

ARBTECH

Preliminary Ecological Appraisal Survey

Warneford Hospital, Warneford Lane, Headington, Oxford, Oxfordshire, OX3 7JX

GBS Health +

Status	Issue	Name	Date
Draft	1	Elen Griffin BSc (Hons), Consultant	02/10/2020
Reviewed	1.1	Louise Sawrey BSc (Hons), Consultant	05/10/2020
Draft	1.2	Elen Griffin BSc (Hons), Consultant	05/10/2020
Draft	1.3	Elen Griffin BSc (Hons), Consultant	05/10/2020
Final	1.4	Elen Griffin BSc (Hons), Consultant	15/10/2020
Draft	1.5	Elen Griffin BSc (Hons), Consultant	27/01/2021
Reviewed	1.6	Louise Sawrey BSc (Hons), MRSB, Consultant	28/01/2021
Update	2	Elen Griffin BSc (Hons), Consultant	28/01/2021

Arbtech Consultant's Contact details:

Elen Griffin BSc (Hons)
Consultant


Arbtech Consulting Ltd

<https://arbtech.co.uk>

Limitations and Copyright

Arbtech Consulting Limited has prepared this report for the sole use of the above-named client or their agents in accordance with our General Terms and Conditions, under which our services are performed. It is expressly stated that no other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us. This report may not be relied upon by any other party without the prior and express written agreement of Arbtech Consulting Limited. The assessments made assume that the sites and facilities will continue to be used for their current purpose without significant change. The conclusions and recommendations contained in this report are based upon information provided by third parties. Information obtained from third parties has not been independently verified by Arbtech Consulting Limited.

© This report is the copyright of Arbtech Consulting Limited. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

Guidelines

This assessment has been designed to meet:

- Chartered Institute of Ecology and Environmental Management 'Guidelines for Preliminary Ecological Appraisal Second Edition, December 2017';
- Chartered Institute of Ecology and Environmental Management 'Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine, September 2018'; and
- British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

This approach is enshrined in Government planning guidance, for example, paragraph 193 of the National Planning Policy Framework for England.

The desk studies and field surveys undertaken to provide a preliminary ecological appraisal (PEA) might in some cases be all that is necessary.

(BS 42020, 2013)

In consequence of the scale and intensity of the proposed development, the low impact on ecological receptors identified through both the site survey and search of local biological records, and the passive interface with the mitigation hierarchy, this plan-led report is considered adequate and proportionate. It communicates all relevant information necessary to determine a planning application or support the recommendations for further surveys.

Executive summary

Arbtech Consulting Limited was originally commissioned by Willmott Dixon Construction Limited to undertake a Preliminary Ecological Appraisal (PEA) at Warneford Hospital, Warneford Lane, Headington, Oxford, Oxfordshire, OX3 7JX. The survey was completed on 23/09/2020. The aim of the survey was to complete an Extended Phase 1 Habitat survey of the survey area (all land that will be impacted by the proposals) and analyse this against a desk study to assess any ecological constraints. An update to the survey was requested by GBS Health +.



Contents

1.0 Introduction and Context..... 6

 1.1 Background..... 6

 1.2 Site Context 6

 1.3 Scope of the report..... 6

 1.4 Project Description 7

2.0 Methodology..... 7

 2.1 Desk Study methodology..... 7

 2.2 Site Survey methodology..... 7

 2.3 Suitability Assessment 7

 2.4 Limitations – evaluation of the methodology 8

3.0 Results and Evaluation 9

 3.1 Desk Study Results..... 9

 3.2 Designated sites..... 9

 3.3 Landscape 10

 3.4 Historical records..... 13

 3.5 Field Survey Results 14

 3.6 Site descriptions and photos 14

 3.7 Protected species evidence 20

4.0 Conclusions, Impacts and Recommendations 21

 4.1 Informative guidelines..... 21

 4.2 Evaluation 21

5.0 Bibliography 25

 Appendix 1: Phase 1 Habitat Survey Map 27

 Appendix 2: Proposed Site Plan 28

 Appendix 3: Desk Study Information 30

 Appendix 4: Legislation and Planning Policy 34

1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was originally commissioned by Willmott Dixon Construction Limited to undertake a Preliminary Ecological Appraisal (PEA) at Warneford Hospital, Warneford Lane, Headington, Oxford, Oxfordshire, OX3 7JX. The survey was completed on 23/09/2020. The aim of the survey was to complete an Extended Phase 1 Habitat survey of the survey area (all land that will be impacted by the proposals) and analyse this against a desk study to assess any ecological constraints. An update to the survey was requested by GBS Health +.

1.2 Site Context

The site is located at National Grid Reference SP 53866 05968 and has an area of approximately 0.2ha. The site consists of an existing open area on an existing hospital site. There is a small garden area to the south of the site in addition to areas of amenity planting to the north east with mature trees to the east forming part of the site boundary.

1.3 Scope of the report

This report describes the baseline ecological conditions at the site; evaluates habitats within the survey area in the context of the wider environment; and describes the suitability of those habitats for notable or protected species. It identifies significant ecological impacts as a result of the development proposals; summarises the requirements for further surveys and mitigation measures, to inform subsequent mitigation proposals, achieve planning or other statutory consent, and to comply with wildlife legislation.

The aim of the PEA was to obtain data on existing ecological conditions, and to conduct a preliminary assessment of the likely significance of ecological impacts on the proposed development. Establishing the baseline conditions for future monitoring. To achieve this, the following steps were taken:

- The desk study area and field survey area (generally 50m from the site boundary/proposed footprint and including the 'zone of influence' of the scheme) have been identified.
- A desk study has been carried out.
- Baseline information on the site and surrounding area has been recorded through an 'Extended Phase 1 Habitat Survey', including a Phase 1 Habitat Survey (JNCC 2010) and recording further details in relation to notable or protected habitats and species.
- The ecological features present within the survey area have been evaluated where possible (CIEEM, December 2017).
- Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act) have been identified.
- Likely impacts on features of value, as a result of the development proposals, have been identified.
- Recommendations for further survey and assessment have been made.
- Recommendations for mitigation and opportunities for enhancement have been provided based on current information.

A survey plan is presented in Appendix 1, proposed plans in Appendix 2, desk study results in Appendix 3 and a summary of relevant legislation is presented in Appendix 4.

1.4 Project Description

The development proposals is for the erection of a two-storey annex to the existing Highfield Unit to provide 8No bed Paediatric Intensive Care Unit. A planning application is being prepared for submission to Oxford City Council.

2.0 Methodology

2.1 Desk Study methodology

The desk study informing the survey conclusions consists of a review of nearby statutory and non-statutory designated sites, Biodiversity Action Plan (BAP), Priority Habitats and granted EPSML records held on the magic.gov.uk database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

2.2 Site Survey methodology

The survey was undertaken by Elen Griffin BSc (Hons), consultant - accredited agent to Natural England Bat Licence Number: 2016-22119-CLS-CLS.

The methodology for the Phase 1 Habitat Survey is based on the best practice publication Phase 1 Habitat Survey Methodology (JNCC, 2010). All land parcels are described and mapped according to JNCC Phase 1 Habitat Classification. Where appropriate, target notes provide supplementary information on habitat conditions, features too small to map to scale, species composition, structure and management.

During the survey, habitats were assessed for their suitability to support protected species, and field signs indicating their presence recorded. The assessment takes into consideration the findings of the desk study, the habitat conditions on site and in the context of the surrounding landscape, and the ecology of the protected species. The likelihood of the presence of protected species is ranked; the habitats on site are evaluated against their likelihood to provide suitable habitat for protected species.

The ecological value of the survey area has been assessed based on the Guidelines for Ecological Impact Assessment (CIEEM, 2018), and the Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring (Hill, 2005), using geographic frames of reference. The biodiversity value of any identified designated sites, habitat types and associated species assemblages has been considered. The distribution and extent of invasive species listed on Schedule 9 of the Wildlife and Countryside Act (1981 as amended 1996) were also noted throughout the survey area.

2.3 Suitability Assessment

The habitats on site were evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat. The likelihood of the occurrence of protected species is ranked according to the criteria listed in Table 1 below.

