eight associates

Eight Associates
Ground Floor
57a Great Suffolk Street
London
SE1 0BB

+44 (0) 20 7043 0418

www.eightassociates.co.uk
info@eightassociates.co.uk

Biodiversity Management Plan
KOKO

Document information

Prepared for:
Jasmeer Patti
Tower Eight
1 Fellmongers Path
London
SE13LY

Date of current issue:
24/10/2017

Issue number: 3

Our reference:
2169 - KOKO Ecology Management Plan - 1710-24rc.docx

Assessment information

Prepared by:
Abigail Elliot

Quality assured by:
Rachel Crookes

Disclaimer

This report is made on behalf of Eight Associates. By receiving the report and acting on it, the client - or any third party relying on it - accepts that no individual is personally liable in contract, tort or breach of statutory duty (including negligence).

Contents

eight associates

Executive Summary
Biodiversity Management Plan
KOKO

Executive Summary

Eight Associates has been appointed by Tower Eight to carry out a Management Plan to inform the BREEAM 2014 assessment of KOKO, located in the London Borough of Camden. The project consists of the reinstatement of the Hope and Anchor Public House at ground and first floor levels, with a new Private Members' Club at first, second and third floor levels. The works at second and third floor, and at roof level will include some new building infill.

A Biodiversity Management Plan details the five-year management of biodiversity features, species and maintenance regime. This document should be used in conjunction with the Ecology Report [2169 – KOKO Ecology BREEAM Report- 1708-14rc.docx] produced by Eight Associates for the KOKO development, which identifies existing ecology and outlines actions that can be taken to enhance the ecological value on site.

The BREEAM New Construction 2014 requirements for the credit LE 05 – 'Long Term Impact on Biodiversity' require that a five-year landscape and habitat management plan is produced covering at least the first five years after project completion. This document describes how management can be established and be continued over the medium to long term, fulfilling this BREEAM requirement, to allow for up to two credits being awarded.

This report also demonstrates that new ecologically valuable habitat, appropriate to the local area, has been recommended. This includes habitat that supports nationally, regionally or locally important biodiversity, and/or which is nationally, regionally or locally important itself; including any habitat listed in the UK Biodiversity. If this is created on site, this will satisfy one of the 'Additional Measures' (no. 4) outlined under BREEAM LE 05, which contributes to achieving the BREEAM LE 05 credits.

The remaining 'Additional Measures' required to achieve the BREEAM LE 05 credits involve contractor actions. These include; nominating a 'Biodiversity Champion'; the principal contractor trains the site workforce (through specific training) on how to protect the site; and the principal contractor records actions taken to protect biodiversity and makes them publicly available if requested. Please contact your BREEAM assessor for details.

eight associates

Introduction
Biodiversity Management Plan
KOKO

Introduction

This report is a biodiversity management plan covering at least the first five years after project completion. This document describes how management can be established and be continued over the medium to long term, fulfilling a key criteria for BREEAM LE 05, to allow up to two credits to be awarded.

Site description and survey

The site is located in central London within a densely built up urban environment, bounded to neighbouring building and Bayham Place to the north, Bayham Street to the east, Crowndale Road to the south and a paved public area to the west. The site is situated approximately 650m west of Camley Street Nature Park, a statutory site that contains habitat for birds, butterflies, amphibians and a rich variety of plant life. No non-statutory sites are present within 1km of the site.

The site encompasses a single building consisting of a theatre/concert venue, office and a public house. There are scattered patches of ruderal plants on the roof and walls of the building, and some introduced planting on the west-facing terrace. The proposals include the reinstatement of the Hope and Anchor Public House at ground and first floor levels, with a new Private Members' Club at first, second and third floor levels. The works at second and third floor, and at roof level will include some new building infill.

A survey was carried out to assess the ecology of the site on 1st August 2016, conducted by Rachel Crookes, an experienced ecologist. The survey provided an Initial Site Survey (Phase 1 Habitat survey), which involved the identification of habitat types present. A protected species risk assessment was also undertaken on site, which included an inspection of existing building facades and roof for features that could be used by roosting bats or nesting birds.

The survey was carried out prior to any works being done at the site. The time of year was optimal for Phase 1 habitat surveys. The survey represents the site's existing ecology prior to the commencement of initial site preparation works, i.e. before RIBA stage 5 Construction (previously RIBA stage K, Construction to Practical Completion), and after RIBA stage 1 Preparation and Brief (previously RIBA stage B, Design Brief). This report has been produced at detailed design stage, which has allowed the facilitation and maximisation of potential ecological enhancement on site.

