

Preliminary Ecological Appraisal and Roost Assessment

Survey site:

Mill Barns, High Street, Whitwell, Hertfordshire, SG4 8AG

Client:

Talmi Investments Ltd

Survey date:

29th April 2025

Project:

This report is prepared to inform a planning application with Hertfordshire County Council.

The proposal is described as: *Conversion and extension of barn into a dwelling.*

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

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

Site Location and Context					
The survey site is centred on National Grid Reference TL18772103 and has an area of approximately 0.18ha. The site comprises a barn and an area of garden with scattered trees. It is situated in the town of Whitwell, Hertfordshire. Aerial imagery shows the local landscape to have a sub-urban character, with large areas of agricultural land and several copses of woodland in the surrounding area, the river Mimram also runs to the north and east of the site.					
Survey Details					
The site survey was undertaken by Rhiannon Jensen O'Brien BSc (Hons), MSc, Consultant Ecologist with two years' experience. Natural England GCN licence number- 2024-12480-CL08-GCN, Bat Licence Number: 2024-12554-CL17-BAT and qualifying member of CIEEM. The survey results and recommendations contained within this report are valid for 18 months. An updated site visit may be required if the report is to be used any longer than 18 months after completion.					
Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (mph)	Rain
29/04/2025	22	56	40	5	None
Survey limitations					
It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records. A biological records data search has not been undertaken. However, given the location of the site, the nature of the habitats present and the assessed suitability of the site for protected or notable species, it is not anticipated that the purchase of biological records data will add any significant weight or alter the conclusions and recommendations outlined in this report.					
Executive Summary					
- A biodiversity net gain assessment is required. - Droppings indicative of bat were identified in B1. Three bat emergence re-entry surveys are recommended with two surveyors and a licence to Natural England is required. - Precautionary working methods are recommended for amphibians, reptiles, nesting birds, foraging and commuting bats and terrestrial mammals.					

Ecological Survey Factor Conclusion, Impact or Recommendations	Detailed using desk study and site survey (carried out under good 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.
Habitats and plants (see habitat map in appendix 1, appendix PRA map, location plan in appendix 3, proposal plan in appendix 4). Botanical species are described with reference to the DAFOR scale (D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare).	
<i>Summary of Survey Findings</i> <i>(UKHab codes used)</i>	On-site habitat descriptions <u>u1b5</u> – Buildings There is 1 building on-site. <u>u1c</u>- Artificial unvegetated unsealed surface A gravel driveway is located to the east.  <u>u1</u> - Built-up areas and gardens [vegetated garden 828, scattered trees 32] Areas surrounding the building comprise vegetated gardens from the surrounding dwellings. The garden areas comprises a managed lawn to approximately 5cm, with species including frequent perennial rye grass, daisy occasional false oat grass, ribwort plantain, nettle, doves foot cranesbill, rare white dead nettle, yarrow, bramble and green alkanet.



There are two scattered trees comprising a medium sized ash and a small sized pear tree located within the boundary.



Individual trees condition assessment

- a) The trees are a native species.
- b) These are individual trees and as such passes this criterion.
- c) The trees are mature.

	d) There is no evidence of adverse impact of tree health by human activities. The trees retain >75% of their expected canopy. e) Natural ecological niches (e.g. deadwood, cavities, ivy, loose bark) are absent from the trees. f) >20% of the tree canopy is oversailing vegetation beneath. Score: Good – passes 5 criteria Local notable habitats Local notable habitats within 2km of the site include: There are approximately 28 patches of deciduous woodland within 2km of the site, with the nearest of these being 164m northwest of the site boundary. There is limited connectivity between the trees on site and the woodland due to separation by an area of agricultural land. There are also 6 patches of floodplain grazing marsh in the area, the nearest being 225m east of the site. There is a traditional orchard 1.4km southwest of the site and lowland fens habitat 1km northwest. There are 2 patches of wood pasture and parkland, the closest being 270m northeast of the site boundary.
<i>Foreseen Impacts</i>	On-site habitats The proposed development will result in the loss of garden areas for the extension, while other existing garden areas will be retained. While this habitat is common without mitigation the loss could result in a net loss in biodiversity at the site. Notable habitats No direct impacts to any notable habitats will occur as a result of the proposed development. However, due to the proximity of the site to River Mimram indirect effects (e.g. pollution, dust, litter, surface run off, etc.) could occur during construction.
<i>Recommendations</i>	On-site habitats Retained trees 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). Notable habitats Best practice measures to minimise the possibility of pollution affecting the nearby river must be implemented during construction. Biodiversity net gain The Environment Act (2021) requires all developments (excluding exemptions) to deliver a 10% net gain in biodiversity. This is mandatory for larger developments and comes into force for smaller developments on 2nd April 2024. Therefore, the planning

