# Sandhole Lane, Westbury Leigh, Wiltshire

# Landscape and Ecology Management Plan

## March 2024

A report on behalf of Wain Homes (Severn Valley)

Ref: 1712B-LEMP-VB-REV2

www.ge-consulting.co.uk - 01647 253652 - info@ge-consulting.co.uk

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Registered office: Unit 11A, Gidleys Meadow Business Park, Christow, Devon, EX6 7QB. VAT Number 160595992

## Site Details

| | |
|---|---|
| Site Name | Sandhole Lane |
| Site Location | Westbury Leigh, Wiltshire |
| Central OS Grid Reference | ST 864 498 |
| Client | Wain Homes (Severn Valley) |

## Quality Assurance

| | |
|---|---|
| Report Title | Landscape and Ecology Management Plan |
| Report Reference | 1712B-LEMP-VB-REV2 |
| Author (s) | Vicki Baldwin BSc MSc |
| Checked By | Lindsay Taylor BSc MSc ACIEEM |
| Approved By | Richard Pash BSc MCIEEM |
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| Revised By | Vicki Baldwin BSc MSc |
| Approved By | Richard Pash BSc MCIEEM |

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# 1 INTRODUCTION

This Landscape and Ecology Management Plan (LEMP) has been produced by GE Consulting in relation to a residential development at Sandhole Lane, Westbury Leigh, Wiltshire (central OS grid reference: ST 864 498), hereafter referred to as the 'Site'.

This LEMP serves a period of 5-years following commencement of development. It will be reviewed and updated at the end of this period when new habitats have established, however is capable of being rolled out over a 25-year period.

## 1.1 Background

The Site benefits from outline consent granted at appeal (ref. Appeal Decision APP/Y3940/W/21/3275352 Feb 2021) for a development of up to 67 dwellings with associated access and highway works, drainage and attenuation, open space, play area, allotments and landscaping (access to be determined, all other matters reserved). This document was commissioned in order to discharge Condition 16 attached to the consent which states:

"*A Landscape and Ecological Management Plan (LEMP) shall be submitted to and be approved in writing by the Local Planning Authority prior to the commencement of the development. The content of the LEMP shall include the following:*

*a) Description and evaluation of features to be managed.*
*b) Landscape and Ecological trends and constraints on site that might influence management.*
*c) Aims and objectives of management.*
*d) Appropriate management options for achieving aims and objectives.*
*e) Prescriptions for management actions.*
*f) Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period).*
*g) Details of the body or organization responsible for implementation of the plan.*
*h) On-going monitoring and remedial measures.*
*i) Details of how the aims and objectives of the LEMP will be communicated to future occupiers of the development.*

*The LEMP shall also include details of the legal and funding mechanism(s) by which the long-term implementation of the plan will be secured by the developer with the management body(ies) responsible for its delivery. The LEMP shall also set out (where the results from monitoring show that conservation aims and objectives of the LEMP are not being met) how contingencies and/or remedial action will be identified, agreed and implemented. The LEMP shall be implemented in full accordance with the approved details*."

## 1.2 Site Description

The site comprises a single large arable field and an adjacent smaller area of poor semi-improved grassland, which was previously divided into paddocks. The fields are primarily bordered by fence lines, with scattered bramble scrub, tall ruderal vegetation and mature trees also bounding the site. The north-western corner of the site is an area previously used as a small holding with derelict sheds and plantation woodland. Other habitats on the Site include a pond and a number of hardstanding access tracks.

## 2 AIMS OF LEMP

The aims of this document are to:

- Provide details on mitigation, compensation and enhancement measures to ensure no net loss of biodiversity and no adverse effects on the landscape character of the area;
- Provide sufficient detail to ensure the retained and new habitats are managed and maintained in the long-term to benefit biodiversity, landscape function and/or recreation;
- Provide a timetable for the implementation of the LEMP; and,
- Provide a monitoring framework to ensure that appropriate refinements and/ or revision of the plan can be made, in order to promote any objectives/ targets of the LEMP.

This LEMP should be read in conjunction with the following Landscape and Lighting Plans which are provided at **Appendix 1**:

- LT Studio LTS_134(01)101 REV G. *Sandhole Lane, Westbury. Landscape General Arrangement Plan.*
- LT Studio LTS_134(01)102 REV F. *Sandhole Lane, Westbury. Landscape Planting and Equipment Schedules.*
- Williams Lighting Consultants Ltd. WLC897-1300-001. *Westbury Leigh Section 38. Proposed Adoptable Lighting Layout.*

## 3 BIODIVERSITY NET GAIN STRATEGY

**3.1** Full details of the BNG assessment are provided in **Appendix 2** and accompanying plans are provided in **Figure 1** and **Appendix 1**.

### 3.2 Rationale

Biodiversity Net Gain (BNG) is an approach to development that leaves biodiversity in a better state than before. The Environment Act 2021 mandates a 10% net gain in biodiversity for developments which will be enforced following a two-year transitionary period and the passing of secondary legislation by November 2023.

### 3.3 Metric Headline Results (Onsite Measures)

The Biodiversity Metric Calculation Tool submitted as part of the planning application detailed the biodiversity net gain assessment using the DEFRA Biodiversity Metric 4.0 (GE Consulting, 2023).

This showed that with onsite measures implemented, the development will deliver a **net gain** in habitat and linear units (see **Table 1**). The baseline habitat condition assessments that were submitted with the outline application (EAD 2020) were used to calculate the baseline habitat units.

**Table 1: Headline Results**

| | **Habitat Units** | **Hedgerow Units** |
|---|---|---|
| **On-site Baseline** | 12.04 | 0.17 |
| **On-site Post-intervention** | 19.45 | 2.71 |
| **On-site Net Unit Change** | 7.41 | 2.54 |
| **On-site Net % Change** | + 61.58% | + 1496.45% |

# 4 BNG DELIVERY PLAN

This section describes the objectives for each habitat (requiring management) to be provided on site, with criteria to be met by the 'Time to Target Condition' and for the remainder of the 30-year period. Ongoing monitoring (see **Section 7**) will be assessed against these criteria (based on metric 4.0 condition criteria).

Locations of proposed habitats are shown in the Landscaping Plans provided in **Appendix 1** and are also shown on **Figure 1**. All landscaping is to be undertaken within the first planting season following completion of construction.

