Babraham Estate

Preliminary Ecological Appraisal & Biodiversity Net Gain Assessment

Produced for Cheveley Park Farms Ltd

By Applied Ecology Ltd

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Executive Summary

- This report details the results of a Preliminary Ecological Appraisal (PEA) and biodiversity net gain assessment used to help inform the design of a Concept Masterplan of development within the Cheveley Park Farm Babraham Estate, Cambridgeshire.
- The PEA confirms that the Site was dominated by arable land of low relative biodiversity value, with pockets of remnant calcareous grassland and semi-natural broadleaved woodland of elevated ecological interest.
- The faunal interests are likely to be varied and could include the presence of an assemblage of specialist farmland birds, badgers, a range of aquatic species associated with standing and flowing water habitats, bats associated with woodland, hedgerows and aquatic habitats, and specialist invertebrate species associated with dead wood, calcareous grassland, and wetland habitats.
- The Concept Masterplan has responded to the findings of the habitat survey with areas of greatest biodiversity value to be retained and enhanced where possible, and development focusing on arable land and other low value habitats. A large area of the Site would be used to create a new countryside park, with significant ecological opportunities relating to this proposal.
- The high-level biodiversity net gain assessment based on the current Concept Masterplan and several working assumptions shows an overall net gain of **+872.77 habitat area units, equivalent to a biodiversity net gain of +52.51%**.

1 Introduction

Background

1.1 Applied Ecology Ltd (AEL) was appointed by Cheveley Park Farm Ltd, in August 2021, to undertake a Preliminary Ecological Appraisal (PEA) of land within its Babraham Estate, South Cambridgeshire ("the Site"). The location of the Site is shown by **Figure 1.1**.

1.2 This appraisal has been prepared as part of a submission package to promote the Site for future development, including new housing and employment land, and a new countryside park. Two options have been proposed, with and without a secondary school in the south of the Site. The proposed Concept Masterplans for the two development options are provided in **Appendix A**.

1.3 This report includes a review of designated wildlife sites and protected and notable species records within and close to the Site, presents habitat mapping and an overview of the habitats present, and evaluates likely protected and notable species interests based on incidental sightings, habitat suitability and existing records. A biodiversity net gain assessment of the concept masterplan using the Natural England Biodiversity Metric 3.0 calculator is also provided.

Legislation and Planning Policy

Legislation

1.4 The Wildlife and Countryside Act 1981 (as amended) provides the main legal framework for nature conservation and species protection in the UK. The Site of Special Scientific Interest (SSSI) is the main statutory nature conservation designation in the UK. Such sites are notable for their plants, or animals, or habitats, their geology or landforms, or a combination of these. Natural England is the key statutory agency in England for advising Government, and for acting as the Government's agent in the delivery of statutory nature conservation designations.

1.5 Designation of a SSSI is a legal process, by which sites are notified under the Wildlife and Countryside Act 1981. The 1981 Act makes provision for the protection of sites from the effects of changes in land management, and owners and occupiers receive formal notification specifying why the land is of special scientific interest and listing any operations likely to damage the special interest.

1.6 The Countryside and Rights of Way Act 2000, and The Natural Environment and Rural Communities (NERC) Act 2006, provide supplementary protected species legislation. Specific protection for badgers *Meles meles* is provided by the Protection of Badgers Act 1992.

Habitats and Species of Principal Importance in England

1.7 The Natural Environment and Rural Communities (NERC) Act came into force on 1 October 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats

and species which are of principal importance for the conservation of biodiversity in England. The list has been drawn up in consultation with Natural England, as required by the Act.

1.8 The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Habitats of Principal Importance

1.9 Fifty-six habitats of principal importance are included on the S41 list. These are all the habitats in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. They include terrestrial habitats such as upland hay meadows to lowland mixed deciduous woodland, and freshwater and marine habitats such as ponds and sub-tidal sands and gravels.

Species of Principal Importance

1.10 There are 943 species of principal importance included on the S41 list. These are the species found in England which were identified as requiring action under the UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. In addition, the hen harrier *Circus cyaneus* has also been included on the list because without continued conservation action it is unlikely that the hen harrier population will increase from its current very low levels in England.

1.11 In accordance with Section 41(4) the Secretary of State will, in consultation with Natural England, keep this list under review and will publish a revised list if necessary.

National Planning Policy Framework

1.12 The National Planning Policy Framework (NPPF) was published in March 2012 (and replaced previous planning policy guidance (PPS 9) on biodiversity. The NPPF was updated in July 2018, February 2019, and in July 2021, and states the following in relation to biodiversity and planning:

1.13 "*When determining planning applications, local planning authorities should apply the following principles*:

- *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; and*
- *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.*

1.14 *The following should be given the same protection as habitats sites:*

- *potential Special Protection Areas and possible Special Areas of Conservation;*
- *listed or proposed Ramsar sites; and*
- *sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.*

1.15 *The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.*"

Babraham Estate

Site location

Site boundary

0 1 2 Kilometers

N

Figure 1.1

Map Scale @ A3: 1:75,000

Surveyed by: N/A	
Survey date: N/A	
Drawn by: RJH	
Checked by: DP	
Status: Final	

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AEL1979_001-00_location_20211123 A3 11/24/2021

2 Existing Information

Sources of Information

2.1 The Cambridgeshire & Peterborough Environmental Records Centre (CPERC) was commissioned by AEL in September 2021, to complete a search of its database for existing biological records. This included a search for records of statutory and non-statutory wildlife sites, ancient woodland, and protected and notable species both on the Site and within 3 km of its centre.