	application must be accompanied by a landscaping/habitat creation and enhancement strategy, biodiversity net gain calculations and a habitat management and monitoring plan to ensure the proposed development delivers a 10% net gain.
Locality and Designated Sites	
<i>Summary of Survey Findings</i>	On-site designations The site is not subject to any designation. Statutory designated sites (within 2km) There are no known statutory sites nearby. No national network sites (SAC, SPA, Ramsar) are located within 2.5km. The site lies within the impact risk zones for two sites of special scientific interest, Knebworth Woods SSSI (3.8km east) and Wain Wood SSSI (4.28km north) and the proposed development is not listed as a possible high risk for this designation. Non-statutory designated sites The presence of non-statutory designated sites within 2km of the site cannot be established without data from Herts Environmental Records Centre (HERC).
<i>Foreseen Impacts</i>	On-site designations No impacts foreseen. Statutory and non-statutory designated sites No impacts to designated sites are anticipated due to the small scale and distance of the proposed development from such sites (where known) as well as the urban location of the site with surrounding physical barriers.
<i>Recommendations</i>	On-site designations None required. Statutory and non-statutory designated sites None required.
Invasive / Non-native species	
<i>Summary of Survey Findings</i>	No problematic invasive and non-native species recorded on site.
<i>Foreseen Impacts</i>	N/A
<i>Recommendations</i>	No further surveys but remain vigilant.
Invertebrates	

Summary of Survey Findings	The habitats present on-site, including lawn and trees, are likely to provide common invertebrates with opportunities to forage and shelter. The site contains no further notable habitats which may provide niches for specialised or protected invertebrates.	
Foreseen Impacts	None foreseen.	
Recommendations	No further surveys.	
Bats		
Summary of Survey Findings	EPSL data A search of the magic.gov.uk database for granted EPSLs within a 2km radius of the site has been completed. Displaced bats from licensed sites <2km away from the survey site will find alternative habitat either within the mitigation measures implemented as part of the licence or will relocate to other known roosts sites in close proximity to the licensed site. No EPSLs are present within a 2km radius of the site. Foraging and commuting habitat Habitats on site including the lawn and scattered trees can provide foraging and commuting opportunities for bats. However, due to the extent of these habitats they are not assessed to provide a significant resource within the landscape. The surrounding landscape contains the river Mimram and areas of woodland to provide additional opportunities. Roosting habitat Buildings and trees to be impacted by the proposed development are assessed for their suitability to support roosting bats below. There is one building on site comprising the barn. No evidence of roosting bats was identified on or within B1.	
B1 Building description		Photographs

Summary

B1 is a detached barn comprising a wooden weatherboarded exterior and a pitched gabled roof with corrugated roofing felt. The eaves are open and lead into the interior. A bat box is located on the southern elevation.

