Whitcher Wildlife Ltd.
Ecological Consultants.

56 HILL END ROAD, MAPPLEWELL.

OS REF: SE 333 092.

ECOLOGICAL IMPACT ASSESSMENT.

Ref No: **220528/EcIA.**

Date: **10th November 2022.**

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1. INTRODUCTION.

1.1. An application is being prepared for the full replacement of an existing dwelling at 56 Hill End Road, Mapplewell.

1.2. Whitcher Wildlife Ltd has been commissioned to carry out a Preliminary Ecological Appraisal of the site to establish whether there are any issues that may affect the proposed works.

1.3. That survey was carried out on 24th May 2022. A subsequent bat dusk emergence survey was carried out on 21st June 2022. Upon completion of those surveys Whitcher Wildlife Ltd were commissioned to prepare this Ecological Impact Assessment (EcIA) to support the planning application.

1.4. Appendix I and II of this report provides additional information on specific species and are designed to assist the reader in understanding the contents of this report.

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2. SURVEY METHODOLOGY.

2.1. Prior to visiting the site, the survey area was cross referenced to maps and aerial photographs to give a general idea of the habitats and potential issues within the area and to identify potential access and walking routes.

2.2. The survey area was walked where access was agreed and public rights of way were used where no access was agreed. All habitats within and immediately around the survey area were documented and the dominant species within that habitat listed in line with the JNCC Handbook for Phase 1 Habitat surveys.

2.3. The survey area and immediate surrounding area was thoroughly searched for evidence of badger (*Meles meles*) activity by looking for the following signs in line with Harris S, Cresswell P and Jefferies D (1989). *Surveying Badgers*. Mammal Society: -

* Badger setts.
* Badger latrines or dung pits.
* Badger snuffle holes and evidence of foraging.
* Badger paths.
* Badger prints in areas of soft mud.
* Badger hairs caught on fencing.

2.3. The survey area was searched for watercourses and where found all watercourses within the survey area and for approximately 100m in each direction were thoroughly searched for evidence of water vole (*Arvicola amphibius*) activity by looking for the following signs, in line with Dean M, Strachen R, Gow D and Andres R (2016). *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series).* Eds Fiona Mathews and Paul Chanin. The mammal Society, London: -

* Water vole burrows.
* Water vole faeces and latrines.
* Water vole feeding stations.
* Water vole runs.
* Water vole prints in areas of soft mud.
* Water vole lawns.
* Predator field signs.

2.5. The survey area was searched for watercourses and where found all watercourses within the survey area and for approximately 50m in each direction were thoroughly searched for evidence of otter (*Lutra lutra*) activity by looking for the following signs in line with the P Chanin (2003). *Monitoring the Otter* and *Conserving Natura 2000 Rivers: Monitoring Series No10 Guidelines: -*

* Otter prints in soft mud.
* Otter spraints.
* Otter Holts.

2.6. The survey area was searched for watercourses and waterbodies. Where found, and where safe to enter the water, all were thoroughly searched for the presence of crayfish, for approximately 50m in each direction of the site, by searching under rocks and logs. Where stated, crayfish traps were also deployed into the watercourse. All survey work was carried out in accordance with the *Conserving Natural 2000 Rivers Monitoring Series No 1, Protocol for Monitoring the White Clawed Crayfish*.

2.7. The survey area was searched for trees and structures and where found these were checked for potential bat roosting sites in line with Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)* by looking for the following signs: -

* Holes, cracks or crevices.
* Bat Droppings.

2.7.1. All survey work was carried out in line with Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition),* with an assessment of the buildings suitability for roosting bats made in accordance with these guidelines.

2.7.2. The subsequent dusk emergence survey was also conducted in accordance with Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition).* It was conducted by a sufficient number of surveyors to cover all areas of roosting potential, in suitable weather conditions from fifteen minutes before sunset to at least an hour and half after.

2.7.3. All surveyors were equipped with Batbox Duet bat detectors, or similar. Static recording devices such as Anabat SD2's were also utilised were appropriate.

2.7.4. The land immediately adjacent to the survey area was assessed for bat roosting potential and bat foraging potential. Connective routes and flight lines were also assessed whilst on site and using maps of the area.

2.8. The area within 500m of the survey site was cross referenced to maps to highlight all ponds close to the site. Where possible, all ponds identified were accessed using agreed access or public rights of way to assess the potential for great crested newts (*Triturus cristatus*) to be present.

2.9. The survey area was assessed for the potential for reptiles and suitable reptile habitats. Where applicable the area was also searched for the presence of reptiles.
2.10. Where appropriate, the habitat within and surrounding the survey area was searched for species such as hazel, oak, honeysuckle, bramble and other species which may provide potential habitat for hazel dormice (*Muscardinus avellanarius*). Field signs such as feeding remains and nests were also searched for where possible, in line with P Bright, P Morris and T Mitchell-Jones *The Dormouse Conservation Handbook 2nd Edition*.

