



Drone view of the site from the south east, looking north west.

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### **Report prepared for:**

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## **Preliminary Ecological Appraisal of land off Back Lane, Helperby Updated 02-10-2024**

Version number - see header  
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## HEADINGS

**RED** = First level. **BLUE** = Second level. **GREEN** = Third level. **MAGENTA** = Forth level



## 1. Summary.

1.1. An area of land on the edge of the village of Helperby in North Yorkshire was originally subject to a planning application that was not developed. Changes to the proposals and a new applicant has resulted in the need to undertake an update ecological assessment in case there have been any changes between the original survey in 2022 and a current survey completed in 2024.

1.2. Between the two years of survey, there have been no significant changes to the vegetation. The lack of management of the grassland has resulted in the encouragement of species like Oat-grass *Arrhenatherum elatius* that is intolerant of grazing and this shift will continue in the absence of any return to mowing or grazing.

1.3. The overall assessment for the site is that it is of low ecological value with the elevation to moderate with the presence of a native hedgerow to the west.

1.4. There are no sensitive or rare habitats on the site and all of the features are common locally and will have a low overall impact in the local area in converting low habitat vegetation into domestic dwellings and vegetated gardens.

1.5. Recommendations are made to:

1.5.a enhance the hedgerow, to be retained, but cut back to obtain visibility sightlines

1.5.b incorporate bird nesting boxes and bat roosting boxes into the properties.

1.6. There will be scope with the enhancement of the hedgerow to include additional species that will be a biodiversity gain in the medium to long-term.

1.7. It is also recommended that consideration to allow the free movement of any likely hedgehogs in the local area is adopted.

## 2. Introduction.

2.1. Dryad Ecology were commissioned to do an update for a Preliminary Ecological Appraisal (PEA) of the site off Back Lane, Helperby, North Yorkshire in accordance with CIEEM guidelines (CIEEM 2016). The original survey was done in April 2022. As [189-01 – Back Lane – Helperby – PEA report – 03]

2.2. The key objectives of a PEA are to identify:

2.2.a the likely ecological constraints associated with a project;

2.2.b any mitigation measures likely to be required, following the 'Mitigation Hierarchy' (avoid, minimise, restore, enhance, compensate, offset)

2.2.c any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA)

2.2.d the opportunities offered by a project to deliver ecological enhancement.



### 2.3. A PEA comprises:

- 2.3.a Desk study for previous records
- 2.3.b Field survey to map and record and classify vegetation, especially protected species habitats and species and habitats of principle importance.
- 2.3.c An assessment of the presence or possible presence of protected or priority plant and animal species.
- 2.3.d Recording any non-native and/ or invasive vegetation.

### 2.4. The results of the PEA form the Preliminary Ecological Appraisal Report (PEAR).

- 2.4.a Identification of any designated nature conservation sites (statutory and non-statutory) that could be affected by the project.
- 2.4.b Mapping of the habitat types present to provide a visual representation of the land within and adjacent to the site boundaries.
- 2.4.c Assessment of the likely importance of the habitats present, determining (as far as possible within the constraints of the site visit(s) undertaken) whether there are any protected or priority habitats present, which could be affected by the project. Limitations in relation to this must be clearly stated.
- 2.4.d Assessment of the likely presence of protected and priority species, which could be affected by the project; and confirmation of the presence of any such species, as far as possible within the constraints of the site visit(s) undertaken. Limitations in relation to this must be clearly stated.
- 2.4.e Based on information gathered, identification of any ecological constraints to the client and relevant members of the project team. This will allow likely significant effects to be avoided wherever possible through careful scheme design and ensure that the likely requirements for possible mitigation and licensing are understood (based upon the level of information known about the project at the time of the assessment).
- 2.4.f Based on information gathered, a list of further ecological surveys likely to be required to inform an EcIA, together with their appropriate scope, method and timing.
- 2.4.g Identification of opportunities for ecological enhancement and Biodiversity Net Gain (BNG).

## 3. Site Description.

3.1. The site comprised approximately 0.18ha of land last used as a car park for the Oak Tree Inn, plus an area of arable. It is bounded by two hedgerows and a fence at SE 454 756. The original site plan showing the red line boundary (see Figure 5.1).

3.2. The site was on level ground, with a low mound along the northern part of the eastern side of the site. Running N/S is a grass track with plastic hexagon matting to make a 'green' road that is now dominated by mosses [BRY] and ephemeral, short perennial [ESP] vegetation.



### 3.3. The site boundaries were:

- 3.3.a N - Post and rail wooden fence.
- 3.3.b E - Close-boarded wooden fence.
- 3.3.c S - No boundary.
- 3.3.d W - Hedgerow 1.5m x 2m on a bank.

