

Abbott Road, North West of
Mansfield

Ecological Impact Assessment (Low
Impact EclA)



Client:

Arc Property Services Partnership
Ltd

Report Reference:

RSE_5579_R1_V1_LECIA

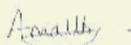
Issue Date:

December 2021

PROJECT

Client:	Arc Property Services Partnership Ltd.
Project:	Abbott Road, North West of Mansfield
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Report Title	Ecological Impact Appraisal (Low Impact)

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1 EXECUTIVE SUMMARY

1.1 Background

- i RammSanderson Ecology Ltd was instructed by Arc Property Services Partnership Ltd. to carry out a Preliminary Ecological Appraisal of Land off Abbott Road, Northwest of Mansfield to inform a residential development.
- ii The site formed a residential house with associated hardstanding, garden and paddock. The site also formed a public footpath and a public amenity grassland field with associated hedgerows, scrub, ruderal and trees. The site was considered to be of limited ecological value with no further surveys recommended.

Table 1: Summary of Ecological Features

Ecological Feature	Comment	Avoidance	Mitigation	Compensation/Enhancement	Residual Impact
Designated Sites	The site falls within the IRZ zones of Teversal Pastures SSSI and Strawberry Gardens SSSI, however the proposals are not of a type included.	N/A	N/A	N/A	N/A
Habitats	The majority of the habitats on site that are likely to be impacted are managed grasslands and ornamental areas only of limited ecological value. Trees and hedgerows of high ecological value.	N/A	Retention of hedgerow and trees in accordance with root protection areas.	N/A	Negligible
Great Crested Newt	No suitable habitats on site of within Zol.	N/A	N/A	N/A	N/A
Bats	The trees on site offer negligible scope for roosting. The site is already heavily influence by street lighting being adjacent to Abbott Road and would be considered to be of low value for foraging bats	N/A	Avoidance of light spill onto the adjacent railway corridor which will form a dark corridor in the area. Lighting requirements of the new car park area should be carefully considered and avoided where possible.	No	Negligible to Low

Ecological Feature	Comment	Avoidance	Mitigation	Compensation/Enhancement	Residual Impact
	B1 assessed as having negligible to low potential with one superficial feature.		Before demolition of building, feature inspected by bat licenced ecologist and subsequent roof strip in accordance with a precautionary method of works.		
Badger	No evidence on site. Potential for foraging and commuting badger.		Best practice should be followed during works for any large mammals that may pass through the site.	N/A	Negligible
Birds	The scattered trees and hedgerows have some scope for bird nesting provision.	N/A	Vegetation clearance should be completed during the period Sept-end Feb to avoid nesting birds. Where this is not possible	N/A	N/A
Reptiles	Limited working area of negligible value for reptiles	N/A	N/A	N/A	N/A
Water Vole and Otter	No suitable habitats on site of within Zol	N/A	N/A	N/A	N/A
Principal Species	Species such as hedgehog are potentially present locally but no habitat impacts are proposed.	N/A	N/A	N/A	N/A
Invasive Species	Butterfly bush (<i>Buddleia</i>) recorded on site.	N/A	Removal prior to development recommended.	N/A	N/A

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2 INTRODUCTION AND BACKGROUND

2.1 Purpose and Scope of this Report

- i RammSanderson Ecology Ltd was commissioned by Arc Property Services Partnership Ltd to assess the potential for protected species and habitats to be present on the site of proposed residential development at land off Abbott Road, North West of Mansfield.
- ii To complete an EclA of the proposals, a desk-based assessment, Extended Phase 1 Habitat Survey and protected species assessments were carried out based upon the findings of the Preliminary Ecological Appraisal (PEA). This report is a stand-alone EclA which has been prepared following current guidance (CIEEM, 2018) and can be used to lawfully determine a planning application in line with current planning policy. This report does not form part of a wider discipline Environmental Impact Assessment (EIA) of Environmental Statement (ES), nor does it confer the need for any such documentation.
- iii The study area was defined depending on the proposals, desk study and applicable legislation (Appendix 1) as shown in the enclosed Site Location Plan (Figure 1) and Phase 1 Habitat plan (Figure 2) plus a buffer zone extended to include the Zone of Influence (see section below) of the proposals (hereafter referred to as the "Site").
- iv This ecological impact assessment is based on a review of the development proposals provided by the Client, which is currently absent of a drawing, desk study data (third party information) and surveys of the Site. The aims of this report are to:
 - Classify the habitat types at the site based on standard Phase 1 Habitat survey methodology;
 - Evaluate any potential for protected species to be present;
 - Identify any ecological constraints that may affect the scheme design;
 - Provide recommendations for any further actions that might be required (for example, to monitor badger setts periodically through construction);
 - Identify likely significant effects on ecological receptors;
 - Assess if the proposals are compliant with legislation and policy relating to biodiversity; and
 - Identify opportunities for ecological enhancement to provide net biodiversity gain in line with the Environment Act (2021) and National Planning Policy Framework (NPPF, 2021).
- v This report pertains to these results only; recommendations included within this report are the professional opinion of an experienced ecologist and therefore the view of RammSanderson Ecology Ltd.
- vi The surveys and desk-based assessments undertaken as part of this review and subsequent report including the Ecological Constraints and Opportunities Plan are prepared in accordance with the British Standard for Biodiversity Code of Practice for Planning and Development (BS42020:2013) and follow current guidance (CIEEM, 2018).