2.11. Where appropriate, the area within and surrounding the survey area was assessed for its potential to house habitat for red squirrels. Field signs of red squirrels were searched for at least every 50m, looking for any dreys, feeding signs or sightings of red squirrels.

2.12. All surveys were carried out in line with the Chartered Institute of Ecological and Environmental Management (CIEEM) survey standards and advice.

2.13. This document is prepared in line with The National Planning Policy Framework (NPPF). This sets out the government policy on biodiversity and nature conservation and places a duty on Planning Authorities to give material consideration to the effect of a development on legally protected species when considering planning applications. The NPPF and the Planning Practice Guidance on “Natural Environment” also promote sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within the development.

2.14. This report is prepared in line with the Natural Environment and Rural Communities (NERC) Act that came into force on 1st Oct 2006. Section 41 (S41) of the Act 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.

2.15. The initial site survey was carried out by Jess Mason BSc. Since 2018 Jess has had experience in a professional capacity as an Ecologist carrying out ecology surveys and phase I habitat surveys. Jess holds Scottish Natural Heritage survey licences in respect of barn owls. She has also successfully completed a number of courses run by FSC in the relative protected species and carrying out phase I habitat surveys and is studying for a MSc in Biological Recording.

2.16. The subsequent bat dusk emergence survey was carried out by Jess Mason BSc and Ruth Georgiou BSc, MCIEEM. Since 2004 Ruth has had experience in a professional capacity as a Wildlife Consultant carrying out ecology surveys and phase I habitat surveys. As a full member of CIEEM Ruth is subject to peer review on an annual basis. Ruth holds Natural England survey licences in respect of bats, great crested newts and white clawed crayfish and has held her own or has been named ecologist on site specific licences for badgers, great crested newts and bats. She also holds a degree in Environmental Science (BSc) and has successfully completed a number of courses run by CIEEM, BCT and FSC in the relative protected species, carrying out phase I habitat surveys and BREEAM assessments.

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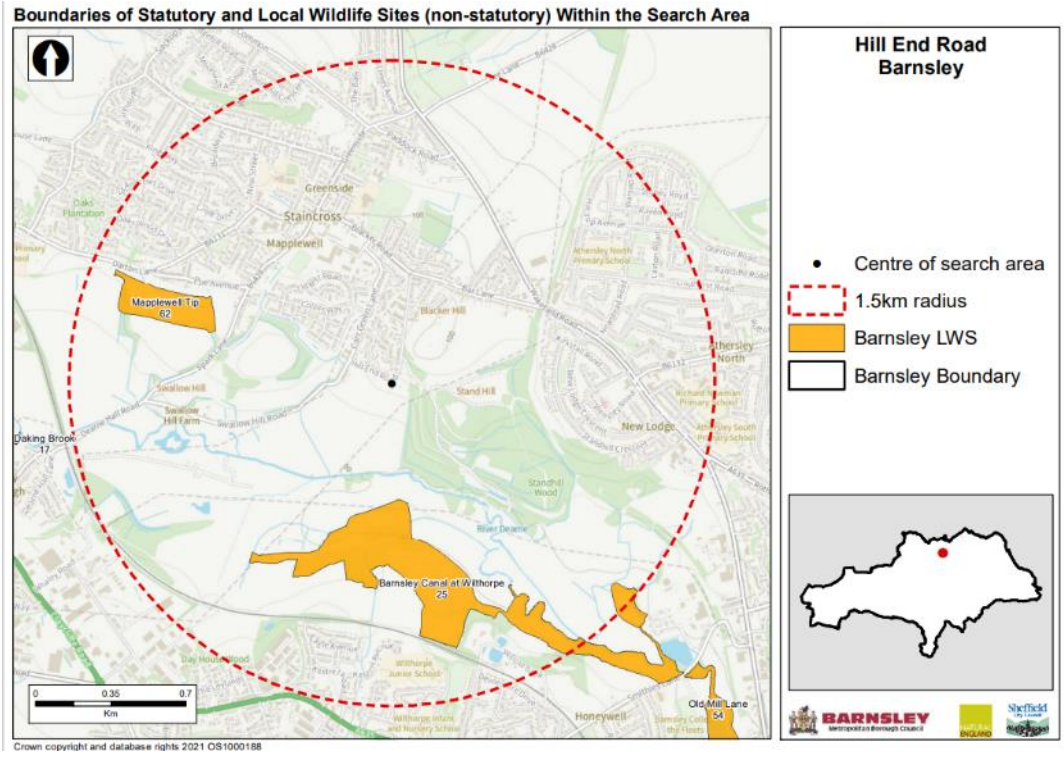
3. SURVEY RESULTS.

3.1. Data Search Results.

3.1.1. A data search was submitted to Barnsley Biological Records Centre for records of protected species and designated sites within 2km of the survey area.

3.1.2. The results show that there are no records of bat roosts or badgers within 1km of the survey area. There are also some occasional bird and plant species records in the area, and there are records of great crested newts, otters and water voles further afield. No species records are relevant to the survey area.

