



FORMER JOHN LEWIS DEPOT, LETCOMBE STREET, READING
(ALSO KNOWN AS JLP MILL LANE)

LANDSCAPE AND ECOLOGY MANAGEMENT PLAN

AUGUST 2024

AECOM

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1. Introduction

1.1 Background

This Landscape and Ecology Management Plan (LEMP) has been prepared by AECOM on behalf of John Lewis Partnership BTR Ltd (hereafter refer to as the Applicant) to inform the management of the ecology enhancements proposed for the Site, and the ecology criteria 2.4 *Long Term Ecological Management and Maintenance* of the Home Quality Mark (HQM) V6.0 design-stage assessment.

This LEMP will provide information for the implementation and management of new biodiversity features at a site in Letcombe Street, Reading, which the below forms the ('Proposed Development'):

"Demolition of the existing building and redevelopment of the site comprising erection of a new building for up to 215 build to rent residential dwellings (Use Class C3) together with flexible commercial / community space (Use Class E/F1/F2), residents' facilities, landscaping, public realm, amenity space, cycle parking and disabled car parking."

The new biodiversity features have been proposed after an initial ecology assessment of the Site. The pre-development baseline information is based on a Site visit with the results incorporated into the Preliminary Ecological Appraisal and HQM ecology reports:

- AECOM (2024) *Mill Lane Reading Preliminary Ecological Appraisal*.
- AECOM (2024) *Mill Lane Reading Home Quality Mark Ecology Assessment Report*.
- AECOM (2024) *Mill Lane Reading Biodiversity Net Gain Assessment*.

The following landscape plans and planting schemes submitted as part of this planning application have been used as the basis of recommendations for future management of the Site:

- Camlins (2024) *Mill Lane Reading General Arrangement Planting Strategy*
- Camlins (2024) *Mill Lane Reading General Arrangement Overall Landscape Plan*
- Camlins (2024) *Mill Lane Reading General Arrangement Tree Planting Strategy*

1.2 Purpose

The LEMP aims to satisfy the following objectives:

- Ensure all protected features on the Site are managed appropriately;
- Provide guidance and appropriate management advice for existing, new and enhanced habitats on the Site;
- Meet the requirements of the BS 42020:2013¹;
- Provide basic objectives to be met;
- Outline key roles and responsibilities for site management; and,
- Provide a five-year management programme, and monitoring advice, starting on completion of the development.

The biodiversity part of the LEMP is developed in accordance with BS 42020:2013, which includes:

- Aims and objectives of management;
- Description and evaluation of features to be managed;
- Biodiversity trends and constraints on-site that could influence management;
- Appropriate management options for achieving aims and objectives;
- Prescriptions for management actions;

¹ BS 42020 : 2013 Biodiversity : Code of Practice for Planning and Development

- Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period);
- Body or organisation personnel responsible for implementation of the plan;
- Monitoring and remedial measures: and
- Funding resources and mechanisms to ensure sustainable long-term delivery of the proposed management.

1.3 Management Structure

The owner, developer or long-term leaseholder will take overall responsibility to ensure that the actions set out in this LEMP are implemented including provision of resources and mechanisms to ensure the sustainable long-term delivery of the proposed management.

The management of the habitats and biodiversity features will generally be carried out by the management company responsible for the Site. The management company will monitor and maintain the habitats and features described in this report and will record actions undertaken.

The LEMP will be updated as necessary in accordance with the actions taken and changes made on the habitats on site.

1.4 Quality Assurance

All AECOM ecologists involved in the preparation of this report follow the Chartered Institute of Ecology and Environmental Management (CIEEM) code of professional conduct when undertaking biodiversity work. They are appropriately qualified and conducted their work using all reasonable skill and care.

The AECOM Ecologists reviewing and approving this LEMP meet the BREEAM requirements for a Suitably Qualified Ecologist (SQE) and are members of (at the appropriate level) the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct (CIEEM, 2019) when undertaking biodiversity work. A SQE must have a degree (or equivalent qualification, e.g. N/SVQ level 5) in an ecology related subject; be a practising ecologist with a minimum of three years relevant experience within the last five years; and are bound by a professional code of conduct and subject to peer review (CIEEM membership).

1.5 Health and Safety

Please note that any consideration of any health and safety implications of the design and implementation of our biodiversity recommendations must be risk assessed by the Applicant to their own satisfaction. Our recommendations are designed to relate solely to biodiversity and nature conservation.

A risk assessment must be conducted for all activities undertaken and health and safety considerations must be taken into consideration.

2. Environmental Legislation, Policies and Relevant Biodiversity Action Plans

The Applicant will comply with current environmental legislation and statutory requirements relating to, but not exclusively.

- Wildlife and Countryside Act (WCA) 1981 (as amended in 2010);
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006 (as amended);
- Animal Welfare Act 2006;
- Environment Act 2021;
- Conservation of Habitats & Species Regulations 2017 (as amended); and
- Alien Invasive Species (Enforcement and Permitting) Order 2019 (as amended).

Further advice and guidance on relevant legislation may be obtained from the UK Government at <http://www.legislation.gov.uk/>.

The LEMP achieves ongoing alignment with activities external to the Proposed Development by identifying opportunities to respond to the policies and guidance listed below, thereby meeting the aims of the BREEAM UK Strategic Ecology Framework²:

- National Planning Policy Framework (NPPF) (2023);
- Reading Borough Local Plan (2019);
- Reading Borough Local Plan Partial Update (November 2023); and
- Reading Biodiversity Action Plan (2021).

Policies related to biodiversity encourage the protection, management and enhancement of biodiversity incorporating opportunities within new developments through the provision of green roofs, planting green walls or soft landscaping.