2.2 The location of statutory wildlife sites beyond the 3 km CPERC search area and associated Impact Risk Zones was also checked using the online MAGIC map database[1] which is managed by Natural England.

Designated Wildlife Sites

2.3 The CPERC designated sites map and associated site details, including reasons for designation, are provided in **Appendix B**.

2.4 No statutory wildlife sites are present within the Site, but the **Roman Road Site of Special Scientific Interest** (SSSI) adjoins and runs the length of the Site's northern boundary. The next closest SSSI is **Sawston Hall Meadows SSSI**, which is located 1 km to the southwest at its closest point. The closest SSSIs with additional Natura 2000 designation are **Devils Dyke Special Area of Conservation** (SAC) which is 13.2 km to the northeast and **Eversden and Wimpole Woods SAC** 15.4 km to the west.

2.5 Given the large size of the Site, various levels of SSSI Impact Risk Zone are present, with impact risk typically decreasing with distance from the two closest SSSIs.

2.6 Two non-statutory wildlife sites are located within the Site, namely **Signal Hill Plantation Grassland County Wildlife Site** (CWS) and part of the **River Granta CWS**. **Worsted Lodge RSV CWS** and **Shelford -Haverhill Disused Railway (Pampisford) CWS** adjoin the Site.

Protected and Notable Species

2.7 A total of 3,794 individual species records were provided by CPERC and can be summarised as follows:

- 13 **amphibian** records, including eight records of common toad *Bufo bufo*, three records of common frog *Rana temporaria* and two records of great crested newt *Triturus cristatus*. The closest GCN record was a 1988 record from the Babraham Institute around 350 m from the Site in an area that looks to have been redeveloped and with no obvious waterbody shown on online aerial photographs.
- 934 **bird** records mainly consisting of an assemblage of farmland birds typical of the local area, including corn bunting *Emberiza calandra*, yellowhammer *Emberiza*

[1] https://magic.defra.gov.uk/MagicMap.aspx

citrinella, yellow wagtail *Motacilla flava*, grey partridge *Perdix perdix*, and lapwing *Vanellus vanellus*.

- 1,150 **plant** records, including conifers and ferns, and characterised by a wide range of species associated with chalk grassland, chalky arable land, and wetland/fen habitats.
- 1,002 insects mainly **butterflies** and **moths**, with distribution largely restricted to a few well surveyed locations such as Lodge Farm and Whitehill Plantation in Fulbourn, and Granta Park.
- 54 reptile records, including **slow-worm** *Anguis fragilis*, **grass snake** *Natrix helvetica* and **common lizard** *Zootoca vivipara*, the latter from the Roman Road SSSI.
- 634 terrestrial mammal records, including **hedgehog** *Erinaceus europaeus*, **bats** (common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, serotine *Eptesicus serotinus*, Daubenton's bat *Myotis daubentonii*, Natterer's bat *Myotis nattereri*, and noctule bat *Nyctalus noctula*) **brown hare** *Lepus europaeus*, **otter** *Lutra lutra*, **badger** *Meles meles*, **polecat** *Mustela putorius* and **harvest mouse** *Micromys minutus*.
- Four records of **white-clawed crayfish** *Austropotamobius pallipes* from the River Granta at Abington and Granta Park.
- Three records of **roman snail** *Helix pomatia* from Stapleford Parish Pit.

3 Survey Approach and Findings

Survey Approach

Habitats and plants

3.1 A Phase 1 habitat survey of the Site was undertaken on 10, 20 and 21 September 2021 by AEL ecologist Rob Hutchinson MCIEEM. Rob is a Principal Ecologist at AEL and holds a Level 5 Field Skills Identification Certificate (FISC) for plant identification from the Botanical Society of Britain & Ireland (BSBI), as well as Natural England survey licences for great crested newt (Level 2), bats (level 1) and hazel dormouse.

3.2 The methodology adopted followed the standard Phase 1 survey approach (JNCC, 2010) by which all habitats present within the Site were classified and mapped according to standard categories. Notes were taken of habitats of typical and unique botanical character, and plant species abundance was noted using the DAFOR scale. Sufficient information was also collected to enable the habitats to be converted to those used by the UK Habitat Classification (UKHab) and to assess and assign habitat condition in accordance with Natural England Biodiversity Metric 3.0 technical supplement condition assessment criteria.

