Water Eaton

PR6a : Land East of Oxford Road

Biodiversity Improvement and Management Plan

Bellway | STRATEGIC LAND

CHRIST CHURCH
UNIVERSITY OF OXFORD

WE/BIM/P02

Water Eaton

Technical Appendix 9.3 Biodiversity Improvement and Management Plan

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On behalf of:
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PLANS

Section 1
Introduction, Context and Purpose

1.1 This Biodiversity Improvement and Management Plan (BIMP) has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Bellway Homes Limited and Christ Church, Oxford (hereafter referred to as 'the Applicant') and aims to provide a framework strategy for the protection, enhancement and management of biodiversity features within land at Water Eaton, Oxford (hereafter referred to as 'the Site') throughout the construction and operational phases of the development.

1.2 The BIMP accompanies Chapter 9 (Biodiversity) of an Environmental Statement (ES) intended to support an outline planning application for a mixed-use development described as follows:

"Outline application (with all matters except access reserved for future consideration) for the demolition of existing buildings and the erection of up to 800 dwellings (Class C3); a two form entry primary school; a local centre (comprising: convenience retailing (not less than 350sqm and up to 500sqm (Class E(a)), business uses (Class E(g)(i)) and/or financial and professional uses (Class E(c)) up to 500sqm, café or restaurant use (Class E(b)) up to 200sqm; community building (Class E and F2); car and cycle parking); associated play areas, allotments, public open green space and landscaping; new vehicular, pedestrian and cycle access points; internal roads, paths and communal parking infrastructure; associated works, infrastructure (including Sustainable Urban Drainage, services and utilities) and ancillary development. Works to the Oxford Road in the vicinity of the site to include, pedestrian and cycle infrastructure, drainage, bus stops, landscaping and ancillary development."

1.3 All matters apart from access are reserved. The Site measures approximately 45.8 hectares (ha) and is centred at approximately Ordnance Survey National Grid Reference SP 505 111. The Site is located to the east of the A4165, Oxford Road to the north of Oxford. The northern boundary adjoins Oxford Parkway Park and Ride site. To the east, the site boundary crosses an open field, then follows field boundaries around St. Frideswide's Farm to the south, where the southern boundary adjoins Cutteslowe Park, Banbury Road North Sports Ground, and an adjacent field. The land to the south of the site boundary is within the administrative area of Oxford City Council.

1.4 The Site is allocated under Policy PR6a – Land East of Oxford Road of the Partial Review of the Cherwell District Local Plan 2011 - 2031 (Part 1), adopted 07 September 2020[1]. Policy PR6a specifies the requirement for this supporting document.

1.5 EDP has provided input throughout the iterative design process so the masterplan, although illustrative, already reflects some important measures to avoid, mitigate or compensate for ecological impacts as well as other measures designed to provide long-term ecological enhancements and biodiversity net gain in line with planning policy at the national and local

[1] The Cherwell Local Plan 2011-2031 (Part 1) Partial Review – Oxford's Unmet Housing Need. Available at: https://www.cherwell.gov.uk/info/83/local-plans/215/adopted-cherwell-local-plan-2011-2031-part-1-partial-review---oxfords-unmet-housing-need

level. The proposals for the Site are illustrated within the Green Infrastructure Parameter Plan, enclosed as **Appendix EDP 1**, which should be read in conjunction with the Illustrative Landscape Strategy provided in **Appendix EDP 2**.

1.6 EDP considers that this BIMP demonstrates compliance with, and the Applicant's commitment to deliver, the requirements set out in PR6a – Land East of Oxford Road, and relevant environmental policies, where it is possible to do so within the confines of the Site. In doing so, EDP considers that the development proposals are compliant with local planning policy and are also consistent with national planning policy.

1.7 The remainder of this document is structured as follows:

- **Section 2** describes the scope in respect of Policy PR6a and the overall aims and objectives of the BIMP, and responsibilities for its delivery;
- **Section 3** summarises the ecological and landscape features within the Site that are the focus of the BIMP;
- **Section 4** provides a vision for the Site and outlines the principles for construction-phase mitigation and necessary design considerations and parameters to maintain ecological features on-site in the long-term;
- **Section 5** - **7** describes habitat retention, enhancement and creation proposals, establishment principles of habitat management as well as longer-term broad management principles;
- **Section 8** describes the monitoring requirements to ensure compliance with this BIMP and future documentation;
- **Section 9** describes potential mitigation specific to farmland birds;
- **Section 10** describes the methodology and results of the Biodiversity Net Gain (BNG) Assessment that accompanies this report; and
- **Section 11** provides a conclusion.

Section 2
Scope, Aims and Responsibilities

SCOPE

2.1 This BIMP is intended to provide the outline framework for delivering ecological enhancement, mitigation and management across the entire Site. It consolidates ecological mitigation information provided in various documents (the EcIA, the Design and Access Statement and Green Infrastructure Parameter Plan) to facilitate determination of the application submitted and demonstrate a commitment to achieving measurable net gains for biodiversity.

2.2 The BIMP intends to provide a sufficient level of detail commensurate with an outline application and therefore contains only broad principles, broad parameters and broad areas for enhancement, mitigation and management. Providing too much detail is not commensurate with an outline planning application and could be counterproductive whilst the detailed design stage (subject to Reserved Matters) is still evolving.

2.3 Policy PR6a requires the production of a BIMP informed by the findings of the Biodiversity Impact Assessment (BIA) and habitat surveys. The BIMP shall include:

"(a) Measures for securing net biodiversity gain within the site and within the residential area and for the protection of wildlife during construction.

(b) Measures for retaining and conserving protected/notable species (identified within baseline surveys) within the development.

(c) Demonstration that designated environmental assets will not be harmed, including that there will be no detrimental impacts down-river in the Cherwell Valley through hydrological, hydro-chemical or sedimentation impacts.

(d) Measures for the protection and enhancement of existing wildlife corridors.

(e) The creation of a green infrastructure network with connected wildlife corridors, including within the residential area, and the improvement of the existing network including through the protection/enhancement of the existing hedgerow network and the protection of mature trees.

(f) Measures to minimise light spillage and noise levels on connective features and other habitat features of biodiversity value.

(g) The protection of the orchard and waterbody adjoining the site at St. Frideswide's Farm.

(h) Farmland bird compensation.

(i) Proposals for long-term wildlife management and maintenance including for the wildlife habitats accessible from the primary school.

(j) A scheme for the provision for in-built bird and bat boxes, for wildlife connectivity between gardens and for the viable provision of designated green walls and roofs."

2.4 For clarity each element of the above policy is addressed as follows in this document:

- Element *a* is addressed in **Section 8** and **10**;
- Elements *b, c, d, e, f, g, i* and *j* are covered in **Sections 4**–**8**; and
- Element *h* is addressed in **Section 9**.

2.5 This BIMP will, therefore provide a framework at this outline planning application stage to inform detailed Ecological Construction Method Statement (ECMS) and Landscape, Ecology Management Plan (LEMP) (or similar document(s)) that will come forward for the Site as part of the detailed Reserved Matters applications in due course. The principles and parameters established within this BIMP will ensure that a coordinated approach to landscape and ecological mitigation and management is secured across the Site, and the protection and enhancement measures identified within the planning application submission are delivered and based on up-to-date ecological information, where necessary.

2.6 It is anticipated that each future ECMS will be informed by relevant updated ecological information as and when those phases of development come forward.

2.7 It is anticipated that each future LEMP will need to describe/demonstrate how it is consistent with the aims and objectives set out in this BIMP.

2.8 Future LEMPs will include detailed soft landscaping measures (e.g. seed mixes, planting depths and mulch composition) and additional and more detailed habitat maintenance which are beyond the scope of this BIMP. However, this BIMP outlines broad habitat management principles to be taken forward to the LEMP.

2.9 The precise phasing, or commencement date, of the development is not yet confirmed and therefore it is not possible to write a BIMP at this stage that identifies the location and timing for Site-based activities in a chronologically linear fashion from year 1 to year 10. Instead, the BIMP provides a description of the broad measures required for any development phase from year 1 (when it commences) to year 10.

2.10 Assuming commencement of at least one development phase in the first year, the BIMP and subsequent LEMP(s) will therefore cover a minimum 10-year period from commencement of the very first construction activity.

2.11 Each development phase may take several years to complete construction, and several development phases will occur over a period of many years. It will therefore be necessary for immediate aftercare/maintenance to occur in the first year of each development phase. Thereafter, for each development phase, management will continue in perpetuity.

2.12 The BIMP is structured to take into account the construction and post-development stages for each possible development phase. During the construction stage of any of the development phases, the measures described in this BIMP seek to protect, maintain and manage existing features of ecological value that are to be retained within the development.

Following completion of each development phase, the measures described in this BIMP also seek to ensure that the ecological features retained/created or enhanced within the built development are retained and managed in perpetuity (during the post-development stage).

2.13 The EcIA for the proposed development took a focused suite of ecological features of local and/or district level value forward for assessment. As acknowledged in the EcIA and **Section 10** of this document, the proposed development ensures there is no net loss to biodiversity as a whole and moreover the proposed development will ensure that a measurable net gain in biodiversity is delivered. This has been achieved through primary ('intrinsic') mitigation that is inherent to the scheme design, which ensures adverse effects upon all protected species populations/assemblages and other features of less than local-value on Site have been avoided/minimised and opportunities for their continued existence on Site has been secured.

2.14 The specific mitigation measures within this BIMP will inform future applications for European Protected Species (EPS) licences as required, subject to any revisions/further requirements to meet licensing criteria as agreed with Natural England, statutory nature conservation organisation in England. This BIMP also therefore provides a sufficient level of information for the Local Planning Authority (LPA) to be satisfied that the development is capable of meeting the requirements of the protected species licensing derogation tests[2], to which it must give due consideration when determining planning applications.

2.15 The proposed biodiversity strategy, which includes a suite of habitat retention, creation and enhancement measures is shown on the Illustrative Landscape Strategy plan (**Appendix EDP 2**), which provides a network of habitats to benefit local biodiversity, as well as across the Green Infrastructure Parameter Plan (**Appendix EDP 1**). Additional ecological mitigation measures are shown on **Plan EDP 1**. The landscape and ecology chapters (which include an Arboricultural Impact Assessment) of the Environmental Statement (and associated technical appendices) submitted in support of the application have also informed this BIMP and this document will aid the necessary joined-up management approach to ensure the delivery of high-quality, multi-functional greenspace and the recreational and movement strategies for the development.

OVERALL AIM AND OBJECTIVES

2.16 The overall aim of this BIMP (and subsequent documentation produced at the reserved matters stage) is to establish and maintain high-quality natural environment within and around the proposed development, in line with Local and National Planning Policy, which supports ecological features of Local level nature conservation value, thereby ensuring the overall Site makes a positive contribution to local biodiversity. The feature-specific objectives to achieve this aim, and against which the success of the strategy will be measured, are listed below; further detail on the procedures to be followed to achieve these objectives are discussed in **Sections 4**–**8**:

[2] As described in Regulation 53 of the *Conservation of Habitats and Species Regulation 2017* (as amended).

