Mead House, Hayes, UB4 8EW
Preliminary Ecological Appraisal

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SUMMARY

Purpose of the report	This report presents a Preliminary Ecological Appraisal (PEA) conducted on Mead House, Hayes End Road, Hayes, UB4 8EW. The Local Planning Authority is the London Borough of Hillingdon, and the survey is required to inform a planning application. The proposals include the change of use from health care use to co–living accommodation (sui generis) with ancillary offices and facilities, as per Site Plan drawing BBA 951.P.24E Proposed site plan by Buckmaster BatCup Architects Ltd.
Surveys completed	The following surveys were completed on–site: • UK Habitat Classification Survey and Habitat Evaluation • Evaluation of protected and notable species • Preliminary Roost Assessment (PRA) of the buildings
Results	In summary, the development site is considered to have negligible–moderate ecological value due to the limited presence of suitable habitats on–site or in adjacent areas for protected species. Consequently, further survey work is considered, recommendations and mitigation measures have been suggested.
Recommendations	Appropriate mitigation measures and additional recommendations have been outlined to safeguard the on–site and adjacent habitats and the species they may support. By implementing any subsequent measures and further survey recommendations, the risk of harm to protected species will be greatly minimised. This approach ensures compliance with relevant legislation and helps preserve the ecological integrity of the area.

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Revision	Description	Date
V1	Updated Site Plans	03.09/2025

1. INTRODUCTION

Gradwell Group was commissioned to undertake a Preliminary Ecological Appraisal of Mead House, Hayes End Road, Hayes, UB4 8EW. Planning consent is to be sought from the London Borough of Hillingdon for the proposed change of use from healthcare use to co–living accommodation (sui generic) with ancillary offices and facilities.

A Preliminary Ecological Appraisal was undertaken in May 2025, consisting of a desk study and field survey following the Preliminary Ecological Appraisal Guidelines (CIEEM, 2017) and standard methodology published in the UK Habitat Classification User Manual (UK Habitat Classification Working Group, 2018).

The red line boundary is approximately 0.38 hectares and is predominantly made up of sealed surfaces, buildings, modified grassland, individual trees and a line of trees. The site sits within an urban; residential context surrounded by mature trees, which are well connected to the wider landscape. The site is within a residential area of Hillingdon, a borough in west London, located about 20km from central London. The surrounding environment includes both commercial and residential dwellings, well–connected woodland blocks and a large park directly adjacent to the northern boundary of the site, which features woodland, woodland scrub, individual trees and large areas of grassland.

There are no known ponds within 250m of the site. Some habitats within the site or directly adjacent have the potential to support protected and/or notable species, and this report outlines important measures to protect species during site clearance and provides further survey recommendations where required. Recommendations to improve the biodiversity status of the site post–development have been included.

This report has been produced by a suitably qualified ecologist. The results and recommendations contained within this report are from the view of the author, and the report is based on the information provided by the client, the proposed development and the results of the desk study/survey. The recommendations are based on the site's current conditions as observed during the baseline survey.

2. METHODS

The purpose and aims of the survey were to:

- To undertake a Preliminary Ecological Appraisal (including third–party data search) to determine the potential for protected species and/or habitats of conservation value.
- Determine how the proposed works may impact on these species, habitats, designated sites or areas of nature conservation interest.
- Identify the requirement for further survey work, mitigation, compensation and / or assessment where necessary and propose suitable enhancements.

Desk Study Methodology

Existing ecological and nature conservation data relevant to the site was requested from the local Environmental Records Centre; this data has been considered as part of the recommendations; however, due to the small–scale project with low potential impact. It is considered that the receipt of such information is unlikely to significantly alter the resulting recommendations of the report, and the evaluation and recommendations held herein are considered to be substantial and appropriate. Records were collated from various sources including the Multi–Agency Geographic Information for the Countryside (MAGIC) online database.

MAGIC Maps was used in May 2025 to undertake a 2km search for statutory designated sites for nature conservation and European Protected Species Mitigation Licences. MAGIC Maps was also used in May 2025 to assess whether the site may fall within a Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ). All sites and record locations are given at an approximate distance from the site and coarse resolution records have not been analysed. Some records have been given at approximate distances or not included in the report where they are considered confidential; however, none of these records are relevant to the proposed development site.

The Ecological Survey Methodology

The survey was carried out on the 01st of May 2025 arriving at 10:30. The weather was 12°C, sun with scattered clouds and light winds (1/2 Beaufort Scale). No precipitation was encountered during the survey.

The survey was completed in accordance with the Preliminary Ecological Appraisal Guidelines (CIEEM, 2017) and standard methodology published in the UK Habitat Classification User Manual (UK Habitat Classification Working Group, 2018). The survey involved walking over the site, mapping the main habitat types (in accordance with minimum mappable habitat sizes) and compiling a botanical species list and target notes to identify particular areas of interest or concern. Observations on the presence, or potential presence, of other certain protected species (e.g., badgers, nesting birds, reptiles and dormouse) and invasive / non–native species were recorded also. Riparian species (e.g., otter, water vole and white–clawed crayfish) have not been included in the assessment as there are no suitable water features on or adjacent to the site to support these species. The survey does not aim to be a comprehensive assessment of the presence or otherwise of all protected species on the site. There are a wide range of protected species, many of them can occur on one site and most require specialist expertise to locate them and / or seasonally constrained survey techniques to confirm their presence, and this is outside of the scope of this instruction. Phase 2 assessments and surveys have been recommended where appropriate.

Hedgerows on the site were assessed following methodology provided in the Hedgerow Survey Handbook (DEFRA, 2007). Where relevant, a native hedgerow was defined as species–rich if the structural species included at least five native woody species in a surveyed 30m section of the hedgerow. The results were then compiled and assessed against qualifying criteria provided within the Hedgerow Regulations (1997) and the UK Biodiversity Action Plan / NERC Act (2006). Further information regarding legislation, policy and methodology for species relevant to this site and provided in full within Appendix 1 of this report. This is not considered to be an exhaustive list and it may be misleading to rely upon them as the information provided may not be up to date at the time of reading. Where there is doubt as to the current legal position then it is best to seek expert legal advice.

Zone of Influence

The zone of influence refers to the geographic extent of potential impacts of a proposed development. Given the small–scale nature of the development, the zone of influence is considered to be 250m from the application boundary for amphibians and reptiles, 30m for terrestrial mammals such as badgers, and within the area of impact for birds and bats. All other impacts are considered within the site boundary unless otherwise specified.

Site Evaluation

Following the preliminary survey, the site can be classified into one of six groups to establish whether the site is considered to hold ecological value at an international, national, regional, county, district or local / site scale (see Table 1). Targeted survey work is usually required to establish the significance of protected species within the site and this evaluation is only a guide.