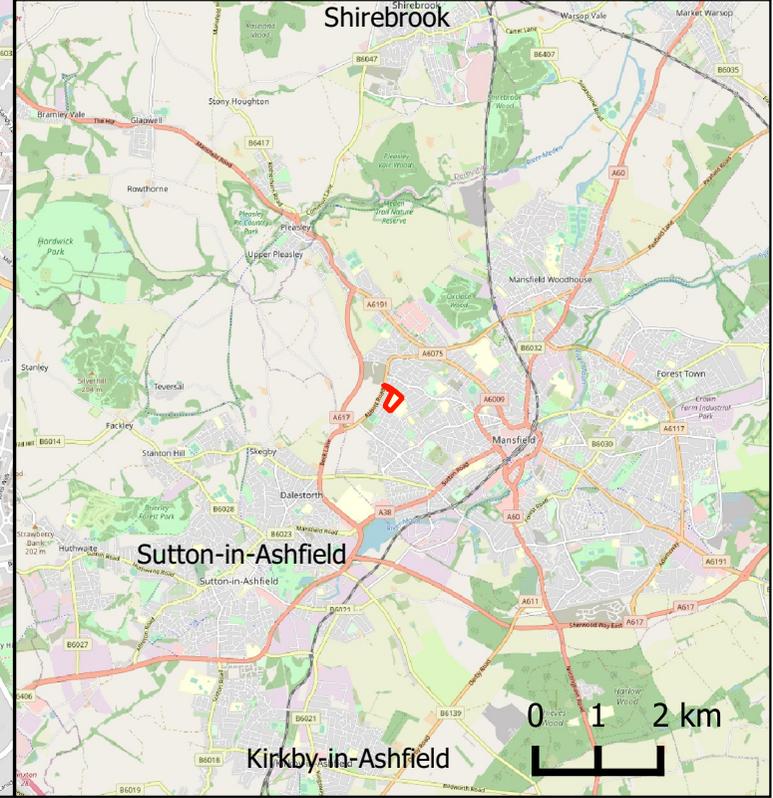
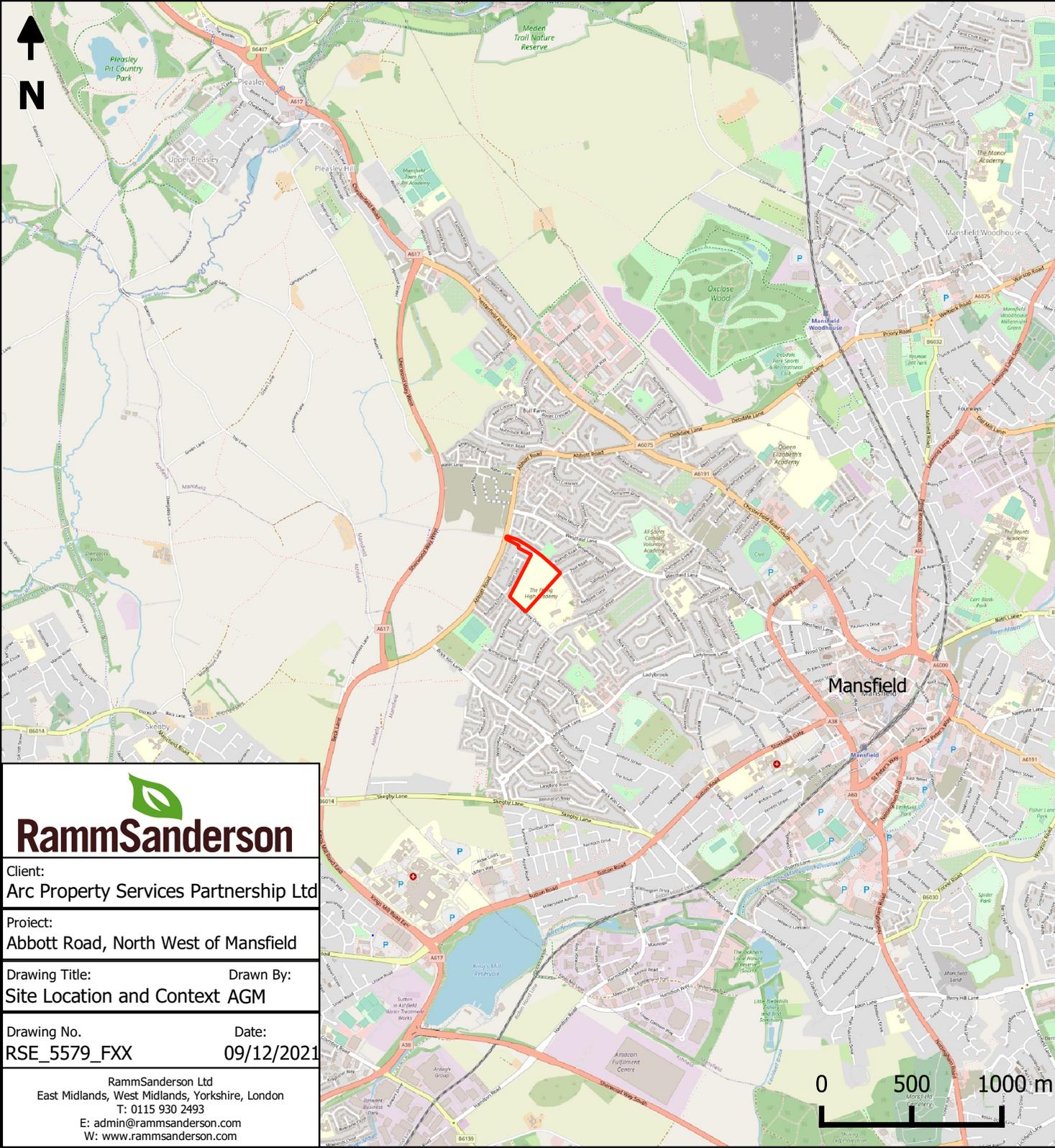
2.2 Zone of Influence

- i The Zone of Influence (Zol) is used to describe the geographic extent of potential impacts of a proposed development. The Zone is determined by the development proposals in relation to individual species ecological requirements indicated in best practice guidelines.
- ii In relation to great crested newts (GCN), the zone of influence is considered to be up to 500m from the site boundaries, as this is the distance that Natural England would require to be considered in relation to GCN licensing. Guidance set out within Natural England's Method Statement template, to be used when applying for a Great Crested Newt development licence, states that surveys of ponds within 500m of the site boundary are only required when '(a) data indicates that the pond(s) has potential to support a large great crested newt population, (b) the footprint contains particularly favourable habitat, (c) the development would have a

- substantial negative effect on that habitat and (d) there is an absence of dispersal barriers.' As the site is dominated by short amenity grassland and hardstanding, a 250m is sufficient.
- iii For badgers, the zone of influence is typically 30-50m from the Site boundary as this is the distance within which a sett can be damaged or disturbed by heavy machinery.
 - iv As bats are highly mobile species, the Zol for these can be 5km from a site wherein high-quality habitat will be impacted by proposals.
 - v For designated sites, the Zone of Influence can be >10km from the site and this is termed the Impact Risk Zone (IRZ). Where sites occur within an IRZ the requirement for a Habitat's Regulations Assessment or Environmental Impact Assessment may be triggered.

2.3 Site Context and Location

- i The site is located off Abbott Road within a residential area North West of Mansfield (grid reference SK 51842 61789). It forms a residential house with associated garden, as well as a public field. In general there is a reasonable connectivity to the wider environment, in particular for aerial species such as bird and bat. Nottingham was located south of the site and Chesterfield north west.



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Client:
Arc Property Services Partnership Ltd

Project:
Abbott Road, North West of Mansfield

Drawing Title: Drawn By:
Site Location and Context AGM

Drawing No. Date:
RSE_5579_FXX 09/12/2021

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3 METHODOLOGY

3.1 Ecological impact Assessment

i The ecological impact assessment is based on the standard best practice methodology provided by the Guidelines for Ecological impact Assessment (CIEEM, 2018). The assessment identifies important sites, habitats, species and other ecological features that are of conservation value based on factors such as legal protection, statutory or local site designations such as Sites of Special Scientific Interest (SSSI) or Local Wildlife Sites (LWS) or inclusion on Red Data Book Lists or Local Biodiversity Action Plans.

ii The importance of an ecological feature is considered within a defined geographical context. The following frame of reference is used, or adapted to suit local circumstances:

- International and European
 - National
 - Regional
 - Metropolitan, County, vice-county or other local authority-wide area
 - River Basin District
 - Estuarine system/Coastal cell
 - Local
 - Below Local level e.g. on site only
- Importance

High Importance



Negligible

iii Consideration of impacts at all scales is important, and essential if objectives for no net loss of biodiversity and maintenance of healthy ecosystems are to be achieved. In identifying impacts, the review considers the Client's Site proposals and any subsequent recommendations made are proportionate / appropriate to the site and have considered the Mitigation Hierarchy as identified below:

- **Avoid:** Provide advice on how the development may proceed by avoiding impacts to any species or sites by either consideration of site design or identification of an alternative option.
- **Mitigate:** Where avoidance cannot be implemented mitigation proposals are put forward to minimise impacts to species or sites as a result of the proposals. Mitigation put forward is proportionate to the site.
- **Compensate:** Where avoidance cannot be achieved any mitigation strategy will consider the requirements for site compensatory measures.
- **Enhance:** The assessment refers to planning policy guidance (e.g. NPPF) to relate the ecological value of the site and identify appropriate and proportionate ecological enhancement in line with both national and local policy.

iv For the purpose of this EclA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' (explained in 3.1.i.) or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects are considered significant at the range of scales from international to local. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the ecological consequences of the project are understood. In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).

v Note: The following definitions are used for the terms 'impact' and 'effect' throughout this report:

- **Impact** – Actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow.

- **Effect** – Outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow.

3.2 Desk Based Assessment

- Data regarding statutory and non-statutory designated sites, plus any records of protected or Priority species and habitats was requested from the local ecological records centre and online resources, details of which are provided in Table 2 below.