### 3.4. Off-site the land was:

- 3.4.a N - Housing.
- 3.4.b E - Housing.
- 3.4.c S - Arable.
- 3.4.d W - Road with grassland and housing at the northern and southern ends.

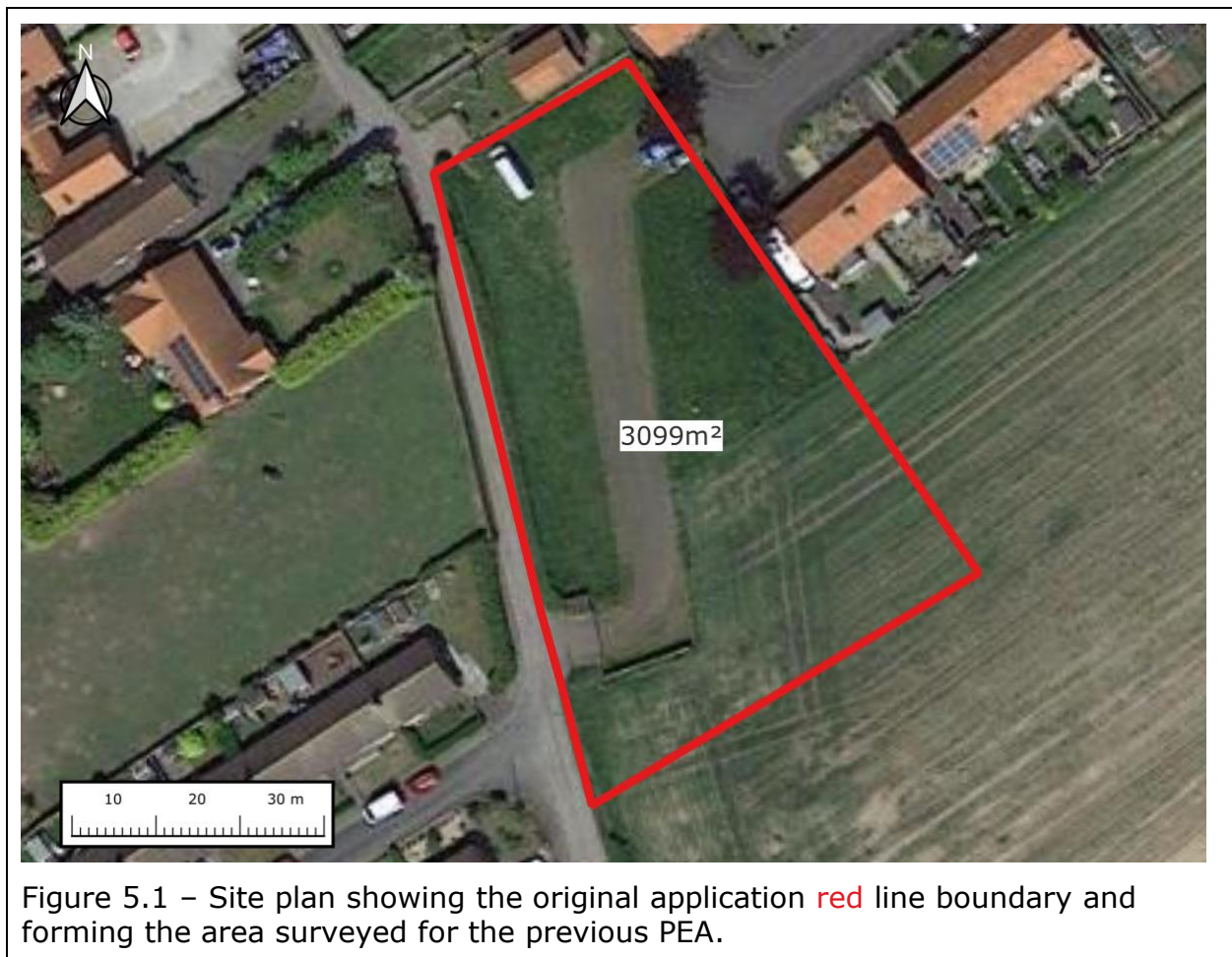


Figure 5.1 – Site plan showing the original application red line boundary and forming the area surveyed for the previous PEA.

## 4. Proposed work.

4.1. The proposal is to develop the site for 2 dwellings, with associated infrastructure and landscaping. The proposed layout is at Figure 6.2.





## 5. Survey.

5.1. Dryad Ecology were commissioned to undertake a full Preliminary Ecological Appraisal (PEA) survey.

5.2. The survey was done on 22-08-2024, under favourable conditions with no constraints on the accuracy and validity for the collection of results.



