Surrey Wildlife Trust
Ecology Services

Biodiversity Enhancement Management Plan

TASE (Trinity Academy St Edwards), Keresforth Close, Barnsley, S70 6RS

Bowmer and Kirkland

ecologyservices@surreywt.org.uk
swtecologyservices.org

Constructionline
Gold Member

ISO 14001 ENVIRONMENTAL MANAGEMENT
ISO 45001 HEALTH & SAFETY MANAGEMENT
ISO 9001 QUALITY MANAGEMENT

Author	Harriet Baber BSc (Hons) - Senior Ecologist	Date	16/11/2022
Reviewer	Louise Ryan BSc MBiolSci - Senior Ecologist	Date	21/11/2022
Approver	Claire Gibbs BSc (Hons) MSc MCIEEM – Principal Ecologist	Date	23/11/2022
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The contents of this report were correct at the time of the site visit. The report is provided for the sole use of the named client and is confidential.

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Acronyms

Acronym	Definition
BCT	Bat Conservation Trust
BNG	Biodiversity Net Gain
BOAs	Biodiversity Opportunity Areas
CIEEM	Chartered Institute of Ecology and Environmental Management
CIRIA	Construction Industry Research and Information Association
DEFRA	Department for Environment, Food and Rural Affairs
EcIA	Ecological Impact Assessment
HPI	Habitats of Principal Importance
ILP	Institute for Lighting Professionals
IRZs	Impact Risk Zones
LNR	Local Nature Reserve
NERC	Natural Environment and Rural Communities
NPPF	National Planning Policy Framework
NVC	National Vegetation Classification
SAC	Special Areas of Conservation
SNCI	Site of Nature Conservation Interest
SNP	Surrey Nature Partnership
SPA	Special Protection Areas
SPI	Species of Principal Importance
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage System

UK Habitat Classification

- Site Boundary
- g-17: Grassland-Ruderal/Ephemeral
- g3c: Other Neutral Grassland
- g4: Modified Grassland
- w1g6: Line of Trees
- w1h: Other Woodland; Mixed
- h2a: Hedgerow Priority Habitat
- h2a-190: Hedgerow Priority Habitat-Hedgerow with Trees
- h3h: Mixed Scrub
- u1-1160: Built up Areas and Gardens-Introduced Shrub
- u1b: Developed Land; Sealed Surface
- u1b5: Buildings
- u1c: Artificial Unvegetated, Unsealed Surface
- r1: Standing Open Water and Canals
- 1191: Bioswale

Management Prescriptions

- Enhanced Grassland Compartment (G1-G3)
- Proposed Trees

Bat Boxes

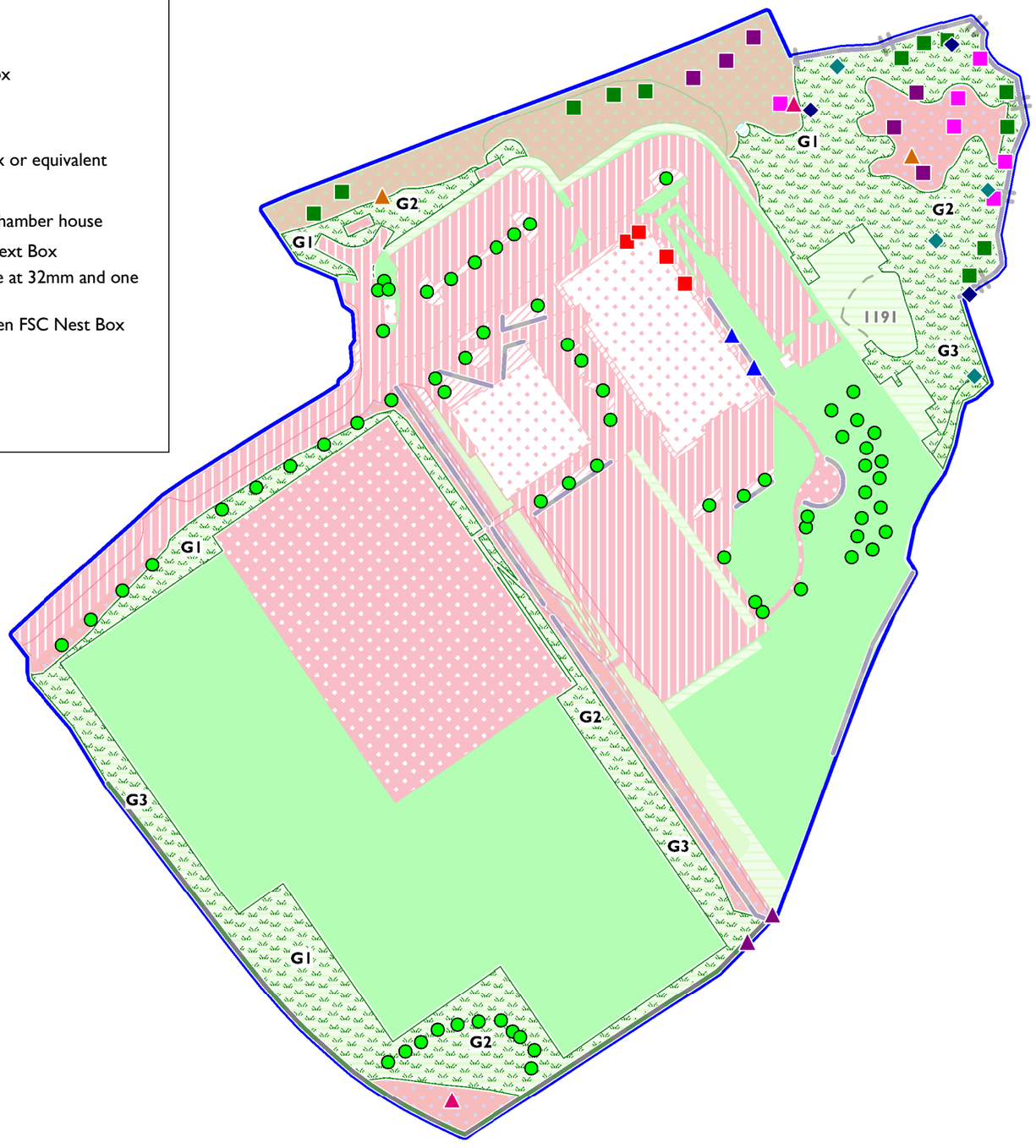
- 1WI Schwelger Summer and Winter Bat Box
- Cavity Bat Boxes or equivalent
- Eco Crevice Bat Boxes or equivalent
- Habitat Bat triple access chambered bat box or equivalent

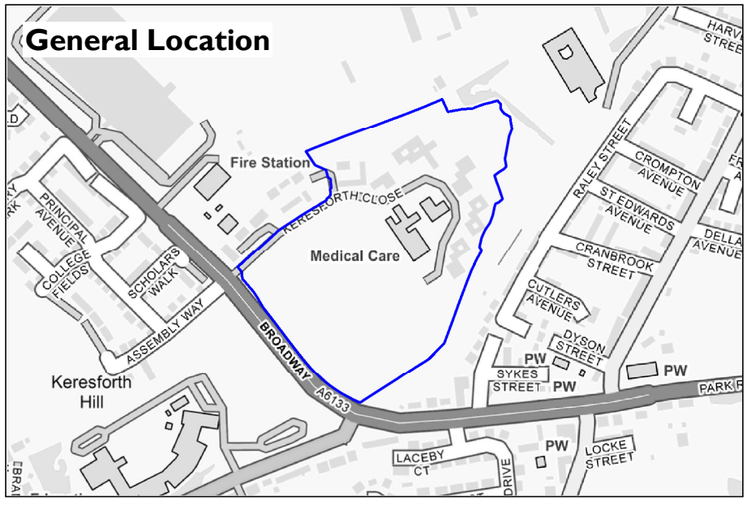
Bird Boxes

- House Sparrow – Vivara Pro Woodstone chamber house
- Starling – Vivara Pro Weedstone Starling Next Box
- Tit – Vivara Pro Woodstone Nest Box (one at 32mm and one at 28 mm)
- One 2H Schwegler Robin Box and one Wren FSC Nest Box

Other Species

- Invertebrates – habitat/log piles
- Reptiles/amphibians – Log piles





Please note: locations are approximate

N

Scale 1: 1700

Produced by: Surrey Wildlife Trust Ecology Services

5373-5, November 2022

Figure 1: TASE Barnsley, Land at Keresforth Close, Barnsley, S70 6RS
Biodiversity Enhancement Management Plan

Surrey Wildlife Trust
Ecology Services

1 Introduction

1.1 Background

1.1.1 Surrey Wildlife Trust (SWT) Ecology Services was commissioned on 10 November 2022 by Bowmer and Kirkland to undertake a Biodiversity Enhancement Management Plan (BEMP) of TASE (Trinity Academy St Edwards), Keresforth Close, Barnsley, S70 6RS. The BEMP is required to discharge condition 14 of planning application 2021/1631; the proposed development is:

"Erection of a new secondary school with associated sports block, sports pitches, hard and soft landscaping, access, parking and drainage."

2 Background

2.1 Site Location

2.1.1 The site, presented in Figure 1, comprises the development boundary that was submitted with the planning application. It is approximately 7.17 ha, and located at Keresforth Close, Barnsley, S70 6RS (central grid reference SE33480561). In the west of the site is a large recreational field which is bordered by a hedgerow, tree line and scrub. In the north-east of the site is the former NHS facility, comprising eight buildings, access roads and parking areas. The former NHS facility area also supports introduced shrubs, grassland, scrub, ruderal/ephemeral, trees and a remnant dry pond. There is a small area of woodland in the north and along the south-eastern boundary is an overgrown hedgerow with trees.

2.1.2 The site is bounded by roads to the south-west, residential properties and playing fields to the north, the Joseph Locke school to the east and a residential development with allotments to the south-east. The site is located in Barnsley Metropolitan area.

2.2 Regulatory framework and planning conditions

2.2.1 In order to receive planning approval, development proposals must comply with relevant UK legislation and planning policies. Details of these (including National Planning Policy and local planning policy) are presented in Appendix 4. Relevance of planning policies and legislation are discussed in Section 6.

