

Land at Hanwell Fields, Banbury
(1006007-01)

Ecological Appraisal

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Executive Summary

- i) **Introduction.** Aspect Ecology has been commissioned by Manor Oak to undertake an Ecological Appraisal in respect of proposed development of land at Hanwell Fields, Banbury, Oxfordshire.
- ii) **Proposals.** The proposals are for development of the site to provide new residential development of up to 117 dwellings, for which an outline planning application is proposed with all matters apart from access reserved for future consideration.
- iii) **Survey.** The site has been surveyed on a number of occasions between August 2020 and September 2023, based on standard extended Phase 1 methodology. In addition, a general appraisal of faunal species was undertaken to record the potential presence of any protected, rare or notable species, with specific surveys conducted in respect of bats, reptiles and Badger.
- iv) **Ecological Designations.** The site itself is not subject to any statutory or non-statutory ecological designations. No identified statutory ecological designations are located within 5km of the site. The nearest non-statutory designation is Fishponds Wood, Hanwell Local Wildlife Site (LWS), which is located approximately 0.7km north west of the current site boundary. All of the ecological designations in the surrounding area are physically well separated from the site and are therefore unlikely to be adversely affected by the proposals.
- v) **Habitats.** The site forms the eastern part of a semi-improved grassland field, with other habitats including boundary hedgerows and scattered scrub. Features of ecological importance include the hedgerows and associated trees, which are to be retained under the proposals and will be protected during construction, with only small sections removed to facilitate access. This will be compensated by new hedgerow planting which will link with the existing / retained hedgerows. Further, substantial new native planting and wildlife habitats are proposed (including enhancement of additional offsite land), in order to ensure biodiversity net gains as calculated using the Defra metric calculator.
- vi) **Protected Species.** The internal areas of the site generally offer limited opportunities for protected species, albeit on the basis of the survey work undertaken, potential opportunities or confirmed use of the site by badger, bats and common nesting birds have been recorded. Accordingly, a number of recommendations and measures are set out in regard to these species in order to ensure they are fully considered and safeguarded under the proposals. Long-term nesting opportunities will be maintained, if not enhanced, under the proposals through new landscape planting and favourable management of habitats and provision of nest boxes.
- vii) **Enhancements.** The proposals present the opportunity to secure a number of biodiversity net gains, including additional native tree planting, new roosting opportunities for bats, and more diverse nesting habitats for birds. The proposals have been considered using the Metric 4.0 calculator, which demonstrates that in combination with offsetting/offsite provision, the development can achieve a substantial calculated net gain in area habitat and hedgerow units.
- viii) **Summary.** In summary, the proposals have sought to minimise impacts on biodiversity and subject to the implementation of appropriate avoidance, mitigation and compensation measures, it is considered unlikely that the proposals will result in significant harm.

1 Introduction

1.1 Background and Proposals

1.1.1 Aspect Ecology has been commissioned by Manor Oak Homes Ltd to undertake an Ecological Appraisal in respect of proposed development of land located north of Dukes Meadow Drive, Hanwell Fields in the north of Banbury, centred at grid reference SP 448 427 (see Plan 6007-01/ECO1), hereafter referred to as 'the site'.

1.1.2 The site is proposed for residential development, including the construction of up to 117 dwellings and associated infrastructure and open space (see Appendix 6007-01/1), for which an outline planning application is proposed, with all matters apart from access reserved for future consideration. The proposals essentially form the second phase of proposed development within the wider landholding, following the recent granting of planning permission for up to 78 new dwellings and associated works within the adjacent land immediately south of the current site boundary.

1.1.3 The site was originally surveyed in August 2020 in order to inform the progression development proposals, with further surveys undertaken during July 2021 to August 2022, the results of which were set out within a previous version of this report (most recently dated September 2022), which was submitted to inform a planning application for a previous development scheme at the site of up to 179 dwellings and associated works. Following consultations associated with the previous scheme, revised development proposals have been developed for a reduced scheme (for the construction of up to 117 new dwellings and associated works) including in order to address a number of issues previously raised. Accordingly, this report has been updated in order to reflect the revised development proposals.

1.2 Site Overview

1.2.1 The site is located in north Oxfordshire within an urban-edge context at the north of Hanwell Fields in Banbury. The site is bounded to the north by arable farmland, beyond the existing northern field boundary hedgerow, whilst Dukes Meadow Drive and associated verges are located adjacent to the southern boundaries, beyond which is existing commercial and residential development and open space within the north of Banbury. East of the site is an area of managed sports pitches and pavilion forming Hanwell Fields Recreation Ground. The western site boundary is relatively undefined on the ground, located internally within the existing grassland field (albeit with the offsite land sloping upwards from the site in line with the wider topography of the field), with further grassland therefore extending offsite to the west of the current site boundary.

1.2.2 The site itself is dominated by semi-improved grassland, forming the eastern parts of a single existing former agricultural field with other habitats including boundary hedgerows and scrub.

1.3 Purpose of the Report

1.3.1 This report documents the methods and findings of the baseline ecology surveys and desktop study carried out in order to establish the existing ecological interest of the site, and subsequently provides an appraisal of the likely ecological effects of the proposals. The importance of the habitats and species present is evaluated. Where necessary, avoidance, mitigation and compensation measures are proposed so as to safeguard any significant existing ecological interest within the site and where appropriate, opportunities for

ecological enhancement are identified with reference to national conservation priorities and local Biodiversity Action Plans (BAPs).

2 Methodology

2.1 Desktop Study

- 2.1.1 In order to compile background information on the site and its immediate surroundings, Thames Valley Environmental Records Centre (TVERC) was contacted, with data requested on the basis of a search radius of 2km.
- 2.1.2 Information on statutory designations was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC) database, which utilises data provided by Natural England, with an extended search radius (25km). In addition, the MAGIC database was searched to identify the known presence of any Priority Habitats within or adjacent the site.
- 2.1.3 In addition, the Woodland Trust database was searched for any records of ancient, veteran or notable trees within or adjacent to the site.
- 2.1.4 Where information has been received from the above organisation(s) this is reproduced at Appendix 6007-01/2 and on Plan 6007-01/ECO2, where appropriate.

2.2 Habitat Survey

- 2.2.1 The site has been surveyed over a number of visits from August 2020 to August 2022 in order to ascertain the general ecological value of the land contained within the boundaries of the site and to identify the main habitats and ecological features present. In addition, a further brief update survey visit was undertaken in September 2023 in order to update the position and identify any significant changes that may have taken place.
- 2.2.2 The site was surveyed based on standard Phase 1 Habitat Survey methodology¹, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail through Phase 2 surveys. This method was extended, in line with the Guidelines for Preliminary Ecological Appraisal² to record details on the actual or potential presence of any notable or protected species or habitats.
- 2.2.3 Using the above method, the site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified. The nomenclature used for plant species is based on the Botanical Society for the British Isles (BSBI) Checklist.

2.3 Faunal Surveys

- 2.3.1 General faunal activity, such as mammals or birds observed visually or by call during the course of the surveys was recorded. Specific attention was also paid to the potential presence of any protected, rare or notable species, and specific consideration was given to bats, Badger and common reptiles, as described below.

¹ Joint Nature Conservation Committee (2010, as amended) 'Handbook for Phase 1 habitat survey: A technique for environmental audit.'

² Chartered Institute for Ecology and Environmental Management (CIEEM) (2013) 'Guidelines for Preliminary Ecological Appraisal.'

Bats³

2.3.2 **Trees.** Trees were assessed for their suitability to support roosting bats based on the presence of features such as holes, cracks, splits or loose bark. Suitability for roosting bats was rated based on relevant guidance⁴ as:

- Negligible;
- Low;
- Moderate; or
- High.

2.3.3 Any potential roost features identified were also inspected for any signs indicating possible use by bats, e.g. staining, scratch marks, bat droppings, etc.

Reptiles⁶

2.3.6 Given the presence of potentially suitable reptile habitat within the site, specific survey work was undertaken to establish the presence/absence of common reptile species at the site and adjacent survey area during September and October 2021.

2.3.7 A total of 120 sheets of thick roofing felt (each measuring a minimum of approximately 0.5m x 0.5m) were placed within suitable areas across the site to act as artificial refugia throughout the survey period (see Plan 6007-01/ECO4). The refugia, or 'tins', provide

³ Surveys based on: English Nature (2004) '*Bat Mitigation Guidelines*' and Collins, J. (ed.) (2016) '*Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn).' Bat Conservation Trust

⁴ Collins, J. (ed.) (2016) '*Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn).' Bat Conservation Trust

⁵ Based on: Mammal Society (1989) '*Occasional Publication No. 9 – Surveying Badgers*'

⁶ Surveys based on: Froglife Advice Sheet 10 (1999) '*Reptile Survey - an introduction to planning, conducting and interpreting surveys for snake and lizard conservation.*'

shelter and heat up more quickly than their surroundings in the morning and can remain warmer than their surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask under and raise their body temperature, which allows them to forage earlier and later in the day. Therefore, checking the refugia at appropriate times of the day (morning and evening) enables the presence/absence of common reptiles to be determined.

- 2.3.8 The refugia remained undisturbed for approximately 1-2 weeks to allow reptiles to find and start using them. Following this initial bedding-in period, refugia were checked at appropriate times of the day on a total of 9, as set out below in Table 2.1.

Table 2.1. Reptile survey dates and weather conditions.

Survey Date	Weather Conditions			
	Wind (BF)	Temp(°C)	Cloud Cover (%)	Precipitation
21/09/2021	2	15-16	25	Dry
22/09/2021	2	11-13	95	Dry
28/09/2021*	3	12-14	95	Dry
29/09/2021*	3	12-13	25	Dry
01/10/2021	3	13-14	15	Dry
04/10/2021	3	10-11	10	Dry
06/10/2021	2	11-13	15	Dry
12/10/2021	3	10-11	90	Dry
14/10/2021	2	10-12	95	Dry

*BF0 = calm, BF12 = hurricane force. * NB See constraints below – partial survey only due to prior removal of a number of mats.*

- 2.3.9 In addition, reptiles basking in the open or partial cover were actively searched for in suitable locations across the site through direct observation. Existing natural objects (e.g. logs and rocks) and artificial refugia (e.g. debris, tyres, etc.) were also searched, where present, for reptiles or evidence of reptiles (e.g. sloughed skin).

2.4 Survey Constraints and Limitations

- 2.4.1 All of the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent during different seasons. The Phase 1 habitat survey was undertaken within the optimal season therefore allowing a robust assessment of habitats and botanical interest across the site.
- 2.4.2 Attention was paid to the presence of any invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). However, the detectability of such species varies due to a number of factors, e.g. time of year, site management, etc., and hence the absence of invasive species should not be assumed even if no such species were detected during the Phase 1 survey.
- 2.4.3 In regard to the reptile survey work, during the period between the surveys on 22 September and 28 September 2021, vegetation within the field was cut, such that a number of the refugia within the survey area (including within the current site boundary) were affected. Accordingly, the survey visits undertaken on 28 and 29 September incorporated a reduced number of refugia within the survey area. The refugia were therefore replaced and an additional 2 survey visits added (making a total of 9) to ensure that a total of 7 survey visits were undertaken across the full number of refugia in line with standard guidance (albeit the partial surveys undertaken on 28 and 29 September are therefore additional and

provide further confidence in the result). Accordingly, overall the reptile survey work undertaken is considered to provide a robust assessment of the current status of reptiles at the site.

2.5 Ecological Evaluation Methodology

2.5.1 The evaluation of ecological features and resources is based on professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this report is based on that described by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018)⁷, which involves identifying 'important ecological features' within a defined geographical context (i.e. international, national, regional, county, district, local or site importance). For full details refer to Appendix 6007-01/3.

2.6 National Policy Approach to Biodiversity in the Planning System

2.6.1 The National Planning Policy Framework (NPPF)⁸ describes the Government's national policies on 'conserving and enhancing the natural environment' (Chapter 15). NPPF is accompanied by Planning Practice Guidance on 'Biodiversity, ecosystems and green infrastructure' and ODPM Circular 06/2005⁹.

2.6.2 NPPF takes forward the Government's strategic objective to halt overall biodiversity loss¹⁰, as set out at Paragraph 174, which states that planning policies and decisions should contribute to and enhance the natural and local environment by:

'minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'

2.6.3 The approach to dealing with biodiversity in the context of planning applications is set out at Paragraph 180:

'When determining planning applications, local planning authorities should apply the following principles:

- a) *if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- b) *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;*

⁷ CIEEM (2018) 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine', ver. 1.2, Chartered Institute of Ecology and Environmental Management, Winchester

⁸ Ministry of Housing, Communities & Local Government (2021) 'National Planning Policy Framework'

⁹ ODPM (2006) 'Circular 06/2005: Planning for Biodiversity and Geological Conservation – A Guide to Good Practice'

¹⁰ DEFRA (2011) 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services'

- c) *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*
- d) *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.'*

2.6.4 The above approach encapsulates the 'mitigation hierarchy' described in British Standard BS 42020:2019¹¹, which involves the following step-wise process:

- **Avoidance** – avoiding adverse effects through good design;
- **Mitigation** – where it is unavoidable, mitigation measures should be employed to minimise adverse effects;
- **Compensation** – where residual effects remain after mitigation it may be necessary to provide compensation to offset any harm; and
- **Enhancement** – planning decisions often present the opportunity to deliver benefits for biodiversity, which can also be explored alongside the above measures to resolve potential adverse effects.

2.6.5 The 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 (BS 42020:2019, section 5.5).

2.7 Local Policy

2.7.1 Policy of relevance to ecology at the site can be found within the 'Cherwell Local Plan 2011 – 2031', which sets out an overall strategy to guide development across the district until 2031, and was formally adopted by Cherwell District Council on 20 July 2015 (Policy Bicester 13 being re-adopted on 19 December 2016). The following policies of the Local Plan are of particular relevance to ecology:

2.7.2 **Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment** states:

'Protection and enhancement of biodiversity and the natural environment will be achieved by the following:

- *In considering proposals for the development, a net gain in biodiversity will be sought by protecting, managing, enhancing and extending existing resources, and by creating new resources*
- *The protection of trees will be encouraged, with an aim to increase the number of trees in the District*
- *The reuse of soils will be sought*
- *If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or as a last resort, a compensated for, then development will not be permitted.*

¹¹ British Standards Institution (2013) 'Biodiversity – Code of practice for planning and development', BS 42020:2019

- *Development which would result in damage to or loss of a site of international value will be subject to the Habitats Regulations Assessment process and will not be permitted unless it can be demonstrated that there will be no likely significant effects on the international site or that effects can be mitigated*
- *Development which would result in damage or loss of a site of biodiversity or geological value of national importance will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site and the wider national network of SSSIs and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity*
- *Development which would result in damage to or loss of a site of biodiversity or geological value of regional or local importance including habitats of species of principle importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity*
- *Development proposals will be expected to incorporate features to encourage biodiversity, and retain and where possible enhance existing features of nature conservation value within the site. existing ecological networks should be identified and maintained to avoid habitat fragmentation, and ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity*
- *Relevant habitat and species surveys and associated reports will be required to accompany planning applications which may affect a site, habitat or species of known or potential ecological value*
- *Air quality assessments will also be required for development proposals that would be likely to have a significantly adverse impact on biodiversity by generating an increase in air pollution*
- *Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourable*
- *A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management.'*

2.7.3 Policy ESD 11: Conservation Target Areas states:

Where development is proposed within or adjacent to a Conservation Target Area biodiversity surveys and a report will be required to identify constraints and opportunities for biodiversity enhancement. Development which would prevent the aims of a Conservation Target Area being achieved will not be permitted. Where there is potential for development, the design and layout of the development, planning conditions or obligations will be used to secure biodiversity enhancement to help achieve the aims of the Conservation Target Area.'

2.7.4 The site is not located within or adjacent to any identified Conservation Target Area based on the adopted information.

