Whitcher Wildlife Ltd.
Ecological Consultants.

LAND OFF LESMOND CRESCENT, MIDDLECLIFF

OS REF: SE 43231 05030

ECOLOGICAL IMPACT ASSESSMENT.

Ref No: **210906/REV1.**

Date: **24th February 2022.**

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1. INTRODUCTION.

1.1. J&K Builders are proposing to construct five residential dwellings with parking and gardens on the land off Lesmond Crescent in the hamlet of Middlecliff at grid reference: SE 43231 05030. Aerial photograph with red line boundary shown below.

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. The site survey was carried out on the 2nd of September 2021 and this report outlines the findings of that survey and makes appropriate recommendations.

1.4. Appendices I and IV of this report provide 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.

2.8. 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.

2.9. 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.

2.10. 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.

2.11. 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*.

2.12. 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.

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

2.14. 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.

2.15. 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.

2.16. This Survey was conducted by Matthew Moore. Matthew is an Ecological Consultant with an array of experience in conducting surveys on a variety of flora and fauna in a professional capacity. Since 2015 Matthew has worked as an Ecological Clerk of Works and as a Consultant Ecologist. Matthew currently holds a Natural England Survey License for Great Crested Newts, has experience of undertaking bat surveys and is working towards gaining a Natural England survey license for bats.

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3. ECOLOGICAL BASELINE.

3.1. Data Search Results.

3.1.1. Barnsley Metropolitan Borough Council.

3.1.1.1. Barnsley Metropolitan Borough Council were commissioned to undertake a data search of all designated sites and protected species with a 2km radius of the site.

3.1.1.2. Dearne Valley Wetlands Special Site of Scientific Interest (SSSI) was identified c.900m to the west of the proposed site.

3.1.1.3. Two non-statutory designated site was identified within 2km of the site. Broomhill Flash and Wombwell Ings Local Wildlife Site was identified c.1.8 km to the southwest of the site.

3.1.1.4. The site lies within the Dearne Valley Green Heart 'Nature Improvement Area'.

3.1.1.5. There were two records for badger within 2km of the site. The nearest record to the site was located c. 1km to the west of the site.

3.1.1.6. There were no recent records of water vole within 2km of the site. The most recent record was within a ditch c. 1.9km to the southwest of the site however this was in 2009 and nothing has been recorded more recently.

3.1.1.7. There was only one record of otter within 2km of the site within the last ten years. This record was identified c.1.9km to the southwest of the site within Broomhill Flash and Wombwell Ings LWS.

3.1.1.8. Ten recent records of bat were identified within 2km of the site. Common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), noctule (*Nyctalus noctula*), lesser noctule (*Nyctalus leisleri*) and myotis species were identified. The nearest record to site was of a Pipistrelle bat c.1.5km to the southeast.

3.1.1.9. There were three records for great crested newt within 2km of the site. The nearest record was of a GCN c.1.6 km to the northwest of the site.

3.1.1.10. There are six recent records of reptile within 2km of the site. All records are of grass snake (*Natrix helvetica*) of which the closest to site was c.500m to the south of the site.

3.1.1.11. There are records for three schedule 9 invasive plant species within 2km of the site. Records include Japanese knotweed (*Fallopia japonica*) c.800m to the southwest of the site, giant hogweed (*Heracleum mantegazzianum*) c. 900m west of the site and Himalayan balsam (*Impatiens glandulifera*) c. 850m to the west of the site.

3.1.2. South Yorkshire Badger Group.

South Yorkshire Badger Group was consulted with respect to badger sett records within 2km of the site. The group do hold records of setts to the northwest of the site, in excess of 1.5kim from the site. There are no other sett records in the area around the site.

3.2. The Surveyed Area.

The site comprised an area of c.0.24 hectares of land on the edge of Middlecliff hamlet. The site is surrounded by residential housing to its western and southern boundaries and arable agricultural land to the east and north.

3.3. Description of Habitats.

3.3.1. Appendix V of this report contains annotated maps marked up with the varying habitats that are cross referenced to target notes in Appendix VI of this report. The habitats on and adjacent to the site are: -

- Amenity grassland
- Fence
- Hedgerow
- Short ephemeral
- Neutral grassland

3.3.2. Amenity grassland.

Amenity grassland was present along a narrow access track off Lesmond Crescent. Common daisy (*Bellis perennis*), dandelion (*Taraxacum officinale*), annual meadow grass (*Poa annua*) and Yorkshire fog (*Holcus lanatus*) were dominant species.