Table 1: showing criteria considered when assessing the likelihood of occurrence of protected species

Present	Species are confirmed as present from the current survey or historical confirmed records.
High	Habitat and features of high quality for species or species assemblage. Species known to be present in wider landscape (desk study records). Good quality surrounding habitat and good connectivity.
Medium	Habitat and features of moderate quality. The site in combination with surrounding land provides all habitat or ecological conditions required by the species or assemblage. Within known national distribution of species and local records in desk study area. Limiting factors to suitability, including small area of suitable habitat, some severance or poor connectivity with wider landscape, poor to moderate habitat suitability in local area.
Low	Habitats within the survey area poor quality. Few or no records from data search. Despite above, presence cannot be discounted as within national range, all required features or conditions present on site and in surrounding landscape. Limiting factors could include isolation, poor quality landscape, or disturbance.
Negligible	Very limited poor-quality habitats and features. No local records from desk study; site on edge of, or outside, national range. Surrounding habitats considered unlikely to support species or species assemblage.

2.4 Limitations – evaluation of the methodology

It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

A biological records data search was not commissioned by the client, therefore historical records of protected species have not been factored into this report. The recommendations in this report aim to compensate for the lack of biological records.

These limitations have been taken into account during the evaluation of the site and requirement for further surveys.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results is provided below, full details are presented in Appendix 3.

3.2 Designated sites

Details of any statutory and non-statutory designated sites within a 2km radius of the survey site, including their reasons for notification, are provided in Table 2 below.

Table 2: Designated sites within 2km radius of the site

Designated Site Name	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
Statutory Sites		
Lye Valley Local Nature Reserve (LNR) and Site of Special Scientific Interest (SSSI)	~823m east	<i>Lye Valley is one of the best recorded examples of a calcareous valley fen in southern England, a nationally rare and threatened habitat which is virtually confined to parts of Oxfordshire, East Anglia and North Wales. The area has been studied by botanists since the 17th century and aroused particular interest during Victorian times. Over 300 species of vascular plants have been recorded at different periods, including many which are strongly associated with calcareous fens and are uncommon in southern Britain, although several have not been recorded for many years.</i>
Magdalen Quarry Local Nature Reserve (LNR) and Site of Special Scientific Interest (SSSI)	~1707m north east	<i>The classic geological site exposes three important rock units (Beckley Sand, Shell Pebble Bed and the Wheatley Limestone) approximately 145 million years old (Upper Jurassic age). The study of the rock sequence at Magdalen Quarry has provided valuable information which has enabled geologists to partially reconstruct the geography of Upper Jurassic times, when much of the area that is now Oxfordshire was covered by a warm, shallow sea. Similar conditions to those found in the Bahama Banks today are believed to have existed at the time. Most importantly, the rock units at this site indicate the presence of a reef structure in this area, formed by growth on the sea bed of an upstanding mound of lime-secreting, marine organisms, such as corals. The proximity of the reef is indicated by the rapid changes in thickness and composition of some of the rock layers, reflecting the importance of the reef as an active source of sedimentary debris. The uppermost unit, the Wheatley limestone, represents a deposit accumulating along the northern flank of the reef. The site is therefore of major importance in the geographical reconstruction of this ancient sea. Furthermore, the presence of fossil ammonites, and more specifically <i>Cardioceras densiplicatum</i>, is important in enabling the deposits to be accurately placed within the Upper Jurassic rock succession.</i>
Magdalen Grove Site of Special Scientific Interest (SSSI)	~1934m north west	<i>Fossiliferous sediments underlying the Summertown-Radley Terrace of the Upper Thames have been exploited by shallow workings in the north-western corner of Magdalen Grove. These form part of an important and controversial stratigraphy recognised in the deposits of this terrace, which has been claimed to provide evidence for the existence of a formerly unrecognised inter-glacial stage in the British Late Middle Pleistocene. The sediments at Magdalen Grove are richly fossiliferous, yielding mammal bones, mollusca and pollen. Although probably representing the tributary Cherwell, they have been correlated with deposits at Stanton Harcourt, in the valley of the main river. The fossil assemblage from the Eynsham Gravel indicates that it was deposited during the penultimate interglacial (correlated with Oxygen Isotope Stage 7 of the 'deep sea' record). This interglacial is a recently identified episode midway between the Hoxnian and Ipswichian Interglacials of the traditional Pleistocene record.</i>

Designated Site Name	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
Rock Edge Local Nature Reserve (LNR) and Site of Special Scientific Interest (SSSI)	~1108m north east	<i>This geologically important site exposes an Upper Jurassic coral-rich limestone known as the Coral Rag, believed to be approximately 145 million years old. The study of the rock sequence at Rock Edge (or Cross Roads) Quarry has provided valuable information which has enabled geologists to partially reconstruct the geography of 145 million years ago, when much of the area that is now Oxfordshire was covered by a warm, shallow sea. Similar conditions to those found in the Bahama Banks today are believed to have existed at the time. At Rock Edge the Coral Rag is rich in fossil remains, derived from corals reefs that formed in the ancient shelf sea. Close examination reveals the presence of two types of limestone, reflecting the close proximity of the reef margin. One variety consists primarily of coarse fragments broken off the reef, whilst the other is finer grained, representing the lime sand accumulating on the sea bed a short distance from the reef. Actual in situ reefs were previously visible in quarries located a few metres to the south. The study of this crucial site has helped to demonstrate the existence of the so-called 'Headington reef' in this area during Upper Jurassic times.</i>
Brasenose Wood and Shotover Hill Site of Special Scientific Interest (SSSI)	~1790m east	<i>Brasenose Wood has a well defined coppice-with-standards structure and is one of the few English woods which is still actively managed by this traditional method. The greater part of the wood is an ancient remnant of Shotover Forest with a documented history dating back to the thirteenth century. The wood lies on poorly-drained Kimmeridge clays but oolitic limestone occurs close to the south western boundary and the presence of lime-loving plants suggests that it outcrops elsewhere in the wood. The flora is exceptionally rich for a wood of this size with 221 recorded vascular plant species including 46 which are characteristic of ancient woodland.</i>
New Marston Meadows Site of Special Scientific Interest (SSSI)	~1626m north west	<i>New Marston Meadows are a series of agriculturally unimproved neutral meadows on the flood plain of the River Cherwell which forms a natural corridor through the centre of Oxford. Within the floodplain calcareous clayey soils have formed on alluvium overlying terrace gravels. The meadows are still traditionally managed as summer-grazed pasture and fen or for hay, the different management practices giving rise to variations in plant communities between the fields. Further, subtle changes in topography create conditions which support a range of swamp and grassland types which are of national importance</i>
Non-statutory Sites		
None known.		

3.3 Landscape

A review of the designated sites, aerial photographs (Figure 1), the magic.gov.uk database and OS maps has been undertaken. Collated together, the site's local habitat is described below:

The site is in a predominantly residential area of Headington, east of Oxford city centre. The landscape is dominated by residential buildings, with areas of scattered parkland and scattered woodland copses and tree lines, which could be used for foraging and commuting.

Boundary Brook runs approximately 225m east of the proposed development site which will provide abundant insect foraging for several protected species.

Table 3: priority habitat inventory within 2km (Magic.gov.uk):

Habitat	Closest distance from site
Deciduous Woodland	Adjacent to southern site boundary
National Forest Inventory	Adjacent to southern site boundary
Good quality semi-improved grassland	~820m south
Lowland fens	~850m east
Ancient Woodland	~1380m east
Coastal and floodplain grazing marsh	~1730m south-west
Lowland meadows	~1920m south-east



Figure 1: Aerial photo of site, showing landscape structure

3.4 Historical records

Thames Valley Environmental Records Centre (TVERC) was not commissioned to provide protected species records for within 2km of the site. This was primarily due to the relatively small scale of the proposed development and lack of expected impact upon protected species.

Table 4: Historical records* within 2km of the site

Taxon Group	Common name	Scientific binomial	Record details
Not required.			