## 6. Desk Study.

6.1. The recommendations for a Preliminary Ecological Appraisal (PEA) requires a local data search. As this was done in 2022, there is no justification to repeat this, especially as the site is of low ecological value unlikely to support protected species or species/ habitats of principle importance (HMSO 2006).

## 7. Field Survey.

7.1. The field study considered any constraints that may impact on the proposed development. In addition, consideration of potential constraints within 30m of the site was considered where practicable, visible and possible.

7.2. Addition for the 2024 survey was the use of a low impact drone to take aerial photography that would provide a more updated assessment and interpretation of the current state of the vegetation rather than the often distinct and variable quality imagery derived from Google Earth which is also usually several years out of date.

7.3. The field surveys involve the following considerations:

### Vegetation

#### Habitat codes

7.4. The vegetation was classified using existing and modified monochrome Phase 1 habitat codes (JNCC 2016) (referred to as Phase 1.5 or P1.5). Additional codes have been added (as allowed in the Phase 1 manual) to reflect the small-scale nature of the project and all of the Phase 1 codes have been extended, where necessary, to form a three-character code. This standardises the presentation of data.

#### Abundance recording

7.5. A further modification adds a degree of abundance of such vegetational habitats as appropriate. This is a modified form of the SACFOR abundance scale (Super-abundant, abundant, common, frequent, occasional, rare) (Hiscock 1990). This scale has the capacity to account for abundance in terms of the number of plants or shoots, as well as the area of ground species cover in (abbreviated) percentage terms. Diagrammatic representation is of the scoring system for both areas and linear features are at Appendix 27.2 and Appendix 28.3. The abundance coding uses a letter for the frequency of plants and a second number for an abbreviated representation of the percentage cover (see 7.6).

7.6. Therefore, frequency and abundance expressed as numbers this facilitates the sorting of lists by descending frequency rather than alphabetically. Rare being given the number 1 and abundant 5. With super-abundant being given 6.

7.7. Abundances are abbreviated, 10% abundance is shortened to a score of 1. The habitat cover/ abundances were 1>9 for 10>90%, Ø for 95-100% and # for present at <10% cover.



7.8. Hawthorn *Crataegus monogyna* can often be both abundant in the number of plants and cover most, or all of the hedgerow length and achieve 6Ø or at least 5Ø.

7.9. A species like Holly *Ilex aquifolium* in a hedgerow may be an occasional occurrence 2, but each plant occupies a large section at high cover 100% and could be coded 2Ø, or even 1Ø. Exceptionally it may occur as both rare large bushes and also an occasional small seedlings and could be coded twice as 1Ø and 2#

7.10. A species like Bramble *Rubus fruticosus* may be abundant but at low cover, e.g., 11. With again the capacity to record denser areas with 11 + 19

### Significant trees

7.11. Trees (of any age) were assessed as to whether they possessed veteran characters of value to saproxylic organisms as well as possibly identifying ancient specimens and their likelihood to support roosting bats.

### Species and habitats of principle importance

7.12. Recording of any vegetation that complied with the definition of a habitat of principal importance under section 41 of the NERC act (HMSO 2006).

### Injurious weeds

7.13. These were surveyed for. In addition to those that are legally designated and require specific treatment, if present, e.g., Japanese Knotweed *Fallopia japonica* other, undesirable species like Ground Elder *Aegopodium podagraria* and Variegated Yellow Archangel *Lamium galeobdolon* ssp. *Argentatum* are considered.

### Fauna

7.14. A wide range of fauna was also considered, in particular protected species (HMSO 1981, 2010) and those designated as species of principle importance (formerly BAP) species under section 41 of the NERC act (HMSO 2006). This included badgers, bats, birds, reptiles and amphibians (especially Great Crested Newts).

#### Bats

7.15. Hibernating or summer roosting bats were considered.

7.16. Any trees would be surveyed following BCT guidelines (Collins 2016) to discover if they had any holes in their trunks or branches, flaking bark or dense Ivy cover.

7.17. The possible significance of the site as being essential to maintain local bat populations is considered.

#### Great Crested Newts

7.18. The possibility for terrestrial GCN usage was considered (English Nature 2001).



### Reptiles

7.19. The possibility for reptiles was considered.

### Amphibians

7.20. The possibility for amphibians other than GCNs was considered.

### Nesting birds

7.21. During the breeding season the possibility for nesting birds is considered (HMSO 1981). In particular, species protected under the Wildlife and Countryside Act (HMSO 1981) Schedule 1 that would be subject to the additional protection of making it an offence to disturb them at their nest as well as the blanket protection of destroying nests, killing or injuring the adults or young, or destroying eggs.

