

LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN
SITE 3 IMAGE BUSINESS PARK, KNOWSLEY

prepared by



commissioned by

HALE ARCHITECTS

on behalf of

SEYBOURNE ESTATES LTD

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1 INTRODUCTION

- 1.1.1 Clarkson and Woods Ltd was commissioned by Hale Architecture on behalf of Seybourne Estates Ltd. to prepare a Landscape and Ecological Management Plan (LEMP) for the proposed development at Site 3, Image Business Park within Knowsley Industrial Estate.
- 1.1.2 This LEMP has been produced in order to satisfy the requirements for LE05 (long term impact on biodiversity) of the BREEAM assessment for the development of the Site.
- 1.1.3 The following documents have been prepared for the Site and should be referred to:
- Pre-Demolition Ecological Survey – Plot C, Image Business Park, Acornfield Road, Knowsley. Clarkson & Woods Ltd., August 2018;
 - Ecological Impact Assessment – Site 3, Image Business Park, Acornfield Road, Knowsley. Clarkson & Woods Ltd., September 2021;
 - Proposed Site Plan – Site 3 Image Business Park, Knowsley. Hale Architecture, 2021. Document ref: 21066 - PL1102;
 - Landscape Proposals – Site 3 Image Business Park, Knowsley. BEA Landscape Design Ltd., August 2021. Document ref: 21-80-05 rev A.
- 1.1.4 Site 3, along with the nearby plots to the north (Sites 1 and 2), were subject to numerous ecological surveys in 2018 prior to the demolition of buildings, with update surveys undertaken in 2021. This LEMP has been informed by the following surveys of the Site undertaken by, or on behalf of, Clarkson and Woods Ltd:
- Phase 1 Habitat Survey and pre-demolition buildings inspections – April 2018
 - Subsequent dusk emergence and dawn re-entry surveys – July 2018
 - Update Phase 1 Habitat Survey – May 2021
 - GCN eDNA survey (Sites 2 and 3) – May 2018 / June 2021
- 1.1.5 The revised National Planning Policy Framework (NPPF), updated in July 2021, states that the planning system should contribute to “*minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*”. It also states that “*opportunities to incorporate biodiversity in and around developments should be encouraged*”. This LEMP seeks to maximise the ecological benefits which the development may offer.
- 1.1.6 The purpose of this LEMP is:
- To set out the agreed aims and objectives for landscape management of the site;
 - To assist in the development of work programmes for landscape maintenance staff;
 - To establish landscape maintenance responsibilities; and



- To help monitor success and progress against the aims and objectives and provide strategies for implementing remedial measures, if required.

- 1.1.7 This LEMP sets out how ecological habitats within the site boundary will be protected and managed appropriately during the operational phase of development for the long term benefit of local wildlife.
- 1.1.8 The LEMP sets out a strategy for the first five years following development. It is recommended that after five years the objectives and prescriptions set out in the plan are reviewed and amended where necessary to ensure the objectives are achieved for the long term.
- 1.1.9 It is the responsibility of Seybourne Estates Ltd to arrange for the work outlined in this document to be undertaken to ensure all prescriptions are fulfilled. Contractors hired to carry out landscaping work and maintenance for biodiversity will be appropriately experienced and qualified.

2 DETAILS OF MANAGEMENT RESPONSIBILITY

2.1 Client/Site Owner

- 2.1.1 Seybourne Estates will be responsible for the implementation of this LEMP through the lifespan of the development. They shall liaise with the Ecological Clerk of Work to commission and arrange an ecologist's input or attendance on-site. In addition, they will ensure that the management company and all landscape contractors are suitably competent and made aware of the ecological constraints. They will provide them with a copy of the LEMP before works are conducted.

2.2 Ecological Consultant

- 2.2.1 Ecological queries should be directed to Clarkson & Woods contactable on 01934 712500. Where another ecological consultancy is employed to fulfil this role, any ecologist must be suitably qualified, have at least two years' experience as a professional ecological consultant and in receipt of suitable training.
- 2.2.2 The ecologist will be responsible for delivering monitoring of the site post-construction. They shall assist and advise the developer and the management company, if required, in their adherence to the requirements of this LEMP.