Table 1. This table has been constructed following the CIEEM EcIA Guidelines (CIEEM, 2018). It contains definitions of the evaluation brackets thereby indicating the importance of each habitat type and their possible habitat status.

Ecological Value	Description / Example
International	An internationally designated site or candidate site. This includes habitats or species listed within Special Areas of Conservation, Special Protection Areas, Ramsar Sites, listed under Annex 1 of the Habitats Directive.
National	Sites that are designated at a UK level. This includes Sites of Special Scientific Interest, supporting nationally threatened or rare species.
Regional	Can include a significant population or number of any nationally important species at a regional level.
Country	Can include a feature identified as of critical importance within Section 41 of the NERC Act (2006).

District	Can include a regularly occurring, locally significant population or number of a regionally important species. A Key Habitat type included within the Biodiversity Action Plan or NERC Habitat of Principal Importance.
Local / Site	Designated sites for nature conservation such as Local Wildlife Sites or viable habitat / species populations considered of value at a county level (Local Biodiversity Action Plan species).

Survey Limitations

There are a small number of limitations, but it is considered that an accurate assessment of the site has been obtained:

- The desk study and field survey does not produce a comprehensive plant or animal species list as this will be limited by factors that influence their presence (such as activity and dormancy periods). However, an assessment can be made of the habitats within the survey area particularly given that the majority of the habitats are considered to be modified. It has also been possible to ascertain their corresponding nature conservation value and the potential for them to support any protected or priority species.

Report Lifespan

Given the transient nature of the subject, the survey results are considered valid for up to 18 months.

3. RESULTS

Desk Study – Statutory Sites

MAGIC maps returned two records of statutory sites for nature conservation within a 2km radius of the proposed site.

Table 2. Summary of Statutory Sites within a 2km Radius of the Application site.

Name / Designation Reason / ID Number	Description	Distance / Direction from site
YEADING MEADOWS – Local Nature Reserves (England) 1009255	The meadows comprise a wide area of species–rich grassland bordering the shallow Yeading Brook. The reserve is south of Ten Acre Wood, another London Wildlife Trust reserve, and comprises a key element of an enjoyable day out exploring this peaceful river. Significant habitat restoration has been undertaken on this stretch of the Yeading Brook, enabling wildlife to flourish.	1.3km NE
YEADING WOODS – Local Nature Reserves (England) 1009256	The site is composed of two areas of woodland adjoining at one corner. It is a hundred year old oak plantation with an underlayer of hawthorn and blackthorn. Yeading Brook runs through the wood, and it has areas of marsh and meadow. Birds	1.8KM NE

	include hobbies and kingfishers, and there are invertebrates such as Roesel's bush crickets, long winged coneheads and gatekeeper butterflies.	

The Natural England Site of Special Scientific Interest (SSSI) Impact Risk Zones layer (available on MAGIC) was also reviewed to determine whether the site falls within any of the risk layers and therefore, could impact SSSIs (or the SSSI components of SACs/SPAs etc.).

The site is located within the outermost Impact Risk Zones (IRZs) for Sites of Special Scientific Interest (SSSIs). It is the responsibility of the Local Planning Authority (LPA) to assess potential impacts on terrestrial SSSIs and determine whether consultation with Natural England is required. However, the proposed development does not fall within the categories that require such consultation. The SSSI Impact Risk Zones indicate that, at this location, the proposed development is unlikely to have an adverse effect on terrestrial SSSIs, or the Special Areas of Conservation (SACs), Special Protection Areas (SPAs), or Ramsar sites they support. As such, the applicant is not required to consult Natural England regarding potential impacts on these designated sites.

Desk Study – Non-Statutory Sites

MAGIC returned no non-statuary sites within a 2km radius of the proposed of the proposed development site.

The proposed development is small in scale and not located directly adjacent to any non-statutory designated sites. With the planned implementation of best practice construction measures, such as controls for water and dust pollution, no impacts are anticipated on these nature conservation sites.

Desk Study – Priority Habitats

MAGIC maps returned five records for priority habitat sites for nature conservation within a 1km radius of the proposed site.

Table 2. Summary of Priority Habitats within a 1km Radius of the Application site.

Designation Reason	ID Number	Distance / Direction from site
Deciduous woodland	PHID50905659_018266355	80m NE
Traditional Orchards	PHID50891649_018214616	80m NE
Traditional Orchards	PHID50868630_018235950	250m SE
Deciduous woodland	PHID50922144_018231902	350m E
Deciduous woodland	PHID50904997_018183625	950m SE

The proposed development is small in scale and, whilst it is closely located to a Deciduous woodland and Traditional Orchard habitat; with the planned implementation of best practice construction measures, such as controls for water and dust pollution, no impacts are anticipated on these nature conservation sites.

Desk Study – Magic Maps (MAGIC)

A review of MAGIC Maps revealed three European Protected Species (EPS) license applications within a 1km radius of the site. The most recent record of activities requiring mitigation for EPS was in 2013.

- GCN; 2014-696-EPS-MIT; 18/06/2014-30/06/2017;DAMAGE_RES; Y; DESTROY_RE; Y – 1.4km W
- GCN; 2014-696-EPS-MIT-1; 02/08/2013-30/06/2017;DAMAGE_RES; Y; DESTROY_RE; Y – 1.5km W
- GCN; EPSM2009-531; 12/03/2009-31/12/2009; DESTROY_RE; Y – 1.5km E

The closest Bat EPS was located 4.4km NW from the development boundary, Bat; 2014-3752-EPS-MIT; C-PIP,S-PIP;24/10/2014-24/10/2019; DESTROY_RE; Y.

UK Habitat Classification Survey and Habitat Evaluation

The results of the UK Habitat Classification Survey are presented below. The habitats on the site have been evaluated as having site value in relation to the immediate surroundings and a regional context.

Planning consent will be sought from London Borough of Hillingdon, following a review of local guidance to determine the habitats' strategic significance. The Biodiversity Net Gain Guidance Document for the Local Planning Authorities was consulted.

Where no relevant plan, strategy, or policy exists, professional judgment may be used to classify habitats as having medium strategic significance, particularly if they provide a link between other strategic locations. Ecologist consultants may apply their judgment to this determination, but a strong justification will be required.