Table 2: Consulted resources

Consultee/Resource	Data Sought	Search Radius from Boundary
Nottinghamshire Biological and Geological Records Centre	Non-Statutory Site Designations	2km
	Protected/Principal Species Records	2km
www.magic.gov.uk ^{1 2}	Statutory Site Designations (Impact Risk Zones)	20km
	Habitats of Principal Importance (NERC Act, 2006)	1km
	European Protected Species Licences	5km

NB: Desk study data is third party controlled data, purchased or consulted for the purposes of this report only. RammSanderson Ecology Ltd cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

3.3 Phase 1 Habitat Survey

- An extended Phase 1 Habitat Survey of the site was completed to identify habitats present. All habitats within the site boundary were described and mapped following standard Phase 1 Habitat Survey methodology (JNCC, 2010), which categorises habitat type through the identification of individual plant species.
- Nomenclature follows Stace (Stace, 2010) for vascular plant species and the DAFOR scale for relative abundance was used in the field to determine dominant plants within habitats and communities (D = dominant, A = abundant, F = frequent, O = occasional and R = rare).

3.4 Protected / Priority Species Scoping Assessment

- The habitats on site were assessed for their suitability for supporting any legally protected or Priority species that would be affected by the proposed development. This includes invasive non-native plant species such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*).

3.5 Limitations

- It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.

¹ Multi Agency Geographic Information for the Countryside Interactive GIS Map.

² MAGIC resource was reviewed on the 30/03/2020

3.6 Accurate lifespan of ecological data

- i The majority of ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for approximately 18 months from the date of survey, notwithstanding any considerable changes to the site conditions, the presence of mobile species such as bats, otters and badgers or where species/county specific guidance dictates otherwise (CIEEM, 2019).

4 BASELINE CONDITIONS

4.1 Surveyors Competency and Survey Conditions

- i The survey was carried out by Aleah Maltby MSc. Aleah has been a professional ecologist since 2018 and holds a class one licence for great crested newts (2021-53915-CLS-CLS). The survey was completed during suitable conditions as detailed in the table below.

Table 3: Summary of conditions during survey

Abiotic Factor	Survey 1
Survey type	PEA
Date completed	26/11/2021
Temperature (°C)	10
Wind speed (Beaufort Scale)	2
Cloud cover (Oktas Scale)	2
Precipitation	0

4.2 Designated Sites

4.2.1 Statutory Designated Sites and Non-Statutory Designated Sites³

- i The nearest statutory designated site is The Hermitage Local Nature Reserve (LNR), located 1.7km south of the site. Furthermore, the site falls within the Impact Risk Zones for Teversal Pastures SSSI and Strawberry Gardens SSSI.
- ii The nearest non-statutorily designated site was Cotton Plantation LWS, located 1.1km north-west of the site, designated for its noteworthy wet woodland.

4.3 Field Survey Results

- i The survey area comprised a residential house, with associated garden, hedgerows and scattered trees. The rest of the site was an amenity public field with associated hedgerows, trees and scrub.
- ii Habitats types detailed below are listed in order of the JNCC (2010) Handbook. The species list provided in this report reflect only those taxa observed during the survey.

³ Full desk study results are provided in Appendix 5.

Table 4: Results of Phase 1 Site Survey

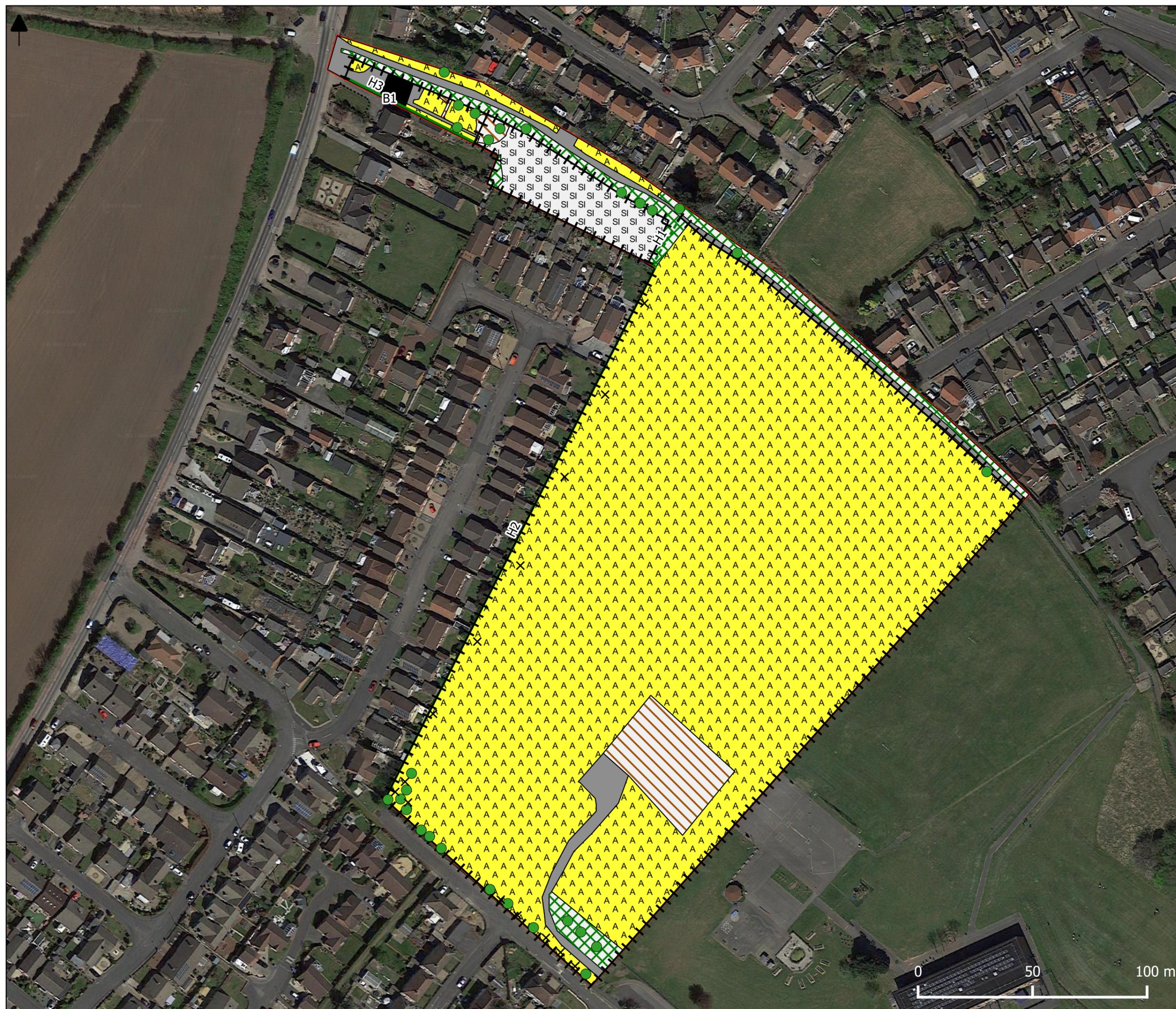
Habitat	Description	Area (m ²)	Proportion of site (%)	Ecological Importance	Photograph
A2.1 Dense Scrub	Dense scrub was present along the borders of the public path to the north of the site, as well as in patches within the public field. This consisted of bramble (<i>Rubus fruticosus agg.</i>) and nettle (<i>Urtica dioica</i>) predominantly.	1893	4	Of low ecological value	
A3.1 Broadleaved Scattered Trees	Irregularly planted throughout the site were multiple semi-mature and mature trees such as Horse chestnut (<i>Aesculus hippocastanum</i>), ash (<i>Fraxinus excelsior</i>), willow (<i>Salix</i>), hawthorn (<i>Crataegus monogyna</i>), red cedar (<i>Thuja plicata</i>), silver birch (<i>Betula pendula</i>) and hazel (<i>Corylus avellana</i>).	N/A	N/A	Of high overall ecological value	

