

Preliminary Ecological Appraisal

June 2025

**Land off Echo Hill,
Royston**

Prepared by
CSA Environmental

On behalf of
Gladman Developments Ltd

Report No: CSA/7494/01/B

This report may contain sensitive ecological information. It is the responsibility of the Local Authority to determine if this should be made publicly available.

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CONTENTS	Page
Executive Summary	1
1.0 Introduction	2
2.0 Legislation, Planning Policy & Standing Advice	3
3.0 Methods	4
Desk Study	4
Field Survey	5
Limitations	6
Evaluation and Assessment	7
4.0 Baseline Ecological Conditions	8
Nature Conservation Designations	8
Habitats and Flora	10
Fauna	13
5.0 Discussion and Recommendations	18
Therfield Heath SSSI and LNR	18
Holland Hall (Melbourn) Railway Cutting SSSI	19
Green Lane South of Royston LWS	19
Habitats and Flora	19
Biodiversity Net Gain	20
Fauna	21
Opportunities for Ecological Enhancement	23
6.0 Conclusions	25
7.0 References	26
Appendices	
Appendix A: Habitats Plan	
Appendix B: Legislation, Planning Policy and Standing Advice	
Appendix C: Desk Study Information	
Appendix D: Photographs	
Appendix E: Habitats and Flora Species List	
Appendix F: Potential Roost Assessment	
Appendix G: Biodiversity Net Gain	

EXECUTIVE SUMMARY

Residential development is proposed at Land off Echo Hill, Royston, for which planning permission will be sought. CSA Environmental was instructed by Gladman Developments Ltd to undertake a Preliminary Ecological Appraisal (PEA) of the Site to identify any ecological constraints to development, inform scheme design, highlight opportunities for ecological enhancement and determine the need for any additional investigation/survey. As part of this PEA, a desk study and field survey of the Site, including a UK Habitat Classification survey, were undertaken in February 2025.

No international statutory designations were identified within the search area. The Site lies south-east of Therfield SSSI and LNR and is connected to these Sites via Public Rights of Way. Furthermore, Green Lane S. of Royston LWS is present immediately south of the Site. Residential development has the potential to increase recreational pressure at the SSSI/LNR. Developer contributions and on-site greenspace provision, in accordance with the Therfield Heath Mitigation Strategy (North Herts Council, 2024) will be delivered as part of the proposed scheme. Safeguards during construction are also proposed in respect of the adjacent LWS.

The Site comprises two grassland fields that are cut annually for hay. These fields are seeded with agricultural grasses with sward composition also reflecting underlying soil character and colonising species. Native hedgerows are present on field boundaries, which should be retained where possible. A residential dwelling with associated garden is included within the Site to the north.

The proposed scheme includes areas of retained grassland, seeking to restore these to species-rich swards. To address Biodiversity Net Gain (BNG) requirements, residual losses of agricultural sown grasslands will require off-site biodiversity gains. These will be secured post-consent through appropriate legal mechanisms to discharge the Biodiversity Gain Condition following grant of consent.

Protected species surveys are currently underway to inform an Ecological Impact Assessment (EclA) of the scheme. Ecological enhancement measures are set out herein to be delivered as part of the proposed scheme including bird and bat boxes, bee bricks, hedgehog holes. Chank banks are also proposed using site-won chalk substrates to benefit local butterfly populations including chalk hill blue *Lysandra coridon* associated with Therfield Heath SSSI.

1.0 INTRODUCTION

- 1.1 This report has been prepared by CSA Environmental on behalf of Gladman Developments Ltd. It sets out the findings of a Preliminary Ecological Appraisal (PEA) of Land off Echo Hill, Royston (hereafter referred to as 'the Site'). Residential development is proposed at the Site, for which planning permission will be sought.
- 1.2 The scope of this appraisal has been determined with due consideration for best-practice guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017), and to the *Biodiversity: Code of practice for planning and development* (BS 42020:2013) published by the British Standards Institution (2013).
- 1.3 The Site occupies an area of c. 8.90ha and is located around central grid reference TL 35378 39946, to the south of Royston. It consists of two neutral grassland fields bordered by native hedgerows and one residential dwelling including an associated garden and driveway (see Habitats Plan in Appendix A).
- 1.4 This PEA aims to:
 - Characterise baseline ecological conditions of the Site and its wider context
 - Identify any ecological constraints to development of the Site
 - Inform scheme design
 - Identify further ecological surveys and investigation necessary to inform a full Ecological Impact Assessment (EcIA) of the Site
 - Highlight opportunities for ecological enhancement
- 1.5 To achieve these aims, an ecological desk study and field survey were undertaken of the Site, the findings of which are presented herein.

2.0 LEGISLATION, PLANNING POLICY & STANDING ADVICE

Legislation

- 2.1 Legislation relating to wildlife and biodiversity of particular relevance to this PEA includes:
- The Conservation of Habitats and Species Regulations 2017 (as amended)
 - The Wildlife and Countryside Act 1981 (as amended)
 - The Natural Environment and Rural Communities (NERC) Act 2006
 - The Protection of Badgers Act 1992
 - The Environment Act 2021
- 2.2 This above legislation has been addressed, as appropriate, in the production of this report. Further information on the above legislation is provided in Appendix B.

National Planning Policy

- 2.3 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities & Local Government, 2024) sets out the government planning policies for England and how they should be applied. Chapter 15: Conserving and Enhancing the Natural Environment, is of particular relevance to this report as it relates to ecology and biodiversity. Further details are provided in Appendix B.
- 2.4 The Government Circular 06/2005, which is referred to by the NPPF, provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their effects within the planning system.

Local Planning Policy

- 2.5 A number of local planning policies relate to ecology, biodiversity and/or nature conservation. These are summarised in Table 1 of Appendix B. These policies have been addressed, as appropriate, in the production of this report.

Standing Advice

- 2.6 Natural England and Defra's Standing Advice (Natural England & Defra, 2014) regarding habitats and protected species aims to support local authorities and forms a material consideration in determining applications in the same way as any individual response received from Natural England following consultation. Standing advice has therefore been given due consideration, alongside other detailed guidance documents, in the production of this report.

3.0 METHODS

Desk Study

- 3.1 An ecological desk study was undertaken in February 2025 comprising a review of online resources and biological records centre data as detailed below.
- 3.2 The Multi-Agency Geographic Information for the Countryside (MAGIC) online database was reviewed to identify nature conservation designations within the following search radii:
 - Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites within 10km of the Site (including possible/proposed sites)
 - Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Local Nature Reserves (LNR) within 3km of the Site
 - Other relevant data e.g. Ancient Woodland Inventory within 1km of the Site
- 3.3 A review was undertaken of the location of any such designations, their distance from and connectivity with the Site, and the reasons for their designation. This information was used to determine whether they may be within the proposed development's Zone of Influence (Zol).
- 3.4 Hertfordshire Environmental Records Centre (HERC) and Cambridgeshire and Peterborough environmental Records Centre (CPERC) was contacted for details of any non-statutory nature conservation designations and records of protected/notable habitats and species. This information was requested for an area encompassing the Site and adjacent land within c. 2km of its central grid reference. This search area was selected to include the likely zone of influence upon non-statutory designations and protected or notable habitats and species.
- 3.5 Further online resources were reviewed for information which may aid the identification of important ecological features. The Woodland Trust's online Ancient Tree Inventory was reviewed for known ancient or veteran trees within the Site and adjacent land. Interactive online mapping provided by the charity 'Buglife' was used to determine whether the Site falls within an Important Invertebrate Area.
- 3.6 In accordance with Natural England's Great Crested Newt Mitigation Guidelines (2001), a desktop search was undertaken to identify ponds within 500m of the Site which may have potential to support breeding great crested newts *Triturus cristatus*, using Ordnance Survey (OS) mapping, the MAGIC database and aerial photography.

- 3.7 Where possible under the terms of the data provider, relevant desk study data are presented in Appendix C.

Field Survey

- 3.8 A UK Habitat Classification ('UKHab') survey was carried out in fine and dry weather conditions on 20 February 2025 by Bethany Wilson ACIEEM FISC level 4 and Rosie Billington, encompassing the Site and immediately adjacent habitats that could be viewed.
- 3.9 UKHab is a unified and comprehensive system for mapping and classifying habitats, designed to provide a simple and robust approach to surveying and monitoring, and replaces Phase 1 Habitat survey methods. The method allows for identification of important habitat types, including habitats of Principal Importance under Section 41 (S41) of the NERC Act (2006) and Habitats Directive Annex I habitats. This method also allows for direct translation of habitats into the Statutory Biodiversity Metric (Defra, 2024).
- 3.10 The following parameters were adopted for the UKHab survey undertaken for this PEA:
- UKHab Professional edition (Butcher *et al.*, 2023, commercial End User Licence Agreement (EULA))
 - Minimum Mappable Unit (MMU):
 - 10m²/0.001ha (polygons)
 - 5m (linear)
 - Primary Habitats recorded to a minimum of Level 2 (see below) with UKHab codes provided
 - Mandatory secondary codes used
 - Base-mapping comprising a combination of aerial imagery and topographic information
- 3.11 Primary Habitats are recorded to a minimum of Level 2. Where the survey is conducted at an appropriate time of year (e.g. May to July for grassland) habitats may be recorded to Level 3, 4 or 5, only if conditions and the experience of the surveyor allow.
- 3.12 Alongside the UKHab survey, additional field survey information was collected, comprising:
- Detailed floral species lists recorded for each identified habitat/parcel
 - Evidence of, or potential for, European Protected Species (EPS) (including bats, great crested newt, dormouse and otter)
 - Evidence of, or potential for, other protected species (including birds, reptiles, water vole, badger and certain invertebrates)
 - Evidence of, or potential for, other notable species (including S41 Species of Principal Importance as well as notable, rare, protected or controlled plants and invertebrates)

- Any other survey information relevant to ecological matters
- 3.13 Results of the UKHab survey are presented on the Habitats Plan in Appendix A. Appendix D provides photographs of the habitats at the Site and Appendix E provides a list of floral species recorded in each habitat parcel. Nomenclature for higher plants within this report is consistent with the fourth edition of *The New Flora of the British Isles* (Stace, 2019).

Botanical and Habitat Condition Surveys

- 3.14 To assist with classification of grassland habitats quadrat samples were taken during dedicated botanical surveys on 19 June 2025 by Jamie Woollam CEcol MCEEIM (FISC Level 5). Representative sample locations were identified within each grassland parcel, spread evenly to avoid habitat transitions or ecotones, following a 'W' shape through the parcel and a covering a minimum of five sampling locations. Both average (mean) species count per m² and peak species counts are reported for comparison.
- 3.15 Quadrats of 1m x 1m were used. This technique assists, for example, with distinguishing between modified (g4) and other neutral (g3c) grasslands (using the threshold of nine species per m², reporting an average of the four samples) and of lowland meadows (g3a). The results of the quadrat surveys are provided in Appendix E.
- 3.16 The abundance of flora species recorded within habitats was measured using the DAFOR scale of abundance. Habitat descriptions below refer to this generalised scale and use (D) for dominant, (A) for abundant, (F) for frequent, (O) for occasional and (R) for rare abundances.
- 3.17 An assessment of habitat and hedgerow condition was also undertaken on the 19 June 2025 by Jamie Woollam CEcol MCIEEM, in accordance with the Statutory Metric User Guide (Defra, 20224). Published condition assessment templates have been completed and are provided in Appendix G.

Preliminary Roost Assessment (Structures)

- 3.18 All accessible buildings on-site were inspected and assessed for their potential to support roosting bats, with due consideration for the *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016). Full survey methods and results are provided in Appendix F.

Limitations

- 3.19 There were no specific limitations to the desk study. The initial field survey was conducted in February, a sub-optimal for botanical surveys. This is not considered to be a significant limitation to the aim of the initial PEA

assessment which is intended to identify broad habitat types and the potential for notable/protected species. Further detailed botanical work within the optimal season is recommended to support a planning application.