The following habitats and ecological features were recorded within or immediately surrounding the site:

- *U1; Urban; Developed Land; Sealed Surfaces; u1b;*
- *U1; Urban; Developed Land; Sealed Surfaces; u1b; Buildings; u1b5;*
- *G; Grassland; Modified Grassland; g4*
- *W; Woodland and forest; Line of trees; 33*
- *Scattered Trees; 32*

Table 3. Habitats and features within the site

Habitat / Feature	Habitat / Feature Description	Photograph
Urban; U1; Developed Land; Sealed Surfaces; u1b;	The site features a car park, walkways and patio area constructed using sealed, impervious materials, predominantly concrete. These surfaces are in good condition, exhibiting minimal cracking and devoid of significant vegetation or habitat-forming species, with vegetation cover consistently below 10%.	 *Figure 1: View of the carparking area*
Urban; U1; Developed Land; Sealed Surfaces; u1b; Buildings; u1b5;	The site features two wooden sheds and the main building; further details of these can be found in the roosting bats appraisal section.	 *Figure 2: View facing the front elevation of the main dwelling.*
G; Grassland; Modified Grassland; g4	This habitat consists of grassland areas subjected to various levels of management, predominantly maintained as mown, species-poor vegetation with fewer than nine species per square metre. These areas are dominated by fast-growing grasses such as Lolium spp. and Trifolium repens. Along the northern boundary and to the eastern side of the building, patches of higher ecological condition were identified. Sward heights varied, though the habitat	 *Figure 3: View facing north across the rear open space.*

	featured over 10% bare ground in places, primarily due to disturbance from rubble piles and scattered debris. An area along the eastern boundary where the sward heights have been unmanaged includes large amounts of Cow Parsley Anthriscus sylvestris with a reduced level of physical damage and bare ground.	 *Figure 4: View facing south across the rear of the main dwelling.*
W; Woodland and forest; Line of trees; 33	A large line of trees runs along the western boundary from south to west, the line of trees is mainly large mature Lime, large–leaved *Tilia platyphyllos*. The tree canopy is continuous and is in a healthy condition, though the line of trees does not feature an undisturbed vegetated strip directly under for at least 6m on both sides.	 *Figure 5: View facing across the western boundary.*

Scattered Trees; 32	The site features multiple scattered trees across the site, varying in maturity and species. Over >70% of the trees are native species with predominantly continuous canopies. Whilst the site does feature some smaller trees showing signs of adverse activities, the majority show little evidence of detrimental harm from human activities. The majority of the trees have a canopy oversailing over >20% of the vegetation beneath. Multiple species are scattered across the site, including Birch, silver Betula pendula, cherry laurel *Prunus laurocerasus*, Maple, field *Acer campestre*, Blue Gum *Eucalyptus Globulus* and Cedar *Cedrus libani*.	 *Figure 6: View facing the southern boundary.*  *Figure 7: View facing the western boundary.*

Invasive Weeds Assessment

A thorough assessment was conducted to determine whether any invasive plant species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) are present on the site.

No species listed under Schedule 9 were recorded during the site survey. However, it is important to note that the absence of identified Schedule 9 species during the survey does not guarantee their absence from the site. Some invasive species may not have been visible at the time of the assessment due to seasonal growth patterns or may exist in areas not fully accessible during the survey.

Suitability for Roosting Bats

The suitability of the existing structures to support roosting bats was evaluated through observations and assessments. The results of this suitability assessment are presented in Table 4.

Table 4. Descriptions of the Buildings and Their Corresponding Suitability for Roosting Bats (Collins, 2023). A Building Reference and Bat Roosting Suitability Plan is in Appendix 4.

Habitat / Feature	Habitat / Feature Description	Suitability for Roosting Bats (Collins, 2023)
B1	The main building within the site is a two-storey building with some single-storey sections. The lower part of the building is mainly red-brick, whilst the upper sections feature a render finish.  *Figure 8: View facing the rear of the building.* The building has a pitched tiled roof with multiple large chimneys. The single-storey sections are mainly a bin store extended on the western elevation of the building and a conservatory to the rear of the building. The building features a combination of window types, including sash and casement windows in varying conditions	The building (B1) is assessed as having **moderate** suitability for roosting bats. This is due to a range of features as described above, providing potential access points for roosting bats. Given the building's moderate suitability, further surveys are recommended if the proposed works involve disturbance to the roof structure that could disturb or kill bats or destroy a bat roost. At least two dusk emergence surveys should be undertaken during the active bat season May–September) following the Bat Conservation Trust (BCT) guidelines. These surveys should be spaced at least two weeks apart, and surveyors should focus on key access points identified.

Figure 9: Single-Storey extension

Various sections of the roof show signs of ageing, though no obvious slipped, broken or missing tiles were observed, which could provide potential access points for bats. Limited gaps were noted around the eaves, and some gaps are present, particularly where the extensions meet the main structure. The brickwork, particularly around the upper rendered section and chimneys, shows visible signs of cracking, including open mortar joints and gaps where some bricks have shifted over time. These features offer potential entry points for crevice-dwelling bats, especially in the chimney stacks where cracks and gaps are prominent. The single-storey extension attached to the western elevation of the main building is constructed with red brick with a pitched tiled roof.

	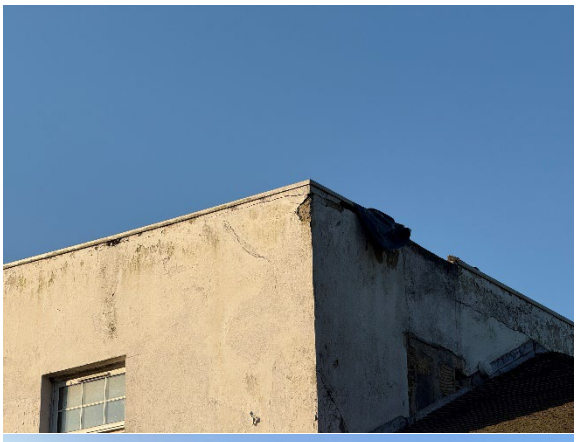 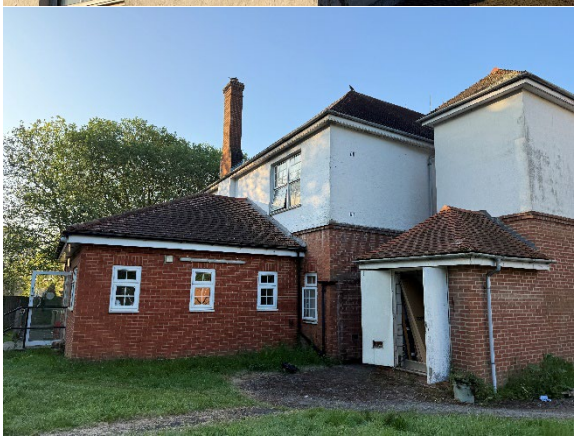 *Figure 10: Potential Roosting Features/Cracking* The roof void would provide ample enclosed space and is suitable for roosting bats. The building's features include several misaligned tiles and isolated bricks cracking, which may offer potential entry points.	
B2 & B3	Buildings two and three (B2 & B3) are wooden sheds located along the eastern boundary. Though the sheds are in varying condition, they feature no obvious gaps or crevices.	B2 and B3 have been classified as having **negligible** suitability for roosting bats. The current indication is that these are to be retained and not demolished. Due to the negligible suitability for roosting bats, no further surveys are required.