2.7.5 Policy ESD 17: Green Infrastructure states:

The District's green infrastructure network will be maintained and enhanced through the following measures:

- *Pursuing opportunities for joint working to maintain and improve the green infrastructure network, whilst protecting sites of importance for nature conservation*

- *Protecting and enhancing existing sites and features forming part of the green infrastructure network and improving sustainable connectivity between sites in accordance with policies on supporting a modal shift in transport (Policy SLE4: Improved Transport and Connections), open space, sport and recreation (Policy BSC10: Open Space, Outdoor Sport and Recreation Provision), adapting to climate change (Policy ESD1: Mitigating and Adapting to Climate Change), SuDS (Policy ESD7: Sustainable Drainage Systems (SuDS)), biodiversity and the natural environment (Policy ESD10: Protection and Enhancement of Biodiversity and the Natural Environment), Conservation Target Areas (Policy ESD11: Conservation Target Areas), heritage assets (Policy ESD15) and the Oxford Canal (Policy ESD16)*
- *Ensuring that green infrastructure network considerations are integral to the planning of new development. Proposals should maximise the opportunity to maintain and extend green infrastructure links to form a multi-functional network of open space, providing opportunities for walking and cycling, and connecting the towns to the urban fringe and the wider countryside beyond*
- *All strategic development sites (Section C: 'Policies for Cherwell's Places') will be required to incorporate green infrastructure provision and proposals should include details for future management and maintenance.*

3 Ecological Designations

3.1 Statutory Designations

Description

- 3.1.1 The statutory designations of ecological importance that occur within the vicinity of the site are shown at Appendix 6007-01/2 and on Plan 6007-01/ECO2.
- 3.1.2 No identified statutory ecological designations of nature conservation importance are located within 5km of the site. (Neithrop Fields Cutting Site of Special Scientific Interest (SSSI), is located approximately 0.9km south west of the site, however is designated for geological reasons and is therefore not of ecological relevance, albeit in any event it is well-removed from the site).
- 3.1.3 Natural England has developed Impact Risk Zones (IRZs) as an initial tool to help assess the risk of developments adversely affecting SSSIs, taking into account the type and scale of developments. The site is not located within any identified IRZ of relevance to new residential development.

Evaluation

- 3.1.4 The site itself is not subject to any statutory ecological designations. All statutory ecological designations in the surrounding area are well removed from the site and separated by existing development and given the nature and scale of the proposals, all such identified designations are unlikely to be affected.

3.2 Non-statutory Designations

Description

- 3.2.1 The non-statutory designations of nature conservation interest that occur within the vicinity of the site are shown on Plan 6007-01/ECO2.
- 3.2.2 The nearest non-statutory nature conservation designation to the site is Fishponds Wood, Hanwell Local Wildlife Site (LWS), which is located approximately 0.75km north west of the current site boundary at its closest point. The LWS is designated on the basis of the medieval fishponds, one of which is noted to contain an island supporting pines with nesting herons. The remaining ponds are reported to be made up mostly of dry and wooded areas with a variety of characteristic flora including Giant Butterbur *Petasites japonicus*, Plott's Elm *Ulmus plottii*, Broad-leaved Helleborine *Epipactis helleborine* and impressive displays of Snowdrop *Galanthus nivalis*.
- 3.2.3 The site is not located within any identified (CTA). The closest identified CTA to the site is the North Cherwell CTA, a small part of which extends within approximately 50m of the eastern site boundary.

Evaluation

- 3.2.4 The site itself is not subject to any non-statutory nature conservation designations. All non-statutory designations in the surrounding area are well removed and separated from the site, including by existing development and given the nature and scale of the proposals, all such designations are unlikely to be adversely affected as a result of the proposals.

- 3.2.5 A number of Conservation Target Areas (CTAs) have been identified within Oxfordshire, which provide a focus for coordinated delivery of biodiversity enhancements where greatest gains are considered to be achievable rather than identifying any current ecological value. As set out above, the site is not located within any identified CTA.
- 3.2.6 Comments received in relation to previous proposals at the site requested that information be provided to illustrate how the development will "secure biodiversity enhancement to help achieve the aims of the Conservation Target Area", in line with Policy ESD 11. Notwithstanding that the site is located entirely outside of the CTA (and therefore clearly cannot contribute towards the targets for habitat measures within the CTA), Table 3.1, below provides a summary in regard to the individual targets associated with the CTA. Where possible, it is anticipated that the measures set out will be incorporated into the detailed landscaping/SUDs features at the appropriate design stage, including as set out at Chapter 6., below:

Table 3.1. Consideration of the site in regard to targets associated with the North Cherwell CTA.

Identified Target associated with North Cherwell CTA	Consideration in regard to the site
1. Floodplain Grazing Marsh – restoration and management for breeding waders and wintering wildfowl	The site is clearly located outside of, and removed from the floodplain and separated from existing waterbodies and watercourses, whilst the topography (situated on sloping ground) is such that no potential exists for restoration and management of this priority habitat type regardless of the proposals. Nonetheless, the proposed attenuation basin within the eastern (lower) parts of the site will provide new wildflower grassland subject to periodic inundation, within closest proximity to the CTA.
2. Lowland Meadow – management, restoration and creation for botanical value and breeding Curlew	The proposals incorporate the retention, enhancement and management of wildflower grassland habitats (see below), albeit the location, size and setting are such that the site is extremely unlikely to provide potential for use by breeding Curlew.
3. River – management and restoration	The site does not contain, nor is it located adjacent to any Rivers or other watercourses and accordingly, it is clear that no potential exists for the proposals to contribute towards this target.
4. Reedbed – management and creation.	The site does not contain, nor is it situated adjacent to any existing reedbeds. Nonetheless, potential the provision of attenuation areas at the east of the site to incorporate new areas of reedbed habitat could be investigated as part of the detailed design/reserved matters stage.
5. Pond – creation and management	It is understood that ground conditions are such that the proposed attenuation features could be designed to incorporate permanent standing water, which could be designed and managed for the benefit of wildlife (subject to flood drainage requirements) as part of the detailed design/reserved matters stage if required, in line with the measures set out at Chapter 6., below.

3.3 Hanwell Brook Wetland

- 3.3.1 Consultation comments received in regard to previous development proposals at the site note that the site is located in proximity to an area known as Hanwell Brook Wetland, with particular reference to potential for hydrological impacts (given the sloping topography), along with recreational pressures associated with increased visitor pressure. Hanwell Brook Wetland is not in receipt of any formal ecological designation, albeit represents an area

which has been subject to improvements for wildlife and people as part of the Wild Banbury Project, funded by Cherwell District Council. The site is located approximately 150m west of Hanwell Fields Wetlands, from which it is separated by the existing Hanwell Fields Recreation Ground.

3.3.2 In regard to hydrological input, it is acknowledged that the topography of the site slopes down to the east, such that drainage flow will be in the direction of Hanwell Brook Wetland. No permanent watercourse is present connecting the 2 areas, albeit a ditch is present along the southern site boundary, which likely directs existing surface water flows from the site towards the Hanwell Brook. Flood risk and surface water management information in regard to the proposed development is set out within the Flood Risk Assessment (Martin Andrews Consulting Ltd, Ref: 802-FRA-01-D, Rev D October 2023), which confirms the proposed drainage strategy for the site, including SUDS and surface water attenuation to restrict surface water run-off from the site to greenfield equivalent rates and ensure no increase in surface water run-off (including in the direction of Hanwell Brook) as a result of the development. Further, as set out within the Flood Risk Assessment, all parts of the development will discharge via an online swale and detention basin prior to discharging into the designated outfall and accordingly, the proposed drainage strategy will provide an acceptable level of water quality treatment to prevent pollution. Further details and specific measures would be reviewed at the detailed (reserved matters) stage in order to confirm (and potentially further increase) the level of water quality treatment provided, thereby providing confidence that the proposals would not result in any adverse hydrological effects on offsite receptors, including Hanwell Brook Wetlands.

3.3.3 In regard to recreational pressures, it is noted that Hanwell Brook Wetland forms an area that has been specifically enhanced for wildlife *and people*, including measures to encourage and assist access by local residents. In particular, Hanwell Brook Wetland is well-serviced by boardwalks and paths, which direct visitor movement and is therefore well-placed to accommodate visitors, whilst substantial further/alternative accessible open space is present within the surrounding areas within Hanwell Fields (including Hanwell Fields Recreation Ground and in line with Policy R1 of the adopted Local Plan 1996). It is therefore unlikely that the proposals would result in any significant adverse recreational effects on Hanwell Brook Wetland.

3.4 Priority Habitats, Ancient Woodland and Notable Trees

Description

3.4.1 No identified ancient woodland is located within 2km of the site. A single mature Ash *Fraxinus excelsior* (T2), located offsite within the wider land under the control of the applicant, approximately 150m west of the current site boundary, is identified as a notable tree on the Woodland Trust database. Specific arboricultural information has been prepared in order to inform the proposed development (e.g. "*Land North of Dukes Meadow Drive, Banbury: Arboricultural Impact Assessment*", Aspect Arboriculture Ltd, dated August 2022 – ref: 10791_AIA.002), which confirms tree T2 possesses a large trunk diameter in comparison to others of the same species along with features commensurate with veteran status. In addition, a further single mature Ash (T17) located offsite in close proximity to north western site boundary is similarly identified to possess a large trunk diameter in comparison to others of the same species along with features commensurate with veteran status. Accordingly, both T2 and T17 are considered to represent veteran trees. No other notable or veteran trees have been identified within the proximity of the site based on the desktop information available. The site does not contain any priority habitats identified on the MAGIC database.

Evaluation

- 3.4.2 Tree T2 is located outside of, and removed from the current development site boundary and accordingly, will remain unaffected under the current proposals. Tree T17 is similarly located outside of the current site boundary, albeit in close proximity to the proposed open space within the north western boundary. The tree will be retained and protected (including adjacent to a substantial buffer of open space, including an identified veteran tree buffer zone in relation to arboricultural considerations). Subject to the implementation of appropriate mitigation measures (as discussed below, and within the associated arboricultural information prepared by Aspect Arboriculture Ltd in relation to the proposed development) trees T2 and T17 will be fully safeguarded and it is therefore unlikely that any Priority Habitats or any notable or veteran trees will be significantly affected by the proposals.

3.5 Summary

- 3.5.1 In summary, the site itself is not subject to any statutory or non-statutory ecological designations and, subject to the implementation of appropriate mitigation measures (as described above), it is unlikely that any such designations, priority habitats, ancient woodland or notable/veteran trees will be significantly affected by the proposals.

4 Habitats and Ecological Features

4.1 Background Records

4.1.1 No specific records of any protected, rare or notable plant species from within or immediately adjacent to the site are included within the information returned from the Records Centre. A number of records of notable species were returned from TVERC including the Wildlife and Countryside Act 1981 Schedule 8 Species Bluebell *Hyacinthoides non-scripta* and the England Red Listed Species Common Valerian *Valeriana officinalis*, Sainfoin *Onobrychis viciifolia*, Wild Pansy *Viola tricolor*, Ragged-robin *Silene flos-cuculi*, Stinking Chamomile *Anthemis cotula*, Prickly Poppy *Papaver argemone*, Lesser Spearwort *Ranunculus flammula*, Dwarf Spurge *Euphorbia exigua*, Corn Marigold *Glebionis segetum* and Hairy Rock-cress *Arabis hirsuta*, none of which have been recorded within or adjacent to the site on the basis of the information received.

4.2 Overview

4.2.1 The habitats and ecological features present within the site are described below and evaluated in terms of whether they constitute an important ecological feature and their level of importance, taking into account the status of habitat types and the presence of rare plant communities or individual plant species of elevated interest. The likely effects of the proposals on the habitats and ecological features are then assessed. The value of habitats for the fauna they may support is considered separately in Chapter 5 below.

4.2.2 The following habitats/ecological features were identified within/adjacent to the site:

- Semi-improved Grassland (Other Neutral Grassland);
- Hedgerows and Trees; and
- Scrub.

4.2.3 The locations of these habitat types and features are illustrated on Plan 6007-01/ECO3 and described below.

4.3 Priority Habitats

4.3.1 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places duties on public bodies to have regard to the conservation of biodiversity in the exercise of their normal functions. In particular, Section 41 of the NERC Act requires the Secretary of State to publish a list of habitats which are of principal importance for conservation in England. This list is largely derived from the 'Priority Habitats' listed under the former UK Biodiversity Action Plan (BAP), which continue to be regarded as priority habitats under the subsequent country-level biodiversity strategies.

4.3.2 Of the habitats within the site, hedgerows are considered to qualify as Priority Habitats and therefore constitute important ecological features. This is discussed further in the relevant habitat sections below.

4.4 Semi-improved Grassland (Other Neutral Grassland)

Description

- 4.4.1 The vast majority of the site is formed by semi-improved grassland located on an east facing slope, forming the lower parts of a single field. Over the course of the survey work, the sward height was noted to vary according to the progression of management, with periods of tall sward noted, interspersed with uniform short vegetation following regular agricultural management (including during August 2021 and June 2022). The eastern areas of grassland in particular were noted to support frequent low colonising/encroaching scrub and Bramble at times, with considerable bare ground evident following occasional cutting and management (both in 2021 and 2022). The grassland sward was originally recorded to be largely dominated by False Oat-grass *Arrhenatherum elatius*, with frequent Perennial Ryegrass *Lolium perenne*, Yorkshire Fog *Holcus lanatus*, Cock's-foot *Dactylis glomerata* and Meadow Grass *Poa sp.*, albeit bare and disturbed ground was noted to be frequent, resulting from irregular cutting and agricultural management (particularly following removal of colonising scrub and Bramble). Frequent ruderal species and recolonizing vegetation was noted to be present reflecting regular agricultural disturbance, albeit overall the habitat is clearly best categorised as grassland, with occasional scattered scrub and denser patches of grass noted in places prior to cutting. Offsite areas west of the current site boundary, higher up the slope were noted in particular to support a more mature grassland sward, with frequent False Oat-grass.
- 4.4.2 Other species present within the grassland sward include frequent Stinging Nettle *Urtica dioica* (including extensive patches at the margins), Red Clover *Trifolium pratense*, White Clover *Trifolium repens*, Creeping Buttercup *Ranunculus repens*, Creeping Thistle *Cirsium arvense*, Field Bindweed *Convolvulus arvensis*, Bent *Agrostis sp.*, Bristly Ox-tongue *Helminthotheca echioides*, Willowherbs *Epilobium sp.*, Broad-leaved Dock *Rumex obtusifolius*, Bramble *Rubus fruticosus*, Ragwort *Jacobaea vulgaris*, Hairy Tare *Vicia 16irsute*, Common Field-speedwell *Veronica persica*, Scentless Mayweed *Tripleurospermum inodorum*, Rosebay Willowherb *Chamerion angustifolium*, Meadowsweet *Filipendula ulmaria* and Common Mouse-ear *Cerastium fontanum*.
- 4.4.3 At the time of the 2023 update work, the grassland sward was noted to be tall, with frequent Bramble and colonising scrub, particularly within the lower eastern areas, and lacking in bare disturbed areas at this time. In addition, a number of stands of Reed Canary Grass *Phalaris arundinacea* were noted to be present within the lower eastern sections. Forbs within the current site boundary are dominated by Broad-leaved Dock, Creeping Thistle and Stinging Nettle, albeit other forbs (consistent with the previous surveys) were noted to be scattered infrequently within the sward, with greater densities generally associated with the existing field margins.
- 4.4.4 Of particular interest within the wider grassland sward, Adder's Tongue Fern *Ophioglossum vulgatum* was noted to be present within the grassland slopes located offsite, immediately west of the current site boundary (the current site boundary having been specifically amended in order to avoid areas recorded to support this species) during survey work undertaken in May 2022.

Evaluation

- 4.4.5 Overall, the grassland is clearly subject to sporadic agricultural management and disturbance, and includes grasses and forb species along with frequent ruderal elements and based on the type and abundance of species present it can be classified as semi-

improved grassland¹². Semi-improved grassland is not uncommon in the local area and higher quality areas of grassland are present in the surrounding area, such as Hanwell Gorse Cherwell Proposed District Wildlife Site. Survey work undertaken in May and June 2022 identified the presence of Adder's Tongue Fern within the sloping grassland areas situated offsite immediately west of the current site boundary (see Plan 6007/ECO3 - the current proposals/site boundary having been specifically revised in order to allow the retention of the grassland containing Adder's-tongue Fern outside of the site boundary, including in line with previous consultation comments).

4.4.6 Adder's-tongue Fern is not specifically protected or rare, but provides some local interest and can represent an indicator of longstanding grassland. However, the nature of the grassland present was recorded to be subject to sporadic agricultural management, with variously frequent colonising scrub/Bramble and bare/disturbed ground supporting frequent ruderal species indicative of disturbance and lacking in any other specific indicators of longstanding undisturbed grassland habitats. Nonetheless, the current proposals have been specifically designed in order to avoid the areas of grassland recorded to contain Adder's-tongue Fern and thereby allow their retention. The relevant grassland areas are therefore located offsite, outside of the current site boundary, uphill of the proposed development site boundary, such that the proposals are unlikely to result in any run-off or contamination of the retained grassland areas, whilst (subject to suitable boundary treatment) no significant hydrological changes to the offsite areas would be anticipated as a result of the proposals that could adversely affect the grassland.

