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Preliminary Ecological Appraisal

Survey site:

Dairy Cottage Studio, Bicester, Oxford, OX25 2PR

Client:

Paul Carry

Survey date:

15th March 2024

Project:

The proposed development comprised the erection of an additional detached residential dwelling to the south of the existing row of residential dwellings.

PEA survey methodology and legislation can be found in the Arbtech Supplement: [PEA Methodology and Legislation - 2024](#).

The site survey was undertaken by Consultant Ecologist Leah Cook (Accredited Agent on Natural England Bat Licence Number: 2018-37888-CLS-CLS).					
Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (mph)	Rain
15/03/2024	13	75	25	15	None

Ecological Survey Factor	Detailed using desk study and site survey (carried out under optimal weather conditions). Any specific limitations noted within relevant section. This table may include further work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent. All clients are expected to read and understand this section, or to contact the lead surveyor for advice.
Conclusion, Impact or Recommendations	
Executive Summary - Phase 2 surveys are required for bats, badgers and reptiles to fully assess the potential impact of the proposed development on these species. Impacts on other species are considered low risk and therefore precautionary working methods have been recommended.	
Habitats and Plants	
<i>Summary of Survey Findings</i> <i>(UKHab codes used)</i>	<p><u>Site Context:</u> The site is located at national grid reference SP 56051 19348 and has an area of approximately 0.62ha. The site is characterised by a single detached residential dwelling and associated outbuildings and amenity grassland with treeline boundaries. The site is located within a rural context, ~14km north of Oxford city centre. As a result, the site is bordered by residential dwellings to the north and west, with arable farmland to the east and south with hedgerow boundaries. Beyond its immediate surroundings however, there are habitats of elevated ecological value including grassland, good quality woodland and standing bodies of water. A site location map is available in Appendix 2.</p> <p><u>Priority Habitats</u> There are no priority habitats within or immediately adjacent to the site. The nearest priority habitat is deciduous woodland which is located ~420m to the north.</p> <p><u>Limitations</u> There were not considered to be any limitations on the completion of the assessment.</p> <p><u>UK Habs Codes</u></p>

- Buildings (u1b5)
- Modified grassland (g4) – Secondary code scattered trees (32), vegetated garden (828)
- Lowland mixed deciduous woodland (w1f)

Buildings (u1b5)

There is a stable, 2 small sheds and a wooden gazebo to the west of the site, just on the edge of the woodland, partially shaded by canopy. Around the edges of the buildings are small piles of debris.



Figure 1 - View of built structures to the west of the site.

Modified grassland (g4) - Secondary code scattered trees (32)

The site is dominated by grassland which is dominated by perennial rye grass and is currently used as an extension of the cottage's gardens to the north of the site. The sward height is >10cm and the grassland is heavily waterlogged in places. Species composition is dominated by Rye Grass with other species including Common Daisy, Creeping Buttercup, White Clover, and Dandelion. Species diversity was low with approximately 5 species per square metre. Around the borders of the grassland in the more shaded areas adjacent to the woodland and surrounding the scattered trees, additional species included Common Nettle, Broadleaved Dock, Lords and Ladies, Cow Parsley, Lemon Balm, and Bull Thistle.

Within the grassland were several small, scattered Hawthorn trees to the northwest.



Figure 2 - View of grassland taken from the northwest of the site.



Figure 3 - View of scattered trees within the grassland.

Lowland mixed deciduous woodland (w1f)

	The woodland to the west and south of the site featured a dense canopy layer with a scarce field layer and absent shrub layer. Species within the canopy includes Silver Birch, Pedunculate Oak, Ash, Hazel, Holly, and Beech. Species within the field layer include Common Nettle, Broadleaved Dock, Lords and Ladies, Cow Parsley, Lemon Balm, and Bull Thistle, Herb Robert, Ivy, Garlic mustard, and Lesser Celandine. There are no ancient or veteran trees and no signs of standing deadwood. No non-native species were recorded within the woodland. A small stream is located to the west of the site at the edge of the woodland.
<i>Foreseen Impacts</i>	The proposed development will result in the loss of <0.5ha of modified grassland. This is likely to have a minimal impact on biodiversity due to the low ecological value of this habitat. However, the proposed development footprint is located approximately 10m to the south and west of woodland, indirect effects such as pollution or tree damage could occur during construction.
<i>Recommendations</i>	<p><u>Mitigation</u> Best practice measures to minimise the possibility of pollution must be implemented during construction.</p> <p>Retained woodland should be protected in line with the measures outlined in the British Standard "Trees in Relation to Design, Demolition and Construction to Construction - Recommendations" (BS 5837) (2012).</p> <p><u>Enhancements</u> A habitat mitigation, compensation and enhancement plan should be written for the site to mitigate habitat loss and detail management for the enhancement of the retained habitats in addition to provisions for habitat creation.</p>
Locality and Designated Sites	
<i>Summary of Survey Findings</i>	<p><u>Statutory Designated Sites</u> The following statutory and non-statutory designated sites are present within 2km of the site:</p> <ul style="list-style-type: none"> Wendlebury Meads and Mansmoor Closes (SSSI) (SP56161760) located 1.25km south - Wendlebury Meads consists of several meadows which have been traditionally managed and have complex and varied flora. Mansmoor Closes is designated for its diverse landscape with over 160 plant species recorded. There are notable bird species such as snipe and curlew which have been recorded. <p><u>Non-Statutory Designated Sites</u> The presence of non-statutory designated sites cannot be determined without the results of a biological records centre search.</p>
<i>Foreseen Impacts</i>	Due to the distance from the site and the scale of the proposed development, there are no foreseen adverse impacts on statutory designated sites as a result of the proposed development.
<i>Recommendations</i>	There are no further recommendations for designated sites as a result of the proposed development.