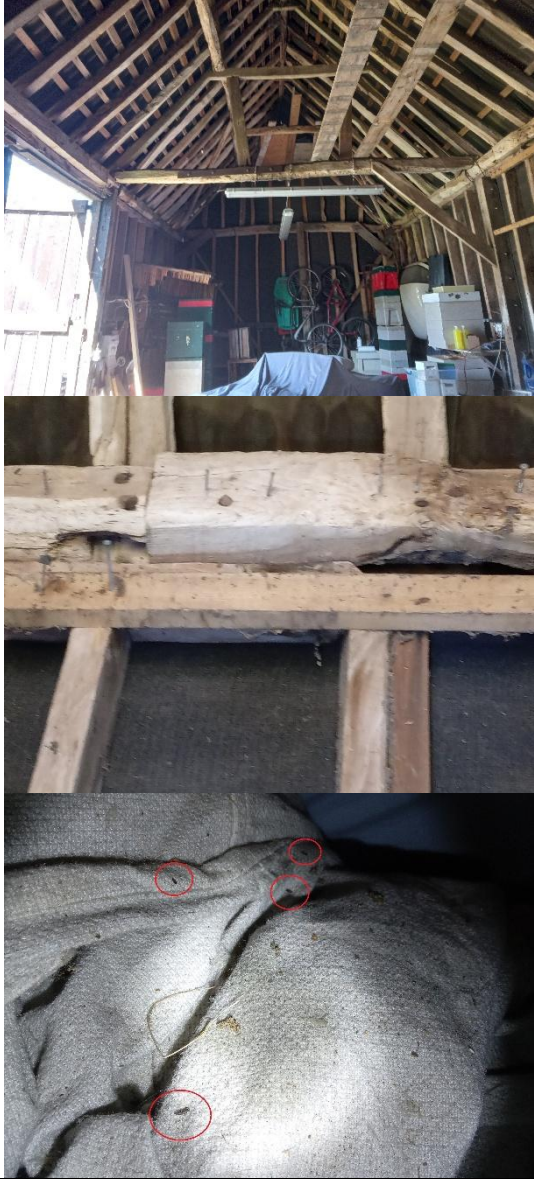
The wooden weatherboarding is generally in good condition, some panels have lifted on the southern and eastern elevation. The corrugated roofing felt is unlined and has minimal overlap thus there is a lack of suitable refuge for crevice dwelling bats in the material. The internal timber structure contains some small crevices suitable for roosting bats.

The building will be extended and converted to a dwelling. The building is a confirmed roost with **high habitat value**.



Feature	Materials	Condition/description/suitability	Photograph(s)
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Walls	Wooden weatherboarding	Condition/description Generally good condition, with some small area lifted/warped. Suitability/access/evidence of bats Raised external boards provide roosting habitat for crevice dwelling bats. No evidence found but recent and current rain would wash this away externally.	
Roof	Corrugated roofing sheets	Condition/description Good condition with no overlap. Suitability/access/evidence of bats The lack of interior lining indicates a lack of opportunities for crevice dwelling bats.	N/A
Eaves	timber	Condition/description Gaps/crevices on wall tops. Suitability/access/evidence of bats Provides possible bat access into internal void and crevices on wall tops. No evidence found but recent and current rain would wash this away externally. Could support maternity roosts of crevice dwelling bats.	

Internal voids	Timber structure, unlined	Condition/description The interior is open to the roof, with a timber structure and no interior lining. The interior appears generally well sealed, however it is noted access is possible from the gable ends. Suitability/access/evidence of bats Approximately 15 droppings indicative of bat were found within B1 across stored items. The wooden timber contains a small number of crevices suitable for bats. Temperature: 26 degrees Humidity: 28% Dimensions: 6m height, 5m width and 11m length.	
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<i>Foreseen Impacts</i>	Roosting habitat [Buildings] The proposed development will result in the conversion and extension of this building. This could result in the destruction or damage of any bat roosts present and could cause disturbance, death or injury to bats. Foraging and commuting habitat The proposed development will not result in the removal of any habitats which could be used by foraging or commuting bats. However, the proposed development will include the use of lighting which could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas. Artificial lighting The proposed development may lead to an increase in the amount of current lighting of surrounding habitats or the retained building without mitigation. This may disturb commuting bats.
<i>Recommendations</i>	Roosting habitat [Buildings] Three bat emergence/re-entry surveys are required on B1 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building. These survey visits should be completed during the optimal survey period mid-May to August inclusive. One of the surveys could be a dawn re-entry survey, or all three can be at dusk if supported by night vision aids (NVA). Two surveyors are required to provide full coverage of the building's elevations to look for emerging/re-entering bats. An infrared camera should also be employed as part of the survey to see where any specific roost locations are located. Lighting mitigation may be required based on the outcome of the night bat survey(s). If any bat roosts are confirmed from this survey schedule, a bat licence would be required to demolish the buildings as it would involve the destruction of roosts. This is applied for with the help of a class 2 licensed bat ecologist after planning permission is granted, but before commencement of works. An EPSL application to Natural England will be required. The EPSL application requires that all surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission. Foraging and commuting habitat No further surveys are required. Artificial lighting A low impact lighting strategy will be adopted for the site during post-development which outlines the areas of the site that will be retained as dark corridors. Parameters can be found on the Bat Conservation Trust website: https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting Suggested biodiversity enhancements