2.2.2 The relevant planning permission condition is detailed below.

- Condition 14 of the planning application states:

"Prior to commencement, a Biodiversity Enhancement Management Plan (BEMP) which would include the following shall be submitted to, and approved in writing by the Local Planning Authority:

- *A plan of the areas to be maintained, enhanced and/or created.*
- *A C29 schedule of actions to create or enhance and maintain each habitat at the required quality for a period of 30 years.*
- *A schedule of ecological monitoring for the 30-year period identifying when key indicators of habitat maturity should be achieved.*
- *Monitoring would be required within years 2, 5, 10, 20 and 30; and*
- *Schedule of actions to be undertaken in case signs of failing are identified. The schedules must include details of technique(s) to be used, equipment to be used,*

roles and relevant expertise of personnel and organisations involved and timing of actions including submission of monitoring report to the Council.

- *Measures to be adopted on site to enhance opportunities for wildlife, such as bat and bird boxes and access for hedgehogs, as set out in Table 5 and Table 18 of the Updated Ecological Report by Surrey Wildlife Trust Ecology Services.*
- *A sympathetic lighting scheme as set out within paragraphs 7.3.6 and 7.3.7 of the Updated Ecological Report. The scheme should be supported by a lux level drawing which indicates that lighting levels at features identified as being used by bats (e.g. hedgerows, tree lines, etc.) are appropriate for continued foraging and commuting use.*

Thereafter the approved scheme shall be carried out in accordance with the approved details and timescales."

2.2.3 The information and data provided have been prepared in accordance with current best-practice guidance (CIEEM, 2019b), (CIEEM, 2021), (BSI, 2013) and (BSI, 2021). Our ecologists are bound by CIEEM's 'Code of Conduct' (CIEEM, 2019b).

2.3 Ecological Background

2.3.1 Previous ecological surveys of the site have been undertaken in 2020 and 2021 by Waterman Infrastructure & Environment Limited and ECUS (Waterman Instructure and Environment Limited, 2020a) (Waterman Infrastructure and Environment Limited, 2020b) (ECUS, 2022). The results of these surveys are detailed in Appendix 1.

2.3.2 In 2022, SWT Ecology Services completed bat hibernation surveys, summer bat presence/likely absence surveys, summer bat activity surveys, an update ecological walkover survey and a BNG assessment (SWT Ecology Services, 2022a) (SWT Ecology Services, 2022b) (SWT Ecology Services, 2022c). The results of these surveys are detailed in Appendix 1.

2.3.3 The BNG assessment for this development identified that a net gain for biodiversity can be achieved (29.31% habitat units and 26.03% hedgerow units) (SWT Ecology Services, 2022c).

2.3.4 The Update Ecology Report was submitted to support this granted planning permission ref: 2021/1631. As such, this this BEMP is based on the BNG assessment and other recommendations/mitigation strategies detailed in the Update Ecology Report (SWT Ecology Services, 2022c).

2.3.5 A separate Construction Environment Management Plan (CEMP: Biodiversity) has also been produced by SWT Ecology Services in response to condition 15 of the planning decision ref: 2021/1631. The aim of the CEMP (Biodiversity) is to provide details of measures to protect the ecological receptors on site. The CEMP (Biodiversity) details the approach that will be implemented by contractors throughout the construction phase to ensure the ecological receptors identified are adequately protected and impacts are minimised and the management techniques outlined within this BEMP have taken into account those outlined in the CEMP: Biodiversity (SWT Ecology Services, 2022d).

2.4 BEMP aims

2.4.1 As stated above, this BEMP is in accordance with the BNG assessment and other recommendations/mitigation strategies detailed in the Update Ecology Report (SWT Ecology Services, 2022c), and is also based on the illustrative masterplans, landscape plans and planting schedules (FS0954-ALA-XX-ZZ-DR-L-0001 to 0017 and 30&31, dated 17/09/2021, and FS0954-ALA-ZZ-DR-L0021S1 to S2, dated 07/10/2021 (Ares Landscape Architects Ltd, September 2021)) that were submitted to support the planning application.

2.4.2 This BEMP is also in accordance with the CEMP: Biodiversity (SWT Ecology Services, 2022d).

2.4.3 The development works to any areas of the site,

2.4.4 The aim of the BEMP is to:

- State the specification of habitat and ecological features which will be installed onsite
- Outline appropriate management of ecological features at the site for a minimum of 30 years post-construction.

2.4.5 More specifically, the scope of work includes:

- Plan of the areas to be maintained, enhanced and/or created (corresponding with the plan to be included within the CEMP: Biodiversity (SWT Ecology Services, 2022d) and BNG assessment (SWT Ecology Services, 2022c), as well as detailed landscape and development design plans (Ares Landscape Architects Ltd, September 2021).
- A C29 schedule of actions to create or enhance and maintain each habitat at the required quality for a period of 30 years; this would include a schedule of monitoring during the period, which identifies when key indicators of habitat maturity should be achieved. The schedule will also detail actions to be undertaken in case signs of failing are identified during the monitoring process.
- The schedules must include details of technique(s) to be used, equipment to be used, roles and relevant expertise of personnel and organisations involved and timing of actions including submission of monitoring report to the Council.
- Measures to be adopted on site to enhance opportunities for wildlife, including provision of nest/roost boxes and habitat piles and connectivity for reptiles.
- Sympathetic lighting scheme, supported by a lux levels drawing which indicates that lighting levels at features identified as being used by bats (e.g. hedgerows, tree lines, etc.) are appropriate for continued foraging and commuting use. This would take into account guidance from the Bat Conservation Trust's Guidance Note 08/18 Bats and artificial lighting in the UK as well as other published documentation in relation to lighting and biodiversity.

3 Limitations

3.1.1 The BEMP considers the unique features of the site, the local area and the proposed development and is based on currently available information. If before, or during implementation of this plan, the development proposal is altered substantially, or significant new ecological information comes to light then the plan will need to be revised accordingly by the project ecologist.

3.1.2 It is also highlighted that it is difficult to be sure at this stage as to what long-term management would actually be required in practice therefore the operations proposed within this report will be reviewed over time and updated as appropriate as part of an iterative process with the monitoring. Any changes in management would be included within the monitoring report that is to submitted to the Council during the 30 year monitoring process.

4 Construction Phase

4.1 Habitat Creation and Enhancement

4.1.1 The documents referred to above, specifically the BNG assessment, have been used to assess the baseline habitats within the site, and recommended enhancement/management of these retained habitats and any newly created habitat that this BEMP applies to, see Figure 1. This BNG assessment has also been used to determine when key indicators of habitat maturity should be achieved. The habitats to be retained, created and enhanced that are discussed within this BEMP are:

- Retention and enhancement of improved grassland and other neutral grassland to achieve other neutral grassland (wildflower meadows). Creation of other areas of other neutral grassland (wildflower meadows)
- Management and enhancement of retained other woodland; mixed
- Enhancement of existing hedgerows and creation of new native hedgerows
- Enhancement of retained scrub and creation of new species-rich shrub
- Management of retained line of trees
- Planting of new trees and enhancement of existing trees
- Retention and creation of modified grassland (grassland areas within the school, including informal play area and football pitches)
- Creation of Urban – Introduced Shrub

4.1.2 Long-term management details of the enhanced and newly created habitats have been provided in Section 5. The management within section 5 details how target condition will be met through management, as well as the predicted timeframes, as per the BNG calculations.

Other Neutral Grassland (wildflower meadows)

4.1.3 In the west, the boundaries of retained modified grassland will be enhanced to create other neutral grassland (wildflower meadows) of at least moderate condition. (see Section 5).

4.1.4 In the north-east (former NHS land), the retained areas of other neutral grassland that are currently of poor condition will also be enhanced and managed to be other neutral grassland (wildflower meadows) of at least moderate condition. A small area of this grassland will include a bioswale for the development, and this will be created to also be other neutral grassland (wet wildflower meadow) of moderate condition (see Section 5).

4.1.5 Additional, new areas of other neutral grassland (wildflower meadows) will also be created around the development, with the aim to be of moderate condition.

4.1.6 The creation of these other neutral grassland (wildflower meadows) areas of moderate condition will be achieved through appropriate management and plug planting of individual plants species, and where required, an appropriate seed mix to increase number of herbaceous species per m^2 (see section 5.2 for details). The other neutral grassland (wildflower meadows) seed to be planted includes Germinal Amenity WFG2 Flowering Meadow, supplemented with WF10 Cornfield, and Germinal Amenity RE3 Floorplain/Water Mead. Individual plant species that are plug planted should be similar to those present in the species assemblage of the seed mixes, however recommendations include common knapweed, wild carrot, yarrow, Lady's bedstraw, rough hawkbit, oxeye daisy and salad burnet.

4.1.7 Any new seeding will be completed between mid-September and early Autumn, prior to any frost but after high summer period, as detailed in this report.

Woodland; Other mixed

4.1.8 At least 0.22 ha of the woodland; other mixed will be managed to ensure it remains as moderate condition (see Section 5).

4.1.9 Approximately 0.12 ha of woodland will be enhanced to be of overall good condition. To increase plant species diversity in the woodland and overall improve the species assemblage to be representative of an National Vegetation Classification community (specifically W10 woodland), there will be new shrub planting within the understorey and seeding within the ground layer (Rodwell, J.S. (ed.), 1991). Species to be planted within the understorey and the seed mix will be in keeping with similar habitats in the local area. Species to be planted are detailed below.

4.1.10 Shrubs include:

- Dogwood
- Hawthorn
- Blackthorn
- Spindle
- Hazel
- Wild cherry
- Field maple

4.1.11 A suitable plant seed mix is detailed in Table 1 below.

Table 1: N10F Woodland Meadow Mix Flowers Only (Naturescapes)

Species	Percentage (%)
Common agrimony	5
Garlic mustard	8
Ramsons	3
Wild angelica	5
Nettle-leaved bellflower	3
Wild foxglove	5
Meadowsweet	5

Species	Percentage (%)
Hedge bedstraw	5
Herb robert	0.5
Wood avens	7
English bluebell	12
Hairy St. John's-wort	3
Wild primrose	1
Selfheal	8
Red campion	7.5
Betony	5
Hedge woundwort	8
Wood sage	5
Upright hedge parsley	4
Total	**100**

Hedgerows

4.1.12 The retained hedgerows, although in good condition, are currently species-poor and therefore will be enhanced to be species-rich and managed to ensure they remain of good condition (see Section 5). The hedgerows will be enhanced through progressive removal overtime of non-native invasive species, including Swedish whitebeam and cotoneaster sp., and plug planting with heavily flowering and fruiting native species.