Bats	
<i>Summary of Survey Findings</i>	<p><u>Local Records</u></p> <p>The following European Protected Species Licenses (EPSLs) for bats are present within 2km of the site:</p> <ul style="list-style-type: none"> • EPSM2010-2344 (SP56082130) north, for common pipistrelle and brown long-eared covering the destruction of a resting place and destruction of a breeding site. <p><u>Bat Foraging and Commuting Value</u></p> <p>The site contains a small parcel of mature woodland and unmanaged grassland which are habitats of high value for foraging and commuting bats but are not extensive. The site has good connectivity to the surrounding landscape with a line of trees and watercourse running down the western boundary in addition to a line of trees/woodland area running across the southern boundary. The wider landscape consists of agricultural land interspersed with standing water bodies and small parcels of woodland which is connected through a network of hedgerows and lines of trees. Immediately adjacent to the north of the site is a row of cottages which emit low level light pollution onto the existing site and there is a main road located approximately 50m to the west of the site where cars and streetlight produce noise and light pollution.</p> <p><u>Bat Roosting Value</u></p> <p>There are stables, gazebo and sheds to the west of the site are expected to be retained and therefore were not subject to the preliminary roosting assessment. Additionally, the woodland is expected to be retained and therefore trees within the woodland were not subject to a ground level tree assessment. Therefore, the buildings and woodland have unknown value for roosting bats. The small trees present to the north of the site have been assessed as having negligible value for roosting bats.</p>
<i>Foreseen Impacts</i>	<p>The proposed development is expected to result in an increase in lighting onto the grassland, woodland and lines of trees. An increase of lighting would reduce suitable habitat for foraging and commuting bats within the wider environment and cause fragmentation of suitable foraging and commuting habitats.</p> <p>There are no foreseen impacts on roosting bats as a result of the removal of the small, scattered trees to the north of the site. Additionally, no further trees or buildings are expected to be impacted by the proposed development and therefore there is not considered to be any impact on roosting bats as a result of the proposed development.</p>
<i>Recommendations</i>	<p>A low impact lighting strategy will be adopted for the site during and post-development, which will include the following measures:</p> <ul style="list-style-type: none"> • Light spill on to woodland should be avoided. • Use narrow spectrum light sources to lower the range of species affected by lighting. • Use light sources that emit minimal ultra-violet light.

	<ul style="list-style-type: none"> • Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm / neutral colour temperature <4,200 kelvin. • Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. • Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only. <p>If the proposals change and the built structures to the west of the site are to be removed, a potential roosting assessment (PRA) is required to assess the potential impacts on roosting bats prior to the commencement of any works. Additionally, if any trees within the woodland are to undergo management or removal, a ground level tree assessment will be required prior to the commencement of any works to assess the potential impact on roosting bats.</p>
Birds	
<i>Summary of Survey Findings</i>	<p><u>Local Records</u> Records cannot be determined without the purchase of biological records data.</p> <p><u>Site Value</u> No evidence of nesting birds was recorded during the survey. There is value for nesting birds within the woodland and within the grassland due to the long sward height, particularly around the borders. There is also value for nesting birds within the buildings.</p>
<i>Foreseen Impacts</i>	The proposed development is considered to be inconsequential to nesting bird populations within the context of the wider environment but the removal of vegetation and impacts to the scattered trees and unmanaged grassland could result in the disturbance, harm or even death of nesting birds if present at the time of works.
<i>Recommendations</i>	<p><u>Mitigation</u> Vegetation removal should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the vegetation should be undertaken immediately, by a qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged.</p> <p>Precautions should be taken with machinery and noise levels when working close to any retained nests so as not to disturb any nearby nesting birds during construction works. At least a 3-5m buffer should be created between any machinery and active nests until the young have fledged.</p> <p><u>Enhancements</u></p>