	Enhancements are dependent on the outcome of further surveys.
Birds	
<i>Summary of Survey Findings</i>	Buildings B1 can provide nesting opportunities for small birds due to open eaves. Trees and vegetation No bird nests were identified within the trees on-site, however they all offer nesting opportunities and nest-building resources for birds. Barn owls The site does not appear to provide any suitable nesting sites for barn owls. Overwintering birds Due to the small size of the site and the extent and type of the habitats recorded, the site not considered suitable to support a significant assemblage of protected and/or notable birds.
<i>Foreseen Impacts</i>	Buildings/trees The proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests. Barn owls None foreseen. Overwintering birds None foreseen.
<i>Recommendations</i>	Buildings/trees Any building works or 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. 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. Barn owls None required.

	Overwintering birds None required. Suggested biodiversity enhancements The installation of a minimum of a bird box on mature trees around the site boundaries or on retained buildings will provide additional nesting habitat for birds e.g. Woodstone Nest Box (buildings or trees) 1B Schwegler Nest Box (buildings or trees) Vivara Pro WoodStone Swift Nest Box (buildings) Or a similar alternative brand. Tree boxes should be positioned approximately 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. Small-hole boxes are best placed approximately 1-3m above ground on an area of the tree trunk where foliage will not obscure the entrance hole. Swift and sparrow boxes should be positioned at the eaves of a building and can be incorporated into the fabric of the building during construction.
Reptiles	
<i>Summary of Survey Findings</i>	Habitat suitability There is limited suitable habitat present on site for reptiles due to a lack of habitats such as scrub and rank grassland which would offer refuge for these species. It is noted that due to management of the garden on site which retained a short sward length at the time of survey, the grassland is suboptimal for reptiles due to an absence of refuge opportunities. The site is also enclosed by managed agricultural land and other residential buildings. These landscape features are likely to significantly limit dispersal opportunities onto the site for reptiles from the wider landscape. However, boundary hedgerows and trees can provide opportunities for reptiles.
<i>Foreseen Impacts</i>	A small area of garden will be lost in the development. The loss of such habitats is likely to be inconsequential to local reptile populations owing to their low value and the presence of more extensive habitat locally. However, site clearance could result in the death or injury of reptiles, if present.
<i>Recommendations</i>	A precautionary working method will be implemented for widespread reptiles during construction, including the following measures: • Vegetation will be maintained at a short sward (5cm) to discourage reptiles. • 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 habitats. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.

	• If any reptiles 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. • In the unlikely event that a reptile is identified, works must cease and advice must be sought from a suitably qualified ecologist. Suggested biodiversity enhancements The site could be enhanced for reptiles post-development with the inclusion of log piles/hibernacula and planting of areas of native shrubs, to provide sheltering opportunities.
Amphibians	
<i>Summary of Survey Findings</i>	EPSL and survey data A review of the MAGIC database returned no granted EPSL records for great crested newts within 2km of the site. However, the MAGIC database did return evidence indicating the presence of great crested newts resulting from historic pond surveys undertaken in 2014. These records are located 50m north of the site. Great crested newts exist in metapopulations and are known to utilise ponds and their connecting terrestrial habitat during their life cycle; great crested newts are typically found within terrestrial habitats up to 500m from breeding ponds (Langton <i>et al.</i> 2001). As such, the great crested newt metapopulation known to be present 50m north is suitably connected to the site. Habitat suitability There are no ponds on the site, but a review of aerial imagery (MAGIC and OS Maps) indicates the presence of 4 ponds within 500m; the closest pond is located 0.15km southeast of the site and is situated on the far side of the B651 (Whitwell Road). Two of the other ponds are also located on the far side of the B651 and the remaining pond is on the far side of Valley Road, 500m west. These landscape features are likely to represent a barrier to dispersal due to heavy traffic flow and high kerbs along the road, reducing connectivity to the site for great crested newts. The site contains a managed lawn which is of sub-optimal value to GCN due to a lack of refuge opportunities, however it is noted scattered trees onsite can provide foraging and refuge value for GCN.
<i>Foreseen Impacts</i>	It is anticipated the development will impact less than 100m² of garden habitat, when factored into the Rapid Risk Assessment calculator provided by Natural England, a result of "Green: offence highly unlikely" is produced and the proposed development is therefore not considered to be licensable. In addition impacts are related to habitats on sub-optimal value for GCN, thus are highly unlikely to be present for prolonged periods in these areas which is assessed to significantly reduce the risk. However it is noted local data identifies presence of GCN in proximity to the site thus recommendations are included below to mitigate risk from construction.
<i>Recommendations</i>	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:

	• 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. • 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. • In the unlikely event that a great crested newt is identified, works must cease and advice must be sought from a suitably qualified ecologist. Suggested biodiversity enhancements The site could be enhanced for amphibians post-development through creation of amphibian hibernacula. Information on how to construct a hibernaculum can be found here: https://www.wiltshirewildlife.org/hibernaculum
Badger	
<i>Summary of Survey Findings</i>	No badger setts were noted on site or within a 30m radius of the site. The site is considered unsuitable for badgers given the lack of suitable sett excavation areas/ground. However the garden areas and scattered trees can provide foraging and commuting value. The site is surrounded by further dwellings and arable fields, providing similar value to badgers with no significant barriers to dispersal.
<i>Foreseen Impacts</i>	Small areas of garden will be removed during construction. The loss of such habitats is likely to be inconsequential to local badger populations owing to their low value and the presence of more extensive habitat locally. However, construction activities could result in the death or injury of badgers, if present.
<i>Recommendations</i>	Owing to the nature of the proposed development and the low potential for impacts, further badger surveys are considered to be disproportionate. A precautionary working method will be implemented during construction, including the following measures: • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which badgers could use. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.

	In the unlikely event that a badger sett is identified, works must cease and advice must be sought from a suitably qualified ecologist. Suggested biodiversity enhancements Planting fruit bearing trees and species-rich grassland to increase foraging opportunities for badgers.
Riparian animals	
<i>Summary of Survey Findings</i>	A tributary to the river Mimram is located 12m east of the site. The river is also located 60m north of the site. This is not within an influencing distance for water vole however otters if present may use the surrounding garden areas to forage and commute.
<i>Foreseen Impacts</i>	Otters The proposed development will not result in the loss of any riparian habitats and no works will be undertaken within 8m of the watercourse (as per Environment Agency regulations). However, due to the presence of the watercourse within close proximity of the site, indirect effects such as pollution could occur during construction. Furthermore, construction activities could result in the death or injury of otters, if present. Water voles 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.
<i>Recommendations</i>	Otters 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: • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • 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 otters 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. 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. Water voles None required.
Hazel dormouse	

<i>Summary of Survey Findings</i>	EPSL data A review of the MAGIC database returned no granted EPSL records for hazel dormice within 2km of the site. Habitat suitability Dormice typically utilise a three-dimensional habitat structure as to commute between feeding and breeding sites whilst avoiding predation. As such habitats on site are considered unsuitable for hazel dormice and therefore the likelihood of this species being present on site is considered acceptably low.
<i>Foreseen Impacts</i>	No impacts are anticipated on hazel dormice as a result of the proposed development.
<i>Recommendations</i>	None foreseen.
Other e.g. hedgehog	
<i>Summary of Survey Findings</i>	The habitats onsite provide foraging and commuting opportunities for hedgehogs, with suitable opportunities in the surrounding landscape.
<i>Foreseen Impacts</i>	Garden areas will be removed during construction. The loss of such habitats is likely to be inconsequential to local hedgehog populations owing to their low value and the presence of more extensive habitat locally. However, construction activities could result in the death or injury of hedgehogs, if present.
<i>Recommendations</i>	Similar to the badgers, a precautionary working method will be implemented during construction, including the following measures: - Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. - The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which hedgehogs 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 hedgehogs 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. Suggested biodiversity enhancements The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for hedgehogs: - Planting fruit bearing trees and species-rich grassland to increase foraging opportunities. - Creation of brash piles or installation of hedgehog houses in shady areas.