- **Objective 1**: Create multi-functional green spaces that fulfil water attenuation, aesthetic and wildlife requirements, while creating recreational opportunities for new residents that successfully engage the public with their local environment and nature;

- **Objective 2**: Protect and enhance key species populations present within the Site, namely birds, bats, common reptiles and butterflies and ensure the outline principles for construction-phase mitigation is adequate and informed by relevant updated baseline data, where relevant;

- **Objective 3**: Protect and enhance key habitats and existing wildlife corridors and create new habitats of ecological value including woodland, trees/scrub, hedgerow, species-rich grassland and attenuation features, which add to the ecological network around and through the Site and deliver a net gain in biodiversity as well as providing additional tangible enhancements to encourage uptake by wildlife such as bird and bat boxes, and contributing to the objectives of local Conservation Target Areas (CTA);

- **Objective 4**: Ensures the long-term management and maintenance of retained and created habitats is delivered in a manner that maximises biodiversity potential and includes safeguards to ensure changes can be made to achieve target habitat conditions;

- **Objective 5**: Ensures the proposals provide adequate on-site mitigation relating to hydrological, hydro-chemical or sedimentation impacts to the River Cherwell and the protection of habitats adjoining the Site at St. Frideswide's Farm which ensures no degradation in condition; and

- **Objective 6**: Ensures the proposals provide sufficient potential mitigation to support ground nesting birds and maintain the conservation status of farmland birds within northern Oxfordshire.

RESPONSIBILITIES

2.17 The responsibility for carrying out the functions of this BIMP and subsequent documents at reserved matters stages will vary and will be confirmed within each ECMS/LEMP as it is produced. Nonetheless, for each phase of development, in principle, the responsibilities will be as follows:

- **Construction Stage** – The protection of existing ecological interest features being retained, and creation of new habitats will be the responsibility of the Applicant, supported by specialists where appropriate[3], and are to be continued through to practical completion of construction;

- **Post-development Stage (Immediate Aftercare/Short-Term Management Up to Year 5)** – For each development phase, and depending upon construction timings, the responsibility for the immediate establishment and maintenance of retained and newly created habitats/structures may be with the Applicant. The Applicant would be

[3] Including Ecological Clerk of Works ecologists, arboriculturists and landscape contractors

supported by specialists, where appropriate, until the development phase is completed at which point the Applicant's nominated management/stewardship company would take over management;

- **Post-development Stage (Longer-Term Management Year 6 To 10)** – For each development phase, by year 6 it is anticipated that all construction activities will be completed and the management of the retained and newly created habitats will fall entirely to the Applicant's nominated management/stewardship company; and

- **Mitigation for Farmland Birds** – Where required and considered appropriate to mitigate the loss of opportunities on-site for ground nesting birds, a mitigation strategy will be agreed with the LPA.

2.18 Works impacting upon protected species, namely roosting bats at this Site, will only commence once the relevant licence (if applicable)[4] has been granted by Natural England and works must be undertaken in accordance with the Method Statement and conditions accompanying any issued licence. It will be the responsibility of the Applicant to ensure that the conditions of any licence are met, with support from Ecological Clerk of Works (ECoW), who in this case will need to be a licensed bat ecologist given the confirmed presence of low status bat roosts within farm structures to be demolished.

2.19 The management schemes detailed within future LEMPs will cover the provision, management, inspection, maintenance, repair and replacement as necessary, taking into account factors including ecological, landscape, arboricultural, social/educational/-recreational uses for the land.

REVIEW PERIOD

2.20 Any future ECMS is unlikely to require review, however, protocols will need to be built into such documents to ensure a robust protocol is in place to address unexpected finds or issues.

2.21 The provisions and responsibilities for future detailed LEMP (or similar document(s)) will be reviewed on an annual basis during the first five years (known as the establishment period).

2.22 It is anticipated that the LEMP (or similar document(s)) will then be reviewed at five-yearly intervals thereafter, as part of ongoing maintenance by the management company.

2.23 Any substantial amendments during the first 10 years will be approved in writing by the LPA (Cherwell District Council).

2.24 The requirement for additional monitoring that may be required is further discussed in **Section 8**.

[4] Mitigation licences are not available for certain protected species, like common and widespread reptiles.

Section 3
Summary of Baseline Biodiversity Interest

3.1 The Site is predominantly of low ecological value being comprised almost entirely of arable farmland. However, it does support networks of species-poor and species-rich hedgerows, a narrow band of broadleaved woodland, scattered mature broadleaved trees, and dense scrub. Native hedgerows and broadleaved woodland are of local value and are deemed to be priority habitats.

3.2 The Site is hydrologically connected to the Thames River via a ditch bounding the southernmost field of the Site, approximately 130m beyond the eastern boundary (which bisects the field). The ditch drains into the Cherwell River, which is a tributary to the River Thames. Oxford Meadows Special Area of Conservation (SAC) is approximately 1.5km to the south-west of the Site and sites within the broad floodplain of the River Thames, upstream of the confluence of the Cherwell and Thames.

3.3 The key species populations identified as part of the EcIA, and which warrant consideration at a strategic level, are as follows:

- **Breeding Birds** – Assemblage of breeding birds of up to district level value, typical for the Site's geographic and topographic location. The hedgerows are used by conservation concern species such as yellowhammer (*Emberiza citrinella*) and linnet (*Linaria cannabina*) and the arable fields provide foraging habitat for a range of species and nesting habitat for skylark ((*Alauda arvensis*) eight to fourteen pairs), yellow wagtail ((*Motacilla flava*) up to 2 pairs), and lapwing ((*Vanellus vanellus*) up to three pairs);

- **Winter Birds** – an assemblage of farmland birds valued at no greater than Local level value using arable stubbles and hedgerows. Barn owl (*Tyto alba*) have also been recorded adjacent to the Site during the winter and a temporary or occasional roost has been found in derelict buildings at St Frideswide's Farm;

- **Bats** – Assemblage of foraging and commuting bats of no greater than Local level value, typical for the Site's geographic location and habitat types. The highest quality bat habitats within the Site are the linear features i.e., hedgerows, woodland fringe and trees. Small common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) roosts have been identified within barn complexes both on and off site. Numerous trees on Site have moderate and high bat roost potential;

- **Invertebrates** – a small population of breeding Brown Hairstreak (*Thecla betulae*) is present on Site, most notably within hedgerows west and north of St Frideswide's Farm;

- **Badgers**– identified as an important ecological feature (IEF) due to their legal rather than conservation status, badger (*Meles meles*) require consideration at future planning stages. A partially active outlier sett is present in the eastern part of the Site, with evidence of foraging/commuting, including latrines and footprints, recorded across the Site; and

- **Common Reptiles** –a small population of grass snake (*Natrix helvetica*) is present in the eastern part of the Site, individual displaced grass snake can readily be absorbed into the wider landscape however, due to their legal status and the risk of killing/injury, common reptiles require consideration at future planning stages.

Section 4
Key Features to be Protected, Enhanced and Created

VISION

4.1 With the exception of the woodland/scrub corridor along the Site's western boundary, the proposals will retain most of the hedgerow network and scattered mature trees on Site and existing green links, which currently provide connectivity to habitats associated with St. Frideswide's Farm (and known bat roosts) to the east, will be retained through design.

4.2 Habitats of inherently low ecological value will be enhanced and a wide band of greenspace, including trees/woodland, hedgerows, wildflower grassland, tussocky grassland, scrub/shrubs and attenuation features, will extend along the entire eastern Site boundary (**Appendix EDP 2**). Multi-functional greenspace then opens into a large area of public open space (POS) in the south-east corner of the Site. The inclusion of a wide band of green space along the eastern boundary will buffer development from the adjacent farm and provide a protective barrier between the Site and the orchard and pond associated with it.

4.3 An integrated network of created multi-functional green corridors will also bisect the Site to maximise connectivity, namely around the proposed school plot and retained archaeological features, Site boundaries and within residential areas via the creation of new hedgerows and street trees forming linear bands. Attenuation features, allotments and linked gardens will further encourage wildlife to become integrated within the Site rather than forced to reside at its fringes.

Protection Measures

4.4 The protection measures outlined below in relation to the protection of retained habitats, birds, bats, reptiles, badgers and butterflies should be delivered through dedicated ECMS documents or similar. These documents should be informed by relevant and current ecological information to ensure they contain appropriate, robust and relevant advice that ensures the protection of all protected and/or notable species and habitats, including off Site hydrological connections with the Thames River.

4.5 Retained habitat will be suitably protected during construction by a suitably defined Ecological Protection Zone (EPZ). This will be demarcated in greater detail as part of an ECMS for each detailed phase of development and for trees, as a minimum, would extend as far as the root protection areas (RPA) defined within the Arboricultural Assessment and any future detailed Arboricultural Method Statement (AMS).

4.6 When implemented, EPZs will be protected by fencing and signage to prevent activities such as the incursion by vehicles or personnel, fires and stockpiling of materials near to retained habitats.

4.7 The risk of potential pollution events including spills, leaks and other incidents during the construction phase will be minimised through key measures included within an ECMS, or similar document, including the adherence to the Environment Agency's Pollution Prevention Guidance Notes (PPGs) which, although withdrawn, are available from the

government's online archives and are still considered to provide sound pollution prevention guidance and principles[5]. This is discussed in more detail later in this section.

Specific Measures for Barn Owl

4.8 To help ensure that the barn owl roost, associated with St Frideswide's Farm, immediately adjacent to the Site, is not subject to disturbance an EPZ must be installed to avoid construction related disturbance impacts. The closest construction phases should have regard for the following restrictions[6]:

- Do not illuminate the eastern boundary or a surrounding 30m buffer at any time to enable barn owl to commute/forage around St Frideswide's Farm complex;
- Design haul roads/access roads to be >40m distant from St Frideswide's Farm to avoid regular traffic disturbance; and
- Avoid continuous construction within 60m of St Frideswide's Farm during the breeding season.

Specific Measures for Badger

4.9 The partially active badger sett is to be retained through design and unaffected by construction. A 30m EPZ must be installed around the sett to ensure accidental damage/destruction does not occur. The perimeter of the exclusion zone shall be marked with temporary safety barrier mesh fencing, or similar, to clearly define its boundary. In general, the following precautionary measures will be adhered to:

- No vegetation clearance will be undertaken within 10m of active setts;
- Vegetation clearance between 10m and 30m of a sett will be undertaken in accordance with the advice of a suitably qualified ecologist and under ecological supervision;
- Vegetation clearance will be permitted using hand tools only with clearance undertaken no lower than 300mm above ground level. No below ground clearance including excavations of root balls will be permitted;
- No excavations or movement of heavy machinery will be permitted within c.10-30m of an active sett (at the discretion of the suitably qualified ecologist); and
- Where this is not possible (i.e. where an active badger sett is located within c.10-30m of areas requiring excavation or vehicle access), it will be necessary to close setts under licence from NE, with sett closure restricted to between the months of July and November.