The site survey was based upon the standard Phase 1 survey methodology (JNCC, 2010). An inventory of habitats present on site was recorded and mapped. The site was also checked for the presence of invasive plant species as defined by Schedule 9 of the Wildlife and Countryside Act, 1981, as amended.

eight associates

Site Details
Biodiversity Management Plan
KOKO

Ecologist's Details	
Company Name	Eight Associates
Company Address	57a Great Suffolk Street, London, SE1 0BB
Contact Name	Rachel Crookes
Contact Telephone Number	020 7043 0418
Ecology Report Reference	2169 - KOKO Ecology BREEAM report – 1710-23rc.docx

Developer / Client Details	
Company Name	Tower Eight
Company Address	1 Fellmongers Path, London SE1 3LY
Contact Name	Jasmeer Patti
Contact Telephone Number	020 7323 6809

Development Details	
Development Name	KOKO
Development Address	1A Camden High St, Kings Cross, London NW1 7JE

eight associates

Contact Details

Biodiversity Management Plan

KOKO

Site survey conducted and report produced by Rachel Crookes:

Ecologist's Qualifications:	MSc - Conservation and Biodiversity BSc - Zoology
Evidence of practicing Ecologist	Eight Associates, Assistant Sustainability Consultant, conducting habitat and protected species surveys, producing reports to support planning and BREEAM (2016); carrying out habitat surveys of nature reserves and writing protected species survey guidelines for volunteers at the Chiltern Society (2015) carrying out water vole surveys, bat box inspections, bat radio tracking and mist netting with Aylesbury Vale Biodiversity department (2014)

Report QA and verification by Stacey Cougill:

Ecologist's Qualifications:	BSc – Environmental Science MSc – Conservation Biology UCert – Species Identification and Biological Recording
Evidence of practicing Ecologist	Eight Associates, Sustainability Consultant specialising in Ecology (2011 to present date), Open University, iSpot, Biodiversity Mentor (2009 – 2012) and Westminster City Council, Biodiversity Project Manager (2007-2010).
Professional Code of Conduct	I am a full member of the Chartered Institute of Ecology and Environmental Management.

eight associates

Recommendations for Ecological Enhancement

Biodiversity Management Plan

KOKO

Recommendations for Ecological Enhancement

The BREEAM credit LE 05 requires that a five-year management plan is adopted, to cover the recommendations made at the time of the initial survey.

Recommendations for ecological enhancement were made for incorporation into the scheme. These are summarised below. Full details of recommendations are contained within the Ecology Report for KOKO (2169 – KOKO Ecology BREEAM Report- 1708-14rc).

Recommendations have been made in the Ecology Report by the suitably qualified ecologist to ensure that site is enhanced for wildlife and a gain for biodiversity in line with national and local policy and to enable compliance with BREEAM.

Please note requirements for compliance with protected species legislation are covered within the Ecology Report for KOKO only ('Compliance with Legislation' section).

Biodiverse green roof

One of the Camden Biodiversity Action Plan Actions is for developments to include green roofs wherever feasible. As per the architect's proposed areas for planting, an area of biodiverse green roof is available. The green roof should be planted with at least 24 different species of plants.

The green roof is planned to consist of a lightweight pre-grown wildflower blanket with wildflowers and herbs selected to provide a viable and vibrant plant community. In order to maximise the biodiversity and benefit to local wildlife the living roof should be planted with a diversity of native plant species or species with a benefit to wildlife. A growing substrate depth of no less than 100mm is recommended. Although some maintenance will be required (to be detailed in the five year management plan), the wildflower blanket can also be allowed to be colonised with the areas local flora that self-set on the site.

The blanket should ideally have varied substrate depth and areas of rocks and sand to increase habitat for invertebrates, which will in turn provide foraging opportunity for birds. Mounds and ridges can provide varying microclimates suitable for different species and create structurally diverse vegetation. In addition, stones and mounds of cleaned bricks can provide insect and spider habitat.

The green roof will need to be maintained regularly to ensure its biodiversity potential is achieved and maintained. Details of a management regime will be provided in a landscape and management plan.

eight associates

Recommendations for Ecological Enhancement

Biodiversity Management Plan

KOKO

Native plants

Where new planting is installed, this should include native species or species of benefit to wildlife.