	<p>The addition of 3 x WoodStone Build-in Swift Nest Box Deep would provide additional nesting habitat for swifts and should be integrated into the walls of the new dwelling.</p> <p>The addition of 1 x Vivara Pro Seville 32mm WoodStone Nest Box and 1 x Vivara Pro Seville 28mm WoodStone Nest Box placed onto mature trees within the woodland would provide additional nesting opportunities for a range of bird species. All bird boxes should be installed in line with manufacturers recommendations.</p>
<p>Reptiles</p>	
<p><i>Summary of Survey Findings</i></p>	<p><u>Local Records</u></p> <p>There are no EPSLs for reptiles within 2km of the site.</p> <p><u>Site Value</u></p> <p>The large area of tussocky grassland onsite bordered by woodland has value for foraging and commuting reptiles. Additionally, the areas of debris around the built structures and brash pile onsite provide refuge habitat for reptiles. Additionally, the site has excellent connectivity for reptiles to the surrounding landscape with bordering habitats consisting of grassland/arable fields and lines of trees and hedgerows.</p>  <p><i>Figure 4 - View of woodland edge with areas of nettles and scrub which has refuge value for reptiles.</i></p>



Figure 5 - Close up view of grassland showing tussocky structure suitable for reptiles.

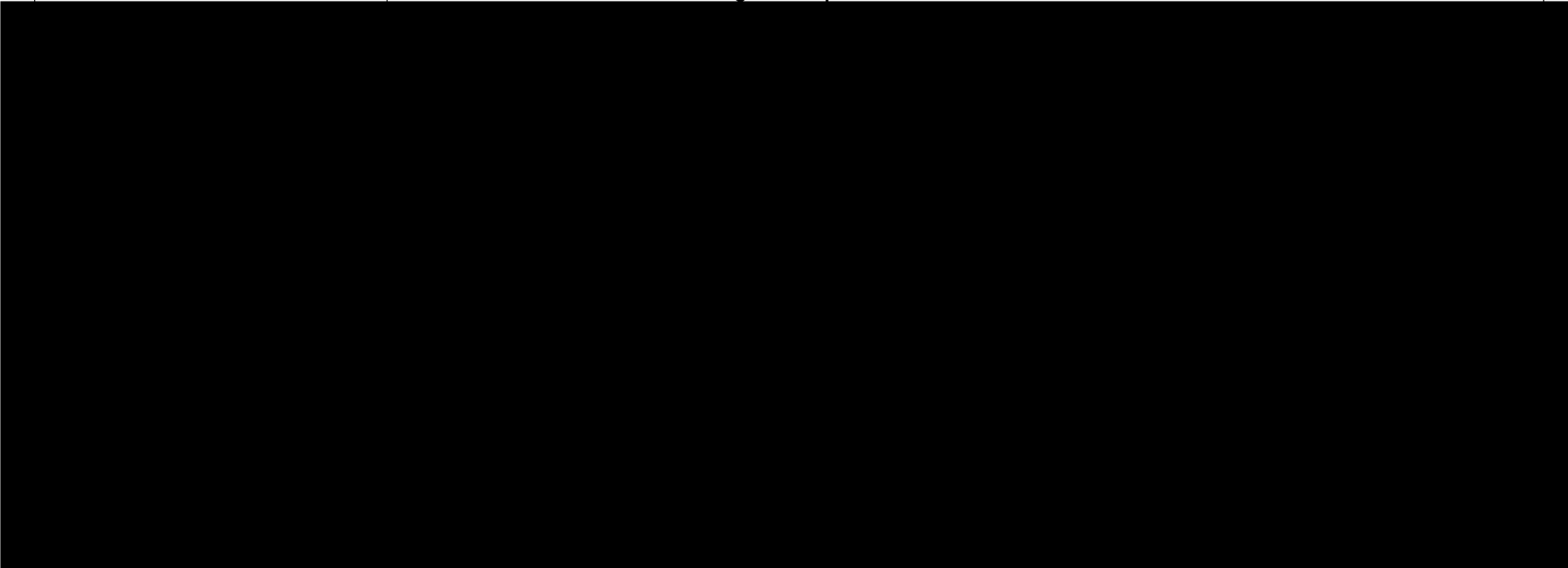


Figure 6 - View of fence along eastern boundary with areas of longer grassland.