Evaluation and Assessment

- 3.20 The evaluation and assessment of ecological features is beyond the scope of a PEA and has therefore not been undertaken here. Formal evaluation and assessment of any identified important ecological features should be undertaken as part of either a full EclA, or receptor-specific survey and assessment in accordance with the published CIEEM method (CIEEM, 2018).

4.0 BASELINE ECOLOGICAL CONDITIONS

Nature Conservation Designations

Statutory

- 4.1 There are no statutory designations covering any part of the Site.
- 4.2 No international statutory designations were identified within 10km of the Site. Two national statutory designations were identified within 3km of the Site. These were the Therfield Heath SSSI (c. 60m north-west of the Site) and Holland Hall (Melbourn) Railway Cutting SSSI (c. 2.3km north-east of the Site).
- 4.3 One local statutory designation was identified within 3km of the Site. This was Therfield Heath LNR (c. 60m west of the Site).
- 4.4 These statutory designations are described in Table 1 below.

Non-Statutory

- 4.5 Eight non-statutory designations were identified within 2km of the Site. The closest designation is Green Lane S. of Royston LWS, a green lane supporting calcareous grassland, which lies immediately adjacent to the southern boundary. The remaining seven non-statutory designations are detailed in Table 1 below.

Table 1. Statutory and Non-Statutory Designations within search radii

Site Name & Designation	Distance & Direction from Survey Area	Special Interests or Qualifying Features
International Designations within 10km		
-	-	-
National Designations within 3km		
Therfield Heath SSSI	c. 60m north-west of the Site	Therfield Heath comprises of lowland calcareous grassland and lowland mixed deciduous woodland. It supports a wide range of butterflies including chalkhill blue <i>Lysandra coridon</i> .
Holland Hall (Melbourn) Railway Cutting SSSI	c. 2.3km north-east of the Site	This designation comprises of lowland calcareous grassland in unfavourable, recovering condition.
Local Designations within 3km		
Therfield Heath LNR	c. 60m west of the Site	Therfield heath LNR comprises a large colony of rare pasque flowers <i>Pulsatilla vulgaris</i> which bloom in early spring and grassland. This grassland comprises herbs include bastard toadflax <i>Comandra umbellata</i> , lesser meadow rue <i>Thalictrum minus</i> and spotted cat's-ear <i>Hypochaeris radicata</i> . Other typical chalk grassland flowers include horseshoe vetch <i>Hippocrepis comosa</i> , squinancywort <i>Cynanchica pyrenaica</i> ,

		wild candytuft <i>Iberis amara</i> and five species of orchid. This Site supports various bird assemblages, butterfly and invertebrate species.
Non-Statutory Designations within 2km		
Green Lane S. of Royston LWS	Adjacent to southern boundary	Green Lane and adjoining field margins supporting calcareous grassland with a rich diversity of species including common knapweed <i>Centaurea nigra</i> , greater knapweed <i>C. scabiosa</i> , agrimony <i>Agrimonia eupatoria</i> , dwarf thistle <i>Cirsium acaule</i> , field scabious <i>Knautia arvensis</i> , common rest-harrow <i>Ononis repens</i> and knapweed broomrape <i>Orobanche elatior</i> .
Therfield Green Lane LWS	c. 0.6km south-west of the Site	Green lane supporting calcareous grassland and substantial hedges for part of its length. Species present include greater knapweed, common knapweed and devil's-bit Scabious <i>Succisa pratensis</i> .
Royston Chalk Pit LWS	c. 0.6km north-east of the Site	Chalk pit with a former lime kiln dominated by deciduous scrub, mainly beech <i>Fagus sylvatica</i> , sycamore <i>Acer pseudoplatanus</i> , ash <i>Fraxinus excelsior</i> and hybrid elm <i>Ulmus glabra x minor</i> . A chalky woodland flora is present, including wood false-brome <i>Brachypodium sylvaticum</i> , yellow archangel <i>Lamium galeobdolon</i> and sanicle <i>Sanicula europaea</i> . The designation overlaps a Herts and Middlesex Wildlife Trust (HMWT) managed nature reserve.
Shaftesbury Green LWS	c. 0.6km north-east of the Site	A remnant area of semi-improved calcareous grassland supporting an upright brome <i>Bromus erecta</i> , agrimony, common knapweed, bird's-foot-trefoil <i>Lotus corniculatus</i> , quaking-grass <i>Briza media</i> and small scabious <i>Scabiosa columbaria</i> .
Therfield, South of Tumulus LWS	c. 1.1km west of the Site	Experimental chalk grassland plot supporting indicators of unimproved grassland. Species comprise agrimony, kidney vetch <i>Anthyllis vulneraria</i> , common knapweed, lady's bedstraw <i>Galium verum</i> , bird's-foot trefoil, wild marjoram <i>Origanum vulgare</i> , cowslip <i>Primula veris</i> and salad burnet <i>Sanguisorba minor</i> .
Fordhams Wood LWS	c. 1.7km west of the Site	Old lynchets with secondary woodland of sycamore, beech and ash with a shrub layer predominantly of hawthorn <i>Crataegus monogyna</i> and elder <i>Sambucus nigra</i> .
Fox Covert nature reserve	c. 1.8km west of the Site	A small beech woodland set within the wider Therfield Heath landscape. This

		supports a variety of bird species and pasque flowers.
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Soil Conditions

- 4.6 A review of Soilscape mapping shows that the underlying soils of the Site fall under Soilscape 3 'freely draining shallow lime-rich soils over chalk or limestone'. These soils provide suitable conditions for calcareous grassland and other lime-rich habitats

Habitats and Flora

- 4.7 Habitats recorded on-site are illustrated in Appendix A with detailed species lists provided in Appendix E. Relevant UKHab codes are provided within parentheses for each habitat type recorded [e.g. Other Neutral Grassland (g3c)].

Irreplaceable Habitats

- 4.8 There is no ancient woodland, as shown on the Natural England Ancient Woodland Inventory, covering any part of the Site or immediately adjacent land. No trees on or adjacent to Site are listed on the Ancient Tree Inventory.

Notable Flora Records

- 4.9 The desk study identified 339 records of 85 notable plant species from within the search area. Those of potential relevance to the Site include corn buttercup *Ranunculus arvensis*, pasqueflower *Pulsatilla vulgaris*, purple milk-vetch *Astragalus danicus*, basil thyme *Clinopodium acinos*, carline thistle *Carlina vulgaris*, chalk eyebright *Euphrasia pseudokernerii*, autumn gentian *Gentianella amarella*, common rock-rose *Helianthemum nummularium*, sainfoin *Onobrychis viciifolia*, spiny restharrow *Ononis spinosa* and hoary plantain *Plantago media*.
- 4.10 There are records are calcareous grassland species, mainly from Therfield Heath SSSI, that may be relevant to the Site given the potential calcareous soil type and the proximity to the SSSI.

Other neutral grassland (g3c)

- 4.11 The majority of the Site comprises grassland across two fields, which at the time of the survey was uniform in height (>50cm) and predominantly consisting of sown grass species.
- 4.12 The grasslands are understood to be managed with an annual hay-cut with no herbicide treatments. Field F1 was last seeded in 2023 with a fast-growing grass mix including agricultural cultivars of timothy *Phleum pratensis*, cock's-foot *Dactylis glomerata*, perennial rye grass *Lolium perenne* and meadow fescue *Schedonorus pratensis* and red fescue *Festuca rubra*. The smaller field F2 was last set in 2019 with a similar composition of grasses.

- 4.13 At the time of survey, both fields comprised predominantly of grass species including those seeded species as above, with other colonising species indicative of surrounding habitats and soil conditions: false oat-grass *Arrhenatherum elatius*, yellow oat-grass, soft brome, smooth meadow-grass, crested dog's tail, Yorkshire fog, and common bent *Agrostis capillaris*. A higher abundance of colonising species were present in field F2 given longer time since seeding.
- 4.14 Herbaceous species were occasional or rarer within the sward, including greater knapweed *Centaurea scabiosa*, wild mignonette *Reseda lutea*, and wild carrot *Daucus carota*, ox-eye daisy *Leucanthemum vulgare*, yarrow *Achillea millefolium*, bladder campion *Silene vulgaris*, common cats-ear *Hypochaeris radicata* and field bindweed *Calystegia arvensis*. Again, a higher proportion of herbs were found in field F2, particularly to the margins, given time following seeding.
- 4.15 As noted above some grass and herb species are indicative of local calcareous (chalk) soil conditions.
- 4.16 Table 2 below sets out a summary of grassland quadrat survey data and condition.

Table 2 Summary of grassland quadrat and condition data

Field	Average (mean) species-richness (sp/ m ²)	Peak species-richness (sp/ m ²)	Condition
F1	10.6	12	Poor
F2	13	15	Good

- 4.17 Both grasslands exceed the threshold of up to 9sp/m² for agriculturally modified grassland as defined by UKHab with a wider range of colonising species present than those seeded. Whilst a small number of calcareous grassland indicators are present the sward does not represent this habitat type and is therefore classified as 'other neutral grassland'.
- 4.18 Notwithstanding the above, only field F2 represents a 'good' example of this habitat given the frequency of false-oat grass, knapweed and other indicator species is high, with field F1 retaining a greater abundance of agricultural species given the shorter time since seeding.
- 4.19 Condition Field F1 was found to be in 'Poor' condition following the Statutory Biodiversity Metric habitat condition assessment (Defra, 2024) as the current management/seed mixture does not represent a good example of its UKHab type. Accordingly field F1 is assessed to be in 'poor' condition, failing statutory biodiversity metric condition assessment essential criterion A, with field F2 passing this and other criteria to be found in 'good' condition.

Suburban mosaic of developed and natural surface (u1d)

- 4.20 A small residential garden and front lawn is located on the north of the Site. Modified grassland is present within the garden, which is lined with ornamental flower beds (846) and landscaping shrub (847). Of particular note is the presence of c. seven orchid basal rosettes within the front garden grassland.
- 4.21 A driveway and small patio areas are present surrounding the residential dwelling within the north of the Site.

Buildings (u1b5)

- 4.22 There are two buildings present on site along the northern boundary. A residential detached house (B1) and a small garden shed (B2).

Native Hedgerows (h2a)

- 4.23 Eight hedgerows were recorded on field boundaries within the Site. The hedgerows comprise native woody species with evidence of a cutting regime from the Site side.
- 4.24 H1 is along the western boundary of the Site and has evidence it has been historically laid and managed. It is on a bank and c. 2m in height and 2.5m wide. Woody species recorded include sycamore *Acer pseudoplatanus*, hawthorn *Crataegus monogyna*, spindle *Euonymus europaeus*, ivy *Hedera helix*, blackthorn, oak *Quercus* sp., elder *Sambucus nigra* and bramble *Rubus fruticosus* agg. Ground flora species visible at this time of year included cleavers *Galium aparine*, ribwort plantain *Plantago lanceolata*, clover *Trifolium* sp. and common nettle *Urtica dioica*.
- 4.25 H2, H4 and H5 are similar in composition and structure. Both of these hedges have been historically laid and have a wire fencing. The hedgerow comprised predominantly of common hawthorn and blackthorn, with a ground flora similar to H1 that included dog-rose *Rosa canina* sp., oxeye daisy *Leucanthemum vulgare* and cow parsley *Anthriscus sylvestris*.
- 4.26 H3 is an overgrown hedgerow, c. 6m tall and c. 1m wide that includes a shallow bank. The species composition was similar to the above hedgerows, with additional species including holly *Ilex aquifolium*, bramble *Rubus*, sun spurge *Euphorbia helioscopia* and creeping thistle *Cirsium arvense*.
- 4.27 H6 is present on the northern boundary of the Site and is adjacent to residential gardens. This hedgerow is gappy and tall but managed from the Site side. Species recorded in H6 include hawthorn, blackthorn, ivy, periwinkle *Vinca* sp., and cow parsley *Anthriscus sylvestris*.

- 4.28 H7 and H8 are short stretches of beech *Fagus sylvatica* hedgerow on the eastern boundary and northern section of Site adjacent to residential gardens.
- 4.29 None of the hedgerows are considered to be species rich, falling below the five woody species required per 30m sample length. Following the Statutory Biodiversity Metric habitat condition assessment (Defra, 2024), six of the hedgerows (H1 – H5 and H7) were found to be in 'Good' condition, with H6 and H8 found to be in 'Moderate' and 'Poor' condition respectively.