### Badgers

7.22. Badgers *Meles meles* can occur anywhere and their presence is considered.

### Water Voles

7.23. Water Voles *Arvicola terrestris* was not considered.

### Otters

7.24. Otters *Lutra lutra* was not considered (HMSO 2010).

### Other species of principle importance

7.25. The most likely species was the Common Hedgehog *Erinaceus europaeus* and this was considered (HMSO 2006).

## Habitats

7.26. The field survey comprised a modified form of the JNCC Phase 1 habitat mapping system, referred to as Phase 1.5, as it made more detailed records and evaluated habitats on a more systematic basis than is normally required for Phase 1.

## Bat suitability survey

7.27. The current suitability of any trees to support roosting bats was evaluated using the principles outlined in the Bat Conservation Trust survey guidelines. (Collins 2016).

## 8. Results.

### Field Study

8.1. Photographs of the site are at Appendix 25.1. The target notes are related to the features and prefaced by its type:

8.1.a A - Area features, fields, woods etc., e.g., A02

8.1.b L - Linear features, hedgerows, streams, walls, e.g., L04



8.1.c P - Point features, individual trees etc., e.g., P07

8.1.d T - Target note, additional non-ecological features e.g., T08

## Constraints

8.2. The survey was done on 22-08-2024 under favourable weather conditions. At the time of the current survey the grassland had been recently cut and the determination of grass species was slightly compromised.

8.3. The timing of the survey was almost outside of the normal bird nesting season regarded as March to August inclusive. Therefore, it was not possible to detect any nesting activity and speculation as to what species might use the area is used as a surrogate for actual data.

8.4. The survey was only done during daylight and there was no dusk survey to detect bat usage.

## Habitats

8.5. The habitat maps in this report use the updated drone imagery as the backdrop for the development site.

## Habitat evaluation

8.6. The vegetation habitat, species and feature evaluations use a three-colour coding system in line with Phase 1 (JNCC 2016) (in brackets):

8.6.a GREEN = Low value (Limited wildlife interest)

8.6.b BLUE = Moderate value (Low priority)

8.6.c RED = High value (High priority)

8.7. These also convert into levels of constraints and are often the same as the evaluations:

8.7.a GREEN = No, or only minor constraints.

8.7.b BLUE = Some constraint that can be mitigated.

8.7.c RED = Major constraint that may require licensing.

8.8. This is colour coded value has an inflection if the feature was, for example, at the upper end of low or the lower end of moderate it would be coded as L+ or M- respectively, making a difference of L- to M+ more significant than L+ to M-. This is particularly helpful for determining change pre- and post-development with a change from L- to M+ showing a greater biodiversity gain than L+ to M-.

8.9. This principle is applied post-development to gain an understanding of the overall change in biodiversity pre- and post-development.

8.10. The habitat areas are hatched by the appropriate evaluation colours. Thus, an area hatched in blue or a linear feature in blue is regarded as having moderate value and those labelled in green indicate low ecological value.



8.11. The labels include the feature/ target note number (see 8.1), the area or length and the habitat code or codes (see Table 11.1) with their abbreviated abundance values (see 7.5).

Table 11.1 - P1.5 habitat codes used.	
Bryophytes (mosses)	BRY
Fence - close boarded	FPB
Fence - post and rail	FPR
Poor hedgerow	HGP
Tall rough grassland	GTR
Tall ruderal	TRU

8.12. The habitats are shown, along with their evaluations at Figure 12.3 for area features, Figure 13.4 for point features and Figure 14.5 for linear features.













Figure 14.5 – Habitats and their evaluation - linear features (see Table 11.1 for habitat codes)

8.13. The descriptions of each feature follow and photographs are included at (Appendix 25.1):



## Vegetation

### Area features

#### A01

8.14. These were similar areas of Tall, rough grassland [GTR] comprising the species listed at Table 15.2 (in descending frequency/ abundance order). For abundance scores see 7.5.

Table 15.2 - Species list for A01 + A02 for both survey years.