	 *Figure 10: Shed along the western boundary* Each shed features a large window allowing significant light ingress into the shed; therefore, creating unsuitable conditions for roosting bats.	

Though no roosting bats were identified during the survey, lack of evidence does not equate to evidence that bats are absent from the building; therefore, if the proposals show the modification or demolition of any building on–site a soft–strip method statement must be followed. This will involve removing any fascias, cladding or roof material by hand with the minimum disturbance possible. If bats or evidence of bats (e.g., droppings, dead bats and/or staining) are found, then stop work immediately and contact an ecologist. An appropriate protection/mitigation strategy will need to be designed and submitted to the local planning authority. A European Protected Species Mitigation (EPSM) licence application will also be required.

Evaluation for protected and notable species

Observations regarding the presence of, or opportunities for, any other protected, rare, or notable faunal species were made during the site visit. Details are provided below.

Suitability for commuting and/or foraging bats

An assessment was made of the habitat surrounding the survey area and its suitability for foraging and commuting bats. The landscape around the site provides a moderate habitat for commuting and foraging bats due to the presence of a mature line of trees and woodland blocks. Given the proposed works and proximity to a line of trees suitable for commuting bats, work should be sympathetic to this group of species, including the provision of a sensitive lighting scheme, as detailed on Page 24. The lighting scheme should be produced during the design scheme and implemented during and post construction.

While no direct or indirect impacts to the trees or line of trees are anticipated from the development, potential effects from dust, noise, and light pollution must be carefully considered. Mitigation measures have been provided in the next section which details the requirements for any new artificial lighting to ensure minimal impact to foraging and commuting bat species. Native species planting, including trees, shrubs and hedgerows will also provide additional benefits for bats.

Amphibians and Reptiles

The site has habitats suitable for great crested newts and other herpetofauna during their terrestrial phases, such as an area of grassland to the rear of the main dwelling; though most of the habitat within the site is unsuitable for great crested newts. Hardstanding and buildings are considered sub–optimal for these species. There are no known ponds within 250m of the site. The site has a negligible potential to support the rarer reptiles such as adder, smooth snakes and sand lizards.

No further survey work is recommended given the low likelihood of encountering reptiles and amphibians as the current proposals show the retention of any suitable habitat. Reasonable avoidance measures have been provided within the recommendations section which are applicable to reptiles, amphibians and small mammals (e.g., hedgehogs).

Badgers

Sett–building opportunities are limited and fencing currently exists surrounding the site, which is in good condition, likely to reduce any movement through the site. No signs of badger activity, such as latrines, tracks, badger highways, or snuffle holes, were present. The site also lacks foraging and commuting opportunities and there are better opportunities in the local and wider environment.

No evidence of badgers was identified during the survey. However, precautionary working methods should be carried out pre-construction and during construction. Any other impacts to badgers are considered negligible, and no further survey work is required.

Birds

The assessment was undertaken during the optimal bird breeding season. Nesting birds should be considered further for their legal protection only. Any clearance / demolition / renovation should ideally be timed to avoid the nesting bird season (typically March to September inclusive). The existing building may also offer nesting or roosting sites for common species, such as house sparrows or starlings, although no inactive/active nests were observed during the site visit.

Further recommendations for mitigation and enhancements relating to nesting birds has also been provided.

Hazel Dormouse

There are no granted European Protected Species (EPS) Mitigation Licences for hazel dormouse on MAGIC within a 2km radius of the site. No direct evidence of dormice, such as nests or individuals, was found during the survey and the habitats are unlikely to support dormice given the lack of connectivity to appropriately sized and suitable habitats (e.g., woodland and hedgerows). Based on the above, no further survey work is considered necessary.

Invertebrates

The site is unlikely to impact rare and / or notable invertebrates due to the limited diversity of plants and habitat. No other triggers were identified to suggest that the development will impact any protected or notable assemblage of invertebrates. Native species planting and providing additional gains for biodiversity are likely to encourage an increased use of the site by an array of invertebrates. They are not considered further in this report other than for possible enhancements.

Other Species

Hedgehogs may utilise the site for commuting with preference likely given to the boundary. No evidence of hedgehogs was observed during the surveys and the site is

only likely to support a very small number. Precautionary working methods are considered sufficient for small mammals including hedgehogs and this will ensure there are no breaches in legislation during site clearance/construction activities; the precautionary working methods will allow dispersal to the surrounding environs. Enhancements have been provided in the following section which are suitable for hedgehogs and other species.

Based on the findings above, the site is considered to have varying ecological value, ranging from negligible to moderate for different faunal species.

To safeguard these species, various mitigation and enhancement measures are outlined in Section 4. These measures, including safeguarding protocols for nesting birds, foraging and commuting bats and badgers, will ensure that the conservation value of these species is protected during and after the construction phase. By implementing these precautions, the impact on local wildlife will be minimised, maintaining the ecological integrity of the site throughout the development process.

4. MITIGATION & RECOMMENDATIONS

Habitats / Biodiversity Net Gain

In line with local and national policy, the proposed development should seek opportunities to incorporate ecological enhancements. A measurable 10% biodiversity net gain must be achieved as a result of amendments to the Town and Country Planning Act 1990 (Schedule 7A) by the Environment Act (2021) if the development isn't except. Due to the current proposals impacting <25sqm of habitat, it is likely this scheme should be considered as except.

The development must ensure that best practice measures are effectively implemented to ensure the protection of adjoining habitats. Chemicals must be securely stored on areas of hardstanding / another sealed surface, following COSHH guidelines. All those working on the site should have access to spill kits and appropriate training in their use.

As far as possible newly proposed trees should be of native species, local provenance and appropriate to the soil/drainage conditions on the Site. Replacement of trees should be designed to maintain connectivity around and/or within the Site, in particular for bats and birds, and as far as possible should be unlit.

Roosting Bats

No roosting bats were identified during the survey however it is not possible to check every area of the building during the survey; lack of evidence does not equate to evidence that bats are absent from the building.

Current proposals indicate that the buildings may be renovated. Building 1, with moderate suitability for bats, will require two presence/absence surveys. These surveys should also be spaced three weeks apart and conducted within the May to September period, with at least one survey taking place between May and August. The results of this survey will inform further recommendations.

The current proposals show that no trees will be removed, although some exhibit PRF–I features. Areas surrounding retained trees should incorporate appropriate buffering with suitable habitat and minimise lighting using a sensitive strategy. For trees that may be directly or indirectly affected by the proposals (such as from lighting), it is recommended to conduct an endoscope inspection of potential roost features right before any work begins.