The proposed biodiversity enhancements incorporate guidance from the Reading Biodiversity Action Plan (BAP). The main opportunities for providing biodiversity enhancements in the Built Environment as identified in the BAP are:

- Green roofs and walls;
- Wildlife friendly landscaping; and
- Installation of nesting and roosting sites for birds and bats.

The targeted species for this BAP habitat include, among others, bats (species of Chiroptera), swifts (*Apus apus*), starlings (*Sturnus vulgaris*) and wild bees.

² BRE, 2016. BREEAM Assessment report (pre-construction). Strategic Ecology Framework. Briefing Paper.

3. Site and Proposed Development Overview

3.1 Site Location and Setting

The Site is located adjacent to Letcombe Street in central Reading, Berkshire, at Ordnance Survey national grid reference SU 71694 73084 and is approximately 0.37 ha in size.

The Site is located on the edge of the town centre in Central Reading within close proximity of key local services and facilities including The Oracle shopping centre opposite, the Premier Inn hotel adjacent to the west and Reading railway station located approximately 1km to the north. The Site itself is bound by Mill Lane and the A329 to the north, Letcombe Street to the south-west and Crossland Road to the south-east, from which the Site is accessed. The Site currently comprises the existing John Lewis Partnership warehouse building with associated car parking and servicing areas to the north-east and south-west of the building.

3.2 Land before Development

The Site, pre-development, includes a single large warehouse. The warehouse roof consists of metal panels.

There are two areas of hard standing on Site, one to the east and one to the west of the warehouse. The hard standing to the west is a customer car park whereas the hard standing to the east is a loading dock with parking bays for the operations team.

There are five distinct areas of introduced shrub on the Site.

There are nine individual trees (Chanticleer pear *Pyrus calleryana* 'Chanticleer') forming a line of urban trees along the northern side of the Site. Three of these trees have dense plant growth from climbing shrubs growing around the trunks. A single sycamore (*Acer pseudoplatanus*) tree is present along the southern border of the site.

3.3 Proposed Development

The Proposed Development will comprise an up to 11 storey Build to Rent (BtR) development of up to 215 residential units, together with flexible commercial / community space (Use Class E/F1/F2), residents' facilities, landscaping, public realm, amenity space, cycle parking and disabled car parking. The landscaping and public realm includes soft planting which includes species of benefit to biodiversity.

The Mill Lane road frontage will be planted with hedging and trees which will provide linear opportunities for biodiversity, including bats and birds. This will replace the trees and introduced shrub removed for the Proposed Development. They will be replaced with native tree and hedge planting or plants of benefit to biodiversity. Design will include native species as much as possible, but balancing with the need for climate change resilient planting.

47 new trees will be planted at the Proposed Development, with either native species or varieties of native species that are more resilient to climate change, shown in the tree planting plan by Camlins (SY743-000-0051 General Arrangement - Tree Planting Plan).

The Wellness garden and neighbourhood garden will include a growing area for the residents and community, which will in turn benefit pollinators essential for food growing, such as butterflies, bees and moths.

Biodiverse extensive brown roofs on the buildings are proposed in the landscape plan by Camlins. The presence of solar panels will provide further diversity of habitats and microclimate for insects and birds.

4. Management Plan

The Management Plan lists the targeted post-development habitats and species that have been identified for conservation action. Objectives for each habitat or species are described along with the actions required to achieve these objectives.

4.1 Targeted Habitats and Species

Habitats and species to be targeted for management and enhancement on this Site were chosen using a range of criteria including:

- protected and priority species and habitats of conservation value known to be already present on the Site or in the vicinity of the Site, some of which are listed in the NERC Act 2006;
- species and habitats targeted in the Reading BAP; and
- species and habitats which are likely to benefit from management at a Site Level.

The Reading BAP has been taken into account when selecting the target species for the Proposed Development as mentioned in Section 2. These species will be managed through the management of habitats (Table 1).

4.2 Site Objectives and Actions

The objectives for the different targeted habitats and species are shown in Table 1. Prescriptions for practical management measures are outlined in Section 5.

Table 1 Target Habitats/Species and Objectives

<i>Target</i>	<i>Objectives</i>	<i>Actions</i>	<i>Reference</i>
Extensive biodiverse brown roof	Creation and management of an extensive biodiverse brown roof including flowering plants to support bees throughout the seasons and provide food for birds.	- Creation as per the landscape general arrangement drawing³ - Use of appropriate wildflower mixtures - Non-intensive management regime to encourage species diversity and discourage species dominance. - Avoiding the use of chemical fertilisers and herbicides/insecticides. - Control of invasive non-native species	Section 5.2
Ground level biodiverse planting	Planting of trees, creation of meadow grassland, planting of hedges, creating of planting beds with biodiverse plant species resilient to climate change.	- Creation as per the landscape plans⁴ - Selection of biodiverse plant species resilient to climate change - Planting of hedges to provide vertical greening	Section 5.3
Bat box	Installation and maintenance of bat boxes	- Installation of at least four bat boxes (Schwegler 1FR bat tube⁵ or the Vivara Pro Woodstone bat tube⁶.) - Avoiding direct lighting of, or external light spill onto, the new bat box. - Maintenance of the box through repair or replacement as part of an annual inspection.	Section 5.4
Bird boxes (swift and starling)	Installation and maintenance of bird boxes	- Installation of six swift boxes. - Installation of six starling boxes. - Maintenance of the boxes through repair or replacement as part of an annual inspection.	Section 5.5
Insect boxes or refugia	Installation and maintenance of insect boxes with suitability for certain bee species	- Installation of a minimum of twelve insect boxes or refugia within or adjacent to the soft landscaping. - Maintenance of the boxes through repair or replacement as part of an annual inspection.	Section 5.6

