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BABRAHAM RESEARCH CAMPUS
FIRST PROPOSALS CONSULTATION (REGULATION 18) – DEC 2021
PLANNING REPRESENTATIONS
APPENDIX 7 : PRELIMINARY ECOLOGICAL APPRAISAL

Preliminary Ecological Appraisal

for

Babraham Research Campus

December 2021

Status: Issue

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Quality Management	
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	Report Author:	**Approved by:**
Author:	Nick Aldus MCCIEM	Dr Jo Parmenter CEcol CEnv MCIEEM MIEMA
Job title:	Senior Ecologist	Director

Client Details	
Client:	Babraham Research Campus Ltd
Client Address:	Babraham Hall House | Babraham | Cambridge | CB22 3AT

Contact Details

The Landscape Partnership Ltd

Greenwood House | 15a St Cuthberts Street | Bedford | MK40 3JG **Tel:** 01234 261315

East Building | Holland Court | Cathedral Close | Norwich | NR1 4DY **Tel:** 01603 230777

The Granary | Sun Wharf | Deben Road | Woodbridge | IP12 1AZ **Tel:** 01394 380509

Ensign House (E&F) | Tavern Quay | Sweden Gate | Surrey Quays | London | SE16 7TX **Tel:** 020 3092 4141

The Landscape Partnership Ltd is a practice of Chartered Landscape Architects, Chartered Ecologists and Chartered Environmentalists, registered with the Landscape Institute and a member of the Institute of Environmental Management & Assessment & the Arboricultural Association.

Registered Office:

Greenwood House
15a St Cuthberts Street
Bedford
MK40 3JG

Registered in England No 2709001

Quality Standards

This report is certified BS 42020:2013 'Biodiversity – code of practice for planning and development' compliant and has been prepared in accordance with The Chartered Institute of Ecology and Environmental Management's (CIEEM) Technical Guidance Series '*Ecological Report Writing*' and Code of Professional Conduct.

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Non-technical summary

The Landscape Partnership was commissioned by Babraham Research Campus Ltd to undertake an Ecological Appraisal of a number of proposed development options which are to be put forward for the Local Plan.

Six future development zones have been identified, amounting to approximately 25,500 sqm of potential office & lab space which represents areas of the Campus that have no planning permissions in place and includes undeveloped land that provides an opportunity for future developments, and developed land with old building stock that can be demolished to make way for redevelopment.

The objectives of the appraisal were to identify the habitats and species present or potentially present on the proposed development sites but also the wider campus, and evaluate their importance, provide an indicative assessment of the impact of the development proposals where possible and describe any measures necessary to avoid impacts, reduce impacts or compensate for impacts so that there is no net harm to ecological features.

The survey involved classifying and recording habitat types and features of ecological interest, and identified the potential for protected species to be present by assessing habitat suitability for those species. The survey was undertaken by appropriately qualified and experienced personnel.

The main campus area surrounding the Hall, is defined by modern development undertaken since the year 2000, replacing many of the original post-war site buildings with modern research laboratories and supporting infrastructure. Despite extensive development the campus retains a parkland aesthetic with areas of open grassland, woodland and scattered trees and which are manged to maintain and enhance their nature conservation value.

Where modern development has been undertaken it has included sympathetic landscape planting and open public realm design, plus ecological enhancements including the creation of species rich calcareous grassland and artificial habitats for bats and birds. Extensive woodland planting has been carried out in recent years on arable land away from the main campus areas, augmenting and connecting areas of established woodland, and which is approaching early maturity.

The Estate is defined by a mature tree belt along the A1307 forming its north-eastern boundary and which extends along the south-eastern boundary with Babraham village High Street. The south-western boundary is defined by an unsurfaced track and Public Right of Way, Rowley Lane, which runs from Babraham High Street to the northwest. The boundary then encloses arable and grazing land south of the River Granta before following the river east, including further arable land before heading north to the A1307.

Based on the habitat types present, it is considered that the site may support the following protected species or groups of species: rare plants, invertebrates, amphibians (excepting great crested newt), reptiles, breeding birds, badger, and bats. Impacts upon individual species or species groups varies between the proposed development sites.

A number of site and species specific ecological surveys have been proposed. It is considered that it is likely to be possible to deliver effective mitigation for any impacts arising from development of the six future development zones; cumulative impacts could be offset by measures across the wider Campus and Estate to benefit biodiversity.

A number of **ecological enhancements** have been proposed, which would improve the quality of the individual development sites for native flora and fauna. Delivery of these enhancements would lead to an overall **Neutral-Minor Beneficial impact** for each of the proposed development options. Campus wide proposals have also been developed and delivery of these enhancements would lead to an overall **Minor-Moderate Beneficial impact** depending upon the scale of what can be delivered.

Babraham Research Campus Ltd have committed to delivering a 10% Net Gain which will be demonstrated using the Natural England Biodiversity Metric and also plan to achieve the “doubling nature” ambition set out by the Natural Cambridgeshire and supported by South Cambridgeshire District Council to give a total of 20% BNG.

1 Introduction

1.1 Commission

1.1.1 The Landscape Partnership was commissioned by Babraham Research Campus Ltd to carry out site-wide ecological scoping including an Ecological Impact Assessment (EcIA) of proposed 'development zones', constraints and opportunities mapping and a Phase 1 habitat survey to facilitate future Biodiversity Net Gain calculations. The collective work will support an application to have the site included within the Local Plan.

1.2 Legislation and policy background

1.2.1 There is a range of protection given to sites and species. Sites may be designated for local, national, or global importance for nature conservation. Species may be protected by varying levels of national regulation.

1.2.2 The Local Planning Authority has a policy to protect features of nature conservation value within its Local Plan. Other regulators have policies relating to the consents issued by them.

1.2.3 Further information is given in Appendix 1.

1.2.4 Assessment was undertaken against current legislation and planning policy, and in accordance with standard guidance. Further information is given in Section 2 and Appendix 2.

1.3 Site location and context

1.3.1 The site is around 5.5km south east of the city of Cambridge within the village of Babraham. The site comprises the Babraham Institute campus which has evolved within the former Babraham Hall Estate following its purchase after the Second World War by the Agricultural Research Council. The present-day campus comprises the Hall, parkland grounds, woodland and arable land which lies on the shallow valley sides of the River Granta and extends to approximately 180 hectares.

1.3.2 The main campus area surrounding the Hall, is defined by modern development undertaken since the year 2000, replacing many of the original post-war site buildings with modern research laboratories and supporting infrastructure. Despite extensive development the campus retains a parkland aesthetic with areas of open grassland, woodland and scattered trees and which are manged to maintain and enhance their nature conservation value.

1.3.3 Where modern development has been undertaken it has included sympathetic landscape planting and open public realm design, plus ecological enhancements including the creation of species rich calcareous grassland and artificial habitats for bats and birds. Extensive woodland planting has been carried out in recent years on arable land away from the main campus areas, augmenting and connecting areas of established woodland, and which is approaching early maturity.

1.3.4 The Estate is defined by a mature tree belt along the A1307 forming its north-eastern boundary and which extends along the south-eastern boundary with Babraham village High Street. The south-western boundary is defined by an unsurfaced track and Public Right of Way, Rowley Lane, which runs from Babraham High Street to the northwest. The boundary then encloses arable and grazing land south of the River Granta before following the river east, including further arable land before heading north to the A1307.

1.3.5 The Ordnance Survey Grid Reference for the approximate centre of the Estate is TL50565096.

1.4 Acknowledgements

Surveyor Competencies

Survey(s) undertaken	Surveyor(s)	Experience (years)	Licences Held
Phase 1 habitat survey	Jo Parmenter CEnv MCIEEM MIEMA	25+	FISC Level 5
	Nick Aldus MCIEEM	15+	Great crested newt Class Licence CL08 (Level 1) Bat Class Licence CL18 (Level 2) FISC Level 3

Other contributors

1.4.1 We acknowledge the input of:

- Cambridge and Peterborough Environmental Records Centre for provision of data;

1.5 Description of the project

1.5.1 The Campus has seen significant growth over the past decade to meet the needs and demands of the life sciences sector. There is evidence of an unmet demand for the specialist space and environment provided by BRC from businesses.

1.5.2 To ensure that the science, start-up and scale-up companies have the environment they need to thrive, the Campus needs to continue its growth. The Campus partners (UKRI BBSRC, Babraham Institute and BBT Ltd) recognise that there is an opportunity to build on the current success of the Babraham Research Campus to further develop and enhance the current facilities and the contribution of the Campus to the local community and local and national economy.

1.5.3 Accordingly, to assist in delivery of the desired future growth, the site is proposed for allocation as an employment development area in the 2023 Local Plan.

1.5.4 Six future development zones have been identified (refer to Appendix 3 for locations), amounting to approximately 25,500 sqm of potential office & lab space which represents areas of the Campus that have no planning permissions in place and includes undeveloped land that provides an opportunity for future developments, and developed land with old building stock that can be demolished to make way for redevelopment.

1.5.5 The six areas comprise;

- R&D3 – An open field to the north of the Estate, west of the currently developed campus
- Central Campus – An area of older campus buildings, car parking and open space
- The Farm – Agricultural buildings, hardstanding and an enclosed meadow south of the River Granta
- The Close – A residential area of the Estate comprising mid-20th century housing, amenity grassland and scattered trees,
- B101 – an area of existing buildings and storage areas to the east of the Campus.
- R&D2B – A smaller area of open grassland enclosed on its western, northern and eastern sides by recent Campus development. *Subject to a current development proposal and thus not considered in depth within this report.*

1.5.6 This study will review the potential future development zones as well as assessing the overall ecological value of the entire estate grounds.

1.6 Objectives of this appraisal

1.6.1 The purpose of this appraisal is to inform an application for inclusion of areas within the Babraham Institute Estate within the Local Plan, as described above. Detailed objectives are to:

- identify the habitats and species present or potentially present and evaluate their importance;
- identify any ecological constraints to development;
- identify further survey requirement
- assess the impact of the development proposal where possible;
- identify any opportunities available for integrating ecological features within the development;
- describe any measures necessary to avoid impacts, reduce impacts or compensate for impacts so that there is no net harm to ecological features;
- propose ecological enhancements

1.7 Previous ecological studies

1.7.1 A number of smaller Ecological Impact Assessments have been undertaken within the site since 2012 in support of individual planning applications for new build projects in the north-western area of the campus. These surveys have focussed more closely on impact assessment of these smaller developments but have variously included assessments to determine the presence or absence of protected species including bats, reptiles, otter and water vole.

1.8 Duration of appraisal validity

1.8.1 The assessment, conclusions and recommendations in this appraisal are based on the studies undertaken, as set out in this report, and the stated limitations. This appraisal is based on the project as described and any changes to the project would need the appraisal to be reviewed. Unless otherwise stated, the assessment, conclusions and recommendations given assume that the site habitats will continue to be used for their current purpose without significant changes until development takes place. However, changes in use or management may occur between the time of the survey and proposals being implemented. Ecological features may change naturally at any time; for example, species may be lost from existing sites or colonise new areas. Our knowledge of the ecology of the site enables us to provide an estimate of the duration of the validity of the surveys carried out and hence the applicability of this appraisal, so that any future need for review and update of this appraisal, or the surveys described within it, and the date by which such updates would become necessary, can be identified.

1.8.2 The table below sets out the duration of validity of each element of each information source. If the proposed development is delayed beyond the stated timescale, updated surveys or further investigations would be required.

Information source	Date undertaken	Duration of validity from date undertaken	Notes
Desk study	24th May 2021	1 – 2 years	Further data may become available.
Phase 1 habitat survey	7th May and 18th May 2021	2 years	The habitats on site may change especially if management changes.

2 Methodology

2.1 Desk study methodology

2.1.1 Cambridge and Peterborough Environmental Records Centre was asked to provide records of protected, rare and/or priority species and details of statutory and non-statutory designated sites, within a 1km radius of the estate boundary. The data was received on the 14th May 2021.

2.1.2 The Magic website[1] was used to identify European sites within a 5km radius and national sites within a 2km radius. The Magic website was accessed on 10B24th May 2021.

2.1.3 Aerial photographs[2] and OS maps were used to gain initial information about the site and the surrounding area. This gives an indication of the types of habitat and species likely to be present and the setting of the site within the landscape.

2.1.4 Water bodies within 250m of the site were identified from the relevant 1:25,000 Ordnance Survey map sheet, to establish the need for protected species scoping surveys, such as great crested newt Habitat Suitability Index surveys. Consideration was also given to the green infrastructure of the local area.

2.1.5 The potential for protected, rare and/or priority species to be present on site has been considered in this assessment, taking into account the nature of the site and the habitat requirements of the species in question. Absence of records does not constitute absence of a species. Habitats on the site may be suitable for supporting other protected species that have not previously been recorded within the search area. Conversely, presence of a protected species in the search area does not imply its presence on-site. Records of alien species, non-localised records (e.g. tetrad records) and records dated before 1995 have not been described in detail but are taken into account when considering likely species presence or absence.

2.1.6 The data supplied by the Records Centre was considered in the assessment of potential impacts below.

Limitations to desk study methodology

2.1.7 There were no significant limitations to the desktop study.

2.1.8 In accordance with BS42020 and advice from most Local Biological Record Centres, species lists are not appended to this report but are available to the Local Planning Authority on request.

2.1.9 Availability of records will vary in different locations, as many depend on the presence of local experts and survey effort within the local area. An absence of a record does not necessarily indicate the absence of that species.

2.2 Phase 1 habitat survey methodology

2.2.1 The standard Phase 1 habitat survey methodology[3] was followed. Phase 1 habitat survey is a standardised system for surveying, classifying and mapping wildlife habitats, including urban areas. All habitats present and areas or features of ecological interest within such habitats were recorded and mapped. The survey methodology facilitates a rapid assessment of habitats and it is not necessary to identify every species on site. Where given, scientific names of plant species follow Stace ed. 4[4].

2.2.2 The survey visit was also used to identify potential for protected, rare and/or priority species, for example bats, mammals, amphibians and reptiles, to occur on, or in the vicinity of, the Estate. Although the survey methodology is not intended for species survey, any protected, rare and/or priority species which were seen during the survey were noted.