A minimum of one bat box (e.g. Schwegler 1FR Bat Tube or Integrated Eco Bat Box Crevice) should be placed on or within the buildings post–development or trees within the site in accordance with the retailer's instructions (see Appendix 5). The boxes should be at least 4m above ground level, away from lights and not placed above / near windows.

Foraging and Commuting Bats

The requirements of any future lighting must be assessed and implemented in line with best practice guidance to inform a sensitive lighting strategy. Such guidance should include construction work being limited between the hours of dawn and dusk, site specific lighting practices (e.g., low–light levels and use of timers) and the avoidance of light spill onto boundaries and adjoining habitats.). These documents contain further information: BCT and ILP (2023) and Matthews et al. (2015).

Badgers

No signs of badger activity, such as latrines, tracks, badger highways, or snuffle holes, were present. Foraging and commuting opportunities are likely not possible on the site. No evidence of badgers was identified during the survey. However, precautionary working methods should be carried out pre–construction and during construction. Any other impacts to badgers are considered negligible, and no further survey work is required.

During the construction period, precautionary mitigation measures should be implemented to avoid potential harm to badgers. These measures should include:

- Storing oils, fuels, and chemicals in sealed containers and ensuring they are not left out overnight.
- Covering any trenches overnight or providing a means of escape for any animals that may fall in, such as a ramp.
- Capping any open or exposed pipework to prevent animals from gaining access.

These recommendations aim to protect badgers and ensure compliance with legal obligations during the development process.

Amphibians and Reptiles

Should any evidence of reptiles be found during works, all activity should cease immediately, and an ecologist must be contacted. A suitable protection or mitigation strategy will need to be developed and submitted to the local planning authority, and if required, a European Protected Species Mitigation (EPSM) licence application will need to be obtained before works can continue.

Any potential habitats created during construction, such as debris piles, should be carefully removed by hand where possible. If any signs of reptiles are observed, a qualified ecologist must be contacted immediately to provide guidance on appropriate actions.

Breeding Birds

Any vegetation removal (e.g., hedgerows, ivy, shrubs, trees) and building demolition / conversion must avoid the nesting bird season (typically March to September inclusive) or otherwise be checked by a suitably qualified ecologist immediately prior to clearance / construction to check for nesting birds if undertaken during the nesting season. If any nests or evidence of nesting is found, then suitable buffer zones will have to be implemented until the chicks have fledged or until the nest has been confirmed as redundant. The netting of any suitable bird nesting habitat is prohibited (CIEEM and RSPB, 2019).

A minimum of one box should be erected on or within the buildings post–development or trees within the site. Suggestions for bird boxes include sparrow boxes (e.g., Schwegler 1SP), swift boxes (e.g., Ibstock Eco–Habitat for Swifts), starling boxes (e.g., Woodstone Starling Nest) and generalist boxes (e.g., Woodstone Build–In Box) (see Appendix 5).

General Recommendations

These working methods are appropriate for mammal species of principal importance including hedgehogs as well as other species (e.g., herpetofauna):

- Work on the site may create rubble piles which may have the potential to be utilised as places of rest or shelter. Such debris must be removed from the site immediately or placed into skips prior to removal, or on pallets if to be reused.
- Escape routes must be provided within any pits dug for the foundations. Such ramps must be no steeper than 45 degrees in angle and must be constructed using rough wooden planks. Any excavations left open overnight must be checked first thing in the morning prior to works recommencing.
- Any exposed open holes should be capped to prevent hedgehogs and other small mammals from gaining access.
- Undertake clearance and construction work between dawn and dusk in daylight hours.
- If protected species are unexpectedly discovered, works must cease immediately, and a suitably qualified ecologist must be contacted. An appropriate protection / mitigation strategy will need to be designed and submitted to the local planning authority. A European Protected Species Mitigation (EPSM) licence application may also be required.

Invertebrate boxes / towers should be incorporated into the design plans to offer invertebrates valuable places of shelter and help to encourage their presence on the site (see Appendix 5). These should be preferably placed in south–facing locations.

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Appendix 1 – Relevant Legislation

Please note, the below legislation and planning policy is not exhaustive, and this does not constitute legal advice.

Bats

Bats are a European Protected Species. Individual bats and their roosts have strict protection and are listed in Annex IV of the EC Habitats Directive 1992 (transposed into law through the Conservation of Habitats and Species Regulations 2017). Some bats have a higher conservation concern in Europe. The habitats supporting these species can be designated as Special Areas of Conservation and the bat species concerned are then listed under Annex II of the Habitats Directive. Species listed on Annex II include the barbastelle, Bechstein's bat, greater horseshoe and lesser horseshoe.

Substantial penalties, which include fines and custodial sentences, are now in place for offenders under the Conservation of Habitats and Species Regulations 2017. The actions and activities that are prohibited are:

- Deliberate capture, injury or killing of a bat,
- Damage or destruct a breeding site or resting place (even if currently vacant),
- Possess, control, transport, sell or exchange, or offer for sale or exchange, of any bat or any part of a bat or anything derived from one, and
- Deliberate disturbance of a bat, in particular disturbance which is likely to impair their ability to: survive, breed or reproduce; rear or nurture their young; hibernate; migrate; or affect the local distribution or abundance of the species.

The Wildlife and Countryside Act 1981 (as amended), which is the primary legislative Act covering wildlife in the UK, affords protection to all the species of bats in the UK. Various amendments have been made to the Act and recent changes include an offence for the reckless damage of roosts or disturbance of bats. Legal precedence

also ensures that roost sites are protected on a regular basis year on year regardless of whether bats are present at the time of inspection.

Many bats are described as being of principal importance for the purpose of conserving biological diversity under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. The NERC Act places a biodiversity duty upon local and national government departments to ensure the conservation of biodiversity. The National Planning Policy Framework (NPPF) also sets out the government's planning policies within England and this aims to promote and ensure sustainable development.

An assessment of any structures and trees within the site was also conducted. The assessment of the structures and trees follows best practice guidelines and techniques and the report has been written in line with recommendations within the new bat survey guidelines (Collins, 2023).

Any structures are initially assessed to have either high, moderate, low, negligible or no suitability to support roosting bats. This is based on the presence of suitable roosting features and also includes an assessment for bat evidence (e.g., feeding remains, staining, bat droppings and individual bats). The categories are allocated irrespective of the presence of a roost. For example, if a bat roost is confirmed to be present then the categorisation still stands but confirmed roost should be added (e.g., high suitability – confirmed roost). Structures assessed to have none or negligible roosting potential do not usually need further surveys. However, those with Low, Moderate or High potential or Confirmed will require additional surveys to confirm if bats are present and to characterise the roost. Buildings are categorised as follows:

- No ('none') suitability – no habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels). No further surveys necessary.

- Negligible suitability – no obvious features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use and apparently unsuitable features on occasion. No further surveys necessary.

