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STRATA STERLING BARNESLEY WEST

BARNESLEY WEST

UPDATED FRAMEWORK BIODIVERSITY AND ECOLOGICAL MANAGEMENT PLAN

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1 INTRODUCTION

1.1 Terms of Reference

1.1.1 Wardell Armstrong LLP (WA) was commissioned by Strata Sterling Barnsley West Ltd to provide an update to the Framework Biodiversity and Ecological Management Plan (BEMP) for a proposed mixed use development scheme located on land west of Barnsley, South Yorkshire, following post-application consultation with the LPA and consultees. This report addresses the comments received by the LPA ecologist with areas of the report amended highlighted in **yellow** for ease of review.

1.1.2 A Preliminary Ecological Appraisal report (PEA), a Biodiversity Offsetting Assessment and a series of protected species baseline reports have been produced by Wardell Armstrong (WA, 2023, 2024), to set out measures required to avoid/mitigate potential effects associated with the development proposals.

1.1.3 In general terms, this report outlines the management and maintenance of habitats, and ecological mitigation measures to ensure that the development proposals are in line with the National Planning Policy Framework (NPPF, 2023) and published British Standards (2013) BS 42020:2013 Biodiversity - Code of practice for planning and development and addresses comments from the LPA review (where necessary).

1.2 Objectives of the BEMP

1.2.1 This BEMP should be read in conjunction with the Preliminary Ecological Appraisal (PEA) and the Environmental Statement (Chapter 7) prepared by Wardell Armstrong LLP, 2023.

1.2.2 This BEMP includes measures for the establishment and management of existing and proposed habitats only. Species enhancement measures are provided separately within the ES Chapter (WA, 2023), and will be detailed within a Landscape Ecological Management Plan (LEMP) to be secured by planning condition.

1.2.3 The broad objectives are to:

- establish and maintain newly created habitats;
- maintain and enhance retained vegetation;
- contribute to local and national objectives i.e. by enhancing the habitats to ensure Biodiversity Net Gain.

2 HABITAT CREATION, ESTABLISHMENT AND MANAGEMENT

2.1 Introduction

2.1.1 The following habitat creation and management guidelines have been prepared with respect to the development proposals and the Biodiversity Net Gain (BNG) assessment. The Landscape Masterplan for the Site (drawing reference: P11754-00-001-GIL-0100 REV 09) shows the location of the habitats to be created.

2.2 Woodland and Scattered Trees

2.2.1 New areas of mixed deciduous and broadleaved woodland are proposed, particularly around the periphery of the Employment Area. Further areas of woodland are proposed along stretches of the boundary of the Residential Area.

2.2.2 Scattered trees are also proposed throughout the strategic landscaping areas, within the species-rich grassland, wildflower meadow and wet meadow.

2.2.3 Native tree species will be used for both the woodland and scattered tree planting.

Establishment and Management

1.1.1 The following recommendations should be adhered to for the creation and management of new areas of mixed woodland:

- Where possible, trees should be planted during the dormant season (October to April), but not during prolonged cold spells where frost might penetrate to the roots. This is fundamental for all planting which is not container grown. All planting should follow established horticultural practices;
- Do not plant new specimens if the soil is waterlogged;
- Soil preparation including loosening of the soil to a depth equivalent to the height of the rootball and over a wide area. This will improve drainage whilst eliminating compaction;
- Incorporate organic matter (shredded bark, woodchip) to improve soil structure.
- All trees to be protected with 100 mm diameter, 600 mm high tube/ mesh rabbit protection, fixed with stakes as specified;
- Creation of protection zones around newly planted shrubs, in line with the BS 5837: 2012 Trees in relation to design, demolition and construction (BSI, 2012);
- Creation of protection zones around newly planted trees, in line with the BS 5837: 2012 Trees in relation to design, demolition and construction (BSI, 2012); and
- Sufficient spacing between trees (as defined by landscape architect).