3.1.3. Details of two Local Wildlife Sites were returned from the data search. Both sites lie more than 500m from the survey area. The site also lies approximately 2km from the Notton Wood Local Nature Reserve. No other statutory designations or ancient woodland was found within 1km of the site.



3.1.4. A copy of the data search results can be provided to the client upon request but must not be placed in the public domain.

3.2. The Surveyed Area.

3.2.1. The survey area is located in the village of Mapplewell near Barnsley, South Yorkshire. The small, enclosed site is surrounded by residential properties to the north, and arable fields in all other directions.

3.2.2. The aerial map below shows the location of the survey area, in red, and the surrounding area.

3.2.3. The survey area comprises a residential building which is built with masonry blocks on the two rendered elevations and is stone-built facing south and west. The building is surrounded by gardens. The survey area is separated from the surrounding arable fields by hedgerows and fencing. The adjacent building, Hill End Farm, is also being planned for development, but this is not included within the scope of this preliminary ecological appraisal.

3.3. Description of Habitats.

3.3.1. Appendix III of this report contains annotated maps marked up with the varying habitats and Appendix IV contains the Habitat Condition Assessment tables.. The habitats on and adjacent to the site are: -

- Building.
- Bare ground.
- Cultivated/disturbed land – amenity grassland.
- Introduced shrub.
- Hedge with trees – species-poor.
- Scattered trees.

3.3.2. Building.

3.3.2.1. An existing residential property built from stone with full rendering on one aspect and partial rendering on other aspects.

3.3.3. Bare ground.

3.3.3.1. A paved courtyard to the south of the building has been mapped as bare ground and contains no semi-natural vegetation.

3.3.4. Cultivated/disturbed land – amenity grassland.

3.3.4.1. The majority of the site comprises amenity grassland. The grassland was dominated by perennial rye (*Lolium perenne*) with smaller proportions of cocksfoot (*Dactylis glomerata*) and Yorkshire fog (*Holcus lanatus*), which had been mown short at the time of survey. Some areas had not been mown so had a taller sward height, but the species composition remained the same.

3.3.5. Introduced shrub.

3.3.5.1. A line of shrub had been planted along the boundary between the amenity grassland and bare ground, comprising *Buddleia* and *Clematis* among other ornamental garden species.

3.3.6. Hedge with trees – species-poor.

3.3.6.1. A hedgerow marks the boundary of the property, comprising hawthorn (*Crataegus monogyna*), holly *(Ilex aquifolium),* sycamore (*Acer pseudoplatanus*), and oak (*Quercus robur*), with a ground layer of nettle (*Urtica dioica*), cocksfoot (*Dactylis glomerata*), perennial rye (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), creeping buttercup (*Ranunculus repens*), cow parsley (*Anthriscus sylvestris*), and bramble (*Rubus fruticosus*).

3.3.7. Scattered trees.

3.3.7.1. Apple (*Malus domestica*), cherry (*Prunus avium*), honeysuckle (*Lonicera periclymenum*) and conifer trees were scattered throughout the amenity grassland.

3.4. Description of Fauna.

3.4.1. No badger setts or badger field signs were identified within the survey area.

3.4.2. There are no watercourses within the survey area therefore there are no habitats present suitable for water voles, otters or crayfish.

3.4.3. There are no ponds within the survey area. A pond approximately 300m to the west of the survey area is separated from the site by extensive arable fields, which provide an ecological barrier to great crested newts. Ponds to the south of the site, within the Barnsley Canal Local Wildlife Site, where there are records of great crested newt, are separated from the site by the River Dearne and extensive arable fields.

3.4.4. The building was inspected internally and externally for evidence of bats and potential roost features. The roof was in fairly good condition with no missing or cracked tiles. However, there were several small gaps within the mortar which could provide potential roost features for bats, as well as small gaps behind fascias. Internally, the roof was lined and appeared to be in good condition, so it is unlikely that bats are able to access the roof space. No evidence of bat roosts or activity was found within the roof space.

3.4.5. The building provides a small number of suitable opportunities for roosting bats, and therefore is assessed as providing **low** potential for roosting bats.

3.4.6. The surrounding gardens, hedgerows and fields provided good foraging opportunities for bats. The tree lines and hedgerows lining the road to the north of the site and hedgerows bordering the fields provided suitable foraging habitat and commuting routes for bats. However, these will remain unaffected by the development.

3.4.7. The building itself did not provide suitable habitat for nesting birds due to the lack of access into the building. However, the hedgerows and trees within the survey area provides ideal habitat for nesting birds during the breeding season. The amenity grassland appears to be regularly mown and is therefore unlikely to offer any suitable habitat for ground-nesting species.

3.4.8. The survey area is assessed to provide negligible potential for reptiles due to the grassland being regularly mown. There is no connectivity with potentially suitable habitats nearby.