- Low suitability – a structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide appropriate conditions (i.e., space, protection, shelter) and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be used as a maternity roost and not a classic cool/stable hibernation site but could be used by individual hibernating bats). One presence / absence survey between May and August.
- Moderate suitability – a structure with one or more potential roost sites that could be used by bats due to their appropriate condition (i.e., size, shelter, protection) and surrounding habitat. However, it is unlikely to support a roost of high conservation value (with respect to roost type only such as maternity or hibernation). Two presence / absence surveys, which have to be three weeks apart, between May and September with at least one surveys between May and Augu
- High suitability – a structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their conditions (i.e., size, protection, shelter) and surrounding habitat. These structures have the potential to support high conservation roosts e.g., maternity or classic hibernation site. Three presence / absence surveys (including for confirmed roosts), which have to be three weeks apart, between May and September with at least two surveys between May and August.

A Ground Level Tree Assessment (GLTA) for bats was also conducted which searches for potential roosting features within trees from the ground. This is a baseline survey only that determines whether there is an available roosting resource (e.g., woodpecker holes, natural holes, knotholes loose bark, cracks and splits) and the need for further survey and/or mitigation. Any Potential Roosting Features (PRFs) are then categorised as either negligible (no noteworthy potential roosting features) or:

- PRF–I – PRF suitable for individual bats or very small numbers of bats either due to the size or lack of suitable surrounding habitats (not a confirmed bat roost). No further surveys are necessary but precautionary method of works for removal and provision of roosting compensation is necessary.

- PRF–M – PRF suitable for multiple bats and may therefore be used by a maternity colony or known roost i.e., known roost present for example, through local records, evidence and sightings. Three climbing inspection surveys, at minimum three week intervals), are required for PRF–M features which should be undertaken May to September with at least two surveys between May and August. If climbing and inspection if not possible, then three dusk emergence surveys with night–vision aids will be required between May and September, with three–week minimum intervals), with at least two surveys between May and August. If a maternity colony is identified, then less invasive methods, such as dusk emergence surveys with night–vision aids should be employed.

The assessment of the site to support commuting and foraging bats follows best practice guidelines and techniques and the report has been written in line with recommendations within the new bat survey guidelines (Collins, 2023). The site is categorised as follows:

- Negligible suitability – no habitat features on site likely to be used by commuting or foraging bats. No survey effort required to establish the habitat value.

- Low suitability – habitats that could be used by low numbers of commuting bats such as an isolated gappy hedgerow or suitable, yet isolated, habitat that could be used by foraging bats such as individual trees. Survey efforts includes one Night–time Nat Walkover survey per active season (Spring – April/May, Summer – June/July/August and Autumn – September/October) and static automated surveys which include data collected over a five–night period in each aforementioned season.

- Moderate suitability – habitats that are well connected to the wider landscape that could be used by commuting bats such as tree lines and hedgerows or by foraging bats such as open water and scrub. Survey efforts includes one Night–time Nat Walkover survey per active season (Spring – April/May, Summer – June/July/August and Autumn – September/October) and static automated surveys which include data collected over a five–night period in each month from April to October.

- High suitability – habitats that are well connected to the wider landscape that are highly conducive to commuting bats such as river valleys and woodland edge or by foraging bats such as broadleaved woodland and grazed parkland. Survey efforts includes one Night–time Nat Walkover survey per active season (Spring – April/May, Summer – June/July/August and Autumn – September/October) and static automated surveys which include data collected over a five–night period in each month from April to October.

Badgers

Badgers and their setts are afforded strict protection under the Protection of Badgers Act 1992. This Act consolidates past badger legislation and, in addition to protecting the badger itself, makes it an offence to damage, destroy or obstruct badger setts. Badgers are also protected under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended), and listed under Appendix III of the Bern Convention, as a species that is in need of protection but may be hunted in exceptional instances. Only badger setts that are currently in use are covered by wildlife legislation.

Surveys are undertaken in line with guidance in Surveying Badgers by Harris *et al.* (1989). A 30–metre zone of influence is considered appropriate for this species based on their known tolerance for disturbance. Any evidence (e.g., badger setts, latrines and snuffle holes) and suitability is noted by the surveyor as well as any disused holes.

Birds

All wild birds in the UK are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy the nest or its eggs.

Some bird species, such as the barn owl, are listed in Schedule 1 of the 1981 Act and receive further protection, making it an offence to intentionally or recklessly disturb these birds whilst building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

The NERC Act (2006) inserts a new schedule into the Wildlife and Countryside Act (1981) to protect the nests of some bird species that regularly re–use their nests, even

when the nests are not in use. This protection currently applies to golden eagle, white–tailed eagle and osprey.

Bird surveys are carried out in accordance with Bird Monitoring Methods (RSPB) (Gilbert *et al.*, 1998).

Reptiles

All British reptiles are listed under schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are therefore protected from intentional killing or injury. This is largely as a consequence of a national decline in numbers associated with habitat loss.

Two scarcer native British reptiles (smooth snake and sand lizard), are afforded 'full' protection. This legislation makes it an offence to intentionally or recklessly kill, injure, disturb, take, possess or sell these species (in all life stages). It is also illegal to damage, destroy or obstruct access to places they use for breeding, resting, shelter and protection.

All species of reptile are priority species in the UKBAP and have been adopted as Species of Principal Importance under Section 41 of the NERC Act (2006) in England (Section 42 in Wales).

Assessments consider information and methodology provided within the Reptile Habitat Management Handbook (Edgar *et al.*, 2010) and the Herpetofauna Workers Manual (Gent and Gibson, 2003).

Amphibians

Great crested newts and their habitats are fully protected by the Conservation of Habitats and Species Regulations (2017) and partially protected under the Wildlife and Countryside Act 1981 (as amended). This legislation makes it an offence to kill, injure or capture great crested newts, their young or eggs, or destroy / damage their ponds or places of shelter used for breeding or protection. The great crested newt is also a Priority species in the UK Biodiversity Action Plan (UKBAP) and had been adopted as a Species of Principle Importance in England under Section 41 of the NERC Act 2006.

The natterjack toad is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats and Species Regulations 2017 making it a European Protected Species. The natterjack toad is also a priority species under the UK Biodiversity Action Plan.

The pool frog is protected under the Conservation (Natural Habitats &C.) Regulations 1994 (as amended). As a European protected species, the deliberate capturing, disturbing, injuring or killing of this species is prohibited, as is damage or destruction of its breeding sites or resting places. The pool frog is also a priority species under the UK Biodiversity Action Plan due to a 100% decline over 25 years (1980–2005).

Common toads are also designated UKBAP species due to a serious decline of populations across large areas of southern, eastern and central England, thought to be mainly due to changes in habitat management, mortalities on the roads, and climate change.