3.3 The habitat map was subsequently digitised using a Geographical Information System (ArcGIS).

Protected and notable species

3.4 The standard Phase 1 habitat survey was "extended" to include a search for evidence of, or potential for, the presence of protected species or species of nature conservation interest within and close to the Site. This walkover, which was undertaken by Rob Hutchinson in conjunction with the habitat survey, was not a detailed survey for such species, but included noting the presence of habitats suitable to support specific protected species, and where seen, any evidence of presence such as droppings, mammal tracks and footprints, shelters (e.g. nests/roosts), hair caught on fence-wire and foraging signs etc.

Survey limitations

3.5 Some limited areas of the Site were not accessible during the survey due to the presence of sensitive pheasant rearing and treatment pens, and these areas were mapped using online aerial photographs.

Survey Findings

Habitats

3.6 The Phase 1 habitat maps (with corresponding habitat value maps) are shown by **Figures 3.1-3.4**, and a breakdown of the habitat types and their extent within the Site is provided in **Table 3.1**.

Babraham Estate

Habitat map - north

- Site boundary
- unimproved calcareous grassland
- arable (including cereals, sugar beet and maize)
- semi-improved calcareous grassland
- poor SI grassland / tall ruderal
- arable (bird seed mix)
- broad-leaved semi-natural woodland
- broad-leaved plantation woodland
- coniferous plantation woodland
- mixed plantation woodland
- dense scrub
- semi-improved neutral grassland
- poor semi-improved neutral grassland
- improved grassland
- amenity grassland
- standing / flowing water
- tall ruderal
- introduced shrubs
- ephemeral/short perennial
- bare ground
- hard standing
- buildings
- line of trees
- species-poor intact hedge
- species-rich intact hedgerow
- individual tree (indicative location and number only)
- x scattered scrub

Figure 3.1

Map Scale @ A3: 1:10,000

Surveyed by: RJH	
Survey date: Sept 2021	
Drawn by: RJH	
Checked by: DP	
Status: Final	

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Babraham Estate

Habitat value map - north

- Site boundary
- High
- Medium
- Low
- Very low
- line of trees
- species-poor intact hedge
- species-rich intact hedgerow
- individual tree (indicative location and number only)
- x scattered scrub

Figure 3.2

Map Scale @ A3: 1:10,000

Surveyed by: RJH	
Survey date: Sept 2021	
Drawn by: RJH	
Checked by: DP	
Status: Final	

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Babraham Estate

Habitat map - south

- Site boundary
- unimproved calcareous grassland
- arable (including cereals, sugar beet and maize)
- semi-improved calcareous grassland
- arable (bird seed mix)
- broad-leaved semi-natural woodland
- broad-leaved plantation woodland
- coniferous plantation woodland
- mixed plantation woodland
- dense scrub
- semi-improved neutral grassland
- poor semi-improved neutral grassland
- improved grassland
- amenity grassland
- standing / flowing water
- tall ruderal
- ephemeral/short perennial
- bare ground
- hard standing
- buildings
- line of trees
- species-poor intact hedge
- species-rich intact hedgerow
- individual tree (indicative location and number only)
- scattered scrub

Figure 3.3

Map Scale @ A3: 1:10,000

Surveyed by: RJH	
Survey date: Sept 2021	
Drawn by: RJH	
Checked by: DP	
Status: Final	

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0 0.1 0.2 Kilometers

Babraham Estate

Habitat value map - south

- Site boundary
- High
- Medium
- Low
- Very low
- line of trees
- species-poor intact hedge
- species-rich intact hedgerow
- individual tree (indicative location and number only)
- x scattered scrub

Figure 3.4

Map Scale @ A3: 1:10,000

Surveyed by: RJH	
Survey date: Sept 2021	
Drawn by: RJH	
Checked by: DP	
Status: Final	

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AEL1979_005-00_habitatvalue_south_20211123 A3 11/24/2021

Table 3.1: Habitat types and their extent within the Site.

Habitat type	Area (ha)	% of Site
Arable (including cereals, sugar beet and maize)	501.90	82.176
Poor semi-improved neutral grassland	31.93	5.228
Broad-leaved semi-natural woodland	24.27	3.974
Broad-leaved plantation woodland	13.44	2.200
Semi-improved neutral grassland	7.86	1.288
Arable (bird seed mix)	7.78	1.274
Tall ruderal	4.54	0.744
Standing water	4.38	0.717
Hard-standing	3.93	0.643
Dense scrub	1.85	0.302
Amenity grassland	1.66	0.271
Improved grassland	1.29	0.211
Buildings	1.10	0.180
Bare ground	1.07	0.175
Unimproved calcareous grassland	0.95	0.155
Mixed plantation woodland	0.83	0.136
Coniferous plantation woodland	0.79	0.130
Semi-improved calcareous grassland	0.62	0.101
Ephemeral/short perennial	0.37	0.061
Poor semi-improved neutral grassland / tall ruderal	0.17	0.029
Introduced shrubs	0.03	0.005
Totals	**610.77**	**100**

Notable plant species

3.7 Several plants of conservation importance due to their scarcity and/or decline across Great Britain, England and/or Cambridgeshire (Vice-County 29) were recorded from the Site during the habitat survey and are listed below.