4.4.7 The grassland present at the site was recorded to be currently used informally by dog walkers, with a number of existing pathways present. Further, a number of protection and mitigation measures (including in relation to potential for increased recreational pressure) are recommended in Chapter 6., in order to safeguard the retained grassland areas, with particular regard to the grassland containing Adder's-tongue Fern.

4.4.8 The identified areas of retained grassland will be protected under the proposed development, whilst the opportunity exists to incorporate specific management measures (including under any detailed management plan, details of which could be secured at the appropriate stage, by way of appropriately worded planning condition(s) attached to any planning permission). Given the current lack of any suitable management regime at the site, the implementation of a ecologically-led management of retained grassland areas represents an opportunity to result in significant enhancement of the grassland in the long term.

4.4.9 Overall the grassland present within the site is not considered to constitute an important ecological feature and is of ecological value at the site level only. The potential for the grassland within site to support faunal species is discussed at Section 5, below.

4.5 Hedgerows and Trees

Description

4.5.1 Four hedgerows are present/extend within the current site boundary, located along the southern, eastern and northern site boundaries respectively (as shown at Plan 6007/ECO3). Hedgerow descriptions are set out at Table 4.1 below.

¹² Natural England (2010) 'Higher Level Stewardship – Farm Environment Plan (FEP) Manual', 3rd Edition

Table 4.1. Hedgerow descriptions.

No.	H	W	Woody species	Avg. per 30m*	Ground flora & climbers	Associated features	Comments (including structure / management)	Likely to qualify#
H1a	4-5m	3-4m	<u>Hawthorn (D).</u> <u>Blackthorn</u> <u>Prunus spinosa (D)</u> , <u>Elder</u> , <u>Ash</u> , <u>Cherry</u> , <u>Dog Rose</u> <u>Rosa canina</u> .	<4	Bramble, Common Nettle, Rosebay Willowherb <i>Chamerion angustifolium</i> , Spear Thistle <i>Cirsium vulgare</i> , Creeping Thistle <i>Cirsium arvense</i> , Hogweed <i>Heracleum sphondylium</i> , Hedge Parsley <i>Torilis sp.</i>	Gaps present, but <10%	Old, outgrown hedge which is somewhat gappy, but still continuous; mammal path recorded; a relatively short length of dry ditch is present towards hedge centre; a single semi-mature Ash tree was recorded.	N
H3	5-6m	>5m	<u>Hawthorn</u> , <u>Blackthorn</u> , <u>Hazel</u> , <u>Ash</u> , <u>Aspen</u> , <u>Alder</u> , <u>Field Maple</u> , <u>Guelder Rose</u> , <u>Dog Rose</u>	≥5	Bramble	No associated features.	Mixed hedgerow/boundary scrub including landscape shrub planting and more longstanding Hawthorn along eastern site boundary with open space. Vegetation suckering into the grassland areas within the east of the site. Majority of vegetation width extends offsite within adjacent open space, albeit given continuous nature may be better described as a band of scrub (particularly noting the overall corridor width greater than 5m).	N
H4	5-10m	5m +	<u>Hawthorn</u> , <u>Elder</u> , <u>Blackthorn</u>	<4	Bramble, Stinging Nettle	Trees (dominated by Ash) present, and connection to adjacent hedgerows otherwise no associated features.	Mature, outgrown boundary hedgerow with frequent trees dominating the eastern end. Single large mature Oak (T20) present.	N
H5	4-5m	2-3m	<u>Hawthorn</u> , <u>Elder</u> , <u>Blackthorn</u> , <u>Field Maple</u> , <u>Crab Apple</u>	~4	Bramble, Stinging Nettle	Standard trees present, including single large mature Ash (T17 - identified as veteran within arboricultural information)	Mature boundary hedgerow, outgrown, variable structure in places albeit any gaps <10%.	N

Woody species (as listed under Schedule 3 of the Hedgerows Regulations 1997) and woodland ground flora species (as listed under Schedule 2 of the Hedgerows Regulations 1997) underlined, y = young, sm = semi-mature, m = mature, pv = possible veteran, B = bank, W = wall, br = bridleway, f/p = footpath, b/w = byway, (D) = dominant species

* estimated average number of woody species (as listed under Schedule 3 of the Hedgerows Regulations 1997) in any one 30m stretch

likely to qualify – as ‘important’ under the wildlife and landscape criteria of the Hedgerows Regulations 1997

Evaluation

- 4.5.2 The hedgerows present are limited to the northern, eastern and southern site boundaries. The hedgerows are relatively substantial and in places outgrown, and contain a number of standard trees (including in particular a large mature Ash (T17) located offsite within hedgerow **H5**, which has been identified as a veteran tree within the arboricultural information prepared in respect of the site and is therefore of some considerable value, representing an irreplaceable habitat in line with NPPF).
- 4.5.3 From a preliminary appraisal, **H3** is considered to be species-rich¹³, however the majority of species were recorded within the southern parts of the hedgerow, which are clearly less than 30 years old (e.g. as confirmed through available historical imagery available at googleearth.com), with the (older) northern section including remnant Hawthorn, albeit this has been largely subsumed within the wider scrub belt (predominantly offsite) and accordingly, the hedgerow is considered unlikely to qualify as ecologically ‘important’ under the Hedgerows Regulations 1997. Based on the number of woody species and associated features, the other hedgerows present are unlikely to qualify as important under the Regulations.
- 4.5.4 The hedgerows within the site (with the possible exception of H3, which may be considered not to meet the definition of hedgerow, with width substantially greater than 5m, extending offsite) are likely to qualify as a Priority Habitat based on the standard definition¹⁴, which includes all hedgerows (>20m long and <5m wide) consisting predominantly (≥80%) of at least one native woody species. It has been estimated that approximately 84% of countryside hedgerows in GB qualify as a Priority Habitat under this definition.¹⁴
- 4.5.5 On this basis, the hedgerows within the site constitute important ecological features, although given the relatively limited network present, are only of importance at the local level.
- 4.5.6 The proposals incorporate the retention of all the hedgerows within the site, and incorporated into substantial buffers of green infrastructure, with the only losses occurring to a small sections at the east of H1a for construction of the proposed site access (consistent with the previously permitted adjacent residential development located immediately south of the site). Retained hedgerows will be protected during the construction phase of the proposals in line with the recommendations included at Chapter 6 below, with in particular substantial buffer zones of retained/enhanced vegetation maintained adjacent to the retained hedgerows. In addition, the proposals offer the opportunity to secure and prolong the life of the existing offsite adjacent veteran tree (T17 - irreplaceable habitat), through the implementation of a veteran tree management plan as part of the wider proposed landscape management actions (see Chapter 6.).

¹³ i.e. five or more native woody species within a 30m length (or four or more in Northern England) – FEP Manual

¹⁴ Based on: Biodiversity Reporting and Information Group (2011) ‘UK Biodiversity Action Plan (BAP) Priority Habitat Descriptions’, ed. Ant Maddock

4.5.7 Furthermore, the proposals incorporate new planting which will link with and strengthen the existing / retained hedgerows, and will aim to enhance the value of these features for biodiversity.

4.6 Scrub

Description

4.6.1 Very occasional scrub was recorded to be present within the site, predominantly forming colonising scattered young scrub, Bramble and suckering woody vegetation associated with the eastern boundary vegetation (as described above), albeit further scrub is present, associated with the extreme south eastern site boundary, adjacent to the offsite road verge associated with Dukes Meadow Drive (including a small section included within the site boundary in order to provide emergency access onto Duke's Meadow Drive), much of which appears to be formed by planted landscaping associated with the construction of the road. In particular, species present include Dogwood *Cornus sanguinea*, Field Maple *Acer campestre*, Guelder-rose, Bramble, Cherry, Field Rose *Rosa arvensis*, Grey Willow *Salix cinerea*, Hazel, Hawthorn, Silver Birch *Betula pendula*, Blackthorn *Prunus fruticosus*, Ash *Fraxinus excelsior*, Goat Willow *Salix caprea* and Grey Willow *Salix cinerea*.

Evaluation

4.6.2 The patches of scrub support a limited range of common and widespread species associated with the landscape planted road verges and field margin, which in general therefore appears relatively recent in nature and encroaching scrub within the grassland, which is sporadic and periodically removed through ongoing agricultural management of the field. On this basis, it is considered that the scrub present within the site is of ecological value at no more than the site level, whilst this habitat type is common and widespread in the local vicinity of the site. Accordingly, the loss of scrub within the site is considered to be of no ecological significance. Nevertheless, the proposals incorporate substantial new tree and hedgerow planting that will provide new and replacement opportunities for wildlife, as described in Chapter 6.

4.7 Habitat Evaluation Summary

4.7.1 On the basis of the above, the following habitats within and adjacent to the site are considered to form important ecological features:

Table 4.2. Evaluation summary of habitats forming important ecological features.

Habitat	Level of Importance
Hedgerows	Local
Veteran Tree (offsite)	Local

4.7.2 Other habitats present within the site include semi-improved grassland and scrub. However, these habitats do not form important ecological features.

5 Faunal Use of the Site

5.1 Overview

5.1.1 During the survey work, general observations were made of any faunal use of the site with specific attention paid to the potential presence of protected or notable species. Specific survey work was undertaken in respect of Badgers, bats and reptiles, with the results described below.

5.2 Priority Species

5.2.1 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places duties on public bodies to have regard to the conservation of biodiversity in the exercise of their normal functions. In particular, Section 41 of the NERC Act requires the Secretary of State to publish a list of species which are of principal importance for conservation in England. This list is largely derived from the 'Priority Species' listed under the former UK Biodiversity Action Plan (BAP), which continue to be regarded as priority species under the subsequent country-level biodiversity strategies.

5.2.2 Where individual priority species, or potential for such species was recorded within the site, this is discussed further at the relevant section, below.

5.3 Bats

5.3.1 **Legislation.** All British bats are classed as European Protected Species under the Conservation of Habitats and Species Regulations 2017 (as amended) and are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). As such, both bats and their roosts (breeding sites and resting places) receive full protection under the legislation (see Appendix 6007-01/4). If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard bats. Given all bats are protected species, they are considered to represent important ecological features. A number of bat species are also considered S41 Priority Species.

5.3.2 **Background Records.** No specific records of bats from within or adjacent to the site were returned from the desktop study. Information received from the LRC returned records of Unidentified bat species (Chiroptera), Brown Long-eared Bat *Plecotus auritus*, Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Pipistrelle bat species *Pipistrellus sp.*, Daubenton's Bat *Myotis daubentonii*, Natterer's Bat *Myotis nattereri* and Noctule *Nyctalus noctula* within 2km of the site. The closest record is for a Pipistrelle bat species recorded in 2001, located approximately 310m south east of the site boundary.

5.3.3 Survey Results and Evaluation

Roosting

Buildings

5.3.4 The site does not contain any buildings or other structures that could provide potential opportunities for roosting bats.

Trees

- 5.3.5 A number of semi-mature and mature trees are present on site. The results of the tree assessment work undertaken at the site are illustrated on Plan 6007-01/ECO3 and summarised in Table 5.1 below:

Table 5.1. Tree inspection results.

Tree No.	Species	Age	Potential Roost Features	Suitability
T20	Oak	Mature	Peeling bark noted, along with potential cracks and minor dead limbs. Substantial splits including horizontal main limb at 5-6m facing west.	Medium-High
T25	Ash	Early mature	Split limb, minor potential features (no obvious major cavities or features)	Low
T27	Crack Willow	Mature	Substantial dead wood, cracks and woodpecker holes, also associated with collapsed deadwood leaning on standing wood providing additional potential features.	Medium-High
T17 (offsite)	Ash	Mature/ Veteran	Multiple cavities and openings. Rot hole at 5m facing west, major old tear-out wound at 4-6m on east side.	High

- 5.3.1 It is understood that the proposals do not require the removal of any of the trees within the site, including those described above with potential bat roost features, such that in the event that bats are present within the trees they will remain unaffected. As such, subject to the implementation of the recommendation outlined at Chapter 6 below in relation lighting, it is considered that bats will be fully safeguarded under the proposals.

Foraging / Commuting

- 5.3.2 As noted above, the habitats within the site, in particular the boundary hedgerows and trees provide substantial vegetated corridors, which offer potential foraging/commuting habitat for bats (albeit noting the proximity of Dukes Meadow Drive and associated development adjacent to the south eastern boundary which likely provides existing light spill). This combination of habitat types occurs relatively frequently in the surrounding area and taking this into the account the site is considered likely to be of no more than local value to bats.
- 5.3.3 The vast majority of the hedgerows and trees within the site will be retained under the proposals, whilst new tree, hedgerow and shrub planting will improve connectivity through the site and increase the foraging potential of the site, in combination with additional habitats including new and retained grassland and attenuation features.
- 5.3.4 Accordingly, subject to the implementation of the recommendations outlined at Chapter 6 below, along with other ecological enhancements, it is considered that the conservation status of local bat populations will be fully safeguarded under the scheme.

5.4 Badger

- 5.4.1 **Legislation.** Badger receive legislative protection under the Protection of Badgers Act 1992 (see Appendix 6007-01/4), and as such should be assessed as an important ecological feature. The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain. It is the duty of planning authorities to consider the conservation and welfare impacts of development upon Badger and issue permissions accordingly.

5.4.2 Licences can be obtained from Natural England for development activities that would otherwise be unlawful under the legislation. Guidance on the types of activity that should be licensed is laid out in the relevant best practice guidance.^{15, 16}

5.4.3 **Survey Results and Evaluation.** Survey results and evaluation in respect of Badger are set out in a Confidential Appendix separate to this report.

5.5 Other Mammals

5.5.1 **Legislation.** A number of other UK mammal species do not receive direct legislative protection relevant to development activities but may receive protection against acts of cruelty (e.g. under the Wild Mammals (Protection) Act 1996). In addition, a number of these mammal species are S41 Priority Species and should be assessed as important ecological features.

5.5.2 **Background Records.** No specific records of other mammals from within or adjacent to the site were returned from the desktop study. A number of records of Hedgehog *Erinaceus europaeus* (Priority Species) were returned from within the search area around the site, with the closest record being from approximately 0.8m west of the site.

5.5.3 **Survey Results and Evaluation.** No evidence of any other protected, rare or notable mammal species was recorded within the site. Other mammal species likely to utilise the site, such as Fox *Vulpes vulpes*, Brown Rat *Rattus norvegicus* and Rabbit *Oryctolagus cuniculus* remain common in both a local and national context, and as mentioned above do not receive specific legislative protection in a development context. As such, these species are not a material planning consideration and the loss of potential opportunities for these species to the proposals is of negligible significance.

5.5.4 The desktop study returned background records of Hedgehog within the surrounding area. Hedgehog is a Priority Species, albeit this species remains common and widespread in England. The site offers potential opportunities for this species, particularly in the form of hedgerows and boundary vegetation. Given the abundance of similar habitats locally, Hedgehog is considered to be of importance at a site level only and there is no evidence to suggest the proposals will significantly affect local Hedgehog populations, whilst in any event in the long term the proposals incorporate the retention of the existing boundary features and vegetation, along with new green infrastructure incorporating native planting and enhanced habitats that will continue to provide suitable (potentially enhanced) habitat opportunities for common mammals such as this species. However, it is recommended that precautionary safeguards are put in place to minimise the risk of harm to Hedgehog in the event this species is present, as detailed in Chapter 6 below.

5.6 Amphibians

5.6.1 **Legislation.** All British amphibian species receive a degree of protection under the Wildlife and Countryside Act 1981 (as amended). Great Crested Newt is protected under the Act and is also classed as a European Protected Species under the Conservation of Habitats and Species Regulations 2017 (as amended). As such, both Great Crested Newt and habitats utilised by this species are afforded protection (see Appendix 6007-01/4 for detailed provisions). Great Crested Newt is also a S41 Priority Species, as are Common Toad *Bufo*

¹⁵ English Nature (2002) 'Badgers and Development'

¹⁶ Natural England (2011) 'Badgers and Development: A Guide to Best Practice and Licensing', Interim Guidance Document

bufo, Natterjack Toad *Epidalea calamita*, and Pool Frog *Pelophylax lessonae*. As such, these species should be assessed as important ecological features.

5.6.2 Background Records. No specific records of Great Crested Newt or other amphibians from within or adjacent to the site were returned from the desktop study. A number of records of Amphibian species were returned from within the search area surrounding the site, including Great Crested Newt, Common Toad, Common Frog *Rana temporaria* and Smooth Newt *Lissotriton vulgaris*, with the closest records of Great Crested Newt located approximately 0.6km north east of the site, recorded in 2015.