Off-site Grassland

- 4.30 At the time of survey the track verges to the west and south of the Site were observed to support a calcareous grassland sward with multiple calcareous indicators including bladder campion *Silene vulgaris*, yellow oat-grass, crossword *Cruciata laevipes* and field scabious *Knautia arvensis*. These grasslands are partially within and the reason for designation of the Green Lane S. of Royston LWS.

Fauna

Bats

- 4.31 A total of 105 bat records were identified within the search area, dating from 1977 to 2020. These include the following species: bat species *Chiroptera*, barbastelle *Barbastella barbastellus*, pipistrelle species *Pipistrellus* sp., long-eared species *Plecotus* sp., brown long-eared bat *P. auritus*, common pipistrelle *P. pipistrellus*, Daubenton's Bat *Myotis daubentonii*, serotine *Eptesicus serotinus*, soprano pipistrelle *P. pygmaeus* and Natterer's Bat *M. nattereri*. The closest records are of unidentified bat species foraging/dispersing along the northern Site boundary. The majority of these records date between 2018 and 2020. One of these records was for anecdotal evidence of a bats within a bat in a garden to immediate north of the Site in 2020. Other roost records were for brown long-eared bat, Daubenton's bat and Natterers bat located at Royston Chalk pits LWS, c. 0.6km north-east of the Site.
- 4.32 A review of European Protected Species licences available on the MAGIC website has identified one bat licence record for brown long-eared bat located c. 1km north-west within 2km of the Site from 2011. This is within a dispersible range of the Site. Woodlands and residential buildings in the wider landscape could offer roosting opportunities for multiple bat species.
- 4.33 The majority of the Site provides foraging and dispersal opportunities for a range of bats species. These are connected to off-site suitable habitats by a network of hedgerows.

Preliminary Roost Assessment

- 4.34 Two structures, labelled B1 and B2 on the Habitats Plan in Appendix A, was assessed for the potential to support roosting bats. Structure B1 was considered to have 'low' potential for bats, with B2 having negligible potential. The full results of the building inspection are provided in Appendix F.
- 4.35 Approximately ten mature trees are present immediately adjacent to the north-eastern corner of the Site (see TN2 on the Habitats Plan in Appendix A). The majority were observed to have potential roost features for bats including knot holes, tear outs and peeling bark.

Badger

- 4.36 The desk study identified 116 records of badger *Meles meles* from within the search area, dating from 1970 to 2023. Of these records, 105 are considered to be recent records dating post 2000. The closest record is within the north-east of the Site from 2020, for trail camera pictures of at least two individuals. The desk study identified a minimum of four badger sett records within the search area, the closest being c. 0.7km south-west of the Site.
- 4.37 No evidence of badgers was recorded during the survey. However, multiple mammal tracks were located along the boundaries of the Site.
- 4.38 The hedgerows and grassland on the Site could provide opportunities for badger to dig setts and also provide foraging and dispersal habitat.

Dormouse

- 4.39 No records of dormouse *Muscardinus avellanarius* were identified within the search area, 2km from the Site.
- 4.40 The majority of the Site, being dominated by managed grassland is considered unsuitable habitat for dormouse which prefer complex habitat structures and woody species. The boundary hedgerows provide some limited opportunities, however these lack the dense vegetation required by dormice. Dormice have historically been present in Cambridgeshire, however due to fragmentation of suitable habitat this species is considered absent from the County except for a 1993 reintroduction project at Brampton Wood (c. 33km north-west of the Site).
- 4.41 Overall, it is considered highly unlikely that dormice will utilise the Site and are not considered further within this report.

Riparian mammals

- 4.42 No records of water vole *Arvicola amphibius* and otter *Lutra lutra* were identified within the search area, 2km from the Site.

- 4.43 No watercourses have been identified within or adjacent to the Site. Therefore, water vole and otter are considered likely absent from the Site and adjacent habitats.

Other Mammals

Brown Hare

- 4.44 The desk study identified 96 records of brown hare *Lepus europaeus* within the search area, dating from 1977 to 2023. The closest records were identified within the Site boundary between 2018 and 2020.
- 4.45 The grassland and hedgerows present at the Site provide opportunities for brown hare to forage and disperse. The wider landscape to the south of arable and pastoral fields provides a large area of suitable habitat for brown hare, which are known to have large home ranges.
- 4.46 Given the proximity of the residential dwellings, the Site is unlikely to be of importance to local brown hare populations.

Hedgehog

- 4.47 A total of 33 records of hedgehog *Erinaceus europaeus* were identified within the search area, dating from 1985 to 2021. The closest record is along the northern boundary in association with a residential garden in various years from 2004-2020.
- 4.48 No evidence of hedgehog was identified during the survey. On-site opportunities for hedgehog are provided by grassland and hedgerows which provide shelter and foraging opportunities. Within the wider landscape, nearby residential gardens situated provide further opportunities for this species.

Harvest Mouse

- 4.49 HERC and CPERC provided four historic records of harvest mouse *Micromys minutus* within the search area, dating from 1974 to 1985. However no current records dating post 2000 of harvest mouse were provided.
- 4.50 Hedgerows and associated field margin grassland provides year round opportunity for this species. Long grassland further within fields also provides a range of opportunities for harvest mouse, albeit with early-season hay cutting likely to impact nest building later in the year.

Birds

- 4.51 A total of 7219 records of 109 bird species were identified within the search area, dating from 1981 to 2020. Those of potential relevance to the Site include barn owl *Tyto alba*, great grey shrike *Lanius excubitor*, redwing *Turdus iliacus*, red kite *Milvus milvus* and skylark *Alauda arvensis*, yellowhammer *Emberiza citrinella*, lapwing *Vanellus Vanellus* and

sparrow hawk *Accipiter nisus*. A large amount of the records provided are in association to Therfield Heath SSSI c. 60m west of the Site.

- 4.52 The hedgerows, grassland and habitats adjacent to the Site provide nesting opportunities for a range of garden and farmland birds, including ground nesting species such as skylark.
- 4.53 During the Site walkover barn owl pellets were noted along H3 and the desk study identified records for foraging barn owl within the Site. No evidence of barn owl nesting was identified to date.

Reptiles

- 4.54 A total of six records of two reptile species were identified within the search area including common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. These records date from 1902 to 2020 with four of these records being considered current dating post 2000.
- 4.55 Grassland and hedgerows on Site provide opportunities for reptiles to forage, bask and seek refuge, particularly in longer grassland sward areas adjacent to hedgerows. Furthermore, the Site is connected to surrounding habitats via hedgerows to woodland, longer sward grassland and scrub.

Amphibians

- 4.56 A total of six records of two amphibian species were identified within the search area, including great crested newt *Triturus cristatus* and common toad *bufo bufo*. These records date from 1981 to 2020 with five records being dating post 2000. The closest records of these is of a common toad recorded along the northern boundary of the Site, likely in association with the residential gardens and P1 on plan CSA/7494/106.
- 4.57 No permanent waterbodies were identified on-site. The hedgerows and grassland may provide foraging, commuting and refuge potential.
- 4.58 A more detailed appraisal of the Site in respect of great crested newt is provided below.

Great Crested Newt

- 4.59 Three records of great crested newt were identified within the search area. All of these records were from the same location, c. 0.8km south-east of the Site in 2017.
- 4.60 A review of European Protected Species licences available on the MAGIC website has identified one great crested newt licence located c. 1.8km north-east of the Site from 2014.
- 4.61 Despite spending much of their annual lifecycle within the terrestrial environment, great crested newts are dependent upon the presence of suitable aquatic breeding habitat in order for a population to persist. No

potential breeding ponds were identified on-site during the site survey and one pond, P1, appears to be present within a dispersible range of the Site based on OS mapping. This pond is located within a residential garden adjacent to the Site.

Invertebrates

- 4.62 A total of 4232 records of 235 invertebrate species were identified within the search area dating from 1800 to 2023. Of these records 3411 were considered current dating post 2000. Those of potential relevance to the Site include roman snail *Helix pomatia*, small Bloody-nosed beetle *Timarcha goettingensis*, black clock *Pterostichus madidus*, scabious longhorn *Nemophora metallica* and chalk hill blue *Polyommatus coridon*. This Site is not located within an Important Invertebrate Area (IIA), however is located c. 60m east of Therfield Heath SSSI is known to have a large populations of invertebrates, with particular butterfly interests.
- 4.63 Given the agricultural nature of grassland which dominate the site and the limited herb content and management regime, the majority of the Site is unlikely to currently support a large or notable population of invertebrates. However, field margins and hedgerows, particularly where chalk grassland flora have colonised, may provide some supporting habitat to populations in the wider landscape.

5.0 DISCUSSION AND RECOMMENDATIONS

Therfield Heath SSSI and LNR

- 5.1 The Site lies c. 60m south-east of Therfield Heath SSSI and LNR and is within the known Natural England Zone of Influence (Zol)/Impact Risk Zone (IRZ).
- 5.2 Therfield Heath SSSI is identified as a good example of East Anglian chalk grassland and is of high conservation value. The designated features of the SSSI are; lowland calcareous grassland, lowland mixed deciduous woodland, a vascular plant and invertebrate assemblage associated with calcareous soils that includes chalkhill blue butterfly *Lysandra coridon*. Natural England undertook condition assessments of the SSSI in March 2024 and recorded that some habitats were in 'unfavourable – no change' condition, with key comments including undermanagement, dog fouling and scrub encroachment affecting the grassland condition and a high frequency of sycamore growth within the woodlands. Pressures affecting the designation were identified as plant disease, dog fouling, recreational disturbance and land management.
- 5.3 Given the physical separation of the SSSI boundary from the Site, no direct impacts are anticipated as a result of the proposed development. However, the Site is connected via PRoWs to the SSSI/LNR with the designation receiving recreational use, particularly from nearby residential area of Royston.
- 5.4 It is anticipated that residential occupation of the Site could lead to indirect impacts through increased recreational use of the SSSI by new residents. A Therfield Heath SSSI Mitigation Strategy developed for the North Hertfordshire Local Plan, proposes off-site and on-site mitigation measures for allocated developments within the c. 3km Zol of the designation (North Herts Council, 2022). This includes financial contributions via S106 payments and the recommendation for the provision of open natural and semi-natural greenspace within residential developments. The strategy recommends that applicants and decision makers should have regard to an 8ha of sufficiently designed open space provision per 1,000 population.
- 5.5 The Development Framework Plan (Iceni, 2025; Revision D) outlines that c. 5.89ha of green infrastructure is proposed. Assuming an occupation rate of 2.4 per new residence for 84 dwellings (=201.6 residents), the proposed open space is significant in excess of 8ha per 1000 residents. The greenspace will include a potential community orchard, circular walking routes and areas of amenity grassland for creation with areas of grassland restoration.

- 5.6 Subject to securing this open greenspace and financial contributions to Therfield Heath SSSI mitigation strategy by an appropriately worded condition no significant adverse effects are anticipated on Therfield Heath SSSI/LNR .

Holland Hall (Melbourn) Railway Cutting SSSI

- 5.7 The Site lies c. 2.3km south-west of Holland Hall (Melbourn) Railway Cutting SSSI and is designated due to its lowland calcareous grassland. The designation was found to be in 'unfavourable – recovering' by Natural England in 2011, with additional grassland management and rabbit control recommended.
- 5.8 Given the distance, no direct adverse effects are anticipated. The Site is outside of the Natural England IRZ for this designation, and therefore indirect recreational impacts are not anticipated.

Green Lane South of Royston LWS

- 5.9 Green Lane S. of Royston LWS present on the off-site side of the southern boundary. The LWS is designated for calcareous grassland with a rich diversity of species.
- 5.10 To avoid accidental or damage or impact during construction, such as from dust or other pathways, a Construction Environmental Management Plan (CEMP) will be prepared, setting out appropriate safeguards to be implemented during construction.
- 5.11 It is anticipated that the LWS could receive increased recreational use as a result of residential occupation of the Site, using footpaths connected to open spaces. As above, sufficient well-designed on-site open space is anticipated to minimise adverse effects off-site along with signage boards indicating the presence of sensitive habitats.