2.2.3 The survey was undertaken on 14B7th May and 18th May 2021 and the weather conditions were sunny and warm on the 7th and warm with occasional light rain on the 18th.

[1] MAGIC: https://magic.defra.gov.uk/MagicMap.aspx.
[2] Google Earth
[3] JNCC (2010) *Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit.* Reprinted by JNCC, Peterborough.
[4] Stace, C (2019) *New Flora of the British Isles*. C&M Floristics. 4th Edition.

Limitations to Phase 1 habitat survey

2.2.4 There were no significant limitations to the Phase 1 habitat survey.

2.3 Assessment methodology

2.3.1 The assessment was undertaken in accordance with the Chartered Institute of Ecology and Environmental Management's Professional Guidance Series[5].

2.3.2 More details of the assessment methodology are provided in Appendix 2, but, in summary, the impact assessment process involves:

- identifying and characterising impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects; and
- identifying opportunities for ecological enhancement.

2.3.3 The hierarchical process of avoiding, mitigating and compensating for ecological impacts is explained further below.

2.3.4 In Ecological Impact Assessment (EcIA) it is only essential to assess and report significant *residual* effects (i.e. those that remain after mitigation measures have been taken into account). However, it is considered good practice for the EcIA to make clear both the potential significant effects without mitigation and the residual significant effects following mitigation, particularly where the mitigation proposed is experimental, unproven or controversial. Alternatively, it should demonstrate the importance of securing the measures proposed through planning conditions or obligations.

2.3.5 Assessment of the potential impacts of the proposed development takes into account both on-site impacts and those that may occur to adjacent and more distant ecological features. Impacts can be positive or negative. Negative impacts can include:

- direct loss of wildlife habitats;
- fragmentation and isolation of habitats through loss of connectivity;
- disturbance to species from noise, light or other visual stimuli;
- changes to key habitat features; and
- changes to the local hydrology, water quality, nutrient status and/or air quality.

2.3.6 Negative and positive impacts on ecological features are characterised based on predicted changes as a result of the proposed activities. In order to characterise the impacts on each feature, the following parameters are considered:

- the magnitude of the impact;
- the spatial extent over which the impact would occur;
- the temporal duration of the impact and whether it relates to the construction or operational phase of the development;
- the timing and frequency of the impact; and
- whether the impact is reversible and over what time frame.

2.3.7 Both short-term (i.e. impacts occurring during the site clearance and construction phases) and long-term impacts are considered.

Conservation status

2.3.8 The extent to which the proposed development may have an effect upon ecological features should be determined in the light of its expected influence on the integrity of the site or ecosystem. The integrity of protected sites is considered specifically in the light of the site's conservation objectives. Beyond the boundaries of designated sites with specific nature conservation designations and clear conservation objectives, the concept of 'conservation status' is used. Conservation status should be evaluated for a study area at a defined level of ecological

[5] CIEEM (2016) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal*, Second Edition. Chartered Institute of Ecology and Environmental Management, Winchester.

value. The extent of the area used in the assessment relates to the geographical level at which the feature is considered important.

2.3.9 For habitats, conservation status is determined by the sum of the influences acting on the habitats and their typical species that may affect their long-term distribution, structure and functions, as well as the long-term survival of its typical species within a given geographical area. For species, conservation status is determined by the sum of influences acting on the species concerned and inter-relationships that may affect the long-term distribution and abundance of its populations within a given geographical area.

Confidence in predictions

2.3.10 It is important to consider the likelihood that a change or activity will occur as predicted and also the degree of confidence in the assessment of the impact on ecological structure and function.

- **Certain** probability estimated at above 95%
- **Probable** probability estimated above 50% but below 95%
- **Possible** probability estimated above 5% but below 50%
- **Unlikely** probability estimated as less than 5%

Cumulative impacts

2.3.11 Consideration is also given to the potential for the development proposal to give rise to significant negative impact in combination with other proposed developments in the local area.

Overall assessment

2.3.12 An overall assessment of value and impact is provided. This is based upon the highest level or value of any of the features or species present, or likely to be present on the site. Similarly, the overall assessment of impact is the impact of greatest significance.

2.4 Mitigation hierarchy

2.4.1 The following principles underpin EcIA and have been followed, where applicable, in this assessment[6].

- **Avoidance** Seek options that avoid harm to ecological features (for example, by locating the proposed development on an alternative site or safeguarding on-site features within the site layout design).
- **Mitigation** Adverse effects should be avoided or minimised through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed – for example, through a condition or planning obligation.
- **Compensation** Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.
- **Enhancement** Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

[6] CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

3 Results

3.1 Desk study results

European sites

3.1.1 There were no European sites in the search area.

Sites of national importance

3.1.2 The following sites of national importance (Site of Special Scientific Interest, National Nature Reserve) were identified within the search area and are detailed within the table below.

Site	Distance from development site (approx.)	Key habitat/features of interest
Roman Road SSSI	1.5km Northeast	The Roman Road supports species-rich calcareous grassland communities with associated hedgerows and copses which is of noted value for invertebrates.
Sawston Hall Meadows SSSI	1.9km Southwest	The site comprises meadows overlying spring-fed peat over chalk and includes marshy grassland which grades into drier calcareous grassland. Wetter areas support a variety of sedges and rushes whilst the drier grassland includes tor-grass *Brachypodium pinnatum*, Yorkshire fog *Holcus lanatus* and supports a variety of herbs including common milkwort *Polygala vulgaris* and spotted-orchid *Orchis fuchsii*. The site is one of only a few supporting the nationally rare umbellifer Cambridge Milk Parsley *Selinum carnifolia.*
Dernford Fen SSSI	1.5km southwest	A remnant site comprising rough fen and carr and includes neutral grassland on calcareous loam, reedbed and alder carr woodland. The site supports marsh orchids *Dactylorhiza* spp. Plus uncommon orchids the marsh helleborine *Epipactis palustris* and the fragrant orchid *Gymnadenia conopsea* subsp. *Densiflora.*
Gog Magog Golf Course SSSI	1.9km North	The site is managed as a golf course but has preserved species-rich calcareous grassland within the 'roughs' and 'semiroughs' The site supports the nationally rare moon carrot *Seseli libanotis* and the locally rare perennial flax *Linum anglicum*. The site also hold a good invertebrate fauna.

3.1.3 Site locations relative to the proposed development site are shown in Appendix 4.

Sites of local importance

3.1.4 The following sites of local importance (Local Wildlife Site, County Wildlife Site, Ancient Woodland, Local Nature Reserve) were identified within the search area and are detailed within the table below.

Site	Distance from development site (approx.)	Key habitat/ features of interest
Signal Hill Plantation Grassland (CWS)	620m North	Supports populations of Nationally Scarce plant species and contains at least 0.05ha of NVC CG3 grassland and frequent numbers of at least six strong calcareous grassland indicators species.
River Granta (CWS)	Adjacent	A major river not grossly modified by pollution or canalisation. Additionally, it supports concentrations of mature pollard willows.
Shelford – Haverhill Disused Railway (CWS)	670m South	Supports populations of a Nationally Rare vascular plant *Filago pyramidata*, and supports frequent numbers of at least 6 strong calcareous grassland indicator species.

Site	Distance from development site (approx.)	Key habitat/ features of interest
Magog Down and Stapleford Pit (CWS)	620m North	The site qualifies under local criteria for habitat mosaic (over 10ha in size supporting three or more habitat features), has an invertebrate index exceeding 500 and contains calcareous grassland supporting at least 0.05ha of CG3 (upright brome) grassland.

3.1.5 Site locations relative to the proposed development site are shown in Appendix 4.

Protected, rare and/or priority species

3.1.6 A number of species records were returned for the search area. Records for protected, rare and/or priority species from within the search area are summarised below. In accordance with BS42020 and advice from most Local Biological Record Centres, species lists are not appended but are available to the Local Planning Authority on request.

Veteran trees

3.1.7 No veteran tree records were returned.

Plants

3.1.8 A large number of records were returned with most recorded from nearby areas of locally designated calcareous grassland.

3.1.9 Species included basil thyme *Clinopodium acinos*, broad-leaved cudweed *Filago pyramidata*, common rock-rose *Helianthemum nummularium*, corn spurrey *Spergula arvensis*, fine-leaved fumitory *Fumaria parviflora*, interrupted brome *Bromus interruptus*, purple milk-vetch *Astragalus danicus*, perennial flax *Linum perenne*, cat-mint *Nepeta cataria,* butcher's-broom *Ruscus aculeatus*, eyebright *Euprasia nemorosa*, harebell *Campanula rotundifolia*, hound's-tongue *Cynoglossum officinale*, night-flowering catchfly *Silene noctiflora*, perennial flax *Linum perenne*, prickly poppy *Papaver argemone*, small-flowered Catchfly *Silene gallica* and few-flowered fumitory *Fumaria vaillantii*.

Invertebrates

3.1.10 A small number of invertebrate records were returned comprising small heath, chalk hill blue and green hairstreak butterflies and older beetle records.

Amphibians including great crested newts

3.1.11 There are a small number of records for common toad *Bufo bufo*, and one older record for great crested newt *Triturus cristatus* (1988) from the Babraham campus and surrounding area.

Reptiles

3.1.12 A small number of records of grass snake *Natrix helvetica* were returned from the search area.

Birds

3.1.13 There were many bird records for the area. Species were typical of the sites rural location and comprised those found in open arable landscapes. Species included barn owl *Tyto alba*, grey partridge *Perdix perdix*, kingfisher *Alcedo atthis*, lapwing *Vanellus vanellus*, skylark *Alauda arvensis,* turtle dove *Streptopelia turtur*, yellow wagtail *Motacilla flava*, and yellowhammer *Emberiza citronella*.

3.1.14 Lapwing, swift *Apus apus*, spotted flycatcher *Muscicapa striata*, Linnet *Linaria cannabina* and song thrush *Turdus philomelos* have been recorded from within the Babraham site.

Terrestrial Mammals including badgers

3.1.1 Records of badger *Meles meles*, polecat *Mustela putorius*, brown hare *Lepus europaeus*, harvest mouse *Micromys minutus*, and hedgehog *Erinaceus europaeus* were returned.

Aquatic Mammals including water voles and otters

3.1.2 Otter *Lutra lutra* have been recorded in the local area. No water vole records were received.

Bats

3.1.3 Records of brown long-eared *Plecotus auritus*, noctule *Nyctalus noctule,* Daubenton's *Myotis daubentonii*, and Natterer's *Myotis nattereri,* common pipistrelle *Pipistrellus pipistrellus,* soprano pipistrelle *Pipistrellus pygmaeus* bat were returned.

3.2 Phase 1 habitat survey

Management, setting and green infrastructure

3.2.1 The site lies on the banks and floodplain of the River Granta and can be broadly divided into the following character areas, The Hall and gardens, parkland, the main Campus, arable fields, grazing pasture, managed and unmanaged grassland and amenity areas. The site has incorporated 20th century development within the Estate whist maintaining a generally rural landscape sympathetic to its location.

3.2.2 The site areas are managed appropriately for their purpose with more amenity management within the Campus, arable and grazing management within the farmland and conservation management undertaken in the woodland, grassland and along river corridor. Land use by approximate area is listed below;

- Developed land - 38.8 hectares
- Conservation woodland - 24 hectares
- Pasture - 25 hectares (currently proposed for woodland creation)
- Farmland - 60 hectares
- Conservation land - 2.3 hectares
- Historic parkland (Babraham Hall and setting protected under a heritage conservation designation) - 15.7 hectares
- Amenity land (cricket field) - 1.4 hectares
- Future development opportunities - 22 hectares

3.2.3 The site is large with a diversity of habitats and lies with a predominantly rural landscape including a number of locally and nationally designated sites present within a relatively small radius. The River Granta provides a string link to habitat upstream and down through the landscape and the connectivity provided by the predominance of arable fields, associated hedgerows, woodland and copses in the wider landscape is limited only by main roads. Consequently, the site can be considered to have good connectivity to the wider local landscape.

3.2.4 Eighteen Phase 1 habitat categories were identified during the Phase 1 habitat survey and are shown on Figure 01. Each habitat is described below.

A1.1.1 Broadleaved semi-natural woodland

3.2.5 Broadleaved woodland is a dominant habitat throughout the site found in all areas. Woodland defined site boundaries and provided screening, and numerous stands of woodland were present throughout the farm area. Small areas were present within the campus and parkland.

3.2.6 Species composition varied throughout around a constant of sycamore *Acer psuedoplatanus*, ash *Fraxinus excelsior*, oak *Quercus robur*, and cherry *Prunus* sp. All woodland was assumed to have been historically managed and replanted which was reflected in the diversity of species noted which included common lime *Tilia x europaea*, large leaved lime *Tilia platyphyllos*, silver birch Betula pendula, field maple *Acer campestre*, beech *Fagus sylvatica*, walnut *Juglans nigra*, sweet chestnut *Castanea sativa*, hornbeam *Carpinus betulus*, horse chestnut *Aesculus hippocastanum*, and Norway maple *Acer platanoides*. A wide age structure was present but few very mature trees were noted.

3.2.7 Shrub layers were dominated by elder *Sambucus nigra* throughout with some field elm *Ulmus minor* and occasional plum *Prunus domestica*, over a typical, varying ground layer comprising cow parsley *Anthriscus sylvestris*, garlic mustard *Alliaria petiolata*, cuckoo pint *Arum maculatum*, hogweed *Heracleum sphondylium* common nettle *Urtica dioica*, common cleavers *Gallium aparine*,

wood anemone *Anemonoides nemorosa*, wood avens *Geum urbanum*, white dead-nettle *Lamium album*, hedge bedstraw *Galium mollugo*, hawkweed ox-tongue *Picris hieracioides,* cuckoo-pint *Arum maculatum*, sweet violet *Viola odorata* and ground ivy *Glechoma hederacea*.

A1.1.2 Broad leaved plantation woodland

3.2.8 Extensive woodland planting has been undertaken within the Estate in the past 20-30 years. This is most notable south of the river corridor within the farmland where existing woodlands have been connected by new planting blocks on former arable land and grassland immediately south of the River Granta. New plantation woodland has also strengthened the Estate's northern boundary tree belt, and which is well established. Smaller and less well established areas are also present in the north east corner in the vicinity of the entrance.