*Records from the past 10 years

A search of the magic.gov.uk database for granted European Protected Species Mitigation Licences (EPSMLs) within a 2km radius of the site has been completed. Displaced protected species from Licenced sites <2km away from the survey site will find alternative habitat either within the mitigation measures implemented as part of the licence or will relocate to other suitable habitat in close proximity to the licenced site. The EPSML records show that two bat roosts have been destroyed within 2km involving common pipistrelle and brown long-eared bats. Displaced bats from these roosts could find suitable roosting habitat on site. There have also been two GCN licenced sites within 2km.

Table 5: Granted EPSMLs within 2km of the site

Case reference of granted application	Approx. distance from site	Bat Species Effected	Licence Start Date:	Licence End Date:	Impacts allowed by licence
2015-13852-EPS-MIT	1480m south-west	BLE,C-PIP	16/09/2015	31/10/2021	Damage of resting place
2017-28235-EPS-MIT	1760m north-east	GCN	04/04/2017	30/04/2019	Destruction of a resting place
EPSM2009-922	1770m north-east	GCN	19/06/2009	30/09/2010	Destruction of a resting place

3.5 Field Survey Results

The site consists of one building with a small garden area to the south of the site in addition to areas of amenity planting to the north east with mature trees to the east forming part of the site boundary and is illustrated in the map in Appendix 1. The weather conditions recorded at the time of the survey are shown in Table 6.

Table 6: Weather conditions during the survey

Date: 23/09/2020	
Temperature	15°C
Relative Humidity	87%
Cloud Cover	100%
Wind	10mph
Rain	None

3.6 Site descriptions and photos

B4/J1.2 – Improved/Amenity Grassland

A large area of improved/amenity grassland is present to the north east of the site. The area has previously been the site of a planted wildflower meadow but has since been closely mown in preparation for the development.



J1.2 Amenity grassland

An area to the south east of the proposed annex is currently used as a working garden for the hospital residents.

**J5 & A1 Hard standing and scattered trees**

Further areas of parking are present to the west of the proposed development. A number of silver birch trees are present along the western boundary that have been planted as part of a previous development.



A1.3 Broadleaved scattered trees

There are a number of scattered broadleaved trees directly adjacent to the south of the proposed development site these include Ash and Oak.

A large number of various trees including fruit trees are present behind the boundary fence of the development site.

The trees immediately adjacent to the proposed development site were inspected from ground-level to assess their potential to support roosting bats.



A3 Parkland and scattered trees (off site)

A large area of parkland is present to the south east of the proposed development. The area will remain unaffected by the proposed development.

**J5, J3.6 & A1 Parking, building and scattered broadleaved trees**

A number of other buildings are present around the development site along with areas of hard standing used for hospital parking. Further scattered trees are present to the north east of the development site, these were also assessed from the ground for their potential to support roosting bats.



J3.6 Buildings

B1 Exterior

The photo opposite shows the area of B1 directly adjacent to the proposed annex.

B1 is a modern brick-built building with a box profile sheet roof.



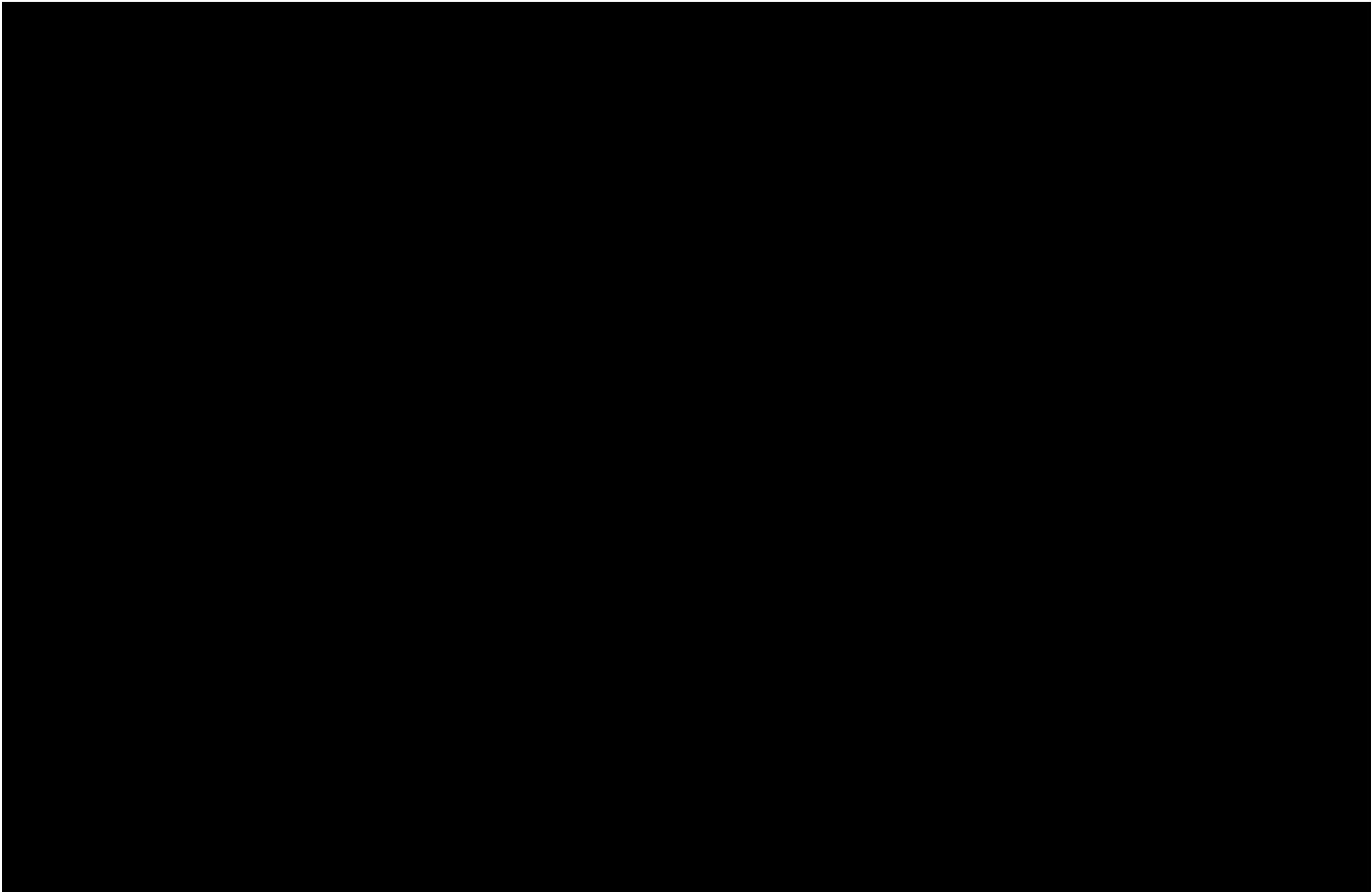
J3.6 Buildings

B1 north east gable elevation (pictured opposite).

The area pictured is the location of the proposed covered walkway that will connect the existing building to the proposed annex. The brick work and box profile sheeting is in good condition with no gaps suitable for bats. Although there are gaps between the wood cladding the felt lining below looks to be in good condition with no gaps suitable for roosting bats.

The wood cladding above the door is in good condition and tightly fitted providing no suitable roosting features for bats.





4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

Likelihood of the presence of protected species

Where physical evidence of the presence of protected species is indeterminate during the survey, the habitats on site are evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat. The likelihood of occupancy of protected species is ranked according to the criteria listed in Table 1.

Where this report supports a planning application, the ecological interest of the study area (including the survey area) and the proposed development has also been evaluated in terms of the planning policies relating to biodiversity. It is clearly stated where a preliminary value can be given and where further information is required.

Appropriate justification for this assessment is provided in Section 2.3 and Table 1 of this report.

4.2 Evaluation

Taking the desk study and site survey results into account, the following conclusions for ecological factors has been reached.