3 SITE DESCRIPTION

- 3.1.1 The development site is located in Knowsley Industrial Estate and is approximately 2.25 hectares (ha) in size, centring approximately at OS Grid Ref. SJ 43747 9873.
- 3.1.2 The Site primarily comprised hardstanding, with areas of pioneer species, species-poor semi-improved grassland and scattered scrub. There was minimal change to baseline habitats noted between the 2018 and 2021 surveys, with the exception that most of the buildings on Site were demolished in 2020.
- 3.1.3 The development proposals include the erection of a single industrial unit with associated access, car parking, loading bay and soft landscaping.
- 3.1.4 Landscaping plans for the site include the creation of wildflower meadow areas seeded with Emorsgate EM2 seed mix, flowering lawn grass borders seeded with Emorsgate EL1, and the plating of new native, species-rich hedgerows, evergreen hedgerow, ornamental shrubs and standard trees.
- 3.1.5 The new native hedgerow will be a double staggered hedge planted with hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, field maple *Acer campestre*, holly *Ilex aquifolium*, and guelder-rose *Viburnum opulus*. Standard tree planting will include silver birch *Betula pendula*
- 3.1.6 Specifications for the installation and maintenance of ecological enhancement features, i.e. bird boxes are detailed in Section 5.
- 3.1.7 The submitted landscape plan (refer to Appendix A) should be referred to for detailed information on planting schedules.



4 OBJECTIVES

- 4.1.1 The following objectives have been identified which, when achieved, will ensure the overarching aims of the Plan are realised.

Objective 1: To manage newly seeded grassland to establish a diverse sward

The wildflower meadow areas will be managed to create a diverse grassland habitat, which will benefit a wide range of species including badgers, birds, small mammals (including foraging bats), invertebrates, reptiles and amphibians.

Objective 2: To manage newly planted hedgerows and trees to maximise their biodiversity value

The newly planted hedgerow along the western site boundary, tree line along the southern boundary and infill woodland planting within the eastern boundary will be managed to maximise their value for wildlife. The hedgerow will be managed to a height and width of at least 2m, as this is considered to be particularly important for encouraging use by native British wildlife.

Objective 3: To allow wildlife to coexist with the operational development

To enhance the site for protected and notable species during the operational phase of the development, nest boxes and other created habitats will be installed around the site during the construction phase to maximise its value for biodiversity. These habitats will be maintained as part of on-going management operations to ensure they are safeguarded.

Night time artificial lighting will be minimised/directed away from boundary features during the operational development site to avoid impacts on light averse wildlife, such as bats.

Objective 4: To monitor the site and assess the success of management

In order to deliver the proposed ecological objectives, monitoring of the effects of management prescriptions will be required in order to ensure that these are effective, and to inform any necessary refinement of the site management.



5 PRESCRIPTIONS

- 5.1.1 In order to achieve the objectives outlined in Section 4, the following management prescriptions have been identified.
- 5.1.2 Implementation of the occupation phase measures will be co-ordinated by the appointed management company.

PR1: Management of New Grassland and Wildflower Planting

Contributes to Objective 1

Seeding

Grass areas to be seeded in accordance with BS 4428:1989 during March, April or September. Unimproved or low fertility topsoil to be imported, cultivated and levelled to remove all minor hollows or ridges as required with any debris or stones greater than 20mm diameter removed to provide a fine weed free tilth. No fertiliser will be applied. Weeds will be eradicated by herbicide or repeated cultivation prior to sowing. Seed mixes to be supplied by Emorsgate Seeds to be sown in accordance with suppliers recommendations.

Wildflower Grassland

In order to encourage pollinators onto the site, a wildflower area will be established within the west of the site, and a tussocky wildflower border will be established around the perimeter of the development. Ground preparation for these areas will follow the manufacturer's guidance, which is summarised below.

First Year of Management (after seeding)

The grassland areas sown with Emorsgate EM2 Wildflower Seed Mix (or equivalent) will be subjected to regular cutting during the first year of establishment to a height of 40-60mm in order to prevent annual weeds from establishing, with arisings either moved off-site. Mown every 6 - 8 weeks during establishment year and remove arisings. Where there is a flush of annual weeds from the soil in the first growing season, which may grow up and obscure the meadow seedlings beneath, this growth can be easily controlled by topping or mowing.

An inspection will be undertaken by the landscape contractor in the March or August following sowing the previous season. In the event that newly seeded grassland fails to establish upon areas of bare ground, these areas will be lightly scarified and re-seeded with the same species mix used to sow the site during initial seeding.

Subsequent Years

Meadow grassland is not cut or grazed from May through to late July/August to give the sown species an opportunity to flower. After flowering in July or August, cut back with a hand-held



trimmer or mower to c.50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from Site. Mow the re-growth through to late autumn / winter to c.50mm and again in spring if needed.

