or trees must take place outside the main nesting bird season (March to August, inclusive). If this is not possible, the site must be inspected by a Suitably Qualified Ecologist ahead of works.
8. As all bat species are negatively affected by light (Eurobats, 2018) (Institute of Lighting Professionals, 2018), and as the site is currently unlit, no artificial lighting should be installed as part of the proposed development. Likewise, light reduction glazing should also be used to prevent light spill on to the adjacent existing (hedgerow) and newly created habitats from the internal lights in the new residential dwelling. It is recommended that measures to reduce the impact of artificial lighting and reduce light spill should be considered and adopted as part of the design process.

9. On-site lighting throughout the construction and operational phases should be managed to avoid light spillage onto ecologically sensitive areas such as the hedgerow and scattered trees to the north.
10. It is likely that with the addition of the wildflower areas and community orchard, the proposed development will result in a net gain to biodiversity at a site level. However, this report is designed as a discussion document to inform the design process and is not an Ecological Impact Assessment. Once plans are finalised and all relevant information is available (arboriculture report, final plan, soil testing results etc...) it is recommended that in line with the best practice approach (CIEEM, 2013; CIEEM, 2017; CIEEM, 2018) an Ecological Impact Assessment and /or a Construction Ecological Management Plan (CEMP) is undertaken to confirm/ensure a net gain to biodiversity is achieved.

1 Introduction

11. The survey and report were carried out by Paul Liptrot BSc (Hons) Grad CIEEM.
12. The report was commissioned by Paul Testa on behalf of Paul Testa Architecture.
13. The site is referred to as the Land adjacent to Hoylandswaine. It is a grass field with some arable land surrounded by fence and wall with a hedged boundary to the north-east. The site is bordered by the A628 Barnsley Road to the south-east and Barnsley Road with the Lord Nelson pub and associated car park to the south-west. The site is bordered by grassed and arable fields with hedgerows to the north.
14. The site is c. 1.18 Ha in area and the approximate central grid reference for the site is SE 2670 0486. Figure 1 shows the location of the site.
15. The report includes an assessment of potential ecological impacts of development on the site, along with ways to avoid, minimise or mitigate potential impacts. Recommendations for further surveys and for enhancement of the site are made where appropriate.

1.1 Nature of the proposals

16. Wildscapes has been provided with background information detailing the proposed project, such as that shown within Table 1-1 Pre-existing information.

Table 1-1 Pre-existing information

TYPE	ITEM TITLE / REFERENCE	DATE ISSUED / PUBLISHED	AUTHOR
Plan	Hoylandswaine Masterplan Rev02	Unknown	Unknown
Plan	Existing Site Location Plan – PT135-PTA-00-ZZ-DR-A-00001	16/11/18	Paul Testa Architecture
Plan	Proposed Site/Block Plan – PT135-PTA-00-ZZ-DR-A-00102	04/12/18	Paul Testa Architecture

2 Planning policy and legislation

17. This legal information is a summary and intended for general guidance only. It is recommended that the original documentation is referred to for detailed and definitive information. Web addresses are located in the References and Bibliography section of this report.

2.1 The Conservation of Habitats and Species Regulations 2010

18. The Conservation of Habitats and Species Regulations 2010 (as amended) transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is absent at the time).

2.2 Wildlife & Countryside Act 1981

19. The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CROW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006 (which also places a duty on authorities to have due regard for biodiversity and nature conservation) consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act.

2.3 National Planning Policy Framework

20. The National Planning Policy Framework (NPPF) outlines government planning policies and how they should be applied to local authorities (Ministry of Housing, Communities & Local Government, 2018). The framework places an emphasis on sustainable development, encouraging the re-use of land that has previously been developed over using land that has a higher environmental value and by minimising impacts on biodiversity. The NPPF states that developments should aim to conserve or enhance biodiversity and encourages opportunities to incorporate biodiversity in and around developments.

2.4 Section 41 Habitats and Species (NERC Act 2006)

21. Section 41 (S41) of the NERC Act 2006 requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40.

3 Methodology

3.1 Desk study

22. Ecological record information for the site and surrounding area (up to 2 kilometres) was requested from the organisations included in Table 3-1.

Table 3-1.Consulted Records Organisation

DATE CONSULTED	ORGANISATION	RECORDS REQUESTED
25/02/2019	Barnsley/Sheffield Biological Records Centre	All protected and notable species within 2km buffer of impact zone. This includes data from local bat groups.

3.1.1 Designated wildlife sites

23. Information regarding designated wildlife sites within the local area was requested from the organisations within Table 3-2.
24. The information and designations included within the search were National Nature Reserves (NNR), Local Nature Reserves (LNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Sites of Special Scientific Interest (SSSI), Ramsar Sites, Ancient Woodland and Granted European Protected Species Licences.

Table 3-2.Organisations consulted with regard to designated wildlife sites

DATE CONSULTED	ORGANISATION	RECORDS REQUESTED
25/02/2019	Multi-Agency Geographic Information for the Countryside (MAGIC)	Local Nature Reserves, National Nature Reserves, Ancient woodland, Sites of Special Scientific Interest, Areas of Outstanding Natural Beauty, Special Areas of Conservation, Special Protection Areas or Ramsar sites within a 2km radius of the site
25/02/2019	Sheffield Biological Records Centre	Non-Statutory Sites Search within 2km of the site

25. In addition to the above resources, online mapping sources including Google Maps, Where's the path and Bing Maps were used to view both satellite imagery and maps of the site and surrounding land.
26. The biological records returned within the data search were filtered to exclude records more than 10 years old. Plant and invertebrate records were also filtered to include only species on either the S41 priority species list (JNCC, 2018) or the IUCN Red data list, excluding species classified as of 'Least Concern'. Mammals, reptiles and amphibians were filtered to include S41 species and species included in the Habitat Directive and Wildlife and Countryside Act 1981. Birds were filtered to include species on the UK Birds of Conservation Concern (BTO, 2018).

3.2 Field survey

27. The Preliminary Ecological Appraisal field survey was undertaken in 2019. The survey date and personnel can be found in Table 3-3.