Table 7: Evaluation of site

Ecological Factor	Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations	Enhancements The Local Planning Authority has a duty to ask for enhancements under the NPPF (2019)
Designated sites	Due to technical issues with magic.co.uk it has not been possible at this time to undertake a desk study	n/a	n/a	n/a
Notable habitats and plants	Due to technical issues with magic.co.uk it has not been possible at this time to undertake a desk study	n/a	n/a	n/a
Invasive / Non-native species	No invasive and non-native species recorded on site.	n/a	n/a	n/a
Bats	B1 has negligible habitat value for roosting bats. The mature trees directly adjacent to the proposed development site provide suitable foraging and commuting habitat.	Bats are very unlikely to be roosting within this building and as such, there are not anticipated to be any impacts on bats as a result of the proposed works. No suitable roosting features were identified within the mature trees directly adjacent to the proposed development site however the trees do provide	No further surveys required. Security lighting during and after the development should be limited and directed away from the surrounding mature trees. In the unlikely event that a bat or evidence of bats is discovered during the development all work must stop and a bat licenced	The installation of a minimum of two Schwegler bat boxes on mature trees around the site boundaries will provide additional roosting habitat for bats e.g. <ul style="list-style-type: none"> • 2F Schwegler Bat Box • 1FF Schwegler Bat Box • 2FN Schwegler Bat Box. Or a similar alternative brand Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly

		suitable commuting and foraging habitat.	ecologist contacted for further advice. Any security lighting required during and after the development should be limited and directed away from the existing mature trees.	direction with a clear flight path to and from the entrance.
Birds	No evidence of nesting birds was found during the survey, however blackbird, robin and starling were seen/heard on site. The mature trees and orchard area to the east of the site does provide suitable nesting and foraging habitat. It is noted that the mature trees surrounding the development are to be retained.	None.	None.	Install three Schwegler or similar bird boxes on retained trees/buildings on site e.g. <ul style="list-style-type: none"> • Schwegler No 17 swift nest box • Schwegler 1SP Sparrow Terrace • Schwegler 1B nest boxes • Schwegler 2H Robin Boxes Nest boxes should be positioned approximately 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. Small-hole boxes are best placed approximately 1-3m above ground on an area of the tree trunk where foliage will not obscure the entrance hole.
Reptiles	No suitable habitat for common reptiles.	None.	None.	Waste materials created during the development e.g. log piles, brash, rocks etc. Can be used to create hibernacula and refugia for common reptiles. These should be positioned on the site boundaries below the existing hedgerow which will be retained.
Amphibians	No suitable habitat on site for amphibians. A review of arial maps identified two ponds within 500m of the development site, however due to the lack of suitable habitat on site GCN and other amphibians are unlikely to be found on site.	None.	None.	As above.

<p>Water Vole No suitable habitat.</p>	<p>Water Vole None.</p>	<p>Water Vole None.</p>	<p>Water Vole None.</p>
<p>Otter No suitable habitat.</p>	<p>Otter None.</p>	<p>Otter None.</p>	<p>Otter None.</p>
<p>Hedgehogs Habitats directly adjacent to the site may provide suitable habitat for hedgehogs therefore hedgehogs may use the site for commuting.</p>	<p>Hedgehogs The proposed development may result in the loss of commuting habitat for hedgehogs. Any hedgehogs present during the works could be injured or killed.</p>	<p>Hedgehogs None.</p> <p>However the following recommendations are given in order to mitigate against potential harm to hedgehogs during the development works.</p> <ul style="list-style-type: none"> • Any trenches dug should either be covered at night or have a rough sawn plank placed in them to act as a ramp for any wildlife which may fall in. • Security lighting to be directed away from the undergrowth. 	<p>Hedgehogs Gaps should be created in new boundary fences to provide commuting routes through the developed site/new garden areas of the developed site for hedgehogs. Hedgehog houses should be incorporated into the developed site positioned beneath the hedgerow boundaries/site boundaries/in shady areas of the new gardens.</p>

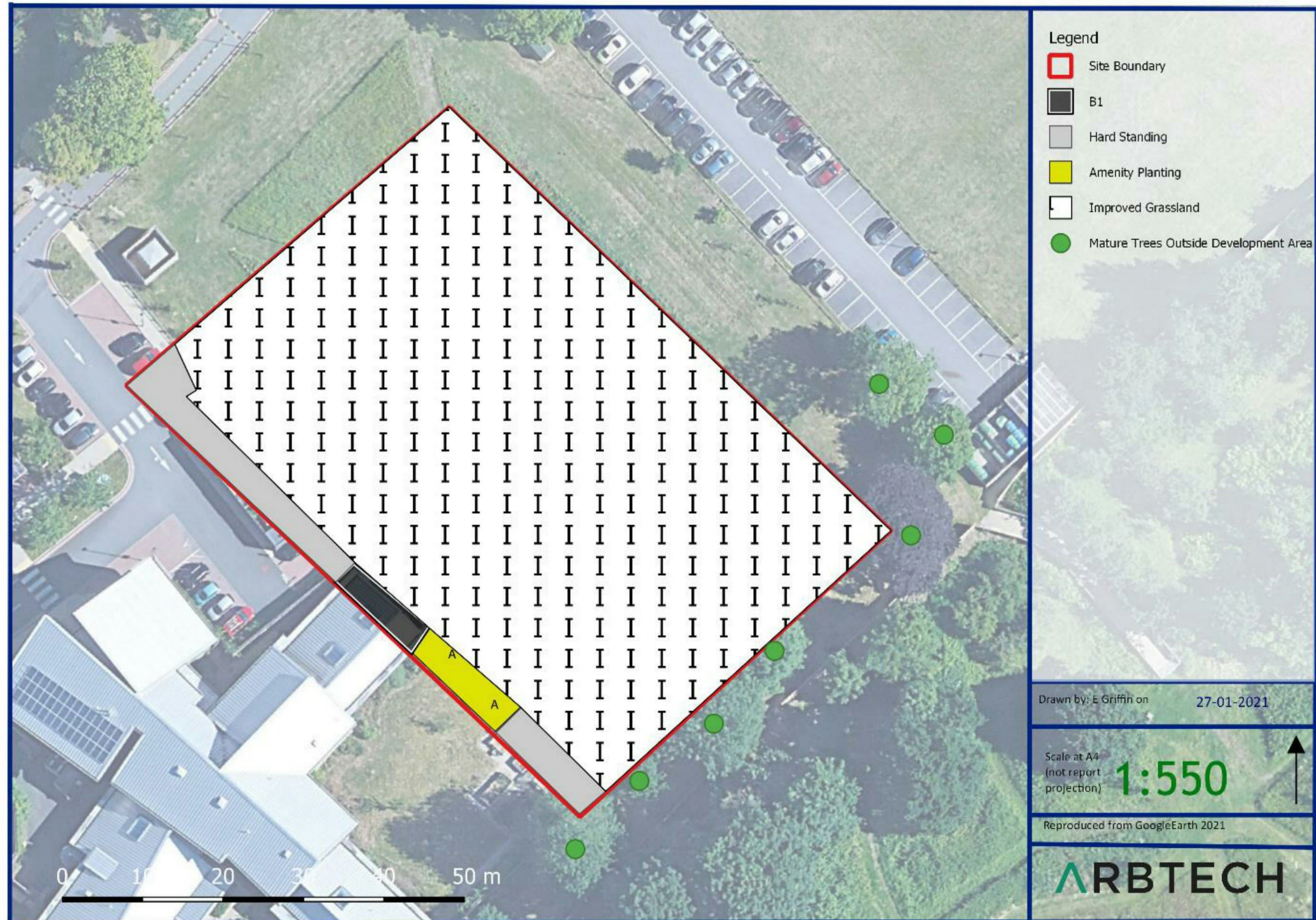
			<ul style="list-style-type: none">• Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.	
--	--	--	---	--