Amenity Grassland & Ornamental Shrubs

In areas of proposed amenity grassland, a low maintenance mix such as Emorsgate EL1 and ornamental shrubs / ground cover will be planted. Amenity grassland seed is best sown in the autumn or spring. As per the landscaping plan, grass areas are to be seeded in accordance with BS 4428:1989 during March, April or September. Pre-seed fertiliser is to be applied in accordance with manufacturer's instructions. Lightly rake areas after sowing then roll with a lightweight roller. Seed to be Emorsgate Seeds mix EG22 'Strong Lawn Grass Mixture' sown at 25g/m² (total 5 grass species).

Weeds in these planted areas will be eradicated by hand or by appropriate mechanical or chemical means, using non-residual herbicides, and only applied on dry still days to avoid herbicide drift onto adjacent habitats.

First Year of Management (Amenity Grass)

Areas of amenity grassland will be cut more regularly than the wildflower areas, and with fewer restrictions and prescriptions regarding timing of work or weeding with an aim to achieve a height of 40-60mm, removing cuttings from Site. Dig out any residual perennial weeds such as docks.

Subsequent Years

Mow regularly to achieve a regular sward height of c.35mm, relaxing the mowing regime from late-June. Cut again when the sward gets untidy (after 4-8 weeks). Cuttings should be collected and removed from site.

Ornamental shrubs are likely to require minimal maintenance through regular annual trimming to achieve a tidy appearance and weeding.

PR2: Management of Newly Planted & Existing Hedgerows

Contributes to Objective 2

New native hedgerows will be created around the peripheries of the Site.

All new hedgerow plants will be sourced in accordance with BS 3936 and will be planted in accordance with BS 4428: 1989, with protective fencing around the plantings. Soil around newly planted hedgerows will be watered immediately after planting and prior to the spreading of mulch.

The newly planted hedgerow trees will be inspected at 6 and 12 months after planting and annually thereafter for the first five years. Any failed planting will be identified and failed plants will be replaced (as required). Up to 10% failure rate for shrubs and trees will be allowed, but if more than



10% failures occurs then replacement planting of the same (or similar) species will be provided. Any trees which fail will be replaced on a like-for-like basis.

Damaged, diseased or dead wood will be pruned immediately after first leaf break. The whips will be lightly trimmed every second or third year, allowing the hedgerow to increase in size each time.

Removal of tree protection will be undertaken promptly once specimens have successfully established after at least three years. This is to prevent trunk distortion, damage and constriction which can be caused by tree guards, mesh and stakes, which can lead to structural weakness in the trunks.

Hedgerow cutting will aim to maximise the health and vigour of the individual plants and structure and thus ensure the longevity of the hedgerows. This will also benefit the range of wildlife associated with the hedgerow habitat, such as invertebrates, bats and birds amongst others present within the local area, by ensuring foraging, commuting and sheltering opportunities are enhanced.

Hedgerows will be cut in January or February to avoid the bird-nesting season (usually between March and August but seasonally variable) and to ensure that the hedgerows provide shelter and foraging resources through the winter months. The hedgerows will be cut on a 3-year rotation, cutting only the eastern face, western face or top of the hedgerow each year. The cutting height will be raised by 10-15cm each year to a height of at least 3m. This will allow plants to produce flowers and berries – fruits are primarily produced on the last years' growth, therefore providing foraging resources for invertebrates, birds and small mammals; whilst preventing the hedgerow height from increasing too rapidly. Further information can be found in Hedgelink UK's "The Hedgerow Management Cycle" guidance document¹.

Hedgerows will be managed to maintain a minimum summer height of at least 2m (preferably 3m), excluding mature trees.

PR3: Tree / Shrub Maintenance

Contributes to Objective 2

Standard trees will be planted around the Site, which will occur in accordance with the approved planting plan.

During the first season of planting, all tree and shrubs species will be watered as necessary in accordance with the recommendations of the supplier. They will also be kept free of weeds and protected from rabbits.

New woody planting will be inspected at 6 and 12 months after planting and annually thereafter for the first five years. Any failed planting will be identified and failed plants will be replaced (as

¹ Adams, N. The Hedgerow Management Cycle. *Hedgelink UK*



required) on an annual basis for the first 5 years from initial planting. Up to 10% failure rate for shrubs will be allowed, but if more than 10% failures occurs then replacement planting of all failed specimens will be provided. Any trees which fail will be replaced on a like-for-like basis.