Planting should include a diverse mix of species, including a variety of fruiting and flowering species, grasses and herbaceous plants to provide a nectar source and overwintering habitat for invertebrates and in turn a foraging habitat for birds. The planting should be biased towards (and preferably exclusively) wildlife-friendly species, such as the following:

Native species appropriate for this use include: Beech (*Fagus sylvatica)*, Box (*Buxus sempervirens*) Lavender (*Lavendula angustifolia*), Hazel (*Caryluss avellana*), Common dogwood (*Cornus sanguinea*), Wild privet (*Ligustrum vulgare*), Holly (*Ilex aquifolium*), Blackthorn (*Prunus spinosa*), Ivy (*Hedera helix),* Hawthorn (*Crataegus monogyna*), Guelder rose (*Viburnum opulus*), Honeysuckle (*Lonicera periclymenum*), Dog rose (*Rosa canina*), Heather (*Calluna vulgaris*), Viper's burgloss (*Echium vulgare*), Primrose (*Primula vulgaris*), Daffodil (*Narcissus pseudonarcissus*), Wood anemone (*Anemone nemorosa*).

Night scented plants may also be beneficial to attract insects and in turn bats. Species such as evening-primrose (*Oenathera biennis*), night-scented stock (*Mattiola bicornia*), lemon balm (*Melissa officinalis*), borage (*Borago officinalis*), may be appropriate for this purpose.

Deadwood loggery

The addition of a deadwood loggery can provide an important egg laying and larval habitat for invertebrates, increasing the variety of invertebrates that the area can sustain and providing food for birds and bats.

It is therefore recommended that a deadwood loggery be installed in an area of the green roof. This should be in a shaded location where possible, for example near a corner wall. Hardwoods such as oak, beech, sycamore or ash are recommended with bark still attached and should be maintained to promote a range of invertebrate species. These should be piled up and left to decay naturally.

Local Policy
Biodiversity Management Plan
KOKO

London Borough of Camden Biodiversity Action Plan

The BAP includes the following Actions for the Built Environment, which are relevant to the assessed site at KOKO:

Actions for the Built Environment:

Living Roofs: All developments to include living roofs wherever feasible, in line with Camden Development Policy 22. 75% of living roofs should be biodiverse extensive roofs, in line with best practice and guidance from the Environment Agency.

Landscaping and Trees: All landscaping schemes to include biodiversity enhancing landscaping.

Green Corridors: Improve the 'green network' in Camden by retaining existing habitat corridors and securing biodiversity improvements along gaps in habitat corridors, as per the Core Strategy Policy CS15 and reflects the All London Green Grid.

SuDs: Provide input into briefs for Camden Council flood alleviation scheme designs to ensure all biodiversity opportunities taken.

Protected and / or priority bat and bird species in Camden that are relevant to the assessed development include the following:

Group / taxon	Protected and / or Priority Species
Bats	Nathusius's Pipistrelle *Pipistrellus nathusii* Common Pipistrelle *Pipistrellus pipistrellus* Soprano Pipistrelle *Pipistrellus pygmaeus*
Birds	Song Thrush *Turdus philomelos* Common Starling *Sturnus vulgaris* House Sparrow *Passer domesticus* Common Linnet *Carduelis cannabina* Brambling *Fringilla montifringilla* Sky Lark *Alauda arvensis* Common Bullfinch *Pyrrhula pyrrhula* Hawfinch *Coccothraustes coccothraustes* Eurasian Tree Sparrow *Passer montanus*

Local Policy
Biodiversity Management Plan
KOKO

London Borough of Camden Biodiversity Action Plan

Black Redstart Action Plan:
The black redstart is an attractive, robin-sized bird of the thrush family with a distinctive orange/brown tail. In London, the black redstart is concentrated on both industrial sites and post-industrial wasteland sites along the River Thames, east of the River Wandle and along the River Lee. Camden is one of the Greater London Boroughs that hosts breeding pairs of Black Redstart; one breeding pair in London equates to 3% of the national population.

Black Redstart Action Plan aims relevant to the KOKO site:
- To protect and enhance the present population by conserving suitable habitat range to facilitate the colonisation of previously uninhabited areas. This may be through the provision of biodiverse brown roofs designed for black redstarts.
- To raise awareness of the species amongst planning authorities, architects, landscapers and developers.
- To establish partnerships with local developers to implement mitigation where development on wasteland sites occurs.

Stag Beetle Action Plan:
The male stag beetle is Britain's largest terrestrial (ground living) beetle. Stag beetles are globally threatened and protected under schedule 5 of the Wildlife and Countryside Act 1981 (as amended). The beetles are listed as priority species by the UKBAP and are also listed in the London BAP. Its distribution has reduced in the last 40 years, and stag beetles are only found in the south of England, but London remains one of a number of hotspots for the stag beetle population and as such is an important stronghold to maintain.