Table 3-3: Dates and Personnel

DATE	SURVEY TYPE	SURVEYOR & QUALIFICATIONS
15/02/19	Preliminary Ecological Appraisal	Paul Liptrot BSc (Hons), GradCIEEM, Ecologist. Class Licence level 4 Reference CL20 - 2018-37087-CLS-CLS.

3.2.1 Weather Conditions

Table 3-4 Weather conditions at the time of survey

SURVEY	DATE	TEMPERATURE (°C)	WIND (BEAUFORT)	CLOUD COVER (%)	NOTES
Preliminary Ecological Appraisal	15/02/19	10	1	40	No Rain

3.2.2 Habitats

Flora - Phase 1 Habitat Survey

28. A habitat survey was undertaken on the site in accordance with the standard Phase 1 Habitat Survey methodology (JNCC, 2010).
29. Nomenclature follows (Stace, 2010) for vascular plant species and uses the DAFOR scale for relative abundance (D = dominant, A = abundant, F = frequent, O = occasional and R = rare/infrequent).
30. The information collected during the survey was approximately mapped using ground-truthing, OS Master Map data, satellite images and GIS software (QGIS, 2018). Please refer to Appendix A, Figure 1 and Figure 2 for a location plan and Phase 1 Survey map.

3.2.3 Protected and Notable Species Assessment

31. The habitats on site were assessed for their suitability to support any legally protected or notable species including invasive species that may present constraints to the proposed development.
32. Any incidental sightings and evidence of species such as footprints, latrines, feeding remains and nests were noted.

Bats – Habitat Suitability Assessment

33. All bat surveys for the site were carried out in line with the latest guidance provided within Bat survey for Professional Ecologists: Good Practice Guidelines (Collins, 2016), Bat Mitigation Guidelines (Mitchell-Jones, Bat Mitigation guidelines, 2004) and Bat Tree Habitat Key (Andrews, 2016). Surveys were carried out on the 15th October 2019 by Paul Liptrot Bat Class Licence level 4 Reference CL20 - 2018-37087-CLS-CLS.
34. As well as utilising standard Phase 1 Survey methodology, an assessment of the potential suitability of the habitats within the site and surrounding area for bats was undertaken, as part of the initial site risk assessment and Preliminary Ecological Appraisal. This included an assessment using the criteria set out in the Bat Conservation Trust Survey Guidelines, as shown in Table 3-5.

Table 3-5 BCT Guidelines for Assessing the Value of Habitats for Bats

Feature	Value
Evidence indicating that a structure/feature is used by bats, such as: • Bats seen roosting or emerging/entering a structure/ feature; • Field signs such as droppings, feeding remains or carcasses found; and/or • Bats heard calling or 'chattering' within a roost.	Confirmed Roost
• Site is close to known roosts • Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river/stream valleys or hedgerows • Habitat of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses, parkland • Buildings, trees or other structures e.g. mines, caves, tunnels, ice houses and cellars, with features of particular significance for roosting bats • Site is connected with the wider landscape by linear features that could be used by commuting bats e.g. lines of trees and scrub or linked back gardens • Habitat could be used by foraging bats e.g. trees, scrub, grassland or water • Several potential roosts in the buildings, trees or other structures • Isolated site not connected by prominent linear features (but if suitable foraging habitat is adjacent it may be valuable if it is all that is available) • Isolated habitat that could be used by foraging bats e.g. a lone tree or patch of scrub, but not parkland • Small number of potential roosts generally of lower conservation importance e.g. probably not maternity roosts or hibernacula • No features that could be used by roosting bats for foraging, roosting or commuting.	High Value Habitat  Low Value Habitat

4 Baseline Ecological Conditions

35. In this section, the baseline ecological conditions for the site are outlined.
36. The biological records returned within the data search from Sheffield Biological Record Centre will be discussed within each corresponding species group. A full list of records obtained can be provided upon request.

4.1 Data search

37. 4898 biological records were returned from Barnsley Biological Record Centre (supplied by Sheffield Ecology Unit), of which, 1406 were from the last 10 years.

4.1.1 Designated sites

38. Several statutory designated sites and areas of priority habitat were returned within the data consultation, the details of which can be found in Tables 4-1 and 4-2.

Table 4-1 Areas of Priority Habitat

NAME	AREA (HA) (2DP)	DESIGNATION
Unnamed Woodland	6.75	Ancient & semi-natural woodland
Unnamed Woodland	0.62	Ancient & semi-natural woodland
Catt Hill Clough Wood	1.89	Ancient replanted woodland
Coates Great Wood (1)	1.94	Ancient & semi-natural woodland
Coates Great Wood (2)	6.18	Ancient & semi-natural woodland
Coates Great Wood (3)	5.97	Ancient & semi-natural woodland
Coates Great Wood (4)	33.91	Ancient & semi-natural woodland
Delf Wood	2.40	Ancient & semi-natural woodland
Icicle Wood	1.43	Ancient & semi-natural woodland
North Wood	11.18	Ancient & semi-natural woodland
Shrogg Wood	2.49	Ancient & semi-natural woodland
Spring Vale Wood	2.53	Ancient & semi-natural woodland

Table 4-2 Statutory Designated Sites

NAME	GRID REFERENCE	AREA (HA)	DESIGNATION	TYPE/HABITAT
Pye Flatts Meadows	SE 273 052	2.26	SSSI	Neutral grassland - lowland

39. There were 3 non-statutory designated sites returned within 2km of the site, all of which are Local Wildlife Sites (LWS). The details of these sites can be found in Table 4-3.