Habitat	Description	Area (m ²)	Proportion of site (%)	Ecological Importance	Photograph
B6 Poor semi-improved grassland	Poor semi-improved grassland was present in the paddock east of the house. The sward height was approximately 15-30cm and it appeared to be managed infrequently. The grassland consisted of abundant false oat grass (<i>Arrhenatherum elatius</i>), fescue (<i>Festuca</i> sp, and ribwort plantain (<i>Plantago lanceolata</i>). Frequently occurring within the sward were creeping buttercup (<i>Ranunculus repens</i>), cow parsley (<i>Anthriscus sylvestris</i>), red clover (<i>Trifolium pratense</i>) and yarrow (<i>Achillea millefolium</i>), with occasional hogweed (<i>Heracleum sphondylium</i>), ragwort (<i>Jacobaea vulgaris</i>) and vetch (<i>Vicia</i>). Rarely occurring was white dead nettle (<i>Lamium album</i>).	1848	4	Of low ecological value	
C3.1 Tall ruderal	An area of scattered tall ruderal was present within the public amenity field, consisting of butterfly bush (<i>Buddleia</i>) and goat willow (<i>Salix caprea</i>) saplings. An area of tall ruderal was also noted in the residential garden which consisted of willowherb (<i>Epilobium</i>).	1814	4	Of low ecological value	

Habitat	Description	Area (m ²)	Proportion of site (%)	Ecological Importance	Photograph
J1.2 Amenity Grassland	<p>An area of amenity grassland made up the garden of the residential house. This was dominated by perennial rye (<i>Lolium perenne</i>) and fescue. Dandelion (<i>Taraxacum</i>), creeping buttercup and ribwort plantain frequented the sward, with occasional daisy (<i>Bellis perennis</i>), yarrow and ragwort. Bracken was present in some areas.</p> <p>The public residential field also consisted of amenity grassland. This was dominated by perennial rye, with frequent yarrow, clover and ribwort plantain. Occasional dandelion, creeping thistle (<i>Cirsium arvense</i>), false oat grass and nettle at the verges were noted. Rarely occurring within the sward were hogweed and ragwort.</p>	42554	85	Of low ecological value.	
J1.4 Introduced Shrub	<p>Some introduced shrub was located within the garden and this consisted of viburnum, box (<i>Buxus</i>) and love vine (<i>Cassytha filiformis</i>).</p>	18	0.01	Negligible ecological value	

Habitat	Description	Area (m ²)	Proportion of site (%)	Ecological Importance	Photograph
J3.6 Buildings	A residential house was located on site. Further details of this building with regard to its bat assessment are provided in Section 4.6.3 and Appendix 3.	130	0.01	Of low ecological value	
J2.1.2 Intact Hedge – Species Poor	<p>H2 was a section of hedgerows from the multiple residential gardens bordering the public field to the west. This consisted of multiple heights, widths and species. The species composition was red cedar, box, cherry laurel (<i>Prunus laurocerasus</i>) and holly (<i>Ilex</i>).</p> <p>H3 was located within the residential house west of the public field and was 1.5m in height and 1m in width. This consisted of arborvitae and appeared regularly managed.</p>	N/A	N/A	Of high ecological value.	

Habitat	Description	Area (m ²)	Proportion of site (%)	Ecological Importance	Photograph
J2.2.2 Defunct Hedge – Species Poor	H1 was a small defunct hedgerow located at the north western corner of the public field near the entrance. It was approximately 4m in height and 1m in width, appearing unmanaged. The species composition consisted of elder (<i>Sambucus nigra</i>) and hawthorn with English ivy (<i>Hedera helix</i>).	N/A	N/A	Of high ecological value.	
J6 Hard standing	Hardstanding was located near the residential house as the associated driveway and garden areas, as well as making up the footpath to the north leading to the public field.	1877	4	Of negligible ecological value.	
Non-native species	Butterfly bush (<i>Buddleia</i>) was recorded on site which is a Schedule 9 species of the WCA 1981.	N/A	N/A	Of negligible ecological value.	



Key

- Boundary
- Phase 1 Habitats**
- A2.1 - Scrub - dense/continuous
- B6 - Poor semi-improved grassland
- C3.1 - Other tall herb and fern - ruderal
- J1.2 - Cultivated land - amenity grassland
- J1.4 - Introduced shrub
- J3.6 - Buildings
- J6 - Hard Standing
- Phase 1 Lines**
- J2.1.2 - Intact hedge - species-poor
- J2.2.2 - Defunct hedge - species-poor
- J2.4 - Fence
- Phase 1 Points**
- Scattered Tree
- × Scattered Scrub



Client:
Arc Property Services Partnership Ltd.

Project:
Abbott Road, North West of Mansfield

Drawing Title:
Phase 1 Habitat Plan

Drawing No. RSE_5579_PH1 Rev: V1

Drawn By: AGM Scale: 1:1500 Date: 09/12/2021



5 IMPACTS AND MITIGATION (CUMULATIVE AND/OR IN ISOLATION)

5.1 Planning Application Search

- i A planning application search was not conducted for this site as affects upon all ecological receptors were nugatory and so would not act in synergy with other proposals. Therefore, an evaluation of cumulative effects was deemed disproportionate as an assessment of impacts can be made in the absence of this data.

5.2 Habitats

- i The habitats on site were of limited ecological value. It is likely that some grassland and tree removal is required to facilitate the proposals however this is not considered to represent a significant ecological impact owing to their overall low value and the context of the site.

5.2.2 Invasive / Non-native Species

- ii Butterfly bush (*Buddleia*) was recorded on site which is a Schedule 9 invasive species in the Wildlife and Countryside Act 1981.

5.3 Statutorily and Non-Statutorily Designated Sites

- i Minimal impacts upon designated sites are anticipated from the proposals as it is not within any SSSI IRZ and proposals are localised to an already residential area. Furthermore, the designated sites are considered too far afield to be impacted by proposals.

5.4 Fauna

5.4.1 Great Crested Newts

- i There were five waterbodies located within 500m of the site boundary. An old garden pond was noted within the garden of the residential house on site, which had been grated over and overgrown with vegetation. This was not considered suitable to support terrestrial or breeding GCN and was not considered further. Ponds 1, 2 and 3 were considered to be beyond a significant barrier to dispersal via Abbott Road, and furthermore Ponds 4 and 5 were deemed to be isolated residential ponds. The habitats on site provided some, albeit limited, foraging and commuting opportunity for terrestrial phase GCN, with the habitats being of a frequently managed and residential nature. Overall, the site was considered unlikely to support GCN and no further survey or mitigation is considered necessary. Appendix 4 identifies the site water body plan with 500m zone of influence.

5.4.2 Bats

Bat Tree Roosts

- ii None of the trees on site offered scope for roosting bats.

Bat Foraging Habitat

- iii The urbanised site is already influenced by street lighting from Abbott Road and neighbouring developments. When assessed against criteria in best practice guidelines (Collins J., eds, 2016) the site was considered to offer low quality foraging and commuting habitat for bats. As such further survey of the site for bat foraging is considered entirely unnecessary and disproportionate for this urbanised location. However, efforts should be made within the proposals to minimise effects of lighting. If avoidance is not possible (which is probable for this location owing to public health and safety), light spill should be minimised and should follow the

guidance set out in Bats and Lighting in the UK (BCT and ILP, 2018). Therefore, associated site lighting proposals must consider the following:

- Avoid lighting where possible;
- Install lamps and the lowest permissible density;
- Lamps should be positioned to direct light to avoid upward spill onto any green corridors that could be used by commuting bats or features with bat roost potential;
- LED lighting – with no/low UV component is recommended;
- Lights with a warm colour temperature – 3000K or 2700K have significantly less impact on bats;
- Light sources that peak higher than 550nm also reduce impacts to bats; and
- The use of timers and dimmers to avoid lighting areas of the site all night is recommended.