3.3.3. Fence.

A chain-link fence and a wooden feather-board fence were present along the western and southern boundaries of the site, backing onto neighbouring gardens on the adjacent land.

3.3.4. Hedgerow.

A species-poor hedgerow existed along the eastern boundary of the site. The hedgerow was dominated by hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and elder (*Sambucus nigra*). Ivy (*Hedera helix*) and Russian vine (*Fallopia baldschuanica*) were also present.

3.3.5. Short ephemeral.

Two small areas of short ephemeral habitat were present to the north and south of the site. This was dominated by redshank (*Persicaria maculosa*) white goosefoot (*Chenopodium album*) black medic (*Medicago lupulina*) and white clover (*Trifolium repens*).

3.3.6. Neutral grassland

The centre of the site was dominated by neutral grassland. Dominant species were rosebay willowherb (*Chamaenerion angustifolium*), common nettle (*Urtica dioica*) common comfrey (*Symphytum officinale*), rough hawkbit (*Leontodon hispidus*), creeping thistle (*Cirsium arvense*) and bramble (*Rubus fruticosus*). The grasses Yorkshire fog (*Holcus lanatus*), false-oat grass (*Arrhenatherum elatius*) and annual meadow grass (*Poa annua*) were also present, but the herbs were dominant.

3.3.7. Dense scrub

A small area of dense bramble (*Rubus fruticosus*) was present at the southern end of the site. Hedge bindweed (*Calystegia sepium*) growth was also present within this habitat.

3.4. Description of Fauna.

3.4.1. No evidence of badger was identified during the survey.

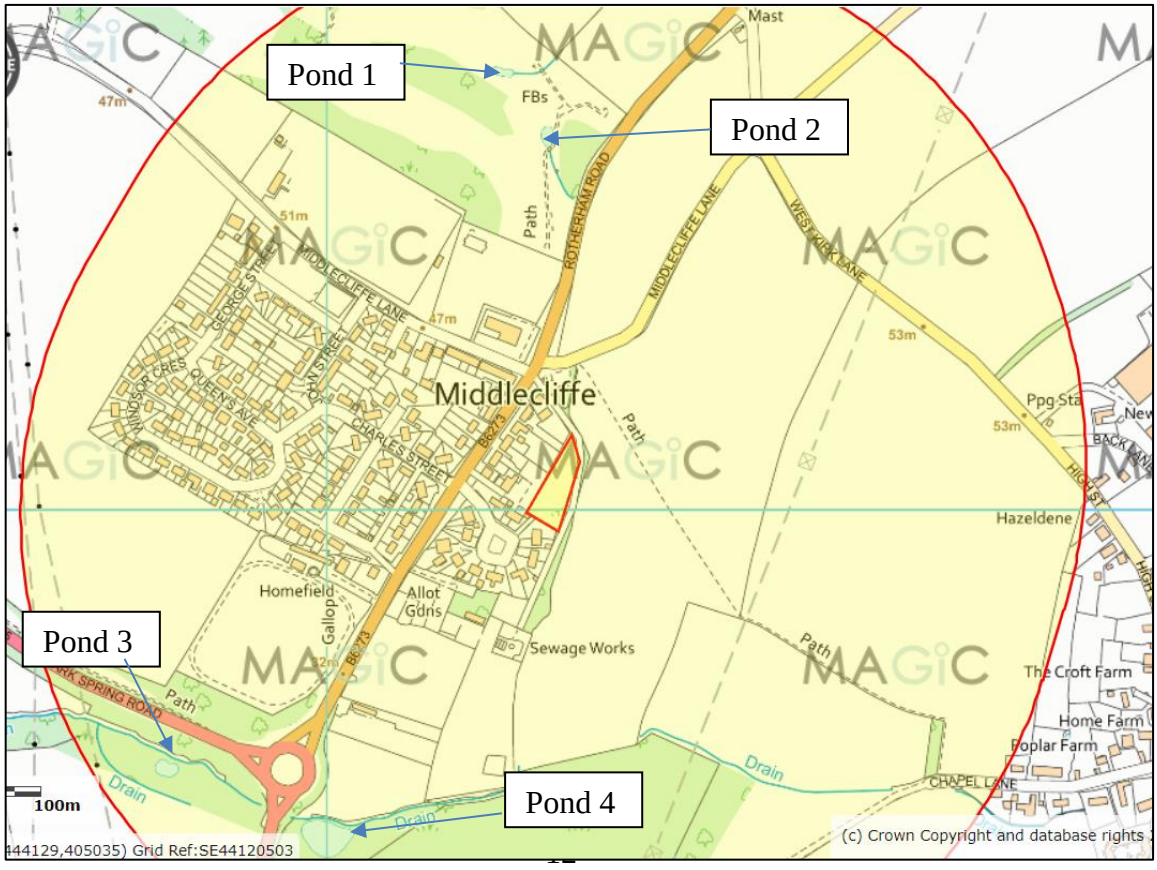
3.4.2. No evidence of water vole was identified during the survey. No watercourses were present on or adjacent to the site that could support this species.