5.0 Bibliography

- British Trust for Ornithology (2016) www.bto.org/about-birds/nbw/putting-up-a-nest-box
- BS 42020, Biodiversity – Code of practice for planning and development (2013) <http://www.eoebiodiversity.org/pdfs/BS42020.pdf>
- Cheffings, C. and Farrell, L. (eds.) (2005) The Vascular Plant Red Data List for Great Britain. Joint Nature Conservation Committee, Peterborough.
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. Chartered Institute of Ecology and Environmental Management, Winchester. <https://www.cieem.net/data/files/ECIA%20Guidelines.pdf>
- CIEEM (2018) Guidelines for Preliminary Ecological Appraisal Institute of Ecology https://www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf
- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists — Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London. <https://www.bats.org.uk/resources/guidance-for-professionals/bat-surveys-for-professional-ecologists-good-practice-guidelines-3rd-edition>
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected? <http://biodiversitybydesign.co.uk/cmsAdmin/uploads/protection-for-bat-habitat-sep-2007.pdf>
- Google Earth (2021) accessed on 27/01/2021.
- Gregory R.D., et al (2009). Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. <https://www.bto.org/sites/default/files/u12/bocc3.pdf>
- HMSO: Wildlife and Countryside Act 1981 (as amended 01.04.1996) <http://jncc.defra.gov.uk/page-1377>
- HMSO: The Protection of Badgers Act 1992 (as amended) <http://www.legislation.gov.uk/ukpga/1992/51/contents>
- HMSO: Countryside & Rights of Way Act (2000) <http://jncc.defra.gov.uk/page-1378>
- HMSO: Natural Environmental and Rural Communities Act (2006) <http://www.legislation.gov.uk/ukpga/2006/16/contents>
- HMSO: Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 <https://www.legislation.gov.uk/uksi/2019/579/contents/made>
- JNCC (2004) Bat Workers Manual, 3rd Edition. <http://jncc.defra.gov.uk/page-2861>
- Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey a technique for environmental audit. http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf
- Magic database (2021) <http://www.magic.gov.uk/MagicMap.aspx> accessed on 27/01/2021.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.
- National Planning Policy Framework (2019) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

- Natural England (2007). Badgers and Development a Guide to Best Practice and Licensing. Natural England. Bristol. <http://www.wildlifeco.co.uk/wp-content/uploads/2014/03/badgers-and-development.pdf>
- Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000) Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10(4), 143-155. <https://www.thebhs.org/publications/the-herpetological-journal/volume-10-number-4-october-2000/1617-03-evaluating-the-suitability-of-habitat-for-the-great-crested-newt-triturus-cristatus/file>
- Paul Edgar, Jim Foster and John Baker (2010). Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth <http://downloads.gigl.org.uk/website/Reptile%20Habitat%20Management%20Handbook.pdf>
- Tom Langton, Catherine Beckett and Jim Foster (2001). Great Crested Newt Conservation Handbook. Froglife. Suffolk. http://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf

Appendix 1: Phase 1 Habitat Survey Map



Appendix 2: Proposed Site Plan



GIA
 Ground Floor 662m²
 First Floor 74m²
 TOTAL 736m²

Name	Room No.	Area	Code
Office	001	100	001
Office	002	100	002
Office	003	100	003
Office	004	100	004
Office	005	100	005
Office	006	100	006
Office	007	100	007
Office	008	100	008
Office	009	100	009
Office	010	100	010
Office	011	100	011
Office	012	100	012
Office	013	100	013
Office	014	100	014
Office	015	100	015
Office	016	100	016
Office	017	100	017
Office	018	100	018
Office	019	100	019
Office	020	100	020
Office	021	100	021
Office	022	100	022
Office	023	100	023
Office	024	100	024
Office	025	100	025
Office	026	100	026
Office	027	100	027
Office	028	100	028
Office	029	100	029
Office	030	100	030
Office	031	100	031
Office	032	100	032
Office	033	100	033
Office	034	100	034
Office	035	100	035
Office	036	100	036
Office	037	100	037
Office	038	100	038
Office	039	100	039
Office	040	100	040
Office	041	100	041
Office	042	100	042
Office	043	100	043
Office	044	100	044
Office	045	100	045
Office	046	100	046
Office	047	100	047
Office	048	100	048
Office	049	100	049
Office	050	100	050
Office	051	100	051
Office	052	100	052
Office	053	100	053
Office	054	100	054
Office	055	100	055
Office	056	100	056
Office	057	100	057
Office	058	100	058
Office	059	100	059
Office	060	100	060
Office	061	100	061
Office	062	100	062
Office	063	100	063
Office	064	100	064
Office	065	100	065
Office	066	100	066
Office	067	100	067
Office	068	100	068
Office	069	100	069
Office	070	100	070
Office	071	100	071
Office	072	100	072
Office	073	100	073
Office	074	100	074
Office	075	100	075
Office	076	100	076
Office	077	100	077
Office	078	100	078
Office	079	100	079
Office	080	100	080
Office	081	100	081
Office	082	100	082
Office	083	100	083
Office	084	100	084
Office	085	100	085
Office	086	100	086
Office	087	100	087
Office	088	100	088
Office	089	100	089
Office	090	100	090
Office	091	100	091
Office	092	100	092
Office	093	100	093
Office	094	100	094
Office	095	100	095
Office	096	100	096
Office	097	100	097
Office	098	100	098
Office	099	100	099
Office	100	100	100