5.4.3 Bat Building Roost

- iv The residential house on site (B1) was assessed for its potential to support roosting bats. B1 was assessed as having a negligible to low potential to support roosting bats, owing to the presence of a section of failed mortar at the ridge of the western elevation. This is likely a superficial feature, with the potential at most to support one or two individual opportunistic bats. The rest of the building was in a good state of repair, with no other potential features noted.

5.4.4 Birds

- v The scattered trees provide suitable habitat for nesting birds. However, these would be restricted to common garden species and do not provide scope for Schedule 1 bird species or notable populations of Birds of Conservation Concern (BoCC).
- vi Any tree management works or vegetation clearance should take place outside the bird nesting season (which runs March to September inclusive) to ensure compliance with the general protection afforded to wild birds under the Wildlife and Countryside Act 1981 (as amended). If this is unavoidable, the trees and hedgerows should be carefully checked, by a suitably qualified ecologist, prior to removal. Where active nests are found, working restrictions would be put in place until follow up survey can demonstrate that all chicks have fledged.

5.4.5 Reptiles

- vii The site is poorly suited to reptile species due to frequent management and its disturbed and isolated urban location will limit this further. No further survey or mitigation is considered necessary or proportionate.

5.4.6 Water Vole, Otter and White-Clawed Crayfish

- viii There are no water bodies within the sites zone of influence.

5.4.7 Badgers and Principal Species

- ix No evidence of badgers was identified on site which was considered to be of limited value for foraging and sett digging.
- x On this basis it is not considered necessary to conduct further assessment for badger in the area. However during construction it is recommended that best practice is followed in respects to badger and any other mammals (i.e. Fox and hedgehog) which may be present locally. This should include
- Mammal ladders (such as a plank) or earth ramps to be placed in any open excavations at the end of each day;
 - Cap off any open pipes at the end of each day;
 - Cover any open holes, or install mammal ladders or earth ramps in any open excavations at the end of each day to prevent animals from becoming trapped;

- Keep all fuel and other harmful substances in a locked area;
- Ensure any spillages are treated with spill kits;
- If any fresh sett digging is observed notify an ecologist immediately and leave a 20m buffer around the area until an assessment can be made.

6 DISCUSSION AND RECOMMENDATIONS

6.1 Protected / Priority Species and Habitats Impact Appraisal

- i The potential for protected species or habitats to be present on site and impacted by the proposals is provided in Appendix 3. No further surveys were conducted to facilitate an assessment of ecological impacts post development. Recommended mitigation and residual impacts is provided in the table below.

Table 5: Summary of Residual Impacts

Ecological Feature	Importance (Geographic Frame of Reference)	Potential Effect	Mitigation Proposed	Proposed Mechanism to Secure	Residual Impact
Statutory Designated Sites	County or above	None	No	N/A	N/A
Non-statutory designated sites	County	None	No	N/A	N/A
Habitats including Priority flora	Negligible	Loss of habitats of low diversity	Retention of hedgerow and trees in accordance with root protection areas		Not significant
Reptiles	Local	None	No	N/A	N/A
Bats – Roosting	Local	B1 assessed as having negligible to low potential with one superficial feature.	Before demolition of the building takes place, the solitary feature should be subject to a thorough inspection by a licenced bat ecologist, and then the subsequent roof strip should be done following a precautionary method of works. In the unlikely event that a bat is found, then all works must cease, and a bat licence be obtained through Natural England before works can re-commence.	N/A	Negligible to Low
Bats – Foraging/Commuting	Local	Unlikely to cause an impact. Low value site already influenced by street lighting	Avoid lighting / use light spill accessories in any new car park lighting that is adjacent to the neighbouring railway corridor.	N/A	Not significant
Great crested newts	N/A	None	No	N/A	N/A

Ecological Feature	Importance (Geographic Frame of Reference)	Potential Effect	Mitigation Proposed	Proposed Mechanism to Secure	Residual Impact
WWC	N/A	None	No	N/A	N/A
Water vole	N/A	None	No	N/A	N/A
Badgers	Local	Potential for killing/injury/disturbance of individuals passing through the site.	Best practice site working procedures in regards to mammals.	Planning Condition	Not significant
Breeding birds	Negligible	Damage or destruction of nests	Precaution in relation to legislative protection of animals. Tree felling should be undertaken outside the bird nesting season.	Planning Condition	Not significant
Otter	N/A	None	No	N/A	N/A
Invasive Species	Local	Potential spread within and off site.	Removal of any butterfly bush (<i>Buddleia</i>) on site is recommended prior to development.	Planning Condition	Not significant

7 COMPENSATION AND ENHANCEMENT RECOMMENDATIONS

- i It is recommended that tree loss offset through replacement trees elsewhere within the site. This could include provision of new Extra Heavy Standards including Rowan (*Sorbus aucuparia*) silver Birch (*Betula pendula*) and cherry (*Prunus avium*). All three are relatively quick growing with limited crown spread. Rowan in particular will provide berries capable of supporting migrator field fare (*Turdus pilaris*) and waxwing (*Bombycilla garrulus*).
- ii Any landscape planting associated with the new development should also consider the use of native shrub species and also species which provide important sources for pollinating species such as lavender. The Royal Horticultural Society provide online resources to identify suitable plants for garden areas that are aesthetically pleasing but of significant value to local pollinators (www.rhs.org.uk/plantsforpollinators).

7.1.2 Wildflower meadows

- iii Enhancing grassland areas of the site by creating wildflower meadows will provide a broad variety of food sources for a diverse range of invertebrates, including lepidopterans and pollinators. This will, in turn provide an ample food source for insectivores such as bats and hedgehogs.
- iv The ground could be prepared for supplementary planting with minimal effort, using a chain harrow. Any existing vegetation should be removed, and the soil should be raked to break it up, producing a fine, firm later of soil. It is recommended that Long Season Meadow Mix (available from Naturescape) is used to allow for a long growing season, producing an aesthetically pleasing meadow of flowers, thus negating the requirement for an extensive mowing regime. Seeds should be sowed during autumn or spring, and if there is a dry period, the soil being sowed should be watered.
- v Once established, the grassland will only require mowing in September (with the arisings being left for 48hrs prior to removal to allow the seeds to disperse for the following year). Any cutting should be removed from the ground, so that a low level of fertility is maintained, and any unwanted weeds such as nettles or thistles should be removed during the first year of management.

7.1.3 Habitat Boxes

- vi Additional enhancements that could easily be met within the development scope include the incorporation of bat and bird nest boxes within the woodland, as well as hedgehog boxes. Boxes could be placed on suitable mature retained trees with hedgehog boxes within the woodland understory. The mounted bat boxes should face south (for additional warmth), and be positioned at least 4 metres from the ground, with the entrances being free of overhanging branches and avoiding artificial lighting. It is also recommended that bird nest boxes be placed 1.5m below each bat box, to ensure that the birds have somewhere to nest and do not inhabit the bat boxes. Suitable bat box dimensions are 430mm high X 270mm wide X 140mm deep. The boxes are designed to mimic natural roost sites and to provide a stable environment.