³ Camlins (2024) Mill Lane Reading General Arrangement Overall Landscape Plan

⁴ Camlins (2024) Mill Lane Reading General Arrangement Planting Strategy

⁵ [Schwegler 1FR Bat Tube \(wildcare.co.uk\)](https://www.wildcare.co.uk/schwegler-1fr-bat-tube)

⁶ [Integrated Bat Boxes | NHBS Practical Conservation Equipment](https://www.nhbs.com/practical-conservation-equipment/integrated-bat-boxes)

4.3 Factors Influencing Management

4.3.1 Natural Trends

If the soft landscaping is left unmanaged or subject to low management inputs, a process of colonisation and succession is likely to occur. This can include establishment of herbaceous, ruderal and scrub species and can change the character of the landscaped area. As the site's vegetation matures with time, trees and shrubs will become larger and denser. Therefore, management prescriptions will need to take these processes into account. The management outlined below is intended to provide suggestions which are compatible with local environmental conditions (e.g. soil type, local native habitats and species).

4.3.2 Human-Induced Trends

This LEMP considers positive management for biodiversity whilst maintaining the primary core purposes of the Site. However, certain limiting factors may only become apparent through use of the newly developed site. For example, excessive use of areas may require appropriate changes in management. Whilst this report is intended to be prescriptive, a pragmatic approach will be taken involving ongoing monitoring so that appropriate management techniques are applied. This LEMP will be updated accordingly.

4.3.3 External Factors

Climate change is a pertinent factor in the development of the LEMP. Planting regimes including species selection have been chosen with resilience to climate change in mind as well with respect to providing shade in hot spells and interception and retention of water with respect to episodes of heavy rainfall.

Changes in management may be required in the long-term to reflect the impact of local climatic fluctuations e.g. timing of arboricultural work to avoid breeding birds.

Care will be taken to minimise the use of machinery on the Site which emit greenhouse gasses. Green waste generated on the Site will be retained and composted on site, if possible, and peat products will not be used.

4.3.4 Legal and Non-Legal Obligations

Additional management of retained, new and enhanced habitats may be required for health and safety reasons. This may conflict with some of the management recommendations outlined below. It is recommended that an ecologist is consulted before any significant arboricultural works to mature trees, climbing plants, bird and bat boxes are carried out as there is a risk of contravening UK legislation regarding roosting bats and breeding birds.

4.3.5 Buried Services

Whenever digging or disturbing the ground, it is important to be aware of any buried services prior to digging. Permissions may be required prior to significant works near to some services.

4.4 Funding

The owner and developer will ensure that funding is provided for the appropriate installation or creation of targeted features (expected as part of the construction budget). The owner will ensure that there is funding and resources for the monitoring and maintenance of the features to ensure stable long-term delivery of the proposed management, expected as part of the long-term landscape maintenance budget.

4.5 Potential Threats to Biodiversity

Potential threats to site biodiversity include:

- **Disturbance:** Activity levels, or site management such as lighting regime or heavy frequent cutting, could potentially cause disruption to species and make the habitat unsuitable for them.
- **Neglect:** Lack of management can detrimentally affect habitats by allowing succession or nutrient enrichment.
- **Demands for space:** Future expansion could result in development on the retained or newly created habitats.
- **Funds:** Lack of resources could prevent implementation of management and monitoring.

- Lack of information: Site users may be unaware of the importance of certain habitats and the rationale behind management decisions and, unknowingly, damage important features. Management contractors and their staff will also be fully aware of the importance of habitats and biodiversity features on Site.

4.6 Responsible Body or Organisation

Table 2 below identifies the body or organisation responsible for creation and/or installation of each of the targeted features. Any appointed landscape contractor must ensure that an ecologist is consulted with regard the method statement or specifications of the target feature. For each organisation, an individual will be identified and appointed to take on the responsibilities as detailed below.

Table 2. Responsibilities for Management

<i>Organisation</i>	<i>Responsibilities</i>
Owner / Developer / Design team / Principal Contractor	Ensuring that all habitat and ecology features are incorporated into the design following the recommendations of this management plan and works are carried out in a timely fashion by the appropriate person according to approved Method Statements and Specifications.
Appointed Contractor for each of the targeted features	Installation and creation of targeted features as described in section 5. Production of Contractor's Method Statement and Specification for the target features of the management plan. Ensuring this is approved and agreed by relevant parties including project manager and ecologist. Conducting these works to a high standard according to methodology.
Appointed Ecological Consultant	Review of Contractor's Method Statements and Specifications. Provide biodiversity advice/input.
Owner / Management Company of the building or Landscape Maintenance Company	Monitoring and maintenance of the target features described in section 5. Update of the Management Plan every five years and when necessary due to changes in the target features or incorporation of new features. Keeping a record of any notable wildlife and submit to the Local Biological Record Centre which is Thames Valley Environmental Records Centre (TVERC) or submit via a recording platform e.g. iNaturalist (https://www.inaturalist.org) or iRecord (https://www.brc.ac.uk/iRecord/)

5. Targets

5.1 Introduction

This section of the report provides recommendations and reference sources for the design of each of the proposed features listed and the methods for their creation, replacement or installation.

Recommendations for materials, illustrations, required management and examples of supplies and sources of further information are given when appropriate. Outline recommendations are provided but exact locations are to be confirmed, dependent on design, health and safety and Construction Design Management (CDM) and biodiversity review.