Species	Abundance 2022	Abundance 2024
Red Fescue <i>Festuca rubra</i>	44	43
Cock's-foot <i>Dactylis glomerata</i>	51	33
Common Bent <i>Agrostis capillaris</i>	33	23
Oat-grass <i>Arrhenatherum elatius</i>		22**
Dandelion <i>Taraxacum officinale</i>	21	21
Yorkshire Fog <i>Holcus lanatus</i>	33	11
Broad-leaved Dock <i>Rumex obtusifolius</i>	1#	11
Common Mouse-ear <i>Cerastium fontanum</i>		11
Creeping Thistle <i>Cirsium arvense</i>	1#	11
White Clover <i>Trifolium repens</i>	1#	11
Perennial Rye-grass <i>Lolium perenne</i>	23	1#
Common Nettle <i>Urtica dioica</i>	11	1#
Common Ragwort <i>Senecio jacobaea</i>	1#	1#
Cow Parsley <i>Anthriscus sylvestris</i>	1#	1#
Ivy <i>Hedera helix</i>	1#	1#
Autumnal Hawkbit <i>Leontodon autumnalis</i>		1#
Ribwort Plantain <i>Plantago lanceolata</i>	1#	1#
Red Clover <i>Trifolium pratense</i>	22	*
Black Knapweed <i>Centaurea nigra</i>	1#	*
* - likely unrecorded owing to recent mowing.		
** - Likely starting to colonise because of lack of management.		

#### A02

8.15. Similar to A01, but with the addition of:

Meadow Vetchling *Lathyrus pratensis* and Broad-leaved Plantain *Plantago major*, and there was more Cock's-foot *Dactylis glomerata* in a sward that was more rank than the other [GRT]s.

#### A03

Similar to A01 and A02, but with more vegetation suggesting a shift towards [TRU], e.g., Cow Parsley *Anthriscus sylvestris* and Broad-leaved Dock *Rumex obtusifolius*

#### A04

8.16. This was an area of hexagon plastic matting used to create a 'green' road and was dominated by [ESP] and lower cover of mosses [BRY]. The [ESP] species included Yarrow *Achillea millefolium* and White Clover *Trifolium repens*.



## Point features

8.17. There was only one point feature worth target noting on the site [P01] and this was a young sycamore tree on the eastern boundary of the proposed development. There was a light colonisation of Ivy *Hedera helix* insufficient to be used by bats. There was also another sycamore tree outside the site boundary further north [P02] of similar character. No possibility of bats roosting.

## Linear features

### L01

8.18. Post and rail fence.

### L02

8.19. Close boarded fence.

### L03

8.20. Close boarded fence

### L04

8.21. Species poor hedgerow. Towards the N there was the remnants of a low brick wall. The species list for this hedgerow is at Table 16.3 .

Table 16.3 - Species list for L04. No change from 2022. Hedgerows Regulations qualifying species in yellow.

Species	Abundance
Hawthorn <i>Crataegus monogyna</i>	60
Cleavers <i>Galium aparine</i>	53
Common Nettle <i>Urtica dioica</i>	41
Ivy <i>Hedera helix</i>	24
Bramble <i>Rubus fruticosus</i>	21
Wood Avens <i>Geum urbanum</i>	21
Cow Parsley <i>Anthriscus sylvestris</i>	21
Dog Rose <i>Rosa canina</i>	11
Domestic Apple <i>Malus spp.</i>	1#
Sycamore <i>Acer pseudoplatanus</i>	1#

## Fauna

8.22. The results of the field surveys for animal species are as follows:

### Bats

8.23. Bats are considered likely to use the site for foraging but there are no opportunities for roosting in either of the trees.

### Great Crested Newts

8.24. Considered unlikely. No evidence.

### Reptiles

8.25. Unlikely present. No evidence.



## Amphibians

8.26. Probably present - Common Frog *Rana temporaria* and Common Toad *Bufo bufo* unlikely to be adversely impacted. No evidence.

## Nesting birds

8.27. Nesting birds were not recorded owing to the time of year, but are likely to be present (HMSO 1981) especially song birds, Swallow, House Martins and Wood Pigeons. No birds were seen on the site during the survey.

## Badgers

8.28. Badgers *Meles meles* can occur anywhere but their presence was not detected. There was no evidence at the time of survey.

## Water Voles

8.29. Water Voles *Arvicola terrestris* were very unlikely and were not detected.

## Otters

8.30. Otters *Lutra lutra* were considered (HMSO 2010), but would be very unlikely and were not detected.

## Other species of principle importance

8.31. The most likely species was the Common Hedgehog *Erinaceus europaeus* and this was likely to be present, but no evidence was found. (HMSO 2006).

## 9. Evaluation.

9.1. The method of evaluation is a pragmatic and practical system using expert judgement and taking all factors into consideration, not just the vegetation habitats currently on the site, but also how the mix may be used by animal species, on, or likely to use the site.

## Area features

### A01

9.2. **Low** ecological value [**L-**].

9.3. This area offers a bulk of vegetation that will be used by invertebrates and is likely to support small mammal. The overall value of this habitat is regarded as being **low**.

### A02

9.4. **Low** ecological value [**L**].