Oxford Health
 ICU
 Warneford Hospital
 REVISED GA PLAN
 GBS health +
 6955 240A



3D View North East



3D View South East



3D View South West



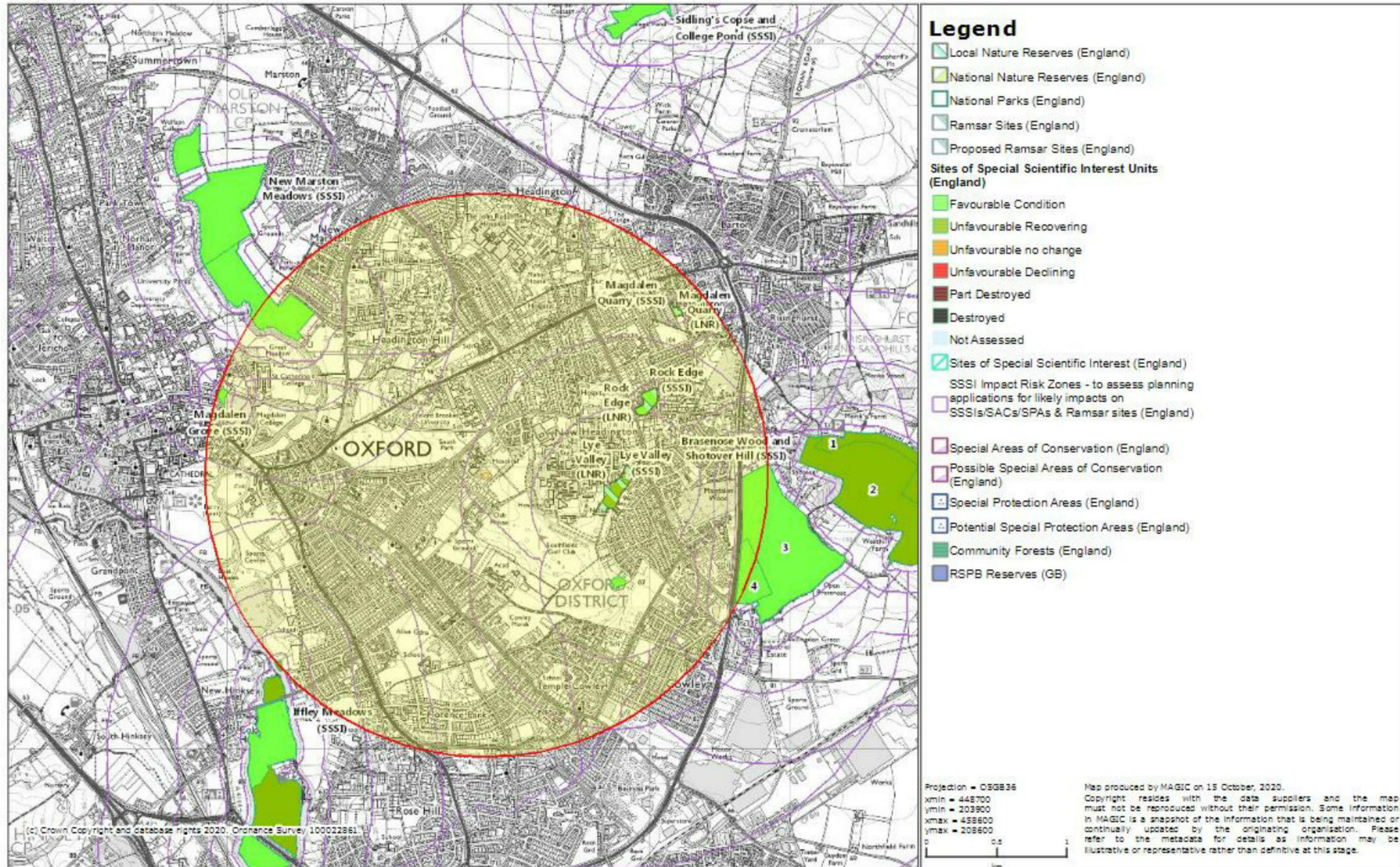
3D View North West

	FIRST ISSUE	18	08/1/21	A
	revision	1	18/1/21	
Oxford Health NHS Foundation Trust, Highfield PICU Extension, Warneford Hospital, Oxford	GBS health +			
Proposed 3D Images	Oxford office: 32 Thomas Hook, 8 Backer Street, Oxford, OX1 1PP			
	T: 01865 301131 F: 01865 340420			
	www.gbshealth.co.uk			
scale	date DEC 2020	author		6955.110A