5.6.3 Survey Results and Evaluation. No evidence for the presence of any fully protected amphibian species (e.g. Great Crested Newt) was recorded during the general survey work undertaken. The site and wider survey area does not contain any standing water bodies and accordingly does not support any potentially suitable breeding habitats for this species. Furthermore, based on a review of the OS 1:25 000 mapping of the area, along with available aerial photography and associated resources, no ponds or other standing waterbodies appear to be located within 250m of the site. Local knowledge of the site and surrounding area indicates a single, small pond to be present within Hanwell Fields Wetland, approximately 230m east of the site, whilst the eastern parts of the site are proposed for open space and SUDs, with proposed development situated over 250m from this pond. Amphibians, including Great Crested Newt, can range some distance from their breeding ponds, although typically the majority of activity with regard to this species is centred within 100m of the breeding pond with the maximum routine migratory range usually occurring within 250m of the pond.

5.6.4 The habitats within the site appear to provide potentially suitable terrestrial habitats for amphibians (in particular including the hedgerows and boundary vegetation), however as noted above these appear to be well separated from any potentially suitable breeding sites for fully protected amphibian species. Accordingly, this group does not appear to represent a potential constraint on the proposed development.

5.7 Reptiles

5.7.1 Legislation. All six species of British reptile are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), which protects individuals against intentional killing or injury. Sand Lizard *Lacerta agilis* and Smooth Snake *Coronella austriaca* receive additional protection under the Conservation of Habitats and Species Regulations 2017 (as amended); refer to Appendix 6007-01/4. All six reptile species are also S41 Priority Species. As such, all reptile species should be assessed as important ecological features.

5.7.2 Background Records. No records of any reptile species within the site or immediately adjacent areas were returned within the information obtained from TVERC. A number of records of Grass Snake *Natrix natrix* and Common Lizard *Zootoca vivipara*, within the wider 2km search area around the site were returned, with the closest record to the site being of Grass snake, recorded approximately 0.4km north east of the site in 2012.

5.7.3 Survey Results and Evaluation. Specific survey work for reptiles was undertaken at the site and wider associated land under the same ownership, the results of which are summarised in Table 5.2., below.

Table 5.2. Reptile survey results summary.

Visit	Date	Common Lizard		Slow Worm		Grass Snake		Other Species
		Adult	Juv.	Adult	Juv.	Adult	Juv.	
1	21/09/2021	0	0	0	0	0	0	0
2	22/09/2021	0	0	0	0	0	0	0
3*	28/09/2021*	0	0	0	0	0	0	0
4*	29/09/2021*	0	0	0	0	0	0	0
5	01/10/2021	0	0	0	0	0	0	0
6	04/10/2021	0	0	0	0	0	0	0
7	06/10/2021	0	0	0	0	0	0	0
8	12/10/2021	0	0	0	0	0	0	0
9	14/10/2021	0	0	0	0	0	0	0
Peak Count		0		0		0		

*In line with information set out within the methodology, above, surveys 3 and 4 were partial only due to reduced numbers of refugia following regular agricultural management.

- 5.7.4 As shown in the table above, no reptiles were recorded within the site during any of the survey visits undertaken.
- 5.7.5 As set out above, no reptiles were recorded at the site during the survey work undertaken, whilst no background records of reptile species were returned from within the site or immediately adjacent areas (the nearest such records being removed from the site boundaries).
- 5.7.6 As such, on the basis of the available evidence, reptile species are unlikely to be present within the site and do not, therefore, appear to represent a current constraint on the proposed development of the site.
- 5.7.7 A number of habitats within the site remain suitable for this group, which could therefore theoretically colonise the site at any time should reptile species be present within nearby suitable habitats (albeit the absence of any records of reptiles from the site or immediate surroundings returned by the data search, in common with the current survey indicates that any potential for future colonisation is likely to be reduced).

5.8 Birds

- 5.8.1 **Legislation.** All wild birds and their nests receive protection under Section 1 of the Wildlife and Countryside Act 1981 (as amended) in respect of killing and injury, and their nests, whilst being built or in use, cannot be taken, damaged or destroyed. Species included on Schedule 1 of the Act receive greater protection and are subject to special penalties (see Appendix 6007-01/2).
- 5.8.2 **Conservation Status.** The conservation importance of British bird species is categorised based on a number of criteria including the level of threat to a species' population status¹⁷. Species are listed as Green, Amber or Red. Red Listed species are considered to be of the highest conservation concern being either globally threatened and or experiencing a high/rapid level of population decline (>50% over the past 25 years). A number of birds are also S41 Priority Species. Red and Amber listed species and priority species should be assessed as important ecological features.

¹⁷ Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) 'Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man' British Birds 108, pp.708-746

- 5.8.3 **Background Records.** Information from the data search includes records for several bird species in the vicinity of the site, including the Red/Amber Listed species Skylark *Alauda arvensis*, Redwing *Turdus iliacus*, Willow Tit *Poecile montana*, Reed Bunting *Emberiza schoeniclus*, Lapwing *Vanellus vanellus*, Linnet *Linaria cannabina*, House Sparrow *Passer domesticus*, Swift *Apus apus* and Dunnock *Prunella modularis* (most of which are also Priority Species). The first four listed species were all recorded within the 1km grid square including the site, albeit more specific information was not available that would allow the precise location of these records to be determined in relation to the site, whilst no more specific records of any of the above species were returned from the site itself.
- 5.8.4 **Survey Results and Evaluation.** Bird species recorded within the site and adjacent areas within the same landholding during the survey work undertaken include Wood Pigeon *Columba palumbus*, Blackbird *Turdus merula* and Dunnock *Prunella modularis*. In addition, Yellowhammer *Emberiza citrinella* was heard calling offsite within distant agricultural land located north of the site during the 2021 surveys.
- 5.8.5 Woodpigeon and Blackbird are not listed as having any special conservation status, while Dunnock is included on the Amber List, as a result of declines in UK breeding populations, and is also Priority Species. However, the habitats present are common in the surrounding area and there is no evidence to suggest the site is of elevated value at a local level for this species (which in any case, are common in Great Britain¹⁸), or any other priority or red/amber list species (e.g. Yellowhammer). The vast majority of the hedgerows, trees and scrub present within the site will be retained and protected under the proposals, albeit minor losses are required in order to provide access, whilst ongoing management could similarly impact on nesting birds utilising woody vegetation at the site at the time of works. Accordingly, a number of safeguards in respect of nesting birds are proposed, as detailed in Chapter 6 below. In the long-term, new nesting opportunities will be available for birds as described in Chapter 6 below.

5.9 Invertebrates

- 5.9.1 **Legislation.** A number of invertebrate species are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). In addition, Large Blue Butterfly *Maculinea arion*, Fisher's Estuarine Moth *Gortyna borellii lunata* and Lesser Whirlpool Ram's-horn Snail *Anisus vorticulus* receive protection under the Conservation of Habitats and Species Regulations 2017 (as amended); refer to Appendix 6007-01/2. A number of invertebrates are also S41 Priority Species. Where such species are present, they should be assessed as important ecological features.
- 5.9.2 **Background Records.** No specific records of invertebrates were returned from within or adjacent to the site. A number of records of Small Heath *Coenonympha pamphilus*, Grizzled Skipper *Pyrgus malvae*, Wall *Lasioommata megera*, White-clawed Crayfish *Austropotamobius pallipes* and Blood-vein *Timandra comae* (all Priority Species, the majority of which relate to historic records over 20 years old) were returned within the information received from TVERC, with the closest in the last 20 years, being Small Heath recorded approximately 1.1km north of the site.
- 5.9.3 **Survey Results and Evaluation.** No evidence for the presence of any protected, rare or notable invertebrate species was recorded within the site. Invertebrate species recorded within the site and adjacent land within the same ownership include Small Tortoiseshell *Aglais urticae*, Meadow Brown *Maniola jurtina*, Large White *Pieris brassicae*, Gatekeeper *Pyronia tithonus*, Ringlet *Aphantopus hyperantus*, Cinnabar Moth *Tyria jacobaeae*

¹⁸ Population estimates of birds in Great Britain and the United Kingdom. Musgrove *et al.*, British Birds, 2013

caterpillar, Puss Moth *Cerura vinula* caterpillar, Blowfly *Lucilia* sp., Seven-spot Ladybird *Coccinella septempunctata*, and Roesel’s Bush Cricket *Metrioptera roeselii*, along with plant galls confirming the presence of the Bedeguar Gall Wasp *Diplolepis rosae*, Thistle Gall Fly *Urophora cardui* and Common Spangle Gall Wasp *Neuroterus quercusbaccarum*. In addition, larva of the Sawfly *Cimbex luteus* was recorded on Willow *Salix caprea* within the wider vicinity.

5.9.4 The site has several areas of bare ground and occasional patches of scrub but otherwise the internal areas contain relatively few micro-habitats that would typically indicate elevated potential for invertebrates¹⁹, such as a variable topography with areas of vertical exposed soil, areas of species-rich semi-natural vegetation; walls with friable mortar or fibrous dung. Accordingly, given the habitat composition of the site and lack of adjacent sites designated for significant invertebrate interest, it is considered unlikely that the proposals will result in significant harm to any protected, rare or notable invertebrate populations, and the site is not considered to support an important invertebrate assemblage.

5.10 Summary

5.10.1 On the basis of the above, a summary of the evaluation of fauna is provided below:

Table 5.3. Evaluation summary of fauna forming important ecological features.

Species / Group	Supported by or associated with the site	Level of Importance
Bats – Roosting	Potential habitat in the form of trees	Local
Bats – Foraging / Commuting	Suitable habitat present	Local
Birds	Confirmed presence on site	Local

5.10.2 Other fauna supported by the site include non-priority species of mammals, amphibians and invertebrates. However, these species do not form important ecological features.

¹⁹ Natural England (2010) ‘Higher Level Stewardship – Farm Environment Plan (FEP) Manual’, 3rd Edition

6 Mitigation Measures and Biodiversity Net Gains

6.1 Mitigation

6.1.1 Based on the habitats, ecological features and associated fauna identified within / adjacent to the site, it is proposed that the following mitigation measures (**MM1** to **MM7**) are implemented under the proposals. Further, detailed mitigation strategies or method statements can be secured via suitably-worded planning conditions, as recommended by relevant best practice guidance (BS 42020:2019).

Hedgerows and Trees

6.1.2 **MM1 – Hedgerow and Tree Protection.** All hedgerows and trees to be retained within the proposed development shall be protected during construction in line with standard arboriculturalist best practice (BS5837:2012) or as otherwise directed by a suitably competent arboriculturalist. This will involve the use of protective fencing or other methods appropriate to safeguard the root protection areas of retained trees / hedgerows.

Grassland (Adder’s Tongue Fern)

6.1.3 **MM2 – Grassland Retention/Protection.** The current proposals have been specifically designed to avoid the areas of grassland identified to support Adder’s-tongue Fern (including in order to address consultation comments in relation to previous proposals). It is proposed that detailed mitigation and protection measures associated with the retained grassland areas are secured and confirmed at the detailed stage through preparation of an appropriate mitigation strategy in order to ensure the suitable protection of retained grassland areas within the same field (which could be suitably secured by way of appropriately worded planning condition at the outline stage).

Bats

6.1.4 **MM3 – Felling of Trees Supporting Bat Roosting Potential.** No trees supporting moderate or high bat roosting potential have been identified for removal under the current layout, although should a need for works to these trees be identified at a later stage (e.g. for health and safety purposes) it is recommended a suitably qualified ecologist is consulted to advise on any further survey requirements and mitigation measures. Such measures may include climbing inspections to investigate potential roosting features and soft felling of trees under an ecological watching brief.

6.1.5 **MM4 – Sensitive Lighting.** Light-spill onto retained and newly created habitat, in particular the retained hedgerows, tree lines and scrub (especially along the south- western boundary), will be minimised in accordance with good practice guidance²¹ to reduce potential impacts on light-sensitive bats (and other nocturnal fauna). This may be achieved through the implementation of a sensitively designed lighting strategy, with consideration given to the following key factors:

- **Light exclusion zones** – ideally no lighting should be used in areas likely to be used by bats. Light exclusion zones or ‘dark buffers’ may be used to provide

²¹ Bat Conservation Trust and Institute of Lighting Professionals (2018) ‘Guidance Note 08/18: Bats and artificial lighting in the UK’; Stone, E.L. (2013) ‘Bats and lighting: Overview of current evidence and mitigation guidance.’; ILP (2011) ‘Guidance notes for the reduction of obtrusive light’ Institution of Lighting Professionals, GN01:2011.

interconnected areas free of artificial illumination to allow bats to move around the site;

- **Appropriate luminaire specifications** – consideration should be given to the type of luminaires used, in particular luminaries should lack UV elements and metal halide and fluorescent sources should be avoided in preference for LED luminaries. A warm white spectrum (ideally <2,700K) should be adopted to reduce the blue light component;
- **Light barriers / screening** – new planting (e.g. hedgerows and trees) or fences, walls and buildings can be strategically positioned to reduce light spill;
- **Spacing and height of lighting units** – increasing spacing between lighting units will minimise the area illuminated and allow bats to fly in the dark refuges between lights. Reducing the height of lighting will also help decrease the volume of illuminated space and give bats a chance to fly over lighting units (providing the light does not spill above the vertical plane). Low level lighting options should be considered for any parking areas and pedestrian / cycle routes, e.g. bollard lighting, handrail lighting or LED footpath lighting;
- **Light intensity** – light intensity (i.e. lux levels) should be kept as low as possible to reduce the overall amount and spread of illumination;
- **Directionality** – to avoid light spill lighting should be directed only to where it is needed. Particular attention should be paid to avoid the upward spread of light so as to minimise trespass and sky glow;
- **Dimming and part-night lighting** – lighting control management systems can be used, which involves switching off/dimming lights for periods during the night, for example when human activity is generally low (e.g. 12.30 – 5.30am). The use of such control systems may be particularly beneficial during the active bat season (April to October). Motion sensors can also be used to limit the time lighting is operational.

Hedgehogs

6.1.7 **MM6 – Hedgehog Safeguards.** In order to safeguard Hedgehogs and other small mammals should they enter the site during construction works, the following measures will be implemented:

- A watching brief should be maintained for Hedgehog and other small mammals throughout any clearance works;
- Any piles of material already present on site, particularly vegetation/leaves, etc. and any areas of dense scrub or hedgerows, shall be dismantled/removed by hand and checked for Hedgehog prior to the use of any machinery/disposal;
- Any trenches left open overnight should be provided with a means of escape, e.g. gently graded ramp or a roughened plank, in order to allow animals to escape should they enter the trench. This is particularly important if the trench fills with water.

- Any material to be disposed of by burning, particularly waste from vegetation clearance and tree works, should not be left piled on site for more than 24 hours in order to minimise the risk of Hedgehogs occupying the pile. If this cannot be avoided, material should be stored within a container such as a skip to prevent animals from gaining access. Any material which has been stored on the ground overnight should be moved prior to burning to allow a thorough check for any animals which may have been occupying the pile;
- Any temporarily exposed open pipes or open drains should be blanked off at the end of each working day so as to prevent Hedgehogs gaining access as may happen when contractors are off-site;
- In the event that an injured Hedgehog is found, the animal should be wrapped carefully in a towel, the British Hedgehog Preservation Society (BHPS) phoned (01584 890 801) and the Hedgehog taken to a local vet immediately;
- To maintain connectivity throughout the site for Hedgehog and to allow access to suitable foraging habitat contained within residential gardens, small holes (approximately 13cmx13cm) should be created within garden fences or under gates.

Nesting Birds

- 6.1.8 **MM7 – Timing of Works.** To avoid a potential offence under the relevant legislation, no clearance of suitable vegetation should be undertaken during the bird-nesting season (1st March to 31st August inclusive). If this is not practicable, any potential nesting habitat to be removed should first be checked by a competent ecologist in order to determine the location of any active nests. Any active nests identified would then need to be cordoned off (minimum 5m buffer) and protected until the end of the nesting season or until the birds have fledged. These checking surveys would need to be carried out no more than three days in advance of vegetation clearance.

6.2 Biodiversity Net Gains

- 6.2.1 The National Planning Policy Framework (NPPF) encourages new developments to maximise the opportunities for biodiversity through incorporation of enhancement measures. The proposals present the opportunity to deliver ecological enhancements at the site for the benefit of local biodiversity, thereby making a positive contribution towards the broad objectives of national conservation priorities and the local Biodiversity Action Plan (BAP). The recommendations and enhancements summarised below are considered appropriate given the context of the site and the scale and nature of the proposals. Through implementation of the following ecological enhancements (**EE1** to **EE7**), the opportunity exists for the proposals to deliver a number of biodiversity net gains at the site.