Table 4-3 Non-statutory Designated Sites

NO.	NAME	GRID REFERENCE	DESIGNATION	INTEREST
626	Royd, Vicar, Lindley and Coates Great Woods	SE278038	LWS	Ancient woodland, Lowland Mixed Deciduous Woodland

NO.	NAME	GRID REFERENCE	DESIGNATION	INTEREST
625	North Wood	SE274048	LWS	Ancient woodland Lowland Mixed Deciduous Woodland, Wet Woodland,
1168	Wool Greaves Meadows	SE268058	Botanical	Lowland Meadows, Lowland Dry Acid Grassland, Hedgerows

4.2 Species and Species Groups

4.2.1 Habitats

Improved grassland – Compartment 01

40. The largest habitat on site is improved grassland (c. 0.99 Ha). The species present include abundant perennial ryegrass *Lolium perenne*, occasional meadow-grass sp. *Poa sp.*, cocksfoot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus* with rarely occurring broadleaved dock *Rumex obtusifolius*.
41. The grassland is grazed, with signs of overgrazing present such as localised patches of common nettle *Urtica dioica*. This may also be a possible indication of nutrient enrichment from brash piles or from a fire site present.
42. The time of year and short sward is a constraint on the identification of species present, however, the habitat is made up of 95% grass to 5% herbs, with few herbs visible. It is unlikely that there are any species of interest present within this habitat.

Hedgerow – H01 – Defunct species-poor

43. The north-western boundary of the site is parallel with a defunct species-poor hedgerow. Although the hedgerow is not within the site boundary, it has been included in the Preliminary Ecological Appraisal due to its close proximity to the site and the effect of any proposed works on root protection zones.
44. The most prominent species present in the hedgerow include dominant hawthorn *Crataegus monogyna* and abundant elder *Sambucus nigra* with occasional ash *Fraxinus excelsior* and pine *Pinus sp.*, rarely occurring hazel *Corylus avellana*, holly *Ilex aquifolium*, bramble *Rubus fruticosus agg.* and cotoneaster sp. An understorey of occasional common nettle is also present.
45. The northern section of the hedge appears to be older with mainly hawthorn, alder, ash and cotoneaster sp. infill and evidence of partial laying and recent cutting.
46. The upper southern section of the hedge includes younger trees and bushes which have been allowed to grow to full height, and includes a more varied mix of species including non-natives.
47. The hedge is approximately 5 to 7 metres tall and 1 to 2 metres deep.

Tall ruderal species – Compartments 02.1 & 02.2

48. Compartment 02.1 consists of dominant common nettle and occasional spear thistle *Cirsium vulgare*, it is in the north-east corner of the site.
49. Compartment 02.2 is to the north-west of the site and consists of an area of disturbed ground by the hedge line. Species present include abundant common nettle and rarely occurring cleavers *Galium aparine* and spear thistle.

Arable – Compartment 03

50. Compartment 03 is a post-arable area with a root protection membrane and planting rows visible. The area consists of abundant lavender sp. *Lavendula sp.* and is grassing over.

Hardstanding (Bare Ground)

51. The north-eastern corner of the site includes an entrance gate and area of bare ground in the form of hard standing.

Scattered trees

52. The scattered trees included in the Preliminary Ecological Appraisal are not within the boundary of the site but have been included due to their close proximity as they are close enough for the root protection zones to be affected by the proposed work and any potential access routes created. The trees may also be affected by the light spill from the proposed development.

4.2.2 Plants

- 53. The data search returned no records of S41 priority plant species within the last 10 years within 2km of the survey site.
- 54. No plant species of interest were noted during the survey.

Invasive species

- 55. No records of schedule 9 species were returned for the survey site. The data search returned records for Canada goose *Branta canadensis*, Indian balsam *Impatiens glandulifera*, Japanese knotweed *Fallopia japonica* and rhododendron *Rhododendron ponticum* from within 2km of the survey site. The closest record was for Japanese knotweed circa. 875m to the east by southeast.
- 56. An unidentified species of *Cotoneaster* was noted in the hedgerow H01.

4.2.3 Invertebrates

- 57. No S41 priority invertebrates were returned within the data search.
- 58. Due to the habitats present on site, it is likely that invertebrates are present. However, it is unlikely that the habitats on site support a diverse invertebrate assemblage.

4.2.4 Amphibians

- 59. The data search returned no amphibian records within the last 10 years. Prior to filtering the records, a single species, common frog *Rana temporaria* was noted within the data set returned from Lindley Wood LWS located 1.8km to the east.
- 60. There are no waterbodies on site. A single waterbody was noted to the north-west of the site, within the adjacent field 5m of the boundary (see images in Appendix D). The waterbody appears to have formed due to a dug hole which incorporates cattle water troughs. It was not HSI (Oldham, Keeble, Swan, & Jeffcote, 2000) as part of this assessment due to both it being on private land and it being an unsuitable time of year to perform the HSI assessment. There are no additional waterbodies within 250m of the site boundary. The closest other waterbodies (3 no) are located approximately 270 to 300 metres to the north and appear to be a series of agricultural irrigation ponds associated with the adjacent pig farm.
- 61. The grassland on site has a short sward due to its current and past management and as such is unlikely to be in use by a significant population of terrestrial amphibians.

4.2.5 Reptiles

- 62. No records of reptiles were returned within the data search.
- 63. The grassland on site has a short sward and the site does not provide a mosaic of habitats suitable for use by reptiles. It is therefore unlikely that the site is in use by a significant population of reptiles.

4.2.6 Birds

- 64. The grid references returned for the bird records were of varying resolutions (i.e. accurate to between 10m and 10km). As such, records accurate to over 1km have been excluded from this assessment, likewise, species which would likely not be present within the habitats on site have also be disregarded. Please refer to table for the remaining species, their current conservation status and the minimum possible distance of the closest record from the survey site.