Appendix 1: Survey/Habitat map



Appendix 2: PRA map



Appendix 3: Location map



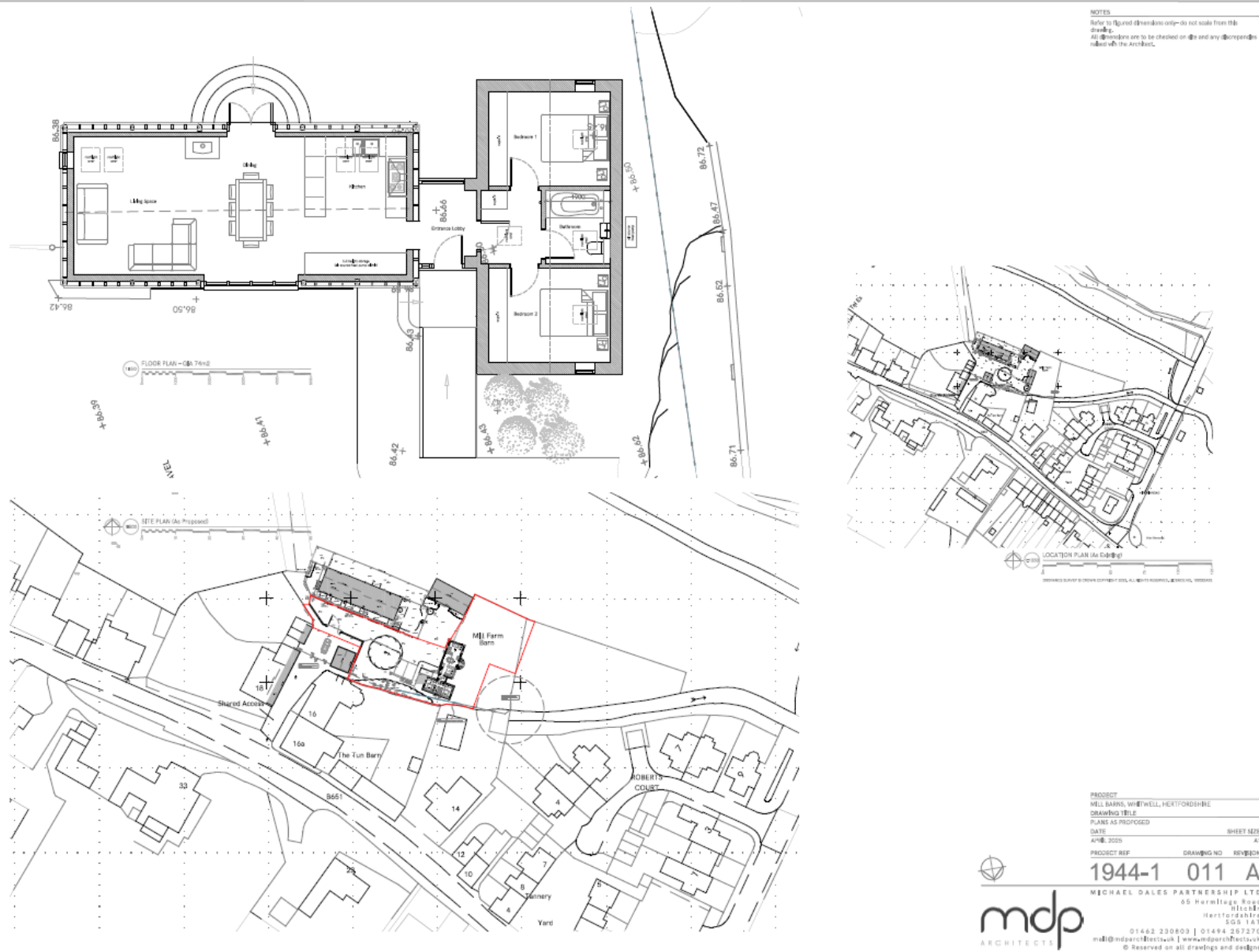
Appendix 4: Proposed plan

NOTES:
Refer to figure dimensions only - do not scale from this drawing.
All dimensions are to be checked on site and any discrepancies noted with the Architect.



PROJECT
MILL BARNS, WHITWELL, HERTFORDSHIRE
DRAWING TITLE
ELEVATIONS AS PROPOSED
DATE
APRIL 2025
PROJECT REF
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Version control			
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Final	1.0	Rhiannon Jensen O'Brien BSc (Hons) MSc, Consultant Ecologist	14/05/2025