Figure 3: Bat Box Example



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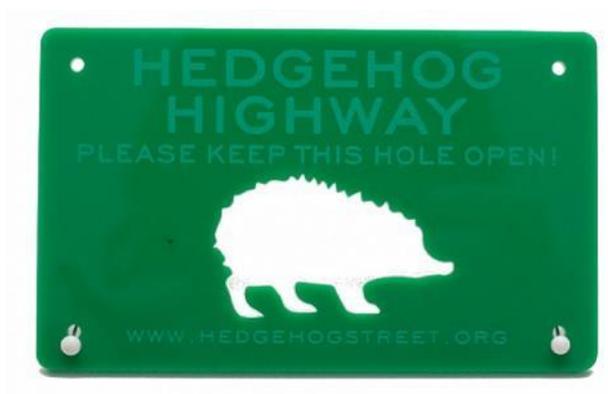
Figure 4: Bird Box Example



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- vii Additional enhancements for invertebrates could also be easily met within the development scope by including insect houses on any retained trees on site. These nest boxes will help to provide a variety of niches for a diverse spectrum of invertebrates to inhabit, and therefore help to increase the terrestrial invertebrate species diversity on site.
- viii Where any permanent residential fencing is to be constructed, small 15x15cm mammal holes should be installed within these fences. 'Hedgehog Highway' signs (available from the British Hedgehog Preservation Society) could be installed above these holes to prevent them being filled in in the future. This will help to maintain their permanency and so the connectivity for mammals, such as hedgehogs, to the site and the surrounding landscape

Figure 5: Hedgehog Highway



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8 MONITORING

- i None proposed or considered necessary.

9 REFERENCES

- i BS 42020:2013 'Biodiversity – Code of Practice for Planning and Development 2013: The British Standards Institution'.
- ii Chartered Institute of Ecology and Environmental Management (CIEEM), 2019. 'Advice Note: on the Lifespan of Ecological Report and Surveys'. Winchester: CIEEM.
- iii Chartered Institute of Ecology and Environmental Management, 2018.' Guidelines for Ecological Impact Assessment in the UK and Ireland'. Terrestrial, freshwater and Coastal. 2nd ed. Winchester: CIEEM.
- iv Chartered Institute of Ecology and Environmental Management, 2017. 'Guidelines for Preliminary Ecological Appraisal. 2nd ed. Winchester: CIEEM.
- v Collins J eds. 2016. 'Bat Surveys: Good Practice Guidelines, 3rd Edition'. London: Bat Conservation Trust.
- vi Department of Communities & Local Government, 2019. 'National Planning Policy Framework', London: DCLG.
- vii Joint Nature Conservancy Council, 2010. 'Handbook for Phase 1 habitat survey'. Peterborough: JNCC.
- viii Office of the Deputy Prime Minister, 06/2005.' Government Circular: Biodiversity and Geological Conservation - Statutory Obligations and their impact within the planning system'. London: ODPM.
- ix www.rhs.org.uk/plantsforpollinators (accessed 24/08/2020)

APPENDIX 1: LEGISLATION AND PLANNING POLICY

9.2 General & Regionally Specific Policies

- i. Articles of British legislation, policy guidance and both Local Biodiversity Action Plans (BAPs) and the NERC Act 2006 are referred to throughout this report. Their context and application is explained in the relevant sections of this report. The relevant articles of legislation are:
 - The Environmental Bill (2021)
 - The National Planning Policy Framework (2021);
 - ODPM Circular 06/2005 (retained as Technical Guidance on NPPF 2019);
 - The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019;
 - The Wildlife and Countryside Act 1981 (as amended);
 - EC Council Directive on the Conservation of Wild Birds 79/409/EEC;
 - The Protection of Badgers Act 1992;
 - The Countryside and Rights of Way Act 2000;
 - The Hedgerow Regulations 1997;
 - The Natural Environment and Rural Communities (NERC) Act 2006; and
 - Local Biodiversity Action Plan for Nottinghamshire.

APPENDIX 2: DESK STUDY DATA

9.3 Desk Study Results

i A total of 15 statutory designated sites were recorded within the search area, the details of which are summarised in the table below. The site was not within the IRZ of either site.

Table 6: Statutorily Designated Sites within 5km of Site Boundary

Site Name	Designation	Location	Brief Description
The Hermitage	LNR ⁴	1.7km S	Mill pond, from the old Hermitage Mill, with reedbeds surrounded by deciduous woodland with good ground flora. 46 bird species.
Oakham	LNR	1.9km SE	Good grassland, wetland and scrub habitats plus recent habitat enhancements.
Quarry Lane	LNR	2km SE	Deciduous woodland and riparian habitats along the River Maun with mill pond and rock exposures. Small limestone exposure which creates a new habitat.
Treveral Pastures	SSSI ⁵	2.1km W	The site includes some of the finest remaining areas of neutral grassland in Nottinghamshire and is of regional importance.
Teversal/Pleasley Network	LNR	2.2km W	Disused railway line contains a varied and botanically rich range of habitats. The most interesting habitat is calcareous grassland which is significant regionally. Other habitats include neutral grassland, bare rock habitat and scrub and woodland. Stone bridges along the route contain brittle bladder fern, harts tongue fern.
Maun Valley Park	LNR	2.8km E	Ancient Oak woodland, grassland, water meadows and wetland habitats.
Pleasley Vale	LNR	2.8km N	Calcareous woodland, scrub, limestone crags and some of the best calcareous grassland in Nottinghamshire. The site is a disused railway.
Pleasley Vale Railway	SSSI	2.8km N	The site contains some of the best remaining calcareous grassland developed on soils derived from the Magnesian Limestone in Nottinghamshire, and is representative of grassland developed on soft limestones in Central and Eastern England.
Pleasley	LNR	2.9km NW	A large pond with bird hide. Smaller ponds where a record 19 species of dragonfly have been reported. Reed beds. Magnesian limestone grassland - great for wildflowers, (bee orchid and common spotted orchid) small plantation woodlands.

⁴ LNR – Local Nature Reserve

⁵ SSSI - Sites of Special Scientific Interest

Site Name	Designation	Location	Brief Description
Rowthorne Trail	LNR	3km NW	Habitats of mature oak and ash woodlands, wildflower meadows, limestone grassland terraces and pools and wetlands. The steep embankments of this disused railway provide excellent habitats for a wide range of limestone loving plants such as Bird's Foot Trefoil and Bee Orchid.
Ravensdale	LNR	3km E	Oak coppice woodland, scrub and acid grassland habitats plus recent heathland creation. Many common bird species are present.
Traversal to Pleasley Railway	SSSI	3km NW	The site comprises one of the few remaining limestone grasslands in Nottinghamshire and is of regional importance.
Brierley Forest Park	LNR	3.2km SW	Major habitats present are species rich calcareous grassland, neutral grassland, springline flushes old species-rich hedgerows, tall herb communities, mixed and broadleaved plantation woodlands, standing water and running water.
Oak Tree Heath	LNR	4.9km ESE	One of the best and largest dry acid heaths in Nottinghamshire. It is part of the Strawberry Hill Heath Site of Special Scientific Interest.
Strawberry Hill Heaths	SSSI	4.9km	These two areas of heath, situated on the eastern outskirts of Mansfield, comprise an important remaining part of the formerly extensive dry acid lowland heathland of Central Nottinghamshire.