Habitat Creation and Management

- 6.2.2 **EE1 – New Planting.** It is recommended that where practicable, new planting within the site be comprised of native species of local provenance, including trees and shrubs appropriate to the local area. Suitable species for inclusion within the planting could include native trees such as Oak, Ash, Birch *Betula pendula* and Field Maple, whilst native shrub species of particular benefit would likely include fruit and nut bearing species which would provide additional food for wildlife, such as Blackthorn, Hawthorn, Crab Apple *Malus sylvestris*, Hazel *Corylus avellana* and Elder, along with Willow species *Salix* sp.

- 6.2.3 **EE2 – Wildflower Grassland.** It is recommended that areas of wildflower grassland are incorporated within the site such that, in combination with the retained/enhanced habitats and new native landscape planting, opportunities for biodiversity will be maximised under the proposals. Wildflower grassland areas should be managed in the long term for the benefit of biodiversity (with particular reference to key species present within the wider retained/offsite areas, including Adder’s Tongue Fern in line with the above considerations).
- 6.2.4 **EE3 – Wetland Features.** The proposals incorporate new Sustainable Drainage Systems (SuDS) features, including in particular a new attenuation features at the east of the site. It is understood that the attenuation features can be designed to incorporate permanent standing water (e.g. through over-excavation), which would therefore be designed to be of value to wildlife and include elements such as sinuous margins (to create a variety of conditions and micro-climates which would encourage a broad range of invertebrates to colonise), gently sloping margins (which are favoured by amphibians) and conditions to allow abundant marginal and aquatic vegetation to develop. Creation of such habitats will provide opportunities for a range of wildlife such as amphibians and invertebrates, while also helping to attenuate surface water run-off.
- 6.2.5 **EE4 – Veteran Tree Management Plan.** The proposals offer the opportunity to secure and prolong the lifespan and ecological value of the existing veteran (Ash) tree (T17) located offsite (close to the existing site boundary and within the same ownership) within hedgerow H5, through the implementation of a suitable veteran tree management plan (informed by arboricultural advice and input) as part of the detailed ongoing landscape management operations at the site.

Bats

- 6.2.6 **EE5 - Bat Boxes.** It is recommended that a number of bat boxes be incorporated within the proposed development. The provision of bat boxes will provide new roosting opportunities for bats in the area, such as Soprano Pipistrelle *Pipistrellus pygmaeus*, a national Priority Species. Where architectural design allows, a number of integrated bat boxes / roost features should be incorporated into a proportion of the new buildings. The precise number and locations of boxes / roost features should be determined by a competent ecologist, post-planning once the relevant final development design details have been approved.

Birds

- 6.2.7 **EE6 - Bird Boxes.** It is recommended that new bird nesting provision be incorporated under the proposals. In particular, where possible nesting bricks/boxes should be incorporated within the design of new buildings, in order to offer nesting opportunities for declining species such as House Sparrow (Priority Species) and Swift *Apus apus* (Red Listed species). The precise number and locations of nesting bricks/boxes should be determined by a competent ecologist, post-planning once the relevant final development design details have been approved.

Invertebrates

- 6.2.8 **EE7 – Bee Bricks.** It is recommended that a number of bee bricks be incorporated within the proposed development thereby increasing nesting opportunities for declining populations of non-swarming solitary bee populations. Ideally, bee bricks should be located within suitable south-facing walls (where architectural design allows), located at least 1m off the ground. The bricks should be unobstructed by vegetation, though within close vicinity of nectar and pollen sources.

7 Biodiversity Net Gain Assessment (BNGA)

7.1 Defra Biodiversity Metric

7.1.1 To quantify the level of biodiversity net gain that can be delivered under the proposed development, the change in biodiversity value resulting from the scheme has been calculated using the Metric 4.0 calculation tool and associated user guide²². This takes account of the size, distinctiveness and ecological condition of existing and proposed habitat areas to provide a proxy measure of the present and forecast biodiversity value of a site, and therefore determine the overall change in biodiversity value.

7.1.2 Relevant outputs from the completed spreadsheet tool and associated target notes are provided at Appendix 6007-01/5 (a completed copy of the metric calculator tool in MS Excel (.xlsm) format is also provided to accompany this report).

7.1.3 Broad habitat areas have been identified based on the survey work undertaken at the site, as described above. Habitat conditions and connectivity scores have then been assigned based on the guidance set out in the Technical Supplement²³, other appropriate guidance and professional judgement.

7.1.4 The post development information used to inform the Biodiversity Metric 4.0 Calculation Tool are based on the latest proposed land use parameters Plan and illustrative masterplan (see Appendix 6007-01/1). Given the outline nature of the proposals at this stage, the proposed strategy necessarily provides an indicative assessment of what could be achieved at the site based on the outline parameters, with any detailed information anticipated to be confirmed through reserved matters considerations at the appropriate stage.

7.2 Assumptions

7.2.1 When inputting the post-development habitat areas and condition to the Metric 4.0, the following assumptions have been made:

- The calculations within this report are based on the latest proposed land use parameters Plan and illustrative masterplan (see Appendix 6007-01/1). Therefore, should the proposed habitats change within future plans, this may need to be reflected in a revised net-gain calculation.
- Further assumptions in regard to individual habitat areas are identified as appropriate within the “Assessor Comments” column within the completed Biodiversity Metric 4.0 spreadsheet (see Appendix 6007-01/5).

7.3 Strategic Significance

7.3.1 Strategic significance in the metric is assigned to give extra value to habitats that are located in optimal locations, or are of a type that meet local objectives for biodiversity. No strategic significance has been applied to the habitats pre or post-development of the site, given the site’s location and setting, situated outside of any identified ecological designations or target areas.

²² Natural England (April 2022) *Natural England Joint Publication JP039. Biodiversity Metric 3.1: auditing and accounting for biodiversity – User Guide.*

²³ Natural England (April 2022) *Natural England Joint Publication JP039. The Biodiversity Metric 3.1: auditing and accounting for biodiversity – Technical Supplement*

7.4 Habitat Type and Condition

7.4.1 Summaries of the pre- and post-development habitats and hedgerows are set out at Tables 7.1 to 7.4, below. Pre-development habitats are identified at Plan 6007-01/BNG1 and post-development habitats are shown at Plan 6007-01/BNG2 (see Appendix 6007-01/5).

Table 7.1. Pre-development Habitats

Habitat	Condition	Condition Rationale
Grassland – Other neutral grassland	Poor	Agricultural grassland, most recently (2023) recorded to support tall sward, the vast majority of which is substantially over 7cm height), lacking in bare ground (<1%), with substantially greater than 5% Bramble and colonising scattered scrub, greater than 5% combined undesirable species (dominated by Creeping Thistle, Broad-leaved Dock and Nettle).
Grassland – Modified grassland	Poor	Small areas of close-mown grassland forming existing amenity road verges.
Heathland and shrub – Mixed scrub	Moderate	Small, discrete areas of former landscape planted scrub associated with Dukes Meadow Drive. Mixed species of predominantly small age range (notwithstanding young colonising scrub present within grassland areas, including suckering vegetation). No evidence for Schedule 9 species.

Table 7.2. Post-development Habitats

Habitat	Condition	Condition Rationale
Urban – Developed land, sealed surface	N/A	Proposed building and hardstanding.
Urban – Vegetated Garden	N/A	Vegetated garden areas associated with individual dwellings (based on illustrative masterplan).
Grassland – Other neutral grassland	Good	Wildflower grassland within wider open space, including substantial buffers and corridors connected with retained/enhanced offsite grassland, managed specifically for wildlife with in particular a view to achieving key BNG condition criteria.
Grassland – Other neutral grassland	Moderate	Wildflower grassland provided within attenuation basin (drainage function and associated management implications - accordingly, moderate condition assumed on a precautionary basis inclusion of additional features such as permanent standing water, wetland areas or reedbeds proposed at the detailed stage which would likely offer potential to increase ecological value).

Grassland – Modified grassland	Poor	Modified grassland/formal amenity uses within wider open space (includes mown paths, managed areas etc) to take account of amenity use requirements.
Heathland and Shrub – Mixed Scrub	Moderate	Native scrub located adjacent to residential development parcels therefore assumed moderate condition.
Individual Trees – Rural Tree	Moderate	New trees provided will be native species/cultivars within areas of greenspace. The trees will be subject to minimal management in order to encourage growth. Trees would be anticipated to pass four of the 6 available assessment criteria and therefore achieve moderate condition.

Table 7.3. Pre-development linear feature (hedgerow)

Habitat	Condition Change	Condition Rationale
Native Hedgerow / Native Hedgerow with trees	Good	Existing hedgerows identified within site boundary in line with survey information (see above), achieving. All hedgerows measure greater than 1.5m height and 1.5m width, lacking vertical gap, with undisturbed vegetation on at least one site, lacking invasive and introduced species, free of significant damage caused by human activities, with no more than 2 failures in relation to specific BNG condition criteria.

Table 7.4. Post-development linear feature (hedgerow) creation

Habitat	Condition Change	Condition Rationale
Native Species-rich Hedgerow / Native Species-rich Hedgerow with trees	Moderate	New native species-rich hedgerows to be located within substantial green infrastructure and managed for wildlife benefit, to a minimum not less than 1.5m. Accordingly, it is likely that such features can achieve good condition, however on a precautionary basis hedgerows within naturalised open space are assigned to moderate condition. Given outline nature of the proposals and illustrative masterplan, minimum length of hedgerows required in order to provide 10% gain is identified (final measures to be confirmed at detailed design stage).

7.5 Biodiversity Net Gain Assessment

Habitat Biodiversity Impact Calculations

- 7.5.1 As set out above, the internal areas of the site are currently dominated by semi-improved grassland, which is clearly subject to sporadic agricultural disturbance, with (most recently) a high proportion of ruderal colonising species, Bramble and colonising scrub present. Other habitats present and affected are extremely small in size and largely associated with the existing highways land along Dukes Meadow Drive (proposed for the new site access).

- 7.5.2 The proposals are for development of the site to provide new residential development of up to 117 dwellings with all matters reserved other than access, within a reduced site area specifically designed in order to avoid grassland areas previously recorded to support Adder's-tongue Fern.
- 7.5.3 On the basis of the considerations and proposals set out (including the assumptions and limitations set out and within the comments in the spreadsheet tool), the Biodiversity Metric 4.0 calculator indicates a net habitat biodiversity unit change for the proposals within the site boundary of -0.52 Habitat Units representing a loss of 2.18% within the site boundary based on the illustrative masterplan. Accordingly, in order to provide compensation for the loss of habitats and ensure biodiversity net gain in line with planning policy requirements, it is proposed to provide offsite/offsetting measures. In order to demonstrate provision of such measures would be deliverable, enhancement of existing habitats within the wider landholding could be suitably provided (as shown at Plan 6007-01/ECO5).
- 7.5.4 The habitats within the wider landholding (blue line land) were subject to survey at the same time as the site boundary and similarly confirmed to support semi-improved grassland (including areas recorded to support Adder's-tongue Fern, as discussed above, which have been specifically excluded from the current site boundary). In order to provide an overall net gain, whilst addressing the relevant trading rules within the metric tool, an indicative area of approximately 2.9ha grassland is identified for potential enhancement, as indicated at Plan 6007-01/ECO5 (albeit given the outline nature of the application and associated indicative nature of the masterplan, the precise area and measures can be further confirmed at the reserved matters/detailed design stage if required). Based on the outline scheme and assumptions within the Defra 4.0 metric, this level of provision would enable the proposals to result in a calculated increase of 7.60 habitat units (representing a calculated net gain of 35.01%, whilst addressing the relevant trading rules within the calculator), thereby calculating that offsite measures are available and deliverable, in order to ensure the appropriate level of offsetting provision, details of which would need to be confirmed at the reserved matters/detailed design stage in order to reflect the final scheme details.
- 7.5.5 Overall therefore, suitable areas are available for ecological enhancement within the control of the applicant, which could be enhanced and managed for the benefit of biodiversity including in order to address any appropriately worded planning condition or obligation requiring the detailed scheme to demonstrate overall Biodiversity Net Gain as calculated using the current Defra metric.

Hedgerow Impact Assessment

- 7.5.6 The proposals incorporate the retention of the majority of the existing site boundary hedgerows (with the only exception being minor losses to facilitate access to the site), whilst the opportunity exists for substantial new native hedgerows to be incorporated into the wider open space, representing enhancement measures in this regard. Accordingly, on the basis of the proposals (see Appendix 6007-01/1) and associated assumptions in terms of hedgerow provision (including as set out within the comments in the spreadsheet tool, with a minimum of 150m new native species-rich hedgerows), the Biodiversity Metric 4.0 calculator indicates a net hedgerow biodiversity unit change for the proposals within the site boundary of +0.58 Hedgerow Units representing an increase of 10.25%.

River Impact Assessment

7.5.7 The site does not include any watercourses (river/stream features) and as such, no score is generated for this section of the metric calculations and no further consideration is relevant in regard to this section.

Overall BIA Consideration

7.5.8 Overall, on the basis of the above considerations and proposed landscape information prepared in respect of the proposed development at the site, the results of the consideration with the Biodiversity Metric 4.0 are summarised at Table 7.1, below, whilst copies of the relevant sections of the completed BIA tool are provided at Appendix 6007-01/5.

Table 7.1. Summary results of consideration using Biodiversity Metric 4.0 based on the current proposed land use parameters and associated landscape strategy plan (see Appendix 6007-01/1 and 6007-01/5).

Unit type	Existing baseline 'value'	Calculated 'value' under the proposals	Identified net unit change	Identified net % change
Habitat units	23.87 units onsite 23.20 units offsite	23.34 units onsite 31.32 units offsite	+8.12 units overall change	+35.01 %
Hedgerow units (Based on minimum provision of 150m species-rich native hedgerow)	5.70 units	6.28 units	+0.58 units	+10.25%
River units	N/A – No Rivers or Streams present/affected			

7.5.9 A number of faunal enhancements are proposed under the scheme, which are anticipated to provide additional gains for biodiversity. These faunal enhancements include the provision of bat and bird boxes, as set out above. However, it is not possible to quantify faunal enhancements with the Biodiversity Metric 4.0 calculator and these are therefore additional to the calculated Net Gain figure using the tool.

7.5.10 On this basis (and subject to the successful implementation of the proposed scheme, including offsetting provision as appropriate), the proposals will result in a calculated net gain in biodiversity (representing greater than 10% net gain based on the calculator tool and in line with local planning policy requirements). The proposals would therefore appear to be in line with relevant planning policy requirements in regard to biodiversity net gain.