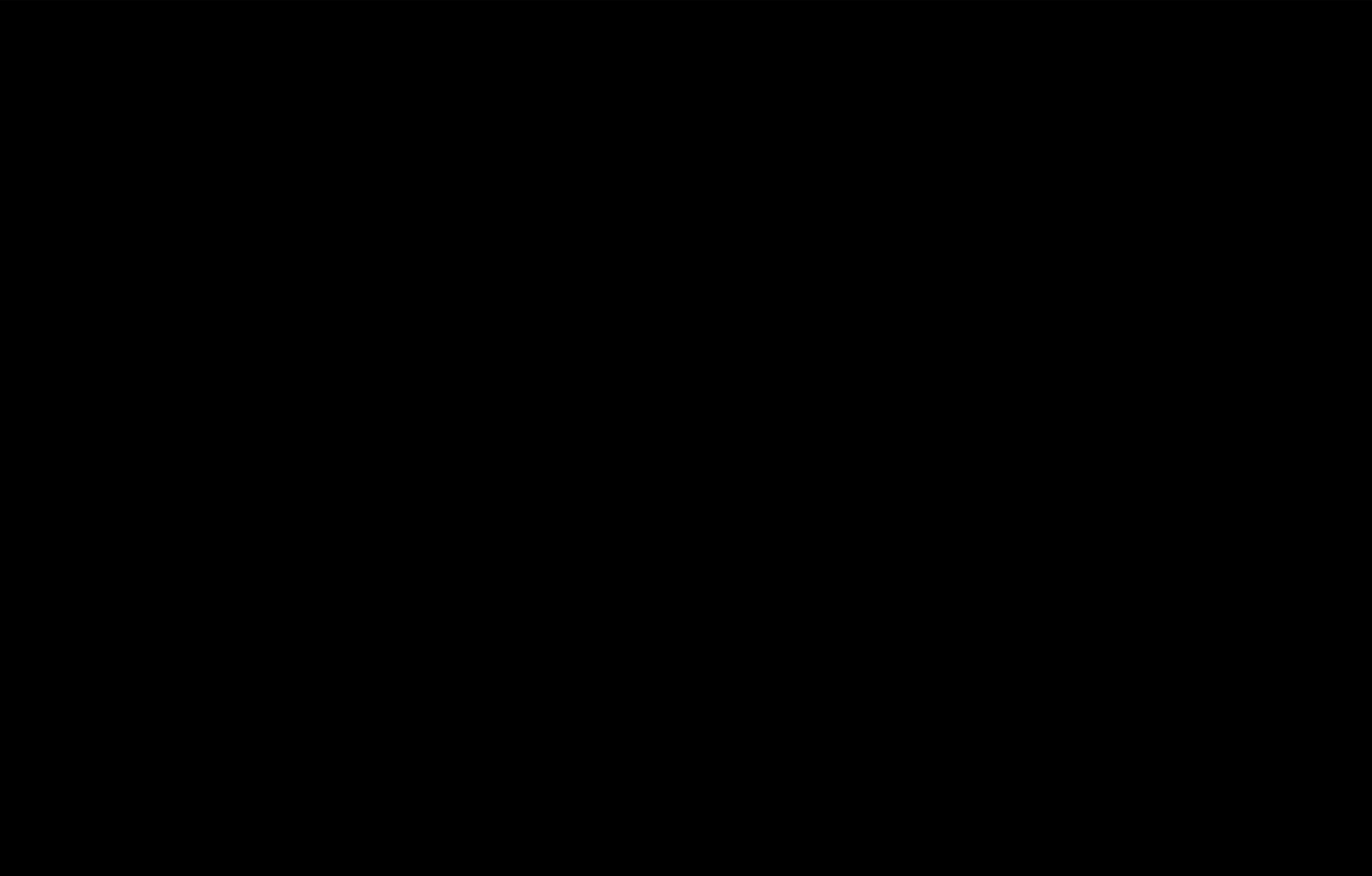
	 <p data-bbox="638 671 1303 699"><i>Figure 7 - View of grassland from the southeastern corner of the site.</i></p>
<p><i>Foreseen Impacts</i></p>	<p>An area of grassland up to 0.5ha will be impacted by the proposed development which could result in the reduction of suitable reptile habitat within the surrounding landscape. Additionally, any reptiles present during construction are at risk of disturbance, harm or even death as a result of the proposed development.</p>
<p><i>Recommendations</i></p>	<p><u>Phase 2 Surveys</u> Reptile surveys will be required to determine presence or likely absence of reptiles on the site. This will comprise the deployment and monitoring of artificial refugia over seven visits and such surveys must be undertaken between April, May and September, in accordance with current survey guidelines (Gent & Gibson, 2003). Mitigation and enhancement for reptiles will be decided following the results of phase 2 surveys.</p>
<p>Great Crested Newts (GCN) & Other Amphibians</p>	
<p><i>Summary of Survey Findings</i></p>	<p><u>Local Records</u> The following European Protected Species Licenses (EPSLs) for GCN are present within 2km of the site:</p> <ul style="list-style-type: none"> • 2016-23813-EPS-MIT (SP55692131) located 1.95 km north, for Great crested newt covering the damage and destruction of a resting place. <p><u>Pond Locations</u> There are 3 ponds located within 500m of the site, 1 of which is located within 250m of the site, and none are located within 100m of the site. In order of closest, pond 1 is located 130m to the northwest, pond 2 is located 320m to the southeast and pond 3 is located 450m north. Pond 1 is separated from the site by a residential dwelling, a</p>

