LIZARD
Landscape Design and Ecology

ECOLOGICAL DESIGN STRATEGY

Downlands Business Park, Lyons Way, Worthing

On behalf of: Worthing Retail Ltd

Client:	Worthing Retail Ltd			
Project:	Downlands Business Park, Lyons Way, Worthing			
Reference:	LLD3128-ECO-REP-001-01-EDS			
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Validity:

This report is valid for 18 months from the date of the site visit. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

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1.0 INTRODUCTION

1.1 Lizard Landscape Design and Ecology has been commissioned by Worthing Retail Ltd to provide an Ecological Design Strategy (EDS) for Downlands Business Park, Lyons Way, Worthing (*Grid Reference: TQ 15286 05301 – hereafter referred to as 'the site'*).

1.2 This report has been produced to allow the discharge of Condition 13 in line with planning approval reference; *AWDM/2026/22*, which states:

> *The development hereby approved shall not be brought into use until further details of a programme of ecological and landscape enhancements to the wider retail park, based on the details set out in the design and access statement, have been submitted to and approved in writing by the local planning authority. The development shall be carried out in accordance with the approved detail.*
>
> ***Reason:** In the interests of sustainability and to help address the climate emergency.*

1.3 This report has been produced based on the following data and documents:

- Design and Access Statement (Mountford Pigott, December 2022).

1.4 This report has been based on data from this report and should be read in conjunction with the above.

1.5 Maintenance prescriptions have been formulated to maximise the biodiversity value of the site and ensure healthy plant growth. It is anticipated that the initial landscape contractor as appointed by the main contractor will be responsible for any defects identified within 12 months of implementation. After this 12-month period all management as detailed within this report will be undertaken by a suitable management company as appointed by the contractor.

2.0 SITE CONTEXT

Site Description

2.1 The survey area is a retail park that covers c. 2.82 hectares (ha) of predominately hardstanding, utilised for parking and 4no. retail units in a single terrace. The eastern and southern boundaries of the site consist of a woodland buffer. Small sections of modified grassland are found throughout the carpark, as well as ornamental shrubbery and small hedgerows.

Surrounding Landscape

2.2 The site forms the southeastern corner of a larger retail and business area. The site is located to the north of Worthing, on the periphery of a largely residential area. Further to the east is Lancing and to the west is Chichester. immediately to the south of the site is the A27 (Sompting by-pass). To the east of the site is the South Downs National Park.

2.3 There are no ponds within 250.0m, however there is 1no. pond shown on OS maps within 500.0m of the site.

Development Proposals

2.4 It is understood that the development proposals include the combining of 2no. retail units as well as the laying of a new wearing course and new white lining within the associated car park.

3.0 BASELINE ECOLOGICAL CONDITIONS

3.1 The existing site is dominated by areas of hard standing and existing buildings, with small areas of modified grassland throughout the hard standing. These areas are of negligible ecological value. The southern and eastern boundaries are made up of broadleaved woodland, which is of significant ecological value.

3.2 The buildings on site have pitched roofs made of corrugated metal, with metal facias and wooden timber cladding on the front of the structures, which were assessed as offering 'negligible' bat roost suitability.

3.3 The ornamental shrub, as well as the woodland boundaries, provide some suitable nesting habitat for common bird species. The woodland is also a valuable foraging resource for bats. It is understood that the areas of modified grassland, ornamental shrub, hedgerow, and woodland are to be retained and protected within the scheme.

4.0 AIMS AND OBJECTIVES

4.1 Aims

4.1.1 The aim of the EDS has been:

- To maximise biodiversity value of the scheme.
- To ensure sensitive management of new and existing features to maximise their biodiversity value.
- To ensure that proposed enhancement measures are appropriately managed into the future.
- To provide a long-term management plan of the site.

4.2 Objectives of the Proposals

4.2.1 The below objectives have been identified, which when implemented, shall ensure the aims of the EDS are achieved:

- To provide areas of suitable soft landscaping suitable for use within a retail park development.
- To create habitat areas at the optimal time of year for their successful establishment.
- To manage areas of grassland, shrubs, and trees to maximise flowering and fruiting abundance.
- To provide additional habitat opportunities for birds, bats, hedgehogs, and invertebrates through the provision of suitable boxes.