Removal of tree protection will be undertaken promptly once specimens have successfully established after at least three years, and once specimens are of a reasonable height. This is to prevent trunk distortion, damage and constriction which can be caused by tree guards and stakes, which can lead to structural weakness developing in the trunks.

Newly planted woody vegetation in general will not be cut for the first three years of growth to ensure mature establishment of the planted transplants.

Post-construction management of the retained trees and newly planted specimens will be carried out between September and February to avoid effects on nesting birds and to ensure trees and shrubs are able to flower, fruit and set seed. It is not anticipated that tree management will be required unless for disease or reasons of health and safety.

PR4: Provision and Maintenance Habitat Creation Measures for Protected / Notable Species

Contributes to Objective 3

The wildlife habitat features listed in Table 1 below will be installed during the construction phase on the retained trees along the western Site boundary to provide additional shelter opportunities for birds.

The bird boxes will specifically be targeted towards urban birds, including starlings to encourage nesting of locally important species.

A sign-off visit by the ECoW, or evidence provided by Seybourne, will be required at the end of construction to confirm that all features have been installed. A log of installation is to be kept by Seybourne.

Table 1: Recommended bird box designs

Type	Species	No. of Boxes
Vivara Pro Barcelona Woodstone Open Nest Box	"Hang the nest box with the supplied screw or nail. Face the box somewhere between northeast to southeast, ensuring it is not in the sun all day. No nesting material needs to be added." Place the nest box at a height of at least 1m, and in dense bush or ivy if possible to conceal.	3
Vivara Pro Woodstone Starling Box	"Hang the nest box with the supplied screw or nail. Hang the nest box at a height of at least 2 meters. Starlings like to breed close to each other, so it is recommended to hang up several nest boxes in the same area. "	3



PR5: Good Horticultural Practice

Contributes to Objectives 1 & 2

The use of peat topsoil/conditioners will be avoided.

No slug pellets will be used within the planting areas.

Use of plant fertilisers, herbicides, and pesticides will be avoided where possible, although where expressly required to facilitate new planting growth will be used as spot treatment only.

PR6: Monitoring of Landscape Planting and Nest Boxes

Contributes to Objective 5

In May, June or July of years 1 and 5, the site shall be monitored by an experienced Ecological Clerk of Works or landscape contractor to assess the establishment and development of habitats; notably the tree/shrub, wildflower meadow and hedgerow planting. As well as establishment of the habitat, planting failures and the presence of any invasive species will be recorded.

A brief monitoring report will be prepared following completion of each year's monitoring which will be submitted to the LPA. Where necessary, recommendations will be made to amend the management prescriptions to protect/enhance the habitats and species within the site, and thus ensure the objectives of this management plan are met.

Annually, between November and February, the bird boxes will be inspected from the ground by maintenance staff to confirm their continued presence and condition may be cleared out in winter as part of maintenance. Clarkson & Woods should be contacted to assist with this if required. Should monitoring inform the need for maintenance or replacement of any of these features, they will be repaired or replaced on a like for like basis. This will ensure that nesting habitat is available within the Site for the long term.



6 MANAGEMENT PLAN DIARY

Annual Management Timetable								Suitable/Optimal					
								Unsuitable/Sub-optimal					
								Prohibited					
Prescription	Activity	J	F	M	A	M	J	J	A	S	O	N	D
PR5	Installation of Bird Boxes (locations to be agreed by an on-site ecologist)	During or post-construction											
PR1	Management of New Grassland / Shrubs and Wildflower Planting Cutting of Grassland (Year 1 Only)												
PR1	Grassland Planting – Re-seeding of Failed Sown Grassland (if required)												
PR1	Cutting of Wildflower Areas (Subsequent Years)												
PR1	Cutting of Amenity Grassland / Shrubs												
PR2	Management of Newly Planted & Existing Hedgerows												
PR3	New Tree / Shrub Maintenance												



Annual Management Timetable								Suitable/Optimal					
								Unsuitable/Sub-optimal					
								Prohibited					
Prescription	Activity	J	F	M	A	M	J	J	A	S	O	N	D
PR3	Inspection and Replacement of Failed Hedgerows / Shrubs / Trees												
PR6	Ecological Monitoring of Planting / Habitat Establishment (Years 1 and 5)												
PR6	Inspection and Maintenance of Bird Boxes (by site personnel)												



APPENDIX A: LANDSCAPE PLAN

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