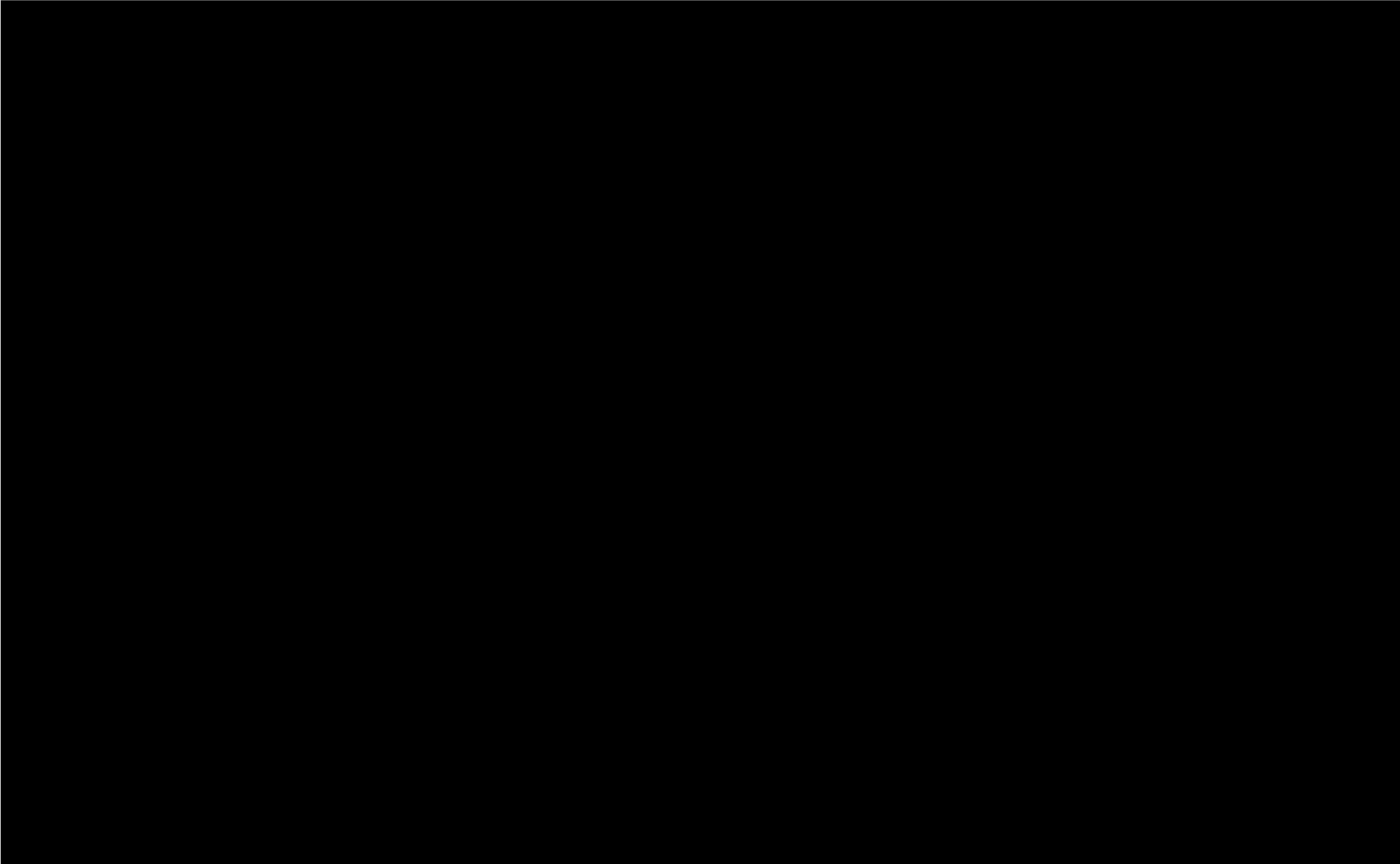
	<p>main road and a small stream which are all considered barriers to dispersal. Pond 2 is separated from the site by spall private roads and agricultural buildings and associated hard standing. Pond 3 is separated from the site by the village of Wendlbury which is considered a barrier to dispersal.</p> <p><u>Site Value</u> The grassland onsite provides foraging and commuting value for amphibians including GCN in addition to the debris onsite providing refuge value. The woodland onsite also provides commuting, foraging and refuge value for amphibians including GCN.</p>
<i>Foreseen Impacts</i>	<p>When it is assumed that GCN are present within all ponds within 500m of the site, the Natural England rapid risk calculator provides a score of “Green – offence highly unlikely”. Additionally, due to the distance and physical barriers from waterbodies, amphibians are considered unlikely to be onsite, however if present during construction, there is a risk of disturbance, harm or death of any amphibians.</p>
<i>Recommendations</i>	<p><u>Mitigation</u> Owing to the nature of the proposed development and the low potential for impacts to great crested newts, further surveys are considered to be disproportionate. A precautionary working method will be implemented for common amphibians during construction, including the following measures:</p> <ul style="list-style-type: none"> • A pre-commencement inspection of the site will be undertaken for amphibians. • A staged approach will be adopted for vegetation clearance, whereby the vegetation will be strimmed to 15cm and left overnight to allow any amphibians to disperse. The vegetation can then be cleared to ground level and must be maintained at this level for the duration of construction to deter amphibians from the working area. • Any rubble piles will be dismantled by hand and debris and brash will be stored on pallets or removed from the site to prevent amphibians from utilising these areas. • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • Best practice pollution prevention measures will be implemented to minimise impacts to nearby aquatic habitats that amphibians could use. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. • If any common amphibians are found in the working area these should be allowed to disperse of their own accord or, if at immediate risk, should be moved by hand to a sheltered, vegetated area away from disturbance. <p>In the unlikely event that a great crested newt is identified, works must cease and advice must be sought from a suitably qualified ecologist.</p>