Stag Beetle Action Plan aims relevant to the KOKO site:
- Maintain and increase the number of stag beetles in Camden by providing additional habitat in parks identified as possessing populations of stag beetles.

eight associates

Contribution to BAP Biodiversity Management Plan KOKO

Contribution to National and Local BAP priorities:

Ecological enhancements to the site will have a positive contribution to the aims of the Camden Biodiversity Action Plan (BAP).

The installation of the biodiverse roof will create habitat in line with local biodiversity policy objectives. Actions for the Built Environment include the provision of living roofs wherever feasible, in line with Camden Planning Guidance 3 (CPG3), and an improvement to the 'green network' by securing biodiversity improvements along gaps in habitat corridors. One of the additional targets is that 75% of living roofs should be biodiverse extensive roofs. The biodiverse roof recommended for the KOKO development will contribute towards this target. The roofs will also create foraging habitat for other BAP bird and bat species, and increase the amount of biodiversity enhanced landscaping across the borough, as outlined in the Camden Built Environment Action Plan.

Two of the Camden Biodiversity Action Plan priority species are the stag beetle *Lucanus cervus* and the oil beetle *Meloe proscarabaeus*. Deadwood loggeries provide ideal nesting habitat for these species, and the surrounding vegetation on the green roof will provide excellent foraging habitat for them.

An action for the Built Environment outlined within Camden's Biodiversity Action Plan contains the inclusion of biodiversity enhancing landscaping within all new landscaping schemes. The incorporation of a variety of native flowering species in the form of hedgerows and introduced planting within the proposed scheme will provide a nectar source and overwintering habitat for invertebrates and a foraging habitat for birds. This will provide benefit to wildlife and create new opportunities for biodiversity, as per the Camden Built Environment Action Plan. The inclusion of night scented plants would also attract bats, many species of which are included as notable species within the plan.

In total the recommendations will ensure that there is a positive contribution to the Local Biodiversity Action Plan and an improvement to the long-term biodiversity of the site, Inclusion of the recommendations within the proposed development will result in the creation of ecologically valuable habitat which is appropriate to the local area, supporting nationally, regionally and locally important biodiversity, including BAP priority species.

eight associates

Management Plan
Biodiversity Management Plan
KOKO

Management Plan

The ecological management plan is based on the recommendations for the ecological enhancement provided in the ecology report produced by Eight Associates (2169 – KOKO Ecology BREEAM Report- 1708-14rc) and outlined above. The management actions are divided into the following sections covering the proposed features and habitats;

– A biodiverse green roof with a wildflower meadow
– Native planting, or planting that will otherwise benefit wildlife
– Installation of a deadwood loggery on the green roof

The building and areas of hardstanding are not subject to specific management under this plan as they have negligible ecological value.

Biodiverse Green Roof

The green roof will need to be maintained regularly to ensure its biodiversity potential is achieved and maintained.

Common issues include (but are not limited to):
- Lack of nutrients: unhealthy plants leads to loss of vegetation coverage
- Invasive weeds and debris: impedes the function of the green roof and can damage the waterproofing
- Impeded drainage: can impact plant health and roof performance

Regular maintenance and inspection checks, generally carried out annually during the spring or late autumn, are required to ensure that the outlets and areas surrounding outlet chambers remain clear and perform as needed. Please note: specifically designated biodiversity areas such as this should be disturbed as little as possible during maintenance so as to not upset any micro-habitats that may have been colonised.

Installation

- Prepare the substrate to either a level surface or a gentle undulation with a minimum depth of no less than 100mm and water to the point of saturation.
- Mark out on the substrate the length and width of rolls to be installed. It is important to ensure that the roll widths and lengths to the roof perimeter are at least 1m in each direction.
- Working from the bottom of the roof and taking care not to stand on the vegetated surface, unroll the blanket and press down firmly onto the substrate. If any voids are apparent under the blanket then it is to be lifted up, the void filled with substrate and the blanket re-bedded.
- Upon the completion of an area installed over a maximum four hour period, the installation is to be heavily watered to ensure that both the blanket and substrate are saturated before moving on to the next area.
- Upon completion of the installation apply organic fertilizer (slow release) at a rate of 80g/m^2 and water in.
- Care must be taken to avoid the blanket being walked or stood upon unnecessarily or otherwise trafficked by other trades during and after the installation, as this will have an adverse effect on the vegetation

Management Plan
Biodiversity Management Plan
KOKO

Biodiverse Green Roof

Establishment Watering and Maintenance
Once the installation has been completed it will be necessary to keep the substrate and blanket damp (not saturated) for a minimum period of 10 weeks. This may be done manually, or a temporary surface mounted irrigation system could be installed, such as an automatic watering irrigation spike (or drip sprinkler).