- *Cichorium intybus* (chicory), England Vulnerable. A few plants in rough grassland at TL 5055 5001, but probably introduced.
- *Clinopodium nepeta* (lesser calamint), Cambridgeshire Vulnerable. Narrow species-rich grassland verge along High Street at TL 5077 4992.
- *Cynoglossum officinale* (hound's tongue), GB Near Threatened, England Near Threatened. Field edge near Mounts Farm (TL 5270 5192).
- *Filago vulgaris* (common cudweed), GB Near Threatened, England Near Threatened. Field edge near Two Acre Plantation (TL 5196 4974).
- *Fragaria vesca* (wild strawberry), England Near Threatened. Moderately species-rich rabbit grazed turf north of Bourn Bridge Cottages (TL 5205 4964).

- *Fumaria densiflora* (dense-flowered fumitory), England in Significant Decline, Cambridgeshire Vulnerable. A few plants in grassland reversion at TL 5110 5239.
- *Fumaria parviflora* (fine-leaved fumitory), GB Vulnerable, England Near Threatened, Cambridgeshire Vulnerable. A few plants along edge of Signal Hill Plantation Grassland CWS and in grassland reversion at TL 5110 5239.
- *Knautia arvensis* (field scabious), England Near Threatened. Present in a few moderately species-rich grass verges across the Site.
- *Lepidium latifolium* (dittander), Nationally Scarce. Small patch along field margin close to new housing development at TL 4951 5023 but unlikely to be native in this location.
- *Linum perenne* (perennial flax), GB Vulnerable, Cambridgeshire Scarce and Vulnerable. Signal Hill Plantation Grassland CWS and grassland reversion at TL 5110 5239.
- *Nepeta cataria* (cat-mint), GB Vulnerable, England Vulnerable, Cambridgeshire Vulnerable. Occasional and relatively widespread throughout the Site, particularly in the north.
- *Orobanche elatior* (knapweed broomrape), England in Significant Decline. Single spike at TL 4973 5060.
- *Papaver hybridum* (rough poppy), Cambridgeshire Vulnerable. A few locations in the north of the Site at TL 5093 5277, TL 5110 5239, and TL 5135 5138.
- *Polygala vulgaris* (common milkwort), Cambridgeshire Vulnerable. Signal Hill Plantation Grassland CWS.
- *Silene noctiflora* (night-flowering catchfly), GB Vulnerable, England Vulnerable, Cambridgeshire Vulnerable. A single plant seen along arable margin at TL 5054 5176.
- *Veronica officinalis* (heath speedwell), England Near Threatened, Cambridgeshire Scarce and Endangered. One location along western edge of disused wooden rail cutting (TL 5213 5029).

3.8 This list provides only an indication of the likely range of notable plants present within the Site. Notable plants associated with the Roman Road SSSI and Worsted Lodge RSV CWS, which adjoin the Site, are not listed. To generate a comprehensive list of notable species and their distribution within the Site would require additional targeted survey at appropriate times of year.

3.9 The invasive non-native plants giant hogweed *Heracleum mantegazzianum* and Indian balsam *Impatiens glandulifera* were present along the River Granta within the Site.

Protected and notable species

3.10 The Site has the potential to support a wide range of protected and notable faunal species due to its large size and the mix of habitats present. This is likely to include, but is not necessarily limited to, the following species and groups:

- An assemblage of specialist farmland bird species, such as corn bunting and yellowhammer.
- Aquatic wildlife associated with the River Granta, including aquatic invertebrates and otter.

- Terrestrial invertebrate species with high individual nature conservation value associated with dead wood habitats in woodland, mature trees and hedgerows, remnant areas of calcareous grassland and flower-rich fallow arable land.
- A range of bat species are likely to use the Site, with a possibility of bats roosting in buildings and mature trees, and the wider use of hedgerows, woodland, and wetland areas, for commuting and foraging.
- Badgers, including their setts and use of the Site for foraging and commuting. Three individual badger setts were seen during the habitat survey confirmed their presence on Site, albeit none were within areas of proposed development.

4 Biodiversity Net Gain Assessment

Approach

4.1 A biodiversity net gain assessment of the Concept Masterplan has been completed using the Natural England Biodiversity Metric 3.0[2]. The metric tool compares the relative biodiversity value of the pre-development habitats with the proposed post-development habitats with the comparison including an assessment of habitat type, condition and, in the case of newly created post-development habitats, difficulty of creation. Linear features, such as hedgerows and rivers, and individual trees, have not been factored into the calculations at this stage.

4.2 The pre-development habitat baseline for the Site was derived using the habitat map presented in Chapter 3, with the Phase 1 habitat types converted into their respective UK Habitat Classification (UKHab) habitat types using professional judgement.

4.3 The post-development habitat types and areas for use in the biodiversity metric calculator, were informed by the Concept Masterplans in **Appendix A**. These masterplans show the scheme both with and without a potential secondary school proposed for the south of the Site. The post-development habitats provided in this chapter relate to the scheme with the school; however, calculations have also been completed for the option without the school and are discussed at the end of this chapter.