9.5. This is similar to A01 and A03. This area offers a bulk of vegetation that will be used by invertebrates and the sward itself is likely to support small mammals, the overall value of this habitat is regarded as being **low**.

### A03

9.6. **Low** ecological value [**L-**].



9.7. This area is similar to A01 and A02, but with more [TRU] species. As with A01 and A02 this area offer a bulk of vegetation that will be used by invertebrates and the sward itself is likely to support small mammals, the overall value of this habitat is regarded as being low.

#### A04

9.8. This is a trackway formed by using hexagon plastic matting to allow vegetation to grow through the holes in the matting. It is currently dominated by [ESP] and mosses with some annual and short lived grasses. It offers very little opportunity for wildlife beyond a few insects and other invertebrates.

#### Point features

9.9. There were only two point features recorded on the survey that were worth target noting. These were both young Sycamore *Acer pseudoplatanus* trees, P01 was within the red line boundary and P02 was outside of the development footprint.

9.10. Both trees were of low [L] ecological value and offered no possibility of bat roosting.

#### Linear features

##### L01

9.11. A fence of very low value [VL-]

##### L02

9.12. A fence of very low value [VL]

##### L03

9.13. A fence of very low value [VL]

##### L04

9.14. A managed but relatively valuable hedgerow of moderate ecological value [M].

9.15. The woody species count was a total of three species that could be applied to a Hedgerows Regulations (HMSO 1997) assessment. As this lists only three species for the whole hedgerow and the threshold for the sample 30m survey length is 5. This hedgerow will fail to qualify as being important under the regulations regardless of where the 30m length is taken.

9.16. The actual Hedgerows Regulations (HMSO 1997) survey section was sample (the central 30m of the whole length) and it contained the following woody species:

9.16.a Hawthorn *Crataegus monogyna*

9.16.b Sycamore *Acer pseudoplatanus*

9.16.c Bramble *Rubus fruticosus*

9.16.d Ivy *Hedera helix*



9.17. Of these only Hawthorn *Crataegus monogyna* (highlighted in yellow) qualifies as a valid species and therefore the hedge has only one species and **FAILS** to qualify as important using the ecological criteria.

## Fauna

9.18. Although it is likely that the shrubs in the hedgerow at L04 will support nesting birds, it is unlikely that there will be any Wildlife and Countryside Schedule 1 (HMSO 1981) species present on the site.

9.19. The species of birds likely to use the area are of relatively **low** conservation significance and the area is likely to have only a **low** value, but at the upper end [**L+**]

## Overall evaluation

9.20. Considering the value of the hedgerow and a relatively low value of the grassland areas, the overall assessment is that the site is of **moderate** value, but at the lower end of the scale [**M-**].

## 10. Impacts.

10.1. The existing hedgerow is to be retained and cut back to facilitate the required sight lines. No adverse impact.

10.2. This hedgerow will cease to qualify as a consideration in the future for a Hedgerows Regulations assessment as hedgerows forming the curtilage of domestic dwellings are outside of the legislation.

## 11. Mitigation and recommendations.

11.1. As a consequence of developing the site for housing, there will be associated vegetated gardens, and residents may encourage wildlife by erecting bird and bat boxes and feeding birds and hedgehogs; mitigation will be a passive consequence of this and needs acknowledgement. It is not normally regarded as mitigation, because it is consequential and not planned or enforced, but it will be a positive impact.

## Avoid

11.2. During construction the boundaries between properties marked as being close-boarded fences shown as blue dashed lines on Figure 6.2 should have hedgehog holes at intervals to allow free movement across, onto and off the development.

## Minimise

11.3. Retain freedom of movement for hedgehogs by having a gap, under close-boarded, fencing of 15cm or installing hedgehog holes as shown at Figure 20.6.





Figure 20.6 – An example of a hedgehog hole in a close boarded fence.

## Restore

11.4. There are no features that require restoration, but enhancement is possible.

## Enhance

11.5. The hedgerow at L04 could be enhanced with a wider variety of shrub species with additional species like:

- 11.5.a Guelder-rose *Viburnum opulus*
- 11.5.b Spindle *Euonymus europaeus*
- 11.5.c Dogwood *Cornus sanguinea*.
- 11.5.d Holly *Ilex aquifolium*
- 11.5.e Hazel *Corylus avellana*

11.6. These will require the creation of gaps by removing small sections to receive the new plants. This should be done by coppicing these short section and NOT removing the roots or disturbing the ground and the new saplings added and protected. This will retain the undisturbed hedgerow soils with its associated micro-flora and fauna.

11.7. The Trees indicated on the Post development plan should ideally be native species and candidate species would be Field Maple *Acer campestre* Pedunculate Oak *Quercus robur*.