**Table 2: Habitat Delivery and Objectives**

| Habitat Type (as shown on Landscaping Plans (Appendix 1) | Location | Target Area | Target Condition | Time to Target Condition (years) | Target Criteria (using Metric 4.0 Condition Assessment) |
|---|---|---|---|---|---|
| Broadleaved woodland – moderate condition (retained) | • North western boundary | 0.18ha | N/A | N/A | • Ongoing management as currently undertaken.<br>• To be protected during construction with Tree Protection Fencing. |
| Native hedgerow, poor condition (retained and enhanced) | • H1 – along eastern boundary | 0.085km | Moderate | N/A | Infill planting anticipated to pass the following criteria:<br>• The hedgerow will be maintained to provide a dense structure of at least 1.5m tall.<br>• Gap between ground and base of canopy shall be <0.5 m for >90% of length.<br>• Gaps make up<10% or total length.<br>• Plant species indicative of nutrient rich soils dominate <20% of cover.<br>• >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species. |
| New species-rich hedgerows | • Along southeastern and western boundaries | 0.38km | Moderate | 5 | Anticipated to pass the following criteria:<br>• The hedgerows will be maintained to provide a dense structure of at least 3m tall and 1.5m wide<br>• Gap between ground and base of canopy shall be <0.5 m for >90% of length.<br>• Gaps make up<10% or total length.<br>• Plant species indicative of nutrient rich soils dominate <20% of cover.<br>• >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species. |
| Mixed scrub | • To buffer existing boundaries to south and east. | 0.318ha | Moderate | 5 | Anticipated to pass the following criteria:<br>• Meets the UKHab description, with at least native 3 woody species, with no single species occupying more than 75% of the cover.<br>• Absence of invasive non-native species (as listed on Schedule 9 of WCA 1981)<br>• The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitats. |
| Individual trees – small | • 254 new native species trees to be planted throughout the development within POS and residential and communal areas. New | 1.03ha | Moderate | 27 | Anticipated to pass the following criteria:<br>• Native species<br>• The tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area |

| Habitat Type (as shown on Landscaping Plans (Appendix 1) | Location | Target Area | Target Condition | Time to Target Condition (years) | Target Criteria (using Metric 4.0 Condition Assessment) |
|---|---|---|---|---|---|
| | tree planting (**Appendix 1**) includes oak, field maple, beech and bird cherry as these are preferred food source of cockchafer in their adult stage. | | | | and no individual gap being >5 m wide (individual trees pass this criterion automatically)<br>• There is little or no evidence of adverse impacts on tree health by anthropogenic activities (e.g., vandalism, pesticides).<br>• More than 20% of the tree canopy is oversailing vegetation beneath. |
| Community Orchard | • Eastern corner of the site | 0.02ha | Moderate | 5 | Anticipated to pass the following criteria:<br>• Less than 5% of fruit trees smothered by scrub.<br>• Evidence of formative pruning to maintain longevity of trees.<br>• At least 95% of trees are free from damage caused by humans or animals.<br>• There is absence of invasive non-native plant species. |
| Introduced Shrub | • Throughout the development within residentail and communal areas. | 0.143ha | N/A | / | • Shrub planting will provide an attractive community space, with healthy native specimens, while avoiding conflict with structures or services or circulation routes.<br>• Planted in accordance with the Landscape Plans as provided at **Appendix 1** avoiding periods of inundation or prolonged ground frost. |
| Amenity grassland/ Vegetated gardens | • Gardens within the development and in communal areas | 0.406ha | N/A | / | • Front lawns will receive good quality amenity grass turf, laid in accordance with good horticultural practice.<br>• Amenity grassland areas in Public Realm and Public Open Space to be seeded with a lawn mix such as Emorsgate EG22 – Strong Lawn Mix. |
| Wildflower meadow grassland, other neutral | • Species-rich wildflower areas proposed in the POS, surrounding the allotments and along the northern boundary (Emorsgate EM1 – Basic General-Purpose Meadow Mix or similar). | 1.156ha | Moderate | 5 | Anticipated to pass the following criteria:<br>• Good representation of habitat type.<br>• Cover of bare ground to be between 1 and 5% of total grassland.<br>• Cover of bracken less than 20% and cover of scrub less than 5%.<br>• All invasive non-native species removed and signs of physical damage to be less than 5%. |
| Allotments | • South western corner | 0.45ha | Moderate | / | Anticipated to pass the following criteria:<br>• Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. |

| Habitat Type (as shown on Landscaping Plans (Appendix 1) | Location | Target Area | Target Condition | Time to Target Condition (years) | Target Criteria (using Metric 4.0 Condition Assessment) |
|---|---|---|---|---|---|
| | | | | | • Contains different plant species that are beneficial for wildlife.<br>• Invasive non-native plant species and others which are to the detriment of native wildlife cover less than 5% of the total area. |
| Wetlands, SUDs areas, other neutral grassland | • Along the northern boundary (Emorsgate EM8 – Meadow Mixture for Wetlands or a similar variety) | 0.114ha | Moderate | / | Anticipated to pass the following criteria:<br>• Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed.<br>• Contains different plant species that are beneficial for wildlife.<br>• Invasive non-native plant species and others which are to the detriment of native wildlife cover less than 5% of the total area. |
| Local Equipped Area of Play (LEAP) | • In the southern area of POS. | 0.042ha | N/A | / | Anticipated to pass the following criteria:<br>• Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed.<br>• Contains different plant species that are beneficial for wildlife.<br>• Invasive non-native plant species and others which are to the detriment of native wildlife cover less than 5% of the total area. |

## 4.1 Protected Species Enhancements

- Enhance the Site for nesting/ roosting bats and birds by providing 10 bat boxes and 25 bird boxes on dwellings, with a further 5 bat and 5 bird boxes on retained trees throughout the development, as per **Table 3** below and Landscape General Arrangement Plan (**Appendix 1**);
- Three reptile hibernacula to be created in the POS and SuDS areas;
- An artificial badger sett will be created along the western boundary of the Site; and
- The layout will maintain commuting routes for bats, via dark corridors (including a 15m buffer between built development and retained woodland on the west of the Site – see **Appendix 1**), to enable them to continue to navigate through the Site.