UK RED DATA LIST BIRDS	S41	SCIENTIFIC NAME	COMMON NAME	MIN DISTANCE (M)*	TOTAL RECORDS
Bird-Amber	No	<i>Anas platyrhynchos</i>	Mallard	1.8	1.0
		<i>Cinclus cinclus</i>	Dipper	1.8	1.0
		<i>Falco tinnunculus</i>	Kestrel	0.0	11.0
		<i>Lagopus lagopus</i>	Red Grouse	1.3	4.0
		<i>Larus fuscus</i>	Lesser Black-Backed Gull	1.6	1.0
		<i>Phylloscopus trochilus</i>	Willow Warbler	1.7	1.0
		<i>Prunella modularis</i>	Dunnock	0.0	9.0
		<i>Strix aluco</i>	Tawny Owl	1.1	1.0
Bird-Red	No	<i>Alauda arvensis</i>	Skylark	0.0	7.0
		<i>Linaria cannabina</i>	Linnet	0.7	2.0
		<i>Sturnus vulgaris</i>	Starling	0.0	3.0
		<i>Turdus iliacus</i>	Redwing	1.9	1.0
		<i>Turdus philomelos</i>	Song Thrush	0.0	2.0
		<i>Turdus pilaris</i>	Fieldfare	1.9	1.0
		<i>Turdus viscivorus</i>	Mistle Thrush	0.0	3.0
	Yes	<i>Cuculus canorus</i>	Cuckoo	0.8	1.0
		<i>Emberiza citrinella</i>	Yellowhammer	0.0	7.0
		<i>Numenius arquata</i>	Curlew	0.0	2.0
		<i>Passer domesticus</i>	House Sparrow	0.0	9.0
		<i>Passer montanus</i>	Tree Sparrow	1.9	2.0
		<i>Vanellus vanellus</i>	Lapwing	0.0	5.0
Total				74	

* Distance dependant on the accuracy of grid references provided within data consultation with BBRC

65. The site has limited suitability for foraging birds. The grassland is of poor quality structurally and there is considerable disturbance present from the adjacent A628 and associated traffic. It may offer some resource to common, less restricted ground foraging species such as blackbird. However, due to its current low sward length and limited diversity, it offers limited suitability to species such as skylark, yellowhammer and Lapwing.
66. There are limited opportunities for ground nesting species, however, the hedgerow on site provides nesting opportunities and could be used as a shelter resource, as could the scattered trees present adjacent to the site boundary to the south-east.

4.2.7 Bats

67. The data search returned records for the common pipistrelle *Pipistrellus Pipistrellus*, noctule bat *Nyctalus noctula* and Daubenton's bat *Myotis daubentoni*. All records were returned from circa 1.8km to the east of the site.

Habitat suitability – roosting

68. There are no trees directly on the site proposed to be developed. There are several trees and groups of trees immediately outside the site to the south-eastern and north-western boundaries (see Figure 2 Phase 1 Results Map).

69. The trees and tree groups to the south-east of the site include ash *Fraxinus excelsior* and field maple *Acer campestre*. These are all of negligible bat roost potential.
70. There is a single veteran ash tree to the north-west of the site which includes a large knothole leading to a potential cavity and a large hazard beam on the most northern of the 3 main limbs (see Photo 7, Photo 8 and Photo 9 in Appendix C). The tree has been assessed to be of **high bat roost potential**. The root protection zone of this tree falls within the site boundary.

Habitat suitability - foraging and commuting

71. Due to the low ecological value of the site, there are low foraging and commuting opportunities available to bats on site. The main features of value would be the hedgerow to the northwest of the site which may be used by commuting bats. The hedgerow may connect roosting opportunities within the village of Hoylandswaine to foraging grounds in the lowland valley. Also, the site is currently unlit by artificial lighting which can restrict the movements and behaviour of bats species and as such should be maintained post development.
72. The wider landscape includes pockets of woodland and waterbodies within 1km, providing good foraging habitat.

4.3 Other faunal species and species groups

4.3.1 Badgers *Meles meles*

73. Badger setts and dead at the side of the road records were returned within 1km of the site.
74. No evidence of badgers was recorded during the site survey. The site does offer some suitability for sett creation along the north western boundary, but the majority of the site is devoid of vegetation cover so is less suitable. The woodland offsite to the north-east, east and west will likely be suitable for sett creation and as such the site could be used by foraging and commuting badgers.

4.3.2 Other mammals

75. The data search returned a record of a dead hedgehog on the road located in Hoylandswaine approximately 550m to the west by south west of the survey site.
76. The grassland on-site offers limited suitability for hedgehogs however the hedgerow to the north-west and surrounding habitats may provide both shelter (including breeding) and foraging opportunities.

5 Ecological opportunities and recommendations

5.1 Proposals

77. The site is to be developed to include a single residential dwelling and associated access track. The proposed dwelling will be partially sub terrain with the surrounding field landscaped to blend it into the topography of the site. It is also proposed that the entire site is landscaped to include a wildflower meadow and community orchard.

5.2 Designated Sites

78. The effects of the development are limited to the site boundary and are extremely unlikely to have an impact on any designated sites. Therefore, no further action is required with regard to designated sites.

5.3 Habitats and plants

79. The habitat to be lost on site is the improved grassland. This is considered to be of low ecological value and therefore presents no constraint to the proposals at this time.
80. The hedgerow and trees bordering the site are not within the site boundary, however, could be impacted by inappropriate construction practices.
81. The trees in the hedgerow along the north-western boundary must be assessed by a suitably qualified arborist in order to determine the required root protection zones. Once determined, the root protection zones or similar mitigation should be adhered to protect both the hedgerow and the mature trees throughout the development.
82. The grassland on site is currently of low nature conservation value. The proposed habitat enhancement measures (wildflower meadow and community orchard) will potentially increase the site's conservation value at a site and local level. Native plants and seeds of local provenance should be used for the habitat creation/ meadow restoration. It is recommended that the soil on site is tested for soil PH, extractable potassium, phosphorus and nitrogen before a suitable seed mix is purchased and planted. Likewise, a post-development management plan and restoration strategy should be produced to ensure the habitats become established and the desired quality achieved.

5.4 Invertebrates

83. The site is highly unlikely to be in use by a diverse assemblage of invertebrates at present. No further action is required with regard to invertebrates.
84. The habitat creation will improve the value of the site for invertebrates by providing nectar and shelter opportunities.

5.5 Amphibians

85. The grassland on site is highly unlikely to be in use by terrestrial amphibians at present due to its structure and there is no breeding habitat on site. The small waterbody just off the site to north-east is not considered large enough to support a significant population of amphibians. No records of great crested newts or other amphibians were returned within the 2km data search (within the last ten years). As such, it is considered that the risk to amphibians can be managed by reasonable avoidance measures during the construction phase.