11.8. Consider introducing the seeds of Bluebell *Hyacinthoides non-scripta* under the hedgerow. Also, adding specimen native hedgerow trees would enhance biodiversity.

11.9. Adding built-in, self-cleaning bat bricks will offer new opportunities for bats (see Figure 21.7 to Figure 22.10).



Figure 21.7 – Built-in bat brick

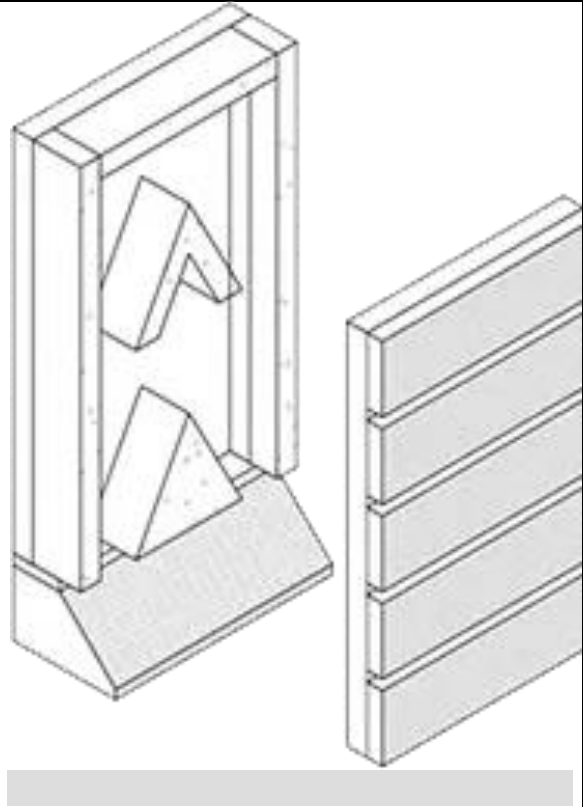


Figure 21.8 – Bat brick showing self-cleaning design.





Figure 22.9 – Bat brick showing access



Figure 22.10 – Bat brick installed

**11.10.** Bird boxes taken from the examples at Figure 22.11 to Figure 23.14 should be installed on the exterior walls of the properties. The number and location to be confirmed by the ecologist and developer. The suggestion is that two boxes on each house as a minimum.



Figure 22.11 - Woodcrete House Sparrow terrace



Figure 22.12 - Open fronted box for either tree or wall mounting.





Figure 23.13 - Example woodcrete tit boxes - 28mm for Blue Tit - and 32mm - for Great Tit versions.



Figure 23.14 - Woodcrete Starling box.

## Compensate

11.11. There should be no requirement to compensate for the loss of relatively low value habitats. There will be medium-term damage to L04 that will be adequate compensation and enhancement to the hedgerow resource.

## Offset

11.12. There should be no need to offset to compensate for the loss of low value existing habitat.

11.13. The design elements coupled with the vegetated gardens will form a biodiversity gain for the site without the need for any offsetting.

## 12. Further surveys

12.1. No further surveys are required unless the site access is to be created during the bird nest season (March to August), when a pre-emptive survey will be needed to confirm a lack of any active nests or leave any active nests undamaged until they are no longer in use.

## 13. Conclusions.

13.1. Overall, the site is currently of moderate [M-] value and the development of the houses and associated landscaping is likely to improve that evaluation based on presumptions that the vegetated gardens will also contribute to the biodiversity gain offered by the hedgerow enhancement, bird and bat box installations and landscaping, moving the site from moderate [M-] to Moderate [M], contributed largely to the hedgerow enhancement and a possible addition of native tree within it.



## 14. References.

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- 14.4. HMSO (1981). Wildlife and Countryside Act (1981) (as amended). HMSO, London.
- 14.5. HMSO (1997). Hedgerows Regulations - Statutory Instrument 1160. HMSO, London.
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- 14.10. WRIGHT, B. (2016). A critical assessment of botanical indicators as historic markers in wooded landscapes. Unpublished PhD thesis. Sheffield Hallam University available at <http://shura.shu.ac.uk/17157/>.



## 15. Appendices

### Appendix 25.1 - Photographs



Figure 25.15 – Current view of site from S looking N along A04



Figure 25.16 – View of eastern boundary site from N looking N.



Figure 25.17 – [ESP] vegetation of A04.



Figure 25.18 – View along current hedgerow S to N



Figure 25.19 – Apple – *Malus spp.* at S end of the hedgerow at L04.



Figure 25.20 – Tussocky regrowth of Oat-grass *Arrhenatherum elatius* at northern end of the site.





