

# WARWICK MILL, OLDHAM

## Biodiversity Enhancement and Management Plan



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## REPORT

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### Prepared for:

**Kam Lei Fong (UK) Ltd**

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# 1 INTRODUCTION

## 1.1 Background

This Biodiversity Enhancement and Management Plan (BEMP) has been prepared on behalf of Kam Lei Fong (UK) Ltd (or future owners) and their contractors with respect to the planning consent for the development of the restoration of Warwick Mill and the immediate surrounding area for residential and commercial purposes, referred to hereafter as “the Development Site”.

This document details appropriate management and monitoring for the existing and newly created habitats on site for the first 5 years following construction and is suitable for being rolled forward to cover the 30-year period post-construction. Details of regular and final monitoring reports required are included.

## 1.2 Purpose of this Report

This report details the biodiversity aims and objectives for the habitats at the Development Site. It sets out the proposed management actions / specifications and details the monitoring programme and targets, which will assess the outcomes of initial habitat creation and the ongoing management. A Biodiversity Net Gain (BNG) assessment (RPS – Biodiversity Net Gain Assessment, July 2023) has been carried out which compliments this BEMP and details the pre- and post-development biodiversity value of the Development Site; based on the Landscape Plans (drawing nos. 907\_PL\_001 and 907\_PL\_02) the total habitat units will be 5.70 (+10.12%) and the total hedgerow units will be 0.03 (+100%). This report will ensure the proposed Biodiversity Net Gain strategy for the site is achieved.

The programme of monitoring and reporting will inform future management decisions, identifying if specific target habitat conditions are not being achieved and setting out remedial actions or modifications to management to address these.

## 1.3 Development Site

The Development Site, situated off Oldham Road, is approximately 1.23 hectares (ha). It is comprised predominately of derelict urban habitats including buildings, hard standing and bare ground with ruderal/ephemeral vegetation. Small areas of grassland, dense scrub and scattered trees are also present around the edges of the site and building. Wince Brook is also present along the southern boundary of the site.

The Development Site lies within a predominately built-up area however parkland and woodland are also present in the surrounding areas including Alkrington Woods Nature Reserve approximately 0.2km west.

## 1.4 New or Enhanced Habitats on Site

New habitats on site include hard landscaping and soft landscaping comprising tree, hedge, shrubs and herbaceous planting, a wildflower meadow, lawn, raised planters and green roofs.

These habitats will provide a small amount of suitable nesting and roosting opportunities for birds and provide nectar and pollen foraging habitat for invertebrates. Butterflies, moths, bees and other pollinating insects will be encouraged to the flowering plants used, which in turn will increase the foraging opportunities for birds and bats. The habitats will be managed sympathetically for wildlife, whilst maintaining visual amenity.

Proposed habitat features also include the installation of bat and bird boxes on boundary trees, insect hotels or similar and the wood from tree felling is to be retained for other wildlife features.

Habitat enhancements include promoting horticultural good practice. This will be utilised within the landscape scheme and includes the use of peat-free composts, mulches and soil conditioners to reduce pressure on important peat bogs.

### **1.5 Existing Management Regime on Site**

The site of the proposed development has been fenced off and left derelict for some time, it is currently monitored by a security company, but no management practises take place. Post-construction, this enhancement and management strategy will be implemented to include the new areas of planting across the site, and incorporate the recommendations of this report, which together will form the site management plan for the next 30 years.

### **1.6 Land Tenure**

The land area under this BEMP is in the ownership of Kam Lei Fong (UK) Ltd.

### **1.7 Responsibilities**

This BEMP has been prepared for Kam Lei Fong (UK) Ltd. Kam Lei Fong (UK) Ltd and their contractors will be responsible for implementation during construction and for the 12 months of the defects rectification period after which time responsibilities would remain with them or be transferred to another organisation or individual if they have taken over ownership and management of the development site. Whichever organisation or individual is in possession of the development site following the defects rectification period shall employ suitably qualified and experienced persons or companies to carry out the long-term management of the landscaped areas in accordance with this plan.

## 2 MANAGEMENT OBJECTIVES

### 2.1 New and Retained Habitats

#### 2.1.1 Existing Trees (Urban Trees)

Forty-six individual trees including 8 medium sized and 38 small sized equating to 0.45 ha are present on site, of these, 17 small sized and 6 medium sized will be retained, the retained trees equate to 0.29 ha of the site on top of the habitat area beneath.

The management objectives for these habitat types are:

- to retain some of the habitats on site adding to the biodiversity value (and in line with the mitigation hierarchy);
- to maintain foraging opportunities for a range of invertebrate, bats and bird species;
- to maintain some nesting habitat for birds;
- to maintain commuting routes for bats;
- to maintain planted areas for visual amenity and as landscape buffers; and
- overall to deliver the approved Biodiversity Net Gain strategy.

#### 2.1.2 Proposed Trees (Urban Trees)

Forty-five small trees and 13 medium trees equating to 0.67 ha of coverage will be planted across the site. They will include evergreen and ornamental flowering species such as box *Buxus sempervirens*, elder *Sambucus nigra*, rowan *Sorbus acuparia*, white willow *Salix alba*, common alder *Alnus glutinosa*, Maack's spindle *Euonymus hamiltonianus* and common camellia *Camellia japonica*.

The management objectives for this habitat type are:

- to improve air quality;
- to provide a green screen/soft landscape buffer to the built-up areas;
- to provide focal points and deliver shade on site;
- to provide foraging and nesting habitat for birds;
- to provide foraging and commuting habitat for bats around site;
- to enhance the biodiversity value of the site; and
- overall to deliver the approved Biodiversity Net Gain strategy.

#### 2.1.3 Proposed Hedgerows (Non-native and Ornamental Hedgerow)

A total of 0.03 km of boundary planting comprising ornamental hedge is to be planted along some of the boundaries of the site.

The management objectives for this habitat type are:

- to provide a green screen/soft landscape buffer between the site and surrounding areas (e.g. the roads);
- to increase floral diversity on site;
- to provide foraging and nesting sites for birds;
- to provide valuable habitat for invertebrates;
- to maintain commuting and improve foraging habitat for bats and ground mammals around site; and

- overall to deliver the approved Biodiversity Net Gain strategy.

### 2.1.4 Proposed Wildflower Meadow (Other Neutral Grassland)

A wildflower mix will be sown to create vegetated ecological corridors particularly along the eastern and southern bank top of Wince Brook and around the footpath to be created to create a natural riverside path. This will create 0.15 ha of new other neutral grassland habitat. Wince Brook will be lined with native wetland species.

Additionally, a further 0.1169 ha of amenity grassland will be created with the ground prepared to the seed distributors specification followed by seeding.

The management objectives for these habitat types are:

- to provide foraging opportunities for a range of invertebrate, bats and bird species;
- to create and maintain planted areas for visual amenity;
- to develop the structural and species diversity of the site; and
- overall to deliver the approved Biodiversity Net Gain strategy.

### 2.1.5 Proposed Lawn (Modified Grassland)

0.05 ha lawn planting are proposed in the inside (courtyards) and outside areas in the west. This will consist of an amenity grassland seed mix.

The management objectives for this habitat type are:

- to provide soft landscaping space for play and activities;
- to provide foraging and nesting habitat for birds; and
- overall to deliver the approved Biodiversity Net Gain strategy.

### 2.1.6 Proposed Shrub and Herbaceous Planting/ Raised Planters (Introduced Shrub)

Various raised planters and wall planters are to be situated and planted with ornamental shrubs, trees, flowering plants, and grasses around the site, this equates to 0.06ha. Proposed species include perennials such as great burnet *Sanguisorba officinalis* and purple coneflower *Echinacea purpurea*, blue fescue *Festuca glauca*, little heath green *Pieris Japonica* and ferns *Polypodiopsida spp.*

The management objectives for this habitat type are:

- to select plants that offer minimal maintenance but create character within the landscape;
- to provide a green screen/soft landscape buffer to the built-up areas;
- to take up the level changes and soften the structures through planting;
- to provide opportunities for invertebrates to live, eat and breed;
- to provide foraging habitat for birds;
- overall to deliver the approved Biodiversity Net Gain strategy.

### 2.1.7 Green Roof (Biodiverse Green Roof)

The development will incorporate one extensive green roof on the main building (The Loom, 8<sup>th</sup> floor), this equates to 0.02 ha.

The management objectives for this habitat type are:

- to conserve energy;
- to increase the longevity of the roofing membranes;
- to enhance the biodiversity value of the site;
- to provide opportunities for insects to live, eat and breed;
- to provide foraging and nesting habitat for birds;
- to provide foraging habitat for bats around site; and
- overall to deliver the approved Biodiversity Net Gain strategy.

### 2.1.8 Wildlife Features

The development will incorporate wildlife features such as bat, bird and insect boxes, and use existing materials on site (such as wood from the trees to be felled) to create other features e.g. piles of deadwood which will attract insects and provide refuge for small mammals and amphibians.

The management objectives for this habitat type are:

- to enhance the biodiversity value of the site;
- to provide opportunities for insects to live, eat and breed;
- to provide refuge habitat/hibernacula for small mammals and amphibians;
- to provide nesting habitat for birds; and
- to provide roosting habitat for bats around site.

## 2.2 Ecological Monitoring

The site should be monitored by ground maintenance staff and/or contractors on an annual basis for 30 years after completion of installation. A suitably qualified ecologist should be instructed to provide additional monitoring every five years within the 30-year period, to ascertain success rates, and determine whether or not the targets in the Biodiversity Net Gain Assessment and this Biodiversity Management and Monitoring Plan are achieved.

A report of progress should be issued to the Local Planning Authority for review every five years post completion of works, with details including management actions taken, any remedial action required or previously undertaken, and targets for the next five years.

The progress reports should be reviewed by a suitably qualified ecologist prior to submission to determine whether the biodiversity condition standard required to achieve the BNG score of 10.12% (habitat units) 100% (hedgerow units) is being met. Should the ecologist determine that standards are not being met, a report of remedial action should be prepared by the ecologist to be implemented within the next five-year period. This should be monitored annually until biodiversity targets are met.

Submission of a final 30-year audit report should be submitted to the LPA. This should include details of the management actions undertaken across the 30-year period (in five-year blocks at a minimum), details of any remedial action taken with outcomes, and evidence that the site has met the BNG targets.

Kam Lei Fong (UK) Ltd (or future owners) and their contractors are responsible for the submission of the above reports to the LPA.

All bat and bird boxes should be inspected for signs of use, with relocation required if not in use after two years. Monitoring of boxes should only be undertaken by a suitably qualified ecologist.

## 3 MANAGEMENT ACTIONS

### 3.1 Retained Habitats

#### 3.1.1 Trees (Urban Trees)

##### Management of Habitat

Pre-development and during the construction phase trees which are to be retained should be protected in line with the BS:5387 (2012) guidelines to include root protection zones, which should be marked out with fencing and clear signage.

Continued management of the trees is expected and the trees on site are classed as being in moderate condition so this should be maintained. To ensure all trees are in a safe and healthy condition, all existing trees shall be inspected by a qualified and experienced arboriculturist annually. All survey results shall be recorded, with additional inspections tasked after storms or periods of bad weather.

No strimming should be undertaken around the trees to avoid damage to bark by the strimming wire.

Formative pruning as necessary to establish a well-balanced and healthy crown appropriate to the species and purpose, along with the removal of any dead, dying or diseased timbers. To increase value for wildlife, pruning of trees should not be undertaken at times which will prevent flowering or fruiting.

Remedial pruning / tree surgery as necessary in accordance with BS:3998 or to remove growth obstructing paths, lighting and signs.

Avoid pruning within the nesting bird season (March to August, inclusive) to protect nesting birds.

Replace any dead, dying or diseased plants in the following planting season with stock of similar specification to the original. If not diseased, dead wood should be retained on site to provide habitat for invertebrates.

### 3.2 New Habitats

#### 3.2.1 Trees (Urban Trees)

##### Creation of Habitat

Trees are to be planted around the entire site. Trees should be at least 5 m from each other to allow room to grow and allow enough sunlight to penetrate which will support the grassland beneath the canopy. Plastic tree guards and supporting poles to be used for each sapling. All tree species planted should be native where possible. To meet poor or moderate condition (as per the BNG assessment) two to four of the following criteria needs to be met respectively:

- at least 70% of the trees should be native;
- canopy should be predominantly continuous (individual trees automatically meet this);
- there is little or no evidence of adverse impact on tree health;
- natural ecological niches for vertebrates and invertebrates are present; and
- more than 20% of the tree canopy is oversailing vegetation below.

##### Management of Habitat

Continued management of the trees is expected. To ensure all trees are in a safe and healthy condition, all existing trees shall be inspected by a qualified and experienced arboriculturist annually. All survey results

shall be recorded and passed to Kam Lei Fong (UK) Ltd (or future owners) and their contractors, with additional inspections tasked after storms or periods of bad weather.

No strimming should be undertaken around the trees to avoid damage to bark by the strimming wire.

Formative pruning as necessary to establish a well-balanced and healthy crown appropriate to the species and purpose, along with the removal of any dead, dying or diseased timbers. To increase value for wildlife, pruning of trees should not be undertaken at times which will prevent flowering or fruiting.

Remedial pruning / tree surgery as necessary in accordance with BS:3998 or to remove growth obstructing paths, lighting and signs.

Avoid pruning within the nesting bird season (March to August, inclusive) to protect nesting birds.

Replace any dead, dying or diseased plants in the following planting season with stock of similar specification to the original. If not diseased, dead wood should be retained on site to provide habitat for invertebrates.

A summary of management required over 30 years is given in Table 4.1. A typical programme of works is provided in Table 4.9.

### 3.2.2 Hedgerows (Non-native and Ornamental Hedgerow)

#### Creation of Habitat

Broadleaved tree/scrub species to be planted in double staggered rows. It is expected this hedge will be non-native and ornamental. This habitat type is given an automatic condition of poor, and no specific management is required in line with the BNG assessment, but the following general management practises apply for this habitat type.

#### Management of Habitat

The landscape contractor shall ensure that the hedging plants are watered adequately particularly during establishment. Any dead or dying plants are to be replaced.

Avoid pruning within the nesting bird season (March to August, inclusive) to protect nesting birds.

There should be no gaps throughout the hedgerow, if one is identified during an assessment then a new tree/shrub should be planted to plug up the gap or management should be adjusted to allow more growth.

Undisturbed ground with perennial vegetation is desirable on either side of the hedgerow (>1m wide). This can be achieved by allowing less management/ restricting access around the hedges where possible.

No fertilisers or other soil enrichment techniques should be used to reduce the likelihood of undesirable species occurring. Undesirable species such as nettles, cleavers and docks should be removed if identified.

Any invasive non-native species found within or adjacent to the hedgerow are to be removed. The hedgerow should be free of damage caused by human activities such as dumped materials or excessive trimming.

A summary of management required over 30 years is given in Table 4.2. A typical programme of works is provided in Table 4.9.

### 3.2.3 Wildflower Meadow (Other Neutral Grassland)

#### Creation of Habitat

The ground should be prepared in advance of planting. It maybe that no additional topsoil is needed, as a nutrient poor substrate would be beneficial. Seeds should be sown in accordance with supplier's instructions. To meet moderate condition (as per the BNG assessment) three to five of the following criteria needs to be met including the essential criteria:

- the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type (essential);
- sward height is varied;
- cover of bare ground is between 1% and 5%;
- cover of bracken is less than 20% and cover of scrub is less than 5%;
- combined cover of species indicative of sub-optimal condition and physical damage accounts for less than 5% of total area; and
- there are 10 or more vascular plant species per m<sup>2</sup> present.

### Management of Habitat

Reseed and repair all areas which fail to establish or become damaged in the following planting season as required.

Strim once annually (in late summer / early autumn - once the wildflowers have flowered and seeded) to a sward height of 100mm, removing all arisings from site.

If the wildflower areas do not naturally establish in this way, more frequent strimming in intervals across the site will be required to provide structural variation.

Spot weed-killing to control coarse ruderal or pernicious weed species as necessary.

Reseed / rejuvenate areas of poor establishment and thinning sward as required.

Should grass species become dominant in the sward and suppress wildflower growth, seeding yellow rattle (*Rhinanthus minor*) into the grassland will reduce grass species abundance and allow wildflowers to grow. Yellow rattle seeds should be sown in the autumn.

A summary of management required over 30 years is given in Table 4.3. A typical programme of works is provided in Table 4.9.

### 3.2.4 Lawn (Modified Grassland)

#### Creation of Habitat

Ground should be prepared in advance and seeds should be sown/prepared lawn laid in accordance with supplier's instructions. To meet poor condition (as per the BNG assessment) three or fewer of the following criteria needs to be met:

- there are 6-8 vascular plant species per m<sup>2</sup> present, including at least 2 forbs;
- sward height is varied;
- cover of bare ground is between 1% and 10%;
- cover of bracken and scrub is less than 20%;
- physical damage is less than 5%; and
- there is an absence of invasive non-native species (INNS).

#### Management of Habitat

Reseed and repair all areas which fail to establish or become damaged in the following planting season as required.

Strim once per month except during winter months (October to February inclusive) to an average sward height of 90 mm, removing all arisings from site.

Spot weed-killing to control coarse ruderal or pernicious weed species as necessary.

Reseed / rejuvenate areas of poor establishment and thinning sward as required.

A summary of management required over 30 years is given in Table 4.4. A typical programme of works is provided in Table 4.9.

### 3.2.5 Shrub and Herbaceous Planting/ Raised Planters (Introduced Shrub)

#### Creation of Habitat

Broadleaved tree and shrub species and herbs and grasses to be planted with a mix of native and non-native species.

#### Management of Habitat

There is no condition score for this habitat and therefore no maintenance advice is offered in this report other than to regularly prune the areas to prevent encroachment onto the adjacent amenity grassland.

A summary of management required over 30 years is given in Table 4.5. A typical programme of works is provided in Table 4.9.

### 3.2.6 Green Roof (Biodiverse Green Roof)

#### Creation of Habitat

A biodiverse green roof is to be installed on The Loom building on site; an extensive green roof has been proposed and should be installed in accordance with the suppliers' instructions. An extensive green roof involves installing different layers to the roof including waterproofing and insulation layers, a root barrier membrane, a drainage layer, a filter layer and then the growing medium above. Plug planting is proposed with additional planting establishing itself through seed dispersal and pollinators. To meet moderate condition (as per the BNG assessment) the biodiverse green roof should have at least two of the following criteria:

- have a varied vegetation structure;
- contain different plant species that are beneficial to wildlife;
- cover of INNS should be less than 5%; and
- depth 80-150mm with at least 50% at 150mm and is planted/seeded with wildflowers and sedums (or prepared with such).

#### Management of Habitat

There should be regular inspections of the whole system with regard to damage/degradation particularly to substrate/roof to ensure integrity of the building fabric is maintained.

The planting suitable to the system installed to be maintained in accordance with manufacturer's recommendations.

Any dead plant material should be removed to allow greater coverage. This will improve the appearance of the roof as well as reduce the spread of fungal diseases. On biodiverse roofs this material could be left to create habitat for wildlife.

Ensure adequate irrigation.

A summary of management required over 30 years is given in Table 4.6.- A typical programme of works is provided in Table 4.9.

### 3.2.7 Bird and Bat Boxes

#### Creation of Habitat

At least five general purpose bird boxes, five bat boxes and two insect boxes are recommended for the development.

Installation of the boxes should be supervised by an ecologist to ensure optimal placement.

#### Management of Habitat

Where accessible, bird nest boxes will be cleaned out annually, between October and February taking care to ensure the boxes are not occupied at the time. Removal of old nest material can reduce the risk of parasites and the use of a water-based preservative on the outside of the box can help to extend the life of a box.

Bat boxes may be used by birds; thus, where accessible, bat boxes will be cleaned out annually, avoiding periods when boxes may be being used by maternity roosting or hibernating bat (May-August and November-February, inclusive). This will only be done by an ecologist with a Natural England bat class licence level 2 or above.

All boxes should be checked annually for damage and replaced where necessary.

A summary of management required over 30 years is given in Table 4.7. A typical programme of works is provided in Table 4.8.

### 3.3 Habitat Enhancements

#### 3.3.1 Horticultural good practice

Good horticultural practice should be utilised within landscaping schemes. This would include the use of peat-free composts, mulches and soil conditioners to reduce pressure on important peat bogs.

#### 3.3.2 Plant Nutrition

Do not apply fertilisers to wildflower areas.

#### 3.3.3 Watering

An efficient perforated-pipe irrigation system will be installed for all areas of external planting. Additional concealed/recessed water points will be installed in strategic locations within the landscape to allow for manual watering of establishing trees as required. These will be fed from the attenuation tanks at lower ground floor. All drainage outlets are required to be checked twice a year.

Watering shall only be carried out to maintain the health and continued vigour of the grasslands until fully established. Water usage shall be controlled and monitored at all times to avoid waste.

Areas which become prone to waterlogging shall be alleviated suitably, and / or drainage added as required.

#### 3.3.4 Pesticides

Pesticide usage should be discouraged to avoid damaging invertebrate populations on the site.

No pesticides shall be used except with the prior written approval of the ecologist and LPA. In such cases all pesticides shall be selected from the current list of approved chemicals and applied in strict accordance with the Control of Pesticide Regulations 1986 and other related Acts and Regulations.

Take appropriate action only if severe infestation occurs. If problem persists over a number of years, consider changing the plant species concerned to one less vulnerable to infestation.

### 3.3.5 Biosecurity

The threat of pests and diseases that affect plant species is widely recognised and all landscape practitioners have a responsibility in detecting, monitoring and controlling pests and diseases at every stage of a plants life from growing, specifying, handling, managing and destroying plants.

Wherever possible all planting shall be sourced from local provenance and reputable sources with supporting paperwork provided at each stage to demonstrate an auditable supply chain should proof be requested.

Reference shall be made regularly to updates from DEFRA and the Forestry Commission with any recommendations or warnings strictly adhered to, to prevent further spread of disease including reporting known outbreaks as appropriate.

Good plant husbandry shall be implemented on site to prevent further spread of diseases particularly where symptoms or confirmed outbreaks of disease has occurred.

### 3.3.6 Establishment of Created Habitats

Following their creation, each habitat will be subject to an initial establishment phase (five years). There is potential for the natural colonisation of new grassland by undesirable species (ruderals, bramble scrub) or for some of the sown species to poorly establish.

### 3.3.7 Invasive Non-Native Plant Species

Himalayan balsam *Impatiens glandulifera* and Japanese knotweed *Fallopia japonica* are non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981. It is an offence to allow these species to grow in the wild.

These species have been recorded alongside Wince Brook in abundance and Himalayan balsam is also present in the east of the site (RPS Preliminary Ecological Appraisal - Update, July 2023). This will all require appropriate management and removal as part of the development.

## 4 MANAGEMENT SUMMARIES

In this section, the proposed timing of management operations for each area are summarised in tabular form (Year 1 = Year of construction completion).

Guidance for all habitats throughout every year:

- Carefully dig out or spot treat any residual perennial weeds such as creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, common ragwort *Jacobaea vulgaris*, and broadleaved dock *Rumex obtusifolius*. Report incidences of invasive species and create a plan to remove them.

**Table 4.1: Tree Planting and Management**

| Feature | Prescriptions                           | Management Actions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Timing                                                                                 |
|---------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Trees   | Planting, replacing dead stock, pruning | <b>Years 1-5</b> <ul style="list-style-type: none"> <li>Planting of five or more native tree species to landscape design.</li> <li>Replace dead or diseased trees.</li> <li>Cut back any damaged, dead or diseased branches to a healthy node or any growth causing obstruction.</li> <li>Undertake pest and disease control using suitable pesticides or fungicides as advised, only if severe infestation occurs.</li> <li>To ensure all trees are in a safe and healthy condition all existing trees shall be inspected by a qualified and experienced arboriculturist annually. All survey results shall be recorded and passed to the client, with additional inspections tasked after storms or periods of bad weather.</li> </ul> | <b>Years 1-5</b><br>Annually<br>Avoid nesting bird season (March to August, inclusive) |
| Trees   | Monitoring                              | <b>Years 6-30</b> <ul style="list-style-type: none"> <li>Repeat steps from years 1-5 as necessary.</li> <li>All existing trees shall be inspected by a qualified and experienced arboriculturist annually. All survey results shall be recorded and passed to the client, with additional inspections tasked after storms or periods of bad weather.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                          | <b>Years 6-30</b><br>Annually                                                          |

**Table 4.2: Hedgerow Planting and Management**

| Feature  | Prescriptions              | Management Actions                                                                                                                                                                                                                                                                                                                                                                                                             | Timing                         |
|----------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Hedgerow | Planting                   | Saplings to be planted in staggered double rows, the rows will have a separation of 0.5 m. Each sapling in the first row will be planted 0.5 m apart from the next sapling. The second row will repeat this pattern but begin 0.25 m further along than the first row in order to be out of sync (staggered).                                                                                                                  | <b>Year 1</b>                  |
| Hedgerow | Maintenance and monitoring | <b>Years 2 - 30</b><br>Hedgerow to be assessed once per year to check its width/height (trimming where necessary using a hedge cutter or pruning saw), the quality of the undisturbed grassland within 1 m, if there are any gaps in the hedgerow or if the gap between ground and leaf cover is >0.5 m, if there are any invasive or undesirable species to remove, and if there is any damage to clear up such as pollution. | <b>Annually</b><br>(September) |

**Table 4.3: Wildflower Meadow Planting and Management**

| Feature                                               | Prescriptions | Management Actions                                                                                                                                                                                                                                                                                                                                                                                                                               | Timing                     |
|-------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Sown wildflower mix (including shade resistant areas) | Planting      | Soil should be prepared for seeding in the new grassland areas. The retained grassland is to be mowed to 50 mm (all arisings removed from site). Up to 50% of the retained grass areas should scarified using a chain harrow, or similar, which will pull out clumps of the grass as it is dragged over the habitat. Seeds should be sown in accordance with supplier's instructions and are to include yellow rattle in the retained grassland. | <b>Year 1</b>              |
| Sown wildflower mix (including shade resistant areas) | Maintenance   | <b>Years 2 - 30</b><br>Cut annually in September to an average of 100 mm (varying between a range of 60 mm and 120 mm) using handheld machinery (petrol strimmer) or flail. All arisings to be collected and removed from site. Remove any colonising bracken or scrub species.                                                                                                                                                                  | <b>Yearly</b> in September |

**Table 4.4: Lawn Planting and Management**

| Feature    | Prescriptions | Management Actions                                                                                                                                                                                                                                                                                                                                                                                                                                               | Timing                            |
|------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Sown grass | Planting      | Soil should be prepared for seeding and seeds should be sown/ prepared lawn laid in accordance with supplier's instructions.                                                                                                                                                                                                                                                                                                                                     | <b>Year 1</b>                     |
| Sown grass | Maintenance   | <b>Years 2 - 30</b><br>Cut monthly March to September (inclusive) to 70 mm using a lawnmower or similar. All arisings to be collected and removed from site. Remove any colonising bracken or scrub species.<br>To create the sward height variety (necessary for moderate condition) each month allow approximately one fifth of the amenity grassland to remain unmown.<br>The amenity grassland within 1 m of the hedgerow should be mown only once per year. | <b>Monthly</b> (March to October) |

**Table 4.5: Introduced Shrub Planting and Management**

| Feature | Prescriptions | Management Actions                                                                                                                                                                                                       | Timing                                         |
|---------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Scrub   | Planting      | <b>Year 1</b> <ul style="list-style-type: none"> <li>Plant ornamental planting species to landscape design.</li> <li>Prune/ deadhead where necessary.</li> </ul>                                                         | <b>October to December</b>                     |
| Scrub   | Maintenance   | <b>Years 2 - 30</b> <ul style="list-style-type: none"> <li>Uproot and replace dead saplings.</li> <li>Check protective guards, replace as necessary.</li> <li>Re-firm as needed.</li> <li>Remove weed growth.</li> </ul> | <b>Yearly</b><br><b>November to mid- March</b> |

**Table 4.6: Green Roof Planting and Management**

| Feature    | Prescriptions                          | Management Actions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Timing                                            |
|------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Green roof | Installation and planting <sup>1</sup> | <ul style="list-style-type: none"> <li>• Site preparation prior to installation.</li> <li>• Installation of essential system components.</li> <li>• Installation of growing medium.</li> <li>• Installation of support system for the plants.</li> <li>• Installation of plants (mat, plug and/or seed).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Year 1</b>                                     |
| Green roof | Maintenance and monitoring             | <p><b>Years 2 - 30</b></p> <ul style="list-style-type: none"> <li>• Irrigation: typically not required.</li> <li>• Fertilisation: generally not required but a slow-release fertilizer could be beneficial to prevent zero vegetation.</li> <li>• Plant management: a maintenance programme should be drawn up to follow the biodiversity hypothesis, ensuring that no materials are removed from the roof that may adversely affect the biodiversity potential of the roof – undesirable plant species should be removed.</li> <li>• General clearance/removal: drainage outlets (with inspection chambers) and gravel/shingle perimeters should be inspected and cleared of any living or dead vegetation.</li> </ul> | <p><b>Annually</b></p> <p><b>Twice Yearly</b></p> |

**Table 4.7: Bat, bird, and insect box management**

| Feature                                                                    | Prescriptions                                      | Management Actions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Timing                                                                                                                                                        |
|----------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To provide roosting and nesting opportunities for bats, birds, and insects | Five general purpose bird boxes and five bat boxes | <p><b>Year 1</b></p> <p>Placement of boxes on suitable trees (or fencing/pergolas for insect boxes) around the site under supervision of an ecologist.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Year 1</b><br>Immediately after construction                                                                                                               |
|                                                                            | Maintenance                                        | <p><b>Years 2 - 30</b></p> <ul style="list-style-type: none"> <li>• Re-site, if possible, if not used after two years.</li> <li>• Replace any damaged boxes.</li> <li>• Clean out nesting debris from bird boxes - between October and February, taking care to ensure the boxes are not occupied at the time.</li> </ul> <p>Sometimes, birds may use bat boxes so boxes should be cleaned out annually, avoiding periods when boxes may be being used by maternity roosting or hibernating bats (May-August and November-February, inclusive). <u>Only to be done by an ecologist with a Natural England bat class licence level 2.</u></p> | <p><b>Years 2 – 5</b></p> <p>Cleaning bird boxes – October to February.</p> <p>Cleaning bat boxes – avoiding May-August and November-February, inclusive.</p> |

<sup>1</sup> [grocode2014.pdf \(b-cdn.net\)](#) - Green Roof Code of Best Practice for the UK (2014)

Table 4.8: Typical programme of operations

| Habitat / Activity                                                                                       | J | F | M | A | M | J | J | A | S | O | N | D |
|----------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| <b>Grass &amp; Wildflower Areas:</b>                                                                     |   |   |   |   |   |   |   |   |   |   |   |   |
| Mow modified grass                                                                                       |   |   |   |   |   |   |   |   |   |   |   |   |
| Strim wildflower areas (other neutral grassland)                                                         |   |   |   |   |   |   |   |   |   |   |   |   |
| Weed control                                                                                             |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Introduced Shrub:</b>                                                                                 |   |   |   |   |   |   |   |   |   |   |   |   |
| Weed control                                                                                             |   |   |   |   |   |   |   |   |   |   |   |   |
| Selective pruning                                                                                        |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Trees:</b>                                                                                            |   |   |   |   |   |   |   |   |   |   |   |   |
| Arboricultural survey                                                                                    |   |   |   |   |   |   |   |   |   |   |   |   |
| Remedial pruning                                                                                         |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Hedgerow:</b>                                                                                         |   |   |   |   |   |   |   |   |   |   |   |   |
| Trimming                                                                                                 |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Green/Brown Roofs:</b>                                                                                |   |   |   |   |   |   |   |   |   |   |   |   |
| Plant management                                                                                         |   |   |   |   |   |   |   |   |   |   |   |   |
| General clearance/removal                                                                                |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Pest and Disease Control</b>                                                                          |   |   |   |   |   |   |   |   |   |   |   |   |
| Physical / Mechanical means                                                                              |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Monitoring and Inspection:</b>                                                                        |   |   |   |   |   |   |   |   |   |   |   |   |
| All Habitats (general)                                                                                   |   |   |   |   |   |   |   |   |   |   |   |   |
| Monitoring survey by Ecologist (every five years)                                                        |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Wildlife Features:</b>                                                                                |   |   |   |   |   |   |   |   |   |   |   |   |
| Cleaning of bird boxes                                                                                   |   |   |   |   |   |   |   |   |   |   |   |   |
| Cleaning of bat boxes (only to be done by an ecologist with a Natural England bat class licence level 2. |   |   |   |   |   |   |   |   |   |   |   |   |

## 5 DELIVERY MECHANISM

The Applicant will be responsible for the full implementation of the management actions and monitoring activities in accordance with the plan and work schedule. The Applicant will document progress in relation to the nature conservation aims and objectives and an annual report circulated to the LPA.

The implementation of the management prescriptions at the correct time of year will continue over the lifetime of the development. The Applicant will appoint suitably experienced contractors and ecologists as required to assist in the delivery.

The costs for site management will be paid for by the operator of the facility as part of the normal operational costs of facility management.

## 6 REFERENCES

- RPS (2023) Warwick Mill – Biodiversity Net Gain Assessment. RPS, Leeds, West Yorkshire.
- RPS (2023) Warwick Mill – Preliminary Ecological Appraisal - Update. RPS, Leeds, West Yorkshire.