Great crested newt site assessments are undertaken in accordance with English Nature (2001) and Langton *et al.* (2001). Any aquatic and terrestrial habitats on the site and in the immediate vicinity were assessed for their suitability for use by great crested newts. Great crested newts have been known to travel up to 500m between breeding ponds and suitable habitats. However, they are more likely to remain between the breeding pond and up to 250m away if there are suitable terrestrial habitats. Therefore, a desk–based search was undertaken prior to the ecological survey for ponds up to 250m from the site using aerial imagery and OS mapping. The terrestrial habitat between the site and these ponds, and therefore connectivity to the site, was also considered (if applicable). Major barriers such as major roads or fast–flowing watercourses are likely to prevent dispersal of great crested newts to the wider environment.

Habitat Suitability Index (HSI) assessments provide a mechanism by which the suitability of a pond to support great crested newts can be objectively assessed in order to assist the identification of ponds potentially supporting this species (Oldham *et al.*, 2000). For the HSI assessment, the locations of waterbodies within a 250m radius of the site were identified from online aerial photographs and a 1:10,000 scale OS map. A HSI assessment was undertaken on each waterbody with ecological connectivity. To make the HSI assessment, the standing waterbody is scored in relation to 10 suitability

indices: location, waterbody area, pond drying, water quality, shade, waterfowl presence, fish presence, number of standing waterbodies in the local area, terrestrial habitat, and macrophyte cover. Each of these features is awarded a score between 0 and 1, and a final score is calculated, also between 0 and 1. This final score enables the standing waterbody to be ranked in terms of its suitability (poor <0.5, below average 0.5 – 0.59, average 0.6 – 0.69, good 0.7 – 0.79 or excellent > 0.8) and an estimate made of the predicted presence of great crested newts within the standing waterbody. The presence of any great crested newt eggs or individual great crested newts were also recorded if applicable as well as the descriptions of the aquatic and surrounding terrestrial habitats. Further surveys, in the form of eDNA surveys or traditional methods (e.g., bottle trapping) may be required, if presence / absence and a population assessment is required. A general assessment for other amphibians was also undertaken.

Dormice

Common dormice and their habitats are fully protected by both the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations (2017). This legislation makes it an offence to kill, injure, disturb or capture dormice, or destroy or obstruct their resting or breeding places.

The dormouse is also a priority species under the UK Biodiversity Action Plan and has been adopted as a species of Principal Importance in England under Section 41 of the NERC Act 2006 (section 42 in Wales) and so is protected from any adverse effects as a result of development.

Hedgehogs

Hedgehogs are UK Biodiversity Action Plan (BAP) species, and therefore must be taken into consideration as part of development planning.

All Mammals

The Wild Mammals (Protection) Act 1996 offers protection to all wild species of mammal, irrespective of other legislation, and focuses on animal welfare, rather than conservation. Unless covered by one of the exceptions, one is guilty of an offence if they mutilate, kick, beat, nail or otherwise impales, stabs, burns, stones, crushes, drowns,

drags or asphyxiates any wild mammal with intent to inflict unnecessary suffering. Its application is typically restricted to preventing deliberate harm to wildlife in general during construction works and similar.

The Wildlife and Countryside Act 1981 (as amended)

The Act and its various amendments have been created from pre–existing legislation and support the Conservation of Habitat and Species Regulations (2017, as amended) in implementing the Berne Convention (1979) and Directive 2009/147/EC on the conservation of wild birds. The schedules within this Act provide a list of protected species and habitats as well as prohibited actions. The Act also contains measures for controlling invasive non–native species under Schedule 9 and amendments to a number of laws including public rights of way. Further details have been provided above for specific species.

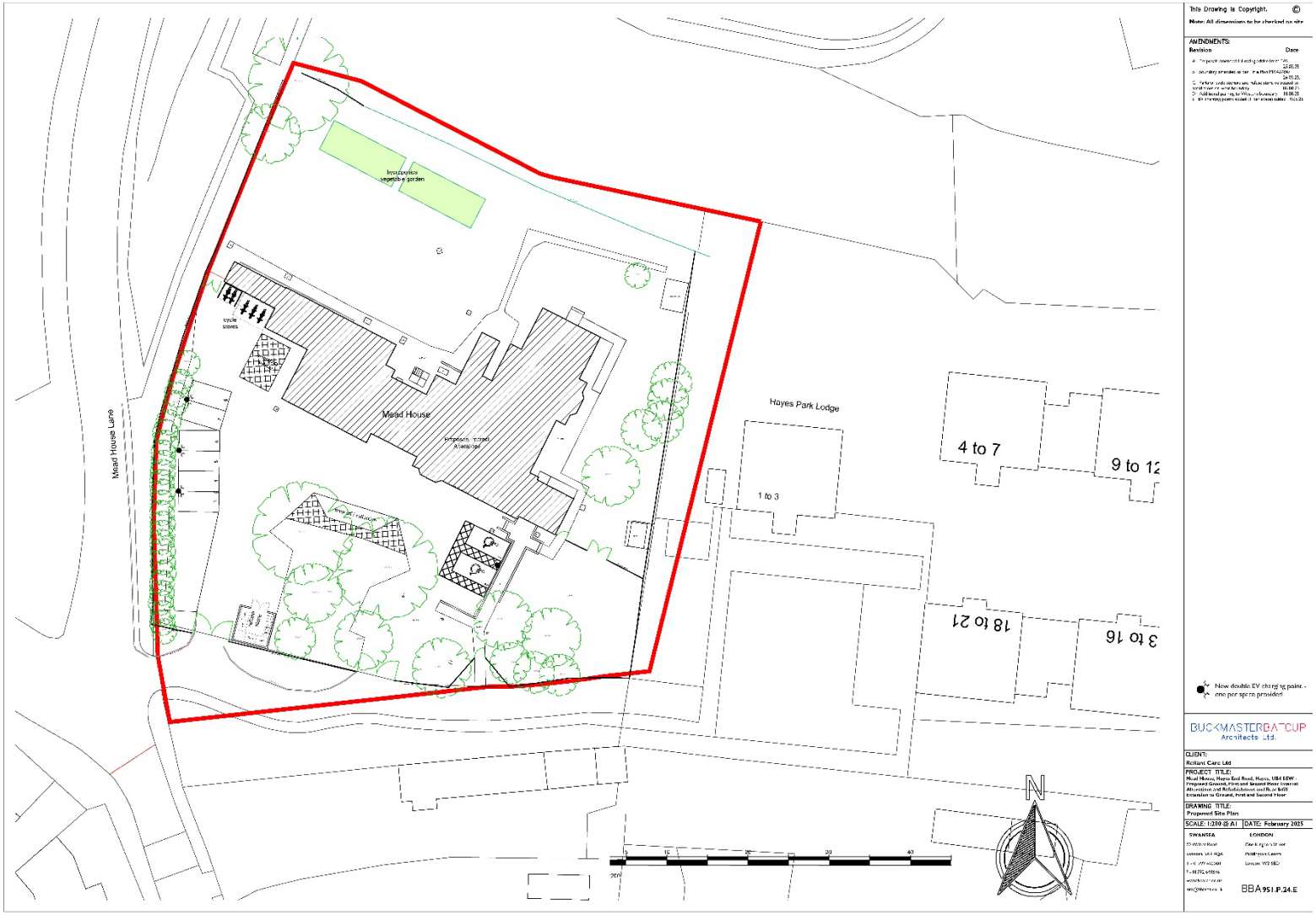
The Conservation of Habitats and Species Regulations 2017