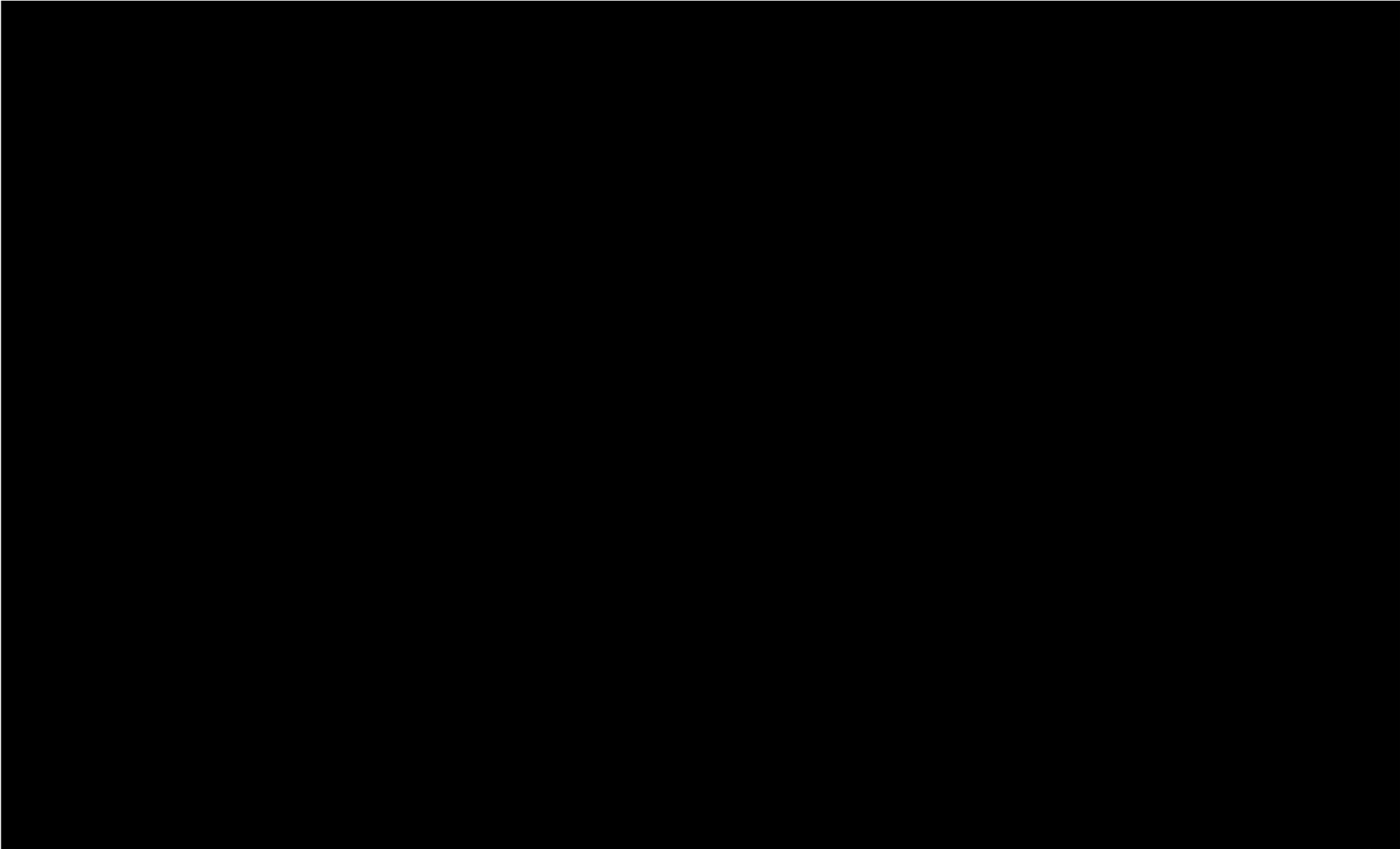
	<p><u>Enhancements</u> An addition of a pond onsite would provide additional habitat for amphibians onsite and increase connectivity of waterbodies within the surrounding landscape.</p>
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Riparian animals

<p><i>Summary of Survey Findings</i></p>	<p><u>Local Records</u> Records cannot be determined without the purchase of biological records data.</p> <p><u>Site Value</u> There is a small watercourse to the west of the site. No evidence of riparian mammals was recorded during the site visit. The woodland and grassland does have commuting value for riparian mammals.</p>  <p><i>Figure 15 - View of stream to the west of the site.</i></p>
<p><i>Foreseen Impacts</i></p>	<p>The proposed development will not result in the loss of any riparian habitats. However, due to the presence of the watercourse located just outside the site boundary approximately 20m west of the proposed footprint, indirect effects such as pollution could occur during construction. Furthermore, construction activities could result in the death or injury of otters, if present.</p> <p>No works will be undertaken within 5m of the top of the banks of the watercourse. Therefore, no impacts are anticipated on water vole as a result of the proposed development.</p>
<p><i>Recommendations</i></p>	<p><u>Mitigation</u> Owing to the nature of the proposed development and the low potential for impacts to otter, further otter surveys are considered to be disproportionate. A precautionary working method will be implemented during construction, including the following measures:</p> <ul style="list-style-type: none"> • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape.