3.2.9 Species were typical of most general purpose commercial native mixes including many of those species identified in established the established woodland above. Bird cherry *Prunus padus* was common in many places, with hawthorn *Crataegus monogyna*, holly *Ilex aquifolium*, hazel *Coryllus avellana*, and occasional Scot's pine *Pinus sylvestris* also identified.

3.2.10 Ground flora tended to be slightly more diverse than established woodland due to the more open canopy but included ruderal species, as above, with some wood avens *Geum urbanum* and hedge bedstraw and *Galium album*.

A1.2.2 Coniferous plantation

3.2.11 A small stand of immature Norway spruce *Picea abies* were growing in a corner of an arable field, formerly occupied by a small structure. The ground flora appeared to have been seeded with a similar commercial conservation headland mix as described in J5, below.

A3.3 Mixed parkland and scattered trees

3.2.12 A large open parkland area is retained to the north of the Hall and Campus, and a range of trees are found within the Campus area itself. Further scattered trees are present within grazed parkland to the south of the site and within The Close. A wide range of species are present including native and ornamental species.

3.2.13 The main parkland area is formally managed, with amenity grassland dominating. Specimen trees are native and non-native mix, including a number of coniferous species such as Wellingtonia *Sequoiadendron giganteum*, and of a range of growth stages including recently planted and mature. Aerial photographs show that this area was previously sub-divided and sheep grazed and more recently cut for hay. The area is now close mown with a low amenity cut.

3.2.14 Within 'The Close' a number of lime, cherry and maple are present, scattered throughout communal amenity grassland and appear to be of an age corresponding to that of the buildings. A number of more mature specimens are also present in the vicinity and are therefore considered to pre-date the development of The Close.

3.2.15 A small and recently planted orchard is sited west of the farm containing a range of immature fruit trees over a seeded meadow grassland.

3.2.16 To the south of the Hall a lime avenue passes through grazed grassland, as does as a line of less formally planted specimens. Numerous scattered trees are present throughout the main campus area and comprise a wide variety of species including oak, maple, cherry, yew, Scot's pine, copper beech, hornbeam, and ash.

3.2.17 Field boundaries in the farmland were mainly of line of mature oak or ash, with a ruderal understorey grading into conservation headland grassland.

B2.2 Semi-improved neutral grassland – B4 Improved grassland - B6 Poor semi-improved grassland – B5 Marshy grassland

3.2.18 Both improved and poor semi-improved grassland was mainly found in the southeast and northwest of the Estate, south of the River.

3.2.19 Within 'The Farm' future development area and areas around the lime avenue, conditions supported a patchy variation between both poor semi-improved and Improved grassland.

Historical aerial photographs show some areas as being sub-divided for compartment grazing, with others appearing to have little formal management at times.

3.2.20 In areas where conditions tended towards a more improved nature, species diversity was low and displayed swards associated with elevated nutrient levels. Along with strong grass growth including perennial rye *Lolium perenne* and cock's-foot *Dactylus glomerata*, dandelion *Taraxacum officinale* agg. was frequent with ruderal species, such as nettle and cow parsley to the margins and as outcrops within the sward. Other species typical of such conditions, such as clovers *Trifolium* sp, daisy *Bellis perennis* and ribwort plantain *Plantago lanceolata* also common.

3.2.21 Within the The Farm, an area of grassland is enclosed within a surrounding woodland belt and which displayed a more diverse sward and which was assumed to have been seeded in the past. Species noted included the grasses meadow fescue *Festuca pratensis*, cock's-foot, meadow foxtail *Alopecurus pratensis* and soft brome *Bromus hordeaceus*, with bulbous buttercup *Ranunculus bulbosus*, creeping buttercup *Ranunculus repens*, ragwort *Jacobaea vulgaris*, mouse-ear chickweed *Cerastium fontanum*, germander speedwell *Veronica chamaedrys*, dove's-foot crane's-bill *Geranium molle*, lesser trefoil *Trifolium dubium*, with occasional spear thistle and broad-leaved dock *Rumex obtusifolius*.

3.2.22 The majority of the undeveloped areas northwest of the campus (R&D2, R&D3) comprised semi-improved neutral grassland. The wider area is known to have been in arable management up until the mid-2000's, having been reverted to grassland as the campus developed and expanded. The sward is assessed as neutral overall but with a calcareous influence from the prevailing ground conditions and disposal of calcareous subsoil from adjacent development. It is assumed that the grassland was seeded due to the relative species diversity and the fact that the area was formerly under arable management. Hawkweed oxtongue *Picris hieracioides* was present, and is likely to have colonised the bare ground following past re-seeding.

3.2.23 Other species noted included spotted medick *Medicago arabica*, ribwort plantain *Plantago lanceolata*, bristly ox-tongue *Helminthotheca echioides*, shepherd's purse *Capsella bursa-pastoris*, yarrow *Achillea millefolium*, dandelion *Taraxacum officinale* agg. dove's-foot crane's-bill *Geranium molle*. ox-eye daisy *Leucanthemum vulgare*, common knapweed *Centaurea debeauxii*, field forget-me-not *Myosotis arvensis* and red-dead nettle *Lamium purpureum*. Grasses included rough-stalked meadow-grass *Poa trivialis*, tall fescue *Festuca arundinacea*, and Yorkshire fog *Holcus lanatus*. Swathes of cowslip *Primula veris* were also present in localised areas.

3.2.24 Part of the area proposed for potential future woodland planting was managed as rough poor semi-improved grassland. The site was at the edge of the river floodplain on slightly rising and undulating ground attributed to geological substrates giving drier, free draining and damper areas. The higher and drier areas of the field were rabbit grazed, with a sandier substrate, while shallow depressions had a thicker grass sward resulting from deeper and damper soils. Aerial photographs show the field as being periodically managed, with occasional hay cuts although the site appears to have been most recently used as an area to dispose of woody waste material due to a number of piles of recently cut tree limbs (understood to be river bank willow pollarding) and a large pile of accumulated woody brash.

3.2.25 Ruderal species were common as outcrops and surrounding brash piles, and included nettle, ragwort, hogweed and burdock. Grasses noted included sterile brome *Bromus sterilis* and perennial rye. The rabbit grazed areas included dove's-foot crane's-bill, common storks-bill *Erodium cicutarium*, parsley piert *Aphanes arvensis,* field forget-me-not *Myosotis arvensis*, early forget-me-not *Myosotis ramosissima*, wild pansy *Viola tricolor*, and common cudweed *Filago vulgaris*.

3.2.26 Vegetation changed to the north-west where a surviving drainage ditch defined the field boundary. Hemlock *Conium maculatum* became frequent, with cow parsley and great willowherb *Epilobium hirsutum* also occurring. The ground in this area was heavily disturbed by rabbit warrens although densely overgrown.

3.2.27 To the far north-west the land included several cattle grazed floodplain grazing marsh. Due to the presence of cattle, this area was not surveyed in detail but vegetation varied between poor

semi-improved grassland with very localised areas of marshier grassland, again resulting from geological conditions which allowed outcrops of reed sweet grass *Glyceria maxima*.

G1 Standing water

3.2.28 Waterbodies were limited on site with only one pond present within the campus, south-east of the Hall, although densely filled with reed mace *Typha* sp. flag iris *Iris psuedacorus* and various rushes. The pond was retaining water although this was shallow with no open areas due to vegetation growth.

3.2.29 A further pond was found within woodland north-west of the farm. The pond was large and retaining water, which appeared to seasonally fluctuate, although was heavily shaded with minimal emergent or aquatic growth evident.

3.2.30 A small network or ditches lay to the west of the Estate within grazing land adjacent to the River Granta. Water quality was good with both emergent and aquatic vegetation present. Species included water mint Mentha aquatica, water figwort *Scrophularia auriculata,* reed sweet grass *Glyceria maxima*, marsh St John's wort *Hypericum elodes,* and hard rush *Juncus inflexus*.

G2 Running water

3.2.31 The River Granta, a County Wildlife Site, passes through the centre of the site. The river is largely unmodified and minimally managed although recent works have been undertaken under local specialist advice, to enhance the biodiversity of the in-stream habitats where passing through the site, through pollarding of bank side willows, and creation of flow diversity.

3.2.32 Bank sides are generally ruderal dominated throughout with nettle common in many areas, with hedge garlic, hemlock, burdock *Arctium* sp. and great willowherb. Other species present included pond sedge *Carex riparia*, red campion *Silene dioica*, hybrid pink campion, reed sweet grass, and marsh marigold *Caltha palustris*. Both elder and bramble were common shrubs, with numerous white willow *Salix alba* pollards.

I4.2 Basic exposure

3.2.33 A large chalk exposure/flood attenuation area lies adjacent to the River Granta in the north-west of the site which was created during a previous work phase in c.2008. It is understood that the majority of the area was not seeded and has been allowed to regenerate naturally. At the time of survey vegetation remained sparse with extensive areas of bare exposed chalk but more dense along the northern embankment where the feature was cut into the slope.

3.2.34 Species included colts-foot *Tussilago farfara*, field scabious *Knautia arvensis*, kidney vetch *Anthyllis vulneraria*, hoary plantain *Plantago media*, sheep's fescue *Festca ovina*, perforate St John's wort *Hypericum perforatum*, mouse-ear hawkweed *Pilosella officinarum*, bugle *Ajuga reptans*, hawkweed ox-tongue, and carline thistle *Carlina acaulis*.

3.2.35 Both rosebay willowherb *Chamaenerion angustifolium* and buddleia *Buddleia davidii* were establishing locally.

J1.1 Arable

3.2.36 Cultivated arable land lay to the south of the river and comprised mainly cereals. Most fields included wide headlands, either as set-aside or seeded grassland.

3.2.37 Within set-aside areas a number of self-seeded species were present and included pineapple weed *Matricaria discoidea*, lesser swine-cress *Lepidium didymium*, black bindweed *Fallopia convolvulus*, hybrid field pansy *Viola x contempta*, flixweed, field milk thistle *Sonchus arvensis*, shepherd's purse, fat hen *Chenopodium album*, cut-leaved crane's-bill *Geranium dissectum*, square-stalked willowherb *Epilobium tetragonum* and mugwort *Artemisia vulgaris*.

J1.3 Ephemeral/ short perennial

3.2.38 Where ground conditions tended towards a drier condition in isolated pockets to the south west, in particular where bordering unmanaged rabbit grazed grassland, short swards supporting wild pansy *Viola tricolor*, early forget-me-not Myosotis *ramossisima*, and common stork's-bill *Erodium cicutarium* were present extending into the woodland fringe from adjacent grassland.

3.2.39 A small area of ephemeral vegetation was colonising a loose aggregate surface, formerly the location of two barns, within the farm. The location was adjacent to both the woodland belt and wider grassland of the field and vegetation from both influenced a diverse sward. Species included small-flowered crane's-bill *Geranium pusillum*, parsley piert *Aphanes arvensis*, lesser burdock *Arctium minus*, hawkweed oxtongue, spotted medick, periwinkle *Vinca minor*, rough chervil *Chaerophyllum temulum*, black mullein *Verbascum nigrum*, weld *Reseda luteola*, thyme-leaved speedwell *Veronica serpyllifolia*, and field forget-me-not *Myosotis arvensis*, as well as ruderal species such as nettle and broad-leaved dock.

J1.4 Introduced shrub

3.2.40 Small areas of ornamental shrub were present throughout the campus areas as formal planting, less formal infill and low ornamental hedges. Species, structure and use varied throughout representing the multiple phases of development within the site and included recent ornamental landscape planting, single-species dividing hedges, and small areas of established shrubs.

3.2.41 Recent planting included an extensive range of native broadleaved and evergreen shrubs and cultivars including wayfaring tree *Viburnum lantana*, yew *Taxus baccata*, dogwood *Cornus sanguinea*, common whitebeam Sorbus aria, Bhutan pine *Pinus wallichiana*, Japanese maple *Acer palmatum*, Chinese white birch *Betula albosinensis*.

J2 Amenity grassland

3.2.42 Amenity grassland was common throughout the main Campus and The Close, in large areas open public spaces, bordering carparks and beneath scattered trees. In general all amenity grassland was short and close mown. In common with most other grassland, the sward was generally neutral but with a calcareous influence. In areas of carparking and where soil had been formed into low bunds conditions were drier with a sandier influence, particularly noticeably so where south-facing compared to north facing leading to a corresponding change in species diversity. Species included low growing herbs such as knotted hedge-parsley *Torilis nodosa*, hawkweed oxtongue, biting stonecrop *Sedum acre*, little mouse-ear *Cerastium semidecandrum*, spotted medick, yarrow and daisy *Bellis perennis*. Individual bee orchid *Ophrys apifera* spikes were noted within grassland alongside the main access drive. Grasses included red fescue, cock's foot, perennial rye and creeping bent *Agrostis stolonifera*.

3.2.43 The most extensive area of amenity grassland was the formal parkland. Aerial photographs show it as being subdivided and sheep grazed up until at least the early 2000's and mown for hay subsequent to this before reverting to formal management in the late 2000's.

3.2.44 A cricket field was also present within the estate forming a large close mown area in the far southern corner with a woodland screen around its boundaries.

J2.1.1 Native species rich hedge – J2.3.1 Native species rich hedge with trees – J2.1.2 Species poor hedge

3.2.45 Hedgerows were not a common feature either within the campus or the farmland areas and limited to short sections of more formally planted examples in the campus as landscape features or boundary demarcation, and field boundary hedges along Rowley Lane.

3.2.46 Hedges within the campus were either typically of common native woody species and managed into a dense and compact shape or more ornamental, such as where associated with the Hall and comprising yew or low box hedging. Along Rowley Lane an older hedge on the southern boundary comprised hornbeam, hawthorn, hazel, oak, elm, spindle *Euonymus europaeus* and field maple with occasional mature trees. A young, recently planted native hedge was establishing on the northern side within the field headland.