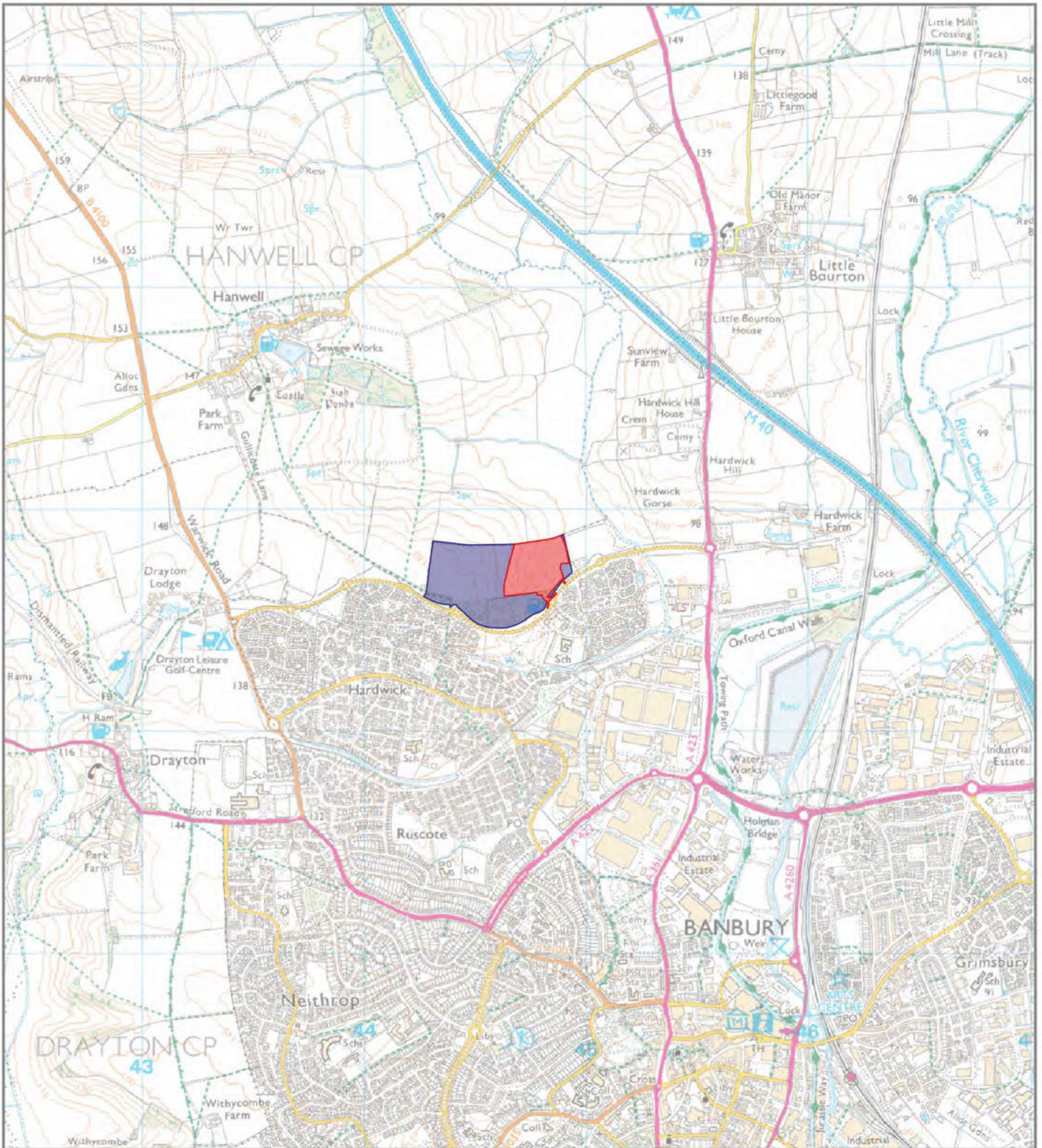
8 Conclusions

- 8.1 Aspect Ecology has carried out an Ecological Appraisal of the proposed development, based on the results of a desktop study, Phase 1 habitat survey and a number of detailed protected species surveys, including in respect of bats, Badger and common reptiles.
- 8.2 The available information confirms that no statutory or non-statutory nature conservation designations are present within or adjacent to the site, and none of the designations within the surrounding area are likely to be adversely affected by the proposals.
- 8.3 The extended Phase 1 habitat survey has established that the site is dominated by habitats not considered to be of ecological importance, whilst the proposals have sought to retain those features identified to be of value. Where it has not been practicable to avoid loss of habitats, mitigation and compensation measures have been proposed to offset losses, in conjunction with the landscape proposals. A number of specific measures and recommendations are set out in order to ensure the suitable protection of the retained habitats and associated fauna, whilst where possible it is recommended that any new planting at the site incorporate native species for the benefit of local wildlife, in combination with the enhancement and management of the retained features of value.
- 8.4 The habitats within the site support several protected species, including species protected under both national and European legislation. Accordingly, a number of mitigation measures have been proposed to minimise the risk of harm to protected species (including Badger, bats and breeding birds), with compensatory measures and enhancements proposed, where appropriate, in order to maintain the conservation status of local populations.
- 8.5 In conclusion, the proposals have sought to minimise impacts and subject to the implementation of appropriate avoidance, mitigation and compensation measures, it is considered unlikely that the proposals will result in significant harm to biodiversity. On the contrary, the opportunity exists to provide biodiversity net gains as part of the proposals.

Plans

Plan 6007-01/ECO1:

Site Location



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Key:

- Site Location
- Additional Land Within the Same Ownership



Aspect Ecology Limited West Court Hardwick Business Park
 Noral Way Banbury Oxfordshire OX16 2AF
 01295 279721 info@aspect.ecology.com www.aspect.ecology.com

**Land at Hanwell Fields,
 Banbury
 Site Location**

6007-01/ECO1

E/JP

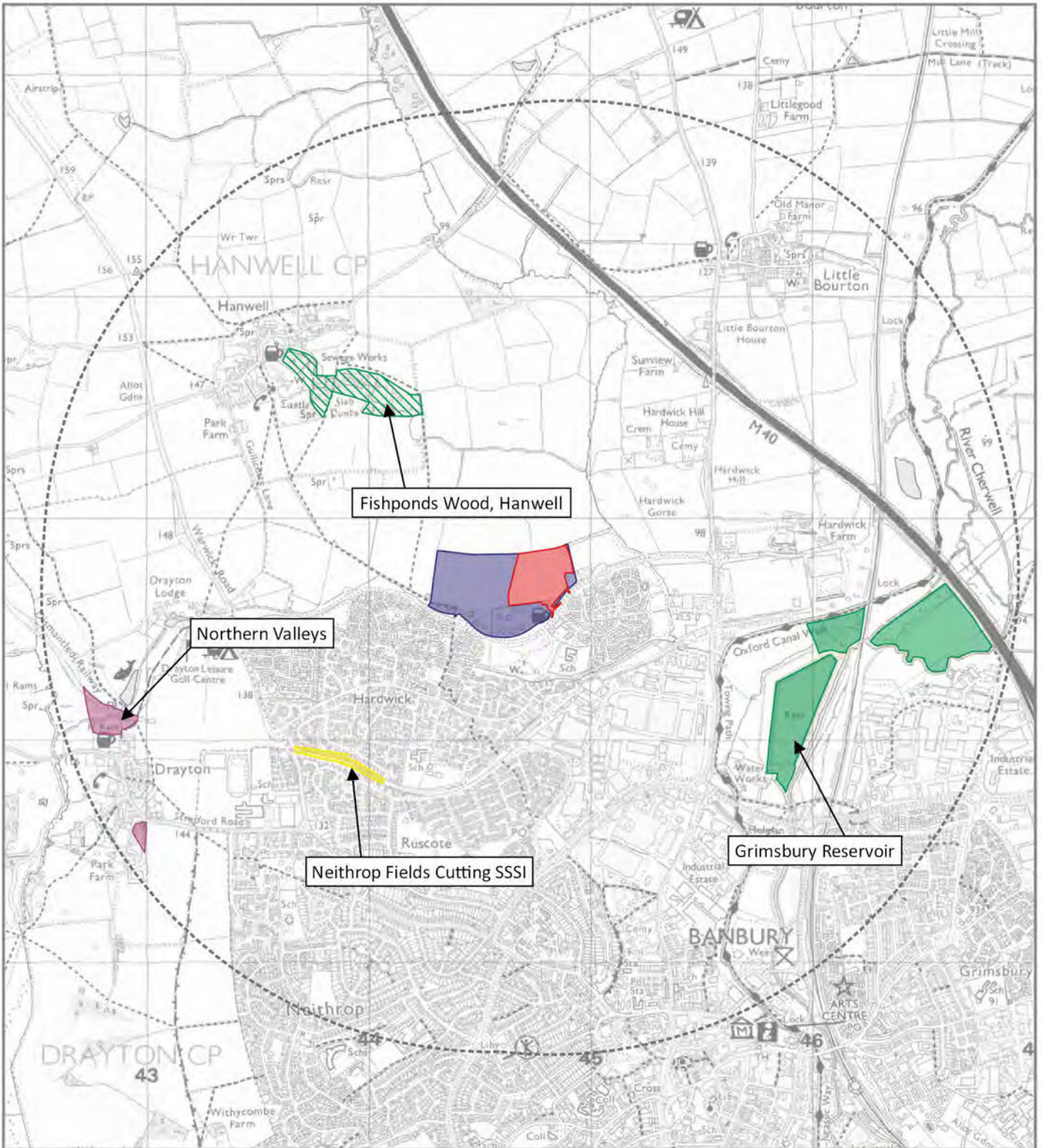
September 2023

PROJECT	
TITLE	
DRAWING NO.	
REV.	
DATE	



Plan 6007-01/ECO2:

Ecological Designations



Key:

- Site Location
- Additional Land Within the Same Ownership
- Sites of Special Scientific Interest (SSSI)
- Conservation Target Area
- Oxfordshire Local Wildlife Site
- Proposed Cherwell District Wildlife Site
- 2km Buffer (only non-statutory designation within this buffer as shown)



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Land at Hanwell Fields,
 Banbury
 Ecological Designations

6007-01/ECO2

E/JP

September 2023

PROJECT
 TITLE
 DRAWING NO.
 REV
 DATE



P:\Project\Aspect Ecology\Projects\ECO_6000\1006007\Graphics\Phase 2 ECO1_3.qxd:007 Phase 2 ECO1_3.qxd:007

Plan 6007-01/ECO3:

Habitats and Ecological Features



- Key:
- Proposed Development Site Boundary
 - Additional Land Within the Same Ownership
 - Semi-improved Grassland
 - Mown Grassland
 - Mixed scrub
 - Hedgerow
 - +
 Tree
 - +
 Trees with Identified Bat Roosting Potential (refer to text for details)

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Land at Hanwell Fields, Banbury	PROJECT
Habitats and Ecological Features	TITLE
6007-01/ECO3	DRAWING NO.
G/JP	REV
September 2023	DATE



Plan 6007-01/ECO4:

Reptile Survey Plan



- Key:
- Proposed Development Site Boundary
 - Additional Land Within the Same Ownership
 - Reptile Transect Location



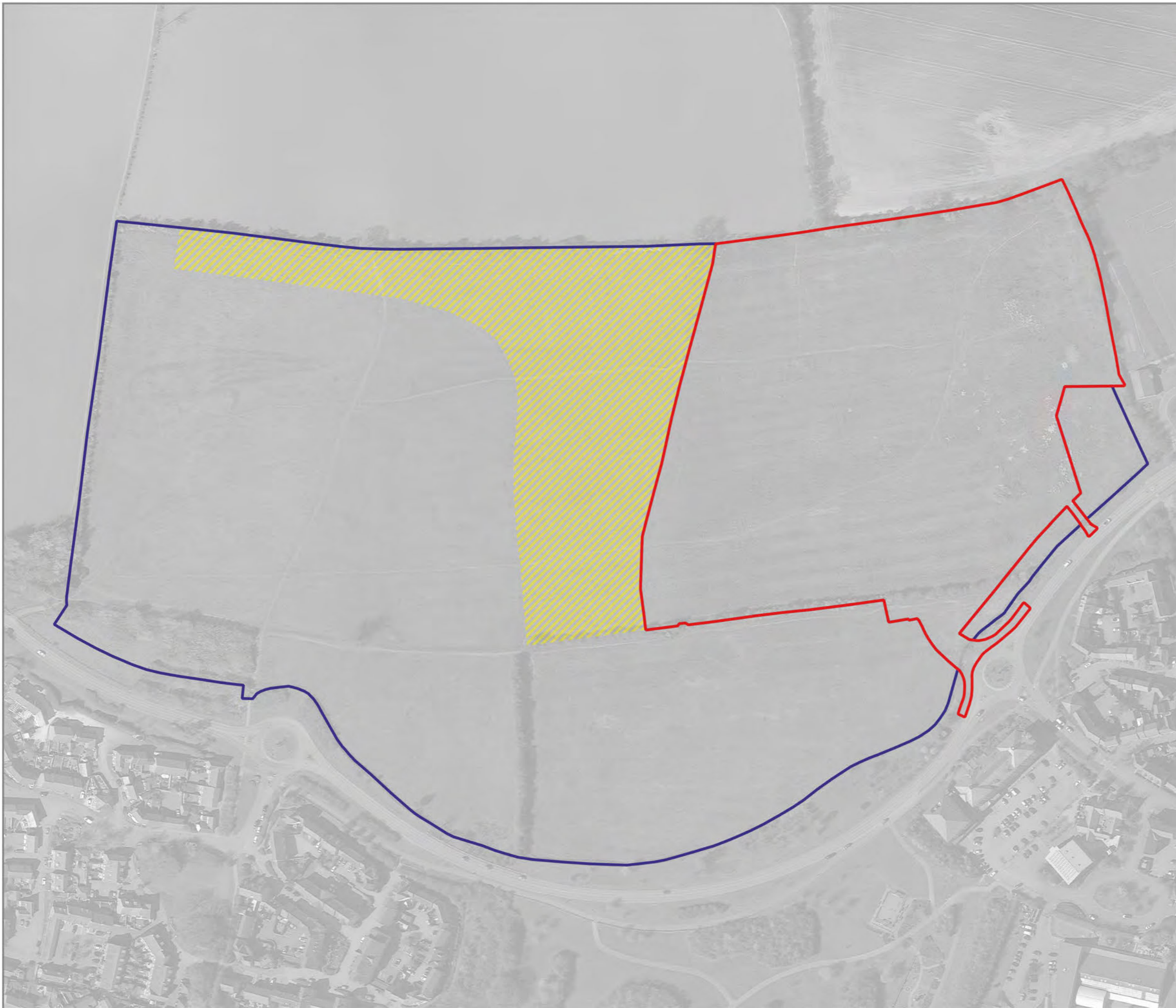
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Land at Hanwell Fields, Banbury	PROJECT
Reptile Survey Plan	TITLE
6007-01/ECO4	DRAWING NO.
C/JP	REV
September 2023	DATE



Plan 6007-01/ECO5:

Illustrative Location of Potential Biodiversity Net Gain Provision



- Key:
-  Proposed Development Site Boundary
 -  Additional Land Under Control of the Applicant
 -  Indicative location of proposed Biodiversity Net Gain provision relating to phase 2 (2.9ha)

Illustrative provision based on outline parameters and associated illustrative masterplan



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Land at Hanwell Fields, Banbury	PROJECT
Illustrative Location of Potential Biodiversity Net Gain Provision	TITLE
6007-01/EC05	DRAWING NO.
G/JP	REV
November 2023	DATE



Appendices

Appendix 6007-01/1:

Proposed Landscape Strategy Plan



PRIVATE				
House Type	No of Bedrooms	Sqft (GIA)	No	Total Sqft
18 Flat	1	625	3	1875
18 Flat	1	625	1	625
28 Maisonette	2	755	4	3020
28 House	2	850	22	18700
38.1	3	1200	21	25200
38.2	3	1350	1	1350
38.3	3	1050	8	8400
38 Bungalow	3	1025	6	6150
48.2	4	1475	10	14750
48.3	4	1675	5	8375
TOTALS			81	88445
Private housing plot areas (sqft)				88445
Net developable area (acres)				5.865
Coverage sqft/acre				15080

AFFORDABLE RENTED / SHARED OWNERSHIP				
House Type	No of Bedrooms	Sqft (GIA)	No	Total Sqft
18 Maisonette	1	625	2	1250
18 Flat	1	625	6	3750
2b Maisonette	2	755	2	1510
2b Flat	2	755	8	6040
28 House	2	850	4	3400
38 House	3	1001	11	11011
48 House	4	1242	3	3726
TOTALS			36	30687
Affordable housing plot areas (sqft)				30687
Net developable area (acres)				1.442
Coverage sqft/acre				21281

SITE TOTALS	
Total Housing plot areas (sqft)	119132
Total Net developable area (acres) based on sketch	7.307
Total Coverage sqft/acre	16304

- Site Boundary
- 26 Plot Number
- 38 House Type
- * Affordable Rented
- Approved application phase 1 : 21/03426/OUT boundary
- Other land in ownership