86. The addition of a wildlife pond would be an invaluable enhancement for the site and as such should be considered during the design phase of the proposals.

5.6 Reptiles

87. The site is highly unlikely to be in use by reptiles at present. No further action is required with regard to reptiles.
88. The habitat creation (wildlife pond, meadow and orchard) would improve the value of the site for reptiles by providing foraging and shelter opportunities. However, the current status of reptiles in the local area is known.

5.7 Birds

89. The habitat on site is considered to offer negligible value to foraging birds.
90. The hedgerow and trees bordering the site are considered to offer suitable habitat for nesting birds. These features are currently planned to be retained. However, if plans change and vegetation removal works are required, these works must be carried out outside the nesting period (March to August). If this not possible, a suitable method statement for the protection of nesting birds will be put in place which will include:
- Pre-works inspection of suitable nesting features and nests within the site and immediate surroundings of the work area by a Suitably Qualified Ecologist (SQE). If active nests are found, works cannot commence until all chicks have fledged. Feral pigeon nests can be removed by an 'authorised person' under a general licence, but as licensing arrangements can change at any time, it is important that the relevant government department is consulted for up to date legal advice before any action is taken.
 - If at any point during the works nesting birds are found, works will be suspended and advice sought from Suitably Qualified Ecologist.
91. The habitat creation (wildlife pond, meadow and orchard) would improve the value of the site for bird species by providing foraging and shelter opportunities. It is also recommended that nesting features are installed into the proposed new dwelling to increase the nesting resource on site.

5.8 Bats

92. The trees in the hedgerows surrounding the site must be retained, as planned. Should this change, an assessment by a Suitably Qualified Ecologist must be undertaken ahead of any tree works.
93. The mature ash tree located along the north-eastern boundary of the site has been classified as **high suitability to support roosting bats**. **If any tree works (including felling, pruning, pollarding) are required, further survey (aerial tree assessment and/or nocturnal presence and absence surveys) is required to confirm the status of this tree for roosting bats.**
94. As all bat species are negatively affected by light (Eurobats, 2018) (Institute of Lighting Professionals, 2018), and as the site is currently unlit, no artificial lighting should be installed as part of the proposed development. Likewise, light reduction glazing should also be used to prevent light spill on to the adjacent existing (hedgerow) and newly created habitats from the internal lights in the new residential dwelling. It is recommended that measures to reduce the impact of artificial lighting and reduce light spill should be considered and adopted as part of the design process.

95. If the installation of external artificial lighting is required, pre and post-development bat activity and light level surveys would be required to assess the value of the hedgerow and grassland for foraging and commuting bats. This would allow the design of suitable mitigation, compensation or enhancement measures to ensure no significant residual effects are suffered as a result of the proposed development with regards to lighting.
96. Likewise, on-site lighting throughout the construction phase should be carefully managed to avoid light spillage onto ecologically sensitive areas such as the hedgerows and trees along the north-eastern boundary.
97. The Institute of Lighting Professionals has produced a guidance note to instruct the design of sympathetic lighting schemes for bats (Institute of Lighting Professionals, 2018). If lighting is required, advice from a suitably qualified ecologist should be sought. However, as some bat species have been seen to adjust their foraging cycle in line with the lunar cycle, it is likely that any increase in artificial lighting would result in an impact.
98. It is recommended that bat boxes be incorporated into the new development in order to increase roosting potential on site, examples of these can be found in Appendix D.

5.9 Badgers

99. There was no evidence of badgers found at the time of the survey. No further action is required with regard to badgers. Should any evidence of badgers be found ahead of works, a Suitably Qualified Ecologist must be contacted and works ceased immediately. Best practice approach for the protection of terrestrial mammals should be adhered to during the construction phase of the proposed works (see below).

5.10 Other mammals

100. Reasonable avoidance measures for the protection of terrestrial mammals should be adopted during works, such as:
- Building materials should be stored off the ground where possible.
 - Chemicals, fuel and other potential pollution agents should be appropriately stored, used and deposited of to ensure pollution or poisoning events do not happen.
 - Any water troughs should be sealed or not open at the top to prevent bird and mammal drowning events.
101. It is also recommended that solid garden fences and walls be avoided, or gaps left in order to allow movement of small mammals around the site following construction. Hedgerows are recommended as a replacement to walls and fences, where possible.

6 Conclusions and recommendations

102. The habitats present consist of improved grassland bordered by hedgerows, dry stone walls and post and wire fencing.
103. No evidence of the use of the site by protected species was found.
104. A suitably qualified arborist must be appointed to determine the root protection zones of any trees to be affected by works, this is of particular importance with regard to the mature ash tree along the north-east of the site.
105. Any work to the hedgerows or trees must take place outside the main nesting bird season (March to August, inclusive). If this is not possible, the site must be inspected by a Suitably Qualified Ecologist ahead of works.
106. As all bat species are negatively affected by light (Eurobats, 2018) (Institute of Lighting Professionals, 2018), and as the site is currently unlit, this should be maintained. It is recommended that measures to reduce the impact of artificial lighting and reduce light spill should be considered and adopted as part of the design process. The use of external lighting should be avoided.
107. On-site lighting throughout the construction and operational phases should be managed to avoid light spillage onto ecologically sensitive areas such as the hedgerow and scattered trees.
108. It is likely that with the addition of the wildflower areas and community orchard, the proposed development will result in a net gain to biodiversity at a site level. However, this report is designed as a discussion document to inform the design process and is not an Ecological Impact Assessment. Once plans are finalised and all relevant information is available (arboriculture report, final plan, soil testing results etc...) it is recommended that in line with the best practice approach (CIEEM, 2013; CIEEM, 2017; CIEEM, 2018) an Ecological Impact Assessment and /or a Construction Ecological Management Plan (CEMP) is undertaken to confirm a net gain to biodiversity is achieved.