3.4.3. No evidence of otter was identified during the survey. No watercourses were present on or adjacent to the site that could support this species.

3.4.4. No evidence of white-clawed crayfish was identified during the survey. No watercourses were present on or adjacent to the site that could support this species.

3.4.5. No evidence of bats was identified during the survey. No structures or trees were present on or adjacent to the site where bats could roost.

3.4.6. No evidence of great crested newt was identified during the survey. There were two ponds c.300m to the north of the site on private land and could not be assessed at the time and another two ponds c.350m to the south within an area of woodland.



3.4.10 HSI surveys for ponds 3 and 4 were undertaken the results of which are shown in the tables below. Pond 3 had an 'Average' score for great crested newt suitability and Pond 4 had a 'Poor' HSI score.

Pond 3		
SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.4
3	Pond permanence	0.1
4	Water quality	0.33
5	Shade	1
6	Waterfowl effect	1
7	Fish presence	1
8	Pond Density	0.9
9	Terrestrial habitat	0.67
10	Macropyhyte cover	0.8
HSI Score		**0.60**

Pond 4		
SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.9
3	Pond permanence	0.9
4	Water quality	0.67
5	Shade	0.6
6	Waterfowl effect	0.01
7	Fish presence	0.67
8	Pond Density	0.1
9	Terrestrial habitat	1
10	Macropyhyte cover	0.4
HSI Score		**0.39**

3.4.11. No non-native invasive Schedule 9 plants were identified on or adjacent to the site during the survey

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4. ASSESSMENT OF IMPACTS, MITIGATION AND RESIDUAL EFFECTS.

4.1. Designated Sites.

4.1.1 *Assessment.*

4.1.1.1. The proposed development is situated c.0.9km from Dearne Valley Wetlands SSSI and therefore within the boundary of the SSSI Impact Risk Zone. Despite the fact that the proposed development is situated within the SSSI Impact Risk Zone it is anticipated that the size and type of development proposed will have no impact on the integrity of the SSSI at this distance.

4.1.1.2. Broomhill Flash and Wombwell Ings Local Wildlife Site was situated c.1.8 km to the southwest of the site. The type and size of development proposed will have no effect on Broomhill Flash and Wombwell Ings LWS at this distance.

4.1.1.3. The site is situated within Dearne Valley Green Heart 'Nature Improvement Area' and therefore the proposed development will have to take this into consideration.

4.1.2. *Mitigation*.

4.1.2.1. The biodiversity net gain calculations have been adjusted to include the metric 'Within area formally identified in local strategy'. This will cater for the fact that the site lies within the Dearne Valley Green Heart 'Nature Improvement Area'.

4.1.2.2. No additional mitigation is deemed necessary with regards to Dearne Valley Wetlands SSSI or Broomhill Flash and Wombwell Ings Local Nature Reserve as the proposal is small in scale and situated far enough away that no impact will be caused.

4.1.3. *Residual Effects*.

4.1.3.1. The scale of the proposed development and impacts caused during the construction and throughout the lifetime of the proposal will have **No Residual Impact** on the integrity of any designated sites.

4.2. Habitats.

4.2.1. *Assessment.*
The habitats identified as neutral grassland and short ephemeral vegetation are to be lost in their entirety and will be replaced by areas of amenity grassland, buildings and built-up areas.