4.1.13 New hedgerows to be created will be planted with beech, and where possible, with an aim to also plant additional other native species.

4.1.14 The aim will be, where possible, to ensure at least six woody species are present in each of the enhanced and newly created hedgerows to ensure they are species-rich. In addition, honeysuckle will be planted within the hedgerows, where possible, to thicken vegetation and provide good nesting material and food resources for wildlife. The woody species will be planted as whips and will include the species in Table 22, all of which are available from Naturescape (https://www.naturescape.co.uk)/. This table also details the approximate distribution of each species within the hedgerow that should be aimed for.

4.1.15 Planting of bare root plants (suggested size of 40-60 cm) will be undertaken during the autumn or winter period with at least 30 cm between each specimen. Protection of newly planted hedgerows and trees is essential to promote growth and survival rates. As such, tree guards will be installed around each newly planted tree for protection against grazing deer. Hedgerows will not be planted in waterlogged or frozen soil and will receive regular water when the earth is dry. Mulch will be spread around the base of newly planted hedgerows to protect the roots, reduce evaporation (water loss) and suppress weeds. Alongside this, corrective pruning may be required, and any weeds will be removed to prevent competition. Any planting that fails will be replaced during the next suitable planting period for that species.

Table 2: Species composition for hedgerows

Species	Scientific Name	Approx. Distribution
Bird cherry	*Prunus padus*	10%
Blackthorn	*Prunus spinosa*	10%
Dog rose	*Rosa canina*	5%
Dogwood	*Cornus sanguinea*	10%
Elder	*Sambucus nigra*	10%
Field maple	*Acer campestre*	10%
Guelder-rose	*Viburnum opulus*	10%
Hawthorn	*Crataegus monogyna*	25%
Hazel	*Corylus avellana*	10%

Species-Rich Shrub Planting

4.1.16 In the north-east (former NHS land), the retained areas of mixed scrub that are currently of moderate condition will be enhanced to be species-rich shrub planting of good condition, with a good structure for wildlife. Buddleia, small leaved cotoneaster and any other non-native invasive species, and any areas with a high density of spear thistle and common nettle will be removed, and the areas will be re-seeded with a species-rich meadow mix (Germinal Amenity WFG2 Flowering Meadow). The shrub creation and enhancements will be achieved by dense planting of a number of native shrub species as detailed below, and Table 3 below.

- Hazel
- Hawthorn
- Holly
- Blackthorn
- Rowan
- Wild cherry
- Field rose
- Guelder-rose

4.1.17 In the west, new areas of species-rich mixed shrub planting of good condition will be created. One area will be created by enhancing the existing scrub along the north-western corner, between G1 and the road, to create a boundary feature and habitat connectivity. Another area will be in the area of public open space (POS) in the south-western corner (to the south-west of G2) to increase connectivity. The species selected will be native and of ideally of local provenance. Table 3 below list the species and percentage composition which will be planted. All of which are available from Naturescape (https://www.naturescape.co.uk/).

Table 3: Species composition for species-rich mixed shrub planting

Species	Scientific Name	Percentage Species Composition (%)
Dog rose	*Rosa canina*	5
Dogwood	*Cornus sanguinea*	10

Species	Scientific Name	Percentage Species Composition (%)
Elder	*Sambucus nigra*	20
Hawthorn	*Crataegus monogyna*	10
Hazel	*Corylus avellana*	25
Holly	*Ilex aquifolium*	10
Privet	*Ligustrum vulgare*	10
Spindle	*Euonymus europeus*	10

Line of trees

4.1.18 The line of trees in the western field will be managed to ensure it remains of moderate condition through the development and for the long-term. This will be achieved through the progressive, long-term removal of any abundant Swedish whitebeam and Norway maple and planting of native woody species as detailed below. Where appropriate, planting will be completed prior to removal of any non-native species to avoid creating gaps within the canopy and vegetation (see Section 5 for detailed long-term management). Species to be included within the line of trees are listed below, all of which are available from Naturescape (https://www.naturescape.co.uk/).

- Common lime
- Pedunculate oak
- Beech
- Silver birch
- Wild cherry
- Elder
- Whitebeam
- Field maple
- Rowan

4.1.19 In addition, other neutral grassland (wildflower meadows), as detailed in paragraph 4.1.3, will be created along the eastern side of the tree line.

Urban Trees

4.1.20 The new urban tree planting around the development will include native species that are local to the area, or non-native ornamental species that have a known benefit to wildlife. Below is a list of species which will be planted, as detailed in the planting plan and schedule for the development (Ares Landscape Architects Ltd, September 2021). Management of these trees is detailed in Section 5, however will also take into account management techniques required to ensure trees remain appropriate to meet the requirements of the school.

- Beech
- Field maple
- *Betula utilis var. 'Jacquemontii'*
- Tulip tree
- Pedunculate oak
- *Tilia cordata* 'Geenspire'

Modified Grassland

4.1.21 The main development area, which includes the grassland areas within the school, including the informal play area and football pitches, will be formed of modified grassland, which will likely be of poor condition in terms of the Biodiversity Metric. These areas of grassland will be seeded with Germinal Amenity A19 All Purpose Landscaping Grass Seed (Ares Landscape Architects Ltd, September 2021) and will be managed as appropriate to meet the requirements of the school.

Introduced Shrub Planting

4.1.22 The areas of introduced shrub planting (ornamental) to be created around the development will include species with a known benefit to wildlife and where possible, native species. The species to be planted are detailed in the planting plan and schedule for the development (Ares Landscape Architects Ltd, September 2021). The introduced shrubs will be managed as appropriate to meet the requirements of the school.

4.2 Creation of Ecological Enhancement Features

4.2.1 To enhance the biodiversity within the development, a number of ecological features will be included within the landscape scheme (SWT Ecology Services, 2022b) (SWT Ecology Services, 2022c). These include:

- Bat boxes
- Bird boxes
- Invertebrate, amphibian and reptile habitat/log piles
- Hedgehog friendly fencing

4.2.2 The specification and proposed location of the features is detailed below and in Figure 1.

Bat Boxes

4.2.3 In accordance with the mitigation licence from Natural England which has been granted in relation to the proposals to demolish the buildings within the north-east, which support six bat day roosts and five bat hibernation roosts, (licence ref no: 2022-61536-EPS-MIT), roost compensation and enhancement measures will be provided in the development (SWT Ecology Services, 2022b). This roost compensation and enhancement is in accordance with the type and status' of the roosts present and will maintain the favourable conservation status' of each roost; the locations are detailed below and illustrated on Figure 1. In addition, other features to benefit roosting bats (including hibernating bats) will be installed on the buildings; details are provided in Table 4 below. The enhancements are also in accordance with Condition 6 of the planning decision permitting the demolition of the buildings in the former NHS land (ref: 2021/1160) and have been detailed in the Update Ecology Report.

Roost replacements

4.2.4 The reinstatement and replacement of roosts will be in the form of tree mounted bat boxes in the east of the development, and will be as follows:

- For the five common pipistrelle, three Improved Cavity Bat Boxes and two Eco Crevice Bat Box

- For the one soprano pipistrelle day roost, one Eco Crevice Bat Boxes
- For the six hibernation roosts, six Habitat Triple Chambered Access Boxes

Roost Compensation

4.2.5 In order to compensate for the loss of roosting features, it is proposed that the following bat boxes are installed on trees in the east:

- For the five common pipistrelle, three Improved Cavity Bat Boxes and two Eco Crevice Bat Box
- For the one soprano pipistrelle day roost, one Eco Crevice Bat Boxes
- For the six hibernation roosts, six Habitat Triple Chambered Access Boxes

Roost Enhancements

4.2.6 The enhancement features detailed below have been designed to complement the roost compensation and enhancement measures that will be provided in accordance with the mitigation strategy associated with the bat mitigation licence. The locations of these enhancement features are also shown on Figure 1.

Table 4: Biodiversity enhancement features for roosting bats

Feature type	Species suitability	Where to place	Number of features required
1WI Schwelger Summer and Winter Bat Box	Soprano pipistrelle Common pipistrelle Natterer's Whiskered Brandt's Brown long-eared	Integrated bat box on the northern and eastern elevations of the two new buildings, to create suitable conditions for hibernating and summer roosts	4
Total			4

4.2.7 The bat boxes will be sited 3-4 m high to avoid predation by cats and disturbance from people. The boxes will also be positioned as to be high enough to avoid direct illumination, placed out of the way of strong wind and positioned where they can get sun for part of the day. Bats can use boxes as hibernation roosts in winter and as maternity roosts in the summer. Therefore, to create a range of temperature variations the boxes will be installed facing different directions (for example north for hibernation roosts, see Figure 1).

Sympathetic lighting strategy – Bats and other Wildlife

4.2.8 The impacts of any increase in lighting on the retained or newly created habitats and ecological features on wildlife will be mitigated for through a sensitive lighting design.

4.2.9 Lighting for the proposed development will be designed as per best practice guidance (BCT and Intitute of Lighting Professionals, 2018) to minimise adverse impacts to bats in the surrounding area. This design will be demonstrated on a separate lux level drawing which indicates that lighting levels at features identified as being used by bats

(e.g. hedgerows, tree lines, etc.) are appropriate for continued foraging and commuting use. This drawing is not included within this BEMP and will be produced in response to condition 11 of the planning decision.