Appendix 3: Desk Study Information

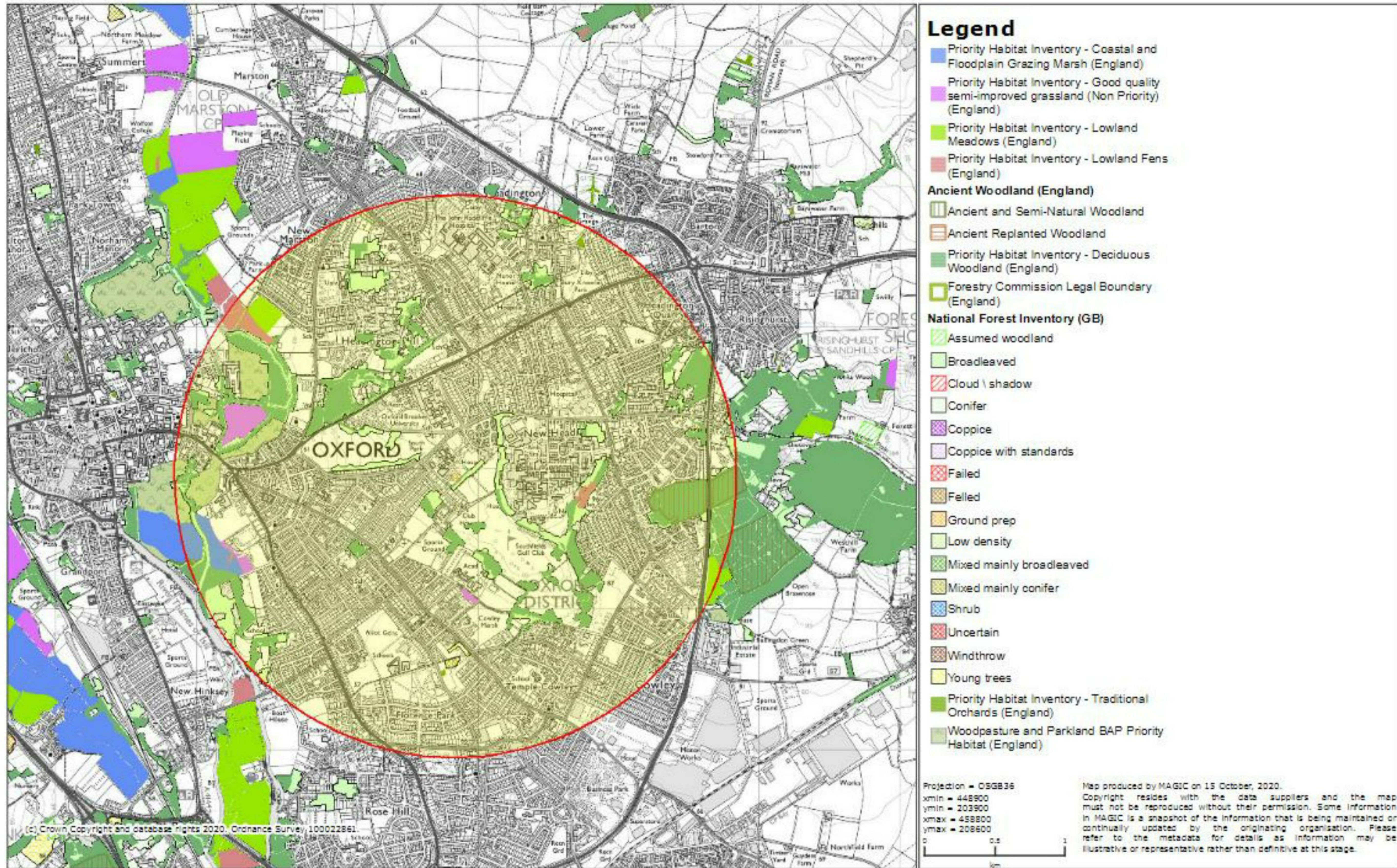
MAGiC

Designated Sites



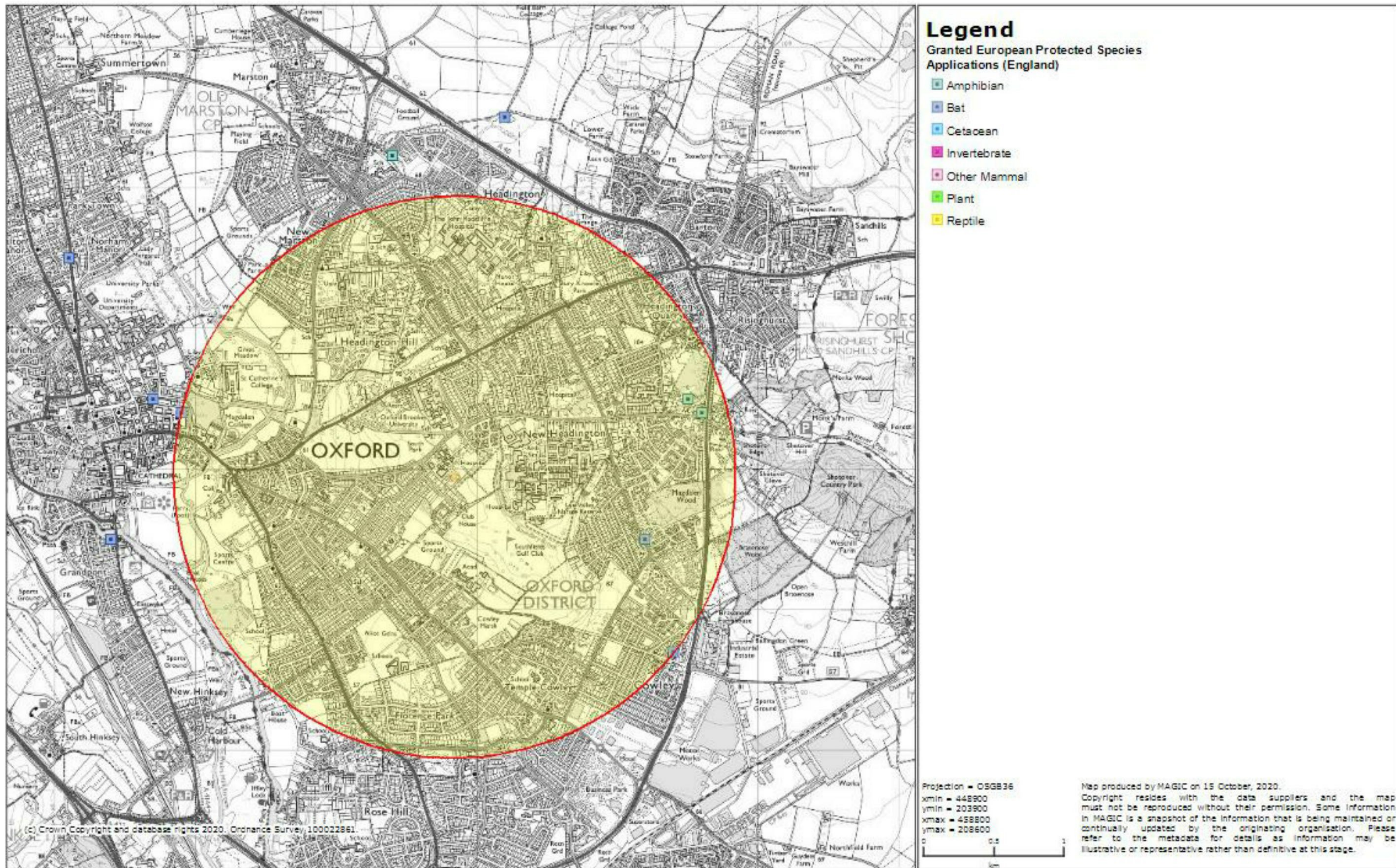
MAGiC

Priority Habitats



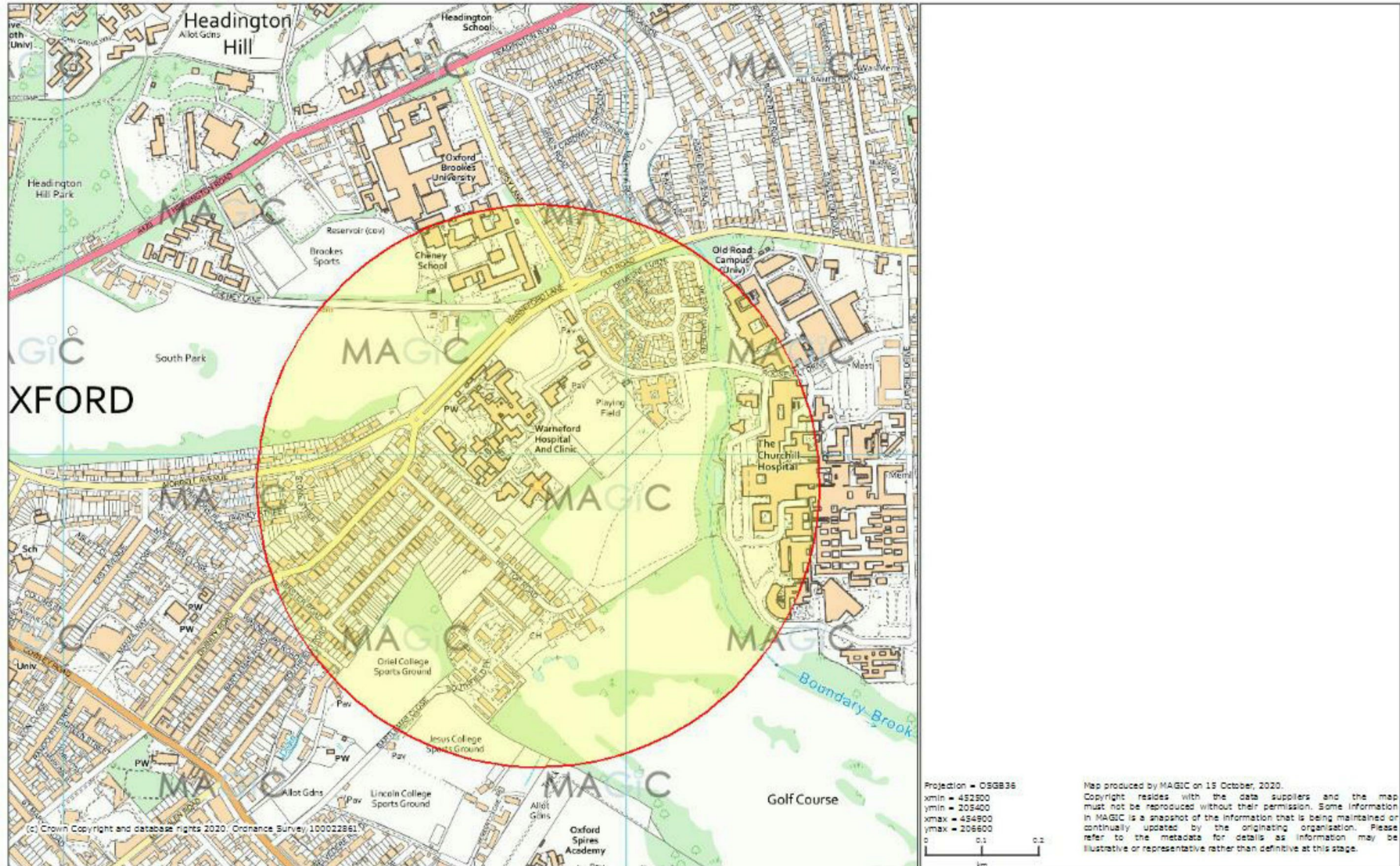
MAGiC

Granted EPSLs



MAGiC

Ponds



Appendix 4: Legislation and Planning Policy

LEGAL PROTECTION

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe. Over 1,000 animal and plant species, as well as 200 habitat types, listed in the directive's annexes are protected in various ways:

Annex II species (about 900): core areas of their habitat are designated as sites of Community importance (SCIs) and included in the Natura 2000 network. These sites must be managed in accordance with the ecological needs of the species.

Annex IV species (over 400, including many annex II species): a strict protection regime must be applied across their entire natural range within the EU, both within and outside Natura 2000 sites.

Annex V species (over 90): Member States must ensure that their exploitation and taking in the wild is compatible with maintaining them in a favourable conservation status.

SPAs are classified under Article 2 of the Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds both for rare bird species (as listed on Annex I) and for important migratory species.

SACs and SPAs up to 12 nautical miles from the coast (i.e. 'territorial waters') are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2017 which consolidate all amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994.

The Conservation of Offshore Marine Habitats and Species Regulations 2017 consolidate and update the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007. The 2017 Regulations introduce amendments which transfer responsibility for European nature conservation in the Welsh offshore region to Welsh Ministers. This gives Welsh Ministers similar powers in Welsh offshore waters to those currently exercised by Scottish Ministers in Scottish offshore waters. These regulations transpose into national law Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive), and elements of Council Directive 2009/147/EC on the conservation of wild birds (Wild Birds Directive) in the UK offshore area. They came into force on 30th November 2017. These regulations apply to the UK's offshore marine area which covers waters beyond 12 nautical miles, within British Fishery Limits and the seabed within the UK Continental Shelf Designated Area. The Conservation of Habitats and Species Regulations 2017 form the legal basis for the implementation of the Habitats and Birds Directives in terrestrial areas and territorial waters out to 12nm in England and Wales (including the inshore marine area) and to a limited extent in Scotland and Northern Ireland.

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as "*areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres*".

However, they may also include riparian and coastal zones. Ramsar sites are statutorily protected under the Wildlife & Countryside Act 1981 (as amended 01.04.1996) with further protection provided by the Countryside and Rights of Way (CROW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. The Government in England and Wales has issued policy statements which ensure that Ramsar sites are afforded the same protection as areas designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs). Further provisions for the protection and management of SSSIs have been introduced by the Nature Conservation (Scotland) Act 2004.

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect 'important' countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species

The Habitats Directive

The EC Habitats Directive aims to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those species of European importance. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (the Conservation Regulations) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). The following notes are relevant for all species protected under the EC Habitats Directive:

In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.

The Habitats Regulations do not define the act of 'migration' and, therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.

In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests':

- The action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment;
- There is no satisfactory alternative; and
- The action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1979, implemented 1982) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.
- Intentionally or recklessly obstruct or prevent any wild bird from using its nest (Scotland only)

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC) and are commonly referred to as “Schedule 1” birds.

