



Landscape and Ecological Management Plan (LEMP)

**Pursuant to Condition 18 of Planning Permission:
9/2017/0922 for Land off Deep Dale Lane, Sinfin,
Derbyshire (Phase 2)**

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Produced by Crestwood Environmental Ltd.

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Draft v1i	27/11/20	Amy Berry (Assistant Ecologist)	Charis Russell-Smith (Consultant Ecologist) / Vincent Smith (Technical Director)
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Rev a	30/06/2021	Amy Berry (Assistant Ecologist)	Sarah Cruickshank (Senior Ecologist)
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This report has been prepared in good faith, with all reasonable skill, care and diligence, based on information provided or known available at the time of its preparation and within the scope of work agreement with the client.

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Crestwood Environmental Ltd.
1 & 2 Nightingale Place
Pendeford Business Park
Wobaston Road
Pendeford
West Midlands
WV9 5HF

Tel: 01902 229 563

Email: info@crestwoodenvironmental.co.uk
Web: www.crestwoodenvironmental.co.uk

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1 INTRODUCTION

- 1.1.1 Crestwood Environmental Ltd. (**'Crestwood'**) have been appointed by Taylor Wimpey North Midlands (**'the Client'**) to produce a Landscape and Ecological Management Plan (**'LEMP'**) pursuant to Conditions 18 of Planning Permission: 9/2017/0922, in relation to a residential development (**'the Permitted Development'**), at land off Deep Dale Lane, Sinfin, Derby (**'the Site'**).
- 1.1.2 The Client has outline planning permission for residential development, consisting of circa 100 dwellings with associated landscaping, 2 attenuation basins as part of Sustainable Drainage System (**'SuDS'**) and creation of Local Equipped Area for Play (**'LEAP'**).
- 1.1.3 A LEMP has been requested by South Derbyshire District Council as a condition of planning, with regards to biodiversity for the Site, and in order to satisfy Condition 18 which is detailed below.

Condition 18

"Prior to the construction of a dwelling a Landscape and Ecological Management Plan (LEMP) shall be submitted to and approved in writing by the Local Planning Authority. The content of the LEMP shall include the following:

- a) a description and evaluation of features to be created and managed, which shall include the incorporation of bat roost and bird box features;*
- b) 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 ten-year period);*
- g) details of the body or organisation responsible for implementation of the plan, along with funding mechanism(s) for that body or organisation; and*
- h) ongoing monitoring and remedial measures, including where monitoring shows that conservation aims and objectives of the LEMP are not being met.*

Where biodiversity enhancement measures are incorporated into dwellings or private gardens to those dwellings, the submitted LEMP shall also include a method of communicating the purpose of such biodiversity enhancement measures to occupiers of those dwelling(s). The approved scheme shall be implemented so that any physical measures are incorporated before the first occupation of each respective dwelling, or use of the garden or open space concerned, and thereafter retained and maintained.

Reason: *In order to safeguard and enhance habitat on or adjacent to the site in order to secure an overall biodiversity gain."*

1.1.4 This LEMP should be read in conjunction with:

- Ecological Appraisal (FPCR, 2017);
- Water Vole Report (FPCR, 2016);
- Construction Environmental Management Plan ('CEMP') (report ref: CE-DD-1771-RP02) (Crestwood Environmental Ltd., 2020);
- Great Crested Newt Mitigation Strategy (report ref: CE-DD-1771-RP03) (Crestwood Environmental Ltd., 2020); and
- Ecological Design Strategy ('EDS') (report ref: CE-DD-1771-RP04) (Crestwood Environmental Ltd., 2020).

1.1.5 This LEMP provides general guidance for habitats set out within the Detailed Landscape Proposals (PDP Associates, 2020) which can be found in Appendix E1. Full details of management for retained habitats, created habitats and enhancements for fauna are described in the accompanying EDS (Crestwood Environmental Ltd., 2020).

1.2 AIMS AND OBJECTIVES OF THE LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN

1.2.1 This report will address the requirement of the LEMP as stated in Condition 18 of the planning conditions set out by South Derbyshire District Council. The LEMP will aim to enhance the Site's value for wildlife through the creation of new habitats and the provision of faunal enhancements as part of the Permitted Development.

1.2.2 This LEMP will outline management measures which will appropriately maintain, and where possible, enhance the biodiversity and ecological value of the Site.

1.2.3 The objectives are to:

1. Set out management measures relating to created habitats;
2. Set out enhancement measures relating to specified fauna;
3. Set out a work schedule for management and enhancement measures; and
4. Identify the body or organisation responsible for implementation of this LEMP.