4.10 During construction, all excavated pits associated with the development will be covered overnight and all trenches will have sloping planks (no greater than 45° angle) placed in

[5] https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg

[6] Shawyer (2011). Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment Developing Best Practice in Survey and Reporting.

them as a means of escape so that animals will not become trapped as they are expected to commute/forage across the Site during the night.

4.11 A survey for badgers will be undertaken no earlier than three months prior to construction work commencing on-site. This survey will include all suitable sett building habitat within the Site, with the aim of identifying any newly excavated setts. Any new setts within 30m of the construction footprint will need to be closed under licence from Natural England between the months of July and November.

Retention of Habitats

4.12 The majority of habitats upon which key species populations on Site rely are to be retained and protected within EPZs, as summarised above (including trees with bat roosting potential) and hedgerows supporting brown hairstreak butterfly. New planting and other forms of habitat creation will compensate for habitats lost resulting from construction, and it will be possible to increase the ecological value of the Site via the nature and quality of proposed habitats as well as their appropriate long-term habitat management.

4.13 Whilst the proposed development will result in an unavoidable reduction in the value of the land for ground nesting birds such as skylark, proposals will result in enhanced opportunities for the wider bird assemblage, having a positive overall impact and increased provision for a variety of birds, including priority species. Despite this anticipated displacement of ground nesting birds, there are principles which can be incorporated into the on-site landscape design and habitat management which will also increase the value of the Site for foraging skylark, including providing species-rich grassland and invertebrate breeding habitats.

Maintaining Connectivity

4.14 Connectivity will be maintained through and around the Site and strengthened through the enhancement of retained hedgerows. The provision of green open space and extensive additional planting along the eastern Site boundary, to include species-rich grasslands, woodland/native trees, hedgerows and scrub, will maintain green links with the wider landscape in all directions.

4.15 It is advised that native thorn species are planted adjacent to retained vegetation and where residential areas are in close proximity to areas of open green space. This will reduce the likelihood of increased cat predation on birds. Appropriate planting would include hawthorn (*Crataegus monogyna*) and blackthorn (*Prunus spinosa*), blackthorn also being of particular interest to brown hairstreak butterfly. These species will also provide additional foraging and refuge opportunities for a variety of native wildlife. The provision of such planting must be captured in detailed landscaping plans at Reserved Matters stage to clearly demonstrate that this type of planting will be implemented.

4.16 Where roadways sever proposed or existing vegetation corridors, wildlife 'hop overs' will be created through the use of street trees/vegetated reservations to reduce the width of any breaches to linear features and to minimise the break in the vegetation canopy, as illustrated on **Plan EDP 1**. This will enable wildlife to continue to navigate along linear

habitats, despite the lower access breach, and with connected canopies connectivity with the wider landscape will be maintained.

Avoidance of Killing/Injury

4.17 Detailed measures to avoid harming individual animals (in line with relevant legislation) during enabling works and construction will be identified and implemented as part of an ECMS, and if relevant, European Protected Species (EPS) licensing, at the Reserved Matters stages of the planning and development process. As well as protective fencing and the inclusion of EPZs, as described above, additional protective measures must be included in an ECMS and should include (but not be limited to) the following:

- All construction contractor personnel to be given pre-commencement 'toolbox talks' regarding the ecologically sensitive features present within the Site and measures required to avoid/minimise impacts. Location and species-specific toolbox talks will be undertaken where contractors will be made aware of the potential presence of animals on-site. This will be delivered by a suitably experienced and/or licenced ecologist ECoW. In all cases these talks will cover the legal protection and working practices to avoid harming animals. The contractors will be informed that if any protected species are found when an ECoW is not in attendance, they must not be handled, works must stop immediately in this area (where safe to do so) and advice must be sought immediately from the ecologist;

- Prior to, and within 3 months of any works commencing on the Site, a walkover survey is to be undertaken by a suitably experienced ECoW to ensure that the status of the Site for habitats and species has not significantly altered since outline planning consent was granted (such as the presence of newly excavated badger setts). The ECoW would review the validity of baseline ecology surveys in accordance with industry guidance and provide a statement justifying the need/scope of updated surveys to inform mitigation. Works would not commence until sufficient data, to inform an appropriate mitigation strategy, has been obtained;

- Construction/clearance activities affecting key habitats and species will be directly supervised by an ECoW, with a licenced ecologist used when EPS are potentially present, including the requirement to redistribute existing habitats such as log/brash piles to maintain current refuge opportunities, and that any such relocations are carried out sensitively and at an appropriate time of year;

- Vegetation clearance to be undertaken outside key species-specific seasons and using sensitive methodologies as prescribed by an ecologist, and according to vegetation type to be removed and the species likely to be impacted (e.g., removal of suitable nesting habitat outside of the breeding bird season, removal of suitable terrestrial habitat for common reptiles during spring/summer months when individuals are active, avoiding habitat piles that may be used by hibernating wildlife, controlling the extent of habitat removal to ensure retained habitats are not accidentally impacted, etc.);

- Any works affecting buildings will not be permitted until the current status of roosting bats is confirmed and the necessary EPS licence secured; all works must proceed in

line with any licence documentation and as specified by the named ecologist on the licence; and

- Ongoing measures to ensure habitats within the construction footprint do not become attractive to wildlife and are restricted to areas of the Site which are suitably protected.

Roosting Bats

4.18 It is anticipated that the majority of trees with bat roosting potential (as shown on Figure 9.1 of the ES) will be retained and protected within the EPZs described above, with the exception of T15, which has been recorded as having high bat roost potential. If this proves not to be the case at the Detailed Design Stage, then further surveys will be required to confirm if roosting bats are present to inform the need for EPS licencing or precautionary approaches to felling.

4.19 Before felling, T15 will be surveyed by a suitably qualified bat licenced surveyor using an endoscope to check for bat roosts. If a bat roost cannot be ruled out, an EPS licence will be required prior to felling.

4.20 All structures planned for removal within the Site will require updated bat surveys to confirm whether the value of the identified bat roosts has increased in the interim and determine if additional mitigation, as described below, is required. Natural England request that survey data, from the most recent bat activity survey season (May to September inclusive), is used in any application.

4.21 Based on current information, the loss of low value bat roosts, used by pipistrelle species will have a low level of impact at a local level. Natural England requests compensation to be in line with Bat Mitigation Guidelines and where compensation is being provided there should be at least one feature, suitable for the species concerned, per roost or per species to be impacted. In this case, the inclusion of bat boxes would be appropriate. Any bat boxes installed as part of an EPS licence application would need to remain in-situ for at least 5 years and would be in addition to the recommended density of bat boxes suggested to enhance the roosting potential on the Site.

4.22 Based on the current status of the roosts found, dedicated monitoring is unlikely to be required.

4.23 Building removal would ideally be timed when bats are active and overnight temperatures are consistently above 8^0Celsius however, flexibility with this may be acceptable in the event the structures have no/extremely low potential to be used by hibernating bats.

4.24 In the event updated survey identifies additional species or a roost of higher conservation status, additional mitigation, including timing restrictions to planned works, are likely to be required.

Sustainable Drainage and Pollution Prevention

4.25 Given the proximity of the Site to a wet ditch network which drains into the River Cherwell to the east, and the natural topography of the Site, there is a direct pathway between the Site and the river. Indirect impacts, resulting from surface water runoff, and potentially other

pollution events, could negatively impact the quality of water flowing through the River Cherwell and affect the Cherwell Valley through hydrological, hydro-chemical or sedimentation impacts causing a decline in quality which would have negative implications for any wildlife associated with the river corridor.

4.26 The implementation of well-designed SuDS allows multiple benefits to be realised in addition to reducing downstream flood risk. These benefits can be categorised as: water quality, ecology and amenity. The drainage network will convey surface water runoff from the development, either by conventional piped systems or open swales, to attenuation basins before eventual discharge from the Site at a controlled rate.

4.27 Other SuDS techniques should be used 'on-plot' to further reduce the contaminant load on the water entering the attenuation basins, slow the flow of water and provide ancillary ecological and landscape benefits. Filter drains and filter strips can be used as or incorporated into conveyance networks and permeable paving and bio retention can be used for source control.

4.28 Protecting water quality is an important part of sustainable surface water management. Typical urban pollutants need to be filtered out prior to runoff entering the local watercourse systems. The combination of various SuDS techniques can be used to create a system that treats the water effectively prior to discharge (a 'treatment train'). The detailed drainage design will be developed in accordance with guidance on the 'treatment train' and the required number of treatment processes for each development type (residential, commercial, road etc.) identified in the CIRIA C753 SuDS Manual 2015.

4.29 In addition, it is important that general measures to prevent pollution and soil-run off resulting in siltation and changes in water quality are implemented during each phase of the development. It is also important to avoid air pollution, namely dust deposition on traditional orchard associated within St. Frideswide's Farm. Although the Environment Agency (EA)'s Pollution Prevention Guidelines (PPGs) have been withdrawn, they still remain the best source of guidance in relation to avoidance of pollution. Reference should be paid to PPG01-06, PPG21 and PPG22 (available on the National archives).

4.30 A Dust Management Plan will be produced – a summary of the measures that will be included in that document is given in Table 6.22 of the ES. Further information on mitigation of water pollution effects is given in Chapter 8 of the ES.

4.31 The Construction Industry Research and Information Association (CIRIA) guidance should also be followed, in particular:

- CIRIA C650 - Environmental Good Practice on Site (2nd Edition), 2005; and
- CIRIA C532 - Control of Water Pollution from Construction Sites, 2000.

4.32 In light of the above, despite the Site being hydrologically connected to the Thames River via a ditch on the eastern boundary, there will be no likely significant adverse effects upon habitats downstream of the Site as a consequence of any changes in water quantity or quality. In addition, habitats associated with St. Frideswide's Farm can also be suitably protected from indirect impacts resulting from pollution generated during construction.

Lighting Strategy

4.33 A sensitive lighting scheme must be devised to ensure the same assemblage of bats can continue to use the Site for roosting, commuting and foraging, including light intolerant species, such as Barbastelle (*Barbastellus barbastellus*). Bats must have accessible dark corridors to commute along during the construction phase as well as during the operational phase of the development.

Restrictions During Construction

4.34 During construction, operational hours should be restricted to between dawn and dusk, and night working will not be permitted. However, some security lighting may be required around compounds and/or public rights of way for security reasons. Floodlighting should not be permitted, and any necessary lighting must be down-lit and directional and must not spill into adjacent habitats which are expected to be used by commuting/foraging bats at night.

Restrictions During Operation

4.35 The eastern boundary vegetation should be completely unlit as well as the areas of open green space planned in the south-east corner of the Site creating a wide 'dark zone' supporting a matrix of habitats of value to commuting and foraging bats.

4.36 Furthermore, sensitive lighting, which minimises light spill from street lighting onto other retained/new bat foraging habitat is needed, particularly along access routes bisecting the Site in an east-west orientation. The content of any lighting scheme must be reviewed and approved by a suitably qualified ecologist. Lighting should follow guidance set out by the Bat Conservation Trust[7] and any lighting should be the minimum required, use 'warm' LED lighting that is directional/down-lit, motion operated and on time-limited switches.