J5 ('Other') Areas seeded with commercial headland grassland mix

3.2.47 Seeded conservation headland displayed a sward typical of commercial headland mixes and included lady's bedstraw *Galium verum*, yarrow *Achillea millefolium*, wild carrot *Daucus carota*, knapweed *Centaurea* sp., birds-foot trefoil *Lotus corniculatus*, and sainfoin *Onobrychis viciifolia*, musk mallow *Malva moschata*, smooth tare *Vicia tetrasperma*, knapweed *Centaurea nigra*, red fescue *Festuca rubra*, sterile brome, curled dock *Rumex crispus* and cock's-foot.

3.2.48 This habitat was also noted in a field corner, also growing Norway spruce.

J6 Buildings/hardstanding

3.2.49 Buildings, roads and pedestrian paths were widespread throughout the main campus, The Close and Farm areas. Buildings represented the range of historic phases of the site including the Church and Hall, some remaining early post-war buildings, and recently constructed laboratories. Surfaced access roads, car parks and paved pathways are common with a range of surfacing types.

3.2.50 Hardstanding was frequent throughout the Farm and comprised concrete footings of demolished barns, gravelled areas and unsurfaced tracks (Rowley Lane).

3.2.51 Most of the newer buildings and public spaces within the campus also featured extensive landscape planting which included a wide range of ornamental grasses, ground cover, shrubs and specimen trees.

J4 Bare ground

3.2.52 Bare ground was frequent in small patches throughout the site although not extensive. This habitat was found within disturbed corners of The Farm and small remnant areas of post-construction disturbance within the Campus.

3.3 Future development areas - Habitats

3.3.1 Specific to the proposed locations for future development, the following habitats are present.

R&D3

- B2.2 Semi-improved neutral grassland
- A1.1.2 Broad-leaved plantation woodland

Central Campus

- A3.3 Mixed parkland and scattered trees
- J1.4 Introduced shrub
- J2 Amenity grassland
- J6 Buildings/hardstanding

The Farm

- A1.1.1 Broadleaved semi-natural woodland
- B6 Poor semi-improved grassland
- J1.3 Ephemeral/ short perennial
- J4 Bareground
- J6 Buildings/hardstanding

The Close

- A1.1.1 Broadleaved semi-natural woodland
- A3.3 Mixed parkland and scattered trees
- J2 Amenity grassland

B101

- A3.3 Mixed parkland and scattered trees
- J2 Amenity grassland
- J2.1.1 Native species rich hedge

R&D2B

- B2.2 Semi-improved neutral grassland
- J4 Bare ground

4 Evaluation of conservation status and impact assessment

4.1 Assessment rationale

4.1.1 The assessment is based on the ecological data presented within this report. Future changes in the wildlife present on site are beyond the scope of this report, unless specifically stated.

4.2 Evaluation of conservation status and assessment of designated sites

4.2.1 The ecological value of the site is considered below and evaluated using the methodology set out in Appendix 2 and in accordance with species legislation and planning policy, as outlined in Appendix 1.

European Sites

4.2.2 There are no European sites within the search area. The impact of future development upon European sites is therefore assessed as **Neutral**.

Sites of national importance

4.2.3 There are four sites of national importance within the search area. These sites are assessed as being of **High** importance for wildlife at the **National** scale.

4.2.4 All four sites lie at sufficient distance such that no impacts are likely to arise from construction. The current and intended use of future development is also of a type whereby no increases in recreational pressures on these four sites are likely to arise.

4.2.5 Sites of Special Scientific Interest (SSSI) Impact Risk Zones are used to assess the necessity to consult Natural England on planning applications at varying distances from SSSIs. The Estate falls into a number of zones for adjacent SSSI's. In accordance with the SSSI Impact Risk Zones User Guidance[7] consultation with Natural England would be required for the proposed development site for:

- **Infrastructure** Airports, helipads and other aviation proposals. Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance).
- **Minerals, Oil & Gas** Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction
- **Air Pollution** Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons > 200m² & manure stores > 250t)
- **Composting** Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.
- **Water Supply** Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.

4.2.6 The potential future development is considered unlikely to fall within these categories and therefore would not require the LPA to consult Natural England.

4.2.7 The impact of the proposed development upon sites of national importance is considered to be **Neutral**, given the distance of the proposed development from the designated sites, the reasons for the sites' designation and the nature of future development.

[7] Magic Maps www.natureonthemap.naturalengland.org.uk [accessed 4th June 2021]

Sites of local importance

4.2.8 Four sites of local importance lie within the search area of which three lie at sufficient distance such that direct impacts from any construction phase are considered unlikely and no impacts would arise post-construction once buildings were in use.

4.2.9 One site, River Granta, passes through the Estate and as such lies in close proximity to a number of the future development areas, in particular R&D3, The Farm and the Central Campus. All rivers and watercourses are susceptible to construction-based impacts from runoff, spills/pollution incidents and the species which use the corridor may be impacted by noise, vibration, movement or lighting.

4.2.10 None of the development lies within very close proximity and the corridor, where passing through the Campus and Hall grounds, is already subject to a degree of human activity and development related impacts.

4.2.11 The risk of surface run-off and pollution can normally be adequately mitigated by construction industry standard surface water management and spill prevention measures such as silt infiltration, bunded fuel storage and use and availability of spill kits.

4.2.12 The site is designated for its physical condition rather than the presence of species reliant upon it and while species such as bats and otter are likely to use the corridor at times, such crepuscular species would be less likely to be impacted by activity during the daytime.

4.2.13 Subject to the appropriate spill and run-off prevention measures being used on site the impact of potential future development upon sites of local importance is considered to be **Neutral**, due to the distance of the proposed development from the locally important sites, the reasons for the sites' designation and the character of the development within its local context.

4.3 Evaluation of conservation status and assessment of habitats and botanical interest

Habitats

4.3.1 Most habitats on site offer a degree of ecological interest with the exception of the most developed areas of the Campus and some of the more intensively managed amenity grassland. Habitats of higher ecological value include the chalk scrapes and exposure, mature woodlands and trees, species diverse grassland, River corridor and wet drainage ditches. Area of ornamental landscape planting around new existing development may also be beneficial to foraging invertebrates, adding and diversifying the available foraging resources.

4.3.2 Chalk scrapes and the chalk exposure continue to mature and are developing a calcareous sward which will add to a wider local resource present within a number of other scattered sites in the landscape.

4.3.3 Extensive young woodland is also present within the Estate but is considered to be of a lesser value currently due to its immaturity and lack of age structure. Grassland of lower species diversity, such as amenity grassland and semi-improved neutral grassland will have some value for foraging birds and invertebrates but of a scale and type that is unlikely to be of significant value to any one species or particularly scarce in the wider landscape.

4.3.4 All arable land and grazed grassland has potential to be used by ground nesting birds when cropping cycles and management regimes are favourable. Tree belts and conservation headlands within the farmland enrich the site and offer opportunities for less common plant species, invertebrates and birds.

4.3.5 In general, and with the exception of the Hall and Church, buildings in the Estate were modern in date and of a construction type unlikely to offer habitat for birds or bats.

4.3.6 The habitats present across the wider Estate are collectively assessed as being of **Lower** value at the **District/Borough** scale with the exception of the River Granta, which is of **County** importance.

4.3.7 Impacts have been provisionally identified for the specific development locations as follows. R&D2 is not assessed as it is the subject of a sperate, development project-specific Ecological Impact Assessment.

Site	Provisional Unmitigated impact
R&D3	Minor-Moderate Adverse – Loss of open grassland
Central Campus	Minor Adverse to Neutral – potential loss of mature trees
The Farm	Minor Adverse – Loss of grassland
The Close	Neutral
B101	Neutral

4.3.8 Subject to development of detailed design proposals, mitigation is considered capable of reducing overall impacts to **Neutral** in all cases, but residual impacts may remain if mature trees are lost

Green infrastructure

4.3.9 The Estate is prominent in the local landscape and combined with habitats along the River Granta provides a range of importance habitat linkages extending beyond the site boundaries.

4.4 Evaluation of conservation status and assessment of species

4.4.1 Impacts have been provisionally identified for the specific development locations as follows. R&D2 is not assessed as it is the subject of a sperate, development project-specific Ecological Impact Assessment.

Veteran trees

4.4.2 There are a number of mature trees on site although none known to be classified as being of veteran condition. With the exception of one prominent mature tree within The Close which would be expected to be retained in any future development no ecologically significant mature trees are present within future development areas. The value of the proposed development site for these is therefore **Negligible.** The impact of the proposed developments upon veteran trees is **Neutral.**

Plants

4.4.3 A number of records of uncommon plant species were returned with the data search, specifically local populations of chalk grassland species and this habitat is represented on site and may in future also support less common calcareous species for nearby sites. The farmland may also support less common arable weed species and areas of unmanaged grassland south of the river in the potential woodland planting areas also contain rabbit grazed swards of floristically diverse habitat which are considered to enrich the site.

4.4.4 The Estate as a whole is assessed as being of **Lower** value at the **Parish** scale.

Site	Provisional Unmitigated impact
R&D3	Minor-Moderate Adverse
Central Campus	Neutral
The Farm	Neutral
The Close	Neutral
B101	Neutral

Invertebrates

4.4.5 The Estate supports a diverse range of habitats likely to support dependant species of invertebrate and which may include less common species of conservation interest. Habitats associated with the proposed development areas are however, not uncommon in the local landscape and therefore less likely to be of value or importance for less common species.

4.4.6 The Estate as a whole is assessed as being of **Lower** value at the **Parish** scale for this group.

Site	Provisional Unmitigated impact
R&D3	Neutral
Central Campus	Neutral
The Farm	Neutral
The Close	Neutral
B101	Neutral

Great Crested Newt

4.4.7 Only two standing water bodies were found on site and these were separated by the strongly flowing River Granta and developed land. Both ponds were in conditions such that great crested newt could be present, with standing water, macrophytes and suitable terrestrial habitat. The presence of extensive developed land close to the campus pond would reduce the connectivity between it and other favourable habitat.

4.4.8 Due to separation between the two ponds, absence of other identified ponds in the local area and any recent great crested newt records, this species is considered absent from the site.

4.4.9 The Estate is assessed as being of **Negligible** value for great crested newt though common amphibian species may still be present.

Reptiles

4.4.10 The wider Estate comprises a mosaic of habitats potentially of interest to all locally native reptile species. Areas of R&D2 and 3 have previously been subject to reptile survey in recent years with only individual grass snake encountered. Grass snake is a mobile and wide-ranging species which will be associated with the river corridor, grassland habitats and potentially woodland fringe. Slow worm and common lizard may also be present in drier south facing habitats, field boundaries and fringing woodland and scrub. All species would be expected to be absent from the main campus areas with only The Farm holding some potential for reptile presence.

4.4.11 The Estate is assessed as being of **Lower** value at the **Parish** scale for this group.

Site	Provisional Unmitigated impact
R&D3	Neutral
Central Campus	Neutral
The Farm	Neutral – Minor Adverse
The Close	Neutral
B101	Neutral

Breeding Birds

4.4.12 Bird records returned were typical of the rural location comprising species common to arable landscapes, as well as those common to gardens and urban greenspaces. The range of habitats within the Estate offer extensive opportunities for foraging, nesting and display and would indicate that the site is capable of supporting a range of breeding birds including less common species and species reliant upon particular habitat types.

4.4.13 Future development sites are focused on land either in active management, such as grassland, or existing developed areas, such as the Central Campus, The Farm and Building B101. Accordingly, the majority of breeding bird habitat is either only minimally affected or is at distance from the development areas.

4.4.14 The Estate is assessed as being of **Lower** value to breeding birds at the **District/Borough** scale.

Site	Provisional Unmitigated impact
R&D3	Minor Adverse – Loss of open grassland foraging/nesting habitat
Central Campus	Minor Adverse – Possible loss of trees. Temporary disturbance

Site	Provisional Unmitigated impact
The Farm	Minor Adverse – Loss of grassland foraging habitat, agricultural buildings and temporary disturbance
The Close	Minor Adverse – Possible loss of trees. Temporary disturbance
B101	Minor Adverse – Possible loss of scrub and scrubby hedges

4.4.15 Subject to future proposals, mitigation is considered capable of reducing overall impacts, but short-term residual impacts may remain if mature vegetation is lost.

Wintering birds

4.4.16 There are no habitats present on site which might support significant populations of wintering birds, although the site does offer foraging potential for common species within grassland, berrying scrub and woodland. None of the future development sites offer significant areas of habitat for this group. The site is considered to be of **Lower** value at the **Parish** scale for this group.

Site	Provisional Unmitigated impact
R&D3	Minor Adverse – Loss of open grassland foraging habitat
Central Campus	Neutral
The Farm	Minor Adverse – Loss of grassland foraging habitat
The Close	Neutral
B101	Minor Adverse-Neutral – Possible loss of foraging habitat

4.4.17 Subject to future proposals, mitigation is considered capable of reducing overall impacts, but short-term residual impacts may remain if mature vegetation is lost.

Water vole

4.4.18 There were no records returned for water vole, although habitats are present in the wider site which could support this species, specifically within drainage ditches in grazed grassland to the north west.

4.4.19 The River Granta has been surveyed for water vole in the vicinity of R&D2 and 3 in recent years with negative results and their absence from this stretch is considered likely to remain the case due to relatively fast flows and sub-optimal vegetation cover and bank profiles. The wider Estate is assessed as being of potential **Lower** value for water vole at the **Parish** scale.

4.4.20 None of the future development areas compromise the River Granta or drainage ditches and hence all impacts are assessed as **Neutral**.

Site	Provisional Unmitigated impact
R&D3	Neutral
Central Campus	Neutral
The Farm	Neutral
The Close	Neutral
B101	Neutral

Otter

4.4.21 Otter is present within the River Granta corridor and therefore passes through site at times. This species is crepuscular and likely to be most active between dusk and dawn. It is likely that this species is habituated to established activity within the Campus without adverse impacts upon its use of the River or associated habitats.

4.4.22 Only R&D2b and 3 lie close to the River Granta and the proposed development of the site is considered unlikely to result in sustained impacts greater than those already established by adjacent development. The value of the River Granta to Otter, in the vicinity of the site is assessed as **Lower** at the **Parish/Neighbourhood** scale.