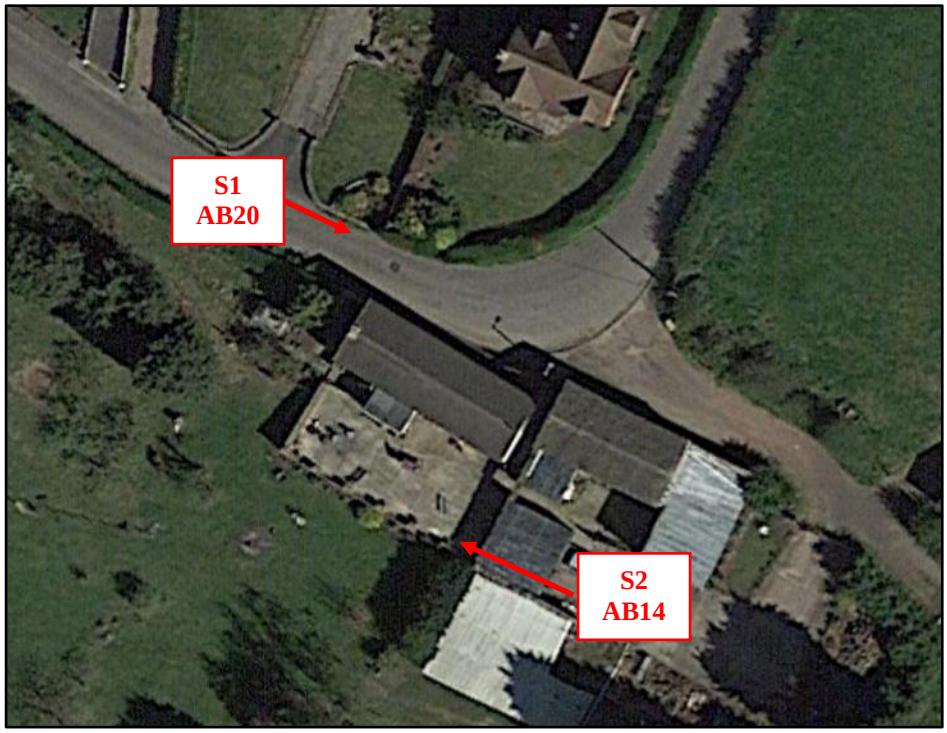
3.4.9. There are no habitats suitable for hazel dormouse or red squirrel within the survey area, and the site lies outside the natural range for both these species.

3.4.10. No invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act (1981) were identified within the survey area.

3.4. Dusk Emergence Survey Results.

3.4.1. The dusk emergence survey was carried out by two surveyors on the evening of 21st June 2022. One surveyor holds a current Natural England class licence for surveying bats, licence number 2015-11823-CLS-CLS, and the other was an experienced assistant.

3.4.2. The surveyors were positioned around the building in order to be able to view all aspects of the building simultaneously. Each surveyor was equipped with a Batbox Duet detector and a two-way radio for communications. In addition, two static Anabat recorders were deployed to record bat activity for subsequent computer analysis using Analook software. The positions of the surveyors (S) and the Anabat recorders (AB) were as shown below.



3.4.3. The evening was fine, clear and still. There was a temperature of 18.5ºC at 21:45, which dropped to 17.1°C at the end of the survey. The survey started at 221:25 and continued until 23:15 and sunset was at 21:39.

3.4.4. Surveyor 1 recorded three Common Pipistrelle bats throughout the whole survey. The first was seen to pass over at 22:55 from north to south. The other two were heard but not seen passing over at 22:12 and 22:17.

3.4.5. Surveyor 2 identified one Common Pipistrelle bat foraging over the garden to the south at 22:17.

3.4.7. The Anabat placed next to Surveyor 1 recorded one Common Pipistrelle bat call at 22:12. No other bat calls were recorded on either Anabats.

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4. IMPACT ASSESSMENT, MITIGATION AND RESIDUAL EFFECTS.

4.1. Designated Sites.

4.1.1. Assessment.

The data search results show that the survey area does not lie within or have any habitat connectivity with the Local Wildlife Sites, which all lie more than 500m from the survey area. The proposed development of the site will have no impact on any designated sites.

4.1.2. Mitigation.

As the development will have no impact on any designated sites there is no requirement for any mitigation.

4.1.3. Residual Effect.

There will be no residual effects on any designated sites.

4.2. Habitats.

4.2.1. Assessment.

4.2.1.1. The survey area includes amenity grassland with an area of bare ground and a building, surrounded by hedgerows. The areas within the development plan are included in the Biodiversity Metric 3.1. below.

4.2.1.2. The baseline habitat Biodiversity Units (Bu) on the site was calculated at 1.19 Habitat Bu and 0.80 Hedgerow Bu as shown in the tables below.