4.2.10 Broadly however, the lighting design will have the following specifications:

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally < 2700 K) to reduce blue spectrum
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used – See ILP Guidance for the Reduction of Obtrusive Light.
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt

4.2.11 Light spillage to the retained boundary features around the western area of the development, and on the woodland, mixed shrub planting and retained hedgerow in the north-east of the development, will be further minimised by using hooded and low-level lighting. Consideration should be given to using motion-sensor lighting on short time-frames to minimise the impact of lighting on bats.

Bird Boxes

4.2.12 Bird boxes are an established technique for increasing the value of landscapes to hole-nesting bird species and may help contribute to any Local Biodiversity Action Plan (LBAP) targets.

4.2.13 To enhance the site's value to nesting birds, eight bird boxes will be placed on an external wall of the new buildings or on trees/within mixed shrub planting around the development. The location of the bird boxes are shown on Figure 1 and detailed in Table 5 below. These features are available at https://www.nhbs.com/.

4.2.14 Boxes should be placed a minimum of 1.5 m (with the exception of starling and house sparrow boxes which need to be installed at least 3 m high) above ground to reduce predation risks and should be in areas with low levels of foot traffic. The boxes should be placed somewhere sheltered and warm; the RSPB recommend that bird boxes are positioned between north and eastern aspects, which avoids strong sunlight and wettest winds (see Figure 1).

Table 5: Bird Boxes

Species	Number of Boxes	Box/Habitat Feature Type and Location
House sparrow	Two boxes	Vivara Pro WoodStone Single Chamber House Sparrow Nest Box, these should be placed near each other to create a colony. Install in new buildings
Tit species	Two boxes	Vivara Pro Seville WoodStone Nest Box, two at 32 mm and two at 28 mm, as this will provide nesting options for different

Species	Number of Boxes	Box/Habitat Feature Type and Location
		sized birds (e.g. blue tit *Cyanistes caeruleus* and great tit *Parus major*). Install on mature trees and in woodland, tree line and mixed shrub planting
Starling	Two boxes	Vivara Pro WeedStone Starling Nest Box, these should be placed near each other to create a colony. Install on mature trees and in woodland, tree line and mixed shrub planting
Robin	Two boxes	2H Schwegler Robin Box or Robin and Wren FSC Nest Box. Install on mature trees and in woodland, tree line and mixed shrub planting.

Invertebrate, Reptile and Amphibian Habitat

4.2.15 To enhance the site for invertebrates, reptiles and amphibians four habitat/log piles and three log piles will be created using materials cut from existing vegetation within the development. The habitat/log piles will be installed within the grassland and mixed shrub planting areas to the northeast (see Figure 1).

4.2.16 The logs used should be hard woods as they last longer and do not contain resins. If suitable material is not available onsite then it will be sourced from a sustainable local supplier.

Hedgehog Friendly Fencing

4.2.17 To ensure connectivity across the site is not lost, any solid board fencing will have holes cut at the base to allow for movement of hedgehogs. The holes will be a minimum of 15 cm high and wide and should be placed as a minimum one every 20 m, examples are shown in appendix 2.

5 Operational Phase

5.1.1 Details of the long-term management required as well as timings for management activities are provided below for each habitat / ecological feature. These are to be implemented over a minimum of 30-years, however the operations proposed within this report will be reviewed over time and updated as appropriate as part of an iterative process with the monitoring. A schedule of proposed timings for management of each habitat, as well as monitoring periods, is provided in Section 8.

5.2 Habitat Management

Other Neutral Grassland (wildflower meadows)

5.2.1 If possible, the areas of other neutral grassland (wildflower meadows) should be protected from the adjacent sports fields/school grounds using picket fences and information boards to explain the management and purpose of the areas.

5.2.2 The other neutral grassland (wildflower meadows) areas will be cut towards the end of the summer the year immediately after the sowing (assuming the grassland is sown in mid-September to Autumn the year before). However, prior to undertaking the first cut, the grassland establishment will be assessed to determine whether it would be suitable to cut the grass. The first cut will be completed in August / September and the cut will be to a height of 300 mm only.

5.2.3 The establishment of the grassland will be monitored for competitive weeds, which will be spot sprayed where necessary or hand pulled. Competitive weeds include but are not limited to:

- Broad-leaved dock
- Common nettle
- Common ragwort
- Cow parsley
- Creeping buttercup
- Creeping thistle
- Curled dock
- Greater plantain
- Spear thistle
- White clover

5.2.4 This will be undertaken every two months during the main growing period April to September for two years post sowing.

5.2.5 Once the other neutral grassland (wildflower meadows) is established it should be cut on a three yearly rotational basis. Each section of grassland should be roughly split into three sections (G1, G2 and G3, which should be decided by the on-site grounds team, however recommendations have been illustrated on Figure 1) and the management rotated between them. This will be to achieve a range of sward heights, which will help to control any coarse grasses and other undesirable species which might be growing in the sward and could out compete other plants. In addition, it creates a grassland habitat with a diverse structure that is beneficial to invertebrates and other wildlife.

5.2.6 The management is detailed further in Section 8 of this report however will broadly be as the schedules outlined in Table 6 and 7.

Table 6: Management and Timings for Establishment of Other Neutral Grassland (wildflower meadows)

Item	Timing
Plug planting of individual species or sowing a seed mix	Between mid-September and to Autumn, and only when nightly temperatures exceed 5^0C
First year management (year immediately after sowing)	The first cut will be completed in August / September and the cut will be to a height of 300 mm only.
Monitoring for competitive weeds and bird damage	Every two months during the main growing period for the first two years.

Table 7: Post Establishment Yearly Management of Other Neutral Grassland (wildflower meadows)

Year	G1	G2	G3
2	Cut in March/April and August/September/October (two cuts)	Cut only in August/September (one cut)	Cut only in August/September (one cut)

3	Not cut at all	Cut in March/April and August/September/October (two cuts)	Cut in March/April and August/September/October (two cuts)
4	Cut in March/April and August/September/October (two cuts)	Not cut at all	Cut only in August/September/October (one cut)

5.2.7 Following year 4, this cutting regime should be continued on a three year cycle. These cuts should be undertaken using a hand strimmer or mower. When the cut is done it will be left for a 3-5 days, this is to allow the seeds to drop, before being collected. The grassland will require no watering or fertilising and any weeds which begin to appear should be handpicked. If the grasses begin to takeover, then a combination of a hard spring cut, seeding more yellow-rattle and raking areas to form bare patches should rectify this.

5.2.8 Any litter that has blown into the areas will be removed as and when required.

Condition of Other Neutral Grassland (wildflower meadows)

5.2.9 For the predicted change in ecological value scores and the predicted BNG to be reached, the other neutral grassland (wildflower meadows) will need to reach moderate condition. The predicted years for the areas of wildflower meadow to reach target condition are detailed in Table 8 below; these are as specified by the BNG calculation produced for this project. (Panks, et al., Biodiversity Metric 3.1: Auditing and Accounting for Biodiversity - User Guide, 2022) (Panks, et al., Biodiversity Metric 3.1: Auditing and Accounting for Biodiversity: Technical Suplement, 2022b) (SWT Ecology Services, 2022c).

Table 8 Condition of Other Neutral Grassland (wildflower meadows)

Habitat Type (retained and enhanced or created)	Current condition	Target Condition	Predicted year to reach target condition
Other neutral grassland, retained to be enhanced	Poor	Moderate	10
Modified grassland, retained to be enhanced	Poor	Moderate	10
Created other neutral grassland	N/A	Moderate	5

5.2.10 In accordance with the Biodiversity Metric 3.1, to reach moderate condition it has been assumed that the wildflower meadows will meet at least 3 or 4 of the following criteria, including essential criteria 1.

- Criteria 1: The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type. Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.

- Criteria 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 insects, birds and small mammals to live and breed.
- Criteria 3: Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.
- Criteria 4: Cover of bracken is less than 20% and cover of scrub is less than 5%.
- Criteria 5: There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition and physical damage accounts for less than 5% of total area
- Criteria 6: There are greater than 9 species per metre squared. It is important to note that for the other neutral grassland areas to reach good condition, they should meet this criteria.

Other Neutral Grassland (wet wildflower meadows - Bioswale)

5.2.11 The other neutral grassland (wet wildflower meadows) area within the bioswale will be cut towards the end of the summer immediately after the sowing (assuming the grassland is sown in mid-September to Autumn the year before). Prior to undertaking the first cut, the species establishment will be assessed to determine whether it would be suitable to cut the swale. The first cut will be completed in August / September and the cut will be to a height of 300 mm only. The area of wet wildflower meadow that will form the bioswale will be managed separately to the other areas of neutral grassland (wildflower meadows), see table 9 below.

5.2.12 The establishment of the species within the bioswale will be monitored for competitive weeds, which will be spot sprayed where necessary or hand pulled. Competitive weeds are similar to those outlined above in 5.2.3.

5.2.13 Monitoring will be undertaken every two months during the main growing period April to September for two years post sowing. The monitoring will also be for birds, where needed deterrent methods will be used to discourage feeding on the seeds, in the worst case a covering with an open wire mesh will be considered.

5.2.14 Once the other neutral grassland (wet wildflower meadow) within the bioswale is established it should be cut three times per year; once in spring (no later than April) to between 50 to 80 mm; once in mid-summer, to 40 mm; and once in autumn, again to 40 mm. These cuts should be undertaken using a hand strimmer which will reduce the risk of harming any wildlife using the grassland (see Table 9). When the cut is done it will be left for a 3-5 days, this is to allow the seeds to drop, before being collected. Prior to the cut this area should be walked over to encourage any wildlife to vacate the area. The grassland will require no watering or fertilising and any weeds which begin to appear should be handpicked. If the grasses begin to takeover, then a combination of seeding more yellow-rattle and raking areas to form bare patches should rectify this.

5.2.15 Any litter that has blown into the areas will be removed as and when required.

Table 9: Management and Timings for Other Neutral Grassland (wet wildflower meadows)

Item	Timing
Plug planting of individual species or sowing a seed mix	Between mid-September and to Autumn, and only when nightly temperatures exceed 5^0C
First year management (year immediately after sowing)	The first cut will be completed in August / September and the cut will be to a height of 300 mm only.
Monitoring for competitive weeds and bird damage	Every two months during the main growing period for the first two years.
Yearly management	Three cuts: • before the end of April 50-80 mm, • between June and August 40 mm, and • between October and November 40 mm

Condition of other neutral grassland (wet wildflower meadows)

5.2.16 For the predicted change in ecological value scores and predicted BNG to be reached the other neutral grassland will need to reach moderate condition and this is likely to take at least 10 years. To reach moderate condition it has been assumed that this wet area of other neutral grassland will meet at least 3 or 4 of the criteria listed above in paragraph 5.2.10 including essential criteria 1.