This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young
- Intentional or reckless disturbance of dependent young of such a bird
- In Scotland only, intentional or reckless disturbance whilst lekking
- In Scotland only, intentional or reckless harassment

Effects on development works:

Works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Reptiles (Amphibians and reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita*, pool frog *Pelophylax lessonae* and great crested newt *Triturus cristatus* receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of reptiles are protected solely under Schedule 5, Section 9(1) & (5) of the WCA, i.e. the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. It is prohibited to:

- Intentionally or recklessly kill or injure these species.

Effects on development works:

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect the breeding sites or resting places amphibian and reptile species protected under Habitats Regulations. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the WCA.

Water voles

The water vole *Arvicola terrestris* is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

Effects on development works:

If development works are likely to affect habitats known to support water voles, the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters *Lutra lutra* are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

An EPSM Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species

- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

An EPSM Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works are likely to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Dormice

Hazel Dormice *Muscardinus avellanarius* are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales (NB: Hazel Dormouse are entirely absent from Scotland)). The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White clawed crayfish

There is a considerable amount of legislation in place in an attempt to protect the White-clawed crayfish *Austropotamobius pallipes*. This species is listed under the European Union's (EU) Habitat and Species Directive and is listed under Schedule 5 of the Wildlife and Countryside Act (1981). This makes it an offence to:

- Protected against intentional or reckless taking
- Protected against selling, offering or advertising for sale, possessing or transporting for the purpose of sale

It is also classified as Endangered in the IUCN Red List of Endangered Species. As a result of this and other relevant crayfish legislation such as the Prohibition of Keeping of Live Fish (Crayfish) Order 1996, a series of licences are needed for working with White-clawed and non-native crayfish. These are:

- A licence to handle crayfish (therefore survey work) in England
- A licence for the keeping of crayfish in England and Wales with an exemption for Signal crayfish (England).
- People in the post-code areas listed with crayfish present prior to 1996 do not need to apply for consent for crayfish already established. It does not, however, allow any new stocking of non-native crayfish into waterbodies. Consent for trapping of non-native crayfish for control or consumption is most likely to be granted in Thames and Anglian regions in the areas with "go area" postcodes.
- Harvesting of crayfish is prohibited in much of England and in any part of Scotland and Wales.

Effects on development works:

The relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the works.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation afforded to Plants

With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only)
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof
- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
 - Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
 - Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

Effects on development works:

An EPSM licence will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for works which are likely to affect species of plants listed on Schedule 5 of the Conservation of Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Invasive Species

Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*

Effects on development works:

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site, however, it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any land owner or occupier may be required prevent the spread of certain 'injurious weeds' including (but not limited to):

- Spear thistle *Cirsium vulgare*
- Creeping thistle *Cirsium arvense*
- Curled dock *Rumex crispus*
- Broad-leaved dock *Rumex obtusifolius*
- Common ragwort *Senecio jacobaea*

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

National Planning Policy Framework (ENGLAND)

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

Scottish Planning Policy (Published: 23 Jun 2014)

The SPP sits alongside the Scottish Government planning policy documents. The National Planning Framework (NPF) provides a statutory framework for Scotland's long-term spatial development. The NPF sets out the Scottish Government's spatial development priorities for the next 20 to 30 years.

A Natural, Resilient Place - Valuing the Natural Environment (National Planning Framework Context) Paragraph 193. The natural environment forms the foundation of the spatial strategy set out in NPF3. The environment is a valued national asset offering a wide range of opportunities for enjoyment, recreation and sustainable economic activity. Planning plays an important role in protecting, enhancing and promoting access to our key environmental resources, whilst supporting their sustainable use.

Policy Principles: Paragraph 194. The planning system should:

- Facilitate positive change while maintaining and enhancing distinctive landscape character;
- **Conserve and enhance protected sites and species, taking account of the need to maintain healthy ecosystems and work with the natural processes which provide important services to communities;**
- Promote protection and improvement of the water environment, including rivers, lochs, estuaries, wetlands, coastal waters and groundwater, in a sustainable and co-ordinated way;
- Seek to protect soils from damage such as erosion or compaction;
- Protect and enhance ancient semi-natural woodland as an important and irreplaceable resource, together with other native or long-established woods, hedgerows and individual trees with high nature conservation or landscape value;
- Seek benefits for biodiversity from new development where possible, including the restoration of degraded habitats and the avoidance of further fragmentation or isolation of habitats; and
- Support opportunities for enjoying and learning about the natural environment.

Planning Policy Wales (Draft 2018)

Paragraph 5.42 of the document refers to Biodiversity and Ecological Networks and states:

The planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement. Addressing the consequences of climate change should be a central part of any measures to conserve biodiversity and the resilience of ecosystems. Information contained in The State of Natural Resources Report (SoNaRR) (published by Natural Resources Wales and Area Statements should be taken into account. Development plan strategies, policies and individual development proposals must take into account the need to:

- Promote the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- Ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- Ensure statutorily designated sites are properly protected and managed;
- Safeguard protected species; and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil; and
- Seek enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.

Environment (Wales) Act 2016 and the Biodiversity Duty

The Environment (Wales) Act introduces a new biodiversity duty, which highlights biodiversity as an essential component of ecosystem resilience. This new duty replaces the biodiversity duty in the Natural Environment and Rural Communities Act 2006 (referred to as the NERC Act). Part 1 of the Act deals with Sustainable management of natural resources including Biodiversity and Resilience of Ecosystems Duty. The Environment Act enhances the current NERC Act duty to require all public authorities, when carrying out their functions in Wales, to seek to “maintain and enhance biodiversity” where it is within the proper exercise of their functions. In doing so, public authorities must also seek to “promote the resilience of ecosystems”. As under the NERC Act the new duty will apply to a range of public authorities such as the Welsh Ministers, local authorities, public bodies and statutory undertakers. This ensures that biodiversity is an integral part of the decisions that public authorities take in relation to Wales. It also links biodiversity with the long term health and functioning of our ecosystems, therefore helping to align the biodiversity duty with the framework for sustainable natural resource management provided in the Act.

Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty)

5.44 Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. Planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:

- a) Diversity between and within ecosystems;
- b) The connections between and within ecosystems;
- c) The scale of ecosystems;

- d) The condition of ecosystems (including their structure and functioning); and
- e) The adaptability of ecosystems.

5.45 In fulfilling this duty, planning authorities must have regard to:

- a) The list of habitats of principal importance for Wales, published under Section 7 of the Environment (Wales) Act 2016;
- b) The State of Natural Resources Report (SoNaRR), published by NRW; and
- c) Any Area Statement that covers all or part of the area in which the authority exercises its functions.

5.46 A proactive approach towards facilitating the delivery of biodiversity and resilience outcomes should be taken by all those participating in the planning process. In particular, planning authorities should demonstrate that they have sought to fulfil the duties and requirements of Section 6 of the Environment Act by taking all reasonable steps to maintain and enhance biodiversity in the exercise of their functions. The broad framework for implementing the duty and building resilience through the planning system includes addressing:

- Diversity: to ensure mechanisms are in place to minimise further loss and that circumstances allow for species' populations to expand and recolonise their natural range (former range) or adapt to future change. This means development should provide a net benefit for biodiversity, and at the very least, with no significant loss of habitats or populations of species, locally or nationally;
- Extent: to ensure mechanisms allow for the maintenance of existing assets and networks and promote the restoration of damaged, modified or potential habitat and the creation of new habitat. This means that planning choices should incorporate measures which seek the creation and restoration of green networks and linkages between habitats and maintaining and
- enhancing other green infrastructure features and networks;
- Condition: this is more complex to address, not least because of the interactions of various factors which underpin habitats. At the very least planning approaches should not compromise the condition of ecosystems. By taking an integrated approach to development, for example, which considers both direct and wider impacts and benefits it should be possible to make a positive contribution through the planning system; and
- Connectivity: to take opportunities to develop functional habitat and ecological networks across landscapes, building on existing connectivity and quality and encouraging habitat creation and restoration. The opportunities could include enlarging habitat areas, developing buffers around designated sites or other biodiversity assets or corridors (including transport and river corridors) and the creation of 'stepping stones' which will strengthen the ability of habitats and ecological networks to adapt to change, including climate change.