Habitat Type	Extent (ha)	Distinctiveness	Condition Assessment	Biodiversity units
Developed land; sealed surface	0.046	V.Low	N/A - Other	0.00
Urban Tree	0.0163	Medium	Fairly Poor	0.10
Modified grassland	0.271	Low	Moderate	1.08
Introduced shrub	0.002	Low	Condition Assessment N/A	0.00
Total	**0.34**			**1.19**

Hedgerow type	Length (km)	Distinctiveness	Condition Assessment	Biodiversity units
Native hedgerow with trees	0.19	Medium	Poor	0.76
Line of trees	0.02	Low	Poor	0.04
Total	**0.21**			**0.80**

4.2.2. Mitigation.

4.2.2.1. The proposed development will replace the existing dwelling with another house on a different footprint on an area of amenity grassland on the site. This will require the removal of the exiting tree line and part of the existing hedgerow.

4.2.2.2. To mitigate for these losses, the lower garden areas will be enhanced, planted and managed to increase their biodiversity value. This will include the enhancing of the existing amenity grassland to create a neutral grassland that is in a ‘fairly good’ condition. This will be achieved by sewing of some wildflowers, managing the grassland in a way that allows the wildflowers to thrive whilst ensuring that scrub and other non-desirable species do not encroach into this grassland. The grassland will also be cut in a way that creates a varied sward height throughout.

4.2.2.3. Eighteen fruit trees will be planted to create a small orchard in the southeast corner of the site, as well as a number of native trees planted across the site.

4.2.2.4. There will be a loss of a small length of hedgerow and the line of trees will be removed, but to mitigate for this the retained hedgerow along the south and west boundaries will be enhanced to improve the condition of the hedgerow from ‘poor’ condition to ‘moderate’ condition. This will be achieved by the planting of some additional native species to reduce the gaps at the base and canopy of the hedgerow and the hedgerow will be managed in a way that will allow it to grow to a height in excess of 1.5m.

4.2.2.5. The above measures will deliver 1.29 Habitat Bu and 0.81 Hedgerow Bu. This is a net gain of 8.71% habitat Bu and 1.34% Hedgerow Bu. This is demonstrated in the tables below that show the post-development calculations for the site.

Habitat Type	**Extent (ha)**	**Distinctiveness**	**Condition Assessment**	**Biodiversity units**
Retained:				
Urban Tree	0.0163	Medium	Fairly Poor	0.10
Enhanced:				
Modified grassland	0.075	Low to Medium	Fairly Good	0.59
Created:				
Developed land; sealed surface	0.126	V.Low	N/A - Other	0.00
Modified grassland	0.07	Low	Moderate	0.24
Traditional orchards	0.045	High	Fairly Poor	0.28
Urban Tree	0.0203	Medium	Fairly Poor	0.07
Total				**1.29**

Hedgerow type	Length (km)	Distinctiveness	Condition Assessment	Biodiversity units
Retained:				
Native hedgerow with trees	0.04	Medium	Poor	0.16
Enhanced:				
Native hedgerow with trees	0.09	Medium	Poor to Moderate	0.65
Total	**0.21**			**0.81**

4.2.3. Residual Effect.

With the above mitigation in place, there will be an overall **positive residual impact at a site level.**

4.3. Species – Bats.

4.3.1. Assessment.

4.3.1.1. The building on the site was initially assessed as having low potential for roosting bats. A subsequent bat dusk emergence survey was carried out and no bats emerged from the building. The proposed works to the building will therefore have no impact on roosting bats.

4.3.1.2. The surrounding area provided good foraging habitat for bats, although very low levels of bat activity were observed during the bat dusk emergence survey carried out on the site. The surrounding habitats will not be impacted by the proposed development.

4.3.2. Mitigation.

4.3.2.1. No bat roosts were identified and therefore there is no requirement for any further surveys or a Natural England EPS licence. However, individual bats can roost almost anywhere for the occasional day therefore in the unlikely event that a bat is found during the works to the building, it will be kept safe and all works will stop until professional advice has been sought on how to proceed with the remaining works.

4.3.2.2. A sensitive external lighting scheme will be implemented, ensuring that any new lighting will be downward directional and will not be directed towards any hedgerows or trees across the site to ensure no fragmentation of bat foraging and commuting habitat.

4.3.3. Residual Effect.

With the above measures in place there will be **no negative residual impact on bats at a site level**.

4.4. Species – Nesting Birds.

4.4.1. Assessment.

There is some potential for nesting birds within the survey area, mostly in the hedgerows and scattered trees. The nesting bird season extends from March to September each year.

4.4.2. Mitigation.

Any vegetation clearance or site clearance works will be carried out outside the nesting bird season. If it is necessary to undertake these works within the nesting bird season, these works will be preceded by a nesting bird survey. Any active nests identified it will be left undisturbed until the young have fledged.

4.4.3. Residual Effect.

With the above mitigation measures in place there will be a **no negative residual impact** on nesting birds at a site level.

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5. BIODIVERSITY ENHANCEMENT MEASURES.

5.1. In line with the NPPF some biodiversity enhancements for fauna species will be provided on the site.

5.2. This will be achieved by providing one integrated bat box and one pair of integrated universal swift boxes in the new house to be constructed on the site.

5.3. The bat box will be an integrated Habibat bat boxes with a custom facing to match the wall construction of the house, as shown below.