A summary of biodiversity information and reference sources, where relevant, are included below⁷. This will be used to input into contractor's Method Statements for habitat design and creation.

5.2 Extensive Biodiverse Brown Roof

5.2.1 Background

Brown roofs are proposed within the Site (see Camlins 2024 drawing - SY743-000-0002 General Arrangement - Overall Landscape). Brown roofs are a type of biodiverse extensive roof create to mimic a brownfield. Brown roofs will have an undulating substrate depths to create differing habitats for a greater range of invertebrate species. Substrate depths should vary typically to achieve an average of 115mm (undulating 80-150mm). Pebbles, boulders, gravels, sands, dew ponds, bare substrate, branches and logs may also be placed within the system to offer suitable habitats for a diversity of invertebrates.

Solar panels will be installed on part of the brown roof and will provide further diversity of habitats and microclimate for insects and birds.

Brown roofs are left for natural colonisation of plants via wind or birds. However, colonisation can be assisted by some level of seeding in low densities in some areas. In that case, appropriate native UK seed mixes should be used (i.e. [Wild Flower Seeds and Seed Mixtures - Emorsgate Seeds \(wildseed.co.uk\)](https://www.wildseed.co.uk/)).

The brown roof should follow the GRO Green Roof code⁸. Brown roofs have benefits for biodiversity, water runoff and cooling of buildings. Further details will be established in the next design stage.

5.2.2 Objectives and Management

Objectives, establishment instructions, management prescriptions, timing, suppliers and sources of further information are summarised below in Table 3.

Table 3. Extensive Biodiverse Brown Roof Objective and Management

Objective	Creation and Management of an Extensive Biodiverse Brown Roof
Establishment instructions	▪ Extent as per drawing General Arrangement Overall Landscape ▪ Follow the suppliers instructions. • Seed mixes will comprise native species (of local provenance where possible) and resilient to climate change. • The substrate will be prepared as per product specification before the seeding/planting/installation of systems. • Contours of 5-15cm in depth will be created on the substrate and ensuring an undulating substrate depth of 80-150mm. • Recommended sowing rates from the specialised contractor will be followed. • Plugs and seeds should be watered for 10-12 weeks after installation to allow the plants to establish. Ensure the substrate remains damp to the touch. The roof may need daily watering in mid-summer

⁷ Any advice provided relates to ecology only. Consideration of any Health and Safety and/or CDM implications of the design and implementation of our biodiversity recommendations must be risk assessed by the Client to their own satisfaction. Biodiversity recommendations are designed to relate solely to biodiversity and nature conservation. A risk assessment must be carried out for all activities undertaken and health and safety considerations must take precedence.

⁸ Green Roof Organisation (2021). The GRO Green Roof Code. Amended June 2023

	and should be constantly monitored during this time. A specialised contractor should provide specific advice on watering requirements.
	• The brown roof system will not be installed in hot, sunny weather. ▪ Watering, where essential, will be undertaken in the morning or evening.
Management Prescriptions	▪ If planting is included watering for the initial months until the planting has rooted into the growing medium to ensure good establishment of the roof. Watering might be required during hot, dry spell of weather. Specialised contractor will advise on the watering requirements. ▪ Avoidance of stepping and walking on the roof during the first year other than for maintenance purposes. ▪ Inspection and control of invasive non-native species will be monitored to assess the need seeding/planting. ▪ Avoidance of the use of chemical fertilisers and herbicides/insecticides. ▪ Mowing and removal of arisings to follow a non-intensive management regimen to encourage species diversity and discourage species dominance. ▪ Inspection of drainage system for blockages.
Timing	▪ Installation of mats in spring or early autumn for best results. ▪ Watering during the initial months after creation of the roof and during warm/dry spell of weather. ▪ Biannual inspection for the presence of invasive non-native species, vegetated cover, drainage system in spring and late autumn.
Remedial Actions	▪ Inspections will assess if the extensive roof is developing as expected or if remedial actions are required. ▪ Remedial actions can include reseeding to increase density, the removal of invasive species, clearing of dominant species, increase of watering regimen, fence off areas, etc. Recommendations from the specialist extensive roof contractor should be followed.
Further Information	To be provided by the specialised contractor
Example Suppliers	https://www.bauder.co.uk/ Eco Green Roofs (egr.co.uk)

5.3 Ground Level Biodiverse Planting

The creation of green areas within the Site will provide foraging opportunities and shelter for birds, bats and invertebrates and support ecological connectivity to local nearby greenspaces. This will enhance the biodiversity of the Site.

Design will include native species as much as possible, but balancing with the need for climate change resilient planting as shown in the Planting Strategy by Camlins.

47 new trees will be planted at the Proposed Development, with either native species or varieties of native species that are more resilient to climate change, shown in the Tree Planting Plan by Camlins⁹ submitted for planning.

The Wellness garden and neighbourhood garden will include a growing area for the residents, which will in turn benefit pollinators essential for food growing, such as butterflies, bees and moths.

The following habitats are shown in the General Arrangement Overall Landscape Plan:

- New specimen trees – biodiversity friendly and climate change resilient
- Hedge mixed native species 1100mm height and yew (*Taxus baccata*) 700m height
- Planting beds medium/low height shrubs and perennials and also where vegetables can be grown
- Groundcover mix, low maintenance and shade tolerant
- Grassland – meadow grass mixture

5.3.1 Objectives and Management

The overall objectives, establishment instructions, management prescriptions and timing for the planting are summarised below in Table 4.