4.2.2. The total Baseline Biodiversity Units for area habitat on the site are shown in the table below.

Habitat	Area (Ha)	Condition	Connectivity	Biodiversity value
Amenity Grassland	0.01	Poor	Low	0.02
Short Ephemeral	0.02	Poor	Low	0.05
Neutral Grassland	0.21	Poor	Low	0.97
Total				1.04

4.2.3. The condition assessment for each habitat is based on the criteria set out in the Biodiversity Metric Technical Supplement. The condition assessment criteria for Amenity grassland is ‘poor’ as it only passes Condition Criteria 2. The site contains some early successional species composed of annuals and open grassland species.

4.2.4. The condition assessment for short ephemeral habitat is ‘Poor’ as it achieves 0 out of 7 possible condition assessment criteria and is classed as a Ruderal habitat with low biodiversity value.

4.2.5. The condition assessment for neutral grassland is poor as it only passes 1 out of 6 possible condition assessment criteria and more than 15% of the area is occupied by undesirable species such as creeping thistle and common nettle. A full list of the condition criteria for each habitat is shown as Appendix VIII this also shows how each habitat has also passed or failed to reach certain criteria.

4.2.6. The following table outlines the Baseline Biodiversity value of linear habitats on the site.

Habitat	Length	Condition	Connectivity	Biodiversity value
Native Hedgerow	95m	Moderate	Low	0.437
Total				0.437

4.2.7. The condition assessment for the native species hedgerow is moderate as it failed in only 3 out of 8 possible condition assessment criteria and did not fail both attributes in more than one functional group.

4.2.8. Mitigation.

According to most recent plans c.167m² of land will be set aside to plant mixed scrub habitat as reflected in the BNG calculations below.

4.2.9. The table below outlines the resultant biodiversity value of the site once the proposed development has been implemented.

Habitat	Area (Ha)	Condition	Connectivity	Biodiversity value
Urban developed land	0.12	N/A-Other	Low	0.00
Urban-vegetated garden	0.1033	Poor	Low	0.23
Mixed Scrub	0.0167	Moderate	Low	0.14
Total				0.37

4.2.10. As there is no provision at present to make changes to the linear habitat on site the biodiversity value of linear features will remain the same as the baseline condition.

Habitat	Length	Condition	Connectivity	Biodiversity value
Hedgerow	95m	Moderate	Low	0.437
Total				0.437

4.2.11. The dense scrub habitat on site has not been included in the baseline biodiversity calculation as the area coverage is too small to be included within the metric.

4.2.12. As the hedgerow habitat on site is being retained and not to be partially cleared it is considered unnecessary to carry out an assessment under the Hedgerow Regulation 1997.

4.2.13. *Residual Effects.*

Overall, the Biodiversity Value of the site 'area habitats' decreases from a baseline Biodiversity Value of 1.04 Bu to a Biodiversity Value of 0.37 Bu post development. No change has been proposed to the value of the hedgerow habitat which will retain its biodiversity value of 0.437Bu.

4.2.14. Overall, the changes to habitat on the proposed site represents a biodiversity net loss of approximately 64.51%. This loss in biodiversity value of the site is well below the required net gain for developments and represents an overall **Negative Residual Impact** on habitats post development of the site.

4.3. Species.

4.3.1. Bats

4.3.1.1. *Assessment.*

There were no potential bat roosts on or directly adjacent to the site. The loss of the neutral grassland habitat on site will result in a loss of some foraging habitat. The retention of hedgerow habitat on site will ensure connectivity throughout the landscape is maintained.

4.3.1.2. The proposal to construct residential dwellings on the site means that there is the potential for a low level of light spillage illuminating adjacent habitats on the site.

4.3.1.3. *Mitigation.*

If lighting is required for the proposal during the construction or post development phase, light spill will be contained within the site and not onto the adjacent hedgerow habitat.

4.3.1.4. The hedgerow habitat on site will be enhanced by filling in any gaps with native hedgerow species.

4.3.1.7. *Residual Effects.*

The enhancement of the hedgerow and additional native species planting will ensure that the level of foraging resource available for bats is maintained at a sustainable level and this combined with the provision of integrate bat boxes will result in an overall **Positive Residual Impact** for bats.

4.3.2. Great crested newts

4.3.2.1. *Assessment.*

4.3.2.2. Ponds 1 and 2 were assumed to have 'average' HSI score for great crested newt as they were situated on a well-maintained golf course with little terrestrial habitat. Both ponds are c.300m from site and are separated by two busy roads and residential development. It is not anticipated that any potential GCN at either of these ponds will commute to the site.