**Table 3: Protected Species Features**

| Quantity | Type and Illustration | Location and description |
|---|---|---|
| **30 no. bird nest boxes** |  | *Building integrated*<br>• Swifts: Schwegler Type 1A (or acceptable equivalent).<br>• Installed as high as possible above ground (ideally at least 4m), ensuring that there is unobstructed access for birds entering and leaving.<br>• Boxes should be sited under the shelter of eaves or overhanging roofs.<br>• Entrance out of direct sun, preferably north or east-facing. |
| **5 no. sparrow terraces** |  | *Building mounted*<br>• Schwegler 1SP House Sparrow Terrace (or acceptable equivalent).<br>• Installed as high as possible above ground (ideally at least 4m), ensuring that there is unobstructed access for birds entering and leaving.<br>• Boxes should be sited under the shelter of eaves or overhanging roofs.<br>• Entrance out of direct sun, preferably north or east-facing. |
| **5 no. hole nesting bird boxes** |  | *Tree mounted*<br>• Schwegler Nest Box 1B (or acceptable equivalent).<br>• The box should be positioned a minimum of 1.2 - 2m above ground, so it can be checked and cleaned if necessary, or higher if feasible.<br>• Can easily be hung from a branch of a fruit tree or a single nail if necessary. |
| **5 no. Built In Open nest box** |  | *Building integrated*<br>• WoodStone Build In Open Nest Box (or acceptable equivalent).<br>• Designed to be built into newly constructed or renovated walls to porivde nesting cavities for bird species wuch as robin, wagtail and black redstart.<br>• Install away from any lighting.<br>• Integrated into external wall of building and requires no maintenance. |

| | | |
|---|---|---|
| **10 no. bat boxes** |  | *Building integrated*<br>• Schwegler 1FR bat tubes (or acceptable equivalent).<br>• The box should be positioned a minimum of 3m above the ground and where there is a clear flight path for bats to linear vegetation (e.g. hedgerows).<br>• Install away from any lighting.<br>Integrated into external wall of building and requires no maintenance. |
| **5 no. tree mounted bat boxes** |  | *Tree mounted*<br>• Schwegler 2F Bat Box (or acceptable equivalent).<br>• The box should be positioned on the trunk a minimum of 3m above ground, so it can be checked and cleaned if necessary, or higher if feasible.<br>• As 3 boxes are being installed they should vary in their height and direction (1 eastern, 1 western, 1 southern) to provide a range of conditions that bats can utilise. |
| **Reptile Hibernacula/ Habitat piles** |  | Provide hibernacula/ resting places for fauna such as reptile, mammals and invertebrates.<br><br>Constructed from cut logs and rubble, topped with loose soil and turf. Approximately 1m x 2m x 1m.<br><br>Located in the SuDS area to the north, the western boundary near the allotments and the eastern boundary near the orchard. |

## 5 MANAGEMENT MECHANISM

This section describes how the LEMP will be implemented, who will fund it and who will be responsible for its delivery.

### 5.1 Managing Agent

Wain Homes (Severn Valley) will appoint a management company to implement all maintenance and management work within public areas during the post-construction phase. Until the appointment is in place, responsibility for implementation will rest with Wain Homes (Severn Valley).

Wain Homes (Severn Valley) or the management company will appoint landscape, ecological and arboricultural specialists to undertake required inspections and provide advice where necessary. The management company may also delegate some of the management responsibilities to community/resident groups, as required and in agreement with Wiltshire Council.

Delivery of management actions will be undertaken by Wain Homes (Severn Valley) up to the point of transfer to the management company. After this time, all management will be undertaken by the management company.

### 5.2 Funding

Wain Homes (Severn Valley) will fund the costs of compliance with the LEMP until practical completion of the development. Following occupation of the final dwelling, each household will be charged an annual management fee (precise sums to be agreed prior to sale and based pro rata on the number of bedrooms in each dwelling). The Managing Agent shall use the funds for the purposes of delivering the LEMP, together with other site maintenance and insurance matters.

### 5.3 Management Constraints

The Site supports habitats suitable for nesting birds therefore, hedgerow and native shrub management should be undertaken between September and February inclusive or proceeded by a check by the project ecologist/ECoW (see Construction Environmental Management Plan – GE Consulting 2023).

During surveys conducted in 2020, low populations of grass snake *Natrix helvetica* and slow worm *Anguis fragilis* were recorded on the Site. Precautionary methods for vegetation clearance including a two staged cutting of tall ruderal and long grassland areas will be implemented in order to avoid harm (see Construction Environmental Management Plan – GE Consulting 2023).

The Site supports suitable habitat for hedgehogs. The precautionary methods as described for common reptiles and amphibians will also ensure no hedgehogs are harmed.

An outlier badger sett is present in the centre of the Site and will be subject to closure under licence from Natural England. If construction commences on site prior to sett closure then an appropriate exclusion zone will be established to ensure that there are no impacts to the sett and that badgers will be able to move freely outside of the construction zone.

An artificial badger sett will be constructed within the

## 6 MANAGEMENT SCHEDULE

### 6.1 General Management Responsibilities

The approved contractors responsibilities will include (but not be limited to) the following;

- Ensuring that operatives implementing the LEMP are suitably skilled and experienced;
- Ensuring the work is carried out in a safe manner avoiding risks to the health and safety of their employees, users of the site and general public. A site specific risk assessment should be submitted prior to the commencement of the work;
- Undertaking work without inconvenience or disturbance to the site occupants or neighbouring occupants. Access to the site and the work shall be undertaken with due regard to the needs of those using the site and surroundings;
- Work shall be timed to avoid unnecessary nuisance or disturbance to the site;
- Ensuring early establishment and healthy growth of all new plantings;
- Ensuring health and structure to existing, retained habitats;
- Watering plants as necessary to aid establishment during the early years after planting;
- Keeping planting areas generally free from weeds;
- Keeping planted areas clear of all litter and debris, including removing soil/ arisings from hard surfaces and paths;
- Removing arisings/ brash from Site unless otherwise agreed;

- Leave the site in a clean, tidy condition after any maintenance operations;
- General pruning and trimming as required ensuring footways, signs etc. are not obscured;
- Reporting and removing invasive and noxious plants;
- Replacing plants that fail where required;
- Thinning of planting where required to allow healthy future growth, at the appropriate time of year.

**Table 4** below provides a timetable for the establishment of the proposed mitigation measures as well as a maintenance specification for a period of 5 years post-completion. The established habitats will then be assessed and this document amended if necessary before being extended for a further period of time.

## Table 4: Work Programme

| Ecological Feature | Objective/ Target | Prescription/ Action | Year Post Commencement | | | | | Month | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | J | F | M | A | M | J | J | A | S | O | N | D |
| **General** | Protect ecology features for unnecessary harm during enabling and construction. | Site to be cleared in line with CEMP to ensure suitable safeguards to maintain populations of protected and notable species during construction and enabling works. | N/A | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Existing and new hedgerows and trees** | Protect existing hedgerows during construction. | Existing hedgerows and trees will be safeguarded in line with best arboricultural practice and ensuring the western woodland is protected. | Pre-commencement | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | No removal of woody vegetation will take place during the bird nesting season (March to August) unless checked by a qualified Ecologist. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Check by an ecologist required for nesting birds | | | | | | ✓ | ✓ | ✓ | ✓ |
| | Ensure new hedges are well-established and form healthy, dense, continuous linear features. | Implement proposed planting in accordance with the Landscape Plans as provided at **Appendix 1**. | ✓ | | | | | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | ✓ |
| | | It is essential to build up a supply of shoots at the base of native hedges, this can be encouraged by pruning long straggly growth. Until the hedge has reached its optimum height it is important to lightly clip the hedge every Autumn to encourage new growth, ensuring a good density and shape. Hedge management will be undertaken outside of the bird breeding season (March to August) unless checked by a qualified Ecologist. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | ✓ | ✓ |
| | | Spraying or strimming of weeds to reduce competition and aid establishment. Not required if weed suppression matting is used. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | | Hedges to be monitored during visits and treated to tackle pest and disease as required. | As required | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | | Mulch material to be maintained at a depth of 75mm for the first three years. | ✓ | ✓ | ✓ | | | | | ✓ | | | | | | | | | |
| | | Replace failed specimens on a like-for-like basis. | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | ✓ |
| | | The planting area will be kept weed free throughout the maintenance period using approved herbicides. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | | ✓ | | | | |
| | | Examine all guards and replace or adjust as appropriate. Remove guards once hedgerows established. | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Ensure persistence, not allowing plants to suffer | Where periods of extreme drought occur, plants that have not yet established (not healthy, not in full leaf, | ✓ | ✓ | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |

| Ecological Feature | Objective/ Target | Prescription/ Action | Year Post Commencement | | | | | Month | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | J | F | M | A | M | J | J | A | S | O | N | D |
| | from drought or become constricted by guards. | suppressed growth) need to be watered where their tolerance to drought is deemed insufficient. | | | | | | | | | | | | | | | | | |
| | Maintain native hedgerows at a minimum height of 3m and minimum width of 1.5m to allow darker corridors for nocturnal species. | Existing hedges to be flail cut on a 3-year rotation, with one third of all hedgerows cut each year, to maximise density. Hedgerows will be trimmed to create an 'A' profile. Top up mulch as required. Remove cut material from Site. Hedgerows will be taken through a Hedgerow Management Cycle provided in **Appendix 3.** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Check by an ecologist required for nesting birds | | | | | | ✓ | ✓ | ✓ | ✓ |
| | | Maintain any temporary fence until hedgerow well-established. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Specimen Trees, Orchard Trees, Shrub & Ornamental Planting** | Provide an attractive community space, with healthy trees, while avoiding conflict with structures or services or circulation routes. | Plant trees and scrub in accordance with the Landscape Plans as provided at **Appendix 1** avoiding periods of inundation or prolonged ground frost. | ✓ | | | | | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | ✓ |
| | | Tree works will follow best practice procedures as set out in BS 3998: 2010. No removal of woody vegetation will take place during the bird nesting season (March to August) unless checked by a qualified Ecologist. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Check by an ecologist required for nesting birds | | | | | | ✓ | ✓ | ✓ | ✓ |
| | | New trees to be watered every two weeks for the first two growing seasons (or as required). | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Where periods of extreme drought occur, trees that have not yet established (not healthy, not in full leaf, suppressed growth) need to be watered where their tolerance to drought is deemed to be insufficient. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | | Maintain a weed-free mulched area around the tree (500mm radius) for the first 3 years after planting in which no strimming is to take place. When trees have reached independence, the sward can be allowed to grow up to the trunk, although tall weeds will be removed from around the trees. Mulch is to be maintained at a depth of 75mm for the first three years. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | ✓ | ✓ | ✓ | ✓ | | | |
| | | Formative pruning to be undertaken as required. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | ✓ | ✓ | ✓ |
| | | Replace any dead, diseased or damaged trees. | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | ✓ |
| | | Trees to be monitored during visits and treated to tackle pest and disease as required. | As required | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |

| Ecological Feature | Objective/ Target | Prescription/ Action | Year Post Commencement | | | | | Month | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | J | F | M | A | M | J | J | A | S | O | N | D |
| | Ensure planted trees are protected and supported during early stages. | Examine all tree stakes and ties, replace or adjust as appropriate. If the tree has yet to establish, replace or adjust ties, spacers and tree tubes as appropriate. If the tree has established well after year 5, then remove all stakes, ties, spacers, tubes etc. - filing any holes with suitable topsoil. | ✓ | ✓ | ✓ | | | | ✓ | | | | | | | | | | |
| | Planting of robust species to provide an attractive environment. | Plant new shrubs and bulbs as per the Landscape Plans. | ✓ | | | | | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | ✓ |
| | Ensure shrubs are well-established and form healthy, dense, continuous linear features | Replace failed specimens on a like-for-like basis. | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | ✓ |
| | | The planting area will be kept weed free throughout the maintenance period using approved herbicides. | | | | | | | | | ✓ | | ✓ | | ✓ | | | | |
| | | New shrubs to be watered every two weeks for the first two growing seasons (or as required). | ✓ | ✓ | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | | New shrubs to be watered in periods of extreme drought (two or more weeks without substantial rainfall). | ✓ | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | Ensure health of plant stock. | Remove weed growth by hand and top up mulch levels as necessary to maintain a depth of 75mm. Dead-head after flowering. Prune back and remove spent stems and dead leaves. | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | | Prune back shrubs (no more than one third of woody growth) during October to February. Trim shrubs back from paths etc. Pruning will be carried out in accordance with accepted horticultural practice for each type of shrub, including climbers and with BS 7370-4, Clauses 3.6.3 to 3.6.5. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | ✓ | ✓ | ✓ |
| | | Neatly prune back and remove the spent stems of perennials during April to October. Care should be taken not damage the crown or emerging new growth. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | | Plants to be monitored during visits and treated to tackle pest and disease when required. | As required | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Shrub planting to be fertilised with ‘Enmag’ or similar annually for the first three years as per manufacturer’s instructions. Mulch material will need to be lifted to apply the fertiliser and replaced after. Ensure a substantial buffer zone is left between fertilised areas and wildflower areas. | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | | | | | | |

| Ecological Feature | Objective/ Target | Prescription/ Action | Year Post Commencement | | | | | Month | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | J | F | M | A | M | J | J | A | S | O | N | D |
| | General | All litter or other debris will be collected and removed by the contractor within the tree planting area. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Amenity Grassland** | Provide attractive, safe and functional communal areas. | Establish amenity grassland using good quality turves and a suitable seed mix (e.g. Emorsgate EG22 Strong Lawn Mixture) in the respective areas described in the Landscape Plans as provided at **Appendix 1** in accordance with the supplier's sowing instructions. | ✓ | | | | | | | ✓ | ✓ | | | | | ✓ | ✓ | | |
| | | Initial cut – when newly seeded amenity grassland reaches 50mm, they should be lightly rolled and cut to a height of 25mm. All arisings shall be removed, and bare patches made good. | ✓ | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | | Once established, maintain amenity grassland at a height of 25-50mm during the growing season ensuring to remove arisings from the Site. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | | Watering requirements will be monitored throughout the first two growing seasons for grassland areas. Mowing will be reduced during prolonged dry periods and the mowing height increased to 50mm at such times. Similarly, in very wet conditions all grass cutting operations will cease until conditions allow for grass cutting to take place. | As required | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | | Grass lawn areas to be fertilised in spring and autumn as per manufacturer's instructions for the first three years. Ensure a substantial buffer zone is left between fertilised and wildflower areas. | ✓ | ✓ | ✓ | | | | | ✓ | | | | | | ✓ | | | |
| | | All litter or other debris will be collected and removed by the contractor immediately prior to grass cutting operations. | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | | | | ✓ | ✓ | | |
| | Ensure grassland is well-established. | The Contractor will protect newly seeded areas where appropriate to prevent seedling destruction by pedestrians. Any worn or damaged lawns to be removed and re-seeded to match existing adjacent grass. | ✓ | ✓ | | | | | | | | | | | | | | | |
| **Allotments** | Provide well managed, functioning and attractive allotment plots | A committee will be assigned and in control of the management of the allotments | As required | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Attenuation features** | Provide effective water attenuation | Ensure attenuation basin is maintained to ensure vegetation doesn't inhibit drainage function. | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | | | | ✓ | ✓ |

| Ecological Feature | Objective/ Target | Prescription/ Action | Year Post Commencement | | | | | Month | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | J | F | M | A | M | J | J | A | S | O | N | D |
| | Integrate drainage features as part of attractive, safe and functional public open space | Establish wetland wildflower grassland areas using a suitable seed mix described in the Landscape Plans as provided at **Appendix 1** as per the supplier's sowing instructions. | ✓ | | | | | | | | ✓ | ✓ | | | | | ✓ | ✓ | |
| | | Initial cut - During first 12 months sward to be regularly cut to minimise competition and weed seed production. Cutting should be frequent enough to disperse the cuttings, or if less frequent remove the cuttings. Cutting to be suspended between April and July to allow flowering of annuals. Landscape Plans as provided at **Appendix 1**. | ✓ | | | | | | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | ✓ | ✓ |
| | | When newly seeded wetland areas reach 50mm they should be cut to a height of 25mm. Arisings will be removed from Site. Any bare patches shall be made good at this time. Meadow grassland suitable for wet soils shall be regularly maintained between 25 and 50mm during the first season after sowing. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | | | | | ✓ | | |
| | | Hand strim areas of persistent pernicious weeds within wetland areas either in late summer when adjacent grassland is mown or in early spring. Herbicides will not be used in wetland areas. | As required | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | Provide species-rich habitat for wildlife, in particular invertebrates. | Ensure that new planting includes native and 'wildlife-friendly' species such as those on the RHS Plants for Pollinators list. | ✓ | | | | | | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Grassland and Wildflower Areas** | Provide attractive, safe and functional communal areas and species-rich habitat for wildlife. | Establish amenity grassland using a suitable seed mix in accordance with Landscape Plans as provided at **Appendix 1**. | ✓ | | | | | | | | ✓ | ✓ | | | | | ✓ | ✓ | | |
| | | Establish wildflower areas within wildlife corridors mix in accordance with Landscape Plans as provided at **Appendix 1**. | ✓ | | | | | | | | ✓ | ✓ | | | | | ✓ | ✓ | | |
| | | Once established, maintain amenity grassland at a height of 20-55mm during the growing season ensuring to remove arisings from the Site. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | | Watering requirements will be monitored throughout the first two growing seasons for grassland and wildflower areas. Mowing will be reduced during prolonged dry periods and the mowing height increased to 50mm at such times. Similarly, in very wet conditions all grass cutting operations will cease until conditions allow for grass cutting to take place. | As required | | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | | Spot treat persistent pernicious weeds within areas of amenity grassland using herbicide following the first season's growth and/or manual hand strimming of target areas either in late summer when adjacent grassland is mown or in early spring. Care will be taken when using herbicide adjacent to aquatic habitats to prevent pollution. | As required | | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | | All litter or other debris will be collected and removed by the contractor immediately prior to grass cutting operations. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | Ensure grassland is well-established. | The Contractor will protect newly seeded areas where appropriate to prevent seedling destruction by pedestrians. Any worn or damaged lawns to be removed and re-seeded to match existing adjacent grass. | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Manage wildflower areas to maintain high plant diversity. | Grassland adjacent to hedgerows and boundaries will be cut once on alternate years. Care shall be exercised when mowing or strimming around trees and hedges or other structures. Arisings will be left for 48 hours to allow dispersal of seeds and invertebrates prior to removal, to encourage grassland establishment and prevent soil enrichment and thatching. Minimum 20% of grassland to be left unmown each year. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | | | | | ✓ | | | |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Hand strim areas of persistent pernicious weeds within wildflower areas either in late summer when adjacent grassland is mown or in early spring. Some weed species such as plantains and dandelions should be allowed to establish as these are preferred food source of cockchafer larvae, along with meadow grass. | As required | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| **Residential Zone** | Create an attractive streetscape, providing a framework of seasonal interest and softening of the built form. | Implement proposed planting in accordance with Landscape Plans as provided at **Appendix 1**. | ✓ | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Maintain road verges and path edges to ensure visibility, prevent obstruction and allow access to manage any adjacent habitats. | Mow verges and path edges monthly during growing season a minimum of 1m from edge of surface or as required for visibility. Remove all arisings, ensuring road/ path is free from debris. Collect and remove litter. Monitor road verges for parking/ damage by vehicles. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | Maintain boundary elements in a safe condition with a good appearance. | Inspect boundary fences regularly and repair when necessary. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | | | | | | | ✓ | | |
| **Protected species enhancements** | Enhance the Site for nesting/ roosting bats and birds by providing integrated and tree mounted boxes. | Bat and bird boxes to be installed throughout the construction phase. Specification provided in **Table 3** | ✓ | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Bat boxes will have a non-invasive visual inspection in autumn or winter months to check for damage. Damaged boxes to be replaced. Any work required to the bat boxes will be carried out by a licenced bat worker. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | ✓ | ✓ | ✓ |
| | Reptile hibernacula to be created in the construction phase and maintained. | Hibernacula will have a non invasive physical inspection during the summer months to check for damage. Any areas of damage or disrepair will be replaced. | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | An artificial badger sett will be created along the western boundary of the site | An artificial badger sett will created to the specifications given in the Construction Environmental Management Plan (GE Consulting 2023) | Pre-commencement | | | | | | | | | | | | | | | | | | |

# 7 MONITORING PLAN AND REVIEW

Monitoring is fundamental to the success of this management plan and is required to assess biodiversity changes compared to the baseline and identify potential issues. This will not only enable the effectiveness of mitigation or compensation to be identified but will also inform future LEMP revisions to be produced.