5.2.17 In addition, to meet the requirements and criteria for the other neutral grassland (wet wildflower meadows) to be suitable as a bioswale it should aim to include the following characteristics.

- Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single structural habitat component / vegetation type should not account for more than 80% of the total habitat area.
- There is a diverse range of flowering plant species, providing nectar sources for insects. These species may be either native, or non-native but beneficial to wildlife.
- Invasive non-native species (Schedule 9 of WCA) are absent.
- The water table is at or near the surface throughout the year. This could be open water or saturation of soil at the surface.

Woodland; Other Mixed

5.2.18 The management and enhancement of the woodland is outlined in Table 10 and will include the following measures:

- Systematic, progressive removal over-time of all invasive non-native species (Swedish whitebeam and cotoneaster) and management to ensure that they do not re-establish. This will be completed outside the breeding bird season and amphibian/reptile hibernation season, therefore will be completed in September and October. Appropriate plug planting of native species will be completed during and before this period, where required.
- Coppicing and thinning of woodland to encourage younger trees and shrubs to grow and to allow light levels to the ground to allow for flowering species to establish in the ground layer. Where required, a suitable seed mix (as detailed in Section 4) will be used to create a ground and shrub layer comprising a good diversity of herb species

that is representative of W10 woodland NVC community (Rodwell, J.S. (ed.), 1991). Coppicing will be done on a ten year rotational basis, trees to be coppiced will be grouped in to ten groups so that coppicing is undertaken each year, in September and October.

- Long term management to achieve a better age distribution of trees and vertical structure this will have to occur naturally over time and is likely to take 10 to 15 years. Mature trees (such as Scot's pine) are present across the woodland and it is considered that, with appropriate management, planting of shrub and herbaceous species and rotational coppicing, a more complex vertical structure could be created in small sections of the woodland.
- Creation of deadwood through the woodland using materials (brash, logs etc.,) from site vegetation clearance and management.

5.2.19 Any management of the shrub and canopy layer will be undertaken outside the breeding bird period. Information boards to explain the management and purpose of the woodland could be deployed.

Table 10: Management for Timings for Woodland

Item	Timing
Planting of shrubs to improve woodland structure	September and October
Sowing of woodland seed mix	Between mid-September and to Autumn, and only when nightly temperatures exceed 5^0C
Installation of log piles	During construction of development
Removal of non-native species within the woodland	September and October
Planting of new shrubs and trees where required to infill removed non-native species	September and October
Rotational coppicing of appropriate species on a ten-year rotation	September and October
Pruning and thinning of trees	As required in January and February

Condition of Woodland

5.2.20 The management that has been detailed above has been developed with the aim is to enhance condition from moderate to good in at least 0.12 ha, and to remain of moderate condition in least 0.32 ha of the woodland. The management has been designed to meet criteria of specific conditions in accordance with the BNG assessment (as detailed below). For the predicted change in ecological value scores to be reached the woodland will need to reach good condition in at least 0.12 ha; this will take approximately 10 years. At least 0.22 ha will need to remain of at least moderate condition for the duration.

- Criteria 1: Two age classes present (remain as moderate condition across woodland)
- Criteria 2: No significant browsing damage evident in woodland (remain as good condition)

- Criteria 3: No invasive species present in woodland (enhance at least 0.12ha of woodland from moderate to good condition)
- Criteria 4: Five or more native tree or shrub species found across woodland parcel (remain as good condition)
- Criteria 5: > 80% of canopy trees and >80% of understory shrubs are native (remain as good condition)
- Criteria 6: 10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply (remain as good condition)
- Criteria 7: All three classes present in woodland; trees 4-7cm diameter at breast heigh (DBH), saplings and seedlings or advanced coppice regrowth (remain as good condition)
- Criteria 8: Tree mortality less than 10%, no pests or diseases and no crown dieback (remain as good condition)
- Criteria 9: Recognisable NVC plant community present, specially W10 woodland (enhance at least 0.12ha of woodland from moderate to good condition, with 0.22ha remaining as moderate condition)
- Criteria 10: Three or more storeys across all survey plots or a complex woodland (enhance at least 0.12ha of woodland from poor to moderate condition)
- Criteria 12: Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/stems and stumps (enhance at least 0.12ha of woodland from poor to moderate condition)
- Criteria 13: No nutrient enrichment or damaged ground evident (remain as good condition)

Hedgerows

New hedgerows

5.2.21 For newly created hedgerows the whips will be planted in the first year and protected using tree stakes and guards, it is recommended that these guards are 20cm tall and biodegradable. In autumn for the first five years any failed whips should be replaced on a like for like basis.

5.2.22 In the first spring, cut shrubs back to 45 – 60 cm above the ground to encourage bush growth. Following this, it should be trimmed back every three years to allow the whips to set strong roots and thick stems. After ten years the hedge should be laid, this will encourage the hedge to thicken at the base, it will make it a good visual barrier and create breeding bird and small mammal habitat. This management does not apply to the hedgerows that exist within the site and are to be retained.

Management of new hedgerows and retained and enhanced hedgerows

5.2.23 In autumn for the first five years any failed whips within the retained and enhanced hedgerows should be replaced on a like for like basis.

5.2.24 Once the new hedge has been laid, and the retained hedgerows enhanced through species-rich planting, each hedge should be grouped in three areas (H1, H2 and H3, to be decided by the on-site grounds maintenance team) and managed on a three-year cycle (see Table 11). This would mean two years of no cutting and the third year cutting back the hedge to leave only 10 cm of new growth behind. It is important to

cut the hedge only every three years as the plants will only flower and fruit in the second year after a cut. It is important that some of the new growth is left every time the hedge is cut as this prevents a cut line forming.

Table 11: Management and Timings for Hedgerows

Item	Timing
Planting of new whips	Autumn
Replacement of failed whips	For the first five years in autumn.
Hedgerow management first 10 years (new hedgerows only)	the first spring, cut shrubs of any new hedgerows created back to 45 – 60 cm above the ground to encourage bush growth. Following this, it should be trimmed back every three years.
Hedgerow management post laying and hedgerow management of existing retained hedgerows	Once laid the hedge should be cut on a three-year rotation split between sections H1, H2 and H3, with 10 cm of new growth left behind. The existing, retained hedgerows should be should be cut on a three-year rotation split between sections H1, H2 and H3, with 10 cm of new growth left behind, from year 0.

Condition of Hedgerows

5.2.25 For the predicted change in ecological value scores to be reached, the new hedgerows will need to reach good condition and will also be upgraded from native hedgerow to native species-rich hedgerow. It should take 12 years to reach this condition.

5.2.26 For the retained and enhanced native hedgerow and hedgerow with trees these will be upgraded to be species-rich, and managed to maintain of good condition.

5.2.27 For each hedgerow to reach good condition it has been assumed that the hedgerows will meet the following criteria of the following functional groups:

- Functional Group A: A minimum height and width of 1.5 m along length of hedgerow.
- Functional Group B: No gap in the canopy or base of hedgerow present, with the exception of gate ways which cannot exceed 5m.
- Functional Group C: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length, present on at least one side of the hedge.
- Functional Group C: Plant species indicative of nutrient enrichment of soils dominate less than 20% cover of the area of undisturbed ground.
- Functional Group D: >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.
- Functional Group D: >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.

5.2.28 Any trees within the hedgerow will also need to meet:

- Functional Group E: 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.
- Functional Group E: At least 95% of hedgerow trees are in a healthy condition. 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.

Mixed Species-Rich Shrubs

5.2.29 For the newly created area of mixed, species-rich shrub planting in the south-western corner of the western development area and all areas of retained and enhanced species-rich mixed shrub in the north-eastern area of the development, the aim of the management will be to achieve scalloped margins to create a range of ecotones and openings. The management of this habitat type should be undertaken during September and October, every one to two years. This timing will avoid the bird breeding season (March - August) and reptile/amphibian hibernation period (November – February).

5.2.30 The new species-rich mixed shrub planting along the north-western corner of the western field will be managed at the same time, however the aim of this will be to create a linear boundary feature.

5.2.31 See table 12 for management details.

Table 12: Management and Timings for Mixed Species-Rich Shrubs

Item	Timing
Removal of invasive non-native species	During construction (outside nesting bird season)
Planting of shrubs	As required in Autumn
Removal of litter	Biannually (twice a year)
Pruning of shrubs and management of scalloped edge	As required in January and February (at minimum every once two years)

Condition of Mixed Species-Rich Shrubs

5.2.32 For the predicted change in ecological value scores to be reached all areas of species-rich mixed shrub planting will need to reach good condition. It should take 10 years for both retained/enhanced and newly created shrub areas to reach this condition.

5.2.33 To reach good condition it has been assumed that the species-rich mixed shrub planting will meet the following criteria:

- Criteria 1: Habitat is representative of UKHab description. There are at least three woody species, with no one species comprising more than 75% of the cover.
- Criteria 2: There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.
- Criteria 3: There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition1 make up less than 5% of ground cover.
- Criteria 4: The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat.
- Criteria 5: There are clearings, glades or rides present within the scrub, providing sheltered edges.

Line of Trees

5.2.34 The retained line of trees will be managed to remain of moderate condition, as well as where possible, enhanced, as detailed in Section 4. In addition, any new trees will be

planted in the first year and protected using tree stakes and guards, it is recommended that these guards are 20cm tall and biodegradable. In autumn for the first five years any failed trees should be replaced on a like for like basis (see Table 13).