Figure 26.21 – Hedgerow L04 from the road looking N from the S.



Figure 26.22 – Site entrance.



Figure 26.23 – Hedgerow L04 along the road looking S.



Figure 26.24 – View from showing transitions of [GTR] to [ESP] to [GTR], left to right.



## SSACFOR Scores - AREA FEATURES



2nd number = **ABUNDANCE** - % cover.

<b>F</b>	1 R			Few	2 O		3 F		4 C		5 A		6 S	
<b>A</b>	10%			Bit	30%		50%		70%		90%		100%	
							Some				Lots		Super	

>>COVER/ ABUNDANCE - NUMBER>>

**9 = 90%**

1 R-9

20-9

3 F-9

4 C-9

5 A-9

6 S-9






## SSACFOR Scores - LINEAR FEATURES




Spidergram Coding/ F(B)SL

Sh - Shrubs: GF = Ground flora

**F** 1 R   Few

**A** 10%   Bit

2 O  3 F  

30%  50%  

4 C 

70% 

5 A  

90%  

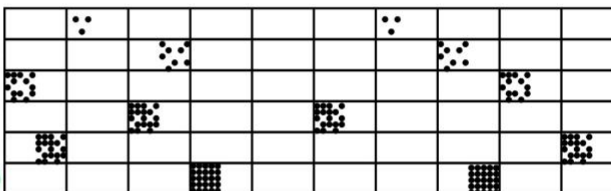
6 S  

100%  


Sh every 50m  
GF every 50m

- 1 = 10%
- 3 = 30%
- 5 = 50%
- 7 = 70%
- 9 = 90%
- Ø = >95%

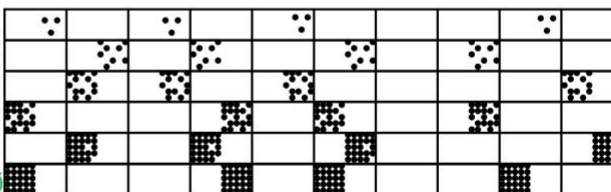
1	R-1
1	R-3
1	R-5
1	R-7
1	R-9
1	R-∅



Sh every 25m  
GF every 25m

- 1 = 10%
- 3 = 30%
- 5 = 50%
- 7 = 70%
- 9 = 90%
- Ø = >95%

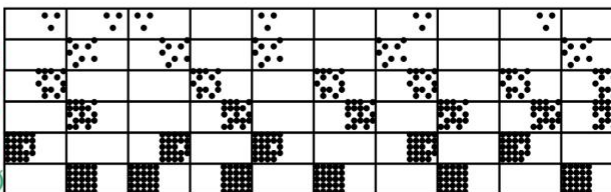
2 0-1  
2 0-3  
2 0-5  
2 0-7  
2 0-9  
2 0-0



Sh every 15m  
GF every 10m

- 1 = 10%
- 3 = 30%
- 5 = 50%
- 7 = 70%
- 9 = 90%
- Ø = >95%

< Cover/ extent

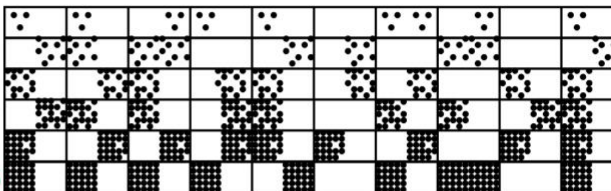


Sh every 10m  
GF every 3m

- 1 = 10%
- 3 = 30%
- 5 = 50%
- 7 = 70%
- 9 = 90%
- Ø = >95%

< Cover/ extent

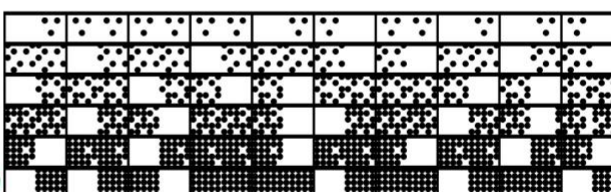
4	C-1
4	C-3
4	C-5
4	C-7
4	C-9
4	C-Ø



Sh every 5m  
GF every 1m

- 1 = 10%
- 3 = 30%
- 5 = 50%
- 7 = 70%
- 9 = 90%
- Ø = >95%

5 A-1  
5 A-3  
5 A-5  
5 A-7  
5 A-9  
5 A-Ø



Sh every 1m  
GF every 10cm

- 1 = 10%
- 3 = 30%
- 5 = 50%
- 7 = 70%
- 9 = 90%
- Ø = >95%

- 6 S-1
- 6 S-3
- 6 S-5
- 6 S-7
- 6 S-9
- 6 S-Ø