4.37 Street lighting should utilise a 3-stage dimming system during the night to minimise any effects on local dark skies yet maintain required safety illumination.

4.38 Any future lighting strategy should adhere to the following core design principles:

- During construction any illuminated site compounds will be sited away from all retained features of ecological interest and structures, including those off Site to the east in St. Frideswide's Farm;
- Lighting with a warm white output (<2700 kelvins) and with a peak wavelength of >550nm should be used;
- Lighting with a directional capacity such as LED should be used, with no UV component;
- Avoidance of luminaires that generate upward light and a strong preference for luminaires that generate low-level downward facing light. Optics should be used to increase lighting directionality and, where possible, these luminaires should also be shielded using hoods, cowls and/or louvres;

[7] Institute of Lighting Professionals (2018). Bat Conservation Trust Guidance Note 08/18. Bats and Artificial Lighting in the UK.

- Where lighting columns are required for public paths in open space and secondary roads, 'glare screens' should be incorporated to reduce light spill onto boundary habitats (and residences) and designed to avoid illumination of the canopy;

- Timing of street lighting should be carefully considered, and where possible, light levels should be reduced during times of lower usage when bats would be active (e.g., 11pm to 5am); and

- For front gardens or elevations facing onto retained boundary hedgerows/linear green features, fixed downward facing luminaires will be utilised at building entrances. For back gardens, installations will include low intensity LED luminaires, mounted at low level to reduce the impact of the overall scheme on the boundary habitats.

4.39 **Plan EDP 1** includes indicative 'dark zones' for foraging bats to provide a framework/guide for future detailed lighting strategies to be developed. These show the priority areas to be kept dark post-development, based on recorded bat activity and the quality of bat foraging habitats (existing and proposed). Dark zones are primarily along the Sites eastern boundary, but to ensure bats can commute across the Site, additional dark zones, bisecting the Site are also recommended, as shown on **Plan EDP 1**. This will allow bats to access larger areas of suitable foraging habitat, where currently bats are primarily restricted to boundary features due to the arable nature of the Site.

4.40 At the time of writing, and with reference to the latest published guidance with respect to lighting and bats, it is proposed that dark zones for the development be defined as areas in which night-time light levels are 1 lux or lower in the horizontal plane. This light level will prevent disturbance to foraging activity, even of particularly light-sensitive species.

4.41 Where these indicative dark zones intersect roads within the development, streetlighting requirements are likely to require light levels above 1 lux for roads to be of adoptable standard. In these areas, a continuous dark zone for foraging bats will, subject to highway lighting restrictions, seek to be achieved at tree canopy level through a combination of lighting design and maturation of the adjacent planted trees and shrubs.

Section 5
Habitat Retention, Enhancement and Creation

5.1 To maximise the value of retained habitats, and to compensate for the losses of habitat resulting from development (and to maximise biodiversity interest in the long-term), the illustrative landscape strategy plan in **Appendix EDP 2** demonstrates the retention/creation of the following habitats:

- **Woodland/Dense Tree Planting** – designed to strengthen the boundaries of the Site and to increase nesting opportunities for birds and strengthen linear features used by commuting bats. Proposed planting schedules should focus on native varieties wherever possible and, where necessary, select non-native varieties which are beneficial such as known pollinators or those providing fruit/seeds/berries throughout the year. This will maximise foraging resources to a variety of wildlife and maximise invertebrate interest which in turn provides additional resources to foraging bats and birds;

- **Tree Planting** – designed to provide linear habitat bisecting the Site and with an opportunity to create isolated areas of new priority habitat, traditional orchard, of value in its own right and known to be of value to a range of invertebrates;

- **Dense Scrub** – designed to provide cover and foraging resources to a variety of wildlife and contribute to the range of edge habitats available to wildlife which will maximise the functionality of green space provision. The provision of a high proportion of blackthorn to maximise egg laying opportunities for brown hairstreak butterfly is necessary to safeguard this species and increase its prevalence on Site;

- **Grassland (Wildflower And Tussocky)** – a species-rich meadow mixture will be sown along the eastern edge of the Site which will be managed as a traditional meadow, to create new foraging and dispersal opportunities for a range of species, including birds, bats, reptiles and invertebrates; parts of the grassland will be managed on a longer cutting regime to create tussocky grassland which will result in a thick thatch able to provide refuge to reptiles and potentially birds. In addition, dense and long grassland will maximise the opportunity for small mammals to thrive thereby increasing prey availability to barn owl, present in the farm complex to the east of the Site. Carefully managed grassland will maximise biodiversity potential to invertebrates and the provision of dedicated footpaths and mown paths will enable residents to enjoy these areas without causing over-use of grassland managed to be of higher ecological value;

- **Amenity Grassland** - hard wearing amenity grassland will be created within and around the new school complex, as well as in isolated areas at the fringe of open green space, which is easily accessible to new residents and cited to dissuade users away from more ecologically valuable habitats closer to the eastern boundary. Amenity grassland within the park extension will use a flowering lawn mix to ensure a higher value to biodiversity;

- **SuDS** – attenuation features will be introduced to the Site, primarily in the eastern extent, including those which will be designed to be permanently wet and managed for

wildlife value. The permanently wet areas will be planted with submerged and emergent aquatic species mixes and will be surrounded by a species-rich wet grassland within areas of SuDS basins prone to seasonal inundation. Other basins, designed to only be wet during flood events, will be sown with wet meadow seed mixtures and be designed to hold water seasonally, thus providing a foraging resource for a varied bird assemblage. Shallow scrapes will also be created to provide varied habitats for invertebrates favouring wet conditions and wetland shrub planting around the edges of these features with create dense areas of cover; and

- **Hedgerows** – retained to maintain existing green links and habitat for brown hairstreak butterfly. Retained hedgerows will be strengthened by planting up defunct sections to maximise their functionality as a green corridor. Retained and created hedgerows will be managed for the benefit of wildlife and allowed to grow tall and bushy. The provision of a high proportion of blackthorn to maximise egg laying opportunities for is necessary to safeguard the on-site population and increase its prevalence on the Site.

5.2 Subject to detailed design, this habitat creation is capable of contributing to the targets set out in the descriptions for CTA within the Site's Zone of Influence (ZoI). Although the Site itself is not covered by any CTA, there are three within 2km of the Site Boundary, namely:

- Thames and Cherwell at Oxford CTA (600m south);
- Lower Cherwell Valley CTA (1.1km west); and
- Oxford Meadows and Farmoor CTA (1.2km west).

5.3 Oxfordshire Biodiversity Action Plan Targets associated with these CTAs include:

- Lowland meadow;
- Floodplain grazing marsh;
- Lowland fen (and swamp);
- Reedbed;
- Rivers;
- Ponds;
- Arable field margins; and
- Hedgerows.

5.4 Soil, hydrology and position on the edge of a residential housing development preclude the option of creating a number of these habitat types within the Site Boundary. However, the management and creation measures outlined above will contribute to targets for hedgerows (through new planting, gap planting and sensitive management), ponds (through creation within SuDS features, particularly within the wildlife enhancement area) and reedbed

(through creation of marginal areas within SuDS features). In addition, if soil conditions allow, there will be an aspiration to contribute to targets for the creation of lowland meadow.

DEDICATED PROVISION FOR SPECIES

5.5 The habitat creation and enhancement summarised above will benefit birds, bats, reptiles, brown hairstreak butterfly and a range of other wildlife.

5.6 To further enhance opportunities for these species, bird and bat boxes will be installed in appropriate locations (including on retained trees and in new buildings) to increase nesting and roosting opportunities and to provide resilience to predation by domestic cats. Specifications and precise locations of any roost/nest boxes will be set out within future detailed LEMPs and/or detailed Soft Landscape Drawings, however, nesting provision should be targeted at priority birds and also barn owl. Suggested densities are set out on **Plan EDP 1**.

5.7 Log/brash piles, in discreet locations, will also be included to provide increased refuge opportunities to common reptiles.

5.8 Suggested densities include:

- Thirty bird boxes on retained/proposed trees;
- Thirty bat boxes on retained trees;
- A total of 770 integrated bird nesting features integrated into residential areas;
- A total of 770 integrated bat roosting features integrated into residential areas;
- Five bird units and five bat units within the grounds or attached to the proposed primary school; and
- Six dedicated log piles for reptiles, amphibians and invertebrates.

ADDITIONAL ENHANCEMENT OPTIONS

5.9 Additional enhancements to maximise the biodiversity benefit of the scheme include the integration of bee bricks in new buildings, and the provision of hedgehog highways incorporated into garden fencing to maximise the availability of suitable habitat to this species. Gaps in fencing must be at least 130mm by 130mm, which is sufficient to allow the passage of hedgehogs and other small mammals. Suitable, pre-fabricated gravel boards are available from many fencing suppliers.

ADDITIONAL ENHANCEMENT OPTIONS WITHIN THE SCHOOL PLOT

5.10 As well as the suggested density of bird/bat boxes within the proposed school plot, gaps in fencing to allow the passage of species such as hedgehog should also be included and a variety of other measures.

5.11 Whilst not required to demonstrate measurable gains for biodiversity (as indicated in **Section 10**), the inclusion of a green roof, incorporating new habitat features and substrates including bare ground, shingle/pebble/stones/rubble, wildflowers and tussocky grassland of value to birds and invertebrates could be explored. Any proposed green roof should be designed with reference to guidelines prepared by Buglife[8] and comprise shallow, low nutrient substrates which require little or no maintenance/irrigation. Substrate depth must be varied in order for it to support a greater diversity of plants and therefore biodiversity. As well as sowing Sedum blankets (only UK native varieties), loose substrate, cobbles/stone piles and areas of bare earth for burrowing invertebrates will attract solitary bees and wasps and provide areas for shelter and nesting sites for saproxylic invertebrates.

5.12 A dedicated LEMP would be produced for the school plot and the careful citing of access gates and footpaths adjacent to the school and bisecting nearby POS will allow for educational walks and enjoyment of habitats manged for the benefit of wildlife. Habitats beyond the school plot would be subject to a separate LEMP.

[8] Buglife – The Invertebrate Conservation Trust. Available at: https://cdn.buglife.org.uk/2019/07/Creating-Green-Roofs-for-Invertebrates_Best-practice-guidance.pdf

Section 6
Establishment/Short-term Management Principles – Years 1-5 (Post-development Stage)

6.1 This section sets out the principles for the establishment and management of the key existing ecological features and elements of the landscape fabric which are to be retained, and the new ecological features/landscape elements which are to be created as part of the proposed development, in order to fulfil the ecological elements of Policy PR6a – Land East of Oxford Road of the Partial Review of the Cherwell District Local Plan 2011 - 2031 (Part 1), adopted 07 September 2020.

6.2 Those areas of new landscaping within the amenity space of each private dwelling will be in private ownership. The management of this landscape fabric will be undertaken privately and is outside of the long-term maintenance parameters of this BIMP or future detailed LEMPs.