1.3 SITE DESCRIPTION

1.3.1 The Site is located at land east of Deep Dale Lane, south of Sinfin, falling within Vice County 57: Derbyshire (centred at National Grid Reference (NGR) SK 34777 30349). The information set out within this LEMP relates to the Site boundary as demarcated by the red line boundary on Plate 1.

1.3.2 The Permitted Development forms a further residential parcel of land ('Phase 2') to a permitted residential development immediately north of the Site (Derby City Council outline planning permission reference: DER/02/15/00211) ('Phase 1').

1.3.3 The Site is currently a single agricultural field with associated field boundary hedgerow and ditches.

The surrounding area comprises residential development to the north and arable and pastureland to the east, south and west.

Plate 1 **Deep Dale Phase 2 - Site Boundary**



2 ECOLOGICAL BASELINE

2.1 HABITATS

2.1.1 An extended Phase 1 survey was undertaken on 24th June 2016 by FPCR (FPCR, 2017) which identified 3 habitats at the Site:

1. Cultivated land/field margins;
2. Hedgerows; and
3. Wet ditches.

2.1.2 A detailed description of the habitats at Site are detailed in the Ecological Appraisal report (FPCR, 2017).

2.2 FAUNA

2.2.1 The results of extended Phase 1 habitat survey and further ecological surveys for great crested newt (*Triturus cristatus*) (FPCR, 2017) and water vole (*Arvicola amphibius*) (FPCR, 2016) identified that the Site contained habitat features suitable for the following protected species:

- **Great crested newt** – The wet ditches provide aquatic habitat for great crested newt.

Suitable terrestrial habitat for great crested newt limited to linear features including field margins and hedgerows;

- **Reptiles** - Hedgerows, field margins and wet ditches provide limited suitability for foraging, commuting and hibernating reptiles;
- **Water vole** - The wet ditches provided foraging and burrowing opportunities for water vole;
- **Bats** - Boundary features including hedgerows and wet ditches considered to provide foraging and commuting habitat for bats. A crack willow (*Salix fragilis*) ('T1' on Figure E10 within the EDS (Crestwood Environmental Ltd., 2020)) located within the eastern hedgerow contained Potential Roost Features ('PRF's') for bats, including branch splits and large cavities within the main trunk. T1 is considered to be of *low* suitability for roosting bats; and
- **Birds** - Hedgerows and trees provide nesting opportunities for birds. T1 is considered viable to support nesting barn owl (*Tyto alba*).

3 CREATED HABITATS AND FEATURES

3.1 HABITATS

3.1.1 The Detailed Landscape Proposals (PDP Associates, 2020) indicate that several new habitats will be created as part of the Permitted Development, as listed below:

- Amenity grassland;
- Attenuation ponds;
- Native hedgerow;
- Ornamental shrub and hedge planting;
- Species-rich meadow grass;
- Species-rich wetland grass;
- Tree planting (native and residential species); and
- Turf.

3.1.2 The newly created habitats will enhance the Site for existing wildlife and will increase biodiversity at the Site.

3.2 ENHANCEMENT FEATURES

3.2.1 A variety of bird boxes integrated into buildings, attached to exterior walls and attached to retained trees will be implemented as part of the Permitted Development. Bird boxes provide suitable nesting opportunities for bird species which may be present in the area. Bird boxes are frequently used when implemented and therefore provide significant benefits to birds.

3.2.2 Bat boxes will be integrated into buildings as part of the Permitted Development which will provide

suitable roosting opportunities for crevice dwelling bats.

3.2.3 Other enhancements include hibernacula for great crested newt and reptiles, and the creation of an invertebrate hotel.

3.2.4 Further details regarding enhancement measures are in Section 7.

4 AIMS AND OBJECTIVES OF MANAGEMENT

4.1.1 This section outlines the ecological management objectives, the overall aim of which is to maintain and enhance the ecological value of the habitats at the Site for biodiversity and promote the use of habitats by various fauna.

Objective 1: Create New Ecologically Valuable Habitat

4.1.2 **Rationale:** To enhance the Site for existing wildlife and to promote an increase in biodiversity at the Site through increasing the suitability of the Site for protected or otherwise notable species.

4.1.3 A summary of the habitats to be created as part of the Permitted Development and the species they are likely to benefit is shown in Table 1.