Management (first five years of operation)

1.1.2 Long-term management of woodland will only include the areas of mixed woodland planted as a part of the proposals. **None of the management within this section should be applied to the retained Ancient Woodland.**

1.1.3 The following long-term management practices are recommended for the areas of mixed woodland:

- Deadwood and fallen limbs / trees should be left in place so as to create habitat for bats, birds, invertebrates, fungi, lichens and mosses;
- Where deadwood needs to be removed i.e. for safety reasons, brush piles should be created elsewhere within the woodland. These will provide suitable habitat for invertebrates and hedgehog;
- Thinning where required (removal of less desirable trees) to create more space for specimens to grow and to let allow light to the woodland floor, which will promote understory and ground flora;
- Thinning to be carried out at regular intervals (e.g. every 10-15 years for broadleaved trees), following the advice of a suitably qualified landscape architect or forestry contractor; and
- Thinning to be undertaken outside of the nesting bird season (March – September inclusive). If this is not possible, thinning to be undertaken after a suitable qualified ecologist (SQE) has checked the tree for active bird nests.

2.3 Native Hedgerow / Scrub

2.3.1 Species-rich native hedgerow will be created across the development, particularly to the south of Hermit Lane within the Employment Area. Areas of scrub area also proposed across the strategic landscaping areas. This includes areas of native scrub, the majority of which is proposed around the Ancient Woodland within the 15m buffer area. An area of rocky gorse scrub is also proposed to the south-east of the Site, and wet scrub is proposed around the SUDs basins.

Establishment and Management

2.3.2 The following management is recommended for all newly planted hedgerows and scrub habitat:

- New shrubs should be planted from mid-autumn – late winter.
- Do not plant new specimens if the soil is waterlogged or frozen.
- Soil preparation to ensure it is friable (has a crumbly texture) and is free from other growth.
- Roots should be protected (covered) prior to planting, particularly in windy and sunny weather.
- New shrubs should be well watered for the first two years.
- Plant hedgerows in double rows where possible, which will increase their biodiversity value.
- Newly planted shrubs will be provided protection (tubes) from grazing and support (stakes).
- Creation of protection zones around newly planted shrubs, in line with the *BS 5837: 2012 Trees in relation to design, demolition and construction* (BSI, 2012).

Management (first five years of operation)

- Occasional trimming of shrubs and hedgerows between January – February (inclusive); and
- Hedgerows to be trimmed on a 3-year rotation, incrementally raising the cutting height each year to ultimately achieve 3m in height.

2.4 Grassland

2.4.1 Areas of neutral grassland are proposed across the Site. This includes species-rich areas, which comprise the majority of the strategic landscaping areas. Areas of wildflower meadow have also been included, and wet meadow is proposed around the SUDs basins.

Establishment and Management

2.4.2 The following management is recommended for newly planted grassland:

- Seeds are best sown on the autumn or spring;
- Seeds must be surface sown and applied using a machine or by hand;
- Divide seeds into two or more parts and sow in overlapping sections to allow for even distribution and prevent running out; and
- Do not incorporate or cover seeds – firm in with a roll or by treading.

Management (First year)

1.1.4 The following management is recommended for the first year:

- Within the first growing season a flush of annual weeds is likely, this can be controlled by topping or mowing;
- Newly sown meadows to be mown regularly in first year to height of 40-60mm, with arisings removed;
- Annuals should be allowed to flower, with a cut in the mid-summer and arisings removed; and
- Perennial weeds such as dock should be removed.

Management (once established)

1.1.5 The following management is recommended once the habitat is established:

- An annual (autumn) hay cut, with arisings removed;
- Cut rotated each year so that at least half the area of grassland remains uncut for wildlife.