4.4.23 The proposed future development sites do not compromise the River and as such impact is judged to be **Neutral**.

Site	Provisional Unmitigated impact
R&D3	Neutral
Central Campus	Neutral
The Farm	Neutral
The Close	Neutral
B101	Neutral

Terrestrial mammals including badger

Brown hare

4.4.24 Brown hare are common within the open grassland habitat west of the campus with a number observed during site visits. Brown hare are a wide-ranging, roaming species and the local landscape provides extensive habitat beyond the Estate boundary. The site is therefore considered to be of **Lower** value for this species at the **Parish** scale. Both R&D2b and 3 are relatively small in terms of development area and while a loss of habitat may impact slightly on the population using the Estate, it is considered unlikely to directly affect individuals or the local population to any measurable extent.

Site	Provisional Unmitigated impact
R&D3	Minor Adverse
Central Campus	Neutral
The Farm	Neutral
The Close	Neutral
B101	Neutral

4.4.25 It is not considered possible to mitigate for impacts upon this species and hence a small residual impact would remain.

Badger

4.4.26 Records were returned for badger and a suspected large established sett was seen within woodland at The Farm development area. The wider site, in particular woodland and field boundary habitats may also support setts with foraging occurring in grassland and arable land.

4.4.27 Development in proximity to active setts and subsequent change of use of a site which may cause disturbance is likely to require licensing. Badger populations fluctuate and change and setts may fall into disuse and therefore the need for a mitigation licence would be determined fully when a detailed scheme is brought forward.

4.4.28 No signs of badger were found in other development areas and habitat was generally unsuitable for sett excavation or extensive foraging activity. The Estate is assessed as being of **Lower** value at the **Parish** scale.

Site	Provisional Unmitigated impact
R&D3	Neutral-Minor Adverse
Central Campus	Neutral
The Farm	Minor-Moderate Adverse – Potential disturbance to active sett
The Close	Neutral
B101	Neutral

4.4.29 Subject to future proposals, mitigation is considered capable of delivering a **Neutral** overall impact.

Bats

4.4.30 The wider Estate supports a range of habitats and landscape features likely to be of importance to both roosting and foraging bats. Mature woodland may support bat roosts while open grassland, the River corridor, and still-air habitats within and adjacent to woodland will form potentially important foraging and commuting habitat. The majority of these habitats are found south of the River although foraging north of the River is still likely in most areas of the site.

4.4.31 Buildings within the site were predominantly modern and hence less likely to support features with potential to be used by roosting bats although an assessment of bat roost potential would be necessary for any building proposed for future demolition. Similarly mature trees have the potential to support bat roosts and should be individually assessed where felling or significant reduction works are necessary.

4.4.32 The Estate is assessed as being up to **Lower** importance for bats at the **District/Borough** level.

4.4.33 All potential development areas have some potential bat foraging interest however all locations are relatively small and will not be of significant value to any one particular individual, species or population. Both R&D2b and R&D3 are situated close to the River Granta corridor and hence measures to mitigate impacts from artificial lighting upon this potential commuting feature would be required.

Bat roosting

Site	Provisional Unmitigated impact
R&D3	Neutral
Central Campus	Neutral – Minor Adverse – Some older buildings present
The Farm	Neutral – Minor Adverse – Some buildings present
The Close	Neutral – Minor Adverse – Some buildings present
B101	Neutral – Minor Adverse – Some buildings present

Bat foraging

Site	Provisional Unmitigated impact
R&D3	Neutral – Minor Adverse – Proximity to River Granta
Central Campus	Neutral
The Farm	Minor Adverse – Likely to be a well-used foraging resource
The Close	Neutral
B101	Neutral

4.5 Cumulative impacts

4.5.1 There are no known cumulative impacts from all future development areas in combination with development in the local area; however development in all 6 of the proposed locations would inevitably result in cumulative loss of grassland habitat. It is considered that this could be offset by compensatory measures to enhance habitats across the wide Estate.

5 Mitigation and avoidance measures

5.1 Avoidance measures

5.1.1 The following impact avoidance measures have been identified and will be delivered.

- All site boundary features, including scrub and woodland at the periphery of the development locations, will be protected in the built scheme.
- Mature trees will be retained in-situ.

5.2 Potential mitigation for likely impacts

5.2.1 The following mitigation is required to reduce the impacts of the scheme to within acceptable limits.

5.2.2 Subject to development of proposals for the individual development locations, protected species surveys may be required for those areas, as set out in Section 6.4 below. Until detailed development proposals are available and such surveys as may be required have been undertaken, it is not possible to identify accurately the likely mitigation requirements in respect of these species. Generic mitigation measures which are likely to be required are set out below.

Habitats

- Ensure that no works come closer than Root Protection Zones of trees and shrubs (as a minimum) in retained habitats.
- To mitigate for loss of vegetation, semi-natural planting should include berry-bearing native trees and shrubs to enhance food availability for wildlife. The proposed planting should be structurally diverse, with tree, shrub and ground layers, and areas of dense scrub as well as more open areas.
- Ornamental planting should constitute at least 50% by area of species of known value to wildlife (which might include native species), such as fruiting species and species known to provide a good nectar source. All ornamental planting should be structurally diverse, with tree, shrub and ground layers, and areas of dense planting as well as more open areas.
- Additional measures as identified through surveys.

Amphibians including Great Crested Newt

- Roadways and drainage measures should be designed to be amphibian friendly to avoid amphibians becoming trapped in gully pots. Mitigation measures should include 'wildlife kerbs' at each drain location that allow a gap of at least 100mm between the drain and the kerbs, dropped kerbs that are flush with the road or even ramps in the kerbs either side of the drain to encourage amphibians away from the drain.
- Wildlife friendly drainage alternatives to gully pots / sewers should be considered, such as gravel filter drains or French drains, Sustainable Drainage Systems (SuDS), permeable pavements, rain gardens and planters.
- Inclusion of a single British Herpetological Society (BHS) Amphibian Ladder in each gully pot within the development.[8] These BHS amphibian ladders provide an escape route for amphibians that become trapped in gully pots.

Reptiles

- Grassland habitat adjacent to the river corridor which is used by grass snake should be retained and current management continued.
- Hibernation sites (hibernacula) should be constructed in undisturbed south-facing areas to replace possible hibernation sites lost to development.
- Additional measures as identified through species surveys.

[8] https://www.thebhs.org/shop/the-bhs-amphibian-gully-pot-ladder

Breeding birds

- The reduction in nesting opportunities as a consequence of vegetation removal or building demolition can be offset by the provision of bird boxes, which could be erected on retained standard trees or buildings elsewhere on site.
- Vegetation removal required for the construction phase should take place outside of the bird breeding season of March to August inclusive, to prevent disturbance to birds.
- Additional measures as identified through species surveys.

Dormouse

- No mitigation required.

Water Vole

- The river corridor and associated vegetation should be retained undisturbed, with a minimum 10m buffer between the bank top and construction activity.
- Heras or similar security fencing should be deployed to ensure that the river corridor remains undisturbed for the duration of the development.
- Additional measures as identified through species surveys.

Otter

- The river corridor and associated vegetation should be retained undisturbed, with a minimum 10m buffer between the bank top and construction activity.
- Heras or similar security fencing should be deployed to ensure that the river corridor remains undisturbed for the duration of the development.
- The river corridor should not be illuminated either deliberately or via light spill from the proposed buildings.
- Additional measures as identified through species surveys.

Badger

- Trenches should be filled in prior to the end of the working day, or a ramp left leaning up from the base of the trench to the surface, so that animals falling in can get out of the excavation.
- Pipework should be closed off at the end of each working day to avoid badgers and other animals becoming trapped.
- Measures may be needed to prevent badgers from conflicting with the planned site use through excavation or foraging activity.
- Security fencing (if required) should be raised from the ground to provide gaps 100mm high and 300mm wide, at approximately 100m intervals around the boundary of the site, to allow the continued movement of mammals, including badger, across the site for foraging and commuting.
- Additional measures as identified through species surveys.

Bats

- If the proposed development is likely to give rise to any unforeseen impact upon retained trees, a bat roost potential survey should be undertaken to assess the extent of their suitability for roosting bats.
- Areas of scrub and trees, and linear features such as hedgerows, should be retained wherever possible throughout the site to allow nesting and foraging activity to continue.
- External lighting should be reduced to a minimum, and designed in accordance with guidelines from the Bat Conservation Trust.[9]

[9] See https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/ .

- The river corridor should not be illuminated either deliberately or via light spill from the proposed buildings.
- Boundary habitats should not be illuminated, either directly or via light spill from adjacent buildings. If lighting is required for the site boundaries, e.g. for security, it should be reduced to a minimum, and designed in accordance with guidelines from the Bat Conservation Trust.[10]
- Additional measures as identified through species surveys.

5.3 Compensation for ecological impacts

5.3.1 No compensatory habitat creation or management is currently envisaged specific to any of the proposed development options, however is likely to be required in order to deliver 20% Biodiversity Net Gain. Opportunities are set out in Figure 02 and in the table below.

5.4 Proposals for further survey or investigation

5.4.1 It is considered that any development within the proposed future development areas is likely to require the following protected species surveys. A project-specific Phase 1 survey and Ecological Impact Assessment will also be required for each of the proposed future developments.

[10] See previous note.

R&D3

Survey type	Season for survey	Methodology & Objectives
Botanical survey	June-August	A single walkover survey to identify species / habitats of value.
Badger survey	Year round (Spring/Autumn are optimal)	A single walkover survey to identify badger setts and their field signs within and in close proximity to the site.
Brown hare survey	March-April	Survey to understand how the site is used by brown hare.
Preliminary Roost Assessment (PRA)	Year round	Inspection of mature trees in close proximity to assess bat roost potential
Bat activity survey	April to October	Transects walked at dusk/dawn to ascertain species using the site and areas of higher activity. Number of survey visits to be confirmed.
Bat emergence/re-entry survey	May to August	A maximum of three survey visits, comprising two dusk surveys and one dawn survey, to identify roosts within trees, if indicated by the proposed PRA. Number of survey visits to be confirmed.
Otter/Water vole survey	April to August	A single walkover survey to identify whether adjacent sections of watercourse support these species; may be required subject to drainage design.
Breeding bird survey/Barn owl survey	April to July	A maximum of three early morning survey visits, together with a dusk survey for barn owl.

Central Campus

Survey type	Season for survey	Methodology & Objectives
Preliminary Roost Assessment (PRA)	Year round	Inspection of buildings and mature trees to assess bat roost potential
Bat emergence/re-entry survey	May to August	*If determined as necessary by PRA* - A maximum of three survey visits, comprising two dusk surveys and one dawn survey, to identify roosts within building(s), trees and other structures. Number of survey visits to be confirmed.

The Farm

Survey type	Season for survey	Methodology & Objectives
Reptile survey	April to June and September to October	Seven survey visits to previously placed artificial refugia to ascertain a presence or absence.
Badger survey	Year round (Spring/Autumn are optimal)	A single walkover survey to identify badger setts and their field signs within and in close proximity to the site.
Preliminary Roost Assessment (PRA)	Year round	Inspection of buildings and mature trees to assess bat roost potential
Bat activity survey	April to October	Transects walked at dusk/dawn to ascertain species using the site and areas of higher activity. Number of survey visits to be confirmed.
Bat emergence/re-entry survey	May to August	A maximum of three survey visits, comprising two dusk surveys and one dawn survey, to identify roosts within building(s), trees and other structures. Number of survey visits to be confirmed.

The Close

Survey type	Season for survey	Methodology & Objectives
Preliminary Roost Assessment (PRA)	Year round	Inspection of buildings and mature trees to assess bat roost potential
Bat activity survey	April to October	Transects walked at dusk/dawn to ascertain species using the site and areas of higher activity. Number of survey visits to be confirmed.
Bat emergence/re-entry survey	May to August	A maximum of three survey visits, comprising two dusk surveys and one dawn survey, to identify roosts within building(s), trees and other structures. Number of survey visits to be confirmed.

B101

Survey type	Season for survey	Methodology & Objectives
Preliminary Roost Assessment	Year round	Inspection of buildings and mature trees to assess bat roost potential
Bat emergence/re-entry survey	May to August	A maximum of three survey visits, comprising two dusk surveys and one dawn survey, to identify roosts within building(s), trees and other structures. Number of survey visits to be confirmed.

R&D2B

5.4.2 Subject to a current development proposal. No further surveys required.

5.5 Species licensing

5.5.1 Habitats Regulations Assessment is required to identify any adverse affect upon the integrity of a European site.

5.5.2 Should it to be necessary to damage or destroy a badger sett whilst it is in use, or disturb a badger in a sett, a licence would be required under the Protection of Badgers Act 1992. At present this is unnecessary and only might be required if a new sett arises or an existing inactive sett comes into use prior to the construction period.

5.5.3 A European Protected Species licence would be needed to implement any impacts upon otter or bats such as damaging a place used for shelter or disturbing the species in its place of shelter. At present this is unnecessary and would only be needed if plans change and trees containing bat roosts would be felled.

5.5.4 It is considered that it would not be necessary for any development within the potential development areas to enter the Local District Licensing scheme for great crested newts given the lack of ponds within these areas, the lack of ponds within the wider site, the small size of the development areas and poor or adverse connectivity between existing site ponds and ponds in the wider local landscape.

6 Enhancement measures

6.1 Ecological enhancement

6.1.1 Ecological enhancement aims to improve the quality of the site and the immediate vicinity for native flora and fauna. Such enhancements can also provide aesthetic appeal and can add value to the proposed development.

6.1.2 Enhancement opportunities specific to the development proposals for this site are provided below. It is not anticipated that all of these options would be utilised. The options are listed in order of priority, with habitat enhancements having most benefit to wildlife. Small-scale enhancements targeted at individual species, whilst valuable, are generally of less overall benefit than habitat enhancement measures.

6.2 Habitat enhancement

6.2.1 Wherever possible, planting should use native species, which support biodiversity significantly better than non-native plants. This is due to the numbers of flowers, fruits, seeds and berries that are produced by our native species and their different flowering and fruiting times throughout the year.