4.3.2.3. Pond 3 received an 'Average' HSI score and is separated from site by a busy road, a roundabout and residential development. It is not anticipated that any GCN from this pond will commute to the site.

4.3.2.4. Pond 4 received a 'Poor' HSI score as it is largely unsuitable for breeding GCN. This pond was c.350m to the south of the site and is separated by agricultural land and residential development. There is a narrow corridor of semi-natural habitat that connects this pond to site.

4.3.2.5. The bases of hedgerows and neutral grassland on site were sparse and offered little to no shelter for amphibians during their terrestrial phases. It is therefore anticipated that there will be a low risk of great crested newts or other amphibians being present on site.

4.3.2.6. *Mitigation*
As there is a low risk of great crested newt entering the proposed work area, it is recommended that some mitigation for this species is implemented to further reduce the impact to this species.

4.3.2.7. It is recommended that all vegetation clearance is kept higher than 150mm above ground level and a toolbox talk will be provided to all personnel operating on the site detailing how to identify this species and what to do in the event that one is discovered.

4.3.2.8. In the event that great crested newts are discovered on site then works will stop and Whitcher Wildlife will be contacted immediately to assess the situation.

4.3.2.9. *Residual Effects.*

With the proposed mitigation measures above implemented the proposed development will have **No Residual Impact** on great crested newts.

4.3.3. Birds

4.3.3.1. *Assessment*
The hedgerow and bramble habitat on site has the potential to support nesting birds between March and August. There is a risk of nesting birds being affected by the clearance or manipulation of these habitats on site if conducted during the bird nesting season.

4.3.3.2. *Mitigation*

Any work to remove the bramble or manipulate the hedgerow habitat will be conducted outside of the bird nesting season, which lasts from March till September. If this cannot be achieved, then the de-vegetation works will be preceded by a nesting bird check prior to being cleared or manipulated.

4.3.3.3. To mitigate for the loss of habitat available for nesting birds the site will be is enhanced by installing integrated bird nest boxes into the structure of the buildings. The integrated nest boxes will ensure that nesting habitat is provided throughout the lifetime of the structures.

4.3.3.4. *Residual Impact*

The provision of bird nest boxes on site will result in a **Positive Residual Impact** on nesting birds. Ensuring that the vegetation clearance works are conducted outside of the nesting season or proceeded by nesting bird survey will ensure that no active bird nests are impacted.

4.3.4. Reptiles

4.3.4.1. *Assessment*

The site is largely isolated from suitable habitat in the wider landscape where reptiles have been recorded, and only connected via narrow field margins and hedgerows, it is anticipated that there is a very remote risk of reptiles entering the proposed working area.

4.3.4.2. *Mitigation*

As there is a remote risk of reptiles entering the proposed work area, all vegetation clearance will be kept to a minimum of 150mm above ground level and a toolbox talk will be provided to all personnel operating on the site. The toolbox talk will include details on how to identify reptiles and what to do in the event that they are discovered.

4.3.4.4. In the event that reptiles are discovered on site then works must stop and Whitcher Wildlife must be contacted immediately to assess the situation.

4.3.4.5. *Residual Effects*. With the above mitigation measures implemented, the proposed development will result in **No Residual Impact** on reptiles.

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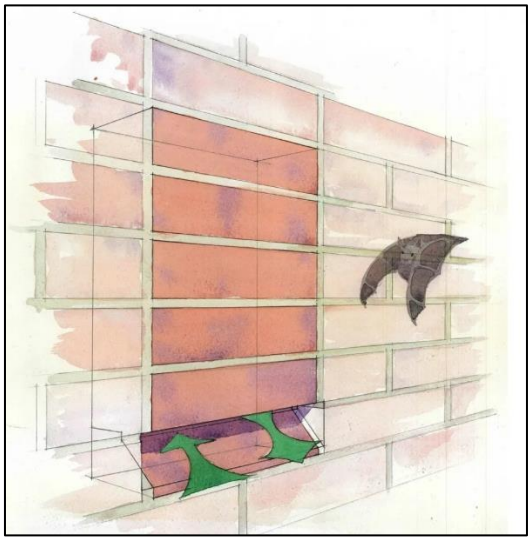
5. COMPENSATION AND ENHANCEMENT MEASURES.