MANAGEMENT PRINCIPLES

6.3 In order to fulfil the objectives set out in **Section 2**, the following principles will apply:

- Creation of multi-functional POS with clearly defined areas for recreation and wildlife, including a wildlife enhancement area with no public access;
- Creation of a species-rich meadow and tussocky grassland within areas of POS to promote species diversity and increase value to wildlife;
- Ensure the existing and newly created native hedgerows are managed and maintained in a manner that ensures their species diversity is increased and continuous green links are available across the Site, with offsets from the development in line with the development brief;
- Manage specimen trees to ensure they remain healthy and undamaged;
- Manage new woodland and scrub planting to ensure they support a diverse structure;
- Manage water attenuation features to provide permanent and seasonal aquatic resources with a varied vegetation structure of value to a range of wildlife; and
- Provision and maintenance of bird and bat boxes and log piles and invertebrate habitats throughout the development to ensure continued functionality to remain of value to wildlife.

GENERAL PROVISIONS

Landscape Establishment Stage

6.4 All landscape implementation works specified in this document should be undertaken by a competent landscape contractor and operations carried out to BS 3936 Part 1 (1992) and Part 10 (1990), and BS 3969:1998. All plant handling to be in accordance with *Handling and Establishing Landscape Plants*, Horticultural Trades Association (HTA). 1985, revised edition March 2002.

Landscape Maintenance Stage

6.5 All tree surgery work should be undertaken in accordance with the requirements of BS 3998:2010 *British Standard Recommendations for Tree Work* and BS 5837:2012 *Trees in Relation to Design, Demolition and Construction*. Any tree surgery works are to be undertaken by a qualified Arboricultural contractor who is listed in the Arboricultural Association's Approved Contractors Directory[9].

6.6 The landscape maintenance regimes specified in this document should be implemented by a competent grounds maintenance contractor. All landscape operations to be carried out in accordance with BS 4428:1989 *Code of Practice for General Landscape Operations*, and BS 7370 *Grounds Maintenance* (Parts 1–5, where applicable).

Plant Replacement

6.7 Any trees or plants which, within a period of five years after planting, are removed, die or become seriously damaged or defective, shall be replaced in the next planting season with others of species, size and numbers as originally approved, and permanently retained thereafter.

Replacement Stock

6.8 All replacement plant stock to be in accordance with BS 3936 Part 1 (1992) and Part 10 (1990), and BS 3969:1998. All plant handling to be in accordance with *Handling and Establishing Landscape Plants*, HTA, 1985, revised edition March 2002.

Watering

6.9 Water as necessary to ensure the continued thriving of all planting. Obtain client's approval before using a supply other than potable mains water. Ensure the full depth of topsoil is thoroughly wetted and that soil achieves field capacity.

Disposal of Arisings

6.10 Unless otherwise specified, dispose of arisings from all operations as follows:

- Remove biodegradable arisings to designated on-site compost heaps; and

[9] www.trees.org.uk

- Remove litter and non-biodegradable arisings to a designated on- or off-site recycling or disposal facility, as agreed with the client.

6.11 Arisings from arboricultural works, including pruning, felling, thinning or coppicing, will be retained on Site as far as possible in the form of wood and brash piles in appropriate locations within created woodland and/or areas of POS where the risk of disturbance by the public is at a minimum.

Litter Collection

6.12 Collect and remove from all public spaces on-site, all rubbish detrimental to the appearance of the Site, including paper, packaging materials, bottles, cans, similar debris and dispose of arisings.

Empty Litter Bins

6.13 Ensure that any litter bins are emptied on a regular basis and that at no time will litter be allowed to spill from the bin. The required frequency of emptying litter bins will depend on usage.

Litter Pick

6.14 Collect and remove all litter from the Site, including bricks, debris, paper, glass, metal, confectionery wrappings, boxes and fly tipping.

GROUND PREPARATION – ALL GRASSES

6.15 Ground preparation is to be carried out in accordance with the following:

- Endeavour to prepare ground so that it is not highly fertile and does not have a problem with perennial weeds. Good preparation is essential to success so aim to control weeds and produce a good quality seed bed before sowing;

- Wherever possible utilise translocated sub-soil from the construction footprint to ensure soil nutrient levels remain low; and

- To prepare a seed bed first remove weeds using repeated cultivation or a herbicide. Then plough or dig to bury the surface vegetation, harrow or rake to produce a medium tilth, and roll, or tread, to produce a firm surface.

SOWING - ALL GRASSES

6.16 Sowing is to be carried out in accordance with the following:

- Seed is best sown in the autumn or spring but can be sown at other times of the year if there is sufficient warmth and moisture. Where seed mixtures contain a proportion of wildflowers, seeds should be sown in autumn to ensure a period of vernalisation, allowing hard-shelled seeds to germinate the following spring;

- The seed must be surface sown and can be applied by machine or broadcast by hand. Sowing rate is to be undertaken in accordance with the supplied directions (g/mm2);

- To get an even distribution and avoid running out, divide the seed into two or more parts and sow in overlapping sections; and

- Do not incorporate or cover the seed, but firm in with a roll, or by treading, to give good soil/seed contact.

KEY OPERATIONS FOR ESTABLISHMENT AND MANAGEMENT

6.17 The following provides a summary of the other key management and maintenance operations to be undertaken in respect of the existing and proposed habitats of ecological importance. Detailed planting schedules will be determined at Reserved Matters stages.

Retained Habitat

Existing Hedgerows and Standard Trees

Management Principles

6.18 Native hedgerows provide visual amenity and contribute to landscape structure and character. Managing existing mature hedgerows in the correct manner can contribute to maintaining their integrity and longevity, ensuring the existing structure and character is maintained as far as possible.

6.19 Native hedgerows have traditionally been subject to a regular management cycle that seeks to maintain them in a healthy, dense form so they are able to provide a strong boundary. The general elements that make up this management cycle can be summarised as:

- Early years establishment – Trimming to shape recently planted or laid hedgerow as it grows up to the desired shape, height and density;

- Mid-term general management – Cutting hedges that have grown up into the general desired height range of between 2-3m on a three-year rotation, increasing the cut height by 10cm each time; and

- End of useful life rejuvenation – Laying the hedgerow once it has grown up to a height of 3-4m, before it begins to turn into a line of trees.

Management and Maintenance Operations

<u>Construction Phase</u>

6.20 To minimise brown hairstreak mortality rates, retained hedgerows should be subject to ongoing, wildlife sensitive maintenance schedule during construction to minimise brown hairstreak egg mortality rates in these habitats.

6.21 This will ensure eggs are not inadvertently destroyed during the construction of the development and that suitable egg-laying habitat is maintained.

6.22 Suitable offsets, in line with the development brief, will be incorporated into the detailed design at the Reserved Matters stage to ensure the ongoing survival and health of retained hedgerows.

Cutting - Hedgerows

6.23 Cutting should be carried out between October and March to avoid bird nesting periods. Ideally, hedge trimming operations should be done in January/February to ensure fruiting berries are not lost. If a hedge must be trimmed during fruiting season, it is essential to only cut one side, so that plenty of fruit remains.

Cutting – Standard Trees

6.24 Standard trees should be left unmanaged although subject to annual visual inspection for health and safety reasons. Any dead/dying/damaged limbs of any standard trees should be removed only if they pose a hazard to public health and safety. In these instances, a bat licenced ecologist should inspect any limbs prior to their removal to check for the presence of roosting bats. Once removed, the limb, as well as any dead wood, should be left at the base of the tree to provide a refugia and food resource for invertebrates or moved into discreet areas of POS.

Gapping-up Hedges

6.25 Gapping-up may be required at the outset to return the hedgerow to the required density with a preference for the inclusion of blackthorn to maximise habitat for brown hairstreak butterfly. Gaps should be planted with new native hedgerow species, during the plant's dormant period, ideally October to February, giving the opportunity to increase biodiversity of the hedge, or add trees to the hedge line.

Hedge Laying

6.26 The existing hedgerows should be laid during the construction phase and then again when they have grown up to between 3-4m and are at risk of turning into a line of trees with reduced density of stems at the base. This returns them to the beginning of the ongoing cycle of management, following which they can be cut on rotation for many more years before being laid again. Typically, a 2m hedgerow cut in sections on a three-year rotation, 10cm higher each year, will take 30 years to get to 3m high, the point at which laying should begin to be considered.

Proposed Habitats

New Hedgerow Planting

Management Principles

6.27 The main management objective for new hedges is to ensure the establishment and appropriate development, following which their structure and integrity should be maintained. Management aims for new native hedgerows are as follows:

- New native hedgerows should establish properly with no gaps and allowed to grow tall and wide;

- Animal browsing should be prevented to ensure young plants are not damaged;
- Species diversity should be maintained with a high proportion of blackthorn to encourage use by brown hairstreak butterfly;
- Long grass margins at the base of the hedgerow should be maintained; and
- Some strong specimens within the hedgerow should be allowed to grow up into hedgerow trees.

Management and Maintenance Operations

6.28 During the establishment period following initial or reinstatement planting of hedgerow trees and shrubs, the following landscape operations are to be undertaken to ensure establishment of healthy, vigorous plants (native hedges, hedgerows, native tree and shrub planting).

6.29 Newly planted hedges will require a period of formative pruning before they reach their final dimensions:

- Native hedges: to be trimmed well for the first three years to encourage bushiness. Trimming to remove around half of the new growth;
- No hedge trimming to be carried out during the bird nesting period (March-August); and
- Allow hedge to reach required heights and then integrate into the existing hedgerow management, as outlined above.

Ongoing Maintenance:

- Trim annually each winter (November-February) on a three-year rotation in sections of 50-100m;
- Avoid flailing native hedgerows on all sides by retaining one natural side in rotation, to maintain foraging and nesting opportunities;
- Trim to maintain an 'A' shaped profile and final trimmed size of about 3m high and 3m wide at base, unless specified otherwise, using suitable mechanical cutters;
- Remove arisings;
- No hedge trimming to be carried out during the bird nesting season (March-August);
- All branches will be neat and clean, and no jagged ends or tears will be left; and
- Do not cut or lop off hedgerow trees. These should be clearly tagged and identified for full maturity. However, lower branches should be removed to prevent excessive shading to hedgerow species.

Species-rich Meadow Grassland Including Rough Tussocky Grassland

Management Principles

6.30 Species-rich grassland provides valuable habitat and feeding grounds for insects, which in turn provides opportunities for predatory species such as birds, bats and reptiles. Providing dedicated areas, on a longer cutting regime and allowing to create a dense thatch further increases the value of grassland to wildlife.

6.31 The main aims for the management of these areas are:

- To establish and maintain meadow areas in a healthy condition with a range of wild flowers and grasses;
- A band of tussocky grassland is formed to increase suitability of the grassland for small mammals, to provide prey to barn owl and other birds of prey and cover for reptiles; and
- To ensure that the area supports a range of wildflowers and grasses and is not dominated by vigorous species or colonised by invasive weeds or scrub.