5.0 COMPENSATION AND ENHANCEMENT MEASURES

5.1 The following features are proposed as compensation and enhancement measures.

Log Piles

5.2 1no. log pile of a minimum 1.0m^3 is to be created within the eastern woodland boundary. This area shall provide shelter and hibernation opportunities for invertebrates, reptiles, and amphibians.

Bat, Bird, Hedgehog and Invertebrate Boxes

5.3 2no. crevice bat boxes, as supplied by Greenwoods Ecohabitat (or a similar specification design), shall be installed between 3.0m – 6.0m high. Summer roost bat boxes should ideally be situated in open sunny positions. These bat boxes shall be installed on trees in the eastern and southern woodland boundaries of the site.

5.4 A total of 2no. general purpose bird boxes, such as the Vivara Pro Seville with 32.0mm entrance hole (or a similar specification design), shall be installed at least 1.50m above ground, where it will be sheltered from the prevailing wind, rain, and strong sunlight. Installation guidance: avoid placing the box on a south-facing aspect. These bird boxes will be installed on trees in the eastern and southern woodland boundaries of the site.

5.5 1no. hedgehog home, such as the Hogilo Hedgehog Home supplied by BHPS, shall be installed on the ground, in a sheltered, shady and dry area. Installation guidance: the entrance of the home should not face north or northeast, to avoid cold winter winds. This home shall be installed within the eastern woodland boundary.

5.6 A invertebrate box suitable for solitary bees, such as the Solitary Bee Hotel supplied by NHBS, shall be installed less than 2.0m from the ground ideally in a sunny position along the southern boundary of the site.

Implementation Schedule

5.7 Bird boxes can be installed anytime throughout the year; late autumn / early winter is the optimum time as many species of bird begin to search for a nest site as early as January. Bat boxes can be installed at any time of year; the optimum time for installation would be before the bats emerge from hibernation in the spring. Hedgehog homes can be installed throughout the year, preferably before winter when it is most likely to be required. Invertebrate boxes can be installed all year round.

6.0 MANAGEMENT PRESCRIPTIONS

6.1 In order to ensure the long-term viability and maximum ecological value of the scheme, detailed prescriptions for initial establishment and long-term management are provided within this section.

6.2 Amenity Lawn

Sowing

6.2.1 Areas of modified grassland are to be retained within the scheme.

Cutting

6.2.2 All debris, litter and large stones over 25.0mm diameter to be removed prior to cutting. Grass shall be cut during the growing season (generally April-October) using a suitable mover to a height of 25.0mm – 50.0mm. Grass will be cut at intervals of not more than 10 – 14 days depending on growing conditions. Arisings shall be collected and removed from the area.

Weed Removal

6.2.3 The sward shall be maintained free of unwanted species by hand pulling or use of a selective spot herbicide where necessary.

Fertiliser and Spiking

6.2.4 A propriety granular slow-release fertiliser shall be applied twice yearly, in the spring and autumn. Areas should be scarified in autumn to remove thatch and dead grass. The area is to be spiked annually in October.

Strimming

6.2.5 Grassed edges to planted areas to be trimmed to maintain a clear smooth edge to planted beds; strim edges elsewhere but not within 100.0mm of trees.

Rectification of Defects

6.2.6 Should bare patches of grass develop, area is to be cultivated to 150.0mm and then seeded with amenity grass seed. To be cross sown in two directions at right angles to each other, (half the seed being used in each direction) at the rate of 35.0 gm per square meter and the ground lightly raked over on a still, dry day.

6.3 Ornamental Shrubs / Herbaceous Planting

Planting

6.3.1 All areas of ornamental shrub are to be retained within the proposed scheme.

Watering

6.3.2 All plants shall be watered as may be required to maintain healthy growth and subsequently in cases of extreme drought (Trees – 5Ltr's per tree, Shrubs 1Ltr each, Grass 5Ltr's/m2). Watering to commence following 10 consecutive days of no rainfall, during the months of June to August. Any failures due to drought shall be replaced during the next optimal planting season.