6.2.2 Opportunities can be divided into small-scale measures specific to one or more of the proposed new development locations, and large-scale, campus wide measures which would benefit biodiversity across the wider area, also providing potential for biodiversity offsetting of any impacts arising from the proposed new developments.

6.2.3 Habitat enhancements include the following (refer also to Figure 02).

Wider-campus measures:	**Biodiversity benefit**	**Wider benefits**
Aquatic environment		
Restore minor watercourses to a more meandering profile; reduce bankside gradient to a shallow cross-sectional profile and remove overhanging/shading trees	Re-naturalised watercourses will support a wider range of plant and animal species than previously	Re-naturalising watercourses will increase water retention on site after heavy rainfall events, thus encouraging peat formation and thus carbon storage and reducing downstream flooding
Reinstate shallow foot-drains	Re-instated foot-drains will support a wider range of plant and animal species than previously, including, potentially breeding waders	Re-instated foot-drains will increase water retention on site after heavy rainfall events, thus encouraging peat formation and thus carbon storage and reducing downstream flooding
Re-wet grazing marsh by installing sluice-boards in foot-drains etc	Re-wetting the marsh will support a wider range of plant and animal species than previously, including, potentially breeding waders	Re-wetting the marsh will encourage peat formation and thus carbon storage, and in the longer term reduce downstream flooding
Restore pond in woodland margin by removing shading/overhanging trees and remove accumulated leaf litter and sediment	The restored pond will support a range of amphibian species, potentially including great crested newt.	The restored pond will increase water retention on site after heavy rainfall events, thus reducing downstream flooding
Restore 'ghost ponds'	The restored ponds will support a range of amphibian species, potentially including great crested newt and may potentially support rare and scarce plant species in the buried seed resource	The restored ponds will increase water retention on site after heavy rainfall events, thus reducing downstream flooding

Allow river to overflow into low lying areas of chalk scrapes	This will create seasonal washland habitat of value for plants and animals	This will increase floodplain capacity
River enhancement works including creation of riffles, bed-raising, localised regrading of banks to a more shallow profile, adaptation or removal of weir to enable fish passage and sensitive management of riverside trees and shrubs (refer to detailed proposals put forward by Wild Trout Trust)	Benefits to aquatic flora and fauna	Reduced potential for downstream flooding
Arable		
Maintain annually rotovated 'arable flora' strip c2-5m wide along all arable margins and do not apply broad-leaved herbicide in this zone except as required to control nuisance weeds	Uncommon arable weeds will be able to thrive, with a benefit to associated invertebrate and bird species	Increased numbers of local pollinators will benefit agriculture
Grassland		
End all fertiliser applications to grassland and restrict herbicide application to spot-spraying of nuisance weeds to increase floristic and thus faunal diversity; bring into extensive grazing regime	Floristic diversity of grassland will increase and grasslands will support a wider range of faunal diversity	Increased numbers of local pollinators will benefit agriculture
Increase species diversity by slot-seeding with general purpose meadow mix	Floristic diversity of grassland will increase and grasslands will support a wider range of faunal diversity	Increased numbers of local pollinators will benefit agriculture
Increase species diversity by slot-seeding with chalk grassland meadow mix	Floristic diversity of grassland will increase and grasslands will support a wider range of faunal diversity	Increased numbers of local pollinators will benefit agriculture
Clear woodland cover for a c20m radius about area of grassland supporting ephemeral flora	The area of grassland supporting uncommon ephemeral plant species will increase and there will also be a benefit to invertebrate species associated with open, dry habitats	
Woodland/Hedgerows		
Plant woodland belt along southern margin of improved grassland area to extend wooded corridor and link existing woodland sections	Greater habitat connectivity will benefit a range of fauna, notably bats and birds	Planting woody vegetation will increase carbon storage
Underplant woodland with shrubs and coppice to improve structure; retain dead/dying ash where safe to do so as standing dead wood resource	Improving the structure of the woodland will benefit bird species; creating an on-site dead wood resource will benefit saprophytic fungi and invertebrates and increase the food resource available to birds, bats, reptiles and amphibians	Planting woody vegetation will increase carbon storage
Plant crenulated scrub margin to soften edge of woodland	Improving the structure of the woodland will benefit bird species and a crenulated margin will increase foraging opportunity for bats and produce a sheltered warm environment for warmth-loving species such as reptiles and butterflies	Planting woody vegetation will increase carbon storage

Plant new broadleaved woodland	Greater habitat connectivity and diversity will benefit a range of fauna, notably bats and birds	Planting woody vegetation will increase carbon storage
Plant small C20 x 20m woodland copses within grazing marsh	Greater structural and species diversity on marshland will benefit fauna	Planting woody vegetation will increase carbon storage; shade and shelter will improve the wellbeing of grazing livestock
Plant new standard trees along field margin	Greater habitat connectivity and diversity will benefit a range of fauna, notably bats and birds	Planting woody vegetation will increase carbon storage
Manage hedge to a taller, broader profile; cut top annually and sides in alternate years	Altered cutting regime will increase flowering and berrying and thus benefit bird and invertebrate species	Increased numbers of local pollinators will benefit agriculture
Built environment		
To reduce impacts upon nocturnal wildlife, in particular bats, consider methods to reduce artificial light such as switching off all unnecessary external lighting between a core period of 11 to 6am and where lighting is necessary for safety or security consider a 50% dimming profile between midnight and 05.30 with electronic photo-cell control of switching pre-set at 70 lux (on-dusk) and 105 lux (off-dawn)	Reduced lighting will benefit bats	Reduced lighting will require less electricity and reduce light pollution
Measures on proposed development sites:	**Biodiversity benefit**	**Wider benefits**
Extend chalk scrapes further to east to link and extend existing	The chalk scrapes create habitat for rare plant species and the invertebrates that feed on them	The chalk scrapes increase floodplain capacity and reduce risk of downstream flooding
Increase species diversity by slot-seeding retained grassland with general purpose meadow mix	Floristic diversity of grassland will increase and grasslands will support a wider range of faunal diversity	Increased numbers of local pollinators will benefit agriculture
Plant new scrub-woodland features	Greater habitat connectivity and diversity will benefit a range of fauna, notably bats and birds	Planting woody vegetation will increase carbon storage
Plant new hedgerow	Greater habitat connectivity and diversity will benefit a range of fauna, notably bats and birds	Planting woody vegetation will increase carbon storage
Green roof features	Green roof features will benefit invertebrate, bird and bat species	Green roof features will assist with insulation and coiling of buildings and provide a sustainable urban drainage function
Green swales	Swales will create new wetland environment and benefit invertebrate, bird and bat species	Swales provide a sustainable urban drainage function, increase infiltration, reduce downstream flooding and help replenish the local aquifer

6.3 Small-scale species enhancement

6.3.1 Small-scale enhancements to benefit individual species/species groups would include the following generic measures, however further opportunity may be identified following site-specific survey of each of the development locations.

- Bat boxes (e.g. Vivara, Ibstock, Habibat or similar), suitable for a range of bat species, should be erected on retained standard trees or buildings in unlit parts of the site.
- Bird boxes (e.g. Vivara or similar), suitable for a range of bird species, should be erected on retained standard trees or buildings in undisturbed parts of the site.
- 20 swift boxes should be erected on proposed buildings.
- Up to 20 habitat piles should be created, using woody cut material (brash) from vegetation clearance. These should be stacked in a quiet, sheltered corner of the site to form piles measuring approximately 2m x 1m x 1m.
- Creation of hedgehog highways through fences; a gap of 13cm x 13cm should be cut out of the base of garden fences to allow hedgehogs to move through the site after construction is complete. Alternatively, include in fence design at least two Hedgehog Friendly Gravel Boards[11] or similar.
- Consider construction of a bat hibernaculum; a room-sized building partly underground and secure from human entry for bats to use in winter.
- Roadways and drainage measures should be designed or modified to be amphibian friendly, to avoid amphibians becoming trapped in gully pots. Specific measures should include 'wildlife kerbs' at each drain location that allow a gap of at least 100mm between the drain and the kerbs, dropped kerbs that are flush with the road or even ramps in the kerbs either side of the drain to encourage amphibians away from the drain.
- The replacement of existing gully pots and drains with wildlife-friendly drainage options, such as gravel filter drains or French drains, Sustainable Drainage Systems (SuDS), permeable pavements, rain gardens and planters, should be considered.
- Where gully pots already exist, and it is not feasible to replace them with wildlife-friendly drainage options, a single British Herpetological Society (BHS) Amphibian Ladder should be installed in each gully pot.[12] These BHS amphibian ladders provide an escape route for amphibians that become trapped in gully pots.
- Seek to negotiate with the local authority to ensure public roadways on and adjacent to the site receive similar attention as regards wildlife-friendly drainage options.

[11] https://www.kebur.co.uk/product/hedgehog-concrete-gravel-board/ or https://www.jacksons-fencing.co.uk/product/sc_667610/hedgehog-gravel-board-for-use-with-slotted-posts-1.83m-x-140-x-28mm-incl.1-x-end-packer-1-x-length-packer-jakcured
[12] https://www.thebhs.org/shop/the-bhs-amphibian-gully-pot-ladder

7 Recommendations

7.1 Recommended further work needed prior to an application

7.1.1 Veteran trees and shrubs would be located accurately by topo survey.

7.1.2 A number of project-specific ecological surveys will be needed including a detailed Phase 1 survey of each of the individual development sites.

7.2 Biodiversity Net Gain calculations

7.2.1 Some Local Planning Authorities require calculations of Biodiversity Net Gain using the national standard Defra metric, although a small proportion of those councils prefer a different metric. The areas of habitats are given various values, and a calculation of those values and habitat area provides the number of biodiversity units a development site has, before development and for the proposals. An appeal decision in October 2020[13] made it clear that where a Local Plan requires Net Gain measured using a metric, but does not quantity the amount of Net Gain, there is no need to meet the 10% Net Gain requirements of the Environment Bill as it is not yet law.

7.2.2 **South Cambridgeshire District Council** has a Local Plan policy NH/4: Biodiversity which includes, among other aims;

- *Development proposals where the primary objective is to conserve or enhance biodiversity will be permitted.*
- *New development must aim to maintain, enhance, restore or add to biodiversity. Opportunities should be taken to achieve positive gain through the form and design of development.*

7.2.3 This policy, adopted in September 2018, was supplemented in 2021 by the 'Doubling Nature Strategy' which sets out the Councils approach to enhancing and conserving biodiversity within their area. The strategy states that the Council *'aspires to achieve 20% biodiversity net gain through development',* but that this cannot be required *'unless and until it is adopted in planning policy or mandated at national level but will encourage all partners to work with us to achieve this aspiration ahead of policy and legal obligations'*.

7.2.4 The applicants have committed to delivering a 10% Net Gain which will be demonstrated using the Natural England Biodiversity Metric and also plan to achieve the "doubling nature" ambition set out by the Natural Cambridgeshire and supported by South Cambridgeshire District Council to give a total of 20% BNG.

[13] Planning Inspectorate (14th October 2020) Appeal Ref: APP/Y0435/W/20/3251121 Land at Brickhill Street, South Caldecotte, Milton Keynes MK17 9FE

8 Conclusions

8.1.1 The purpose of this report was to inform a Local Plan submission.

8.1.2 The overall value of the site to wildlife is considered to be **Lower** at the **County** scale.

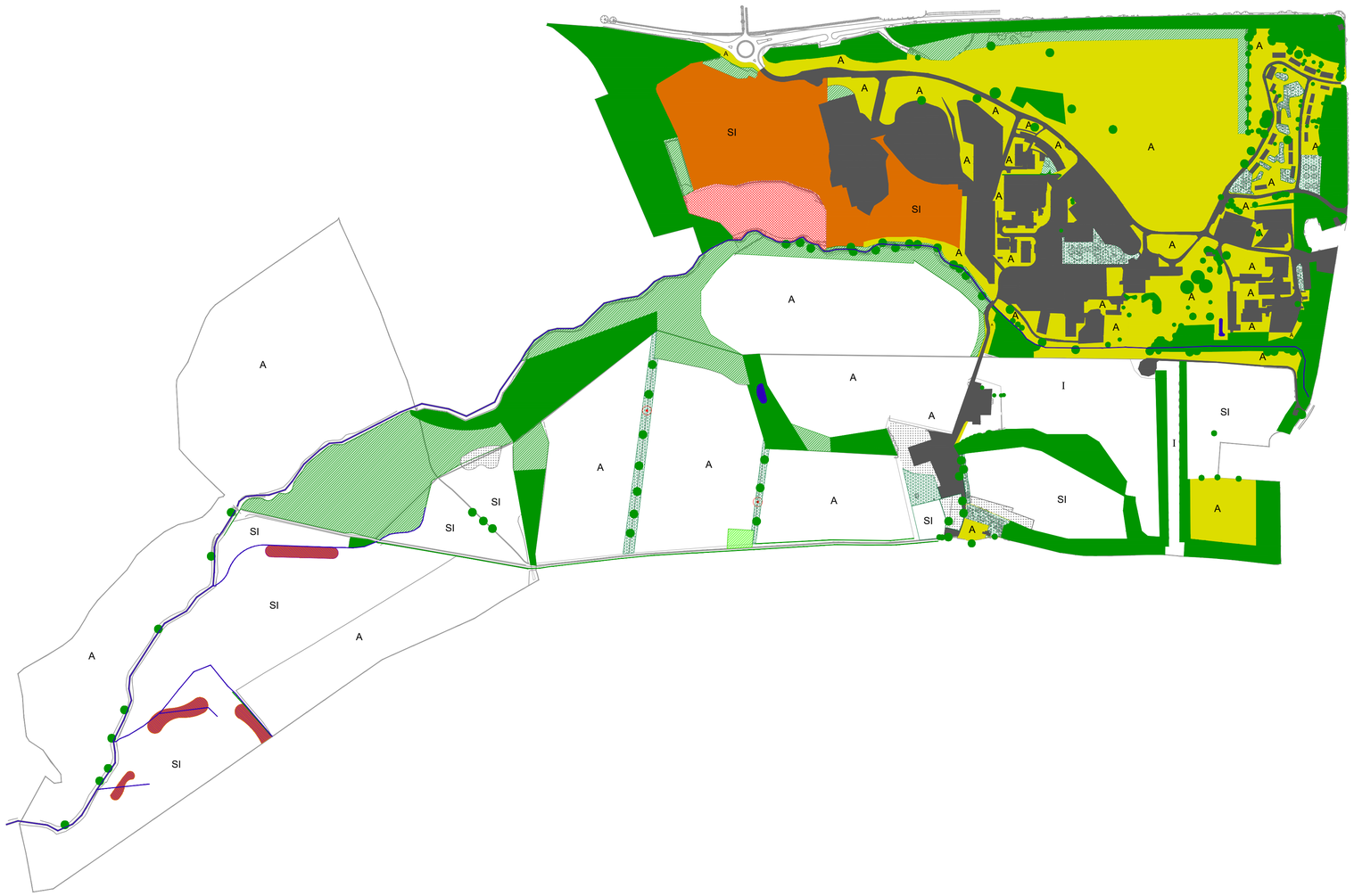
8.1.3 The overall impact of the proposals upon each of the proposed development locations is considered to be as follows

Site	Provisional Unmitigated impact
R&D3	Minor-Moderate Adverse
Central Campus	Minor Adverse
The Farm	Minor Adverse
The Close	Minor Adverse
B101	Minor Adverse

8.1.4 The mitigated impact in all cases is considered to be **Neutral**.

8.1.5 The adoption of all or most of the enhancement measures detailed in Section 6 above would give rise to a **Minor-Moderate Beneficial** impact.