5.1. In line with the National Planning Policy Framework there will be a requirement to provide some biodiversity enhancements on the site. The following enhancements will be implemented:

5.2. To enhance the value of the site for bats, integrated bat boxes will be incorporated into the design of the proposed buildings on site. Integrated bat boxes are built directly into the brickwork of the building. One Integrated bat box will be installed in 10% of the properties. The Habibat boxes range are recommended as these match the finish of the wall so are more discrete.



5.3 The provision of integrated bird boxes will also be incorporated into the design of the proposed buildings on site. As with the above this type of box is built directly into the brickwork of the building. Installing one bird box into 10% of properties will greatly enhance the site for birds.

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Prepared by:	
Matthew Moore	Date: 24th February 2022

Checked by:	
Derek Whitcher, BSc, MCIEEM, MCMI	Date: 24th February 2022.

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Appendix I. 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 of 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 II. GREAT CRESTED NEWT INFORMATION.

Ecology

Great Crested Newts breed in ponds and other water bodies. They can begin to migrate to their breeding ponds as early as the first frost-free days in late January with the majority reaching their breeding ponds by mid-March. Timing will be influenced by several factors, primarily evening temperatures above 5^{o}C and rainfall.

The peak egg-laying period is from mid-March to mid-May. The newts will lay their eggs individually, mainly on the leaves of submerged plants. The larva hatch after three weeks and then take another 2-3 months to complete larval development. Adult newts generally leave their breeding ponds from late May onwards.

Once the larvae have completed metamorphosis (the transition from aquatic larvae, efts, to land-adapted juveniles), they emerge from the pond. This emergence begins in late August and generally continues until late October. It takes 2-4 years to reach sexual maturity, during which time the newts will be land based.

Adults and immature newts spend the winter in places that afford protection from frost and flooding. This will generally be underground amongst tree roots, in mammal burrows, or under suitable refuges above ground like deadwood or rubble piles. Hibernation may last from October to February.

Whilst on land, outside the hibernation period, great crested newts will forage at night, taking a wide range of invertebrate prey.

Great Crested Newts therefore spend the majority of their time on land and only visit the ponds for breeding purposes.

Great Crested Newts will travel large distances between ponds and terrestrial refuges. It is recommended that anywhere within 500m of a pond should be treated as potential Great Crested Newt habitat.

Surveys

Walkover surveys will identify the suitability of any ponds within the area for Great Crested Newts by using a HSI assessment. The terrestrial habitat and their links will also be assessed.

Aquatic surveys of newts can be carried out through the trapping of ponds in suitable weather conditions during the breeding season, although these surveys do not provide accurate population estimates.

Terrestrial surveys and exclusions can be conducted between March and September when newts are moving out of breeding ponds.

An experienced surveyor must carry out the surveys and must be in possession of an appropriate Natural England Great Crested Newt survey license.

It is essential that Great Crested Newt surveys are planned well in advance of any development and ideally before Planning Consent is sought. Surveys can only be carried out at the appropriate time of year and repeat surveys are essential.

Legislation

Great Crested Newts are protected under Appendix II of the BERN Convention (1982), Schedule 5 of the Wildlife and Countryside Act (1981), Annex II and IV of the Habitats Directive, Annex II of the Conservation and Wildlife Regulations (2010) and are listed under section 41 of the Natural Environment and Communities Act (2006) making them a species of principal importance.

This makes it an offence to kill, injure or take any Great Crested Newt, to interfere with any place used for shelter or protection, or to intentionally disturb any animal occupying such a place.

If Great Crested Newts are to be effected by any development, a thorough assessment of the population is essential followed by the design of a comprehensive mitigation package. Only when this has been done can a license application be submitted to Natural England for approval. It takes 30 working days for a license application to be determined and the period that mitigation measures take can be measured in months. It is therefore essential to plan well in advance of development commencing.

Appendix III. 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 IV. REPTILE INFORMATION.

Ecology

There are five main species of reptile that reside in the UK; Common or Viviparous Lizard (*Lacerta vivipara*); Sand Lizard (*Lacerta agilis*); Slow Worm *(Anguis fragilis*); Grass Snake (*Natrix natrix*) and Adder (*Vipera berus*). The Adder is the only native species that is venomous although this is rarely harmful to humans.