During seasonal periods of cool, wet weather the green roof may be watered less and it is recommended to cut back on watering from early September.

General Maintenance

- Following installation annual maintenance should include the following:
- Inspect any waterproofing systems visible at all upstands, to ensure it is firmly adhered.
- Re-seed any bare patches if necessary
- Cut back vegetation in the autumn and ensure any cuttings are removed from site.
- Ensure that all rainwater pipes are free from blockages and that water flows freely through them.
- Remove any vegetation growth that may have occurred, within the pebble ballast or paving.
- The building owner should keep a record of all inspections and maintenance carried out on the roof. Any signs of damage or degradation should be reported immediately so that arrangements can be made for remedial work to be carried out if necessary. Also report any signs of damage or degradation to the landscape, which might affect the future integrity of the waterproofing.
- Plug plant or re-seed if necessary

Native planting

Soil condition: Improve soil condition by applying peat free compost and bone meal prior to and during planting.

Pruning: Prune to encourage denser growth. Prune the longest branches on shrubs and remove dead, dying or diseased branches in the months outside of the bird-nesting season seasons (October-February).

Planting dense fruiting and flowering shrub species such as hawthorn (*Crataegus monogynya*), and hazel (*Corylus avenella*) has been recommended – this will act as a food source for foraging birds. Ensure that these shrubs are managed for wildlife by cutting back the fruiting species after winter. Stimulate berry production by removing old branches with infrequent or poor berry production in the months outside of the bird nesting seasons (October-February).

Prune shrubs as required promoting healthy growth and natural shape. Remove dead, dying or diseased wood and suckers.

Weed control: Control weeds by mulching using chippings. Carry out weeding every six months. Prevent the growth and spread of invasive weeds, such as Japanese Knotweed and take advice from experienced professional on control if it is found.

Shrubs: Mulch all shrub planting areas to a minimum depth of 75mm. Ensure that soil is thoroughly moistened prior to re-mulching, applying water where necessary.

Deadwood loggery	This should be in a shaded location where possible, for example near a corner wall. Hardwoods such as oak, beech, sycamore or ash are recommended with bark still attached and should be maintained to promote a range of invertebrate species. These should be piled up and covered in water to start the decay process. The logs should then be left to naturally decay.

eight associates

Schedule of Works
Biodiversity Management Plan
KOKO

Year	Feature	Spring	Summer	Autumn	Winter
One	Biodiverse green roof	Install living roof in either spring or autumn. Apply 80g/m^2 of slow release organic fertiliser to the vegetated surface		Install living roof in either spring or autumn	
	Native planting	Improve soil condition by applying peat free compost and meal prior to and during planting			Improve soil condition by applying peat free compost and meal prior to and during planting
				Lightly prune the newly planted shrubs to encourage denser growth	
				Carry out weeding	
	Deadwood loggery			Install before spring and leave to decay naturally	
Two-five	Biodiverse green roof			Check the pebble ballast borders / drainage channels are weed free and allow adequate drainage	
				Trim back the vegetation to a 50-70mm height and remove waste matter for composting/disposal	
				Weed out unwanted plants	
				Fertilise if necessary	
				Re-seed or plug plant if necessary	
		Signs of damage or degradation should be reported immediately			
		Inspect the waterproofing system is viable at all upstands, to ensure it is firmly adhered			
		Ensure that all rainwater pipes are free from blockages and that water flows freely through them			
		Clear all debris from the roof surface, rainwater outlets, gutters etc. Debris must be removed from the roof			
	Native Planting	Improve soil condition by applying peat free compost and meal prior to and during planting. Weeding to remove unwanted plants / Removal of yellowing leaves/dead plants			
		Ensure that soil is thoroughly moistened and re-mulch shrub planting areas (if necessary)		Cut back vegetation where appropriate and ensure any cuttings are removed from site. Pruning, remove dead, dying diseased wood and suckers (if necessary). Cut back the fruiting species after winter. Remove old branches with infrequent or poor berry production to stimulate berry production. Ensure this is carried out outside of the bird nesting seasons (October-February)	