2.5 Drainage features

2.5.1 Across the Site, nine SUDs basins, one pond and several swales are proposed.

Establishment and Management

2.5.2 Waterbodies should be allowed to fill naturally, and aquatic vegetation allowed to naturally colonise waterbodies.

Management (first five years of operation)

1.1.6 The following management is recommended for drainage features. All management should be undertaken outside of the amphibian and bird breeding season (October – February inclusive):

- Retaining a minimum of 25% water (volume) within permanent ponds to prevent them becoming choked with vegetation.
- Management of trees and shrubs adjacent to prevent complete shading;
- Desilting where necessary;
- Routine checks for fish and non-native invasive species;
- Removal of litter; and
- General condition checks and delivery of remedial works.

3 RETAINED HABITAT ENHANCEMENT MEASURES

3.1 Introduction

3.1.1 Habitats which are to be retained on Site will be enhanced and managed following the methods as outlined above. Further management as to protect retained habitats and nearby designated sites which may be impacted by the works, are outlined below.

3.2 Woodland, Scattered Trees and Native Hedgerow

3.2.1 All of the existing woodland, including all the Ancient Woodland, plus a number of scattered trees across the Site will be retained. Some lengths of hedgerow will be retained where possible, including those along Hermit Lane.

3.2.2 All retained woodland, trees and hedgerow will be protected by a root protection zones (RPZ's), in line with *BS 5837: 2012 Trees in relation to design and construction* (BSI, 2012). The Ancient Woodland will be protected by a 15m buffer from the extent of the canopy. Buffers will be demarcated with fencing to exclude works and machinery encroachment.

3.2.3 Retained Ancient Woodland will not be subject to any enhancement, excluding removal of non-native invasive species such as Himalayan balsam *Impatiens glandulifera*. However, mitigation measures and management will be implemented to ensure there are no adverse impacts upon occupation of the site. This will include:

- Installation of interpretation boards and dog waste bins;
- Monitoring checks with associated reporting every third year to assess impacts and requirements for management revisions. This will commence immediately following the completion of works and will continue for a minimum fifteen-year period.

3.3 Native Hedgerow

3.3.1 Hedgerows will be retained where possible, including those along Hermit Lane.

3.3.2 Retained hedgerows will be protected by root protection zones, in accordance with *BS 5837: 2012 Trees in relation to design and construction* (BSI, 2012). Buffers will be demarcated with fencing to exclude works and machinery encroachment.

3.3.3 In order to manage hedgerows for the benefit of biodiversity and wildlife the following enhancements shall be undertaken:

- Lay hedgerows to provide a dense structure in the long term, A third of each hedgerow to be laid in any one year with remaining lengths laid every other year such that entire hedgerow lengths are laid over a six year period.

- Ideally, once established the hedgerows should be maintained to an A-shape to maintain a dense structure at the base and cover for nesting birds. Management of hedgerows should be on a rotation to ensure availability of fruits/nuts/seeds.
- Trim no more than one third of the length each year.
- Re-lay hedgerows after 15-20 years depending on growth extents and requirements. As per initial management, laying should be done over no more than 1/3 of hedgerow length.

3.4 Red Brook Pastures LWS

3.4.1 The Red Brook Pastures LWS which is located outside the site boundary and approximately 30m distant, will be retained and shall not be directly impacted by works.

3.4.2 To prevent indirect effects upon occupation of the site, interpretation boards and dog waste bins will be installed to mitigate for any additional recreational pressure. Furthermore, monitoring checks with associated reporting will be undertaken every third year to assess impacts and requirements for management revisions. This will commence immediately following the completion of works and will continue for a minimum fifteen-year period.

4 CONCLUSION

4.1 Conclusion

- 4.1.1 In conclusion, the management prescriptions outlined above show that the Site can be managed to provide biodiversity benefits. The Site should be managed and maintained in accordance with the above recommendations for 30 years to align with the recommendations enhancing the habitats to ensure biodiversity value can be achieved on Site. The establishment of habitats such as species rich grassland and hedgerow will provide an overall benefit to wildlife. In addition, the Site can be managed to enhance and manage habitats which will benefit a range of faunal populations.

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