Habibat 001 - Bespoke Facing

Habibat 003 Bat Box

5.4. Two integrates universal swift nest boxes will also be in the gable end wall of the new house, similar to that shown below, but the type of box will be selected to match the wall construction of the house. Swift boxes have also been proven to be used by other small birds, including sparrows and therefore will cater for a variety of bird species.

Prepared by:	
Jess Mason BSc and Ruth Georgiou BSc, MCIEEM	Date: 10th November 2022.

Checked by:	
Derek Whitcher, BSc MCIEEM, MCMI.	Date: 11th November 2022.

6. REFERENCES.

Chartered Institute of Ecology and Environmental Management. 2017. ***Guidelines for Preliminary Ecological Appraisal, Second Edition.*** CIEEM, Hampshire.

Chartered Institute of Ecology and Environmental Management. 2017. ***Guidelines for Ecological Report Writing, Second Edition.*** CIEEM, Hampshire.

1981. ***Wildlife and Countryside Act.*** *http://www.legislation.gov.uk/ukpga/1981/69* (accessed 18/02/16)

2000. ***Countryside and Rights of Way Act.*** *http://www.legislation.gov.uk/ukpga/2000/37/contents*.

2017. ***The Conservation of Habitats and Species Regulations.*** *http://www.legislation.gov.uk/uksi/2010/490/contents/made*.

2012. ***National Planning Policy Statement.*** *https://www.gov.uk/government/publications/national-planning-policy-framework--2*

Anon. 1995. ***Biodiversity: the UK Steering Group report. Vol 2: Action Plans.*** HMSO, London.

Joint Nature Conservation Committee. 2004 (ed.). ***Handbook for Phase 1 habitat survey: A technique for environmental audit.*** JNCC, Peterborough.

1992. ***Protection of Badgers Act.*** *https://www.legislation.gov.uk/ukpga/1992/51/contents*.

Harris S, Cresswell P and Jefferies D. 1989. ***Surveying Badgers.*** Mammal Society. London.

Dean M, Strachen R, Gow D and Andres R (2016). ***The Water Vole Mitigation Handbook*** (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The mammal Society, London

Chanin P. 2003(a). ***Ecology of the European Otter.*** Conserving Natura 2000, Ecology Series No.10. English Nature, Peterborough.

Chanin P. 2003(b) ***Monitoring the Otter Lutra lutra.*** Conserving Natura 2000 Rivers Monitoring Series No. 10. English Nature, Peterborough.

Peay S. 2003. ***Monitoring the White-Clawed Crayfish Austropotamobius pallipes.*** Conserving Natura 2000 Rivers Monitoring Series No. 1. English Nature, Peterborough.

English Nature. 2001. ***Great Crested Newt Mitigation Guidelines.***

Langton T, Beckett C, Foster J. 2001. ***Great Crested Newt: Conservation Handbook.*** Froglife, Suffolk.

Oldham et al. 2000. ***Great Crested Newt Habitat Suitability Assessment. ARG UK Advice Note 5, May 2010.***

Collins J. (ed.) 2016. ***Bat Surveys for Professional Ecologist: Good Practice Guidelines.*** 3rd ed. The Bat Conservation Trust, London.

English Nature. 2004. ***Bat Mitigation Guidelines.*** English Nature, Peterborough, UK.

BTHK 2018. ***Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals.*** Exeter: Pelagic Publishing.

BOCC4 Eaton et al. 2015. ***Birds of Conservation Concern 4: The Population Status of Bird's in the UK, Channel Islands and Isle of Man.***

Joint Nature Conservation Committee. 2004. ***Common Standards Monitoring Guidance for Birds.*** 2004 ed. JNCC, Peterborough.

Froglife. 1999. ***Froglife Advice Sheet 10: Reptile Survey.*** Froglife, London.

Bright P, Morris P, Mitchell-Jones T. 2006. ***The Dormouse Conservation Handbook*** 2nd edition. English Nature, Peterborough.

Joint Nature Conservation Committee. 2004 (ed.). ***Common Standards Monitoring Guidance for: Reptiles and Amphibians.*** JNCC, Peterborough.

Joint Nature Conservation Committee. 1996. ***UK Strategy for Red Squirrel Conservation.*** JNCC, Peterborough.

Appendix I. NESTING BIRD INFORMATION.

Ecology

The nesting season will vary according to the weather each year but generally commences in March, peaks during May and June and continues until September. It is also worth remembering that some birds nest in trees and scrub, but others are ground nesting or prefer man- made structures or buildings.

Surveys

Nesting bird surveys search for potential nest sites in vegetation, buildings etc. Potential nesting sites are observed over a suitable period of time for bird movements or calling male birds that would indicate the presence of a nest. The presence of a nest can be identified from the field signs without the necessity to see the nest itself, thereby avoiding any disturbance of the nests. The best way to avoid this issue is to plan for vegetation clearance to be carried out outside the bird-nesting season.