(as amended)

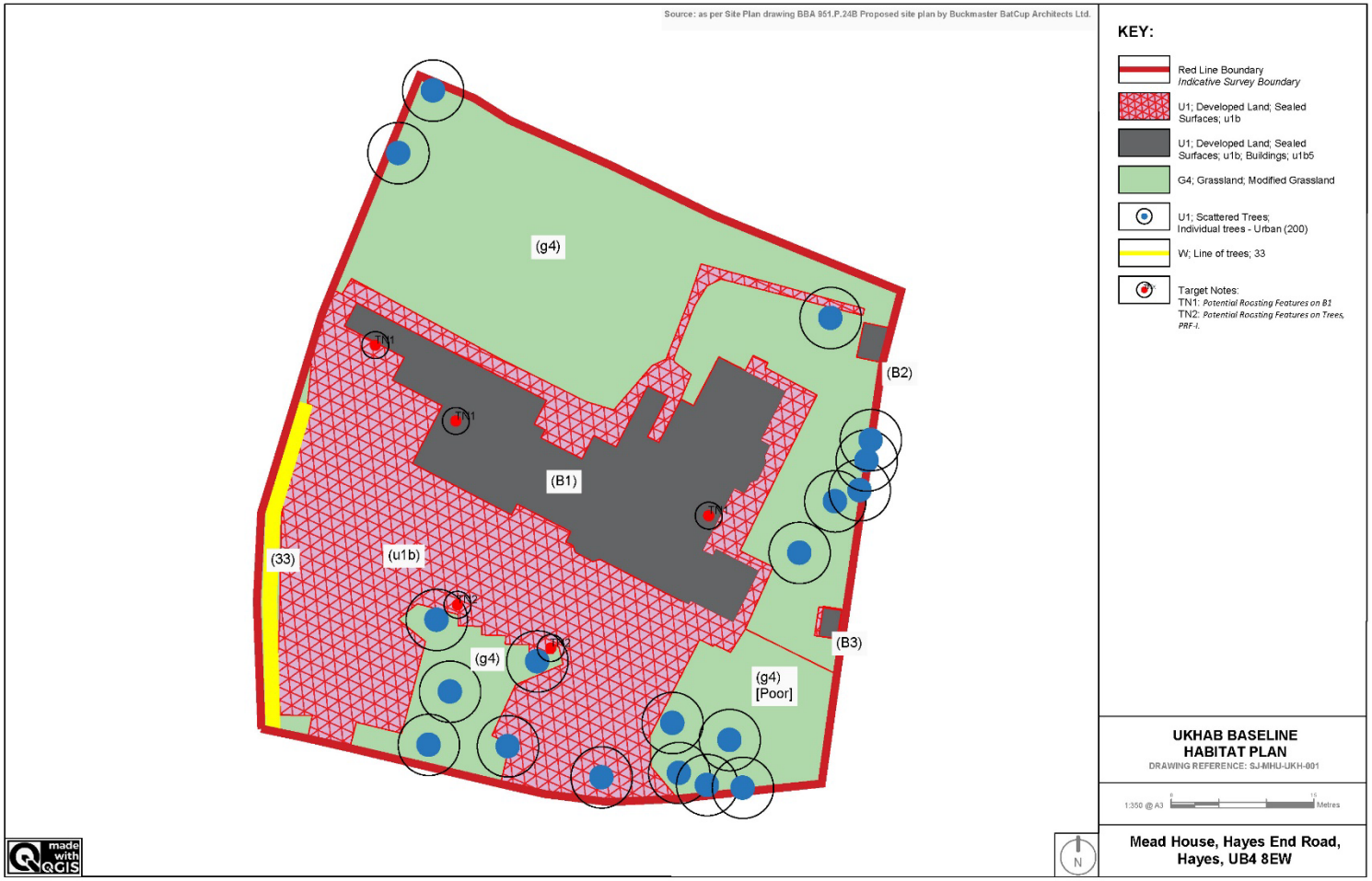
These Regulations are the primary method by which the Council Directive 92/43/EEC under Conservation of Natural Habitats and of Wild Fauna and Flora (the 'Habitats Directive') is transposed for England and Wales and their territorial seas. These Regulations form the basis for implementation of Europe's nature conservation policy through habitat and species level protection. It also requires the designation of European sites known as Special Areas of Conservation (SAC). Taken collectively with the Special Protection Areas (SPAs), which are underpinned by the Birds Directive, these form the Natura 2000 Network of protected sites. Public bodies must exercise their nature conservation responsibilities in order to ensure compliance with these Regulations. These Regulations also require conservation of natural habitats and habitats of species through selection process which are afforded protection under the Habitats Directive. The Regulations contain provision for the appropriate management of sites such as the control of damaging operations special nature conservation orders and restoration orders. The Regulations offer strict protection to European Protected Species under Schedule 2 and plants under Schedule 5. Such offences may include the deliberate capture, killing, disturbance or trade of these animals. Similarly, plants

listed under schedule five are typically protected from picking, collection, cutting destruction or trade.

Appendix 2 – BBA 951.P.24E Proposed site plan



Appendix 3 – UKHAB Baseline Survey

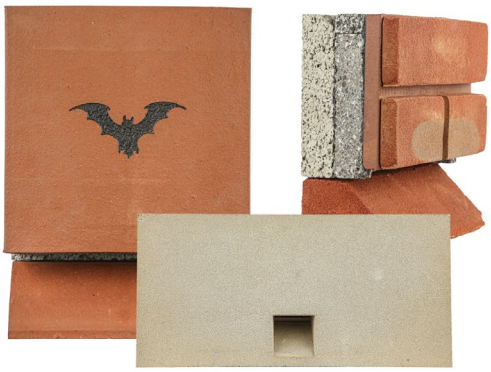


Appendix 4 – Recommended enhancement specifications

WoodStone Build-In Open Nest Box

Schwegler 1SP Sparrow Terrace

Ibstock Eco-Habitat for Swifts



Integrated Eco Bat Box, Crevice

Schwegler 1FR Bat Tube

Invertebrate Tower / Log Pile