4.4 A range of assumptions have been made for likely habitat types and conditions within the broad development and landscaping types shown. The condition of pre-development habitats and target conditions of post-development created habitats were determined in line with the Biodiversity Metric 3.0 Calculation Tool Technical Supplement condition assessment criteria[3].

Results

Pre-development habitats

4.5 The habitat areas and their assessed conditions are detailed in **Table 4.1**. Overall, the baseline habitat value of the Site was calculated at **1,662.24 habitat area units**.

[2] Available from http://nepubprod.appspot.com/publication/6049804846366720. Accessed on 16/07/2021.

[3] Panks, S.; White, N.; Newsome, A.; Potter, J.; Heydon, M.; Mayhew, E.; Alvarez, M.; Russel, T; Scott, S.J.; Heaver, M.; Scott, S.C.; Treweek, J.; Butcher, B. and Stone, D. (2021) *Biodiversity Metric 3.0: Auditing and accounting for biodiversity – technical supplement*. Natural England.

Table 4.1: Baseline habitat value.

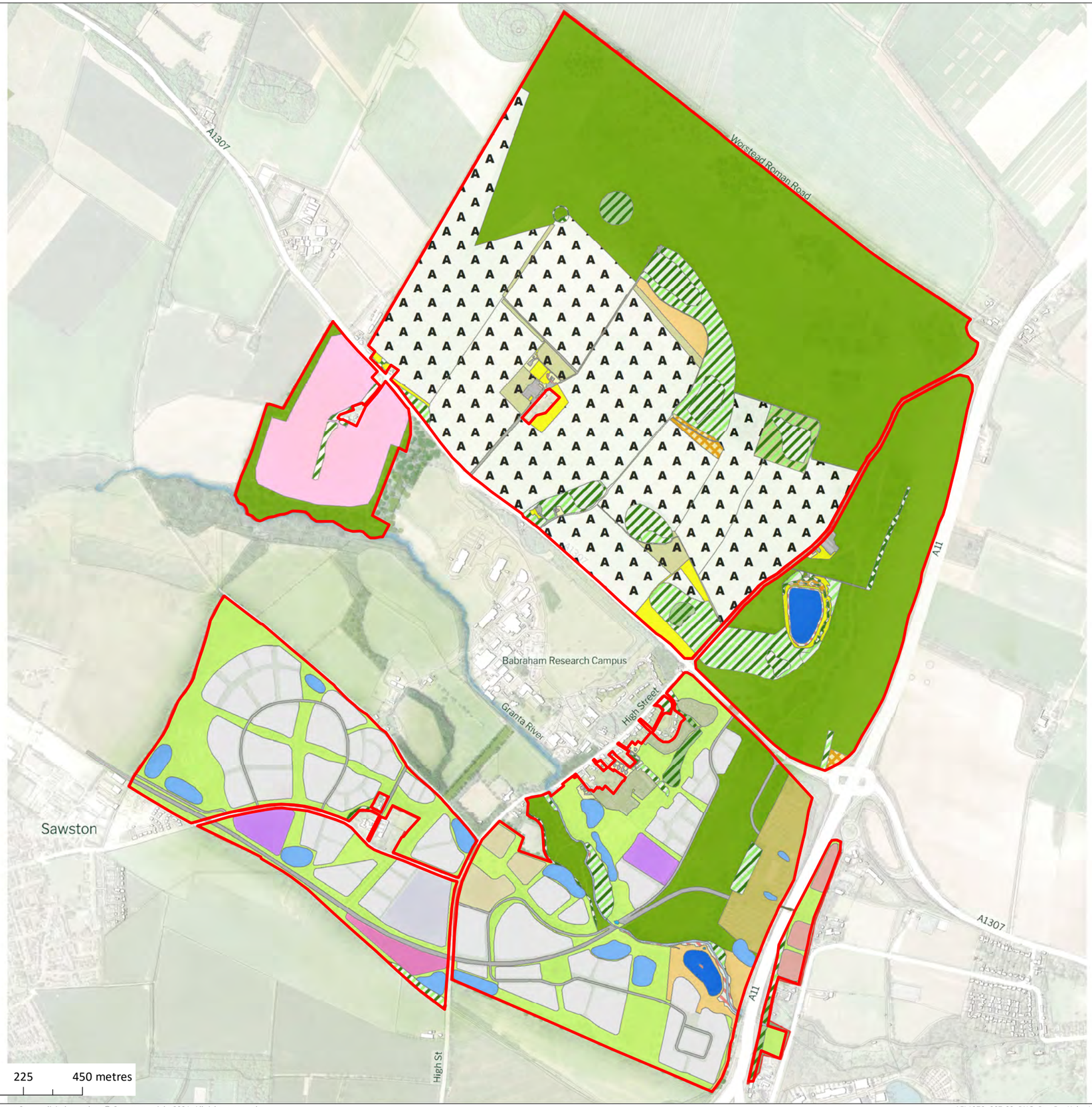
Habitat (UKHab)	Condition	Area (ha)	Habitat unit value	Area lost to development (ha)
Cropland: Cereal crops	N/A	376.85	753.70	482.72
Cropland: Arable field margins game bird mix	N/A	7.78	31.12	10.48
Cropland: Non-cereal crops	N/A	125.06	250.12	250.12
Grassland: Lowland calcareous grassland	Good	0.04	0.72	0.00
Grassland: Lowland calcareous grassland	Moderate	1.52	18.24	0.00
Grassland: Modified grassland	Good	1.19	7.14	7.14
Grassland: Modified grassland	Moderate	31.97	127.88	107.28
Grassland: Modified grassland	Poor	1.89	3.78	1.54
Grassland: Other neutral grassland	Moderate	7.86	62.88	15.12
Heathland and shrub: Mixed scrub	Moderate	1.78	14.24	0.88
Heathland and shrub: Mixed scrub	Poor	0.07	0.28	0.00
Lakes: Ponds (non-priority habitat)	Poor	0.03	0.12	0.00
Lakes: Reservoirs	Fairly Poor	3.57	21.42	0.00
Sparsely vegetated land: Ruderal / ephemeral	Moderate	4.91	19.64	15.04
Urban: Vacant / derelict / bare ground	Poor	1.07	2.14	1.74
Urban: Developed land, sealed surface	N/A - Other	5.02	0.00	0.00
Urban: Introduced shrub	Poor	0.03	0.06	0.00
Woodland and forest: Lowland mixed deciduous woodland	Moderate	21.58	258.96	4.08
Woodland and forest: Lowland mixed deciduous woodland	Poor	2.69	16.14	0.00
Woodland and forest: Other coniferous woodland	Poor	0.79	1.58	0.00
Woodland and forest: Other woodland, broadleaved	Moderate	3.75	30.00	0.16
Woodland and forest: Other woodland, broadleaved	Poor	9.69	38.76	0.36
Woodland and forest: Other woodland, mixed	Poor	0.83	3.32	0.08