⁹ Camlins (2024) Mill Lane Reading General Arrangement Tree Planting Plan

Table 4. Ground Level Biodiverse Planting Objectives and Management

Objectives and Management

Objective	Creation and Management of Ground Level biodiverse Planting
Establishment Instructions	- Extent will be as shown in the General Arrangement Overall Landscape Plan - All composts, mulches and soil conditioners used in planting will be peat-free. - All plants will be grown and sourced in the UK. - Tree nurseries must be an internal 'Plant Health Insurance' process. - All plantings will be undertaken when the Site and weather conditions are appropriate to the successful establishment of plants. - All topsoil and subsoil used in planting areas will be accordance with British Standard BS3882:2015 and BS8545:2014 using the recommended depths. - Establishment will follow specialised contractor recommendations. - Invasive species will be avoided in the planting strategy. - Tree roots shall be soaked in water an hour before planting and treated with bone meal mix and must be planted to the same depth as at the nursery.
Management Prescriptions	- The establishment and growth of plants will be monitored, and individuals replaced as appropriate. - Timing and pruning will follow the advice of a horticulturist specialist. - There will be limited use of pesticides (herbicides, insecticides, fungicides and molluscicides) or chemical fertilisers, preventing fatal effects on the food chain particularly invertebrates, birds and/or mammals. Where pesticide use is essential, only non-residual pesticides will be used. - Watering will be appropriate following contractor recommendations. - Invasive plant species will be controlled. - Imported topsoil should be free from stone rubbish and invasive species. A sample of the imported topsoil should be checked for quality before spreading is commenced.
Timing	- Planting of deciduous shrubs are recommended, unless otherwise stated by the landscape or horticultural contractor, to be undertaken between the mid-October and mid-November or from mid-February and mid-April. For evergreen shrubs, plant in September /October or April /May. For herbaceous plants: September/October or March /April. Bulbs in September/October. - Annual monitoring of health, growth, cover and invasive species will be conducted during the growing season. - Trimming or pruning trees will be carried out in autumn or winter outside the breeding season for birds and following a horticultural specialist's instructions.
Remedial Actions	- Unsuccessful individual plants will be replaced. - Planting of the meadow grassland areas will be bolstered by additional planting if the density expected is not achieved or thinned when size exceeds expectations or affects the growth of adjacent plants. - Invasive species/pernicious weeds will be removed. - Additional watering will be undertaken in hot spells, especially for planted trees.
Legal Considerations	Invasive non-native species listed on the Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) or the Invasive Alien Species (Enforcement and Permitting) Order 2019 (as amended) cannot be kept, grown, cultivated, or permitted to reproduce should they establish within the planting at any time. It is also recommended to avoid species listed on the London Invasive Species Initiative (LISI). If necessary, an invasive species specialist should be consulted if these species require removal.

5.4 Bat Boxes

5.4.1 Background

The installation of bat boxes is beneficial for biodiversity enhancement for the Site by providing roosting opportunities within the Proposed Development. This is in line with the Reading BAP, where bats are a targeted species. Bat species habituated to urban areas are targeted, including common pipistrelle and soprano pipistrelle.

At least Four integrated bat boxes are to be installed within the Proposed Development. Integrated bat boxes such as, the Schwegler 1FR bat tube¹⁰ or the Vivara Pro Woodstone bat tube¹¹ are recommended.

¹⁰ [Schwegler 1FR Bat Tube \(wildcare.co.uk\)](http://wildcare.co.uk)

¹¹ [Integrated Bat Boxes | NHBS Practical Conservation Equipment](#)

5.4.2 Objective and Management

Objectives, establishment instructions, management prescriptions, timing, suppliers and sources of further information are summarised in Table 5.

Table 5. Bat Boxes Objective and Management

Bat Boxes Objective and Management

Objective	Installation and Maintenance of Bat Boxes
Establishment Instructions	Integrated bat tubes will be installed on the façade of the buildings in the general locations as shown in Figure 1 in Appendix A. The bat tubes will: • be located: – avoiding prevailing wind/rain – facing southern orientations (for daytime warming) – in close proximity to existing or created green infrastructure – at least three meters above ground level to reduce chances of predation and disturbance but allow access for maintenance. – 5m – 2m away from external light lights, and lights will have a shield preventing light spill and will be directional, using downwards facing lighting to avoid excessive light-spill onto bat boxes/tubes/bricks, and new green infrastructure. – be integrated into the walls of buildings. A suitably qualified ecologist should supervise the installation or review the final locations.
Management Prescriptions	• Any damaged boxes will be replaced. • The condition of the wall where the tubes will be integrated, will be checked annually. • The success of the use of the bat boxes should be monitored, for example by local residents, supervised by an ecologist or a local bat group or as part of an activity organised by office staff. Surveyors would seek to observe bats leaving or returning to the tubes during the period an hour after dusk during the period of May to August. • Monitoring that requires the disturbance of a bat boxes (i.e. inspection) will be undertaken by a bat licenced ecologist. • The results of the surveys will be held on file and submitted to Thames Valley Environmental Records centre (or can be submitted online via a recording platform e.g. iNaturalist https://www.inaturalist.org) or iRecord (https://www.brc.ac.uk/irecord/). • Any management action undertaken will be recorded in a building management logbook.
Timing	• Bat boxes will be installed during the construction works (wall construction). • Monitoring of the use of the boxes by bats is recommended every two years. Bat emergence/re-entry surveys can only be conducted between May and August. • Monitoring of the box for damages or degradation at any time, annually. • Replacement of damaged elements will be done as soon as damage is detected and if the box is unoccupied. A check by a bat licenced ecologist will be needed in advance to avoid disturbance of roosting bats.
Legal considerations	Roosting bats are protected from disturbance under UK and EU legislation. Only bat licensed ecologist will inspect bat boxes. If any boxes need to be removed and, or repaired this must be done immediately after the box is checked by a licensed bat ecologist as there is a possibility of bats being present. Bat surveys do not necessitate to be undertaken by bat licensed ecologists.
Further Information	Further bat box information is available from a range of sources, including: Bat Conservation Trust (undated). Bat Box Information Pack. http://www.bats.org.uk/pages/bat_boxes.html Mitchell-Jones, A.J. and McLeish, A.P. Ed (2004). Bat Workers' Manual. 3rd Edition. JNCC Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature Gunnell, K. Murphy, B. and Williams, C. (2013) Biodiversity for Low and Zero Carbon Buildings: A Technical Guide for New Build, RIBA Publishing, London.
Example Suppliers	Bat boxes are available commercially from a wide range of suppliers including: NHBS http://www.nhbs.com/ Wildcare http://www.wildcareshop.com/ The Nestbox Company http://www.nestbox.co.uk/ CJ Wildlife http://www.birdfood.co.uk/ctrl/node:140:page:16:/bats Habibat http://www.habibat.co.uk/