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8 Appendices

8.1 Appendix A - Location Information and survey results

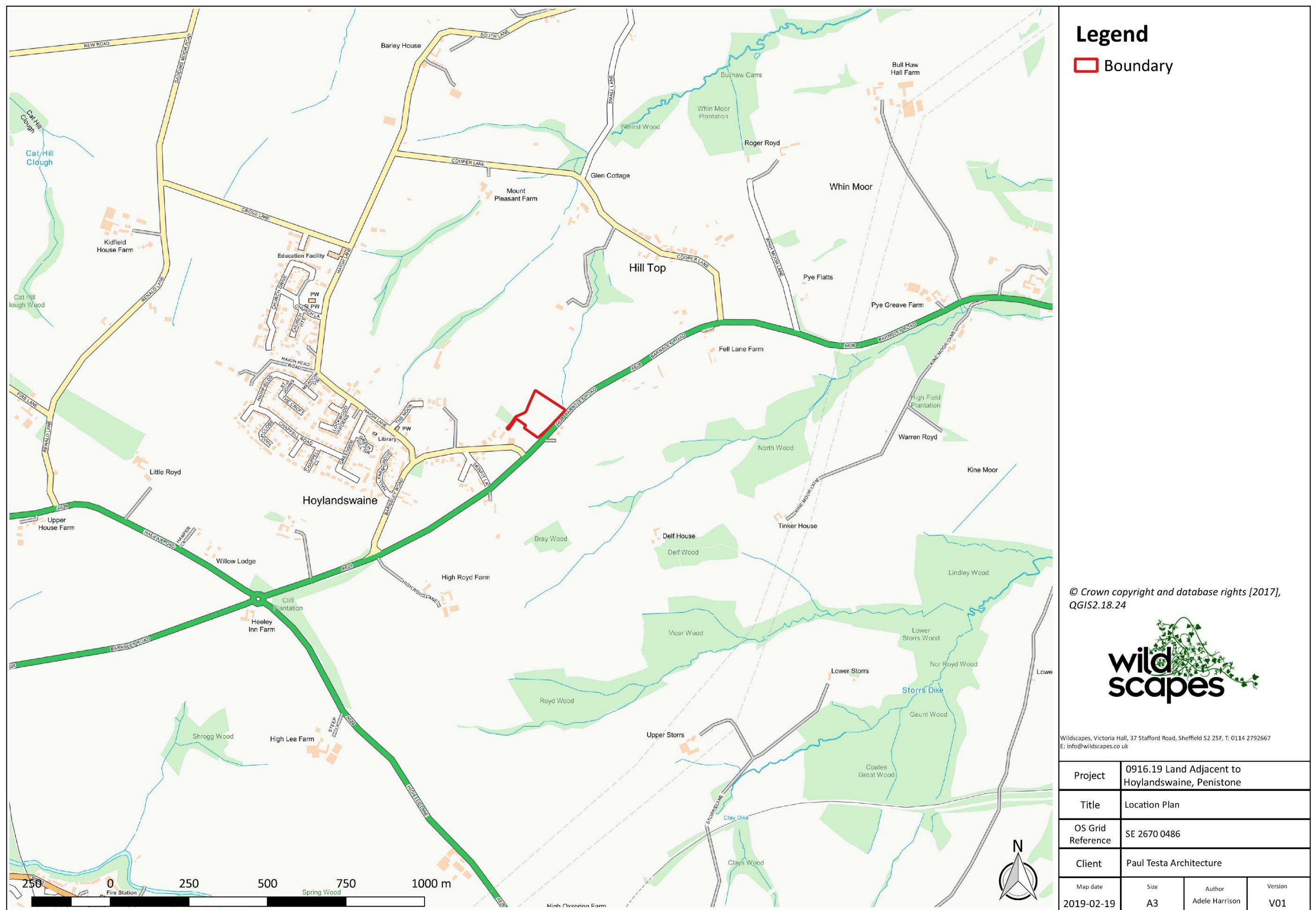
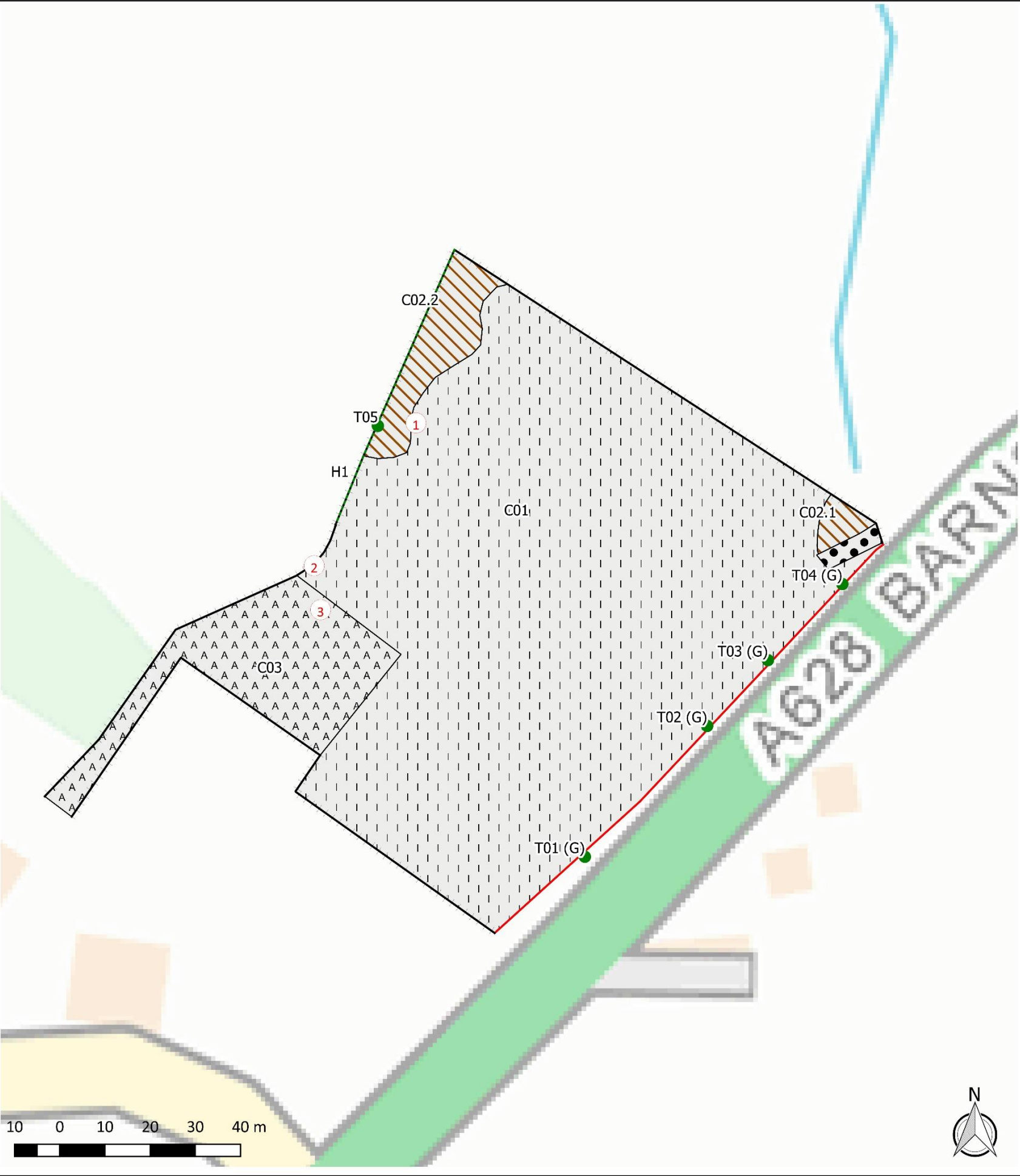