Romsey Portishead Camberley
 T: 01794 367703 T: 01275 407000 T: 01276 749050
 F: 01794 367276 F: 01794 367276 F: 01794 367276

www.thrivearchitects.co.uk

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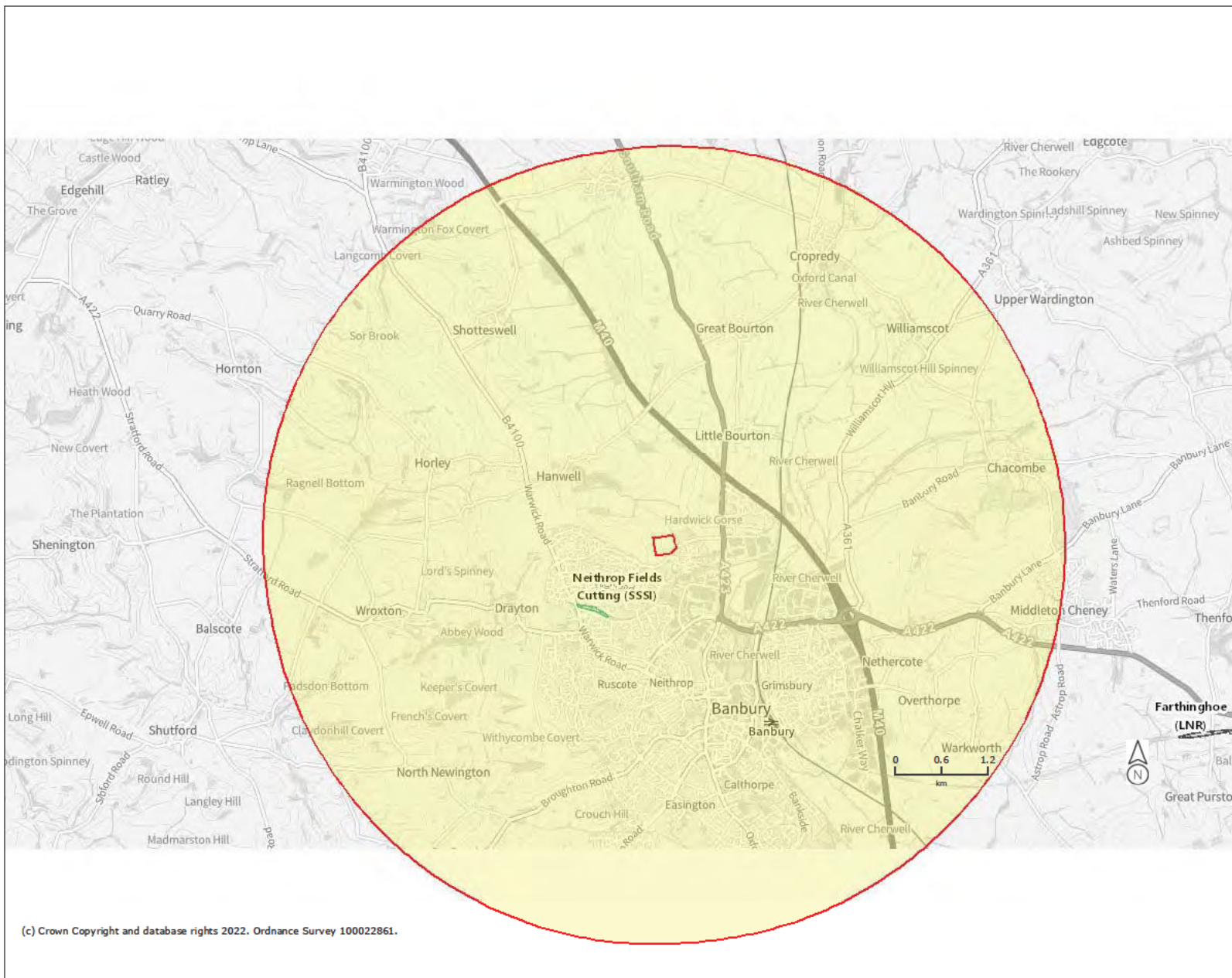
Rev	Description	Date	Au	Ch
A	Preliminary issue	07.06.23	AB/AA	AB/-
B	Revised layout	30.06.23	AB/hm	-/-
C	Revised layout & boundary	18.09.23	AB/AA	AB/-
D	Revised boundary	18.10.23	AA/-	-/-
E	Amendment to affordable mix/accom schedule	19.10.23	AB/AA	AB/-

Project	Hanwell Fields, Banbury Phase 2		
Drawing	Sketch Layout Illustrative - 03		
Client	MANOR OAK HOMES		
Job no.	MANO220426	Date	07.06.23
Dwg no.	SKL-03	Rev.	E
Author	AB/AA	Checked	AB/-
Status	PLANNING	Scale	1:1000@A1
Office	Romsey		
Client ref.	-		



Appendix 6007-01/2:

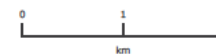
Desktop Study Data



Legend

-  Local Nature Reserves (England)
-  National Nature Reserves (England)
-  Sites of Special Scientific Interest (England)

Projection = OSGB36
 xmin = 434400
 ymin = 238800
 xmax = 454100
 ymax = 248000



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Site Check Report Report generated on Wed Oct 18 2023
You selected the location: Centroid Grid Ref: SP44624254
The following features have been found in your search area:

SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)
No Features found

Site Check Report Report generated on Wed Oct 18 2023
You selected the location: Centroid Grid Ref: SP44794274
The following features have been found in your search area:

Sites of Special Scientific Interest (England) - points

Name	Nei hrop Fields Cut ing SSSI
Reference	1000768
Natural England Contact	Conservation Delivery Team
Natural England Phone Number	0845 600 3078
Hectares	1.44
Citation	1002934
Hyperlink	http://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s1002934

Sites of Special Scientific Interest (England)

Name	Nei hrop Fields Cut ing SSSI
Reference	1000768
Natural England Contact	Conservation Delivery Team
Natural England Phone Number	0845 600 3078
Hectares	1.44
Citation	1002934
Hyperlink	http://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s1002934

Local Nature Reserves (England) - points

No Features found

Local Nature Reserves (England)

No Features found

National Nature Reserves (England) - points

No Features found

National Nature Reserves (England)

No Features found

Site Check Report Report generated on Wed Oct 18 2023
You selected the location: Centroid Grid Ref: SP44744269
The following features have been found in your search area:

Ramsar Sites (England) - points

No Features found

Ramsar Sites (England)

No Features found

Proposed Ramsar Sites (England) - points

No Features found

Proposed Ramsar Sites (England)

No Features found

Special Areas of Conservation (England) - points

No Features found

Special Areas of Conservation (England)

No Features found

Possible Special Areas of Conservation (England) - points

No Features found

Possible Special Areas of Conservation (England)

No Features found

Special Protection Areas (England) - points

No Features found

Special Protection Areas (England)

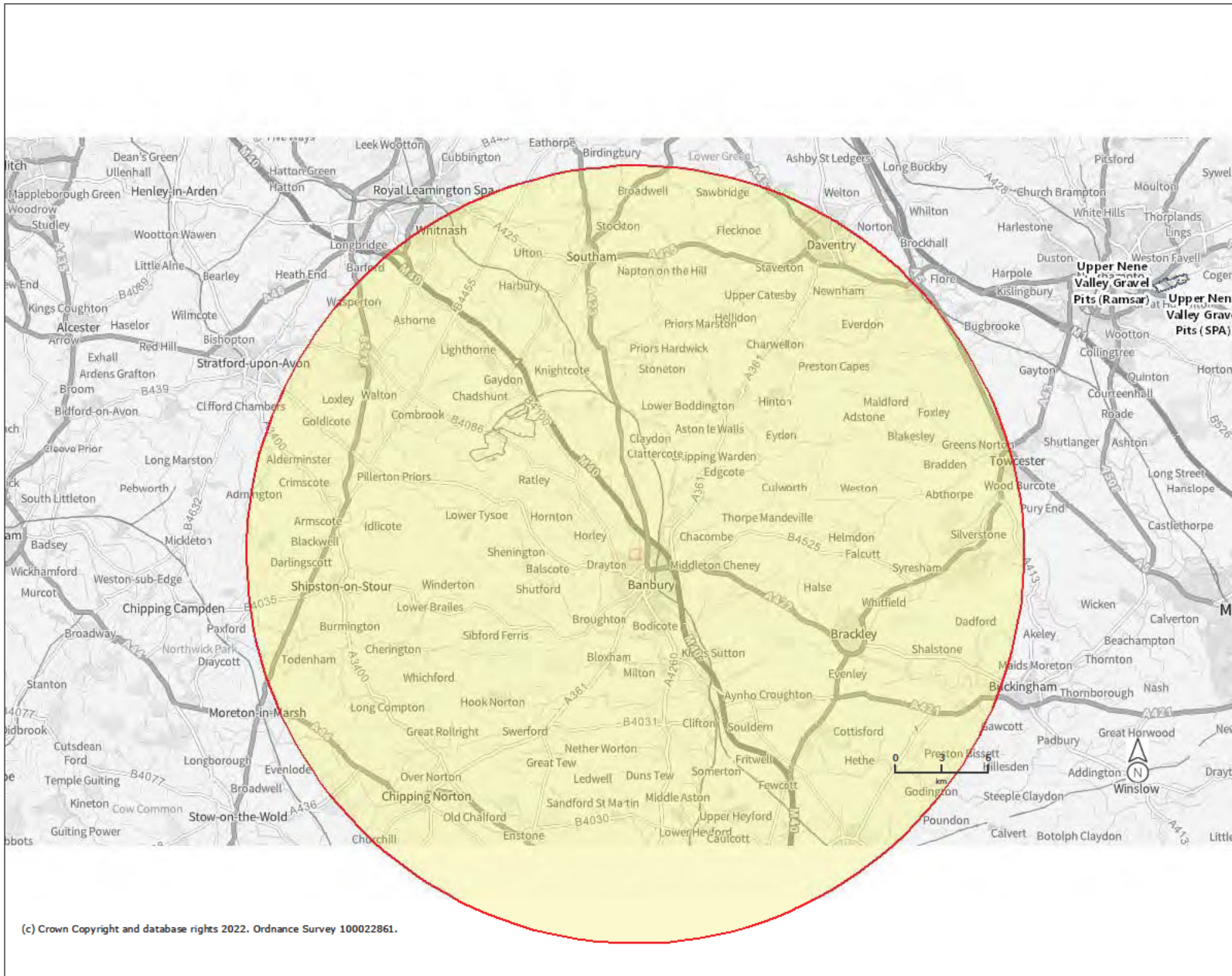
No Features found

Potential Special Protection Areas (England) - points

No Features found

Potential Special Protection Areas (England)

No Features found



Legend

- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Protection Areas (England)
- Potential Special Protection Areas (England)

Projection = OSGB36
 xmin = 394800
 ymin = 223900
 xmax = 493200
 ymax = 269500

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Legend

- Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)
- Priority Habitat Inventory - Lowland Calcareous Grassland (England)
- Priority Habitat Inventory - Lowland Dry Acid Grassland (England)
- Priority Habitat Inventory - Lowland Meadows (England)
- Priority Habitat Inventory - Lowland Heathland (England)
- Priority Habitat Inventory - Reedbeds (England)

Priority Habitat Lakes

- Dystrophic
- Eutrophic
- Mesotrophic (Marl)
- Mesotrophic
- Oligotrophic

Surveyed Priority Ponds Points (points)

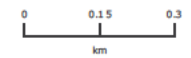
- CWW no OS pond within 30m
- CWW within 30m of OS pond
- CWW within OS pond
- PP no OS pond within 30m
- PP within 30m of OS pond
- PP within OS pond

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)
- Priority Habitat Inventory - Traditional Orchards (England)
- Woodpasture and Parkland BAP Priority Habitat (England)
- Priority Habitat Inventory - No main habitat but additional habitat exists (England)

Projection = OSGB36

xmin = 442900
 ymin = 241800
 xmax = 446100
 ymax = 243600



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Appendix 6007-01/3:

Evaluation Methodology

Evaluation Methodology

1. The evaluation of ecological features and resources is based on professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this report is based on that described by the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (2018)¹.

Importance of Ecological Features

2. Ecological features within the site/study area have been evaluated in terms of whether they qualify as 'important ecological features'. In this regard, CIEEM guidance states that *"it is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable"*.
3. Various characteristics contribute to the importance of ecological features, including:

- Naturalness;
- Animal or plant species, sub-species or varieties that are rare or uncommon, either internationally, nationally or more locally, including those that may be seasonally transient;
- Ecosystems and their component parts, which provide the habitats required by important species, populations and/or assemblages;
- Endemic species or locally distinct sub-populations of a species;
- Habitat diversity;
- Habitat connectivity and/or synergistic associations;
- Habitats and species in decline;
- Rich assemblages of plants and animals;
- Large populations of species or concentrations of species considered uncommon or threatened in a wider context;
- Plant communities (and their associated animals) that are considered to be typical of valued natural/semi-natural vegetation types, including examples of naturally species-poor communities; and
- Species on the edge of their range, particularly where their distribution is changing as a result of global trends and climate change.

4. As an objective starting point for identifying important ecological features, European, national and local governments have identified sites, habitats and species which form a key focus for biodiversity conservation in the UK, supported by policy and legislation. These are summarised by CIEEM guidance as follows:

Designated Sites

- Statutory sites designated or classified under international conventions or European legislation, for example World Heritage Sites, Biosphere Reserves, Wetlands of International Importance (Ramsar sites), Special Areas of Conservation (SAC), Special Protection Areas (SPA);

¹ CIEEM (2018) 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine', Chartered Institute of Ecology and Environmental Management, Winchester

- Statutory sites designated under national legislation, for example Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR);
- Locally designated wildlife sites, e.g. Local Wildlife Sites (LWS).

Biodiversity Lists

- Habitats and species of principal importance for the conservation of biodiversity in England and Wales (largely drawn from UK BAP priority habitats and priority species), often referred to simply as Priority Habitats / Species;
- Local BAP priority species and habitats.

Red Listed, Rare, Legally Protected Species

- Species of conservation concern, Red Data Book (RDB) species;
- Birds of Conservation Concern;
- Nationally rare and nationally scarce species;
- Legally protected species.

5. In addition to this list, other features may be considered to be of importance on the basis of local rarity, where they enable effective conservation of other important features, or play a key functional role in the landscape.

Assigning Level of Importance

6. The importance of an ecological feature should then be considered within a defined geographical context. Based on CIEEM guidance, the following frame of reference is used:
 - International (European);
 - National;
 - Regional;
 - County;
 - District;
 - Local (e.g. Parish or Neighbourhood);
 - Site (not of importance beyond the immediate context of the site).
7. Features of 'local' importance are those considered to be below a district level of importance, but are considered to appreciably enrich the nature conservation resource or are of elevated importance beyond the context of the site.
8. Where features are identified as 'important' based on the list of key sites, habitats and species set out above, but are very limited in extent or quality (in terms of habitat resource or species population) and do not appreciably contribute to the biodiversity interest beyond the context of the site, they are considered to be of 'site' importance.
9. In terms of assigning the level of importance, the following considerations are relevant:

Designated Sites

10. For designated sites, importance should reflect the geographical context of the designation (e.g. SAC/SPA/Ramsar sites are designated at the international level whereas SSSIs are designated at the national level). Consideration should be given to multiple designations as appropriate (where an area is subject to differing levels of nature conservation designations).

Habitats

11. In certain cases, the value of a habitat can be measured against known selection criteria, e.g. SAC selection criteria, 'Guidelines for the selection of biological SSSIs' and the Hedgerows Regulations 1997. However, for the majority of commonly encountered sites, the most relevant habitat evaluation will be at a more localised level and based on relevant factors such as antiquity, size, species-diversity, potential, naturalness, rarity, fragility and typicalness (Ratcliffe, 1977). The ability to restore or re-create the habitat is also an important consideration, for example in the case of ancient woodland.
12. Whether habitats are listed as priorities for conservation at a national level in accordance with Sections 41 and 42 of the Natural Environment and Rural Communities Act (NERC) 2006, so called 'Habitats of Principal Importance' or 'Priority Habitats', or within regional or local Biodiversity Action Plans (BAPs) is also relevant, albeit the listing of a particular habitat under a BAP does not in itself imply any specific level of importance.
13. Habitat inventories (such as habitat mapping on the MAGIC database) or information relating to the status of particular habitats within a district, county or region can also assist in determining the appropriate scale at which a habitat is of importance.

Species

14. Deciding the importance of species populations should make use of existing criteria where available. For example, there are established criteria for defining nationally and internationally important populations of waterfowl. The scale within which importance is determined could also relate to a particular population, e.g. the breeding population of common toads within a suite of ponds or an otter population within a catchment.
15. When determining the importance of a species population, contextual information about distribution and abundance is fundamental, including trends based on historical records. For example, a species could be considered particularly important if it is rare and its population is in decline. With respect to rarity, this can apply across the geographic frame of reference and particular regard is given to populations where the UK holds a large or significant proportion of the international population of a species.
16. Whether species are listed as priorities for conservation at a national level in accordance with Sections 41 and 42 of the Natural Environment and Rural Communities Act (NERC) 2006, so called 'Species of Principal Importance' or 'Priority Species', or within regional or local Biodiversity Action Plans (BAPs) is also relevant, albeit the listing of a particular species under a BAP does not in itself imply any specific level of importance.
17. Species populations should also be considered in terms of the potential zone of influence of the proposals, i.e. if the entire species population within the site and surrounding area were to be affected by the proposed development, would this be of significance at a local, district, county or wider scale? This should also consider the foraging and territory ranges of individual species (e.g. bats roosting some distance from site may forage within site whereas other species such as invertebrates may be more sedentary).