Post-development habitats

4.6 The post-development habitats, including the proposed area of developed land (buildings and hard-standing) and other newly created habitats within the Site, are presented in **Table 4.2** and shown in **Figure 4.1**.

Babraham

Post-development habitats



- Site boundary
- developed land, sealed surface - condition N/A
- development - employment
- development - housing
- development - local centre
- development - primary school
- development - secondary school
- development - travel hub
- development - village
- development - potential R&D area
- landscaping - development areas
- landscaping - semi-natural areas
- SUDS features
- retained Bare ground - poor condition
- retained Cereal crop - condition N/A
- retained Game bird mix - poor condition
- retained Introduced shrubs - poor condition
- retained Lowland calcareous grassland - good condition
- retained Lowland calcareous grassland - moderate condition
- retained/enhanced Lowland mixed deciduous woodland - moderate condition
- enhanced Lowland mixed deciduous woodland - poor condition
- retained Mixed scrub - moderate condition
- retained Mixed scrub - poor condition
- retained Modified grassland - moderate condition
- retained Modified grassland - poor condition
- retained Other coniferous woodland - poor condition
- retained Other neutral grassland - moderate condition
- retained Other woodland, broadleaved - moderate condition
- retained Other woodland, broadleaved - poor condition
- retained Other woodland, mixed - poor condition
- retained Ponds (non-priority) - poor condition
- retained Reservoirs - fairly poor condition
- retained Ruderal / ephemeral - moderate condition
- retained River

Figure 4.1

Map Scale @ A3: 1:15,500

Surveyed by: n/a	Applied Ecology Ltd
Survey date: n/a	
Drawn by: RD	
Checked by: DP	
Status: Final	

4.7 The development types and landscaping shown in the Concept Masterplan in **Appendix A** have each been broken down into proportions of proposed habitat types, as shown in **Table 4.2**.

4.8 The extensive areas of green landscaping are broken down into areas of lower habitat target condition around development areas that are likely to have a higher proportion of formal and amenity type landscaping (playing fields, recreational space, etc.), and areas with a higher habitat condition targets due to their location beyond key development areas. These proportions are broad estimates and subject to change but indicate an achievable range of potential habitats for the development and landscaping types indicated by the Concept Masterplan.

4.9 In addition, most of the retained habitats are assumed to be retained unchanged at this stage, except for lowland mixed deciduous woodland, part of which is assumed to be enhanced through improved management to increase its condition.

4.10 Overall, the post-development habitats score a post-development value of **2,535.01 habitat area units**. The option excluding the secondary school in the south of the Site has a post-development value of **2,544.55 habitat area units**.

Table 4.2: Post-development habitats.