- ii The Site lies within 5km of Teversal Pastures SSSI and Strawberry Gardens SSSI. The proposals are not of a type that is included within the Impact Risk Zones for these National designated sites.
- iii Seven non-statutorily designated sites were also identified within the search radius, details of which are provided in Table 7

Table 7: Non-Statutory Designated Sites

Site Name	Designation	Location	Brief Description
Cotton Plantation	LWS ⁶	1.1km NW	A noteworthy wet woodland
Debdale Lane Grassland	LWS	1.2km NE	A noteworthy calcareous grassland
Woodhouse Lane Quarry	LWS	1.6km W	A calcareous grassland and scrub on an old quarry site
Hermitage Mill Pond	LWS	1.7km S	Former Mill Pond with heronry

⁶ LWS – Local Wildlife Site

Site Name	Designation	Location	Brief Description
King's Mill Reservoir	LWS	1.8km S	A notable water body
Dawgate's Lane Grassland	LWS	2km WNW	Steep, unimproved grassland with a noteworthy sward
Little Dawsgate's Wood	LWS	2.1km WNW	A deciduous plantation woodland

- iv There are no Habitats of Principal Importance under Section 41 of the NERC Act, 2006 located within a 1km radius of the site.
- v Records of previous European Protected Species Licences (EPSL) were discovered within a 5km search area around the site. This included:
- Six records of bat licences relating to common pipistrelle (*Pipistrellus Pipistrellus*) and brown long-eared (*Plecotus auratus*). The closest record returned was 0.7km east and allowed the destruction of common pipistrelle resting place. The most recent record returned allowed the destruction of common pipistrelle and brown long-eared resting place.
 - One record related to great crested newts was returned. It was 2.9km south and allowed the damage and destruction of a resting place.
- vi Protected species records were received from Nottinghamshire Biological and Geological Records Centre. A summary of the records considered most relevant to the site and/or proposed development are provided in

Table 8: Summary of protected and Priority species records

Common Name	Scientific Name	Records	Conservation Status
Amphibians			
Smooth newt	<i>Lissotriton vulgaris</i>	1 record, 1.1km NW	Partial protection under WCA ⁷
Palmate newt	<i>Lissotriton helveticus</i>	1 record, 1.1km NW	Partial protection under WCA
Common toad	<i>Bufo bufo</i>	2 records; closest record 1.1km NW	NERC ⁸ , Partial Protection under WCA
Common frog	<i>Rana temporaria</i>	2 records; closest record 1.1km NW	Partial protection under WCA
Mammal			
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	4 records; closest record 10m SSW	EPS, WCA, NERC

⁷ WCA – Wildlife & Countryside Act (1981) Section 5 protecting against trade or sale of species.

⁸ NERC – Species of Principle Importance under Section 41 of the Natural Environment Rural Communities Act (2006) Species of Principal Conservation Importance; UKBAP & LBAP

Common Name	Scientific Name	Records	Conservation Status
Noctule	<i>Nyctalus noctula</i>	18 records; closest record 10m SSW	EPS, WCA, NERC
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	95 records (2 of which were roost records); closest record 10m SSW	EPS, WCA
Brown long-eared bat	<i>Plecotus auritus</i>	9 records (1 of which was a roost record), closest record 75m SSW	EPS, WCA, NERC
European hedgehog	<i>Erinaceus europaeus</i>	11 records; closest record 215m NNW	NERC
Bat sp.	<i>Chiroptera sp.</i>	3 records (2 of which were roost records); closest record 0.7km ES	EPS ⁹ , WCA
Leisler's bat	<i>Nyctalus leisleri</i>	2 records; closest record 0.8km WSW	EPS, WCA
Nyctalus sp.	<i>Nyctalus sp.</i>	2 records; closest record 0.8km WSW	EPS, WCA
Pipistrelle	<i>Pipistrellus sp.</i>	21 records (8 of which were roost records); closest record 0.9km NE	EPA, WCA
Whiskered/Brandt's bat	<i>Myotis sp.</i>	3 records; closest record 1km SSW	WCA
Nathusius Pipistrelle	<i>Pipistrellus nathusii</i>	1 record, 1.1km NNW	
Roe Deer	<i>Capreolus capreolus</i>	3 records; closest record 1.1km N	DA ¹⁰
Myotis sp.	<i>Myotis sp.</i>	2 records; closest record 1.4km NE	EPS, WCA
Whiskered bat	<i>Myotis mystacinus</i>	1 record, 1.6km NNW	WCA
Daubenton's	<i>Myotis daubentonii</i>	3 records, closest record 1.7km ESE	EPS, WCA
Water vole	<i>Arvicola amphibius</i>	3 records; closest record 1.8km S	WCA, NERC
Eurasian badger	<i>Meles meles</i>	9 records within 2km of the site	PBA ¹¹
Birds			
Lapwing	<i>Vanellus vanellus</i>	1 record, 210m NW	BoCCRed, NERC
Marsh tit	<i>Poecile palustris</i>	1 record, 210m NW	BoCCRed, NERC
Short-eared owl	<i>Asio flammeus</i>	1 record, 210m NW	BoCCAmber
Tawny owl	<i>Strix aluco</i>	1 record, 210m NW	BoCCAmber
Fieldfare	<i>Turdus pilaris</i>	2 records; closest record 210m NW	BoCCRed, WCA (1)

⁹ EPS – European Protected Species - protected by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

¹⁰ DA – Deer Act 1991

¹¹ PBA – Protection of Badgers Act 1992

Common Name	Scientific Name	Records	Conservation Status
Grey partridge	<i>Perdix perdix</i>	3 records; closest record 210m NW	BoCCRed, NERC
Quail	<i>Coturnix coturnix</i>	9 records; closest record 210m NW	BoCCAmber, WCA (1)
Lesser redpoll	<i>Acanthis cabaret</i>	1 record, 1km ENE	BoCCRed, NERC
Starling	<i>Sturnus vulgaris</i>	3 records; closest record 1km ENE	BoCCRed, NERC
Kestrel	<i>Falco tinnunculus</i>	6 records; closest record 1km ENE	BoCCAmber
Bullfinch	<i>Pyrrhula pyrrhula</i>	7 records; closest record 1km ENE	BoCCAmber, NERC
Song thrush	<i>Turdus philomelos</i>	8 records; closest record 1km ENE	BoCCAmber, NERC
Sparrowhawk	<i>Accipiter nisus</i>	10 records; closest record 1km ENE	BoCCAmber
Tree sparrow	<i>Passer montanus</i>	2 records; closest record 1.2km NW	BoCCRed, NERC
Yellowhammer	<i>Emberiza citrinella</i>	9 records; closest record 1.2km NW	BoCCRed, NERC
Herring gull	<i>Larus argentatus</i>	2 records; closest record 1.6km NE	BoCCRed, NERC
Honey buzzard	<i>Buteo buteo</i>	4 records; closest record 1.6km NE	BoCCAmber
Black-headed gull	<i>Chroicocephalus ridibundus</i>	6 records; closest record 1.6km NE	BoCCAmber ¹²
House sparrow	<i>Passer domesticus</i>	6 records; closest record 1.6km NNW	BoCCRed, NERC
Wren	<i>Troglodytes troglodytes</i>	6 records; closest record 1.6km NE	BoCCAmber
Swift	<i>Apus apus</i>	10 records; closest record 1.6km NNW	BoCCRed
Wood pigeon	<i>Columba palumbus</i>	10 records; closest record 1.6km NE	BoCCAmber
Brambling	<i>Fringilla montifringilla</i>	1 record, 1.8km ESE	BoCCGreen, WCA (1) ¹³
Common crossbill	<i>Loxia curvirostra</i>	1 record, 1.8km ESE	BoCCGreen, WCA (1)
Common whitethroat	<i>Sylvia communis</i>	1 record, 1.8km ESE	BoCCAmber
Lesser black-backed gull	<i>Larus fuscus</i>	1 record, 1.8km ESE	BoCCAmber
Linnet	<i>Linaria cannabina</i>	1 record, 1.8km ESE	BoCCRed, NERC
Great white egret	<i>Ardea alba</i>	1 record, 1.8km ESE	BoCCAmber

¹² BoCC - Birds of Conservation Concern (Version 5) - split in to three categories of conservation importance - Red, Amber and Green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green

¹³ WCA (1) - Schedule 1 Wildlife and Countryside Act 1981 (as amended)