Maintenance and Management Operations

6.32 During the establishment period (first growing season), following initial or reinstatement seeding, the following landscape operations shall be undertaken to ensure establishment of a healthy, vigorous sward, including:

- Provide protection, keep watered and weed-free as necessary to promote successful germination/establishment;
- When newly seeded areas reach required height, remove all stones, litter, etc., and undertake first cut;
- Autumn sowing: First cut March (cut to 40-70mm if there is sufficient material or weeds have colonised to a height of 300mm), then May (cut to 40-70mm in early May) and September (cut to 40mm after flowering);
- Spring sowing: Cut 6 weeks after sowing (cut to 40-70mm if there is sufficient material), then May (provided sward has grown to 100mm or above, cut to 40-70mm) and Sept/Oct (cut to 40mm after flowering and remove clippings);
- After each cut ensure clippings are removed;
- Ongoing Maintenance (Following First Growing Season); and
- Once the meadow grassland is established, routine grass maintenance is to be undertaken to fulfil the management objectives.

Cutting – Wildflower Grassland

6.33 During the second and subsequent years of management, undertake a single summer/autumn cut in late-August or September to allow plants to set seed and keep the grass generally long. Height of cut to be no lower than 100mm due to potential for reptiles to be present and undertaken in a directional manner to flush any reptiles towards suitable habitat such as hedgerows or scrub. Cut grass shall be left to dry for 3-7 days dependent on weather conditions, and then collected and removed to a designated composting area on or off-site. It is important to collect and remove arisings, to retain low soil fertility and high floral diversity. Grass can then be cut again in autumn or early-spring if necessary in order to emulate aftermath grazing. No cutting should take place after March in order to allow wildflower species to flower.

Cutting – Tussocky Grassland

6.34 Areas designated as tussocky grassland will be cut every three to five years to create a long/tussocky sward. Grass should be cut to a minimum of 300mm to allow a thatch layer and dense tussocks to form. The same establishment described for wildflower grassland above will apply. When cutting is carried out, it should be in late-summer/autumn to allow flower species to set seed, however, this will not be an annual occurrence. The same height restrictions and directional cutting applies to this grassland due to the potential for reptiles to be present when the grass is cut.

6.35 Additional control of encroaching scrub may be necessary where tussocky grassland abuts shrub or hedgerow planting. This maintenance should be carried out on an "as necessary" basis, cutting back encroaching scrub using hand tools outside of the active nesting season for birds (March-August inclusive).

Weed Control

6.36 Remove all unwanted invasive, vigorous weeds (such as thistles and nettles, as well as all injurious weed species listed in the Weeds Act 1959 and Countryside Act 1981), including roots, by hand or by spot treatment with appropriate weed killer. Selective lawn killers will not be used.

Amenity Grassland

Management Principles

6.37 The main objectives for the management of these areas are:

- To establish and maintain grass areas in a healthy, vigorous, attractive condition; and
- Provide suitable conditions, including appropriate grass length, appropriate to the intended use (informal recreation and visual amenity) which will minimise use of habitats of higher ecological value.

6.38 Approximately 50% of amenity grassland should be seeded with a flowering lawn mix. These mixes are designed to provide flowering plants within an amenity setting, using plants able to withstand semi-regular cutting. This will provide an additional resource for pollinators as well as providing visual interest.

Maintenance and Management Operations

6.39 During the establishment period (the first growing season), following initial seeding or turfing, the following landscape operations will be undertaken to ensure establishment of a healthy, vigorous sward:

- Provide protection, keep watered and weed-free and apply ameliorants as necessary to promote successful germination/establishment;
- New turf to be irrigated until the turf is established (approximately eight weeks from laying, depending on weather conditions), and any area of poor establishment shall be re-turfed as soon as is practicable;
- When newly seeded/turfed areas reach 50mm high, remove all stones, litter, etc., and cut to 30mm; and
- Subsequently keep grass length between 25 and 75mm until end of growing season in autumn.

Ongoing Maintenance (Following First Growing Season)

6.40 Once the grassland has established and the first-year cut has been taken, routine grass maintenance should be undertaken from spring, with grass cutting on-going through the growing season, in order to fulfil the management objectives.

Cutting

6.41 At the start of the growing season, undertake a high cut (50 to 75mm), mowing as necessary before increasing the frequency and reducing the height as specified:

- Before mowing, remove litter, rubbish and debris;
- Cut to length appropriate to intended use – general amenity grassland in open space areas (25-75mm);
- Grass to be left in a neat and even finish without surface rutting, compaction or damage to grass;
- Edges to be left neat and well defined. Neatly trim or strim grass where it abuts fences, walls and around other objects, but no closer than 100cm from tree trunks and plant stems; and
- All non-grass areas are to be kept free of arisings created by any grass cutting operations.

Weed Control

6.42 Spot treat specific weeds with a suitable herbicide as necessary to remove undesirable and injurious weeds.

Fertiliser

6.43 Feed grass areas as necessary to maintain the vigour of the grass. Feed with a proprietary spring or autumn lawn fertiliser judged suitable for the on-site soil conditions, as well as for use in residential areas. Do not apply to wildflower meadow areas. Application rate in accordance with manufacturers guidelines.

Watering

6.44 Grass to be watered as necessary to maintain good condition.

Woodland, Tree and Shrub/Scrub Planting

Management Principles

6.45 The main management aim for woodland, tree and shrub/scrub planting is to ensure the establishment and maintenance of healthy, attractive trees that are safe and provide ecological benefit, including continued use by commuting/foraging bats and nesting birds and the provision of lower level and dense vegetation islands/stepping stones.

6.46 Any tree surgery works are to be undertaken by a qualified arboricultural contractor who is listed in the Arboricultural Association's Approved Contractors Directory (ref: www.trees.org.uk).

6.47 All tree surgery work should be undertaken in accordance with the requirements of BS 3998:2010 British Standard Recommendations for Tree Work and BS 5837:2012 Trees in Relation to Design, Demolition and Construction.

6.48 Scrub/shrubs must be managed to prevent terrestrial succession within adjacent grassland habitats.

Management and Maintenance Operations

6.49 During the establishment period following initial or reinstatement planting of trees, the following landscape operations are to be undertaken to ensure establishment of healthy, vigorous plants.

Ongoing Maintenance

6.50 Undertake formative pruning to avoid future structural problems, to remedy disease and to achieve good form. Cutting will ideally be undertaken in January or February, but certainly between September and February inclusive to avoid the main bird breeding season, or otherwise preceded by a pre-commencement inspection by a suitably qualified ecologist to confirm that no active birds' nests are present. Consultation with a licensed bat worker may also be required depending on the age or the tree and extent of tree works required as roosting bats may be affected by such actions.

6.51 Hand pulling of shrubs/scrub should be undertaken as required to prevent succession of adjacent grassland habitat.

Annual Monitoring

6.52 All trees to be regularly inspected to ensure that they remain in a safe condition. In undertaking the inspection, consideration should be given to safety aspects in balance with ecological benefits provided by the tree.

6.53 Where any new tree planting deteriorates, following its initial establishment, take necessary measures to resolve any underlying problems. Replace dead or dying trees at the earliest opportunity.

6.54 To ensure the long-term viability of trees, an annual inspection should be undertaken by a suitably qualified arboricultural consultant, with all recommendations implemented in full within three months of initial inspection.

SuDS

Management Principles

6.55 The primary function of the water attenuation basins will be related to drainage and retention of run-off, however some of the proposed waterbodies can also add to the network of wetland habitat within the local landscape and be designed to hold permanent water, with planting and management of the vegetation tailored towards aquatic wildlife.

6.56 SuDS designed to support water should be designed on the following principles:

- Irregular in shape;
- A variable depth profile comprising a number of hollows and hummocks along the base;
- Gently sloping margins, so as to maximise habitat diversity when water levels retreat over the spring and summer months, exposing wide, warm and wet muddy margins suitable for a range of plant and invertebrate species;
- Shallow bank profiles with a gradient of no more than 30°, where planting is proposed to allow soil to settle on top of the clay lining without sinking to the bottom;
- Seeding of the banks with a suitable pond edge mix of local provenance which includes varieties that can thrive in both shallow and deeper water; and
- Open areas at the banks to avoid substantial shading of open water.

6.57 Proposed wetland shrub planting should be planted in accordance with their habitat requirements, as follows:

- Emergent plants – plant into 'V' shaped trenches at the water's edge;
- Submerged plants – plant in areas of permanent water with the use of hessian sacks and weighted baskets as required; and

- Floating plants – plant in areas of variable water depth, ensuring that at least part of the plant is above water level.

6.58 Attenuation features designed to be dry outside of major rainfall events can be subject to the same management regime described above for wildflower meadow grassland although depending on ground conditions, a wetland seed mix may be more appropriate than the species rich meadow mixture sown elsewhere.

Management and Maintenance Operations

Establishment Period

6.59 Undertake an assessment of any planted marginal and emergent aquatic vegetation to ensure that it has established. Failed plants shall be replaced as necessary to ensure a diverse structure, though there will also be an emphasis on natural colonisation.

Ongoing Maintenance

6.60 Undertake regular formative pruning of bankside vegetation to maintain direct sunlight to the pond surface.

6.61 Marginal and emergent vegetation should be maintained around at least one half of the pond's edge; where necessary, marginal plants shall be prevented from encroaching across any permanent water's surface by hand removal. A minimum of 40% of the water's surface is to remain clear of floating and emergent vegetation. To be effective in removing marginal and emergent vegetation, and to prevent rapid regrowth, plant removal must include removal of the roots. Removal of vegetation should occur in the autumn/winter when amphibians are expected to be absent.

6.62 Any vegetation removed from the water body shall be piled on the bankside for 24h prior to removal for composting.

Annual Monitoring

6.63 Check annually to monitor aquatic vegetation succession, presence/absence of invasive aquatic plant species, bank stability and water depth. Desilting completed as required.

6.64 In the event any pond, designed to hold water, does not support sufficient water year-round, advice must be sought from a suitably qualified person to determine the best course of action to ensure remediation is undertaken to ensure long-term retention of water.

Habitat Boxes/Piles – Bird, Bat, Invertebrates and Reptiles

Management Principles

6.65 The primary function of these new habitats is to create a network of well-maintained and utilised wildlife boxes and features.

Management and Maintenance Operations

6.66 Units installed on trees/poles will be checked after five years and repaired/replaced where necessary.

6.67 Where there is a requirement, bird boxes should only be removed outside of the breeding season (March-August inclusive).

6.68 Where there is a requirement, bat boxes must not be removed unless an inspection by a licensed bat ecologist has taken place and a bat roost is confirmed as absent.

6.69 Integrated units will be of a nature where no ongoing management/maintenance is required. These units will be incorporated into the fabric of new homes and will not require any intervention.

6.70 Dedicated log/brash piles should be added to annually, using materials cut during maintenance works. Log piles should be maintained as at least 1m by 1m with a height of 0.5m at all times.