Reptiles occupy a wide range of habitats including woodland, marshes, heathland, moors, sand dunes, hedgerows and bogs. Sand Lizards are confined to moorland and coastal sand dunes where they lay their eggs in the warm sand. The range of the Sand Lizard in the UK is therefore very limited. Slow Worms can be found in a wide variety of habitats throughout Britain and is the most likely reptile to be found in urban and suburban environments.

Maintaining the right body temperature is vital to reptiles' survival. In the morning, they find a warm basking site to heat up their bodies, then later they may move back into the shade because they do not sweat and have to be careful not to overheat. During hot summers, Adders will try to move to damper, cooler sites.

Over winter reptiles will hibernate in burrows or under longs where they are protected from the cold and predators, emerging from February onwards as the weather warms up.

Reptiles generally begin to mate April to May with young born in late July to September. The Common Lizard gives birth to live young, hence the term viviparous, meaning live bearing.

Surveys

Reptile surveys involve the searching of refuge such as logs and stones for any animal sheltering below. Artificial refuge may be laid out on site for the purpose of reptile surveys.

Legislation

Reptiles are protected under Appendix II (sand lizards) and Appendix III (common lizard, slow worms, smooth snake, grass snake and adders) of the BERN Convention (1982), partially protected under Schedule 5 of the Wildlife and Countryside Act (1981), Annex IV of the Habitats Directive and are all listed under section 41 of the Natural Environment and Communities Act (2006) making them a species of principal importance.

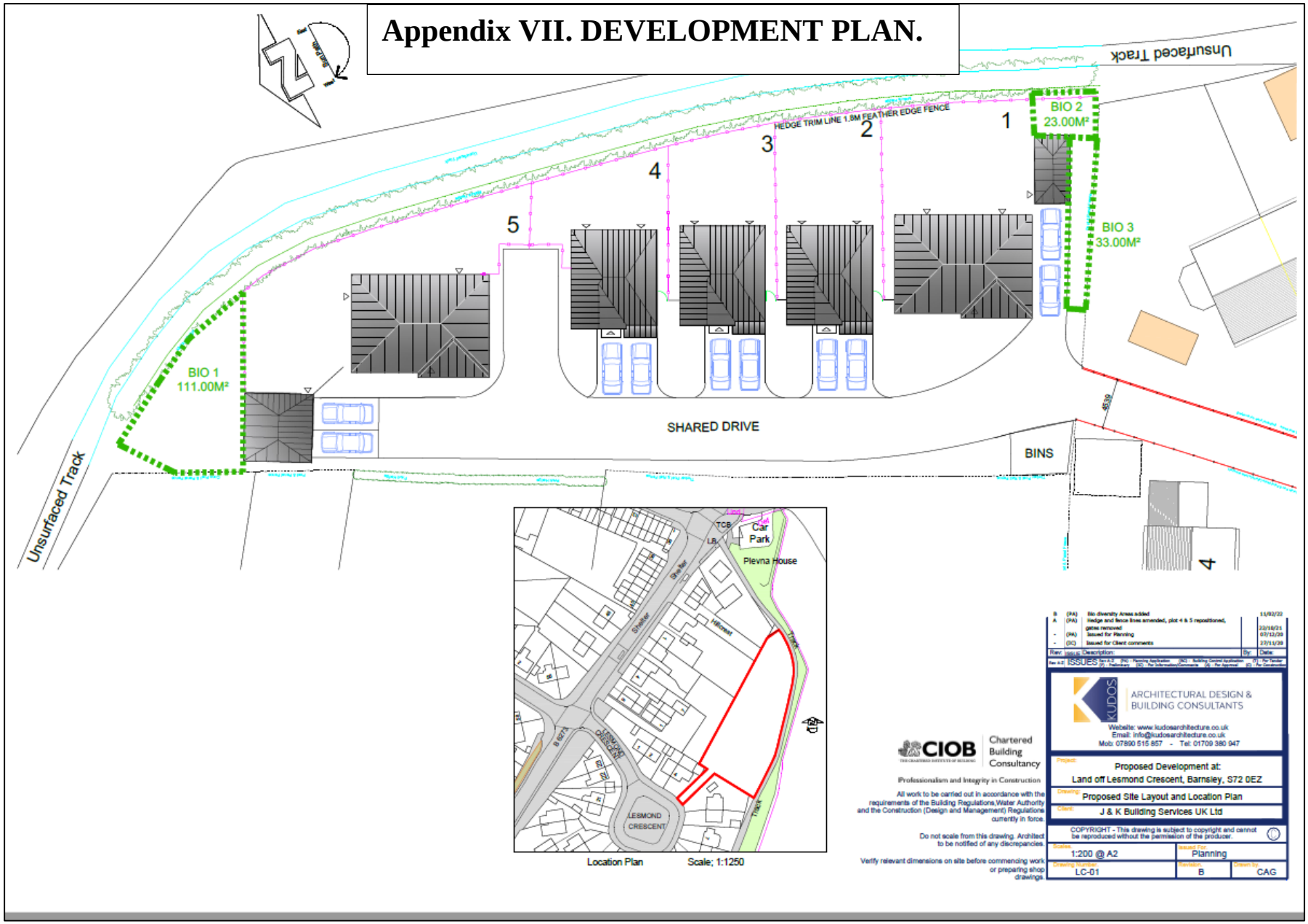
This makes it an offence to disturb any reptile while it is occupying a structure or place it uses for shelter or protection or to obstruct access to such a place.