Habitats (UKHab)	Target condition	Area (ha)	Habitat units value
Retained habitats			
Cropland: Cereal crops	N/A	135.49	270.98
Cropland: Arable field margins game bird mix	N/A	5.16	20.64
Grassland: Lowland calcareous grassland	Good	0.04	0.72
Grassland: Lowland calcareous grassland	Moderate	1.52	18.24
Grassland: Modified grassland	Moderate	5.15	20.60
Grassland: Modified grassland	Poor	1.12	2.24
Grassland: Other neutral grassland	Moderate	5.97	47.76
Heathland and shrub: Mixed scrub	Moderate	1.67	13.36
Heathland and shrub: Mixed scrub	Poor	0.07	0.28
Lakes: Ponds (non-priority habitat)	Poor	0.03	0.12
Lakes: Reservoirs	Fairly Poor	3.57	21.42
Sparsely vegetated land: Ruderal / ephemeral	Moderate	1.15	4.60
Urban: Vacant / derelict / bare ground	Poor	0.2	0.40
Urban: Introduced shrub	Poor	0.03	0.06
Woodland and forest: Lowland mixed deciduous woodland	Moderate	8.24	98.88
Woodland and forest: Other coniferous woodland	Poor	0.79	1.58
Woodland and forest: Other woodland, broadleaved	Moderate	3.73	29.84
Woodland and forest: Other woodland, broadleaved	Poor	9.60	38.40
Woodland and forest: Other woodland, mixed	Poor	0.81	3.24
Enhanced habitats			
Woodland and forest: Lowland mixed deciduous woodland	Moderate–Good	13.00	168.62
Woodland and forest: Lowland mixed deciduous woodland	Poor–Moderate	2.69	18.75

Habitats (UKHab)	Target condition	Area (ha)	Habitat units value
New habitats			
Urban: Developed land sealed surface (roads)	N/A	10.49	0
Urban: Developed land sealed surface (Employment area – 90%)	N/A	2.28	0
Urban: Introduced shrub (Employment area – 10%)	Poor	0.25	0.48
Urban: Developed land sealed surface (Housing areas – 70%)	N/A	50.63	0
Urban: Vegetated garden (Housing areas – 30%)	Poor	21.70	41.88
Urban: Developed land sealed surface (Local centre – 80%)	N/A	3.48	0
Urban: Introduced shrub (Local centre – 20%)	Poor	0.87	1.68
Urban: Developed land sealed surface (Primary school – 70%)	N/A	3.38	0
Grassland: Modified grassland (Primary school – 30%)	Poor	1.45	2.80
Urban: Developed land sealed surface (Primary school – 70%)	N/A	1.75	0
Grassland: Modified grassland (Primary school – 30%)	Poor	0.75	1.45
Urban: Developed land sealed surface (Travel hub – 50%)	N/A	4.94	0
Urban: Introduced shrub (Travel hub – 10%)	Poor	0.99	1.91
Heathland and shrub: Mixed scrub (Travel hub – 20%)	Moderate	1.98	13.26
Grassland: Other neutral grassland (Travel hub – 20%)	Moderate	1.98	13.26
Urban: Developed land sealed surface (Village area – 50%)	N/A	1.99	0
Urban: Vegetated garden (Village area – 50%)	Poor	1.99	3.84
Grassland: Modified grassland (Landscaping around development – 40%)	Poor	25.01	48.27
Heathland and shrub: Mixed scrub (Landscaping around development – 20%)	Moderate	12.51	83.75
Grassland: Other neutral grassland (Landscaping around development – 30%)	Moderate	18.76	125.59
Woodland and forest: Other woodland, mixed (Landscaping around development – 20%)	Moderate	6.25	17.17
Grassland: Modified grassland (Semi-natural landscaping – 10%)	Poor	20.52	39.60
Heathland and shrub: Mixed scrub (Semi-natural landscaping – 30%)	Good	61.56	517.31
Grassland: Other neutral grassland (Semi-natural landscaping – 40%)	Good	82.08	689.75
Woodland and forest: Other woodland, mixed (Semi-natural landscaping – 20%)	Moderate	41.04	112.75
Urban: Sustainable urban drainage feature (SUDS features – 80%)	Moderate	7.38	17.77
Lakes: Ponds (non-priority habitat) (SUDS features – 20%)	Moderate	1.84	13.23
Urban: Developed land sealed surface (Potential R&D area – 80%)	N/A	17.67	0
Urban: Introduced shrub (Potential R&D area – 20%)	Poor	4.42	8.53

Conclusion

4.11 Based on the current Concept Masterplan and the working assumption set out above, the proposed development could result in an overall net gain in biodiversity of **+872.77 habitat area units, equivalent to a net gain of +52.51%.**

4.12 Alternately, the option excluding the secondary school could deliver **+882.31 habitat area units, equivalent to a net gain of +53.08%**.