5.2.35 Trees should be pruned as required in January and February to promote healthy growth.

Table 13: Management and Timings for Trees

Item	Timing
Planting of new trees	Autumn
Replacement of failed trees	For the first five years in autumn.
Pruning of trees	As required in January and February

Condition of Line of Trees

5.2.36 The tree line, which is currently of moderate condition, will be managed to ensure it remains of this condition by ensuring it continues to reach the following criteria:

- Criteria 1: More than 70% of trees are native species.
- Criteria 2:Tree canopy is predominantly continuous with gaps in canopy cover making up 5 m wide
- Criteria 5: At least 95% of the trees are in a healthy condition. 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.

Urban Trees

5.2.37 Trees will be planted in the first year and protected using tree stakes and guards, it is recommended that these guards are 20cm tall and biodegradable. In autumn for the first five years any failed trees should be replaced on a like for like basis (see Table 13 for management and timings).

5.2.38 Trees should be pruned as required in January and February to promote healthy growth.

5.2.39 The trees will also be managed as appropriate to meet the requirements of the school.

Condition of Trees

5.2.40 For the predicted change in ecological value scores to be reached the trees will need to reach a mixture of poor and moderate condition. It should take 27 years to reach moderate condition and 10 years to reach poor condition.

5.2.41 To reach moderate condition it has been assumed that the trees will meet the following criteria:

- Trees a native species
- The tree is mature
- Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark
- More than 20% of the tree canopy is over vegetation rather than an artificial surface

5.2.42 To reach poor condition it has been assumed that the trees will meet the following criteria:

- Trees a native species

Modified Grassland

5.2.43 The main development area, which includes the grassland areas within the school, including the informal play area and football pitches, will be formed of modified grassland. These areas of grassland will be seeded with Germinal Amenity A19 All Purpose Landscaping Grass Seed (Ares Landscape Architects Ltd, September 2021) and will be managed as appropriate to meet the requirements of the school. As such, it is not determined within this BEMP what criteria will be met, however it is assumed the grassland would be of poor condition.

Introduced Shrub Planting

5.2.44 Any major pruning work that is required to maintain the introduced shrubs on site should be undertaken during January and February. This timing will avoid the bird breeding season (which begins in March) and means berries will be left to support over wintering birds.

5.2.45 Shrubs will be fitted with protection and support, i.e., tubes / stakes, if necessary, when planted, it is recommended that these guards are 20cm tall and biodegradable. Protection of newly planted shrubs is essential to promote growth and survival rates. Shrubs should not be planted in waterlogged or frozen soil and should receive regular water when the earth is dry. Mulch will be spread around the base of newly planted shrubs to protect the roots, reduce evaporation (water loss) and suppress weeds. Alongside this, corrective pruning maybe required, and any weeds should be removed to prevent competition. In autumn for the first five years any failed shrubs should be replaced on a like for like basis.

5.2.46 The introduced shrubs will also be managed as appropriate to meet the requirements of the school.

Table 14: Management and Timings for Introduced Shrub Planting

Item	Timing
Planting of new shrubs	Autumn
Replacement of failed shrubs	For the first five years in autumn.
Pruning of shrubs	As required in January and February

Condition of Introduced Shrub

5.2.47 For the predicted change in ecological value scores to be reached the introduced shrub planting will not need to reach a pre-set condition. It should take one year for the introduced shrub planting to establish.

5.3 Management of Ecological Enhancement Features

Bat Boxes

5.3.1 The bat boxes do not require cleaning out, however a maintenance check should be done every two years from the ground to check they are still securely in place. As bats are legally protected, if an internal check of the box is required, then a suitably qualified and licenced bat ecologist will be required to undertake this.

5.3.2 Monitoring of the boxes that have been installed as roost replacement and compensation will be in accordance with the bat mitigation licence.

Table 15: Timescales and Management for Bat Boxes installed for Enhancement

Item	Timing
Installation of bat bricks	During construction of development
Maintenance check from the ground only (should boxes need to be repaired or moved after installation, this must be done by a licenced bat ecologist)	Every two years

Bird Boxes

5.3.3 Although not essential, it would be beneficial to clean out the bird boxes during the winter months (October to February) as this will remove any parasites from the previous year.

Table 16: Timescales and Management for Bird Boxes

Item	Timing
Installation of bird boxes	During construction of development
Maintenance check	Once every two years during winter months – October to February. This can be done in combination with bat box maintenance. To clean out the box, old nesting material and failed nests (including eggs) should be removed, and the box cleaned using boiling water to kill off parasites. Once the box is completely dry the lid can be replaced. Insecticides or flea powder will not be used (RSPB, 2021).

Invertebrate, Amphibian and Reptile Habitat

5.3.4 The habitat/log piles will require minimal work, only requiring replenishing with brash a once a year when trees and bushes are cut back.

5.3.5 Details of management activities are provided below.

Table 17: Management and Timings for Invertebrate Habitat

Item	Timing
Installation of log/habitat piles	During construction of development
Replenishing off log/habitat piles, where required.	Annually between March – October, outside the amphibian and reptile hibernation period. Topped up using brash from when trees and bushes are cut back, when required.

Monitoring and Feedback

5.3.6 The habitats will need to be monitored by a suitably qualified ecologist on years 2, 5, 10, 20 and 30. This will ensure that the management is producing the desired outcome onsite. A monitoring report will be produced and submitted to the LPA, this will give an indication of the current condition of the habitats, and will recommended any adjustments which might be required.

6 Useful Contacts

6.1.1 The table below provides useful contacts for obtaining ecological advice.

Table 18: Useful Project Contacts

Organisation	Contact Details	Address
Surrey Wildlife Trust Ecology Services	Louise Ryan Louise.Ryan@surreywt.org.uk	Surrey Wildlife Trust School Lane Pirbright Surrey GU24 0JN

7 Annual Checklist of Management Actions – For Use by Contractor

Habitat	Management Item	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Date Completed	Comments	Remedial Actions Required / Completed
Other neutral grassland (wildflower meadows)	Plug planting of individual species or sowing a seed mix	During construction															
	First cut to a height of 300mm	1															
	Spot spraying for competitive weeds	1															
	Rotational cutting of grassland	2			G1	G1				G3	G1 and G3	G1					Monitoring report to be produced
		3			G2	G2				G1	G1 and G2	G2					
		4			G3	G3				G2	G2 and G3	G3					
		5			G1	G1				G3	G1 and G3	G1					Monitoring report to be produced
		6			G2	G2				G1	G1 and G2	G2					
		7			G3	G3				G2	G2 and G3	G3					
		8			G1	G1				G3	G1 and G3	G1					
		9			G2	G2				G1	G1 and G2	G2					
		10			G3	G3				G2	G2 and G3	G3					
		11			G1	G1				G3	G1 and G3	G1					
		12			G2	G2				G1	G1 and G2	G2					
		13			G3	G3				G2	G2 and G3	G3					
		14			G1	G1				G3	G1 and G3	G1					
		15			G2	G2				G1	G1 and G2	G2					
		16			G3	G3				G2	G2 and G3	G3					
		17			G1	G1				G3	G1 and G3	G1					
		18			G2	G2				G1	G1 and G2	G2					
		19			G3	G3				G2	G2 and G3	G3					Monitoring report to be produced
		20			G1	G1				G3	G1 and G3	G1					
		21			G2	G2				G1	G1 and G2	G2					
		22			G3	G3				G2	G2 and G3	G3					
		23			G1	G1				G3	G1 and G3	G1					
		24			G2	G2				G1	G1 and G2	G2					
		25			G3	G3				G2	G2 and G3	G3					
		26			G1	G1				G3	G1 and G3	G1					
		27			G2	G2				G1	G1 and G2	G2					
		28			G3	G3				G2	G2 and G3	G3					
		29			G1	G1				G3	G1 and G3	G1					
		30			G2	G2				G1	G1 and G2	G2					Monitoring report to be produced
Other woodland; mixed	Planting of shrubs to improve woodland structure	During construction															
	Sowing of woodland seed mix	During construction															
		1									G1	G1					

Habitat	Management Item	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Date Completed	Comments	Remedial Actions Required / Completed
	Removal of non-native species within the woodland and planting of new shrubs and trees where required to infill removed non-native species Rotational coppicing of appropriate species on a ten-year rotation (G1 – G10)	2									G2	G2					Monitoring report to be produced
		3									G3	G3					
		4									G4	G4					
		5									G5	G5					Monitoring report to be produced
		6									G6	G6					
		7									G7	G7					
		8									G8	G8					
		9									G9	G9					
		10									G10	G10					Monitoring report to be produced
		11									G1	G1					
		12									G2	G2					
		13									G3	G3					
		14									G4	G4					
		15									G5	G5					
		16									G6	G6					
		17									G7	G7					
		18									G8	G8					
		19									G9	G9					
		20									G10	G10					Monitoring report to be produced
		21									G1	G1					
		22									G2	G2					
		23									G3	G3					
		24									G4	G4					
		25									G5	G5					
		26									G6	G6					
		27									G7	G7					
		28									G8	G8					
		29									G9	G9					
		30									G10	G10					Monitoring report to be produced
	Pruning and thinning of trees	1															
		2															Monitoring report to be produced
		3															
		4															
		5															
		6															
		7															
		8															

Habitat	Management Item	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Date Completed	Comments	Remedial Actions Required / Completed
		9															
		10															Monitoring report to be produced
		11															
		12															
		13															
		14															
		15															
		16															
		17															
		18															
		19															
		20															Monitoring report to be produced
		21															
		22															
		23															
		24															
		25															
		26															
		27															
		28															
		29															
		30															Monitoring report to be produced
Hedgerows	Planting of new whips	1															
	Replacement of failed whips	Years 1 - 5															Monitoring report to be produced
	Cut back to 45 – 60cm to above ground level (new hedgerows only)	1															
	Trimmed/pruned where required (retained hedgerows)	4															
	Trimmed/pruned where required (retained hedgerows)	7															
	Hedge laid	10															Monitoring report to be produced
	Hedge pruning/trimming on a three-year rotational basis	11		H1	H1												
		12		H2	H2												
		13		H3	H3												
		14		H1	H1												
		15		H2	H2												
		16		H3	H3												
		17		H1	H1												
		18		H2	H2												