Other LWSs

- 5.12 The remaining local wildlife sites within the surrounding area are all acknowledged to be sensitive to a range of factors, including potential recreational pressure (i.e. trampling of grassland flora and woodland understorey) and increase in cat predation (on birds and other wildlife). However, the measures listed above are anticipated to also relieve any potential pressures in respect of these designations

Habitats and Flora

- 5.13 The Site is dominated by other neutral grassland that is managed for hay creation. At present the biodiversity and quality of the grassland is limited due to its current agricultural management and seeding. Reversion of this grassland represents a strong opportunity to increase biodiversity at the Site, comprising restoration of other neutral grassland with affinities to chalk grasslands.

- 5.14 The eight hedgerows are S41 Habitats of Principal Importance and represent important foraging, refuge and dispersal habitats for a range of fauna. These should be retained and buffered from development. They may also be vulnerable to damage from passing construction traffic and ground compaction. Retained trees, including those off-site but adjacent to the construction zone should be protected during construction through compliance with standard arboricultural practice (BS5837:2012).

Biodiversity Net Gain

- 5.15 Legislation and existing policy support the provision of Biodiversity Net Gain (BNG) through development. The NPPF states that planning decisions should provide net gains for biodiversity, and central government have legislated a requirement for at least 10% net gain in relation to all planning permissions, post February 12, 2024.
- 5.16 The Statutory Biodiversity Metric (Published February 2024) was used to calculate the net effect of the proposed development upon biodiversity, with full calculation provided separately.

Baseline

- 5.17 Baseline (pre-development) habitats and linear measurements were taken from the Habitats Plan in Appendix A. Habitat condition results were taken from the assessments provided in Appendix G.
- 5.18 Given the close proximity to Therfield Heath SSSI, the Site falls within a 'High' strategic significance multiplier in line with emerging guidance from Herts and Middlesex Wildlife Trust in relation to Ecological Network Mapping in the Interim Local Nature Recovery Strategy.
- 5.19 As calculated by the Biodiversity Metric provided separately, the baseline value of the Site is 61.17 Habitat Units and 10.33 Hedgerow Units.

Post-Development Habitats

- 5.20 Post-development scenario was prepared using Development Framework Plan (Iceni, Drawing Reference: 1000619_DL101 Rev D) were available outlining the residential development parcel (3.01ha including roads) and proposed green infrastructure (5.89ha). Proposed habitat types within these areas have been measured from this illustrative plan and inputted into the metric, along with appropriate habitat types and conditions. Professional judgement was applied throughout the calculation process to ensure target habitats were reasonable, achievable and ecologically justified.
- 5.21 As calculated by the Biodiversity Metric provided, the post-development value of the Site is 33.78 Habitat Units and 12.48 Hedgerow Units.

Biodiversity Calculation

- 5.22 The predicted net effect of biodiversity as a result of this assessment is set out within Table 3 below.

Table 3. Net Effect on Biodiversity:

Habitat Units	
On-site baseline	61.17
On-site post-intervention	33.78
Total net change	-27.39 (-44.77%)
Hedgerow Units	
On-site baseline	10.33
On-site post-intervention	12.48
Total net change	+2.15 units (+20.81%)

- 5.23 The proposed development will result in a net loss of 27.39 Habitat Units, with the relevant trading rules not satisfied. Off-site biodiversity gains will be necessary to secure a 10% Biodiversity Net Gain with a minimum of 33.56 Habitat Units required. The final outcome for the Site will be subject to more detailed parameters of scheme design and landscape strategy.
- 5.24 There is a net gain in Hedgerow Units in excess of 10%.
- 5.25 Following a grant of planning permission an application to discharge the Biodiversity Gain Condition would be submitted completely a Biodiversity Gain Plan. On-site significant biodiversity gain would be secured through an appropriate legal mechanism (as such planning condition) subject to an on-site HMMP for a 30-year period. On-site habitat creation and enhancement will be supplemented by suitable off-site off-setting to secure a 10% net gain in biodiversity overall.

Fauna

Bats

- 5.26 All British bat species are legally protected under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended).
- 5.27 The Site offers foraging and navigational features suitable for use by bats which are known to be present within the wider landscape. To ensure functionality is retained, retention and buffering of the hedgerow network is recommended as far as is practicable. Habitat creation and retention within areas of open space should be carefully designed to provide suitable foraging habitats for bats, mitigating for the loss of grassland habitats across the Site.
- 5.28 Given the presence of navigational features and foraging opportunities for bats at the Site, monitoring of bat activity is underway scheduled for

2025 to determine the species present, pattern of use and overall value of the Site to bats. Furthermore, where hedgerows and trees are to be removed or subject to significant arboricultural works these should first be subject to a Preliminary Roost Assessment to assess their potential to support roosting bats.

- 5.29 Building B1 was classified as having Low potential for roosting bats. In accordance with current guidelines, a single emergence survey is to be undertaken to determine the presence/likely absence or type of bat roost.

Badger

- 5.30 Badgers are protected under the Protection of Badgers Act (1992). Killing or injury of a badger, or interference with a sett is prohibited. Suitable badger sett creation habitat was recorded within the Site, and as such a further badger survey is underway at the time of writing.

Nesting birds

- 5.31 All wild birds are protected from killing and injury, and their nests and eggs are protected from damage and destruction, under the Wildlife and Countryside Act 1981 (as amended). Therefore, any clearance of nesting habitat or features required to facilitate the development should avoid the period between March and August (inclusive) when nesting birds are most likely to be present. If this is not possible, habitat will need to be checked for nesting birds by a suitably qualified ecologist prior to clearance with works only proceeding if no nesting evidence or behaviour are observed.
- 5.32 The Site has potential to be used by a range of common and farmland bird species. Breeding bird surveys are underway in 2025 to determine the importance of the Site to local bird populations.

Reptiles

- 5.33 All British reptile species are listed within Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are afforded protection against killing and injury under parts of sub-section 9(1) of the Act. In addition, all British reptile species are species of principal importance under S41 of the NERC Act (2006) in England.
- 5.34 Hedgerows and longer sward grassland on field margins provide suitable foraging, refuge and dispersal habitat. Given this and the legal protection afforded to reptiles, reptile surveys are underway at the Site in 2025 to identify any populations of reptiles and to determine the scope of any mitigation or enhancement measures which are necessary.

Great Crested Newt

- 5.35 Great crested newt and their habitats are strictly protected under the Wildlife and Countryside Act 1981 (as amended) and the conservation of Habitats and Species Regulations 2010. In combination this legislation protects great crested newts from deliberate capture, killing and injury, intentional or reckless disturbance, damage or destruction of a resting site or breeding place, and intentional or reckless damage, destruction or obstruction of a breeding site or rest place.
- 5.36 No permanent waterbodies are present on-site. Terrestrial habitats within the Site, notably the grassland field margins and hedgerow bases, are suitable to support dispersal, refuge and foraging by great crested newts. A Habitat Suitability Index (HSI) assessment of the off-site pond P1 to be undertaken to determine its suitability to support great crested newt breeding. If suitable, further surveys would be recommended to determine presence or likely absence and to inform the scope of any mitigation or enhancement measures which are necessary.

Invertebrates

- 5.37 The Site is unlikely to currently support important invertebrate assemblages as set out above. However, given its location close to important invertebrate habitat, including at Therfield Heath, significant opportunities are available to provide new habitats at the Site for these populations, including:
- Butterfly banks: using site-won chalk from development works (footings, SuDS features and earth movements) south facing banks created within grassland/open space on flat areas to the north of the Site. These features can be created in linear or horseshoe shapes and either sown with chalk grassland species or allowed to colonise naturally.
 - Grassland restoration (as above) seeking to create species-rich swards with chalk grassland affinities
 - Ensuring seed mixes for any grassland, butterfly bank or other areas include horseshoe vetch, the sole foodplant of chalkhill blue
 - Provision of bee-bricks on south and east facing buildings ensuring sufficient height to avoid shading

Opportunities for Ecological Enhancement

- 5.38 To promote adherence to the NPPF and North Herts local plan the following opportunities for ecological enhancement have been identified in addition to species matters above:
- Invertebrates: see recommendations above
 - Incorporation of native plants and those of wildlife importance in to landscaping scheme to provide foraging opportunities for birds, invertebrates and bats

- Creation of lowland calcareous grassland within open spaces
- Improved connectivity of green infrastructure with new hedgerow planting and infill planting
- Provision of new bat roosting opportunities within new buildings and retained mature trees
- Provision of bird nesting opportunities within new buildings and retained mature trees
- Provision of hedgehog gaps in new fencing to promote habitat connectivity across and within the Site

6.0 CONCLUSIONS

- 6.1 Confirmed ecological constraints to development at the Site have been identified as the presence of:
- Therfield Heath SSSI and LNR
 - Green Lane S., of Royston LWS
- 6.2 The following additional investigation/survey work is scheduled for 2025 to inform an evidence-based EclA of the proposed development, such that suitable ecological impact avoidance, mitigation and/or compensation measures may be adopted:
- Bat surveys
 - Badger surveys
 - Breeding bird surveys
 - Reptile surveys
 - GCN surveys
- 6.3 Recommendations for ecological enhancement measures that could be delivered as part of development at the Site have been provided here-in, which will aid accordance with north Herts Local Plan.

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Appendix A

Habitats Plan

Appendix B

Legislation and Planning Policy

- 1.1. The **Conservation of Habitats and Species Regulations 2017** (as amended) make prescriptions for the designation and protection of Sites of Community Importance ('European sites', i.e. Special Areas of Conservation and Special Protection Areas) and European Protected Species (EPS). The latter include all native bats, great crested newts, dormice, otters and certain reptiles, listed under Annex II of the Regulations. Following the UK's departure from the European Union, the provisions of the Regulations have been retained through enactment of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which came into force on 31 December 2020.
- 1.2. The **Wildlife and Countryside Act 1981** (as amended, principally by the Countryside and Rights of Way Act 2000) forms the basis for protection of statutory designated sites of national importance (e.g. Sites of Special Scientific Interest; SSSIs) and native species that are rare and vulnerable in a national context. Additionally, badgers are protected under the **Protection of Badgers Act 1992**.
- 1.3. The **Environment Act 2021** received Royal Assent in November 2021. Through an amendment to the Town and Country Planning Act 1990 the Environment Act introduced a mandatory requirement for all planning permissions to be conditional upon the submission of a Biodiversity Gain Plan for approval by the Local Planning Authority. The Plan will need to demonstrate a net gain of at least 10% in the biodiversity value of the development site.
- 1.4. Section 40(1) of the **Natural Environment and Rural Communities (NERC) Act 2006** (as amended) states that each public authority, "must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving and enhancing biodiversity." This legislation makes it clear that planning authorities should consider impacts to biodiversity when determining planning applications, with particular regard to the Section 41 (S41) lists of 56 habitats and 943 species of principal importance. The UK Biodiversity Action Plan (BAP) has been superseded by the Biodiversity 2020 Strategy, however Local BAPs continue to influence biodiversity management and conservation effort, including through the spatial planning system, at the local scale.
- 1.5. The **National Planning Policy Framework (2024)** (NPPF) sets out government planning policies for England and how they should be applied. With regards to ecology and biodiversity, Chapter 15: Conserving and Enhancing the Natural Environment, paragraph 187, states that the planning system and planning policies should minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

- 1.6. Paragraph 193 sets out the principles that local planning authorities should apply when determining planning applications:
- If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.
 - Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest.
 - Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.
 - Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.
- 1.7. Accompanying the NPPF, central government guidance on the implementation of planning policies is set out within online Planning Policy Guidance (PPG). The Natural Environment PPG addresses principles across a broad spectrum of topics targeting biodiversity conservation, from individual site and species protection through to the supporting of ecosystem services, and the use of local ecological networks to support the national Nature Recovery Network. In particular, the PPG promotes the delivery of measurable Biodiversity Net Gain through the creation and enhancement of habitats alongside development.
- 1.8. The **Government Circular 06/2005**, which is referred to within the NPPF, defines statutory nature conservation sites and protected species as a material consideration in the planning process.
- 1.9. Local planning policies of relevance to ecology, biodiversity and/or nature conservation have been set out in Table 1 below.