Vigilance for Badgers

6.71 It is possible badgers will create new setts within areas of POS. Should any large mammal excavations be observed, the appointed Managing Agent should seek advice from a suitably qualified ecologist. Certain restrictions to management measures described above may need to be applied to ensure setts are not subject to disturbance. Future LEMPs will be informed by an updated badger survey and appropriate protocols would be included should badger setts be identified.

Section 7
Longer-term Management Principles

7.1 The long-term recommendations for management discussed below should be broadly adopted during the management regime beyond 5 years.

SPECIES-RICH MEADOW GRASSLAND

7.2 Areas of meadow grassland within the Site should continue to be managed as such in the long-term, with management based around a single autumn cut for the majority of the grassland and cut no lower than 100mm due to the potential presence of common reptiles.

7.3 Tussocky grassland should continue to be cut on a longer cutting regime to the management described above (cut every three to five years) to maintain a longer/ tussocky sward.

AMENITY GRASSLAND

7.4 Amenity grassland can continue to be managed as a low-growing lawn or similar with regular mowing to around 30mm. Maintenance operations will continue to ensure the health and continuity of the grassland sward.

WOODLAND, TREES AND SHRUBS/SCRUB

7.5 All trees and shrubs to be subject to an inspection every five years by an Arboricultural Association approved arboriculturist contractor or professional arboriculturist to:

- Ensure that the tree stock is managed for its health and safety and its lifespan, and coverage optimised; and
- Ensure that the environmental benefits of the scheme are maximised for local wildlife.

7.6 Woodland should be managed such that it forms a closed canopy, with healthy shrub layer and selective thinning and consideration for coppicing to promote good age diversity may be required.

7.7 Any tree, shrub or whip planting that is found to have failed will be replaced in full in the current, or next available, planting season. Dead trees within woodland blocks should be left in-situ to provide deadwood habitat.

7.8 Any maintenance pruning required, particularly in relation to trees/shrubs, to be undertaken in accordance with good horticultural and arboricultural practice with thinning, trimming and shaping of specimens undertaken as appropriate to species, location, season, and stage of growth.

7.9 Where remedial work to mature trees is required, an update ground-level inspection by a suitably qualified ecologist will be undertaken to determine its current potential to support roosting bats.

7.10 All management and remedial work should avoid the main bird nesting season (March to August inclusive). Where this is not possible, a pre-commencement check for nesting birds must be undertaken by a suitably qualified ecologist operative will be required prior to commencement of management/remedial works. Minor works required during this period should otherwise follow the advice of a suitably qualified ecologist, landscape architect or arboriculturist.

HEDGEROWS

7.11 Native hedgerows throughout the Site should be allowed to grow tall and wide and should be cut every 3 years on rotation, with one third of the hedgerow resource cut each year. Cutting should be undertaken no more frequently than once every three years, between September and February inclusive to avoid the main bird breeding season. If any hedgerow plant dies, it should be replaced.

ARTIFICIAL UNITS AND HABITAT PILES

7.12 Integrated bird/bat boxes can be subject to a visual inspection to ensure they have not been removed/blocked.

7.13 Bird nesting boxes and bat boxes installed on trees within the Site should be checked after five years of being installed and repaired/replaced where necessary. Five-year replacement checks should continue long-term.

7.14 Bird boxes should only be removed outside of the breeding season (March-August inclusive) and where there is a requirement, bat boxes must not be removed unless an inspection by a licensed bat ecologist has taken place and a bat roost is confirmed as absent.

VIGILANCE FOR BADGER SETTS

7.15 The appointed Managing Agent should continue to monitor areas of POS for new mammal excavations and seek advice from an ecologist should a suspected badger sett be found. Certain restrictions to management measures may need to be applied to ensure setts are not subject to disturbance.

Section 8
Monitoring

8.1 Detailed LEMPs, or similar documents, should be created in line with information provided within this BIMP and be informed by an updated walkover and assessment for badgers as a minimum.

8.2 Any detailed LEMP should be monitored to establish any changes in Site conditions, evaluate whether the core objectives are being achieved and report back to the local authority.

8.3 Monitoring for each newly created or retained habitat will be carried out after the initial habitat creation and enhancement measures have been implemented, to ensure compliance with individual LEMPs and that stipulated in the Biodiversity Impact Assessment (see **Section 10**).

8.4 Another monitoring visit is then required in year 5 to ensure the condition of the habitats continues to be on target for what has been proposed to demonstrate site wide net gains for biodiversity.

8.5 Based on the outcome of these visits, any changes in management recommendation will be provided in a revised report. These monitoring visits are to be conducted by a suitably qualified ecologist and assessed against the core management objectives and principles described in this BIMP.

8.6 Minor management variations in response to Site conditions can be accommodated, but any major changes will necessitate a review of the scope of operations to be discussed, and if necessary, agreed in writing, with the LPA. Additional, annual or bi-annual visual monitoring may be required in the first 5 years (e.g., in the event ponds do not hold water or grassland fails to thrive), and any issues with the detailed management and maintenance should be raised as soon as possible to enable early intervention.

8.7 The following key aspects of the detailed LEMPs should be monitored to ensure that they are meeting core management objectives:

- Appropriate management of new woodland, trees and hedgerows – cyclical assessment of mature trees by an appropriately qualified arborist, using the arboricultural survey as a baseline;
- Development of new planting by undertaking an annual assessment using the existing landscape drawings as a baseline;
- Success of habitat creation in establishing new habitats and opportunities for birds, bats, invertebrates and reptiles; and
- Achieve stated gains for biodiversity and reach target condition.

8.8 Soft landscaping works will be undertaken within the first available season upon completion of construction and subsequent LEMPs will include detailed timetables which provide the optimal timings for the monitoring and maintenance tasks for the newly created and retained habitats including any necessary justifications relating to any restrictions applied.

Section 9
Farmland Birds

9.1 Locally significant populations of farmland birds breed within the Site, including 8-14 pairs of skylark, 1-2 pairs of yellow wagtail and 2-3 pairs of lapwing in some years. Development will result in an unavoidable reduction in the value of the land for ground nesting birds, but proposals will result in enhanced opportunities for the wider bird assemblage, having a positive overall impact and increased provision for a variety of birds, including priority species.

9.2 To mitigate the loss of opportunities on-site for ground-nesting birds, a strategy is in the process of development. The mitigation strategy will seek to be on-site but, if required, could include off-site habitat enhancements to arable farmland, where considered appropriate. Negotiations are underway with local landowners in order to identify possible off-site mitigation locations in the vicinity of the Site. A suitable strategy will subsequently be agreed through discussion with the LPA. The details of the mitigation to be provided will be secured either through planning condition or the S106 Agreement.

9.3 The timing of delivery of the provision of any enhancements will be a matter for discussion with the LPA, taking into consideration the phasing of development and seeking to ensure uninterrupted availability of suitable habitat for ground-nesting birds in the local area.

MONITORING

9.4 Any mitigation should be monitored to ensure that its goals are being met.

Section 10
Biodiversity Net Gain Assessment

10.1 The Biodiversity Net Gain (BNG) assessment has been undertaken to objectively measure the net biodiversity impacts of the proposed development in order to assess the scheme's potential to deliver net biodiversity gain. The assessment has been undertaken using the Statutory Biodiversity Metric (using the latest version of 'the metric', released December 2023). The assessment has been undertaken by a principal ecological consultant suitably experienced in these types of assessment.

METHODOLOGY

10.2 The design and layout of the development has been refined through various iterations to ensure that potentially significant ecological effects are avoided or minimised, where possible, and to deliver biodiversity gains in accordance with local and national planning policy. The establishment and long-term management of habitats will aim to result in a considerable net gain in habitat biodiversity value and proposed new planting will aim to enhance connectivity between existing habitats, thereby strengthening the integrity of the local ecological network.

Baseline

10.3 Baseline habitats are based on data collected during the Extended Phase 1 Habitat Survey and Hedgerow Regulations Assessment (as set out in Technical Appendix 9.1).

10.4 Habitat condition scores were assigned using the tables set out within the Statutory Biodiversity Metric Condition Assessment published alongside the metric, the details of which are set out in **Table EDP 10.1** - **10.4** below.

Table EDP 10.1: Modified Grassland Habitat Condition Assessment

Grassland- Modified Grassland		**Condition Achieved (Y/N)**
		St Frideswide's Track
1	There are 6-8 vascular plant species per m2 present, including at least 2 forbs. Note - this criterion is essential for achieving Moderate or Good condition.	N
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	Y
3	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble Rubus fruticosus agg. may be present).	Y

Grassland- Modified Grassland		**Condition Achieved (Y/N)**
		St Frideswide's Track
	Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	
4	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y
5	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)	Y
6	Cover of bracken less than 20%.	Y
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y
Number of Criteria Passed		**6**
Condition		**Poor**

Table EDP 10.2: Scrub Habitat Condition Assessment

Heathland and shrub – Mixed scrub		**Condition Achieved (Y/N)**
1	The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). - At least 80% of scrub is native, - There are at least three native woody species, - No single species comprises more than 75% of the cover (except hazel, common juniper, sea buckthorn (only in its restricted native range), or box, which can be up to 100% cover).	Y
2	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	Y
3	There is an absence of invasive non-native plant species4 (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition6 make up less than 5% of ground cover.	Y
4	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	Y
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N
Number of Criteria Passed		**4**
Condition		**Moderate**

Table EDP 10.3: Woodland Habitat Condition Assessment

Woodland – Other Woodland; Broadleaved	
Indicator	**Score (Good – 3, Moderate – 2, Poor – 1)**
1. Age distribution of trees	3
2. Wild, domestic and feral herbivore damage	1
3. Invasive plant species	3
4. Number of native tree species	2
5. Cover of native tree and shrub species	1
6. Open space within woodland	2
7. Woodland regeneration	2
8. Tree health	2
9. Vegetation and ground flora	1
10. Woodland vertical structure	2
11. Veteran trees	1
12. Amount of deadwood	1
13. Woodland disturbance	2
Total Condition Assessment Score	**23**
Condition	**Poor**

Table EDP 10.4: Hedgerow Habitat Condition Assessment

Hedgerows		**Condition Achieved (Y/N)**						
		Hedgerow Nos.						
		H1, H3, H5a, H8, H13	**H2, H6b, H7, H10, H11, H12**	**H4, H15**	**H5b, H16**	**H6a**	**H9**	**H17**
A1 (Height)	>1.5 m average along length.	Y	Y	Y	Y	Y	Y	Y
A2 (Width)	>1.5 m average along length.	Y	Y	Y	Y	Y	Y	Y
B1 (Gap – hedge base)	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees').	Y	N	Y	N	Y	N	Y
B2 (Gap – hedge canopy continuity)	Gaps make up <10% of total length and · No canopy gaps >5 m.	Y	N	Y	Y	N	Y	Y

Hedgerows		**Condition Achieved (Y/N)**						
		Hedgerow Nos.						
		H1, H3, H5a, H8, H13	**H2, H6b, H7, H10, H11, H12**	**H4, H15**	**H5b, H16**	**H6a**	**H9**	**H17**
C1 (Undisturbed ground and perennial vegetation)	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · measured from outer edge of hedgerow, and · is present on one side of the hedge (at least).	N	N	Y	N	N	Y	Y
C2 (Nutrient-enriched perennial vegetation)	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	N	N	N	N	N	N	N
D1 (Invasive and neophyte species)	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Y	Y	Y	Y	Y	Y	Y
D2 (Current damage)	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	Y	Y	Y	Y	Y	Y	Y
E1 (Tree age)	At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	N/A	N/A	N/A	N/A	N/A	N	N

Hedgerows		**Condition Achieved (Y/N)**						
		Hedgerow Nos.						
		H1, H3, H5a, H8, H13	**H2, H6b, H7, H10, H11, H12**	**H4, H15**	**H5b, H16**	**H6a**	**H9**	**H17**
E2 (Tree health)	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	N/A	N/A	N/A	N/A	N/A	Y	Y
Number of Criteria Passed		**6**	**4**	**7**	**5**	**5**	**7**	**8**
Condition (P = Poor, M = Moderate, G = Good)		**M**	**P**	**G**	**M**	**M**	**M**	**G**

10.5 All baseline habitats are shown on **Plan EDP 2**: Pre-development Habitats.

Proposed Habitats

10.6 Proposed habitats are based on the Illustrative Landscape Strategy and mitigation detailed in the main body of Chapter 9 of the ES. Proposed habitats are illustrated on **Plan EDP 3**: Post-development Habitats.