Figure 1 Location Plan Map



Legend

- 1 Target Notes
- Tree/Tree Group (G)
- J2.2.2 Defunct species-poor hedge (H1)
- J2.4 Fence
- J2.5 Wall
- B4 - Improved grassland
- ▨ C3.1 - Other tall herb and fern - ruderal
- ▤ J1.1 - Cultivated/disturbed land - arable
- J4 - Bare ground

Label	Information
C01	Compartment 01
C02.1	Compartment 02.1
C02.2	Compartment 02.2
C03	Compartment 03
H1	Hedgerow H1
T01 (G)	Two ash - negligible bat suitability
T02 (G)	Group of ash, field maple - negligible bat suitability
T03 (G)	Common ash, field maple - negligible bat suitability
T04 (G)	Two ash - negligible bat suitability
T05	Common ash (veteran) - high bat suitability

Target Note	Information
TN01	Localised patches of nettle
TN02	Collection of stone and bramble patch
TN03	Concrete base for building and localised vegetated hardcore

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 Wildscapes, Victoria Hall, 37 Stafford Road, Sheffield S2 2SF, T: 0114 2792667 E: info@wildscapes.co.uk	Project	0916.19 Land Adjacent to Hoylandswaine, Penistone		
	Title	Phase 1 Map		
	OS Grid Reference	SE 2670 0486		
	Client	Paul Testa Architecture		
	Map date	Size	Author	Version
2019-03-06	A3	Adele Harrison	V01	

Figure 2 Phase 1 Results Map

8.2 Appendix B – Species List

Compartment ID	Traditional Name	Scientific Name	DAFOR
C01 - Improved Grassland	Perennial rye-grass	<i>Lolium perenne</i>	A
	Meadow-grass sp.	<i>Poa sp.</i>	O
	Cock's-foot	<i>Dactylis glomerata</i>	O
	Yorkshire-fog	<i>Holcus lanatus</i>	O
	Broad-leaved dock	<i>Rumex obtusifolius</i>	R
	Common nettle	<i>Urtica dioica</i>	
H01 - defunct species-poor hedge	Elder	<i>Sambucus nigra</i>	A
	Hawthorn	<i>Crataegus monogyna</i>	D
	Ash	<i>Fraxinus excelsior</i>	O
	Hazel	<i>Corylus avellana</i>	R
	Pine sp.	<i>Pinus sp.</i>	O
	Cotoneaster sp.	-	R
	Holly	<i>Ilex aquifolium</i>	R
	Bramble	<i>Rubus fruticosus agg.</i>	R
C02.1 - Tall Ruderal	Common nettle	<i>Urtica dioica</i>	D
	Spear thistle	<i>Cirsium vulgare</i>	O
C02.2 – Tall Ruderal	Common nettle	<i>Urtica dioica</i>	A
	Cleavers	<i>Galium aparine</i>	R
	Spear thistle	<i>Cirsium vulgare</i>	R
C03 – post Arable	Lavender sp.	<i>Lavendula sp.</i>	A
Scattered trees	Ash	<i>Fraxinus excelsior</i>	R
Scattered trees	Field Maple	<i>Acer campestre</i>	R

8.3 Appendix C – Photographs



Photo 1 North western boundary hedgerow and tall ruderal



Photo 2 Improved grassland



Photo 3 Post arable



Photo 4 Trees located of site to south east



Photo 5 Additional tree along the south eastern boundary



Photo 6 Pond in field adjacent to site



Photo 7 High Bat Roost Suitability mature ash tree along north western boundary with two main PRF circled