Figures



Key

- A1.1.1 Broad-leaved semi natural woodland
- A1.1.2 Broad-leaved plantation woodland
- A1.1.2 Coniferous plantation
- A3.3 Mixed parkland / scattered trees
- SI — J2.2.B2.2 Semi-improved neutral grassland
- I — B4 Improved grassland
- B5 Marshy grassland
- SI — B6 Poor semi-improved grassland
- G1 Standing water
- G2 Running water
- I4.2 Basic exposure
- A — J1.1 Arable
- J1.3 Ephemeral/short perennial
- J1.4 Introduced shrub
- A — J1.2 Amenity grassland
- J2.1.1 Native species rich hedge
- J2.1.2 Species poor hedge
- J2.3.1 Native species rich hedge with trees
- J3.6 Buildings/hardstanding

Letter	Revision	By	Date

thelandscapepartnership

Project
Babraham Research Campus

Bedford	01234 261315 ☒
Woodbridge	01394 380509 ☐
London	020 3092 4141 ☐
Norwich	01603 230777 ☐

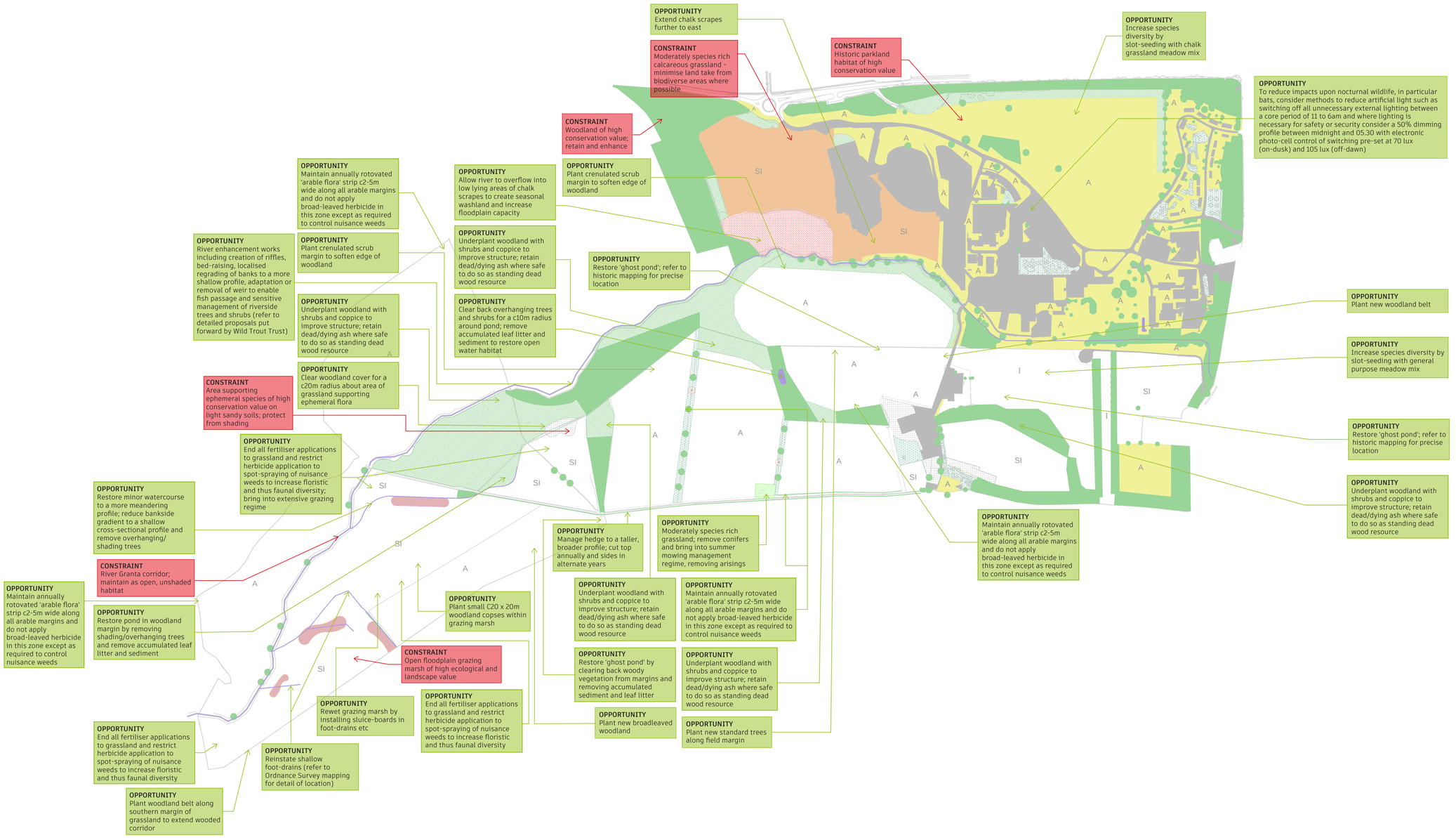
Drawing
Phase 01 Figure 01

Job No.	B21035
Dwg. No.	701
Scale	1:5000@A1
Drawn	RG
Checked	NA
Date	16.06.2021

Status
Ecology

Do not scale off drawing. All dimensions & Levels are to be checked on site. Any discrepancies must be reported to the landscape architect immediately.

North



Key

- A1.1.1 Broad-leaved semi natural woodland
- A1.1.2 Broad-leaved plantation woodland
- A1.1.2 Coniferous plantation
- A3.3 Mixed parkland / scattered trees
- SI J2.2.B2.2 Semi-improved neutral grassland
- I B4 Improved grassland
- B5 Marshy grassland
- SI B6 Poor semi-improved grassland
- G1 Standing water
- G2 Running water
- I4.2 Basic exposure
- A J1.1 Arable
- J1.3 Ephemeral/short perennial
- J1.4 Introduced shrub
- A J1.2 Amenity grassland
- J2.1.1 Native species rich hedge
- J2.1.2 Species poor hedge
- J2.3.1 Native species rich hedge with trees
- J3.6 Buildings/hardstanding

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Woodbridge	01394 380509	☐
London	020 3092 4141	☐
Norwich	01603 230777	☐

Project
Babraham Research Campus

Drawing
Constraints and Opportunities
Figure 02

Status
Ecology

Job No.	B21035
Dwg. No.	B21035.702
Scale	1:5000@A1
Drawn	IO
Checked	JP
Date	19-07-2021

North

Appendix 1

Legislative and policy context

There is a number of pieces of legislation, regulations and policies specific to ecology which underpin this assessment. These may be applicable at a National or Local level. References to legislation are given as a summary for information and should not be construed as legal advice.

Birds Directive

The European Community Council Directive on the Conservation of Wild Birds (79/409/EEC), normally known as the Birds Directive, sets out general rules for the conservation of all naturally occurring wild birds, their nests, eggs and habitats. It was superseded by the 'new' Birds Directive (2009/147/EC) which generally updated the previous directive.

Since the end of the Brexit transition period on 31st December 2020 the Birds Directive no longer is part of the UK legal system.

Habitats Directive

The European Community Council Directive on the Conservation of Natural Habitats of Wild Fauna and Flora (92/43/EEC), normally known as the Habitats Directive, aims to protect the European Union's biodiversity. It requires member states to provide strict protection for specified flora and fauna (i.e. European Protected Species) and the registration and regulation of Special Areas of Conservation.

Since the end of the Brexit transition period on 31st December 2020 the Habitats Directive no longer is part of the UK legal system.

Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 generally follow the Birds Directive and Habitats Directive but unlike the Directives there is no role for the European Union; the UK Government has taken that role following the end of the Brexit transition period on 31st December 2020. For clarity, the following paragraphs consider the case in England only, with Natural England given as the appropriate nature conservation body. In Wales, the Countryside Council for Wales is the appropriate nature conservation body.

Special Protection Areas and Special Areas of Conservation are defined in the regulations as forming a national network of 'European sites'. The Regulations regulate the management of land within European sites, requiring land managers to have the consent of Natural England before carrying out management. Byelaws may also be made to prevent damaging activities and if necessary land can be compulsorily purchased to achieve satisfactory management.

The Regulations define competent authorities as public bodies or statutory undertakers. Competent authorities are required to make an appropriate assessment of any plan or project they intend to permit or carry out, if the plan or project is likely to have a significant effect upon a European site. The permission may only be given if the plan or project is ascertained to have no adverse effect upon the integrity of the European site. If the competent authority wishes to permit a plan or project despite a negative assessment, imperative reasons of over-riding public interest must be demonstrated, and there should be no alternative to the scheme. The permissions process in that case would involve the Secretary of State. In practice, there will be very few cases where a plan or project is permitted despite a negative assessment. This means that a planning application has to be assessed by the Local Planning Authority, based on information provided by the applicant, and the assessment must either decide that it is likely to have no significant effect on a European site or ascertain that there is no adverse effect upon the integrity of the European site.

Government policy is for Ramsar sites (wetlands of global importance) to be treated as if they were European sites within the planning process.

Appropriate Assessment

Appropriate Assessment is required in certain instances under the Conservation of Habitats and Species Regulations 2017. Regulation 63 says that:

> *63.— (1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which-*
>
> *(a) is likely to have a significant effect on a European site or a European offshore marine site*

(either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of the site,

must make an appropriate assessment of the implications for that site in view of that site's conservation objectives.

(2) A person applying for any such consent, permission or other authorisation shall provide such information as the competent authority may reasonably require for the purposes of the assessment or to enable them to determine whether an appropriate assessment is required.

(3) The competent authority shall for the purposes of the assessment consult the appropriate nature conservation body and have regard to any representations made by that body within such reasonable time as the authority may specify.

(4) They must also, if they consider it appropriate, take the opinion of the general public, and if they do so, they must take such steps for that purpose as they consider appropriate.

(5) In the light of the conclusions of the assessment, and subject to regulation 64 (considerations of overriding public interest), the competent authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be).

(6) In considering whether a plan or project will adversely affect the integrity of the site, the authority must have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which they propose that the consent, permission or other authorisation should be given.

The competent authority is typically the local planning authority. The appropriate assessment contains the information the council requires for the purposes of its assessment under the Habitat Regulations.

The Habitats Regulations also are applicable to local authority land use plans and policies. If a policy or plan is likely to have a significant effect upon a European site, the permission may only be given if the policy or plan is ascertained to have no adverse effect upon the integrity of the European site. This approach gives rise to a hierarchy of plans each with related appropriate assessments. For example, the appropriate assessment of a Regional Spatial Strategy will affect policies within a Core Strategy, which will then need its own appropriate assessment, and so on.

European Protected Species

European Protected Species of animals are given protection from deliberate capture, injury, killing, disturbance or egg taking/capture. Their breeding sites or resting places are also protected from damage or destruction, which does not have to be deliberate. A number of species are listed as European Protected Species, with those most likely to be considered in planning applications being bats, dormouse, great crested newt and otter. Natural England may give a licence for actions that are otherwise illegal, subject to them being satisfied on the three tests of no alternative, over-riding public interest, and maintenance of the species in favourable condition.

European Protected Species of plant are also listed and given protection. These species are generally very rare and unlikely to be present in proposed development sites.

Wildlife and Countryside Act 1981

The Wildlife and Countryside Act 1981 has been amended many times, including by the Countryside and Rights of Way Act 2000. It contains provisions for the notification and regulation of Sites of Special Scientific Interest, and for protected species.

The Regulations regulate the management of land within Sites of Special Scientific Interest, requiring land managers to have the consent of Natural England before carrying out management.

All public bodies are defined as 'S28G' bodies, which have a duty to further the nature conservation of Sites of Special Scientific Interest in the undertaking of their functions. In practice, this prevents planning applications being permitted if they would harm Sites of Special Scientific Interest, as it would be a breach of that duty.

The Act makes it an offence intentionally to kill, injure, or take any wild bird, take, damage or destroy the nest of any wild bird, while that nest is in use or being built, or take or destroy an egg of any wild bird. Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young.

The Act makes it an offence intentionally to kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. Some species have lesser protection under this Act, for example white-clawed crayfish, common frog and toads are only protected from sale, and reptile species, other than smooth snake and sand lizard, are protected from intentional killing or injury, but they are not protected from disturbance and their habitat is not protected. It is also an offence intentionally to pick, uproot or destroy any wild plant listed in Schedule 8.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) dated February 2019 replaces previous Government Policy in relation to nature conservation and planning expressed in the NPPF dated March 2012.

Chapter 15 paragraph 170(d) of the NPPF 2018 says that the planning system should contribute to and enhance the natural and local environment by minimising impacts on and providing net gains for biodiversity.