Appendix V. ANNOTATED MAP OF THE SURVEY AREA

Appendix VI. TARGET NOTES.

Target Note 1. Dense Scrub (Bramble) habitat.

Appendix VII. DEVELOPMENT PLAN.



Appendix VIII: BNG HABITAT CONDITION CRITERIA.

Condition Assessment Criteria: Amenity Grassland (Urban-Amenity grassland UKHAB)	Pass/Fail
1. Known history of disturbance at the site or evidence that soil has been removed or severely modified by previous use(s) of the site. Extraneous materials/substrates such as industrial spoil may have been added which in turn has led to a low nutrient environment.	Fail
2. The site contains some vegetation. This will comprise of early successional communities consisting mainly of stress-tolerant species (e.g. indicative of low nutrient status or drought). Early successional communities are composed of (a) annuals, or (b) mosses/liverworts, or (c) lichens, or (d) ruderals, or (e) inundation species, or (f) open grassland, or (g) flower-rich grassland, or (h) heathland.	Pass
3. The site contains unvegetated, loose bare substrate and pools may be present and desirable.	Fail

Condition Assessment Criteria: Short Ephemeral (Sparely vegetated land Ruderal/Ephemeral UKHAB).	Pass/Fail
1. There should be no evidence of damage to the pavement surface.	Fail
2. Cover of typical emergent pavement flora and clint-top vegetation should account for at least 25% of total vegetation cover (i.e. excluding bare rock).	Fail
3. Cover of all undesirable herbaceous species (false oat-grass, crested dog's-tail, brambles, creeping thistle, spear thistle, curled dock, broad-leaved dock, common ragwort, common nettle and other pernicious perennial species) should be less than 5%.	Fail
4. Cover of undesirable woody species (sycamore, beech, blackthorn and cotoneasters) should be less than 10% of the woody cover.	Fail
5. Cover of bracken, scrub and trees less than 25%.	Fail
6. Cover of weed (for example, creeping and spear thistles, docks, brambles, common ragwort and common nettle) or non-native species less than 1%.	Fail
7. Less than 50% of live leaves (broad-leaved plants), fronds (ferns) or shoots (dwarf shrubs) show signs of grazing or browsing.	Fail
Condition Poor	
• Ruderal Habitat with low biodiversity value. • Most of the condition criteria are being failed.	

Condition Assessment Criteria: Neutral Grassland	
1. The area is clearly and easily recognisable as a good example of this type of habitat and there is little difference between what is described in the relevant habitat classifications and what is visible on site.	Fail
2. The appearance and composition of the vegetation on site should very closely match the characteristics for the specific Priority Habitat [i.e as described by either the Phase 1 Habitat Classification or the UK Habitat Classification], with species typical of the habitat representing a significant majority of the vegetation.	Fail
3. Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency. See relevant Habitat Classification for details of indicator species for specific habitat.	Pass
4. Undesirable species and physical damage is below 5% cover.	Fail
5. Cover of bare ground greater than 10% (including localised areas, for example, rabbit warrens).	Fail
6. Cover of bracken less than 20% and cover of scrub and bramble less than 5%.	Fail