Pruning

6.3.3 Shrubs should be checked bi-annually for shape, form, and size, and pruned accordingly whilst they are still in leaf.

6.4 Native Trees, Shrubs and Hedges

Planting and Establishment

6.4.1 No new planting is proposed in the scheme.

Watering

6.4.2 All plants shall be watered as may be required to maintain healthy growth and subsequently in cases of extreme drought (Trees – 5Ltr's per tree, Shrubs 1Ltr each, Grass 5Ltr's/m2). Watering to commence following 10 consecutive days of no rainfall, during the months of June to August.

Pruning / Trimming – Ongoing

6.4.3 Pruning and trimming of trees and hedges should be carried out outside of the bird breeding season (*nesting season: March – August inclusive).* Trees and shrubs should be checked bi-annually for shape, form, and size, and pruned accordingly. Hedges should be cut in alternate years, if possible, to allow species to flower and fruit on the previous year's growth. Pruning of hedgerows should be carried out in such a way to achieve a dense hedgerow.

Weeding

6.4.4 Areas around plants should be kept clear of weeds by weeding twice a year in the Spring and Autumn. Any litter or debris should be removed as soon as it is found.

Fertiliser

6.4.5 Slow release 11:22:9 NPK fertiliser at a rate of 50g / tree to be applied annually to the base of each tree. Fertiliser is to be applied in spring.

6.5 Log Piles

Maintenance

6.5.1 Log pile is to be checked annually and topped up as necessary. Wire securing piles should be checked for safely and remedial measures taken as and when required.

6.6 Bat Boxes

Maintenance

6.6.1 The bat boxes specified above do not require any cleaning. A visual inspection should be carried out annually to ensure the boxes remain in good condition and securely affixed to the trees.

6.7 Hedgehog Home

Maintenance

6.7.1 The hedgehog specified above does not require any cleaning. A visual inspection should be carried out annually to ensure the boxes remain in good condition and the entrance is not blocked.

6.8 Bird and Invertebrate Boxes

Maintenance

6.8.1 No maintenance necessary. A visual inspection should be carried out annually to ensure the boxes remain in good condition and securely affixed to the trees.

7.0 LONG-TERM MANAGEMENT AND MONITORING

7.1 Modified Grassland

Rectification of Defects

7.1.1 The condition of the modified grassland areas overall should be inspected and monitored on an annual basis over the 30-year management period. Should bare patches of grass develop during this time, the area is to be cultivated to 150.0mm and then seeded with amenity grass seed; to be cross-sown in two directions at right angles to each other (half the seed being used in each direction) at the rate of 35.0 gm per square metre and the ground lightly raked over on a still, dry day when the top 25.0mm of soil is dry. Within the 30-year management period following monitoring due to condition it may be decided that the lawn should be re-seeded / re-turfed in its entirety.

7.2 Ornamental Shrubs / Herbaceous Planting

Thinning, Dividing, and Plant Replacement

7.2.1 Trees and shrubs should be checked bi-annually for shape, form, and size, and pruned accordingly whilst they are still in leaf. On a 5-year cycle areas of ornamental shrub planting and herbaceous planting should be reviewed for size and spacing and any requirement for removal and thinning should be assessed. Herbaceous plant material should be divided and managed on a routine basis to maintain vigour. Any leggy, failed, or defective plant material should be replaced within the soft landscape planting scheme. A review of the soft landscape scheme should be undertaken in years 1-3, 5, 7, 10 and each 5 years thereafter to advise of any removal or replacements required.

7.3 Native Trees and Hedgerows

Thinning, Pruning, and Plant Replacement

7.3.1 Pruning and trimming of trees, shrubs, and hedgerows should be carried out outside of the bird breeding season (nesting season: March – August inclusive). Trees and shrubs should be checked bi-annually for shape, form, and size, and pruned as appropriate to the species, whilst they are still in leaf. Hedges should be cut in alternate years, if possible, to allow species to flower and fruit on the previous year's growth.

7.3.2 Pruning of hedgerows should be carried out in such a way to achieve a dense hedgerow. On a 5-year cycle native trees shall be reviewed for size and spacing and any requirement for removal and thinning should be assessed.