Table 1. Summary of regional and local planning policy relating to ecology

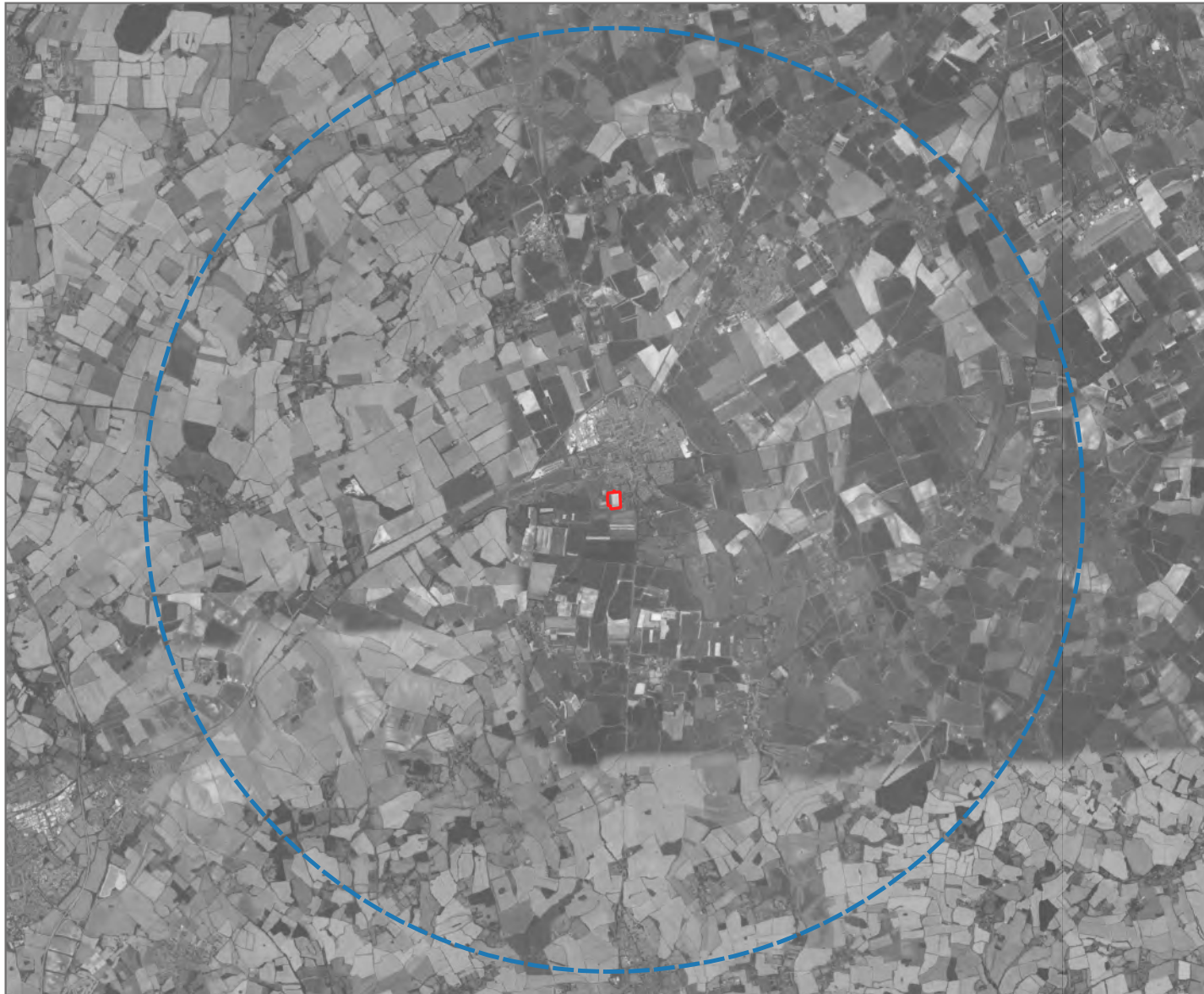
Policy	Summary
North Herts Local Plan 2011-2031	
Policy SP12: Green infrastructure,	a) Protect, identify, manage and where possible enhance a strategic multi-functional network of green infrastructure;

Policy	Summary
landscape and biodiversity	b) Consider and respect landscape character, scenic beauty and locally sensitive features, particularly in relation to the Chilterns Area of Outstanding Natural Beauty; c) Protect, enhance and manage designated sites in accordance with the following hierarchy of designations and features: • Internationally designated sites • Nationally designated sites • Locally designated sites; • Non-designated sites that include important habitats and species d) Protect, enhance and manage biodiversity networks including wildlife corridors, ancient woodlands and hedgerows, wetland and riverine habitats, Local Geological Sites, protected species, priority species and habitats, and non-designated sites of ecological value and ensure measurable net gains for biodiversity; and e) Protect other open spaces and support provision of new and improved open space.
Policy NE4: Biodiversity and geological sites	Planning permission will only be granted for development proposals that appropriately protect, enhance and manage biodiversity in accordance with the hierarchy and status of designations and features listed in Policy SP12. All development should deliver measurable net gains for biodiversity and geodiversity, contribute to ecological networks and the water environment, and/or restore degraded or isolated habitats where possible. Applicants should, having regard to the status of any affected site(s) or feature(s): a) Submit an ecological survey that is commensurate to the scale and location of the development and the likely impact on biodiversity, the legal protection or other status of the site; b) Demonstrate that adverse effects can be avoided and / or satisfactorily minimised having regard to the hierarchy of protection below: • locating on an alternative site with a less harmful impact; • providing adequate mitigation measures; or • as a last resort compensated for. The acceptability of approach(es) to avoidance, mitigation and compensation will be commensurate with the status of the asset(s) likely to be affected by the application; Compensation is unlikely to be an appropriate solution for proposals affecting nationally or internationally designated sites other than in the most exceptional circumstances. c) Include appropriate measures to manage construction impacts by demonstrating how existing wildlife habitats supporting protected or priority species will be retained, safeguarded and managed during construction;

Policy	Summary
	d) Integrate appropriate buffers of complimentary habitat for designated sites and other connective features, wildlife habitats, priority habitats and species into the ecological mitigation and design. The appropriateness of any buffers will be considered having regard to the status of the relevant habitat. 12 metres of complimentary habitat should be provided around wildlife sites (locally designated sites and above), trees and hedgerows. It may be necessary to exceed this distance for fragile habitats such as ancient woodland or to provide appropriate root protection for mature trees; and e) Provide a long-term management and monitoring plan including mitigation measures as necessary. Local Geological Sites are ratified by the Herts & Middlesex Wildlife Trust (HMWT) and are afforded the same protection as Local Wildlife Sites.

Appendix C

Desk Study Information



-  Site boundary
-  10km buffer
-  Special Protection Areas (SPA)
-  Ramsar
-  Special Areas of Conservation (SAC)

*No designations identified within search area



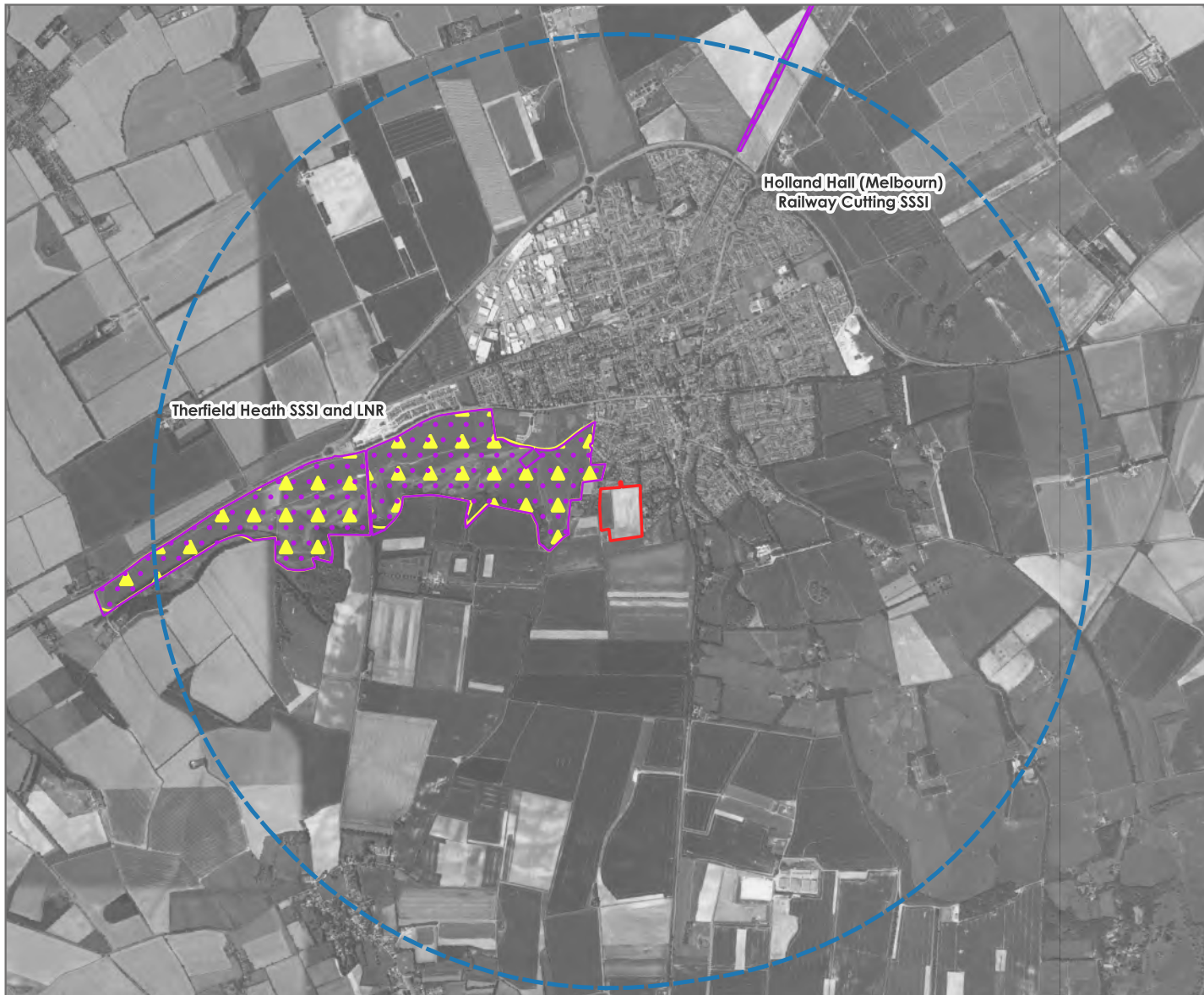
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Project	Land off Echo Hill, Royston	Date	February 2025	Drawing No.	CSA/7494/100
Drawing Title	International Statutory Designations	Scale	Refer to scale	Rev	-
Client	Gladman Developments Ltd	Drawn	RB	Checked	JW



- Site boundary
- 3km buffer
- Sites of Special Scientific Interest (SSSI)
- Local Nature Reserve (LNR)
- National Nature Reserves (NNR)