Habitat	Management Item	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Date Completed	Comments	Remedial Actions Required / Completed
		19		H3	H3												
		20		H1	H1												Monitoring report to be produced
		21		H2	H2												
		22		H3	H3												
		23		H1	H1												
		24		H2	H2												
		25		H3	H3												
		26		H1	H1												
		27		H2	H2												
		28		H3	H3												
		29		H1	H1												
		30		H2	H2												Monitoring report to be produced
Mixed scrub	Removal of invasive non-native species and planting of shrubs	During construction															
	Removal of litter	1 – 30															
	Pruning of shrubs and management of scalloped edge	1															
		2															Monitoring report to be produced
		3															
		4															
		5															
		6															
		7															
		8															
		9															
		10															Monitoring report to be produced
		11															
		12															
		13															
		14															
		15															
		16															
		17															
		18															
		19															
		20															Monitoring report to be produced
		21															
		22															
		23															

Habitat	Management Item	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Date Completed	Comments	Remedial Actions Required / Completed
		24															
		25															
		26															
		27															
		28															
		29															
		30															Monitoring report to be produced
Line of trees	Systematic removal of non-native species and planting of new trees	During construction															
	Systematic removal of non-native species and replacement of failed trees	1															
		2															Monitoring report to be produced
		3															
		4															
		5															Monitoring report to be produced
	Systematic removal of non-native species (Sept/Oct) and pruning of trees (Jan/Feb)	6															
		7															
		8															
		9															
		10															Monitoring report to be produced
		11															
		12															
		13															
		14															
		15															
		16															
		17															
		18															
		19															
		20															Monitoring report to be produced
		21															
		22															
		23															
		24															
		25															
		26															
		27															
		28															
		29															

Habitat	Management Item	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Date Completed	Comments	Remedial Actions Required / Completed
		30															Monitoring report to be produced
Urban trees	Planting of new trees	During construction															
	Replacement of failed trees	1															
		2															Monitoring report to be produced
		3															
		4															
		5															Monitoring report to be produced
	Pruning of trees, where required	Years 1 – 30															Monitoring report to be produced
Introduced shrub planting	Planting of new shrubs	During construction															
	Replacement of failed shrubs	1															
		2															
		3															
		4															
		5															
	Pruning of shrubs	Years 1 - 30															
Other neutral grassland (wet wildflower meadow – bioswale)	Sowing of seed mix	During construction															
	Cut to height of 300 mm	1															
	Monitoring for competitive weeds and bird damage	1															
		2															
	Cutting of swale: • Early cut to 50-80 mm • Middle cut to 40 mm • Late cut to 40 mm	3															Monitoring report to be produced
		4															
		5															
		6															Monitoring report to be produced
		7															
		8															
		9															
		10															Monitoring report to be produced
		11															
		12															
		13															
		14															
		15															
		16															
		17															
		18															

Habitat	Management Item	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Date Completed	Comments	Remedial Actions Required / Completed
		19															
		20															Monitoring report to be produced
		21															
		22															
		23															
		24															
		25															
		26															
		27															
		28															
		29															
		30															Monitoring report to be produced
Bird Boxes	Installation	During construction															
	Maintenance check	1															
		2															Monitoring report to be produced
		3															
		4															
		5															Monitoring report to be produced
		6															
		7															
		8															
		9															
		10															Monitoring report to be produced
		11															
		12															
		13															
		14															
		15															
		16															
		17															
		18															
		19															
		20															Monitoring report to be produced
		21															
		22															
		23															
		24															

Habitat	Management Item	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Date Completed	Comments	Remedial Actions Required / Completed
		25															
		26															
		27															
		28															
		29															
		30															Monitoring report to be produced
Bat Boxes	Installation	During construction															
	Maintenance check (as determined by the mitigation licence)	Years 1 - 30															Monitoring report to be produced
Invertebrate, amphibian and reptile log piles/habitat	Installation	During construction															
	Replenishing of log piles/habitat as required	1 – 30															Monitoring report to be produced

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Appendix 1 Summary of surveys

Receptor number	Ecological Receptor	Report reference	Summary results	Recommendations
1	Designated Sites	(SWT Ecology Services, 2022c) (ECUS, 2022) (Waterman Infrastructure and Environment Limited, 2020b) (Waterman Instructure and Environment Limited, 2020a)	No statutory or non-statutory designated sites within 1 km of development site	No further recommendations.
2	Terrestrial habitats	(SWT Ecology Services, 2022c) (ECUS, 2022) (Waterman Infrastructure and Environment Limited, 2020b) (Waterman Instructure and Environment Limited, 2020a)	Woodland adjacent to the northern boundary of the north-eastern field (woodland; mixed) and priority hedgerows that bound the fields. Remnant dry pond.	Majority of woodland and hedgerows to be retained, protected and enhanced through the development. Best practice to be followed during the development works, including retaining a buffer zone between the woodland, hedgerows and development area (including use of vehicles, site cabins and stored materials). Protection measures and buffer required during construction activities including: • Appropriate buffer between development and woodland/hedgerows to allow protection of root protection zones in-line with BS 5837:2012. • Developing a pollution incidence response plan. • Appropriate fencing. • Appropriate storage of fuel, material, and chemicals. • Appropriate dust control. • Habitat Protection Zones Regarding the remanent and dry pond, this will be retained and enhanced through the development. Protection measures

Receptor number	Ecological Receptor	Report reference	Summary results	Recommendations
				outlined above will be followed when working near to the pond.
3	Invertebrates	(SWT Ecology Services, 2022c) (ECUS, 2022) (Waterman Infrastructure and Environment Limited, 2020b) (Waterman Instructure and Environment Limited, 2020a)	No specific surveys undertaken.	Habitats will be retained by habitat protection zones
4	Amphibians	(SWT Ecology Services, 2022c) (ECUS, 2022) (Waterman Infrastructure and Environment Limited, 2020b) (Waterman Instructure and Environment Limited, 2020a)	One dry remanent pond on-site and one pond within 250 m radius (18 m to the north). The off-site pond has been assessed to have poor suitability for breeding GCN. Suitable terrestrial habitat within the development site for amphibians.	GCN Mitigation strategy recommended, including registering the site under the South Yorkshire District Level Licencing Scheme (DLL). Other Precautionary Method of Works (PMoW) within the Mitigation Strategy include: • Site induction to all contractors to brief on PMoW required for GCN and other amphibians • Retention and creation of habitat protection zones • Habitat manipulation (two-step mowing process) of grassland during amphibian active period, March – October. • Supervised destructive search of any habitat with suitability to be used for refuge by amphibians. • Appropriate storage of any stored materials/waste piles and other site materials. Any trenches should be covered over-night.

Receptor number	Ecological Receptor	Report reference	Summary results	Recommendations
5	Breeding birds	(SWT Ecology Services, 2022c) (ECUS, 2022) (Waterman Infrastructure and Environment Limited, 2020b) (Waterman Instructure and Environment Limited, 2020a)	No specific surveys undertaken.	Appropriate scheduling of works, or supervision by an appropriately qualified ecologist. Enhancements for breeding birds post development.
6	Bats – foraging and commuting habitat	(SWT Ecology Services, 2022a) (SWT Ecology Services, 2022b) (SWT Ecology Services, 2022c)	Species using the site include common pipistrelle, soprano pipistrelle, *Myotis* sp. (whiskered) and brown long-eared. Extremely low activity by bats in main development area. The highest level of bat activity was concentrated along the eastern, southern and western boundaries of the recreation field.	Appropriate lighting around development (limited increase in any artificial lighting on retained hedgerows, woodland, other neutral grassland and mixed scrub) Area of highest level of bat activity along the boundaries of the recreation field in the south-west; these boundary features will be retained and protected through the creation of the habitat protection zones in these locations. The majority of the hedgerows and woodland will be protected through the creation of the habitat protection zone.
7	Bats – roosting habitat	(SWT Ecology Services, 2022a) (SWT Ecology Services, 2022b) (SWT Ecology Services, 2022c)	Six bat day roosts (common pipistrelle and soprano pipistrelle) and five bat hibernation roosts (common pipistrelle, soprano pipistrelle, brown long-eared and whiskered) present in six buildings in former NHS land	A mitigation licence from Natural England required to legally destroy the roosts. This licence has been granted (licence ref no: 2022-61536-EPS-MIT), active between 25/07/2022 and 22/07/2027. The mitigation strategy proposed in this licence, and the report, has therefore been approved by Natural England and as such, has been implemented.
8	Badger	(SWT Ecology Services, 2022c)	No badgers recorded.	Walkover survey within 24 hours of works commencing to check for new holes and assess these for badger usage. If a hole is identified, a 30 m exclusion will be instated until

Receptor number	Ecological Receptor	Report reference	Summary results	Recommendations
				badger confirmed likely absent. If badger is present, appropriate monitoring and licencing will be required.
9	Hedgehog	(SWT Ecology Services, 2022c)	No hedgehogs recorded.	Ecological enhancements for hedgehog through development
10	Invasive non-native species, including Schedule 9 invasive species under the Wildlife and Countryside Act 1981	(SWT Ecology Services, 2022c) (ECUS, 2022) (Waterman Infrastructure and Environment Limited, 2020b) (Waterman Instructure and Environment Limited, 2020a)	Invasive species recorded in development site including Swedish whitebeam, Norway maple, small leaved cotoneaster (Schedule 9) and late cotoneaster (Schedule 9) (see Figure 1).	Systematic removal of non-native invasive species. Species included on list of Schedule 9 should be treated and removed by a suitability trained specialist and measures to limit any spread and/or introduction of invasive species during construction period.
11	Other mammals	(SWT Ecology Services, 2022c)	Evidence of rabbit within the site.	Appropriate site management.
12	Reptile	(SWT Ecology Services, 2022c) (Waterman Infrastructure and Environment Limited, 2020b) (Waterman Instructure and Environment Limited, 2020a)	No presence/likely absence surveys undertaken.	PMoW to site clearance; similar to the that detailed above for amphibians.