5.5 Bird Boxes

5.5.1 Background

Bird boxes were recommended in the PEA report for biodiversity enhancement of the Site and for providing breeding opportunities within the Proposed Development. Priority species from the Reading BAP were targeted.

Six swift multicavity boxes ([Schwegler No. 17a Swift Box](#)) and **six** starling boxes ([custom brick facing](#)) will be installed as a part of the Proposed Development.

Swifts and starlings live in colonies; therefore, it is recommended to mount the bird boxes in groups and in close proximity or using triple/double cavity boxes, i.e. a single unit has multiple nest compartments (multiple entrance). Swift boxes should be installed under eaves of the buildings or similar.

5.5.2 Objective and Management

Objectives, establishment instructions, management prescriptions, timing, suppliers and sources of further information are summarised below in Table 6.

Table 6. Bird Boxes Objective and Management

Objective	Installation and Maintenance of Bird Boxes
Establishment instructions	- Boxes listed above will be integrated to the buildings as shown in Figure 1 in Appendix A; - The box entrance(s) will be in a shaded location and sheltered from the prevailing wind and rain and will not be accessible to predators, such as cats. - The front of boxes will be angled vertically or slightly downwards so that the rain cannot enter through the hole. - North and east facing elevations are preferred for bird boxes. Although shaded locations could be also possible. - Boxes will not be situated in locations which are externally lit at night. - Boxes will be placed 1.5m – 2m away from external light lights, and lights will have a shield preventing light spill. - Boxes on buildings should be located more than 5 m high and away from windows, preferably under the roof eaves, in the top course of brickwork. - The entrance of the boxes should not be obstructed, for example, by aerials. - Installation of boxes for swift will be in groups as they live in colonies, with entrances 60 to 100 cm apart. - Installation will be on or in close proximity to green infrastructure.
Management Prescriptions	- Cleaning is advisable, but not necessary for integrated boxes. Front panel can be unscrewed. - The success of the use of the bird boxes by nesting birds could be monitored. Boxes could be monitored by a local bird group and/or by students as part of an outdoor-based learning session. Surveyors would seek to observe birds leaving or returning to the boxes during breeding bird season (March – September inclusive) early in the morning. Observations will be made using binoculars from a suitably concealed position where presence will not lead to change in birds' behaviour. It may be possible to install nest box cameras to monitor the success of breeding. The results of the surveys will be held on file and submitted to the Local Environmental Records Centre or can be submitted online via a recording platform e.g. iNaturalist https://www.inaturalist.org or iRecord (https://www.brc.ac.uk/iRecord/). - Any management action undertaken will be recorded on a logbook.
Timing	- Integrated bird boxes should be created during construction with mounted bird boxes being installed at any time after the construction works, preferably in autumn, after the breeding season and before the start of the breeding season (generally February). - Cleaning between October and February only, outside the nesting bird season. - Replacement of damaged elements will be undertaken as soon as damaged is detected and when boxes are unoccupied.
Legal considerations	Birds and their nests are protected by the Wildlife and Countryside Act 1981 (as amended). Bird boxes used by birds cannot be cleaned, removed or replaced until it is not used by nesting birds and their chicks are fledged.
Further Information	Further bird box installation information is available for a range of sources, including: RSPB http://www.rspb.org.uk/makeahomeforwildlife/advice/helpingbirds/nestboxes/ ; Gunnell, K., Murphy, B. and Williams, C. (2013) Biodiversity for Low and Zero Carbon Buildings: A Technical Guide for New Build . RIBA Publishing, London.

Example Suppliers	Bird boxes are available commercially from a wide range of suppliers including. NHBS http://www.nhbs.com/ Wildcare http://www.wildcare.co.uk/ The Nestbox Company http://www.nestbox.co.uk/ CJ Wildlife http://www.birdfood.co.uk/
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5.6 Insect Refugia

5.6.1 Background

Insect refugia were recommended in the PEA for the Proposed Development to increase habitat for invertebrates to encourage pollination of flowers and to attract birds and bats. Different types of refugia will cater habitat for different insect and other invertebrate species. For example, insect refugia with small tubes (2mm – 10 mm in diameter) are suitable for red mason bees (species of *Osmia*), leafcutter bees (species of *Megachile*) and bell bees (species of *Chelostoma*).

12 bee boxes, bee cubes and/or insect hotels are recommended within the Proposed Development within the green areas. These can be hung on trees or erected on posts within the soft landscaping, or on walls around the soft landscaping.

5.6.2 Objective and Management

Objectives, establishment instructions, management prescriptions, timing, suppliers and sources of further information are summarised below in Table 6.

Table 7. Insect Refugia Objective and Management

Objective	Installation and Maintenance of Insect Refugia
Establishment instructions	- At least twelve insect refugia will be installed within the Proposed Development, close to or within the soft landscaping features. - Insect refugia will be sheltered from the prevailing wind, rain and strong sunlight. - The bee boxes and bee cubes can be affixed to walls or erected on trees/posts within the soft landscaping. Insect hotels can be placed at ground level within the soft landscaping. - Installation will be close to food and nesting sources for the adults. - Boxes targeting bees (bee boxes or hotels) will be installed in full sun, facing south or south-eastern direction. - Boxes will be placed at the height of 1 m off the ground to deter terrestrial infiltration by predators, and to reduce the attractiveness to wasps (species of <i>Vespa</i>) which predate on both the adult and larval bees. - While some cover is required for the boxes, their location will provide clear flight lines to and from the tubes into the surrounding environment, avoiding vegetation in front of the boxes obscuring the entrances to the tunnels. - Natural and untreated materials will be used. - Tubes and cuts will be clean, without splinters.
Management Prescriptions	- Annual removal and cleaning of dead cells (cells that remain in a walled-up condition from the previous year because no larvae emerged) to prevent mould and mites that would multiply on the dead bees or larvae. They will be unoccupied for proceeding with cleaning. Occupied tubes will not be disturbed. Care must be taken not to damage the plugged holes, as these will contain developing larval or pupal. - Replacement of the insect refugia or parts of it (tubes) as they can degrade with time and to avoid build-up of mould, mites and parasites. If a box is occupied at the time of replacing, put the box under a waterproof container with a large hole in it until the next summer, when young will emerge. This ensures that no further eggs will be laid in the box. Once they are emerged and the box is unoccupied, the box can be disposed of¹². - Replacement of materials that are broken, checking that no invertebrates are using them. - Replacement of any damaged or degraded fixings or unoccupied boxes.
Timing	- Bee boxes inspection and cleaning will be done annually at the end of the summer. - Replacement of the insect refugia or parts of boxes every two years, at the end of summer, after bees have emerged.
Further Information	https://www.foxleas.com/make-a-bee-hotel.asp

¹² Carlton, M. (2015, November 13). *How to Make and Manage a Bee Hotel: Instructions that Really Work*. <https://www.foxleas.com/make-a-bee-hotel.asp>

	https://entomologistlounge.wordpress.com/2017/09/18/insect-hotels-a-refuge-or-a-fad/?utm_content=bufferfd279&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer https://www.shgroup.org.uk/media/1023120/biodiversity-toolkit-008-final-anna_08022021.pdf https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/build-a-bug-hotel/
Example Suppliers	Nestbox Company - www.nestbox.co.uk Wildcare - www.wildcare.co.uk RHS Plants - www.rhsplants.co.uk Natural History Book Service (NHBS) - www.nhbs.com https://www.wildlifeworlddirect.com/vendors/buglife/

6. Work Programme

The work programme outlined in Table 8 indicates the actions to be taken annually following project completion. These are summarised and the details provide in Section 5 Targets.

Ongoing management will be required after the five-year period and it is recommended this management plan is used as a basis for the on-going management of the habitats and features on the Site. The plan considers Year 1 to be the establishment of a habitat or feature e.g. installation of boxes. Annual management from Years 2 – 5 will be broadly similar each year and the monitoring can be used to guide ongoing future management beyond the scope of this management plan.

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Table 8. Five Year Work Programme

Feature	Action	Timing	Year 1	Year 2	Year 3	Year 4	Year 5	Subsequent years
Extensive biodiverse brown roof	Preparing surface, adding substrate and/or mats	Spring or autumn (seeding of wildflower mix in autumn)	✓					None
Extensive biodiverse brown roof	Watering	Upon installation/seeding, during the first year and during warm/dry spell of weather and as per specialised contractor advice.	✓	✓	✓	✓	✓	During warm/dry spell of weather
Extensive biodiverse brown roof	Monitoring for the presence of invasive non-native species, vegetated cover, drainage system	Twice a year (Spring and late autumn)	✓	✓	✓	✓	✓	Annually
Extensive biodiverse brown roof	Cutting/mowing to a 50-70 in height and removal of arisings	At least late autumn	✓	✓	✓	✓	✓	Annually
Ground level Planting	Preparing Ground / Planting / Seeding	As per horticultural specialist advice. Typically: Sowing August/September and March/April, dependent on conditions Herbaceous plants: September/October or March /April. Bulbs: September/October. Deciduous shrub planting: mid-October/mid - November or mid-February/mid-April Evergreen shrub planting: September/October or April/May Tree planting or replacement October to March.	✓	-	-	-	-	Ad Hoc depending on success of previously planted vegetation
Ground level Planting	Trimming / Pruning Shrubs/ Trees	Outside the bird breeding season between October and February If conducted within nesting bird season an ecologist would need to check the area in advance of works for the presence of nesting birds.	-	✓	✓	✓	✓	Once Annually
Ground level Planting	Management, including monitoring for unhealthy plants, removing invasive plants and vegetation cover	Annually during the growing season.	-	✓	✓	✓	✓	Annually
Bat box	Installation of bat boxes	During the construction for integrated boxes	✓					None
Bat box	Monitoring the use of the bat boxes by bats.	May - September					✓	Every five years
Bat box	Maintenance (inspection of box and fixings for damages or degradation) and replacement.	Any time. A bat licensed ecologist will be required if box is occupied by a bat or bats	✓	✓	✓	✓	✓	Annually inspection and replacement when necessary
Bird box	Installation of bird boxes	During the construction for integrated boxes	✓					None
Bird box	Monitoring the use of the boxes by nesting birds	March to August inclusive		✓		✓		Biannually
Bird box	Maintenance (inspection of box and fixings for damages or degradation), cleaning and replacement.	In autumn (October-November)	✓	✓	✓	✓	✓	Annually inspection and replacement when necessary

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Insect refugia	Installation of boxes	Any time after the construction works or the installation of soft landscaping	✓					None
Insect refugia	Maintenance (inspection of box and fixings for damages or degradation), cleaning and replacement of boxes.	At the end of the summer/Autumn	✓	✓	✓	✓	✓	Annually inspection and replacement biannually (or when necessary due to damage)
Entire site	Keeping a record of wildlife on site and submitting to the Local Biological Record Centre which is Thames Valley Environmental Records Centre or iNaturalist or iRecord	Any time	✓	✓	✓	✓	✓	Annually

7. Post-Development Ecology and Biodiversity

The Proposed Development will provide new green infrastructure and ecological features within an urbanised area of Reading town centre.

The new green infrastructure (i.e. ground level planting, trees, hedging and biodiverse roofs) will highly increase the current resources for wildlife and biodiversity within the Site. The new habitats, together with new habitats created in nearby new developments, will function as stepping-stone habitats within the local urban context of the borough and contribute to improved habitat connectivity among other green areas and to the River Kennet.

New artificial habitats (bird and bat boxes and insect refugia) will provide new roosting and nesting opportunities for the expected increased numbers of invertebrates, birds and bats using the Site.

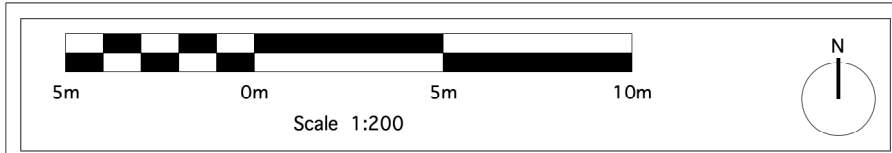
The green infrastructure will provide suitable habitat for birds, bats, pollinators and other insects.

8. Conclusion

The LEMP provides measures to enhance the biodiversity of the Proposed Development, notably for invertebrates, bat and breeding birds. These enhancement measures support both the national Biodiversity Action Plan and the local Reading Biodiversity Action Plan and will contribute to the aims for biodiversity within the Reading borough Council Local Plan.

This LEMP describes the management of ecological enhancements for the first five years after project completion. This will be managed by JLP as the building owners.

Appendix A Location of Bat, Bird and Insect Boxes



NOTES

1. All dimensions in millimetres unless otherwise shown.
2. All levels in metres above Ordnance Datum (mAOD) unless otherwise shown.
3. All dimensions to be checked on site and any discrepancies reported to Employer before pricing / work starts.
4. Any ambiguities or discrepancies within this drawing and any other information given elsewhere must be reported to Camlins and the Employer for clarification before pricing work proceeds.
5. All drawings to be read in conjunction with other Camlins drawings and specification information as appropriate.
6. Refer to relevant Engineer's and Architect's information as appropriate for confirmation of all engineering and architectural details.
7. All works to be carried out in accordance with the latest British Standards and appropriate codes of practice as a minimum.

KEY

- Planning application site boundary
- Proposed Specimen Trees - refer to drawing SY743-000-0051 General Arrangement - Tree Planting Plan
- Hedge - mixed native species, maintained at nom. 1100mm high
- Hedge - overgreen, yew maintained at 700mm high
- Planting beds - medium height shrubs and perennials
- Planting beds - low height shrubs and perennials
- Grassed area, generally mounded
- Small set stone paving
- Footway paving to Highway Authority adoptable standard
- Footway paving to Highway Authority adoptable standard in contrasting colour
- Concrete block paving to Highway Authority adoptable standard
- Resin bound aggregate surfacing, with aluminium edging
- Pre-cast concrete steps
- Gabion wall retaining edge with timber seating, nom. 550 high
- Gabion wall retaining edge, nom. 500 high
- Concrete flag maintenance margin, nom. 300 wide
- Kingpost / sleeper retaining wall to Crossland Road
- Brick retaining wall with balustrade guarding where required.
- Steel guardrail
- Natural rocks as playable landscape
- Timber playable landscape features
- Loose furnishings (Indicative)
- Steel gates (Swing)
- Steel gates (Sliding)
- Raised timber planters for community vegetable and herb growing. Provided in both Neighbourhood and Residents garden
- Indicative proposed lighting columns to lighting specialist's specification
- Indicative proposed bollard lighting to lighting specialist's specification
- Biodiverse Brown Roof
- Plant Area
- Solar PVs
- indicative integrated bat box locations (Schwegler 1 FR bat tube)
- Indicative integrated bird box locations in clusters of 3 (Vivara Pro Rendered Build-In Swift Nest Box) and custom brick facing starling box
- Indicative locations of bee cubes on walls or posts

Rev.	Date	Description	Revised by	Checked by
			New Zealand House, Abbey Foregate, Shrewsbury, Shropshire, SY2 8PD 01743 290 779 www.camlins.com	

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Former John Lewis Depot, Letcombe Street, Reading (also known as JLP Mill Lane)
John Lewis Partnership BTR Ltd

General Arrangement - Overall Landscape Plan

Status Planning	Drawn by LeT	Checked by PSS
Drawing Number SY743-000-0002	Revision -	Scale 1:200@A1
		Date 27.03.2024

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