Legislation

Nesting birds are protected under The Wildlife and Countryside Act 1981.

Part 1. -(1) Of the Act states that: - If any person intentionally: - kills, injures or takes any wild bird; takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or takes or destroys an egg of any wild bird, he shall be guilty of an offence.

Part 1. -(5) of the Act states that: - If any person intentionally: - disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on, or near a nest containing eggs or young; or disturbs young of such a bird, he shall be guilty of an offence and liable to a special penalty.

The Countryside and Rights of Way Act 2000 amends the above by inserting after “intentionally” the words “or recklessly”.

Appendix II. BAT INFORMATION.

Ecology

There are currently 18 species of bat residing in Britain, 17 of which of which are known to breed here. They are extremely difficult to identify in the hand and even more so in flight.

All appear to be diminishing in numbers, probably due to habitat change and shortage of food, caused by pesticides, as insects are their sole diet.

As their diet consists solely of insects, bats hibernate during the winter when their food source is at its most scarce. They will spend the winter in hollow trees, caves, mines and the roofs of buildings.

Certain species, particularly the pipistrelle (the commonest and most widespread British bat) can quickly adapt to man-made structures and will readily use these to roost and to rear their young.

Surveys

During walkover surveys, bat roosts can be identified by looking for:

- Suitable holes, cracks and crevices within any building, tree or other structure.
- Bat droppings along walls, window cills, or on the ground.
- Prey remains, such as insect wings.

Further investigations can be made using endoscopes, by carrying out aerial inspections of trees or by conducting bat activity surveys during dusk and dawn over summer months.

Legislation

Bats are protected under Appendix II and III of the Bern Convention (1982), Schedule 5 and 6 of the Wildlife and Countryside Act (1981), Annex IV of the Habitats Directive (some species under Annex II), Annex II of the Conservation of Habitats and Species Regulations (2010) and EUROBATS agreement. Numerous species are

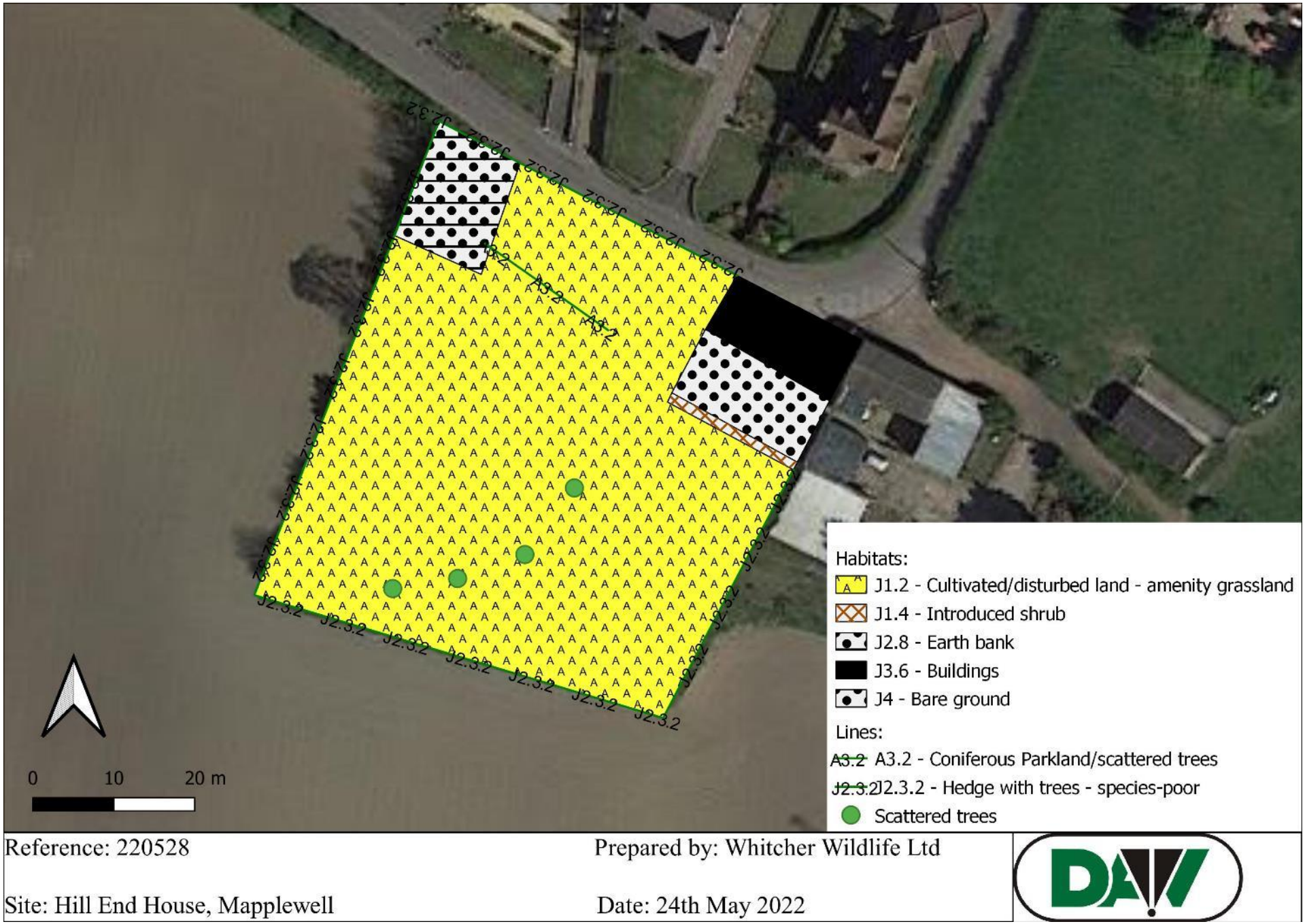
also listed under section 41 of the Natural Environment and Rural Communities Act (2006) making them species of principal importance.