Paragraphs 171 and 172 relate to policy for designated sites of biodiversity or landscape importance. Proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged against Local Plans policies which will distinguish between the hierarchy of international, national and locally designated sites and allocate land with the least environmental or amenity value and maintain and enhance networks of habitats and green infrastructure. Further policy is within paragraph 174, where Local Planning Authorities should within their Local Plans aim to protect and enhance biodiversity by:

- Identifying, mapping and safeguarding components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- Promoting the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

When determining planning applications Local Planning Authorities should apply the following principles:

- If significant harm resulting from a development cannot be avoided (through locating it 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 incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

Paragraph 176 adds protection to candidate sites of European or International importance (Special Protection Areas, Special Areas of Conservation and Ramsar sites) and also to those sites identified or required as compensatory measures for adverse effects on habitats sites, potential SPA, possible SAC listed or proposed Ramsar sites.

Paragraph 177 clarifies that 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, i.e. a European site, (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

Government circular 'Biodiversity and Geological Conservation – Statutory Obligations and their Impact Within the Planning System' referenced ODPM 06/2005 has not been replaced and remains valid. It sets out the legislation regarding designated and undesignated sites and protected species and describes how the planning system should take account of that legislation. It does however pre-date the NERC Act 2006 (see below), which includes a level of protection for a further list of habitats and species regardless of whether they are on designated sites or elsewhere.

Natural Environment and Rural Communities (NERC) Act 2006

This Act includes a list of habitats and species of principal importance in England. Local Authorities are required to consider the needs of these habitats and species when making decisions, such as on planning application.

Local Planning Authority's planning policy

The Local Planning Authority will have policies relating to biodiversity conservation.

Species Legislation

The following table provides an overview of legislation with regard to species.

Protected Species	Legislation			
	Wildlife & Countryside Act, 1981	**The Conservation of Habitats and Species Regulations, 2017**	**Natural Environment & Rural Communities (NERC) Act, 2006**	**Protection of Badgers Act, 1992**
Plants (certain 'rare' species)	✓	✓[14]	✓	
Invertebrates (certain 'rare' species)	✓	✓[15]	✓	
White-clawed crayfish	✓		✓	
Great crested newt, natterjack toad, pool frog	✓	✓	✓	
Other amphibians	✓[16]		✓	
Sand lizard, smooth snake	✓	✓[17]	✓	
Other reptiles	✓[18]		✓	
Breeding birds	✓	✓	✓	
Wintering birds (certain 'rare' species)	✓	✓	✓	
Bats	✓	✓	✓	
Dormouse	✓	✓	✓	
Water vole	✓		✓	
Otter	✓	✓	✓	
Badger				✓

[14] Nine species present in the UK, with very specialised habitat requirements, are European Protected Species.

[15] Fisher's estuarine moth, large blue butterfly and lesser whirlpool ram's-horn snail are European Protected Species.

[16] The four other native amphibian species (smooth and palmate newts, common frog and common toad) are only protected against trade under this act.

[17] Smooth snake and sand lizard are European Protected Species.

[18] The four other native reptile species (common lizard, slow worm, grass snake and adder) are protected against intentional killing, injury and trade under this act.

Appendix 2

Assessment Methodology: Valuing Ecological Features and Impact Assessment

The three-stage assessment method for determining ecological value is based upon assessment matrices published in the Handbook of Biodiversity Methods[19]. It has been updated to comply with recent changes to planning policy and legislation. The three-stage process allows the value of ecological sites, habitats and populations, and the magnitude of the impact, to be cross-tabulated to identify impact significance.

Valuing ecological sites, habitats and populations: scale and level of value

Scale	Level of value	Sites, habitats and populations
Greater than national	**Very High**	Statutory sites designated under international conventions or related national legislation, in particular: • Wetlands of International Importance (Ramsar sites), • Special Areas of Conservation, • Special Protection Areas.
National	**High**	Statutory sites designated under national legislation, for example: • Sites of Special Scientific Interest (England, Wales, Scotland), • National Nature Reserves (UK). Significant viable areas of habitats, or populations or assemblages of species of principal importance for the conservation of biodiversity in England and Wales (Section 41 species and habitats)[20] of such size and quality as might qualify for SSSI designation. Populations or assemblages of red-isted, rare or legally protected species, as might qualify for SSSI designation, for example: • species of conservation concern, • Red Data Book (RDB) species, • birds of conservation concern (Red List species), • nationally rare and nationally scarce species, • legally protected species.
County	**Medium**	Statutory sites of lower conservation value designated under national legislation, for example Local Nature Reserves (UK). Non-statutory sites designated under local legislation, for example: • County Wildlife Sites, • Local Wildlife Sites, • Roadside Nature Reserves (protected road verges). Viable areas of habitat or populations of species of principal importance for the conservation of biodiversity in England and Wales (Section 41 species and habitats)[21] of such size and quality as might qualify for designation at the county level. Other non-designated sites which meet the criteria for designation at this level.

[19] Hill, D., Fasham, M., Tucker, G., Shewry, M., Shaw, P. (eds.) (2005) *Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring*, Cambridge University Press.

[20] Listed under S41 of the Natural Environment and Rural Communities Act 2006 http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx.

[21] Listed under S41 of the Natural Environment and Rural Communities Act 2006 http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx.

District/ Borough[22]	**Lower**	Sites meeting criteria for metropolitan designations. Undesignated sites or features not meeting criteria for county designation, but that are considered to enrich appreciably the habitat resource within the local district or borough, for example: • ancient woodland, • diverse, ecological valuable and cohesive hedgerow networks, • significant clusters or groups of ponds, • veteran or ancient trees. Viable areas of habitat or populations of species of principal importance for the conservation of biodiversity in England and Wales (Section 41 species and habitats)[23] not qualifying for designation at the county level.
Parish	**Lower**	Areas of habitat considered to enrich appreciably the ecological resource within the context of the local parish. Small areas of habitat or populations of species of principal importance for the conservation of biodiversity in England and Wales (Section 41 species and habitats)[24].
Site only	**Negligible**	Ecological feature or resource not meeting any of the above criteria.

Note: there is much overlap in designations and lists of important species, and many sites, habitats and species appear on several. Where a site, habitat or species has multiple designations or levels of protection, normally the highest level would be the level at which impacts are assessed.

[22] Including metropolitan boroughs.

[23] Listed under S41 of the Natural Environment and Rural Communities Act 2006 http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx.

[24] Listed under S41 of the Natural Environment and Rural Communities Act 2006 http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx.

Definitions of impact magnitude

Magnitude (negative or positive)	Definition/trigger
Severe	Loss or severe degradation affecting over 75% of a site feature, habitat or population. Adverse change to, or reduced condition of, over 90% of a site feature, habitat or population, for example through disturbance or trampling.
Major	Loss or severe degradation affecting over 25% of a site feature, habitat or population. Adverse change to, or reduced condition of, over 50% of a site feature, habitat or population, for example through disturbance or trampling. For benefits, an impact equivalent in nature conservation terms to a gain of over 50% in a site feature, habitat or population.
Moderate	Loss or severe degradation affecting over 5% of a site feature, habitat or population. Adverse change to, or reduced condition of, over 10% of a site feature, habitat or population, for example through disturbance or trampling. For benefits, an impact equivalent in nature conservation terms to a gain of 10-50% in a site feature, habitat or population
Minor	Loss or severe degradation affecting up to 5% of a site feature, habitat or population. Adverse change to, or reduced condition of, 1-10% of a site feature, habitat or population, for example through disturbance or trampling. For benefits, an impact equivalent in nature conservation terms to a gain of up to 10% in a site feature, habitat or population.
Insignificant	No loss of or severe degradation to a site feature, habitat or population. Adverse change to, or reduced condition of, less than 1% of a site feature, habitat or population. No benefit to a site feature, habitat or population.

Impact significance

	Magnitude of impact							
Value of site, habitat or population	*Severe Negative*	*Major Negative*	*Moderate Negative*	*Minor Negative*	*Insignificant*	*Minor Positive*	*Medium Positive*	*Major Positive*
Very High	Severe Adverse	Severe Adverse	Major Adverse	Major Adverse	Neutral*	Major Beneficial	Major Beneficial	Major Beneficial
National (High)	Severe Adverse	Major Adverse	Major Adverse	Moderate Adverse	Neutral*	Moderate Beneficial	Major Beneficial	Major Beneficial
County/Metropolitan (Medium)	Major Adverse	Major Adverse	Moderate Adverse	Moderate Adverse	Neutral	Minor Beneficial	Moderate Beneficial	Major Beneficial
District/Borough (Lower)	Major Adverse	Moderate Adverse	Moderate Adverse	Minor Adverse	Neutral	Minor Beneficial	Moderate Beneficial	Moderate Beneficial
Parish (Lower)	Moderate Adverse	Moderate Adverse	Minor Adverse	Minor Adverse	Neutral	Minor Beneficial	Minor Beneficial	Moderate Beneficial
Minimal/negligible	Neutral	Neutral	Neutral	Neutral	Neutral	Minor Beneficial	Minor Beneficial	Moderate Beneficial

Where the impact significance falls below Minor Adverse, the term 'Neutral' is used.

*In some circumstances, some 'insignificant' impacts might fail legislative or policy tests and the impact would be greater than Neutral.

Appendix 3

ISO A1 - 594mmx841mm

DATE	REVISION	REV	DRW	CHK
10.8.21	Buildings Added	A	DR	DR

Keyplan

North Arrow

Detail Symbol

Detail No.
Sheet No.

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NORR Consultants Limited.
An Ingenium International Company

Tennyson House,
159 - 165 Great Portland Street,
London W1W 5PA
England, UK
norr.com

Drawn DGR	Date JULY 2021
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Scale 1:2500	
Client BABRAHAM RESEARCH CAMPUS LTD	
Project LOCAL PLAN DEVELOPMENT	
Drawing Title OVERALL SITE MASTERPLAN	
Sheet Status INFORMATION	
Project No. IALN 21 0006	
Drawing No. 100	Rev. A

Appendix 4

Designated Sites Map

for The Landscape Partnership

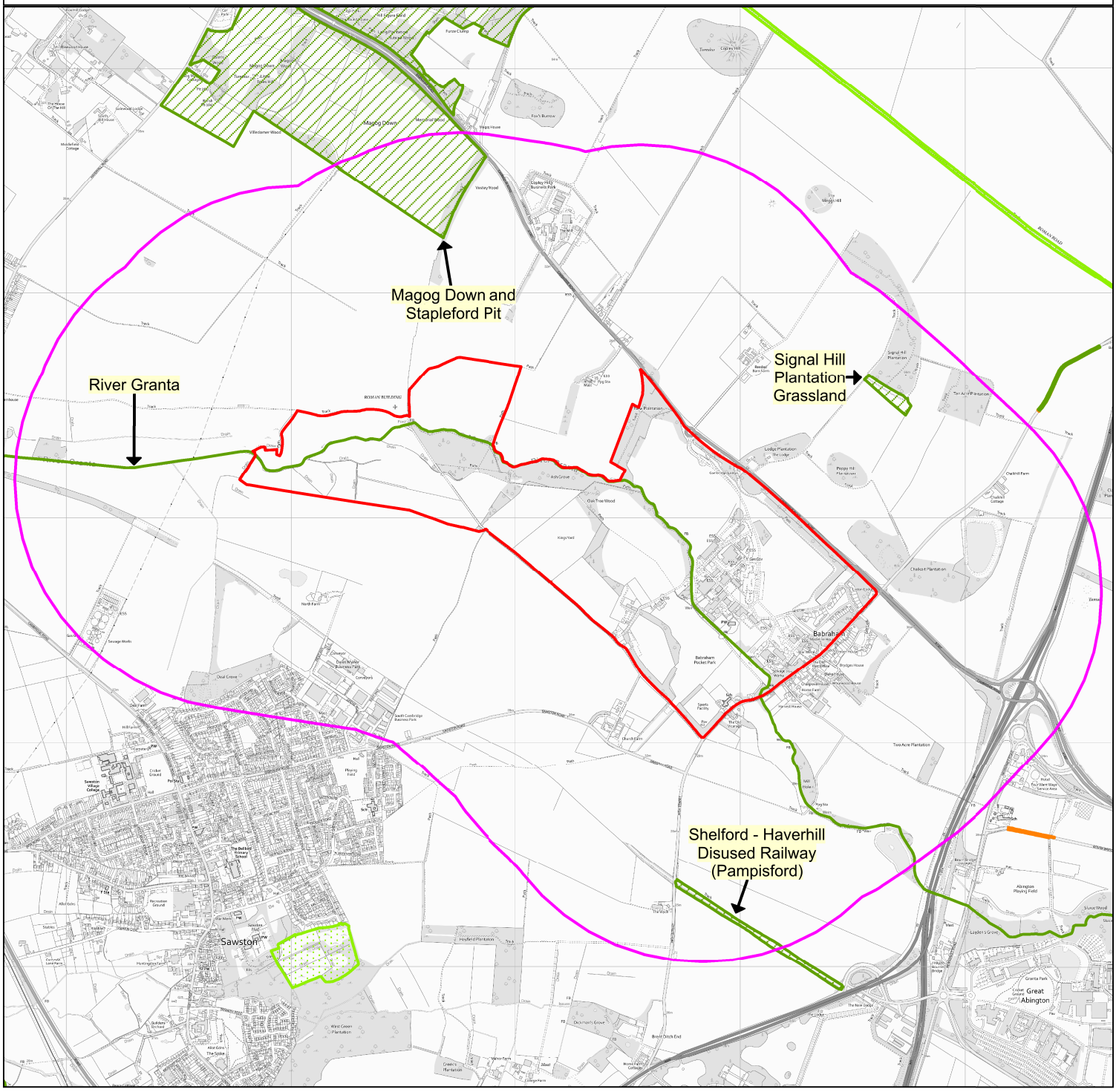
Babraham Campus

14/05/2021

1:25,000 @ A4

CPERC
The Manor House
Broad Street
Cambourne
Cambridgeshire
CB23 6DH

CPERC
CAMBRIDGESHIRE & PETERBOROUGH
ENVIRONMENTAL RECORDS CENTRE



Search Area

Site Boundary

SSSI

LNR

County Wildlife Site

Protected Road Verge (PRV)