Monitoring will be undertaken by a competent ecologist in years 2, 5, 10, 15, 20, 25, and 30 following completion of works, as follows:

- Site walkover to confirm habitats present;
- The habitats will be assessed against the target criteria in **Table 2** to measure progress towards target; and
- Report produced detailing results and any remedial measures required to achieve aims.

An adaptive management approach should be adopted whereby the results of monitoring feed back into the appropriate management of the Site.

The management plan will be reviewed during Year 5 and a new management plan, covering at least a further five years will be produced, guided by this document and knowledge of the habitats and species present on Site at that time.

## 8 REFERENCES

EAD Ecology, 2020 *Sandhole Lane, Westbury Leigh, Wiltshire - Ecological Impact Assessment*

GE Consulting, 2023 *Sandhole Lane, Westbury Leigh, Wiltshire - Construction Environmental Management Plan*




**Legend:**

- Site Boundary
- 1160 - Introduced shrub
- c1f - Horticulture
- g3c - Other neutral grassland
- g4 - Modified grassland
- h3h - Mixed scrub
- u1 - Built-up areas and gardens
- u1b - Developed land. sealed surface
- w - Woodland
- Native Hedgerow
- Native Species Rich Hedgerow

0 20 40 60 80 m

Imagery ©2023 CNES / Airbus, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies. Map data ©2023 Google

**Figure 1:**
Post-Development BNG Plan

**Project:**
Sandhole Lane, Westbury Leigh

**Client:**
Wainhomes Severn Valley

Date:
26/9/2023

Drawn:
AG

Ref:
1713-LEMP-F1

Revision:
-

ge consulting | ECOLOGY ARBORICULTURE LAND MANAGEMENT

N

## Appendix 1 – Landscape General Arrangment Plan (LTS_134 (01) 101_RevG) and Landscape Planting and Equipment Schedules (LTS_134 (01) 102_RevF)




KEY CONTINUATION

- Eastern ecology corridor
- Northern ecology corridor
- Western ecology buffer (15m offset to woodland)

**GENERAL NOTES:**

1. ALL DIMENSIONS AND LEVELS SHALL BE CHECKED ON SITE PRIOR TO CONSTRUCTION WORKS COMMENCING.
2. ALL LANDSCAPE DRAWINGS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS & ENGINEERS DRAWINGS AND SPECIFICATIONS.
3. ANY DISCREPANCY CONCERNING THE DRAWINGS SHOULD BE REFERRED TO LANDSCAPE ARCHITECT IMMEDIATELY.
4. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
5. ALL LEVELS ARE IN METERS.
6. EXISTING SERVICE ALIGNMENTS SHALL BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO CONSTRUCTION WORK COMMENCING.

Key

- Site boundary
- Proposed tree
- Existing trees retained with root protection area as shown
- Existing planting area to be removed
- TF — Tree protection fencing
- Proposed 1.0m tall wildflower planting area
- Proposed neutral grassland area
- Proposed dense mixed scrub planting area
- Area of retained woodland
- Proposed native species rich hedgerow
- Proposed wetland grass seed mix for SUDS area
- Proposed ornamental planting area to perimeter of properties
- Proposed lawn area to rear property gardens
- Proposed amenity grassland
- 1 — Proposed rubber crumb surface to LEAP
- 2 — Proposed hoggin footpaths to allotments and woodland area
- Proposed infiltration basin
- Proposed below ground cellular storage crates
- Proposed 5 rod plots in allotment area
- Proposed 10 rod plots in allotment area
- HP — Indicative locations of habitat piles/hibernacula
- BS — Indicative location of artificial badger sett
- NB — 5no. Schwegler Nest box 1B (or acceptable equivalent)
- BB — 5no. Schwegler Bat box 2F (or acceptable equivalent)
- SB — 30no. Schwegler Swift bricks 1A (or acceptable equivalent)
- HS — 5no. Schwegler House sparrow terrace 1SP (or acceptable equivalent)
- WB — 5no. WoodStone builld-in open nest box (or acceptable equivalent)
- BT — 10no. Schwegler Bat tubes 1FR (or acceptable equivalent)

| Rev | Date | Description | Drawn | Checked |
|---|---|---|---|---|
| G | 12.12.23 | Updates on layout | NP | MND |
| F | 25.09.23 | Ecology corridors added | NP | MND |
| E | 30.08.23 | Updates on layout | NP | MND |
| D | 02.06.23 | Updates to tree layout | DL | MND |
| D | 01.06.23 | Updates on layout | DL | MND |
| C | 22.05.23 | Updates on layout | NP | MND |
| B | 11.01.23 | On plot planting added | DL | MND |
| A | 05.01.23 | Updates to LEAP | DL | MND |

**FOR PLANNING**


10 Bartlett Street
Bath
BA1 2QZ
T +44 (0) 1225 852115
E contactus@ltstudio.co.uk


LT STUDIO

Client: WAIN HOMES SEVERN VALLEY

Project: SANDHOLE LANE, WESTBURY

Title: LANDSCAPE GENERAL ARRANGEMENT PLAN

| Designed: | Drawn: | Checked: |
|---|---|---|
| MND | DL | MND |
| Scale @ A1: 1:500 | Date: DEC 2022 | Approved: MND |

Drawing No.: LTS_134(01)101

Revision: G

S.T. Job Code M5-0270

## Planting area - Ornamental mix (Total Area = 1519m$^2$), (Total no. of plants = 12616)

Containerised stock to be planted at the appropriate time according to the construction programme. All plants to be sourced at 2 litre pot sizes from one single supplier to ensure consistency and planted at a density of 8 no. per m2 (min.). See individual planting area sizes in drawing. All plants to be stored in an upright position & only delivered to site when planting is ready to proceed & soil has been prepared. Stock to be kept moist & protected from the wind - Once planted, all areas to be covered in bark mulch to 50mm depth (Total Mulch Volume = 78.2m$^3$)

| Location | Species | Common Name | Supply size (litre) | % of mix | Form | No. Required |
|---|---|---|---|---|---|---|
| Hatched area as shown | Pennisetum alopecuroides 'Hameln' | Chinese fountain grass | 2L container grown | 20% | Pot full | 2523 no. |
| Hatched area as shown | Nepeta racemosa 'Walkers Low' | Catmint | 2L container grown | 20% | Pot full | 2523 no. |
| Hatched area as shown | Teucrium x lucidrys | Hybrid germander | 2L container grown | 20% | Pot full | 2523 no. |
| Hatched area as shown | Origanum laevigatum 'Herrenhausen' | Oregano | 2L container grown | 20% | Pot full | 2523 no. |
| Hatched area as shown | Salvia nemorosa 'Caradonna' | Balkan clary | 2L container grown | 20% | Pot full | 2523 no. |