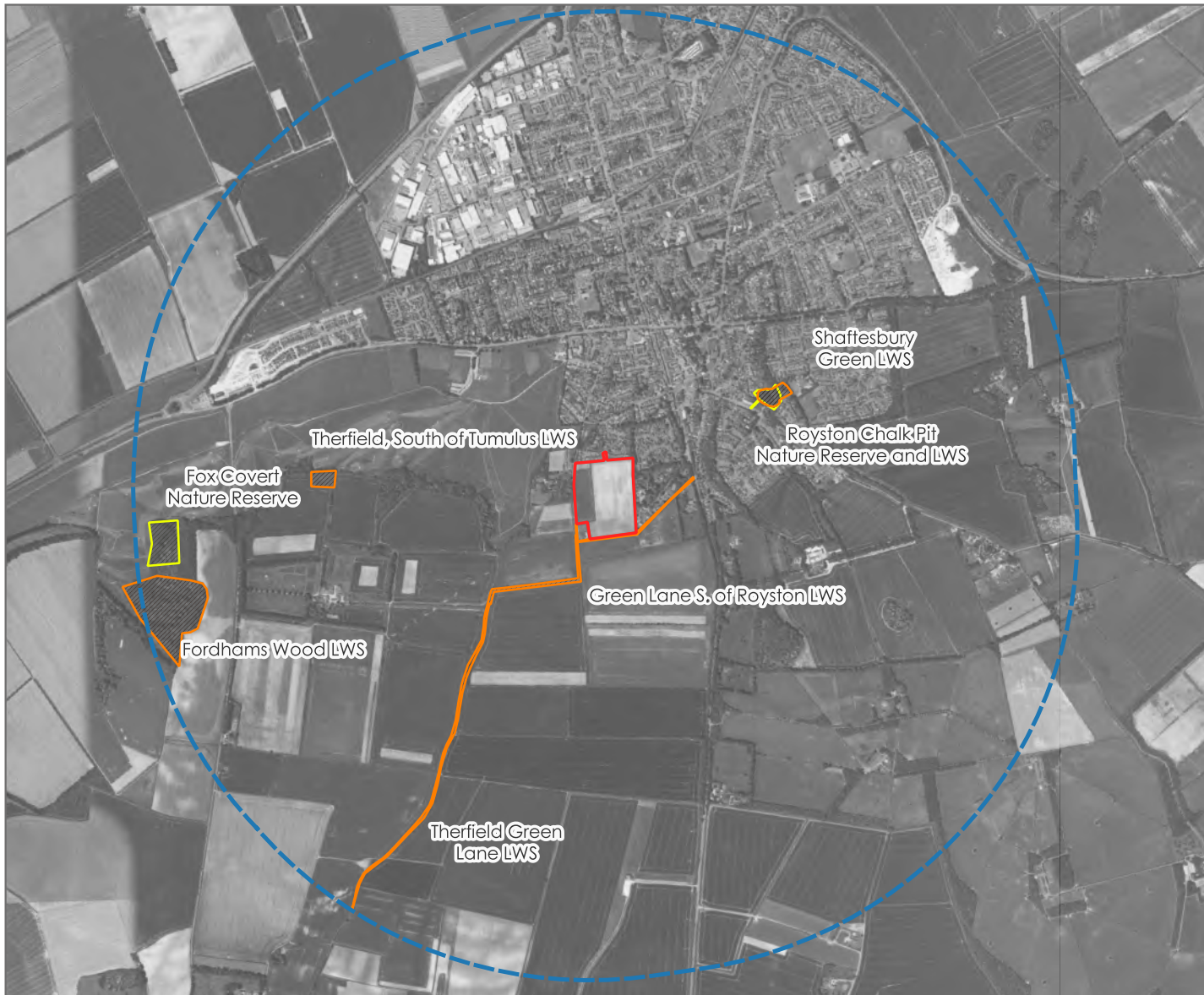
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Project	Land off Echo Hill, Royston	Date	February 2025	Drawing No.	CSA/7494/101
Drawing Title	National and Local Statutory Designations	Scale	Refer to scale	Rev	-
Client	Gladman Developments Ltd	Drawn	RB	Checked	JW



- Site boundary
- 2km buffer
- Local Wildlife Sites (LWS)
- Nature Reserves



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Project	Land off Echo Hill, Royston	Date	February 2025	Drawing No.	CSA/7494/102
Drawing Title	Non-Statutory Designations	Scale	Refer to scale	Rev	-
Client	Gladman Developments Ltd	Drawn	RB	Checked	JW



- Site boundary
- 1km buffer
- Deciduous woodland
- Lowland calcareous grassland
- No main habitat but additional habitats pres
- Traditional orchard



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Project	Land off Echo Hill, Royston	Date	February 2025	Drawing No.	CSA/7494/103
Drawing Title	Priority Habitats	Scale	Refer to scale	Rev	-
Client	Gladman Developments Ltd	Drawn	RB	Checked	JW



 Site boundary

 2km buffer

*No designations identified within search area

0 500 1,000 m


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Project	Land off Echo Hill, Royston	Date	February 2025	Drawing No.	CSA/7494/104
Drawing Title	Ancient Woodland	Scale	Refer to scale	Rev	-
Client	Gladman Developments Ltd	Drawn	RB	Checked	JW



-  Site boundary
-  2km buffer
-  Granted EPS applications - Great crested newt
-  Granted EPS applications - Bat



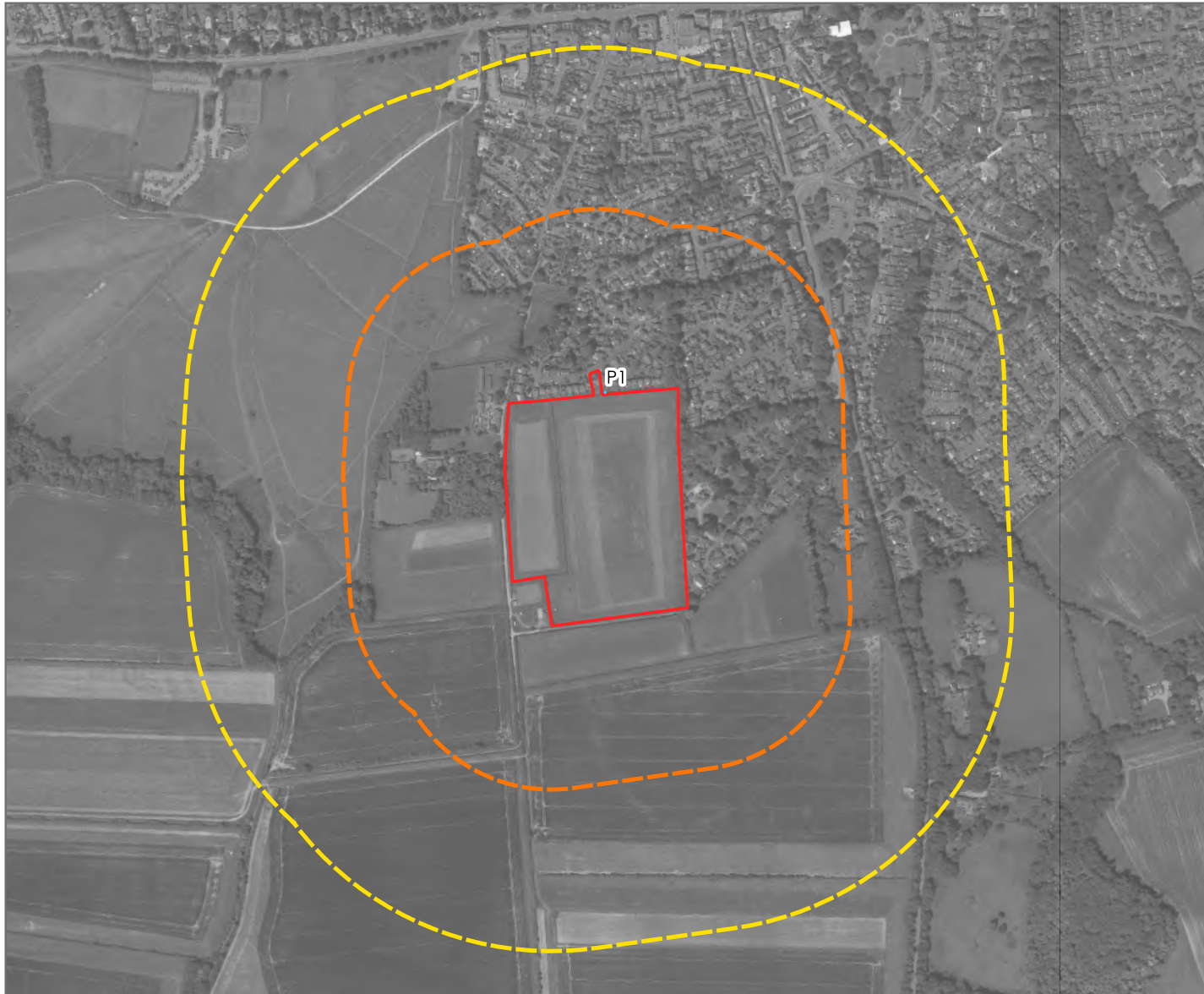
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Project	Land off Echo Hill, Royston	Date	February 2025	Drawing No.	CSA/7494/105
Drawing Title	Granted EPS Applications	Scale	Refer to scale	Rev	-
Client	Gladman Developments Ltd	Drawn	RB	Checked	JW



-  Site boundary
-  250m Pond Buffer
-  500m Pond Buffer
-  Ponds (with reference number)



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Project	Land off Echo Hill, Royston	Date	February 2025	Drawing No.	CSA/7494/106
Drawing Title	Pond Plan	Scale	Refer to scale	Rev	-
Client	Gladman Developments Ltd	Drawn	RB	Checked	JW



-  Site boundary
-  1km buffer
-  Great Crested Newt class survey licence returns



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Project	Land off Echo Hill, Royston	Date	February 2025	Drawing No.	CSA/7494/107
Drawing Title	Great Crested Newt class survey licence returns	Scale	Refer to scale	Rev	-
Client	Gladman Developments Ltd	Drawn	RB	Checked	JW

Appendix D

Photographs



Photograph 1. F1 from the southern boundary of the Site.



Photograph 2. F1 showing the tussocky edge of the field



Photograph 3. F2 looking towards the southern boundary of the Site.



Photograph 4. H1 along the western boundary of the Site.



Photograph 5. H2 along the south-west boundary of the Site.



Photograph 6. H3 along the western boundary of the Site.



Photograph 7. H4 along the southern boundary of the Site.



Photograph 8. H5 along the centre of the Site.



Photograph 9. H6 along the northern boundary of the Site.



Photograph 10. Northern elevation of B1.



Photograph 11. Southern elevation of B1 and vegetated garden.



Photograph 12. Green Lane S.of Royston LWS, adjacent to the southern boundary of the Site.