	<ul style="list-style-type: none"> • The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to the watercourse and any retained habitats which riparian mammals could use. • Best practice pollution prevention measures will be implemented to minimise impacts to the watercourse and any retained habitats that otters could use. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. <p>In the unlikely event that an otter holt or den is identified, works must cease and advice must be sought from a suitably qualified ecologist.</p>
Hazel dormouse	
<i>Summary of Survey Findings</i>	<p><u>Local Records</u> There are no EPSLs for dormice within 2km of the site.</p> <p><u>Site Value</u> The woodland onsite has foraging and commuting value for dormice. There are no further habitats of value to dormice onsite.</p>
<i>Foreseen Impacts</i>	The woodland will not be impacted as during the proposed development. Therefore, there are no expected impacts on dormice as a result of the proposed development.
<i>Recommendations</i>	<p><u>Enhancements</u> Woodland management to reduce the canopy layer coverage and encourage denser growth of the field layer and development of a shrub layer would enhance the site for dormice. Additionally, intruding hazel coppice within the woodland would increase the value of the site for breeding and hibernating dormice.</p>

Appendix 1: Site Location

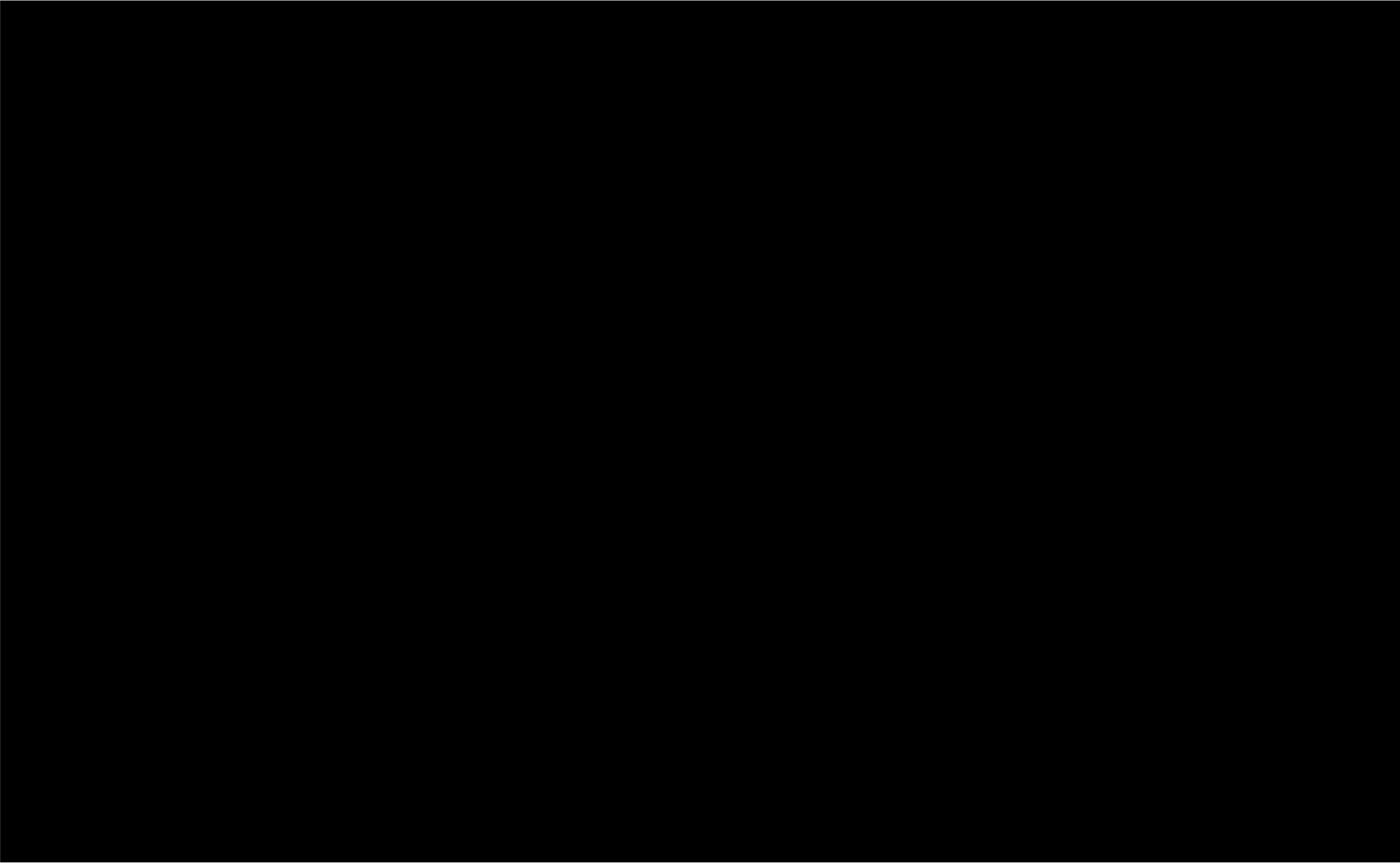


Appendix 2: UKHabs Map

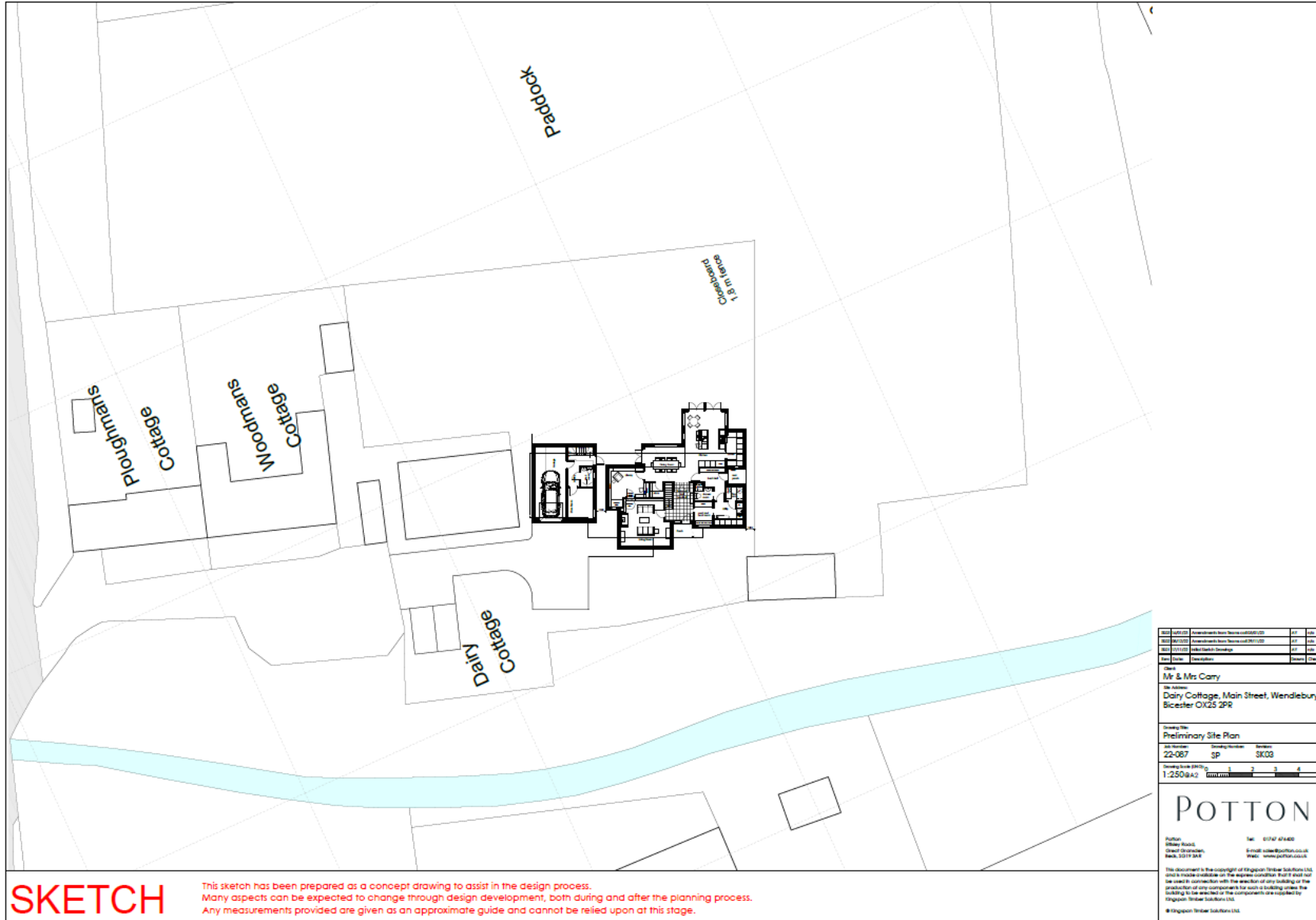


Appendix 3: Pond Location Map





Appendix 5: Proposed Plans



Paul Carry

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Version control			
Status	Issue	Name	Date
Draft	0.1	Leah Cook, Consultant Ecologist	19/04/2024
Proof	0.2	Natalie Evans BA (Hons), MA, MRSB, Principal Consultant	21/04/2024
Draft	0.3	Leah Cook, Consultant Ecologist	21/04/2024
Proof	0.4	Natalie Evans BA (Hons), MA, MRSB, Principal Consultant	22/04/2024
Final	1.0	Leah Cook, Consultant Ecologist	24/04/2024