Photo 8 Close up of knot hole and wind damaged

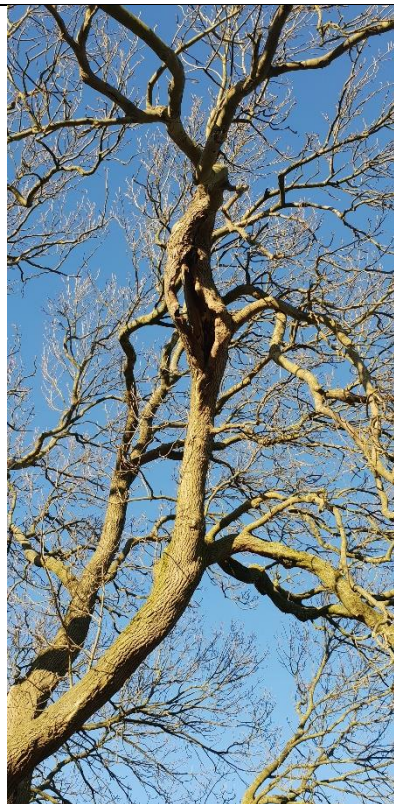
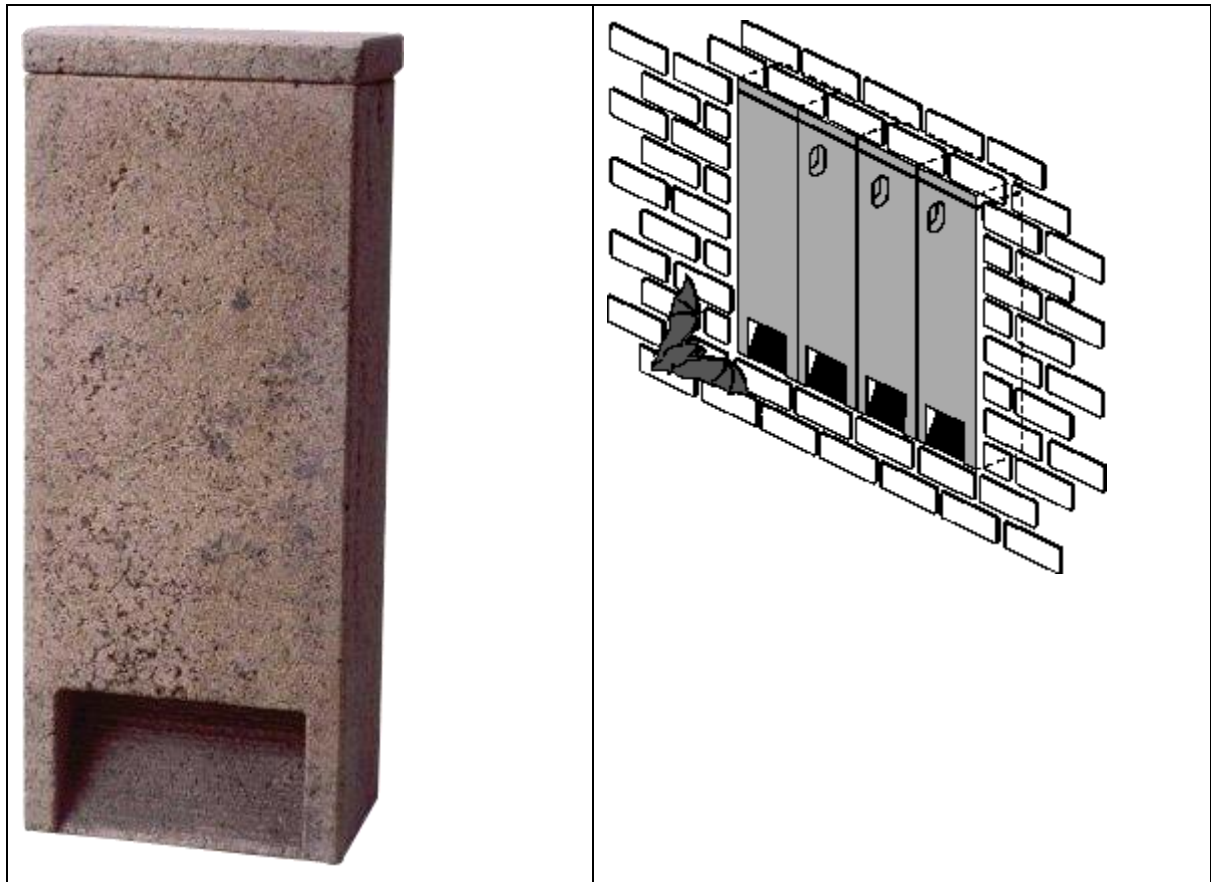


Photo 9 Hazard beam PRF

8.4 Appendix D - Bat roosting features



The 2FR Bat Tube is suitable for bat species which inhabit buildings and is designed to be built into the masonry of an external wall. It can either be built flush with the wall or beneath a rendered surface. The tube is constructed from woodcrete and has an integrated wooden panel onto which bats can easily cling.

Unlike the 1FR, the 2FR has transverse connecting holes which allow several tubes to be placed next to each other in modular form in order to create a much larger space. It is recommended that at least three units are connected together. An optional passage through the rear panel also enables existing cavities in the walls to be accessed via the tube. This provides an excellent solution to the problem of providing access to existing roosts when converting or renovating older buildings.

This box requires no maintenance as droppings fall out of the entrance ramp.

8.5 Appendix E - Bird nesting features

House sparrow nesting box



The Sparrow Terrace has been designed to help redress the balance of falling house sparrow numbers. The current UK population of 6 million pairs is half what it was in 1980 and this is thought to be due to habitat destruction and lack of suitable nesting spaces. Sparrows are social birds and like to nest in company. This terrace provides ideal nesting opportunities for three families. Made of Schwegler's revolutionary wood-concrete mix, this terrace is durable, breathable and will last many decades. It may also occasionally attract tits, redstarts and spotted flycatchers.

The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. It is suitable for all types of houses in built-up areas, and on industrial and agricultural buildings such as barns, sheds and factories. Due to its weight (15kg), it is not suitable for fences or garden sheds. Ideally place the terrace two metres or more above the ground. Either install on the surface of the wall using the plugs and screws provided, or install directly into the wall. Cleaning is advisable but not necessary. The front panel can be removed by turning the screw hook.

The Sparrow Terrace is available in either Stone or Brown

Blue tit nesting box with 26mm entrance hole



Natural cavity nest sites have declined dramatically so providing a nest box in your garden or woodland can provide much-needed breeding and roosting space for cavity-nesting species. The 1B is the bestselling nest box for garden birds and one of the official nest boxes of BTO's National Nest Box Week. The 1B nest box will attract a wide range of species and is available with different entrance hole sizes to prevent birds from competing with each other for the boxes. The 1B is available in four colours: brown, green, white and red. The nest box can be attached to the tree or wall using an aluminium nail or by hanging over a branch and is made from Woodcrete to ensure that it lasts for decades. The front panel is removable for inspection and cleaning.