## Rear Garden Lawn (Total Area= 4401m$^2$)

## Trees (Total = 255 no.)

All containerised/root-balled stock to be stored in an upright position & only delivered to site when planting is ready to proceed & soil has been prepared. Stock to be kept moist & protected from the wind.

| Location | Species | Common Name | Supply size (litre) | Height (cm) | Density | Form | No. Required |
|---|---|---|---|---|---|---|---|
| As shown - Cb | Carpinus betulus | Hornbeam | 16-18cm girth | 400-450 | As shown | Single-stem | 18 no. |
| As shown - Ac | Acer campestre | Field maple | 16-18cm girth | 480-540 | As shown | Single-stem | 41 no. |
| As shown - Pp | Prunus padus | Bird Cherry | - | 200-250 | As shown | Multi-stem | 50 no. |
| As shown - Sa | Sorbus aucuparia | Rowan | - | 450-500 | As shown | Multi-stem | 70 no. |
| As shown - Fs | Fagus sylvatica | Beech | 20-25cm girth | 500-600 | As shown | Single-stem | 17 no. |
| As shown - Tc | Tilia cordata | Small leaved lime | 20-25cm girth | 450-500 | As shown | Single-stem | 46 no. |
| As shown - Aco | Alnus cordata | Italian Alder | 14-16cm girth | 300-350 | As shown | Single-stem | 5 no. |
| As shown - Sal | Salix alba | White Willow | 14-16cm girth | 300-350 | As shown | Single-stem | 3 no. |
| As shown - Qr | Quercus robur | Common Oak | 20-25cm girth | 500-600 | As shown | Single-stem | 5 no. |

## Play Equipment

At least 6 unique play experienced to be provided in LEAP in accordance with Wiltshire Council Fixed Play Area specifications.

| Location | Equipment Type | Play Experience | No. Required |
|---|---|---|---|
| In LEAP as shown - 1 | Play unit | Sliding/climbing | 1no. |
| In LEAP as shown - 2 | Spring rocker/see-saw | Rocking | 3 no. |
| In LEAP as shown - 3 | Balance bridge | Balancing | 1 no. |
| In LEAP as shown - 4 | Play house | Social play | 1 no. |
| In LEAP as shown - 5 | Swings | Swinging | 2 no. |

0 10 20 50 100m

## Planting area - Dense mixed scrub planting (Total Area = 2095m$^2$), (Total no. of plants = 16760)

Containerised stock to be planted at the appropriate time according to the construction programme. All plants to be sourced at 2 litre pot sizes from one single supplier to ensure consistency and planted at a density of 8 no. per m2 (min.). See individual planting area sizes in drawing. All plants to be stored in an upright position & only delivered to site when planting is ready to proceed & soil has been prepared. Stock to be kept moist & protected from the wind - Once planted, all areas to be covered in bark mulch to 50mm depth (Total Mulch Volume = 104.8m$^3$)

| Location | Species | Common Name | Supply size (litre) | % of mix | Form | No. Required |
|---|---|---|---|---|---|---|
| 3 - as shown | Prunus spinosa | Blackthorn | 2L container grown | 15% | Pot full | 2515 no. |
| 3 - as shown | Crataegus monogyna | Hawthorn | 2L container grown | 15% | Pot full | 2515 no. |
| 3 - as shown | Corylus avellana | Hazel | 2L container grown | 14% | Pot full | 2346 no. |
| 3 - as shown | Cornus sanguinea | Dogwood | 2L container grown | 14% | Pot full | 2346 no. |
| 3 - as shown | Viburnum opulus | Guelder Rose | 2L container grown | 14% | Pot full | 2346 no. |
| 3 - as shown | Rosa Canina | Dog Rose | 2L container grown | 14% | Pot full | 2346 no. |
| 3 - as shown | Sambucus Nigra | Elder | 2L container grown | 14% | Pot full | 2346 no. |

## Planting area - Native species rich hedgerow (Total Area = 1324m$^2$), (Total no. of plants = 10592)

Containerised stock to be planted at the appropriate time according to the construction programme. All plants to be sourced at 2 litre pot sizes from one single supplier to ensure consistency and planted at a density of 8 no. per m2 (min.). See individual planting area sizes in drawing. All plants to be stored in an upright position & only delivered to site when planting is ready to proceed & soil has been prepared. Stock to be kept moist & protected from the wind - Once planted, all areas to be covered in bark mulch to 50mm depth (Total Mulch Volume = 66.2m$^3$)

| Location | Species | Common Name | Supply size (litre) | % of mix | Form | No. Required |
|---|---|---|---|---|---|---|
| 5 - as shown | Prunus spinosa | Blackthorn | 2L container grown | 12% | Pot full | 1272 no. |
| 5 - as shown | Crataegus monogyna | Hawthorn | 2L container grown | 11% | Pot full | 1165 no. |
| 5 - as shown | Corylus avellana | Hazel | 2L container grown | 11% | Pot full | 1165 no. |
| 5 - as shown | Acer campestre | Field Maple | 2L container grown | 11% | Pot full | 1165 no. |
| 5 - as shown | Lonicera periclymenum | Honeysuckle (native) | 2L container grown | 11% | Pot full | 1165 no. |
| 5 - as shown | Viburnum Lantana | Wayfaring tree | 2L container grown | 11% | Pot full | 1165 no. |
| 5 - as shown | Viburnum opulus | Guelder Rose | 2L container grown | 11% | Pot full | 1165 no. |
| 5 - as shown | Cornus sanguinea | Dogwood | 2L container grown | 11% | Pot full | 1165 no. |
| 5 - as shown | Euonymus europaeus | Spindle | 2L container grown | 11% | Pot full | 1165 no. |

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Key

- Site boundary
- Proposed tree
- Existing trees retained with root protection area as shown
- Existing planting area to be removed
- Tree protection fencing
- Proposed 1.0m tall wildflower planting area
- Proposed neutral grassland area
- Proposed dense mixed scrub planting area
- Area of retained woodland
- New native species rich hedgerow
- Proposed wetland grass seed mix for SUDS area - Emorsgate EM8
- Proposed ornamental planting area to perimeter of properties
- Proposed lawn area to rear property gardens
- Proposed amenity grassland

| Rev | Date | Description | Drawn | Checked |
|---|---|---|---|---|
| F | 12.12.23 | Updates on layout | NP | MND |
| E | 25.09.23 | Ecology corridors added | NP | MND |
| D | 30.08.23 | Updates on layout | NP | MND |
| C | 02.06.23 | Updates on tree layout | DL | MND |
| C | 01.06.23 | Updates on layout | DL | MND |
| B | 22.05.23 | Planting area calculations & species | NP | MND |
| A | 11.01.23 | Planting area calculations & species | DL | MND |

FOR PLANNING


LT STUDIO
10 Bartlett Street
Bath
BA1 2QZ
T +44 (0) 1225 852115
E contactus@ltstudio.co.uk


Client: WAIN HOMES SEVERN VALLEY

Project: SANDHOLE LANE, WESTBURY

Title: LANDSCAPE PLANTING AND EQUIPMENT SCHEDULES

| Designed: | Drawn: | Checked: |
|---|---|---|
| MND | DL | MND |

| Scale @ A1 | Date: | Approved: |
|---|---|---|
| 1:500 | JAN 2022 | MND |

Drawing No.: LTS_134(01)102 Revision: F

S.T. Job Code M5-0270

## Appendix 2 – Biodiversity Net Gain Assessment

BNG is an approach to development that aims to leave the natural environment in a measurably better state than it was initially and meets the requirements of the Government's 25 Year Environment Plan.