7.3.3 Existing mature trees are to be inspected annually, or following periods of high winds, for signs of poor health or defects; remedial action will be taken where required. All work is to be undertaken by a suitably qualified tree surgeon.

7.4 Log Piles

Inspection and Replacement

7.4.1 An area of dead wood should be created as the logs breakdown and get replenished. The condition of the log pile should be checked on an annual basis and replenished where necessary.

7.5 Bird, Bat and Invertebrate Boxes

Inspection and Replacement

7.5.1 The bat boxes specified above do not require any cleaning. A visual inspection should be carried out annually to ensure the boxes remain in good condition. If the boxes have broken down or disintegrated, they should be replaced. A visual inspection should be carried out annually to ensure the boxes remain in good condition. Boxes which have shown no signs of use after 3 years should be moved to a more appropriate location if considered necessary during the monitoring visits.

7.6 Hedgehog home

Inspection and Replacement

7.6.1 The hedgehog home specified above does not require any cleaning. A visual inspection should be carried out annually to ensure the home remains in good condition and that the entrance is not completely blocked. If the home has broken down or disintegrated, it should be replaced.

7.7 Monitoring and Reporting

7.7.1 Monitoring of ecological compensation and enhancement measures shall take place each year on years 1-3 after completion, as well as years 5, 7, 10 and each 5 years after for a period of at least 30 years.

7.7.2 Any remedial measures which are identified as required shall be undertaken at the earliest opportunity following any inspection.

8.0 IMPLIMENTATION SCHEDULE

Table No. 01 – Annual Maintenance Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
MODIFIED GRASSLAND												
Mowing				X	X	X	X	X	X	X		
Strimming												
Weed Control					X					X		
Top Dressing				X								
Scarifying and Spiking										X		
ORNAMENTAL SHRUBS												
Watering (as required)				X	X	X	X	X	X	X		
Replace Losses											X	
Pruning			X							X		
NATIVE TREES, SHRUBS & HEDGING												
Watering (as required)				X	X	X	X	X	X	X		
Pruning			X									
Replace Losses											X	
Maintain 500mm dia. clear base				X		X		X				
Weeding					X				X			
BIRD, BAT, INVERTEBRATE BOXES, HEDGEHOG HOME												
Cleaning (bird boxes)										X		
Check condition											X	
LOG PILES												
Check Integrity			X							X		
Re-stock if needed			X							X		
COMPOST												
Check Integrity			X							X		

Table No. 02 – Long-Term Monitoring and Management Plan

	Y 1	Y 2	Y3	Y 5	Y7	Y10	Y15	Y20	Y25	Y30
MODIFIED GRASSLAND										
Rectification of Defects	X	X	X	X	X	X	X	X	X	X
Review of Lawn Condition	X	X	X	X	X	X	X	X	X	X
ORNAMENTAL SHRUBS										
Thinning and Dividing	X	X	X	X	X	X	X	X	X	X
Review of Condition of Soft Landscape Overall	X	X	X	X	X	X	X	X	X	X
Replacement of Defective Planting	X	X	X	X	X	X	X	X	X	X
NATIVE TREES, SHRUBS & HEDGING										
Tree Pruning / Thinning	X	X	X	X	X	X	X	X	X	X
Review of Tree Planting Overall	X	X	X	X	X	X	X	X	X	X
Replacement of Defective Planting	X	X	X	X	X	X	X	X	X	X
BIRD, BAT, INVERTEBRATE BOXES, HEDGHOG HOME										
Check Condition / Replace	X	X	X	X	X	X	X	X	X	X
LOG PILES										
Re-stock If Needed	X	X	X	X	X	X	X	X	X	X
COMPOST										
Re-stock If Needed	X	X	X	X	X	X	X	X	X	X

Appendix A – Ecological Enhancement Plan



***Position of proposed ecological enhancements**. Log piles are represented by a red rectangle. A hedgehog home is represented by a dark blue circle. An invertebrate box is represented by a light blue circle. Bird boxes are represented by red circles. Bat boxes are represented by yellow circles. Overlaid figure obtained from Mountford Pigott Landscape Plan.*