10.7 The proposals are the subject of an outline planning application. Detailed design of green infrastructure and public open space will not be available until reserved matters application(s) are brought forward. As such, this assessment has been based on a number of assumptions based on the Illustrative Landscape Strategy, professional judgement and extensive experience of a wide range of similar projects. Those assumptions are:

- The ratio of developed land; sealed surface to vegetated gardens within development parcels will be 70:30. All developable area apart from access roads, the Oxford/Banbury Road, part of the school site and paved pedestrian pathways is included within this assumption;
- SuDS features have been entered as 67% “Sustainable urban drainage feature” in moderate condition, and 33% “Pond (non-priority)”. This, conservatively, accounts for wildlife sensitive design, including a high proportion of open water where appropriate;
- Mixed scrub/shrub planting will achieve a “moderate” condition rating within its time to target condition (5 years) through appropriate management;

- The majority of areas of amenity grassland within public open space will be planted with a flowering lawn mix, allowing them to achieve a "moderate" condition score. Areas of grass on road verges and the school site will be planted with a standard amenity mix suitable for intensive use and will therefore never achieve more than a "poor" condition;

- Areas of wildflower and tussocky grassland have been entered as "Other neutral grassland" in "fairly poor" condition. It is likely that some areas will achieve good condition, particularly where recreational pressure is lower (away from pathways) and some will be in poor condition due to disturbance, undesirable species and nutrient enrichment, however, these are considered likely to balance each other out on average. The proposed fairly poor condition score is therefore considered to be conservative;

- In response to comments made by Oxford City Council and Cherwell District Council, a proportion of grassland, woodland and SuDS habitats have been contained within a wildlife enhancement area, closed off from public access, with gated access for management only. These areas have therefore been ascribed a "good" condition score to reflect the lack of excessive disturbance and other human influences;

- Woodland planting has been entered as "Other woodland; broadleaved" in "poor" condition. it is considered unlikely that woodland will be able to reach more than poor condition in the lifetime of the management plan, given the need for varied age and vertical structure, a developed ground flora and the presence of dead wood; and

- A total of 570 "Urban trees" have been assumed, based on the number pictured on the illustrative landscape strategy. The majority of these (520) have been assumed to reach "small" size (diameter at breast height <30cm) within 27 years. The remainder have been assumed to reach "medium" size. This will be dependent on the age of the stock planted and the species used.

RESULTS

10.8 The headline results of the metric are provided in **Appendix EDP 3**, and a copy of the calculator tool will be submitted alongside the application. Overall, it is predicted that a significant net biodiversity gain can be delivered on-site by the development proposals, thereby meeting both local and national policy requirements regarding biodiversity. The creation of broadleaved woodland, ponds, traditional orchard and planting of street trees, coupled with the enhancement of grassland results in an on-site gain of 24.75%, equivalent to 22.63 habitat units. In addition, the creation of just under 1km of native hedgerow and enhancement of >2km existing hedgerow will result in an on-site gain of 63.45%, equivalent to 19.64 hedgerow units.

10.9 The establishment and long-term management of habitats, as secured through the BIMP, and subsequent LEMPs, will offset the losses to development and result in a considerable net gain in habitat biodiversity value.

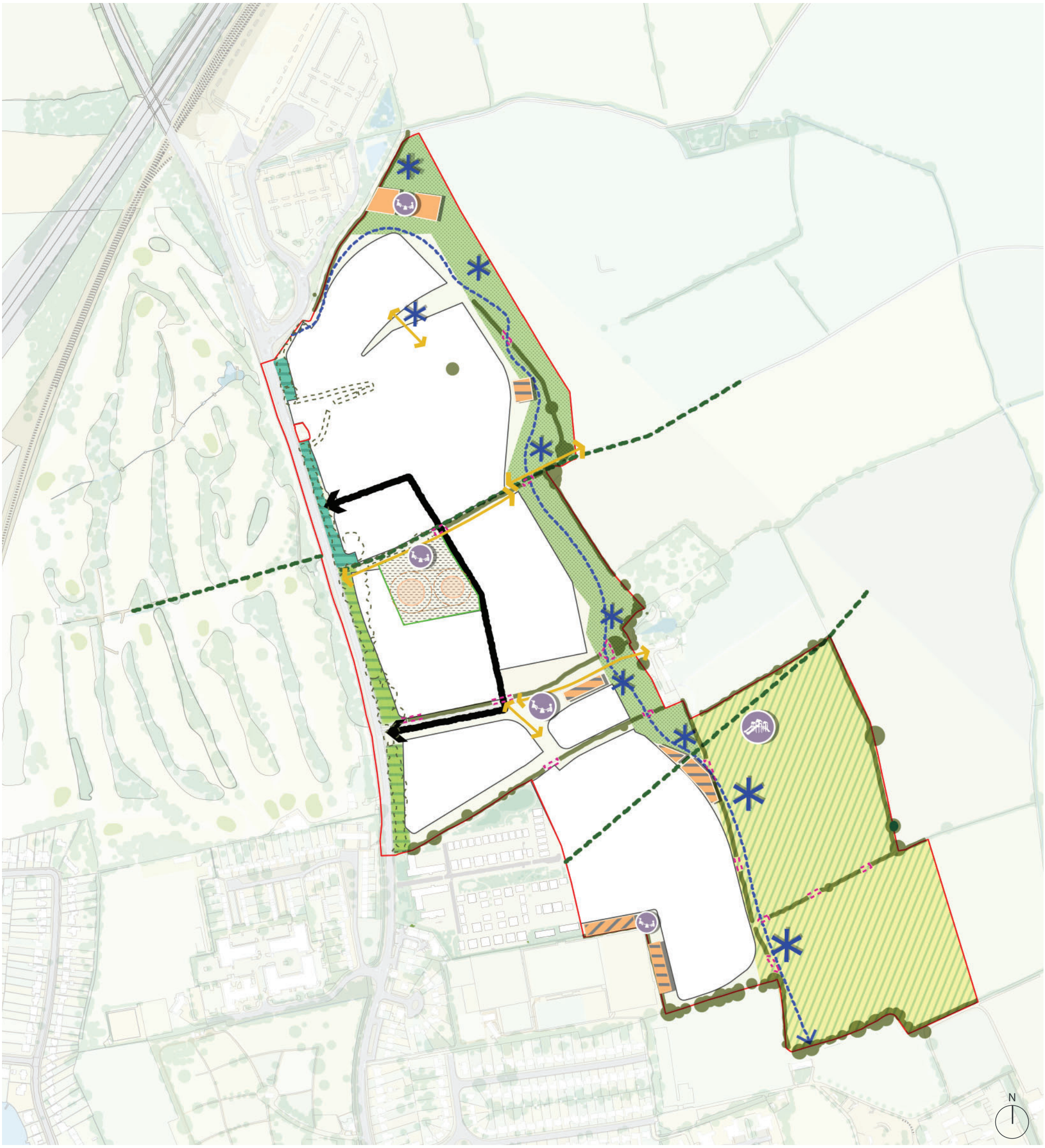
Section 11
Conclusions

11.1 The provisions outlined in this BIMP provide a robust framework for future detailed protection, enhancement and management measures for the key ecological resources associated with the Site and protection measures to ensure off Site receptors are not impacted by the proposals.

11.2 Important habitats, species populations and green infrastructure resource will be maintained or enhanced, and the extensive creation of ecologically valuable habitats will ensure a net gain in biodiversity is secured over the long-term.

11.3 This document demonstrates compliance with the relevant ecological points stated in Policy PR6a - Land East of Oxford Road of the Partial Review of the Cherwell District Local Plan 2011 - 2031 (Part 1), adopted 07 September 2020. In doing so, EDP considers that the development proposals are compliant with local planning policy and are also consistent with national planning policy.

Appendix EDP 1
Green Infrastructure Parameter Plan
(Drawing No. 58, Revision M, 10/11/2023)



Site boundary

Open space and planting

Indicative location for drainage attenuation basins and ponds

Underground remains of historic barrows with offset boundary

'Barrows Park' to incorporate barrows and offset boundary

Existing public right of way / bridleway

Minimum 9 metres to allow buffer from proposed footway edge to include earthworks, ditch and structural planting (subject to detail design)

Minimum 6 metres to allow buffer from proposed footway edge to include earthworks, ditch and structural planting (subject to detail design)

Indicative location for community gardens / orchards

Indicative location for allotments

Indicative location for play areas

Indicative location for the MUGA play area

Trees / hedgerows to be retained (Buildings to be offset from hedgerows/ trees outside the Root Protection Areas (RPAs)

Trees/ hedgerows to be removed (extent to be determined at RM stage)

Sections of hedges to be removed to allow crossings etc (location, number and extent to be determined at RM stage)

Indicative pedestrian, wheelchair, and all-weather cycle route; alignment subject to detail

Green infrastructure corridor along the site's eastern boundary to include structural landscape planting and a pedestrian, wheelchair and all-weather cycle route

Public open green space including structural landscape planting and land set aside for the creation of wildlife habitats and for nature trail/ circular walks

Indicative route for vehicles, cyclists and pedestrians (number and route to be determined at RM stage)

Access roads

PR6a, North Oxford

on behalf of Bellway Homes Limited and Christ Church, Oxford

drawing no.	58	drawing	Green Infrastructure Parameter Plan		
revision	M	scale	1:5,000 @A3	job no.	477898
drawn by	ZP	checked by	AR	date	10/11/2023

Urban Design Studio | savills

Appendix EDP 2
Illustrative Landscape Strategy Plan
(edp5650_d029j 23 January 2024 LTi/ESt)