Appendix 2 Ecological Enhancement Specifications

Enhancement	Example
Bat boxes	Improved Cavity Bat Box  Eco Crevice Bat Box 

	Habitat Bat Triple Access Chambered Bat Box 
Bird boxes	Vivara Pro WoodStone Single Chamber House Sparrow Nest Box 

	Vivara Pro Seville WoodStone Nest Box  Vivara Pro WeedStone Starling Nest Box 

	2H Schwegler Robin Box  Robin and Wren FSC Nest Box 

Brash piles	 
Log piles	

	
Hedgehog friendly fencing	 

Appendix 3 Scientific names of fauna species referred to in the report

Amphibians

- *Bufo bufo* – common toad
- *Epidalea calamita* – *natterjack toad*
- *Pelophylax lessonae* – pool frog
- *Triturus cristatus* – great crested newt

Bats

- *Barbastella barbastellus* – western barbastelle
- *Myotis bechsteinii* – Bechstein's
- *Nyctalus noctula* – noctule
- *Pipistrellus pygmaeus* – soprano pipistrelle
- *Plecotus auritus* – brown long-eared
- *Rhinolophus ferrumequinum* – greater horseshoe
- *Rhinolophus hipposideros* – lesser horseshoe

Birds

- *Acanthis cabaret* – lesser redpoll
- *Acrocephalus paludicola* – aquatic warbler
- *Acrocephalus palustris* – marsh warbler
- *Alauda arvensis* – skylark
- *Anser albifrons* – white-fronted goose
- *Anthus trivialis* – tree pipit
- *Aythya marila* – scaup
- *Botarus stellaris* – bittern
- *Branta bernicla bernicla* – dark-bellied brent goose
- *Burhinus oedicnemus* – stone-curlew
- *Caprimulgus europaeus* – nightjar
- *Circus cyaneus* – hen harrier
- *Circus hudsonius* – northern harrier
- *Coccothraustes coccothraustes* – hawfinch
- *Crex crex* – corncrake
- *Cuculus canorus* – cuckoo
- *Cygnus columbianus bewickii* – Bewick's swan
- *Dryobates minor* – lesser spotted woodpecker
- *Emberiza calandra* – corn bunting
- *Emberiza cirlus* – cirl bunting
- *Emberiza citrinella* – yellowhammer
- *Emberiza schoeniclus* – reed bunting
- *Lagopus lagopus* – red grouse
- *Larus argentatus* – herring gull
- *Limosa limosa* – black-tailed godwit
- *Linaria cannabina* – linnet
- *Linaria flavirostris* – twite
- *Locustella luscinioides* – Savi's warbler
- *Locustella naevia* – grasshopper warbler
- *Lullula arborea* – woodlark
- *Lyurus tetrix* – black grouse
- *Melanitta nigra* – common scoter
- *Motacilla flava* – yellow wagtail
- *Muscicapa striata* – spotted flycatcher
- *Numenius arquata* – curlew
- *Passer domesitcus* – house sparrow
- *Passer montanus* – tree sparrow

- *Perdix perdix* – grey partridge
- *Phylloscopus sibilatrix* – wood warbler
- *Poecile montanus* – willow tit
- *Poecile palustris* – marsh tit
- *Prunella modularis* – dunnock
- *Puffinus mauretanicus* – Balearic shearwater
- *Pyrrhula pyrrhula* – bullfinch
- *Sterna dougallii* – roseate tern
- *Streptopelia turtur* – turtle dove
- *Sturnus vulgaris* – starling
- *Turdus philomelos* – song thrush
- *Turdus torquatus* – ring ouzel
- *Vanellus vanellus* – lapwing

Mammals (except bats)

- *Arvicola amphibius – European water vole*
- *Erinaceus europaeus – West European hedgehog*
- *Felis silvestris* – wildcat
- *Lepus europaeus – brown hare*
- *Lepus timidus – mountain hare*
- *Lutra lutra – European otter*
- *Martes martes* – pine marten
- *Meles meles* – Eurasian badger
- *Micromys minutus* – harvest mouse
- *Muscardinus avellanarius* – hazel dormouse
- *Sciurus vulgaris* – red squirrel

Reptiles

- *Anguis fragilis* – slow-worm
- *Coronella austriaca* – smooth snake
- *Lacerta agilis* – sand lizard
- *Natrix helvetica* – grass snake
- *Vipera berus* – adder
- *Zootoca vivipara* – common lizard

Appendix 4 Legislation and Planning Policy

Legislation

Conservation of Habitats and Species Regulations 2017 (as amended)

Provides for the protection of Natura 2000 sites (SACs, SPAs and Ramsar sites), European Protected Species and habitats. European Protected Species are protected from:

- Deliberate capture, injury or killing.
- Deliberate disturbance of a European Protected Species, such that it impairs their ability to breed, reproduce or rear their young, hibernate or migrate or significantly affect their local distribution or abundance.
- Deliberately take or destroy effect.
- Damage or destroy a breeding site or resting place.
- Keep, transport, sell or exchange any live, dead or part of a European Protected Species.

European Protected Species include, but are not limited to:

- Great crested newt
- Natterjack toad
- Otter
- Smooth snake
- Sand lizard
- All bat species
- Hazel dormouse

The LPA will be aware of its legal duty under Regulation 9(3) of Conservation of Habitats and Species Regulations 2017, as amended, which states that "*a competent authority in exercising any of its functions, must have regard to the requirements of the Directives so far as they may be affected by the exercise of those function*".

Also, under Regulation 55 (9b) of the above regulations, the LPA must apply the following three tests when deciding whether to grant planning permission where a Protected Species (bats) may be harmed, in line with of the Conservation of Habitats and Species Regulations 2017, as amended.

- The activity must be for imperative reasons of overriding public interest or for public health and safety.
- There must be no satisfactory alternative.
- Favourable conservation status of the species must be maintained.

Natural England has stated that they would expect these three tests to be adequately considered by the LPA before planning permission is granted. Natural England will require evidence from the applicant that the LPA has considered the three tests and how they were met, before a mitigation licence can be issued. Where a mitigation licence is required to avoid breach of legislation, development cannot proceed even where a valid planning permission is granted.

Wildlife and Countryside Act 1981 (as amended)

Key piece of legislation consolidating existing wildlife legislation to incorporate the requirements of the Bern Convention and Birds Directive. It includes additional protection

measures for species listed under the Conservation of Habitats and Species Regulations 2017 (as amended) and includes a list of species protected under the Act. It also provides for the designation and protection of Sites of Special Scientific Interest (SSSI).

Development which would adversely affect a SSSI is not acceptable except only in special cases, where the importance of a development outweighs the impact on the SSSI when planning conditions or obligations would be used to mitigate the impact. Developments likely to impact on a SSSI will likely require an Environmental Impact Assessment (EIA).

The Impact Risk Zones (IRZs) dataset is a GIS tool which details zones around each SSSI according to the particular sensitivities of the features for which it is notified and specifies the types of development that have the potential to have adverse impacts. Natural England uses the IRZs to make an initial assessment of the likely risk of impacts on SSSIs and to quickly determine which consultations are unlikely to pose risks and which require more detailed consideration. Local Planning Authorities (LPAs) have a duty to consult Natural England before granting planning permission on any development that is in or likely to affect a SSSI.

Further information on specific legislation relating to species protected under the Wildlife and Countryside Act 1981 (as amended) is detailed below, under Protection of Protected Species and Habitats.

Environment Act (2021)

The Environment Act (2021) makes a provision for biodiversity net gain to be a condition of planning permission in England. Planning applications will need to demonstrate a 10% biodiversity net gain can be met. A biodiversity net gain plan must be submitted and must include:

(a) information about the steps taken or to be taken to minimise the adverse effect of the development on the biodiversity of the onsite habitat and any other habitat
(b) the pre-development biodiversity value of the onsite habitat,
(c) the post-development biodiversity value of the onsite habitat,
(d) any registered offsite biodiversity gain allocated to the development and the biodiversity value of that gain in relation to the development,
(e) any biodiversity credits purchased for the development,

Countryside and Right of Way Act 2000

Amends and strengthens the Wildlife and Countryside Act 1981 (as amended). It also details habitats and species for which conservation measures should be promoted.

Natural Environment and Rural Communities Act 2006

Section 40 of the Act places a duty on local planning authorities to conserve and enhance biodiversity in England whilst carrying out their normal functions. Section 41 comprises a list of Habitats of Principal Importance (HPIs) and Species of Principal Importance (SPIs) which should be considered.

The LPA will need to have particular regard to any relevant local nature recovery strategies, and any relevant species conservation strategy or protected site strategy prepared by Natural England.

Hedgerows Regulations 1997

Under these regulations it is an offence to intentionally or recklessly remove, or cause or permits another person to remove, a hedgerow. Important hedgerows are defined in Section

4 of the Regulations. This includes hedgerows that have existed for over 30 years or satisfies at least one criteria listed in Part II of Schedule 1.

Wild Mammals (Protection) Act 1996

Under this act wild mammals are protected from the intentional unnecessary suffering by crushing and asphyxiation.

Planning policy

National Planning Policy Framework (2021)

Details the Government's planning policies for England and how these should be applied, particularly to contribute to the Government's commitment to halt the decline of biodiversity. When assessing planning applications, LPAs should have regard to conserving and enhancing biodiversity by applying a number of principals, including:

- Avoiding impacts to biodiversity through appropriate site selection.
- Mitigating residual impacts.
- Encouraging the preservation and enhancement of biodiversity.
- Preventing the development of protected sites, such as SSSIs.
- Refusing permission where habitats that cannot be recreated, such as ancient woodland, would be lost.
- Encouraging good design that limits light pollution.

Relevant paragraphs in the NPPF (2021) are detailed below.

Paragraph Number	Detail
174	"Planning policies and decisions should contribute to and enhance the natural and local environment by…minimising impact on and providing net gains for biodiversity" Protection of sites of biological values Preventing new and existing development from adverse impacts to soil, air, water or noise Development should help improve local conditions
175	Maintenance and enhancement of networks of habitats and green infrastructure; plan for the enhancement of natural capital at a catchment or landscape scale
179	"To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and steppingstones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for **securing measurable net gains for biodiversity**."
180	"When determining planning applications, local planning authorities should apply the following principles: a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

Paragraph Number	Detail
	b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."
185	"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should: … c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation."