



Landscape and Habitat Management Plan

7a, 7b and 7c Bayham Street, Camden Town, London

ISSUE RECORD

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1 INTRODUCTION

1.1 Development Proposals

Meridian Project Management Ltd. is redeveloping land at 7a-7c Bayham Street in Camden Town, London. The redevelopment will include the demolition of the three existing buildings on site, followed by the construction of a hotel and office space at Camden Lifestyle. A blue roof incorporating approximately 80m² of sedum substrate has been included in the proposed building plans (1783-DMA-SS-RF-DR-A-100 105).

The site is being assessed under BREEAM 2014 for sustainability and environmental performance and therefore requires a Landscape and Habitat Management Plan (LHMP) for the created habitats and ecological enhancements proposed for the site, in order to satisfy BREEAM Section LE05.

1.2 Pre-Existing Survey Work

A Preliminary Ecological Appraisal and Preliminary Bat Roost Assessment was undertaken by Peak Ecology Ltd (Project ref: MerPe01) at the site on 18th June 2020. Subsequent nocturnal bat activity surveys were undertaken on the 14th July 2020, which confirmed the likely absence of roosting bats within the buildings on site.

Peak Ecology Ltd. was also appointed to provide an ecologist to meet the Suitably Qualified Ecologist (SQE) criteria to carry out an assessment of the site based on the BREEAM UK New Construction and Non-domestic Buildings 2014 assessment guidelines. The extent of each habitat type within the site boundary was assessed by Peak Ecology Ltd prior to the commencement of works on site, and recommendations for credit assessments under the BREEAM criteria provided within the BREEAM Assessment – Land Use and Ecology report (MerPe01.1).

2 AIMS OF THE MANAGEMENT PLAN

In line with the recommendations within LE05, this Landscape and Habitat Management Plan covers a period of five years after the completion of site works, as well as the time spent creating habitats on site. After five years, the plan should be reviewed and updated, by a process of discussions between those responsible for its implementation and the ecologist.

The management plan aims to provide details of the following:

- Establishment of habitats;
- Provisions for ongoing management of all habitats at the site; and
- A timetable for the implementation of any works.

HABITAT ENHANCEMENTS

3.1 Proposed Habitat Enhancement

This plan has been produced for the implementation of the proposed habitats on site as well as the habitat enhancements. The latter of which were recommended in accordance with guidance as set out in the National Planning Policy Framework (2021) and detailed within Section 5.3 of the Preliminary Ecological Appraisal and Preliminary Bat Roost Assessment (Peak Ecology, 2020). In summary, these included:

- Inclusion of green or brown roofs and the development of a 'wildlife friendly' planting scheme across the site.
- Integration of suitable bird boxes, targeted at species most likely to use them.
- Provision of a variety of invertebrate refugia into soft landscaped areas, including partially buried log piles, bug hotels, bumblebee boxes, wildlife paving stones, butterfly hibernation boxes and general nesting aids.
- Install bat boxes on the proposed buildings as an enhancement measure, improving roosting opportunities for bats.
- Use native species within soft landscaped areas, however, if native species are not practical it is recommended that species with known benefit to wildlife are considered as an alternative.
- It is important that any new fencing or walls installed as part of the development do not create a barrier to dispersal for wildlife. In addition, abstaining from the use of pesticides and relaxing the management of habitats, such as hedgerows can increase the resources provided to wildlife.

At the time of writing the Preliminary Ecological Appraisal and Preliminary Bat Roost Assessment (Peak Ecology, 2020) a finalised site plan was not available. A review of the final design makes it clear that Enhancements 5 and 6, as detailed above, are no longer relevant and these should not be taken forwards as part of the development. In addition, a nocturnal bat activity survey carried out on site found that no bats emerged from the building and no bats were recorded foraging or commuting through the site or within the surrounding landscape. As such, it is considered disproportionate to incorporate bat boxes within the building as it is highly unlikely that these would be utilised and therefore Enhancement 4 should not be taken forwards.

Based on the final design and details within the various ecological reports including this plan the enhancements that are being incorporated into the development will contribute to the biodiversity of the wider area and therefore, under NPPF the responsibility to enhance biodiversity is still being met by the implementation of Enhancements 1 to 3.

4 ESTABLISHMENT AND MANAGEMENT OF HABITATS

Habitat enhancement on site will include the incorporation of a green roof, situated in the north western corner of the building. Located on Level 2, the green roof will extend across 60m² of the roof structure. It will incorporate a mosaic of habitats, including sedum planting, a 12m² area of plug planting for wildflowers and suitable species-specific habitats, in line with Section 5 of this LHMP.

The following plans detail the full extent and location of the green roof as well as the detailed scope for each ecological enhancement on site:

- Dexter Moren Associates (2021) *Bio-diverse Roof: Camden Lifestyle (UK) Ltd* (Drawing no: BST_DMA_XX_RF_DR_A_SK011)
- Dexter Moren Associates (2021) *Biodiversity Enhancement: Camden Lifestyle (UK) Ltd* (Drawing no: BST_DMA_XX_XX_DR_A_SK010)

~~Soft landscaping within the site will include the creation of a Bauder Blue Roof system which incorporates a section of approximately 80m² of sedum green roof onto the blue roof drainage cell system.~~

4.1 ~~Green/Blue~~ Roof

~~The current proposals show the installation of a Bauder Blue Roof system across the entire roof of the proposed building. The aim of using a blue roof is to support a source-controlled sustainable drainage system, which provides an environmentally friendly benefit to the reduction in storm water runoff speeds. This control system can be particularly beneficial within an urban setting where the level of impermeable surfaces is significantly higher than those of a rural environment.~~

~~Although the areas of blue roof provided environmental enhancements for the site it is unlikely that they will enhance the ecological value of the site. The incorporation of an area of green roof planting over the blue roof drainage system will allow for improved filtration of the stored water and also increase in habitat creation. The following LHMP provides the recommendations for the implementation and management of the green roof section, including the proposed wildflower planting area.~~

4.1.1 *Green Roof Establishment*

A pre-cultivated geotextile sedum blanket will be used in the green roof area. The pre-seeded blankets that will be used ~~will either be the Bauder XF300 Sedum Blanket or will be~~ the SB Substrate Sedum Blanket. The blanket will be pre-seeded with a mix of between 13 to 17 sedum species, to ensure a variety of different leaf types and flowers selected to be as shade and drought tolerant as possible. The sedum blanket will be laid on loose substrate at a depth of 80mm, providing an adequate root zone for plant growth.

The sedum blankets will be enhanced by including an area of wildflower plug planting. The wildflower enhancement will cover an area of 12m² within the green roof. The sedum matting will be increased to a depth of 150mm deep in this area to support the growth of wildflowers. The extent of this area is shown in the Bio-diverse Roof Plan (Drawing no: BST_DMA_XX_RF_DR_A_SK011).

Wildflower plug plants have been specifically chosen to be drought tolerant and hardy to conditions typically associated with sedum green roofs. A species list for the wildflower planting has been provided within the invertebrate and bird sections of this LHMP.

4.1.2 *Green Roof Management*

Once established, sedum roofs require a low level of maintenance, due to the drought tolerant nature of the plants. Annual access may be required to remove invasive/unwanted species, such as tree saplings, woody shrubs, and perennial grasses.

Areas where sedum growth or wildflower plug planting has not been successful will be subject to replanting, either through plug planting or sections of replacement sedum blanket. If required, the use of a slow-release organic fertiliser may be used to promote sedum growth. This should only be applied in the autumn months, so it may be beneficial to undertake any maintenance at this time of year.

A Bauder approved specialist will be used for the installation of the SB Substrate Sedum Blanket. A bespoke maintenance plan will be developed with the installation company to ensure the successful upkeep of the roof. The maintenance plan will be included within the Operational Maintenance Plan for the building which will be adhered to by the client and implemented by a maintenance team.

5 **PROTECTED AND NOTABLE SPECIES**

Habitats covered by this plan include:

- In line with NPPF (2021) recommendations, enhancement of the site for nesting birds, including placement of bird boxes for appropriate species such as house sparrow, starling, house martin, black redstart and tit species.
- Enhancement of the site in line with NPPF (2021) recommendations for and improved invertebrate assemblage, including provision of a variety of invertebrate refugia into soft landscaped areas. These enhancements may include partially buried log piles, bug hotels, bumblebee boxes, wildlife paving stones, butterfly hibernation boxes and general nesting aids.

5.1 **Invertebrates**

5.1.1 *Enhancement*

Invertebrates will favour a mosaic of habitat types, with areas of bare ground providing as important a habitat structure as vegetated habitats. Bare ground is used by a wide range of invertebrates (such as; bees, wasps, ants, beetles and butterflies) for nesting, basking and hunting. The pebble substrate on the top of the blue roof will provide extensive open areas of bare ground for invertebrates surrounding areas of green roof planting. The green roof could be further enhanced for invertebrates by creating a south facing slope contoured from sand-like soils to allow easy burrowing for egg laying. Patches of bare ground, overlain with small grade pebble/shingle will also be created between the sedum planting. An increase in structural diversity will also be achieved by the inclusion of a 12m² wildflower plug planting area within the sedum matting, as shown in the Bio-diverse Roof Plan (Drawing no: BST DMA XX RF DR A SK011). This will also increase the nectar source available for invertebrates.

Log piles can be ideal habitats for invertebrates. As shown on the Biodiversity Enhancement Plan (Drawing no: BST DMA XX XX DR A SK010) log piles will be included within the green roof area adjacent to the larger boulders. Small holes of varying sizes should be drilled into these to provide egg laying opportunities for a wide variety of invertebrates. A variation of log sizes will be used with log diameters varying up to 25-30cm. The logs will be sited in direct contact with the green roof area to enhance humidity within the log pile. A proportion of the sedum substrate material will be removed to allow for the log piles to be sunk into the ground, further enhancing humid conditions within the log piles. The log piles will be located away from any shaded area and be subject to direct sunlight for as much of the day as possible.

Additional enhancements will be made for invertebrates in the form of bee hotels. These will be sited in full sun, orientated in a south to south-easterly direction. They will be elevated approximately 1m above the level of the green roof.

Suitable products and designs for home built and shop bought bee hotels can be found on the RSPB and NHBS websites:

<https://www.rspb.org.uk/get-involved/activities/nature-on-your-doorstep/garden-activities/buildabeebandb/>
<https://www.nhbs.com/solitary-bee-hotel>

5.1.2 *Maintenance*

The maintenance to be undertaken on the green roof, detailed in section 3.1.2 would ensure the ongoing maintenance of the planting within the green roof areas for invertebrates.

As logs will naturally decay over time, new logs will be added to the piles when required. The decayed material will be left on site forming part of the substrate of the green roof.

The bee hotels will need minimal maintenance but will require cleaning out once a year. This will be undertaken on any empty tubes between October to February. Any tubes/holes that have mud or leaves capping the entrance must be left until spring, when all eggs have had time to hatch.

5.2 Birds

5.2.1 Enhancement

The detailed structure of the green roof as outlined in the planting and invertebrate sections above would also provide, once established, suitable foraging habitat for black redstart. Black redstart is a priority species under the London Biodiversity Action Plan and is a red list species on the Bird of Conservation Concern (BoCC) (Eaton et. al. 2015). In addition, they are protected under the Wildlife and Countryside Act (1981) and London is noted to be one of the most important locations for this rarely occurring species. The vegetation structure and mosaic of habitats that is to be planted on the green roof area is considered suitable to support the invertebrate assemblage on which species such as black redstart may forage.

The south facing mound, recommended for invertebrates, will be built up to a maximum height of 500mm. These contoured areas should be profiled with a gentle slope of approximately 17° (1:3) facing south westerly winds, and a steeper slope of 30° (1:1.5) facing the opposite direction. Each contoured area should either be allowed to naturally colonise with species or, preferably, planted with a seed mix based on the following species:

Table 1: Suitable species for planting

| Common Plant Name | Scientific Name |
|----------------------------|-------------------------------|
| St John's Wort | <i>Hypericum perforatum</i> |
| Yellow-wort | <i>Blackstonia perfoliata</i> |
| Common Centaury | <i>Centaureum erythaea</i> |
| Kidney Vetch | <i>Anthyllis vulneraria</i> |
| Common Bird's-foot-trefoil | <i>Lotus corniculatus</i> |
| Black Medick | <i>Medicago lupulina</i> |
| Dove's-foot Crane's-bill | <i>Geranium molle</i> |
| Common Eyebright | <i>Euphrasia nemorosa</i> |
| Betony | <i>Stachys officinalis</i> |
| Devil's-bit Scabious | <i>Succisa pratensis</i> |
| Ribwort Plantain | <i>Lantago lanceolata</i> |
| Selfheal | <i>Prunella vulgaris</i> |

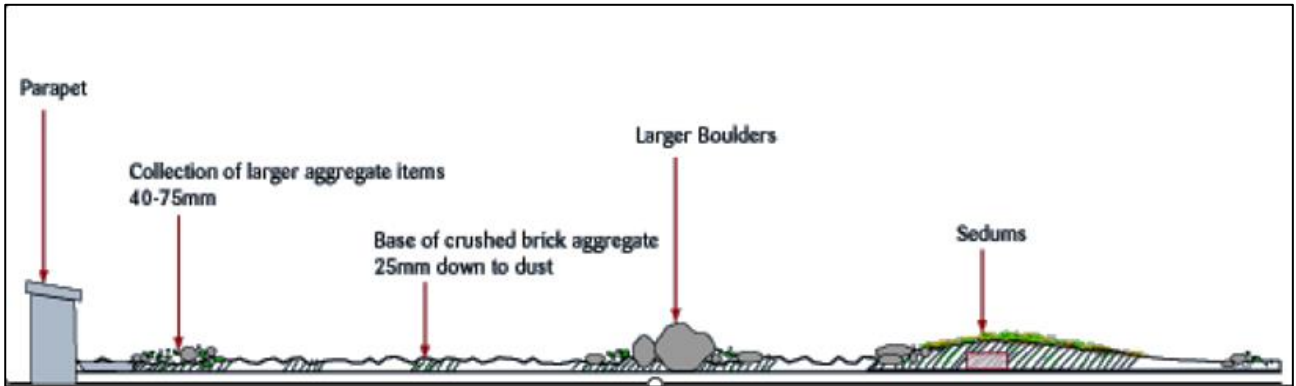
Ideally the substrate of a black redstart roof will comprise a mix of aggregate. Sections of pebbles (20-40mm) and small boulders (200-400mm) will be added to the roof on the edge of the green roof area.

~~Consideration should be given to incorporating a small depression the green roof around which the small boulders could be placed to allow the retention of a shallow pool of rain water. This would create further suitable habitats for invertebrates and therefore more foraging opportunities for black redstart.~~

Figure 1 provides the specification of the black redstart roof design that is to be implemented, in line with Biodiversity Enhancement Plan (Drawing no: BST DMA XX XX DR A

SK010).

Figure 1: Cross section of example black redstart roof



Source: www.blackredstart.org.uk

~~Variations on the above recommendations can be provided should there be structural restrictions on the implementation of the proposed enhancements outlined above.~~

In accordance with NPPF recommendations provided within the Preliminary Ecological Appraisal and Preliminary Bat Roost Assessment (Peak Ecology, 2020) bird boxes should be incorporated into the design of the new building. The following nest boxes will be used for the enhancement of the site as detailed below. The location of the nest boxes is detailed within the Biodiversity Enhancement Plan (Drawing no: BST_DMA_XX_XX_DR_A_SK010), an extract from which is shown in Figure 2

Figure 2: Bird box locations

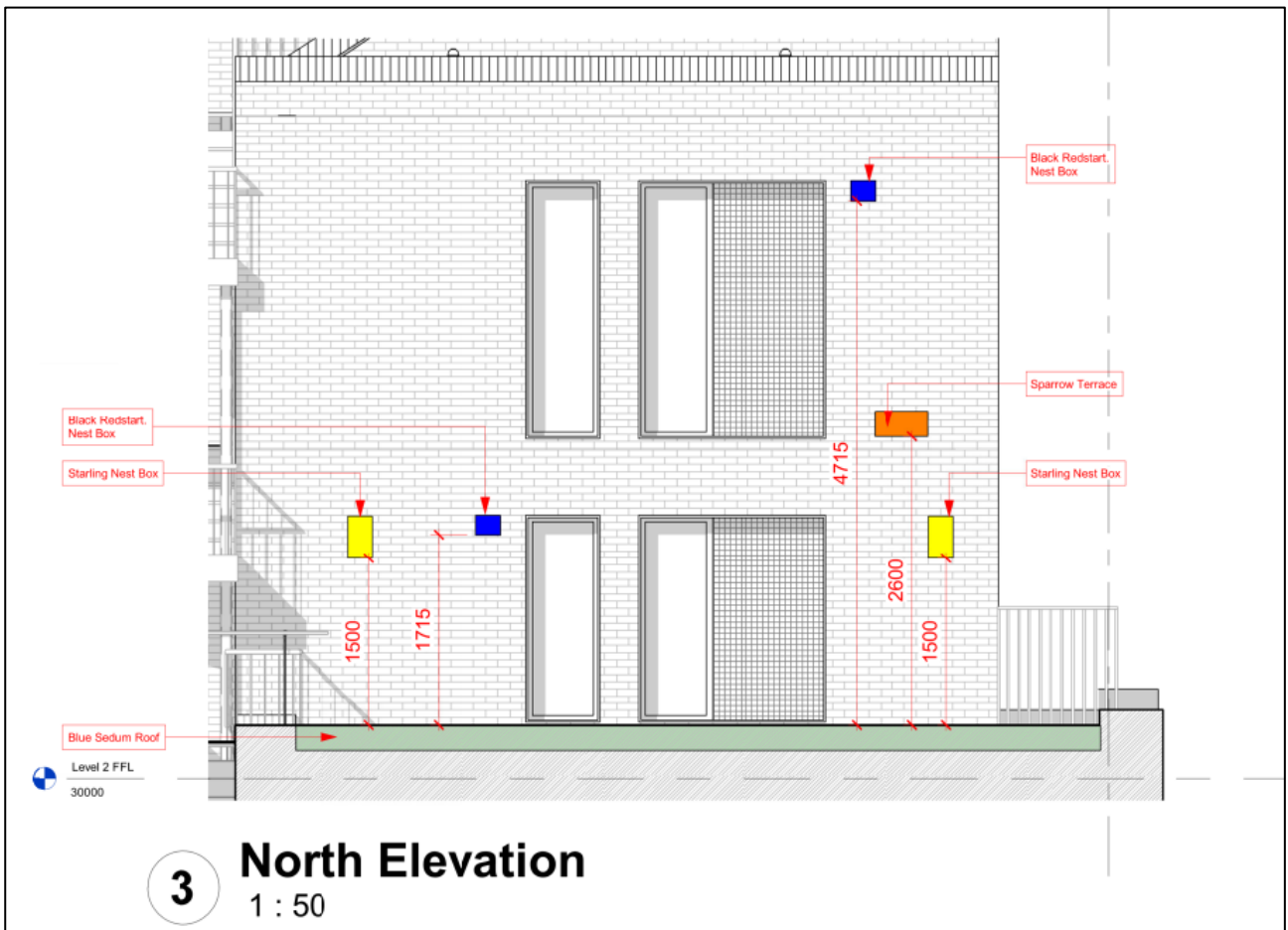


Table 2: Recommended bird box enhancement

| | |
|---|---|
| <p><u>Black Redstart</u></p> <p>Two boxes should be included within the brickwork of the new building around the area of the green roof. The boxes <u>will</u> be located at <u>1.7m and 4.7m, at</u> either end of the green roof. <u>This will</u> allow sufficient space between the boxes for individual territories.</p> <p>The boxes <u>will</u> be located away from areas of regular disturbance, such as doors or walkways, positioned in a sheltered spot away from prevailing winds.</p> |  <p>Sourced from www.nhbs.com</p> |
| <p><u>Sparrow terrace</u></p> <p>House sparrows are social and favour nesting in colonies; therefore, a terrace <u>will</u> be provided to allow for multiple nesting pairs. This <u>will</u> be sited on the wall of the building <u>at 2.6m</u> above the green roof area as it is unlikely that predators will persist on the roof of the building.</p> <p>The <u>terrace will</u> be located on the north<u>ern</u> elevation of the building, to avoid direct sunlight and provide opportunities for the young to use the garden habitats to the east of the site for foraging opportunities.</p> |  <p>Sourced from: www.rspb.org.uk</p> |
| <p><u>Starling</u></p> <p>The starling nest box has a larger entrance hole (45mm) than that of the house sparrow box. Although a terrace is not required several boxes <u>will</u> be installed to support colonies of starlings.</p> <p>These <u>will</u> be located 1.5m above the level of the green roof. Located to avoid direct sunlight a north, north eastern or north western direction <u>has</u> be favoured.</p> |  <p>Sourced from: www.nhbs.com</p> |

It is recommended that a minimum of two of these nest box enhancements are implemented on site. The proposed design currently exceeds this recommendation and has included provision for all three box designs listed within Table 2 above.

5.2.2 Management

Once established a roof created for black redstart will need very little, if any, maintenance. The maintenance of the green roof outlined in Section 3.1.2 will be sufficient in the upkeep of the roof for black redstart. Black redstart typically breed between mid-April and the end of July. Any form of disturbance around the nest boxes during this time will be reduced to a minimum.

All nest boxes will also be cleaned out once a year, removing any previous nesting material or debris from inside. This will be undertaken outside of the bird breeding season, between September and January (inclusive), unless it can be confirmed that nesting birds are not present.

6 SUMMARY TIMETABLE

Table 3 below shows a calendar for the timing of works to be carried out over a five-year period.

Table 3: Calendar of timing for works

| Works | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---------------------------------|-----|-----|--------------------|-----|-----|-----|-----|-----|--------------------|-----|-----|-----|
| Establishment of green roof (Year 1) | Installation of sedum matting | x | x | x With watering | | | | | | x With watering | | x | x |
| | Contouring and habitat creation | x | x | x | x | x | x | x | x | x | x | x | x |
| | Seeding of contoured mounds | | | x | x | x | | | | | | | |
| Raking substrate, replanting and weed removal | | | | | | | | | | x | x | x | |
| Bee hotel cleaning – | Uninhabited tubes | x | x | | | | | | | | x | x | x |
| | Inhabited tubes | | | x | x | | | | | | | | |
| Nest box cleaning | | x | | | | | | | | x | x | x | x |

Note - x denotes months in which works may be carried out

7 **REFERENCES**

Black Redstarts.org <https://www.blackredstarts.org.uk/pages/greenroof.html>

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