Appendix E

Habitats and Flora Species List

Quadrat Survey Results

Table 1. Habitat Polygons					
Site Name	Land off Echo Hill, Royston				
Survey Date and Surveyor(s)	20/02/2025 Bethany Wilson ACIEEM FISC Level 4 and Rosie Billington				
Scientific Name	Common Name	Neutral grassland (g3):F1	Neutral grassland (g3): F2	Suburban mosaic of developed and natural surface (u1 d)	Offsite Calcareous grassland (g2)
Bryophytes					
Rhytidiadelphus squarrosus	Springy turf-moss			X	
Herb Species					
Achillea millefolium	Yarrow	X	X		
Agrimony eupatoria	Common agrimony		X		X
Anthriscus sylvestris	Cow parsley		X		X
Artemisia vulgaris	Mugwort	X			X
Ballota nigra	Black horehound	X			
Bellis perennis	Daisy			X	
Betonica officinalis	Betony	X			
Bryonia sp.	Bryony				X
Calystegia arvensis	Field bindweed	X			
Calystegia sepium	Hedge bindweed				X
Capsella bursa-pastoris	Shepherd's-purse	X			
Centaurea nigra	Common knapweed	X	X		X
Centaurea scabiosa	Greater knapweed	X			X
Cerastium sp.	Common mouse-ear		X	X	
Cirsium arvense	Creeping thistle	X	X		
Cirsium vulgare	Spear thistle	X	X		X
Cotoneaster sp.	Cotoneaster			X	
Cruciata laevipes	Crosswort				X
Daucus carota	Wild carrot	X	X		
Epilobium sp.	Willowherb	X		X	
Galium album	Hedge bedstraw	X			
Galium aparine	Cleavers		X		
Geranium molle	Dove's-foot crane's-bill	X	X		
Geum urbanum	Wood avens			X	X
Glechoma hederacea	Ground-ivy	X	X	X	
Helleborus sp.	Hellebore			X	
Helminthotheca echioides	Bristly ox-tongue	X			
Heracleum sphondylium	Hogweed	X			X
Hypericum perforatum	Perforate St John's-wort		X		X
Hypochaeris radicata	Common cat's-ear		X		
Knautia arvensis	Field scabious		X		X
Knautia sp.	Scabious	X			
Lamium sp.	Dead-nettle		X		
Lavandula angustifolia	Lavender			X	
Leontodon hispidus	Rough hawkbit				X
Leucanthemum vulgare	Oxeye daisy	X	X		
Lotus corniculatus	Common bird's-foot-trefoil				X
Narcissus sp.	Daffodil			X	
Pentaglottis sempervirens	Green alkanet			X	
Picris sp.	Hawkweed	X			
Plantago lanceolata	Ribwort plantain	X	X		
Potentilla reptans	Creeping cinquefoil			X	
Primula veris	Cowslip	X	X		
Prunella vulgaris	Selfheal	X	X	X	
Ranunculus acris	Meadow buttercup		X		
Ranunculus repens	Creeping buttercup		X		
Reseda lutea	Wild mignonette	X			
Rumex acetosa	Common sorrel			X	
Salvia rosmarinus	Rosemary			X	
Senecio jacobaea	Common ragwort	X	X	X	
Silene latifolia	White campion		X		
Silene vulgaris	Bladder campion				X
Taraxacum agg.	Dandelion		X	X	
Tragopogon pratensis agg.	Goat's-beard				X
Trifolium pratense	Red clover				X
Trifolium repens	White clover		X	X	
Tulipa liliaceae	Tulip			X	
Urtica dioica	Common nettle		X	X	X
Veronica chamaedrys	Germander speedwell	X	X		
Vicia sativa	Common vetch				X
Viola sp.	Pansy			X	
Sedges and Rushes					
Carex pendula	Pendulous sedge			X	
Grasses					
Agrostis capillaris	Common bent	X	X		
Alopecurus pratensis	Meadow foxtail	X	X		
Anisantha sterilis	Barren brome		X		
Arrhenatherum elatius	False oat-grass	X	X		X
Brachypodium sylvaticum	False brome				X
Bromus hordeaceus	Soft-brome		X		
Cynosurus cristatus	Crested dog's-tail		X		
Dactylis glomerata	Cock's-foot	X	X	X	X
Elytrigia repens	Common couch		X		
Festuca rubra	Red fescue	X	X	X	X
Holcus lanatus	Yorkshire-fog		X		
Hordeum secalinum	Meadow barley		X		
Lolium perenne	Perennial rye-grass	X	X	X	X
Lolium pratense	Meadow fescue	X			
Phleum pratense	Timothy	X	X		
Poa pratensis	Smooth meadow-grass		X		
Trisetum flavescens	Yellow oat-grass	X	X		X
Woody Species					
Broadleaved					
Acer pseudoplatanus	Sycamore				X

Scientific Name	Common Name				
		Neutral grassland (g3):F1	Neutral grassland (g3): F2	Suburban mosaic of developed and natural surface (u1 d)	Offsite Calcareous grassland (g2)
<i>Crataegus monogyna</i>	Hawthorn				X
<i>Euonymus europaeus</i>	Spindle			X	
<i>Hedera helix</i>	Ivy		X		
<i>Ilex aquifolium</i>	Holly			X	
<i>Ligustrum</i> sp.	Privet				X
<i>Prunus avium</i>	Cherry			X	
<i>Prunus spinosa</i>	Blackthorn		X		X
<i>Rosa canina</i> sp.	Dog-rose				X
<i>Rubus fruticosus</i> agg.	Bramble		X		
<i>Sambucus nigra</i>	Elder				X
<i>Ulmus</i> sp.	Elm				X

Table 2. Linear Habitats

Site Name	Land off Echo Hill, Royston								
Survey Date and Surveyor(s)	20/02/2025 Bethany Wilson ACIEEM FISC Level 4 and Rosie Billington								
Scientific Name	Common Name	Habitat Parcel Number/Habitat Type							
		H1	H2	H3	H4	H5	H6	H7	H8
Herb Species									
Anthriscus sylvestris	Cow parsley	X	X	X		X	X		
Cirsium arvense	Creeping thistle			X					
Epilobium sp.	Willowherb				X				
Euphorbia helioscopia	Sun spurge			X					
Galium aparine	Cleavers	X	X	X		X	X		
Glechoma hederacea	Ground-ivy	X		X		X	X		
Leucanthemum vulgare	Oxeye daisy		X	X		X	X		
Plantago lanceolata	Ribwort plantain	X				X	X		
Trifolium sp.	Clover	X				X	X		
Urtica dioica	Common nettle	X	X	X		X	X		
Vinca sp.	Periwinkle						X		
Grasses									
Arrhenatherum elatius	False oat-grass	X							
Woody Species									
Coniferous									
Chamaecyparis lawsoniana	Lawson's cypress						X		
Taxus baccata	Yew					X			
Broadleaved									
Acer pseudoplatanus	Sycamore	X	X		X				
Crataegus monogyna	Hawthorn	X			X	X	X		
Euonymus europaeus	Spindle	X							
Fagus sylvatica	Beech							X	X
Hedera helix	Ivy	X	X	X	X	X	X		
Ilex aquifolium	Holly	X		X	X	X			
Ligustrum sp.	Privet				X				
Prunus domestica	Plum		X	X	X		X		
Prunus spinosa	Blackthorn	X	X		X	X	X		
Quercus sp.	Oak	X							
Rosa arvensis	Field-rose	X							
Rosa canina sp.	Dog-rose				X	X			
Rubus fruticosus agg.	Bramble	X		X	X	X			
Sambucus nigra	Elder	X	X			X			
Ulmus sp.	Elm			X					

Site Name	Land off Echo Hill, Royston								
Survey Date and Surveyor(s)	19/06/2025 Jamie Woollam CEcol MCIEEM (FISC Level 5)								
Scientific Name	Common Name	Field F1					Field F2		
		QA	QB	QC	QD	QE	QA	QB	QC
Approximate Grid Reference		TL 35344 39798	TL 35473 39867	TL 35378 39946	TL 35461 40022	TL 35363 40071	TL 35256 40073	TL 35308 39984	TL 35268 39881
<i>Achillea millefolium</i>	Yarrow				R	R			
<i>Agrostis capillaris</i>	Common bent	R	R	R		R	R	R	O
<i>Arrhenatherum elatius</i>	False oat-grass	F	R	R		R	A	F	R
<i>Bromus hordeaceus</i>	Soft-brome						R		
<i>Calystegia arvensis</i>	Field bindweed		R		R				
<i>Centaurea nigra</i>	Common knapweed	R				R			
<i>Centaurea scabiosa</i>	Greater knapweed	O				R	R		F
	Crested dog's-tail							F	R
<i>Dactylis glomerata</i>	Cock's-foot	F	F	F	F	F	O	O	
<i>Daucus carota</i>	Wild carrot		R	R	R				R
<i>Festuca rubra</i>	Red fescue	F	O	O	O	O	F	O	F
<i>Galium album</i>	Hedge bedstraw	R				R			
<i>Holcus lanatus</i>	Yorkshire-fog						O		R
<i>Hypericum perforatum</i>	Perforate St John's-wort								R
<i>Knautia arvensis</i>	Field scabious						R		R
<i>Leucanthemum vulgare</i>	Oxeye daisy	O						O	F
<i>Lolium perenne</i>	Perennial rye-grass	R	R	O	O	O	R		
<i>Lolium pratense</i>	Meadow fescue		R	R	R		O	O	O
<i>Phleum pratense</i>	Timothy	F	F	F	F	F	R	F	R
<i>Poa pratensis</i>	Smooth meadow-grass						O	R	R
<i>Prunella vulgaris</i>	Selfheal	O							
<i>Reseda lutea</i>	Wild mignonette		R	R	R				
<i>Silene latifolia</i>	White campion							R	R
<i>Trisetum flavescens</i>	Yellow oat-grass	O	R	R	R		R	O	O
Quadrat Average per Field		10.6					13		
Total Number per Quadrat		12	11	10	10	10	13	11	15
Quadrat Average Per Field (removing undesirable species)		10.6					13		
Total Number per Quadrat (removing undesirable species)		12	11	10	10	10	13	11	15

Appendix F

Potential Roost Assessment

1.0 Legislation

1.1 All British bat species are legally protected under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 (as amended). These Regulations make it an offence to:

- Deliberately capture, injure, or kill a bat
- Deliberately disturb bats, impairing their ability to survive, breed, reproduce or rear/nurture their young, or which significantly affects the local distribution or abundance of the species
- Damage or destroy a breeding site or resting place used by bats

1.2 All bats and their roosts in the UK were previously fully protected under the Wildlife & Countryside Act 1981 (as amended). Amendments to the Act have removed most provisions as they relate to bats, however it remains an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection

1.3 It is important to note that bat roosts are protected throughout the year, regardless of whether or not bats are present at the time. Under the Regulations, the offence of damaging or destroying a breeding site or resting place is subject to 'strict liability', i.e. an offence is committed irrespective of whether the causal act was deliberate or otherwise.

1.4 Where development is proposed that would result in an offence under the Regulations, a European Protected Species (EPS) statutory derogation licence (often termed 'EPS Mitigation Licence') will need to be secured from Natural England to permit an act that would otherwise be unlawful. Such a licence can only be granted following receipt of planning permission with all relevant conditions discharged, and where it has been demonstrated that specific statutory derogation tests have been met.

2.0 Methods

2.1 The following survey methods, design, data analysis and interpretation have been undertaken with due consideration of the Bat Conservation Trust (BCT) guidelines 4th edition (Collins, 2023).

Desk Study

2.1 An ecological desk study was undertaken in February 2025 comprising a review of online resources and biological records centre data as detailed below.

- 2.2 The Multi-Agency Geographic Information for the Countryside (MAGIC) online database was reviewed to identify nature conservation designations within the following search radii:
- Bat-related Special Areas of Conservation (SAC) within 10km of the Site (including possible/proposed sites)
 - Other relevant data e.g. EPS licences relating to bats within 2km of the Site
- 2.3 A review was undertaken of such designations (if present and recent), including their distance from and connectivity with the Site. This information was used to determine whether they may be within the proposed development's Zone of Influence (Zoi).
- 2.4 Herts Environmental Record Centre (HERC) and Cambridgeshire and Peterborough Environmental records Centre (CPERC) was contacted for records of bats. This information was requested for an area encompassing the Site and adjacent land within c. 2km of its central grid reference. This search area was selected to include the likely zone of influence upon bats.

Preliminary Roost Assessment (PRA) - Structures

- 2.5 A detailed external and internal inspection of the building on-site was completed on 20 February 2025, using high-powered torches, binoculars, ladder and endoscope as appropriate. The survey was carried out by Bethany Wilson ACIEEM and Rosie Billington.
- 2.6 External inspection focused on identifying potential bat access points to the interior of each structure and any external features that could potentially be used by crevice-dwelling species. Particular attention was given to window sills, window panes, weatherboarding, and pitch/ridge tiles; as evidence is typically found in these locations.
- 2.7 The internal inspection involved a systematic search for bats or any evidence of their activity, in particular droppings and/or feeding remains within the building/loft spaces of the building.
- 2.8 A description of the structures was made, including construction, condition (in respect of roosting, rather than building or structural integrity) and age (where known).
- 2.9 The aim of this inspection is to record direct (i.e. actual roosting bats) or indirect evidence of roosting bats (e.g. droppings), as well as the nature and number of features with 'potential' to support roosting bats. This includes consideration of structures to support bats whilst in hibernation.

Assessing 'Potential' of Building to Support Roosting Bats

- 2.10 All structures were assigned to one of five categories in respect of their 'potential' to support roosting bats, or the confirmation of any bat roosts

identified. 'Potential' in this context is taken to be the broad suitability of features to support roosting bats, based upon the nature, condition or structure of such features, in the absence of confirmed evidence of roosting.

2.11 Assigning the following categories is intended to determine the effort of any further targeted survey or inspections which are necessary to prove presence or likely absence of roosting bats, rather than to assign importance to such features.