Worstead Roman Road
A1307
A11
Babraham Research Campus
Granta River
High Street
Sawston
High St
Granta Park

Key

- Site boundary
- Development parcels
- CSET Phase 2 bus and cycle route
- Proposed bus stop
- Primary School
- Secondary school
- Larger centre
- Local centre
- Potential Research and Development area
- Employment area
- Historic bunker site
- Area of historic crop enclosure (Roman camp)
- SUDS

0m 100m 200m 300m 400m

Rev	Date	Description	Dwn	Ckd
.	06/10/21	First issue	AS	SK
A	21/10/21	Second issue	AS	CY
B	01/11/21	Changes to development parcels	AS	CY
C	16/11/21	Changes to SUDS and development parcels	AS	CY

Drawn	AS
Checked	SK
Date	06/10/21
Scale @ A0	1:5000

Land At Babraham

Concept Masterplan Site Wide

Option with secondary school

BA9645 SK04

REV - C

For information

PRP

A1307
Worstead Roman Road
A1307
A11
Babraham Research Campus
Granta River
High Street
Sawston
High St
A1307
A11
Granta Park

Key

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Drawn	AS
Checked	SK
Date	06/10/21
Scale @ A0	1:5000

Land At Babraham

Concept Masterplan Site Wide

Option without secondary school

BA9645 SK04

REV - C

For information

PRP

Designated Sites Map

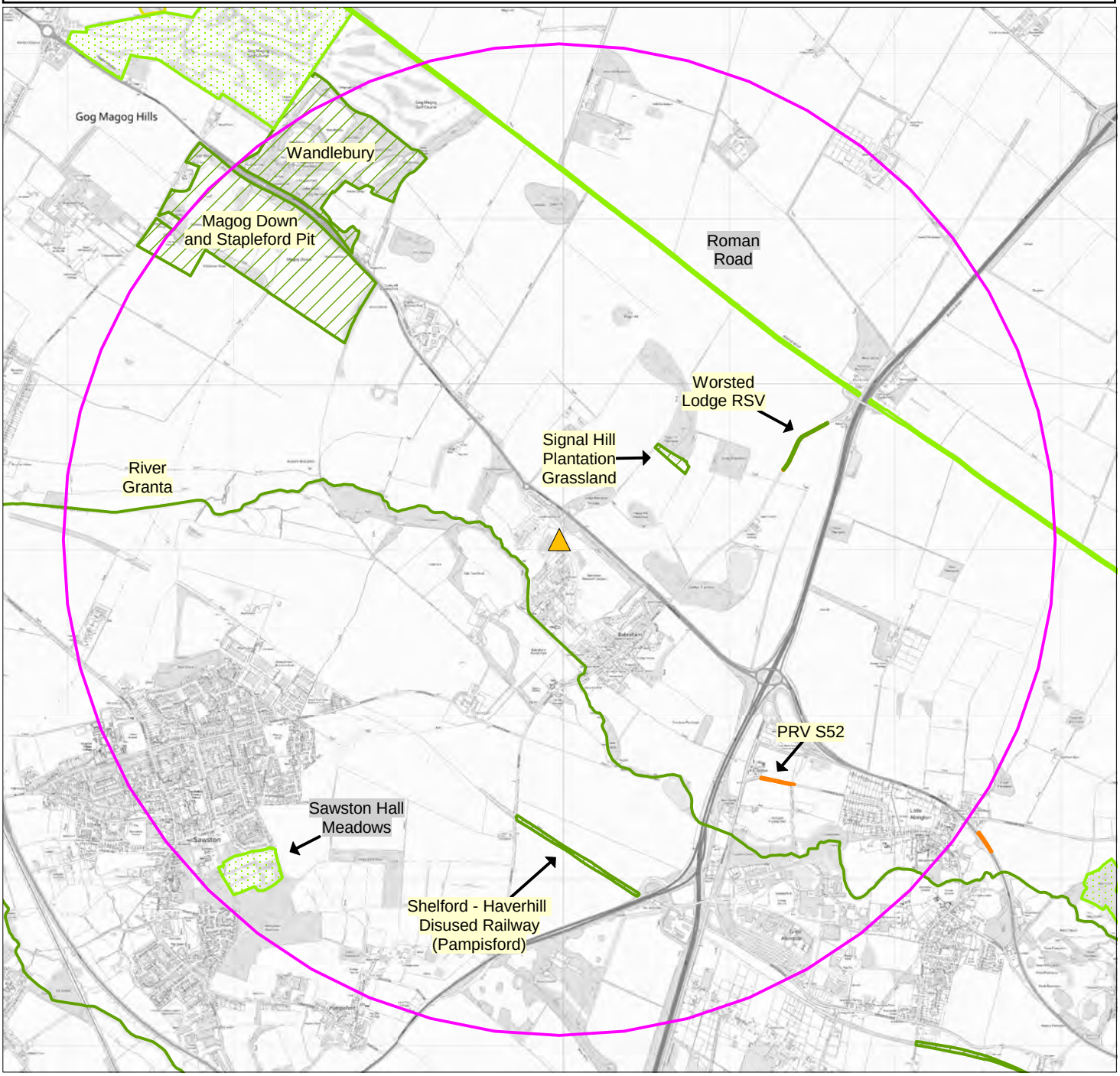
for Applied Ecology

Babraham

1:35,000

CPERC
The Manor House
Broad Street
Cambourne
Cambridgeshire
CB23 6DH

CPERC
CAMBRIDGESHIRE & PETERBOROUGH
ENVIRONMENTAL RECORDS CENTRE



Search Area

Supplied Grid Reference

SSSI

LNR

County Wildlife Site

Protected Road Verge

N
W
E
S

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