Appendix 6007-01/4:

Legislation Summary

LEGISLATION SUMMARY

1. In England and Wales primary legislation is made by the UK Parliament, and in Scotland by the Scottish Parliament, in the form of Acts. The main piece of legislation relating to nature conservation in the UK is the Wildlife and Countryside Act 1981 (as amended).
2. Acts of Parliament confer powers on Ministers to make more detailed orders, rules or regulations by means of secondary legislation in the form of statutory instruments. Statutory instruments are used to provide the necessary detail that would be too complex to include in an Act itself¹. The provisions of an Act of Parliament can also be enforced, amended or updated by secondary legislation.
3. In summary, the key pieces of legislation relating to nature conservation in the UK are:
 - Wildlife and Countryside Act 1981 (as amended)
 - Protection of Badgers Act 1992
 - Hedgerows Regulations 1997
 - Countryside and Rights of Way (CROW) Act for England and Wales 2000
 - Natural Environment and Rural Communities Act 2006
 - Conservation of Habitats and Species Regulations 2017
4. A brief summary of the relevant legislation is provided below. The original Acts and instruments should be referred to for the full and most up to date text of the legislation.
5. **Wildlife and Countryside Act 1981 (as amended)**. The WCA Act provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) identified for their flora, fauna, geological or physiographical features. The Act contains strict measures for the protection and management of SSSIs.
6. The Act also refers to the treatment of UK wildlife including protected species listed under Schedules 1 (birds), 5 (mammals, herpetofauna, fish, invertebrates) and 8 (plants).
7. Under Section 1(1) of the Act, all wild birds are protected such that it is an offence to intentionally:
 - Kill, injure or take any wild bird;
 - Take, damage or destroy the nest of any wild bird whilst in use* or being built;
 - Take or destroy an egg of any wild bird.

* The nests of birds that re-use their nests as listed under Schedule ZA1, e.g. Golden Eagle, are protected against taking, damage or destruction irrespective of whether they are in use or not.
8. Offences in respect of Schedule 1 birds are subject to special, i.e. higher, penalties. Schedule 1 birds also receive greater protection such that it is an offence to intentionally or recklessly:
 - Disturb any wild bird included in Schedule 1 while it is building a nest or while it is in, on or near a nest containing eggs or young;
 - Disturb dependent young of such a bird.

¹ <http://www.parliament.uk/business/bills-and-legislation/secondary-legislation/statutory-instruments/>

9. Under Section 9(1) of the Act, it is an offence to:
 - Intentionally kill, injure or take any wild animal included in Schedule 5.
10. In addition, under Section 9(4) it is an offence to intentionally or recklessly:
 - Obstruct access to, any structure or place which any wild animal included in Schedule 5 uses for shelter or protection; or
 - Disturb any wild animal included in Schedule 5 while occupying a structure or place which it uses for that purpose.
11. Under Section 13(1) it is an offence:
 - To intentionally pick, uproot or destroy any wild plant listed in Schedule 8; or
 - Unless the authorised person, to intentionally uproot any wild plant not included in Schedule 8.
12. The Act also contains measures (S.14) for preventing the establishment of non-native species that may be detrimental to native wildlife, prohibiting the introduction into the wild of animals (releases or allows to escape) and plants (plants or causes to grow) listed under Schedule 9.
13. **Protection of Badgers Act 1992.** The Act aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain. It should be noted that the legislation is not intended to prevent properly authorised development. Under the Act it is an offence to:
 - Wilfully kill, injure, take, possess or cruelly ill-treat* a Badger, or attempt to do so;
 - To intentionally or recklessly interfere with a sett# (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

* the intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence

A sett is defined as “any structure or place which displays signs indicating current use by a Badger”. Natural England advice (June 2009) is that a sett is protected so long as such signs remain present, which in practice could potentially be for some time after the last actual occupation by Badger. Interference with a sett includes blocking tunnels or damaging the sett in any way
14. Licences can be obtained from the Statutory Nature Conservation Organisation (SNCO) for development activities that would otherwise be unlawful under the legislation, provided there is suitable justification. The SNCO for England is Natural England.
15. **Hedgerows Regulations 1997.** ‘Important’ hedgerows (as defined by the Regulations) are protected from removal (up-rooting or otherwise destroying). Various criteria specified in the Regulations are employed to identify ‘important’ hedgerows for wildlife, landscape or historical reasons.
16. **Countryside and Rights of Way (CRoW) Act for England and Wales 2000.** The CRoW Act provides increased measures for the management and protection of SSSIs and strengthens wildlife enforcement legislation. Schedule 12 of the Act amends the species provisions of the WCA 1981, strengthening the legal protection for threatened species. The Act also introduced a duty on Government to have regard to the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.






17. **Natural Environment and Rural Communities Act 2006.** Section 41 of the NERC Act requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as local planning authorities, in implementing their duty under Section 40 of the Act, to have regard to the conservation of biodiversity in England, when exercising their normal functions. 56 habitats and 943 species of principal importance are included on the S41 list. These are all the habitats and species in England that were identified as requiring action in the UK Biodiversity Action Plan (BAP).
18. **Conservation of Habitats and Species Regulations 2017 (as amended).** The Regulations enact the European Union's Habitats Directive (92/43/EEC) in the UK. The Habitats Directive was designed to contribute to the maintenance of biodiversity within member states through the conservation of sites, known in the UK as Special Areas of Conservation (SACs), containing habitats and species selected as being of EC importance (as listed in Annexes I and II of the Habitats Directive respectively). Member states are required to take measures to maintain or restore these natural and semi-natural habitats and wild species at a favourable conservation status.
19. The Regulations also require the compilation and maintenance of a register of European sites, to include SACs and Special Protection Areas (SPAs)² classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). These sites constitute the Natura 2000 network. The Regulations impose restrictions on planning decisions likely to significantly affect SPAs or SACs.
20. The Regulations also provide protection to European Protected Species of animals that largely overlaps with the WCA 1981, albeit the provisions are generally stricter. Under Regulation 43 it is an offence, *inter alia*, to:
 - Deliberately capture, injure or kill any wild animal of a European Protected Species;
 - Deliberately disturb any wild animals of any such species, including in particular any disturbance likely to impair their ability to survive, to breed or reproduce, to rear or nurture their young, to hibernate or migrate, or which is likely to affect significantly their local distribution or abundance;
 - Deliberately take or destroy the eggs of such an animal;
 - Damage or destroy a breeding site or resting place of such an animal.
21. Similar protection is afforded to European Protected Species of plants, as detailed under Regulation 47.
22. The Regulations do provide a licensing system that permits otherwise illegal activities in relation to European Protected Species, subject to certain tests being fulfilled.

² Special Protection Areas (SPAs) are protected sites classified in accordance with Article 4 of the EC Directive on the Conservation of Wild Birds (79/409/EEC) (aka the Birds Directive), which came into force in April 1979. SPAs are classified for rare and vulnerable birds (as listed on Annex I of the Directive), and for regularly occurring migratory species.

Appendix 6007-01/5:

Relevant output from the Biodiversity Metric 3.1 Calculation Tool



- Key:
-  Site Boundary
 -  Mixed scrub (0.0025ha)
 -  Modified grassland (0.0525ha)
 -  Other neutral grassland (5.9350ha)
 -  Native Hedgerow (0.6km)

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Land at Hanwell Fields, Banbury	PROJECT
Pre-development Habitat Measurements	TITLE
6007-01/BNG1	DRAWING NO.
J/JP	REV
July 2023	DATE





- Key:
- Site Boundary
 - Retained & Enhanced Other neutral grassland (1.1575ha)
 - Wider Open Space (Other Neutral Grassland & Native Scrub) (0.5300ha)
 - Other neutral grassland: Attenuation (0.1850ha)
 - Modified grassland (0.1925ha)
 - Amenity Open Space (Modified Grassland) (0.0900ha)
 - Vegetated garden (1.2300ha)
 - Mixed scrub (0.4550ha)
 - Developed land; sealed surface: Building (0.7325ha)
 - Developed land; sealed surface: Hardstanding (1.4175ha)
 - Retained Native hedgerow (0.53km)
 - Non-native and ornamental hedgerow (1.17km)
 - Proposed Urban Tree [131]

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Land at Hanwell Fields, Banbury PROJECT

Post-development Habitat Measurements TITLE

6007-01/BNG2 DRAWING NO.



I/JP REV

July 2023 DATE

The Biodiversity Metric 4.0 - Calculation Tool

Start page

Project details			
Planning authority:	Cherwell DC		
Project name:	Hanwell Fields (Phase 2)		
Applicant:	Manor Oak Homes		
Application type:			
Planning application reference:	TBC		
Completed by:	Aspect Ecology (CL)		
Date of metric completion:	18 October 2023		
Reviewer:			
Version control:	4.0 (vf3)		
Consenting body reviewer:			
Date of consenting body review:			
Target % net gain:	10%		
Irreplaceable habitat present on-site at baseline:	No		
Total site area (including irreplaceable habitat area):	7.70	Irreplaceable habitat area at baseline:	0.00

Instructions

Main menu

Results

Cell style conventions	
	Attention required
	Input error/rules and principles not met
	Use of this cell is not appropriate
	Enter data
	Automatic lookup
	Result

View all

Reset view

On-site baseline map Insert



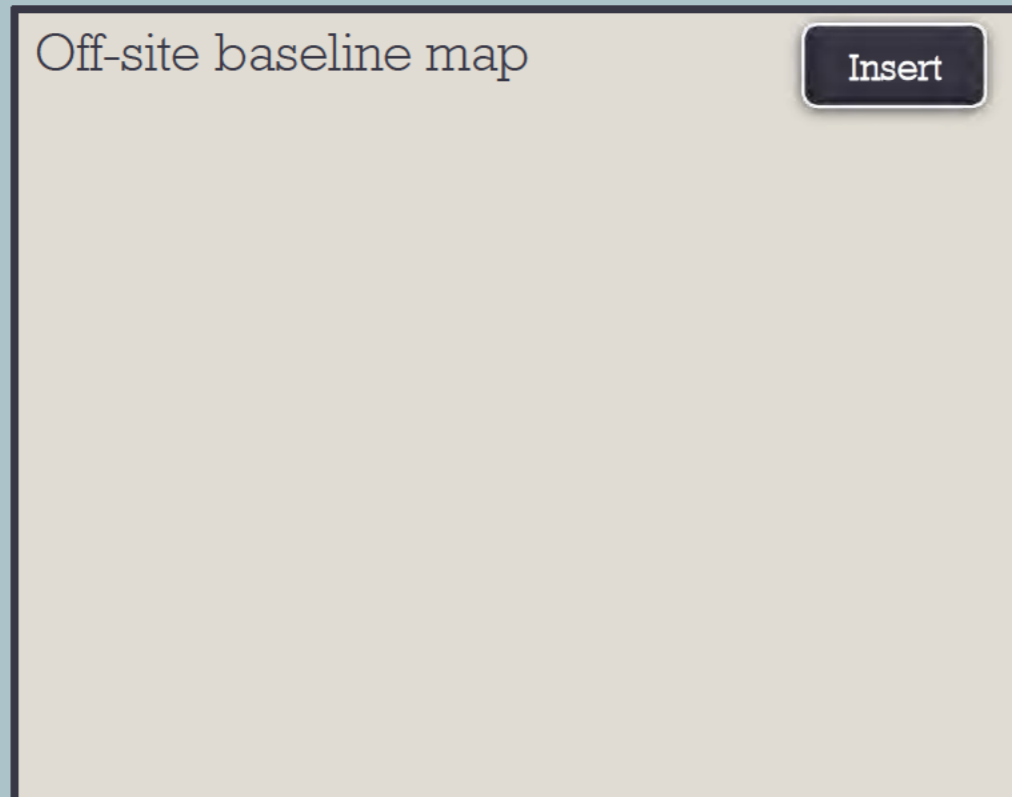
On-site baseline map reference number

On-site post intervention map Insert



On-site post-intervention map reference number

Off-site baseline map Insert



Off-site baseline map reference number

Off-site post intervention map Insert



Off-site post-intervention reference number

Hanwell Fields (Phase 2)
Headline Results
Scroll down for final results Δ

Return to results menu

On-site baseline	Habitat units	23.87	
	Hedgerow units	5.70	
	Watercourse units	0.00	
On-site post-intervention <small>(Including habitat retention, creation & enhancement)</small>	Habitat units	23.34	
	Hedgerow units	6.28	
	Watercourse units	0.00	
On-site net change <small>(units & percentage)</small>	Habitat units	-0.52	-2.18%
	Hedgerow units	0.58	10.25%
	Watercourse units	0.00	0.00%

On-site net gain is less than target set Δ

Off-site baseline	Habitat units	23.20	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention <small>(Including habitat retention, creation & enhancement)</small>	Habitat units	31.32	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change <small>(units & percentage)</small>	Habitat units	8.12	35.01%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%

Combined net unit change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	7.60	
	Hedgerow units	0.58	
	Watercourse units	0.00	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	

FINAL RESULTS

Total net unit change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	7.60	
	Hedgerow units	0.58	
	Watercourse units	0.00	
Total net % change <small>(Including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	31.86%	
	Hedgerow units	10.25%	
	Watercourse units	0.00%	

Trading rules satisfied?	Yes \checkmark
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Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	23.87	26.25	0.00
Hedgerow units	10.00%	5.70	6.27	0.00
Watercourse units	10.00%	0.00	0.00	0.00

Unit requirement met or surpassed \checkmark
 Unit requirement met or surpassed \checkmark
 Unit requirement met or surpassed \checkmark

Item ID	Item Name	Status	Classification		Priority	Start Date	End Date	Duration	Dependencies	Resources	Cost	Risk	Notes	Comments
			Category	Sub-category										
001	Item 1	Active	Category A	Sub-category 1	High	2023-01-01	2023-01-15	15	None	Resource 1	1000	Low	Item 1 description	Item 1 comment
002	Item 2	Active	Category A	Sub-category 2	Medium	2023-01-01	2023-01-20	20	001	Resource 2	1200	Medium	Item 2 description	Item 2 comment
003	Item 3	Active	Category B	Sub-category 1	Low	2023-01-01	2023-02-01	32	001, 002	Resource 3	1500	Low	Item 3 description	Item 3 comment
004	Item 4	Active	Category B	Sub-category 2	High	2023-01-01	2023-01-31	31	003	Resource 4	1800	High	Item 4 description	Item 4 comment
005	Item 5	Active	Category C	Sub-category 1	Medium	2023-01-01	2023-02-15	45	004	Resource 5	2000	Medium	Item 5 description	Item 5 comment
006	Item 6	Active	Category C	Sub-category 2	Low	2023-01-01	2023-03-01	61	005	Resource 6	2200	Low	Item 6 description	Item 6 comment
007	Item 7	Active	Category D	Sub-category 1	High	2023-01-01	2023-02-28	59	006	Resource 7	2500	High	Item 7 description	Item 7 comment
008	Item 8	Active	Category D	Sub-category 2	Medium	2023-01-01	2023-03-15	74	007	Resource 8	2800	Medium	Item 8 description	Item 8 comment
009	Item 9	Active	Category E	Sub-category 1	Low	2023-01-01	2023-04-01	92	008	Resource 9	3000	Low	Item 9 description	Item 9 comment
010	Item 10	Active	Category E	Sub-category 2	High	2023-01-01	2023-04-15	106	009	Resource 10	3200	High	Item 10 description	Item 10 comment

SECTION 1				SECTION 2				SECTION 3				SECTION 4				SECTION 5							
Item	Description	Quantity	Unit	Item	Description	Quantity	Unit	Item	Description	Quantity	Unit	Item	Description	Quantity	Unit	Item	Description	Quantity	Unit				
1	Excavation	100	cu yd	1	Backfill	100	cu yd	1	Gravel	100	cu yd	1	Concrete	100	sq ft	1	Asphalt	100	sq ft				
2	Foundation	100	sq ft	2	Formwork	100	sq ft	2	Rebar	100	lb	2	Paint	100	gal	2	Sealant	100	lb	2	Insulation	100	sq ft
3	Roofing	100	sq ft	3	Plumbing	100	sq ft	3	Electrical	100	sq ft	3	Mechanical	100	sq ft	3	Interior	100	sq ft	3	Exterior	100	sq ft
4	Landscaping	100	sq ft	4	Site Prep	100	sq ft	4	Final	100	sq ft	4	Asphalt	100	sq ft	4	Concrete	100	sq ft	4	Gravel	100	sq ft
5	Drainage	100	sq ft	5	Foundation	100	sq ft	5	Roofing	100	sq ft	5	Landscaping	100	sq ft	5	Drainage	100	sq ft	5	Excavation	100	sq ft

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