The National Planning Policy Framework (NPPF) 2021 states in paragraph 180 (d) when determining planning applications, local planning authorities should apply the following principles (underline added for emphasis):

*"… opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity."*

The Environment Bill (2021) will see a legal obligation for all planning applications in England to deliver a 10% net gain in biodiversity from November 2023. The gain relates to both linear habitats (e.g. hedgerows, rivers) and non-linear habitats (e.g. grassland, woodland) and requires the use of a 'metric' to calculate the required biodiversity units. The current NPPF requires every development to deliver "a" measured net gain and as such most LPA's now insist on the metric being applied to demonstrate this gain.

### Calculating Gains

A 'metric' is used to calculate biodiversity units and is applied to both linear habitats (e.g. hedgerows, lines of trees, rivers, streams) and non-linear habitats (e.g. grassland/woodland).

Metrics use habitat as a proxy measure for capturing the value and importance of nature, with different habitat types scored according to their relative biodiversity value. This value is then adjusted depending on the size, condition and location of the habitat, to calculate 'biodiversity units' for that specific project or development.

The metric used for this assessment was the Natural England Biodiversity Metric 4.0 released in April 2023.

### Aims

The aim of this assessment is to identify and assess the 'biodiversity value' of the habitats pre- and post-development and determine whether a biodiversity net gain can be achieved.

The report and calculations are based on the following plans:

- Baseline condition assessments based on those recorded by EAD in 2020 (EAD, EcIA 2020) to accompany the outline submission. Update walkover survey in 2022; and
- Post-development BNG Plan (**Figure 1**) based on Landscape Planting and Equipment Schedules Plan and Landscape General Arrangement Plan produced by LT Studio (see **Appendix 1**).

### BNG Principles

This report takes into account a set of key principles which explain the inherent limitations and intended use of the metric.

These principles are detailed in the Biodiversity Metric 4.0 User Guide (Natural England 2023) and can be summarised as follows:

- **Principle 1** – This metric does not change existing biodiversity protections, statutory obligations, or policy requirements. The use of this metric does not override the ecological mitigation hierarchy and other requirements (such as consenting or licensing processes, for example woodlands).
- **Principle 2** – This metric should be used in accordance with established good practice guidance and professional codes.
- **Principle 3** – This metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice.
- **Principle 4** – Biodiversity units are a proxy for biodiversity and should be treated as relative values.

- **Principle 5** – This metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance.
- **Principle 6** – Habitat interventions need to be realistic and deliverable within a relevant project timeframe.
- **Principle 7** – Created and enhanced habitats should seek, where practical and reasonable, to be local to any impact and deliver strategically important outcomes for nature conservation.
- **Principle 8** – The metric does not enforce a minimum habitat size ratio for compensation of losses. However, proposals should aim to:
    - Maintain habitat extent (supporting more, bigger, better and more joined up ecological networks) and
    - Ensure that proposed or retained habitat parcels are of sufficient size for ecological function.

**Methods**

*Site Survey and Condition Assessment*

The Site was survey comprised an Extended Phase 1 Habitat Survey in accordance with the Joint Nature Conservation Committee's survey methodology (JNCC 2010) and condition assessment following the criteria in the Natural England 'Biodiversity Metric 4.0 - Technical Annex 1- Condition Assessment Sheets' (Natural England 2023a). Condition assessments were taken from the original survey work completed by EAD in relation to the outline application (EcIA, EAD, 2020).

*Biodiversity Metric Methodology*

The Site was divided up into distinct habitat 'parcels' and linear features based on the UK Habitat Classification System (UKHab) and measured accordingly using the QGIS mapping tool.

In order to translate between the Phase 1 system and the UKHab, the "UKHab/Phase 1 translation" tab within the Technical Data section of the Metric was utilised.

The area of each habitat to be created, retained, and/or enhanced was entered into the Metric. These were then each given an appropriate target condition, connectivity score and strategic significance score.

The post development BNG plan is provided as **Figure 1**.

*Strategic Significance*

The strategic significance score represents the local significance of the habitat based on its location and habitat type and is considered separately for each individual habitat. The value is determined by undertaking a search for LPA biodiversity and green infrastructure strategies that apply to the site. Due to the Site not being located within an area that has formerly been identified in a local strategy, all habitats were considered to have **Low** strategic significance.

*Rules*

In order to ensure the proper use of the metric and to understand the intended outputs, the following rules have been adhered to as detailed in the Natural England 'Biodiversity Metric 4.0 User Guide' (Natural England, 2023b):

- **Rule 1** – Competency requirements must be complied with.
- **Rule 2** – Biodiversity unit outputs are unique to this metric. The results of other metrics, including previous versions of this metric, are not comparable to those of this metric. The three types of biodiversity units generated by this metric (area, hedgerow and watercourse) cannot be summed, traded, or converted between modules.
- **Rule 3** – The trading rules of this metric must be followed.

- **Rule 4** – Losses and deterioration of irreplaceable or very high distinctiveness habitat cannot be accounted for through this metric.
- **Rule 5** – In exceptional ecological circumstances, deviation from this metric methodology may be permitted by the relevant consenting body or planning authority. Any deviation must be fully justified and evidenced, and follow advice set out in Section 3.3 (of the User Guide).

**Results**

*Headline Results*

As demonstrated in **Table 2.1** below, the BNG assessment predicts that with the on-site measures implemented, the development will deliver a significant **net gain** for biodiversity with all trading rules satisfied.

**Table 2.1: Summary of BNG Metric Assessment**

| Unit Type | Onsite Baseline Units | Onsite Post-development Units | Net Unit Change | % Change |
|---|---|---|---|---|
| Habitat | 12.04 | 19.45 | 7.41 | 61.58% |
| Hedgerow/ Linear | 0.17 | 2.71 | 2.54 | 1496.45% |