All bats and their roosts are therefore protected in the UK. This makes it an offence to kill, injure or take any bat, to interfere with any place used for shelter or protection, or to intentionally disturb any animal occupying such a place.

The UK has designated maternity and hibernacula areas as Special Areas of Conservation (SAC's) under the Habitats Directive. Implementation of the UK Biodiversity Action Plan also includes action for a number bat species and the habitats which support them.

Where development proposals are likely to affect a bat roost site, a licence is required from Natural England.

Appendix III. ANNOTATED MAP OF THE SURVEY AREA.



Appendix IV. BASELINE CONDITION ASSESSMENTS.

Urban – None priority habitat type.

CORE CRITERIA - applicable to all urban habitat types:		
1	Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area.	**No**
2	There is a diverse range of flowering plant species, providing nectar sources for insects. These species may be either native, or non-native but beneficial to wildlife. NB - To achieve GOOD condition, criterion 2 must be satisfied by native species only (rather than non-natives beneficial to wildlife).	**No**
3	Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area. NB - To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).	**Yes**
ADDITIONAL CRITERION - only applicable to Open mosaic on previously developed land habitat type:		
4a	The site shows spatial variation, forming a mosaic of at least four early successional communities (a) to (h) PLUS bare substrate AND pools. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland.	**N/A**
ADDITIONAL CRITERION - only applicable to Bioswale and SUDS habitat types:		
4b	The water table is at or near the surface throughout the year. This could be open water or saturation of soil at the surface.	**N/A**

Condition assessment results:	**Condition assessment score:**
If 3 criteria assessed:	
• Passes 3 of 3 core criteria; AND • Meets the requirements for good condition within criteria 2 and 3	Good (3)
• Passes 2 of 3 core criteria; OR • Passes 3 of 3 core criteria but does not meet the requirements for good condition within criteria 2 and 3	Moderate (2)
• Passes 0 or 1 of 3 core criteria	Poor (1)
If 4 criteria assessed:	
• Passes 3 of 3 core criteria; AND • Meets the requirements for good condition within criteria 2 and 3; AND • Passes additional criterion 4a or 4b	Good (3)
• Passes 2 of 3 of 4 criteria; OR • Passes 4 of 4 criteria but does not meet the requirements for good condition within criteria 2 and 3	Moderate (2)
• Passes 0 or 1 of 4 criteria	Poor (1)

Grassland – low value (modified grassland)

1	There must be 6-8 species per m^2. Note - if a grassland has 9 or more species per m^2 it should be classified as a moderate distinctiveness grassland habitat type. **NB - this criterion is non-negotiable for achieving good condition.**	**No**
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	**No**
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	**Yes**
4	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	**Yes**
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	**No**
6	Cover of bracken less than 20%.	**Yes**
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species[1] make up less than 5% of ground cover.	**Yes**

Condition assessment results:	**Condition assessment score:**
Passes 6 or 7 of 7 criteria including non-negotiable criterion 7	Good (3)
Passes 4 or 5 of 7 criteria; OR Passes 6 of 7 criteria excluding non-negotiable criterion 7	Moderate (2)
Passes 0, 1, 2 or 3 of 7 criteria	Poor (1)

Hedgerows.

Hedgerow favourable condition attributes			
Attributes and functional groupings (A, B, C, D & E)	**Criteria (the minimum requirements for 'favourable condition'**	**Description**	**Pass/fail**
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).	**Fail**
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]).	**Fail**
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).	**Fail**
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).	**Fail**
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).	**Fail**
C2. Undesirable	Plant species indicative of nutrient enrichment of soils dominate <20%	The indicator species used are nettles (Urtica spp.), cleavers (Galium aparine) and docks (Rumex spp.).	**Fail**

perennial vegetation	cover of the area of undisturbed ground	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.	**Pass**
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).	**Pass**
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.	**Fail**
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.	**Pass**

Condition categories for hedgerows without trees		
Category	**Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-2**	**Weighting (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 <u>Does not fail both attributes</u> 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 <u>Fails both attributes</u> 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**	**Weighting (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 V. PROPOSED SITE PLAN.