2.12 The following categories are assigned to structures and/or trees herein, Either:

- **High** – 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 size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/ stable hibernation site.
- **Moderate** – A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation made at this stage is irrespective of species conservation status, which is established after presence is confirmed).
- **Low** – A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic/cool hibernation site, but could be used by individual hibernating bats).
- **Negligible** – No obvious habitat features on site likely to be used by roosting bats. However, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
- **None** – No habitat features on site likely to be used by any roosting bats at any time of year (i.e. a complete absence of crevices/ suitable shelter at all ground/ underground levels).

2.13 These categories above are allocated irrespective of the presence of a roost. If a roost is confirmed to be present then the categorisation still stands (because other roosts may be present but undiscovered) but 'confirmed roost' should be added, e.g. Low – confirmed roost; Medium – confirmed roost; High - confirmed roost.

2.14 The potential of a structure to support roosting bats is often influenced by its age and construction, thermal stability, lighting and levels of human activity. Furthermore, the proximity to foraging habitat -

particularly woodland, parkland and wetland- as well as the presence of navigational routes (e.g. hedgerows, treelines and watercourses) influence both the potential for bats to roost, as well as the species which may roost. Professional judgement is therefore applied, based upon known factors which affect the potential of features to support roosting bats, insofar as determining the need or scope of further surveys or inspections. Consideration has also been given to the potential of a feature to support hibernating bats and any further works needed to confirm this.

Limitations

- 2.15 The survey was conducted at a suitable time of year and in good conditions. Access was possible to 90% of the loft void due to obstruction of beams and a water tank. This was not considered a major limitation as visible observations were possible from a distance around these obstructions.

3.0 Results

Preliminary Roost Assessment (PRA) – Structures

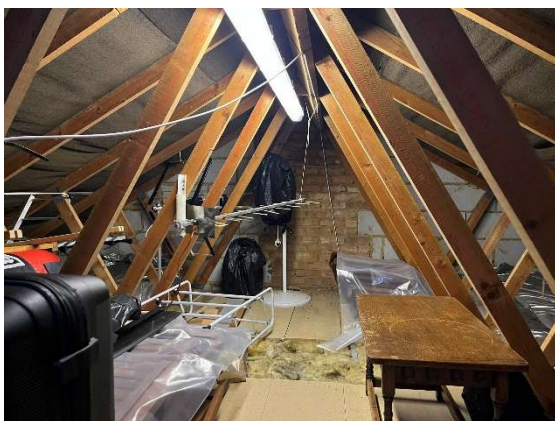
- 3.1 The structure comprises a two story-residential house with a pitched clay tile roof and two gable ends. Two mesh covered vents are present on the apex of the roof. The exterior of the roof and walls are in good condition with very limited no cracks, missing tiles or potential access points within the walls. Wooden soffits around the roof are generally in good condition and tightly sealed, where gaps appear these are exposed and highly cobwebbed.
- 3.2 The windows are well sealed, apart from one which has a minor crack in the concrete on the southern elevation of the house which lead to a small crevice that was moderately exposed. On the northern elevation are two dormer windows, which have wooden barge boards, soffits and lead flashing. Small gaps are present between the wooden soffits and the lead flashing on both of these windows.
- 3.3 Internally, the loft void is well maintained and clean because it is well sealed and is in frequent use as storage. A water tank is present on the eastern elevation. The western chimney breast has recently been repointed and no feature suitable for roosting bats were identified. No light ingress was observed or features where bats could access the roof void (with the apex vents sealed from the outside). Evidence of wasp activity was observed.
- 3.4 This building was classified as having Low potential to support roosting bats.
- 3.5 Building B2 was a garden shed of wooden construction with a felt roof. This building was well sealed and did not have features suitable for roosting bats.



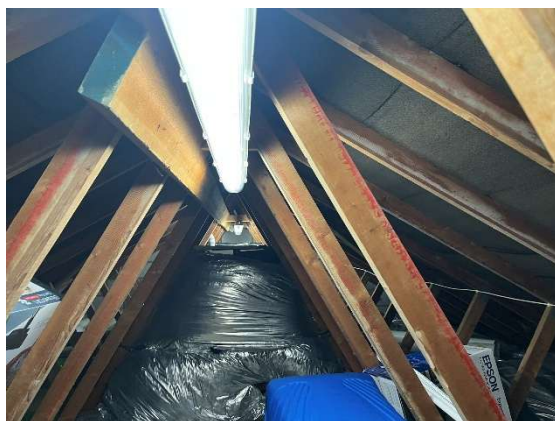
Photograph 1. Northern elevation of B1.



Photograph 2. Southern elevation of B1.



Photograph 3. Western end of the internal loft void.



Photograph 4. Eastern end of the internal loft void.



Photograph 5. Showing the slight lift in the wooden soffit.



Photograph 6. Showing the intact dormer windows including the lead flashing and borage board. Showing the slightly lifting soffit.

Appendix G

Biodiversity Net Gain

Habitat Condition Assessments

Land off Echo Hill, Royston
Headline Results
Scroll down for final results ⚠

Return to
results menu

On-site baseline	Habitat units	61.17	
	Hedgerow units	10.33	
	Watercourse units	0.00	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	33.78	
	Hedgerow units	12.48	
	Watercourse units	0.00	
On-site net change (units & percentage)	Habitat units	-27.39	-44.77%
	Hedgerow units	2.15	20.81%
	Watercourse units	0.00	0.00%

Off-site baseline	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%

Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	-27.39	
	Hedgerow units	2.15	
	Watercourse units	0.00	

Spatial risk multiplier (SRM) deductions	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.00

FINAL RESULTS

Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	-27.39
	<i>Hedgerow units</i>	2.15
	<i>Watercourse units</i>	0.00

Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	-44.77%
	<i>Hedgerow units</i>	20.81%
	<i>Watercourse units</i>	0.00%

Total net g

Trading rules satisfied?	No - Check Trading Summaries ▲
--------------------------	--------------------------------

Unit Type	Target	Baseline Units	Units Required	Unit Deficit
<i>Habitat units</i>	10.00%	61.17	67.28	33.50
<i>Hedgerow units</i>	10.00%	10.33	11.37	0.00
<i>Watercourse units</i>	10.00%	0.00	0.00	0.00

No additional h
No additional wa

Input errors/rule breaks present in metric ▲

Condition sheet: HEDGEROW Habitat Types														
Habitat Type														
Native hedgerow Native hedgerow - associated with bank or ditch Native hedgerow with trees Native hedgerow with trees - associated with bank or ditch Species-rich native hedgerow Species-rich native hedgerow - associated with bank or ditch Species-rich native hedgerow with trees Species-rich native hedgerow with trees - associated with bank or ditch														
Habitat Description														
Refer to associated reporting for habitat descriptions and flora list/quadrat information.														
ukhab – UK Habitat Classification														
On-site or off-site, site name and location	Echo Hill, Royston (7494)			Survey date and Surveyor name	Jamie Woollam (19.06.2025)									
Limitations (if applicable)				Survey reference (if relating to a wider survey)										
Condition Assessment Details														
A series of ten attributes, representing key physical characteristics are used for this assessment. Each attribute is assigned to one of five functional groups (A – E) and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria.														
This assessment is based on the Hedgerow Survey Handbook ¹ and Favourable Conservation Status document ² . For further clarification please refer to the Hedgerow Survey Handbook.														
Best practice would be to record the species, age, spacing and other key information about all trees present along a hedgerow within the 'Habitat Description' box, as well as other key features of the hedgerow.														
Hedgerow favourable condition attributes														
Attributes and functional groupings (A, B, C, D and E)	Criteria - the minimum requirements for 'favourable condition'	Criteria description	Habitat parcel reference											
			H1	H2	H3	H4	H5	H6	H7	H8				
			Grid reference											
Core groups - applicable to all hedgerow types				Criterion passed (Yes or No)										Notes (such as justification)
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Y	Y	Y	Y	Y	Y	Y	Y			
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	Y	Y	Y	Y	Y	Y	Y	N			
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	Y	Y	Y	Y	Y	N	Y	N			

B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	Y	Y	Y	Y	Y	N	Y	Y				
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and · Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	Y	Y	Y	Y	Y	Y	Y	N				
C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	Y	Y	Y	Y	Y	Y	Y	N				
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA ³) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website ⁴ , as well as the BSBI website ⁵ where the 'Online Atlas of the British and Irish Flora' ⁶ contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website ⁷ .	Y	Y	Y	Y	Y	Y	Y	Y				
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (for example, excessive hedgerow cutting).	Y	Y	Y	Y	Y	N	Y	N				

Additional group - applicable to hedgerows with trees only

E1.	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient ⁸), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.	-	-	-	-	-	-	-	-				
E2.	Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.	-	-	-	-	-	-	-	-				

The hedgerow condition assessment generates a weighting (score) ranging from 1 - 3, which is used within the Statutory Biodiversity Metric. The scores for each are set out in the tables below.

Condition categories for hedgerows without trees

Category	Category Requirements	Metric Score
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.	3

Moderate	No more than 4 failures in total; AND <u>Does not fail both attributes</u> in more than one functional group (for example, fails attributes A1, A2, B1 and C2 = Moderate condition).	2
Poor	Fails a total of more than 4 attributes; OR <u>Fails both attributes</u> in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1
Score achieved:		H1-H5, H7=Good, H6 = Mod
Condition categories for hedgerows with trees		
Category	Category Requirements	Metric score
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.	3
Moderate	No more than 5 failures in total; AND <u>Does not fail both attributes</u> in more than one functional group (for example, fails attributes A1, A2, B1, C2 and E1 = Moderate condition).	2
Poor	Fails a total of more than 5 attributes; OR <u>Fails both attributes</u> in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1
Score achieved:		
Suggested enhancement interventions to improve condition score		
H1-H5, H7 = Good H6 = Mod H8 = Poor		

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)												
UK Habitat Classification (UKHab) Habitat Types												
Grassland - Lowland calcareous grassland Grassland - Lowland dry acid grassland Grassland - Lowland meadows Grassland - Other lowland acid grassland Grassland - Other neutral grassland Grassland - Tall herb communities (H6430) [Not to be confused with the Tall forbs secondary code – see UKHab guidance for details.] Grassland - Upland acid grassland Grassland - Upland calcareous grassland Grassland - Upland hay meadows Sparsely vegetated land - Calaminarian grassland												
Habitat Description												
Refer to associated reporting for habitat descriptions and flora list/quadrat information.												
ukhab – UK Habitat Classification												
On-site or off-site, site name and location	Echo Hill, Royston (7494)		Survey date and Surveyor name	Jamie Woollam (19.06.2025)								
			Survey reference (if relating to a wider survey)									
Limitations (if applicable)			Habitat parcel reference									Notes (such as justification)
			F1	F2								
Condition Assessment Criteria			Grid reference									
			Criterion passed (Yes or No)									
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description). ¹ Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.		No	Yes								
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.		No	No								
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ² .		Yes	Yes								
D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.		Yes	Yes								
E	Combined cover of species indicative of suboptimal condition ³ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species ⁴ (as listed on Schedule 9 of WCA ⁵) are present, this criterion is automatically failed.		No	Yes								
Additional Criterion - must be assessed for all non-acid grassland types												

F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 3 and 5 cannot contribute towards this count).	Yes	Yes											
	Note - this criterion is essential for achieving Good condition for non-acid grassland types only.													
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)														
Number of criteria passed														
Condition Assessment Result	Condition Assessment Score	Score Achieved x/√												
Acid grassland types (Result out of 5 criteria)														
Passes 5 criteria	Good (3)													
Passes 3 or 4 criteria	Moderate (2)													
Passes 2 or fewer criteria	Poor (1)													
Non-acid grassland types (Result out of 6 criteria)														
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)		Good											
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)													
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)	Poor												
Suggested enhancement interventions to improve condition score														
Notes														
Footnote 1 - Professional judgement should be used alongside the UKHab description.														
Footnote 2 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.														
Footnote 3 - Species indicative of suboptimal condition for this habitat type include: creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i> . There may be additional relevant species local to the region and or site.														
Footnote 4 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.														
Footnote 5 – Wildlife and Countryside Act 1981 (as amended).														



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