Common Name	Scientific Name	Records	Conservation Status
Osprey	<i>Pandion haliaetus</i>	1 record, 1.8km ESE	BoCCAmber, WCA (1)
Reed bunting	<i>Emberiza schoeniclus</i>	1 record, 1.8km ESE	BoCCAmber, NERC
Skylark	<i>Alauda arvensis</i>	1 record, 1.8km ESE	BoCCRed, NERC
Stock dove	<i>Columba oenas</i>	1 record, 1.8km ESE	BoCCAmber
Tree pipit	<i>Anthus trivialis</i>	1 record, 1.8km ESE	BoCCRed, NERC
Willow tit	<i>Poecile montanus</i>	1 record, 1.8km ESE	BoCCRed, NERC
Willow warbler	<i>Phylloscopus trochilus</i>	1 record, 1.8km ESE	BoCCAmber
Dunnock	<i>Prunella modularis</i>	2 records; closest record 1.8km ESE	BoCCAmber
Pink-footed goose	<i>Anser brachyrhynchus</i>	2 records; closest record 1.8km ESE	BoCCAmber
Rook	<i>Corvus frugilegus</i>	2 records; closest record 1.8km ESE	BoCCAmber
Grey wagtail	<i>Motacilla cinerea</i>	3 records; closest record 1.8km ESE	BoCCAmber
Mistle thrush	<i>Turdus viscivorus</i>	3 records; closest record 1.8km ESE	BoCCRed
Peregrine	<i>Falco peregrinus</i>	3 records; closest record 1.8km ESE	WCA1
Greenfinch	<i>Chloris chloris</i>	4 records; closest record 1.8km ESE	BoCCRed
Redwing	<i>Turdus iliacus</i>	4 records; closest record 1.8km ESE	BoCCAmber, WCA (1)
House martin	<i>Delichon urbicum</i>	6 records; closest record 1.8km ESE	BoCCRed
Reptile			
Grass snake	<i>Natrix natrix</i>	2 records; closest record 1.1km NW	Partial protection under WCA, NERC
Invasive Species			
Japanese knotweed	<i>Reynoutria japonica</i>	18 records; closest record 485km SW	WCA (9) ¹⁴
Himalayan balsam	<i>Impatiens glandulifera</i>	2 records; closest record 1.6km NNW	WCA (9)
American Mink	<i>Neovison vison</i>	1 record, 1.8km E	WCA (9)
Rose-ringed Parakeet	<i>Psittacula krameri</i>	2 records; closest record 1.8km ESE	WCA (9)

¹⁴ WCA (9) - Schedule 9 Wildlife and Countryside Act 1981 (as amended)

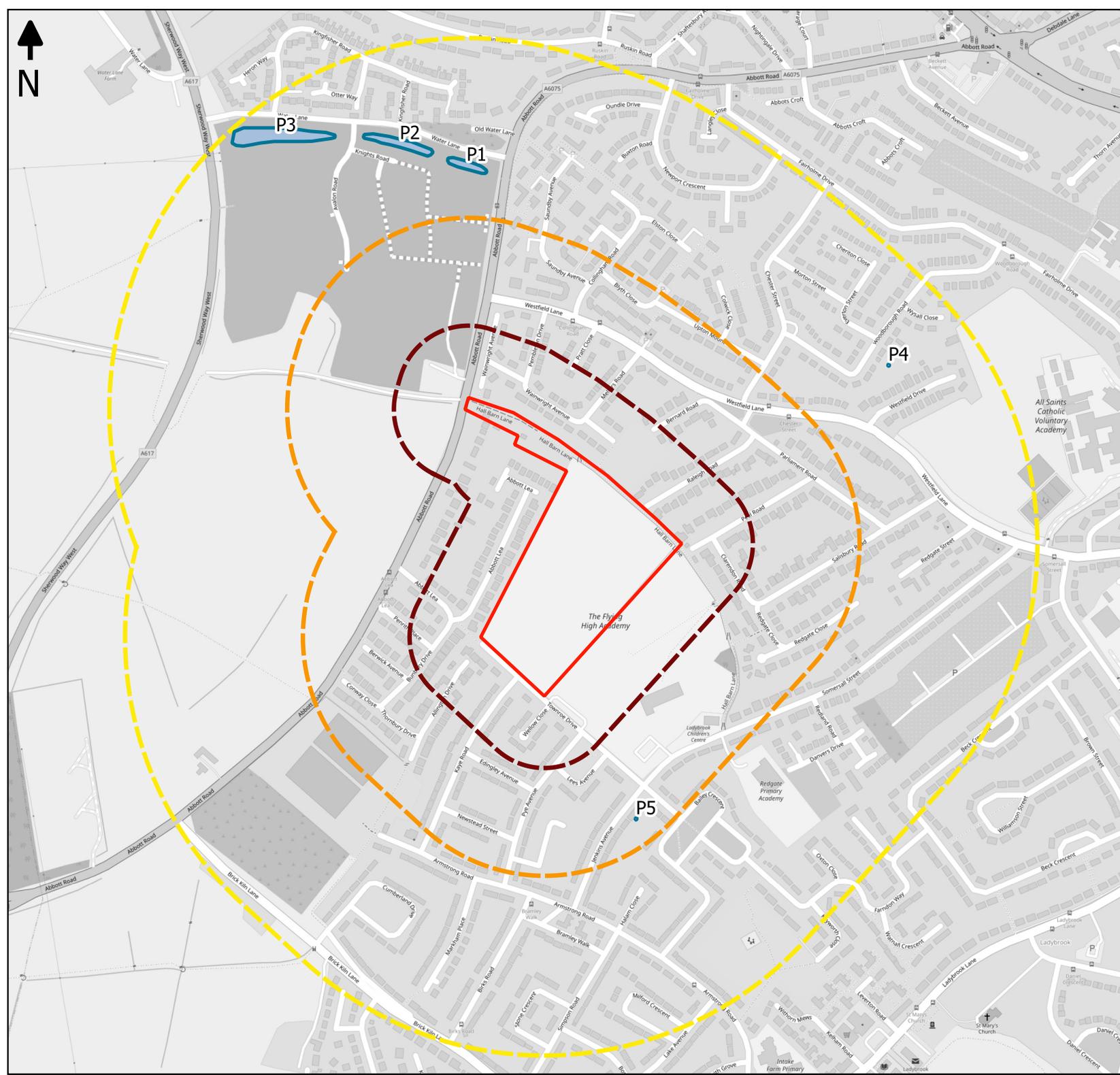
NB: The desk study data is third party controlled data, purchased for the purposes of this report only. RammSanderson Ecology Ltd cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

9.4 Habitat Connectivity Analysis and Closest Relevant Records

- i In assessing the site, a review of online resources and desk study data was undertaken to assesses the site with respect to its connectivity to the wider environment, particularly along linear features (rivers, railways, canals etc.) and any designated or protected sites. The figure below highlights the site and any such habitat connectivity. This assessment enables the evaluation of a particular proposal in context of the wider environment with regard to the site itself and any species which may utilise the site.
- ii The site is immediately adjacent to residential housing and main roads with minimal terrestrial connectivity to species such as badgers and GCN. Further afield there are some arable and grassland fields which provide some connectivity to aerial species such as bats and birds.

APPENDIX 3: BAT BUILDING ASSESSMENT

Bldg. ref	Description	Potential Access Points	Evidence	Grading	Photographs
B1	<p>Two storey cavity red brick detached house with pitched clay pantile roof, wooden gables and soffit. Wooden windows and doors. House in good state of repair.</p> <p>No internal access.</p>	<p>Small area of failed mortar at ridge on western elevation. This was a single area, limited in extent and considered most likely to be superficial only and was the only minor defect recorded on the structure.</p>	N/A	<p>Negligible - Low</p>	



- Key**
-  Site Boundary
 -  100m buffer
 -  250m buffer
 -  500m buffer
 -  Pond Locations



Client:
Arc Property Services Partnership Ltd

Project:
Abbott Road, North West of Mansfield

Drawing Title:
Waterbody Plan

Drawing No. RSE_5579	Scale: 1:12000 @A4	Rev: V1
Drawn By: CN	Date: 23/11/2021	

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