Table 1 *Habitat Creation and Associated Biodiversity Benefits*

Habitat	Biodiversity Benefits
Amenity grassland	Increased foraging habitat for badger (<i>Meles meles</i>) and hedgehog (<i>Erinaceus europaeus</i>).
Attenuation Ponds	Increased habitat for foraging bats, birds, water vole, grass snake (<i>Natrix helvetica</i>), great crested newt and invertebrates.
Native Hedgerow and Shrubs	Increased sheltering, foraging and commuting habitat for bats, birds, badger, hedgehog, small mammals and invertebrates.
Species-Rich Meadow Grass	Increased habitat for great crested newt, reptiles and invertebrates and foraging habitat for bats and birds.
Species-Rich Wetland Grass	
Tree Planting	Increased commuting and foraging habitat for bats, with potential for roosting opportunities once trees are established. Increased habitat for nesting birds and invertebrates.

Objective 2: Enhance the Site for Protected Species

4.1.4 **Rationale:** To increase the suitability of the Site for existing protected species.

4.1.5 The enhancement measures to be incorporated into the Permitted Development are shown in Table 2 overleaf.

Table 2 Enhancement Measures

Enhancement Measures	Biodiversity Benefits
Creation of Hibernacula	Increased sheltering and hibernating opportunities for great crested newt, reptiles, invertebrates and hedgehog.
Installation of Bird and Bat Boxes	Additional roosting opportunities for bats and nesting opportunities for birds.
Creation of Invertebrate Hotel	Additional sheltering and foraging habitat for invertebrates.

Objective 3: Monitor Establishment of Habitats and Faunal Provisions

- 4.1.6 **Rationale:** To assess the status and condition of the newly created habitats and faunal provisions and implement remedial measures where appropriate to ensure success and longevity of these features for biodiversity.

5 PRESCRIPTIONS FOR MANAGEMENT ACTIONS

- 5.1.1 This section sets out the principles of habitat creation and habitat management that should be incorporated into the detailed landscaping proposals and management plan for the Site.
- 5.1.2 Full details of habitat creation and management are provided in the EDS (Crestwood Environmental Ltd., 2020).
- 5.1.3 Table 3 identifies ecological trends and constraints that may influence management prescriptions for the Site.

Table 3 Ecological Trends and Associated Constraints

Ecological Trend	Associated Constraints
Great crested newt/reptile hibernation period (November – February)	Vegetation removal during active season (March – October inclusive). Suitable vegetation to be checked by an ecologist prior to management.
Bat active period (April – October inclusive)	Avoid unnecessary lighting disturbance to linear features between April and October. Avoid lighting in close proximity to bat boxes (all year).
Bat hibernation period (November – March)	Potential for roosting bats within mature trees. A qualified ecologist will be consulted prior to any tree works being undertaken to avoid destruction of potential bat roosts.
Nesting bird season (March – August inclusive)	Vegetation removal outside of bird nesting season, or the vegetation checked for the presence of active nests by a suitably qualified ecologist/ SQE prior to clearance.

6 OBJECTIVE 1: HABITAT CREATION

6.1 ATTENUATION PONDS

- 6.1.1 2 attenuation ponds will be created in the eastern extent of the Site as part of the Permitted Development. These have been designed to be beneficial for biodiversity and as such, include features such as seasonally open water and appropriate seeding.

- 6.1.2 The attenuation ponds will provide increased habitat for foraging bats, birds, water vole, grass snake, great crested newt, general amphibians, and invertebrates.

Management

- 6.1.3 The attenuation ponds will be monitored to ensure vegetation encroachment does not occur, which if allowed to succeed, will cause ponds to dry out.
- 6.1.4 Should the attenuation ponds become heavily shaded (more than 50% at 1m from the margins), management will include pruning overhanging trees and shrubs to reduce shading and leaf litter in the ponds.

6.2 GRASSLAND SEED MIXES

- 6.2.1 A species-rich wetland grass seed mix (Emorsgate Mix EM8 - Meadow grass mixture for wet soils, or equivalent diversity) will be sown around the attenuation ponds in the eastern extent of the Site and will include a wildflower mix and grass species such as common bent (*Agrostis capillaris*), meadow foxtail (*Alopecurus pratensis*), quaking grass (*Briza media*) crested dogtail (*Cynosurus cristatus*), slender-creeping red-fescue (*Festuca rubra*), sweet vernal grass (*Anthoxanthum odoratum*), tufted hair-grass (*Deschampsia cespitosa*) and meadow barley (*Hordeum secalinum*). The attenuation ponds are intended to be dry and act as storage before the hydrobrake, however there will be times of year where water will be retained. EM8 contains species suitable for seasonally wet soil and can withstand flooding, therefore is an appropriate mix.
- 6.2.2 A species-rich meadow grass seed mix (Emorsgate Mix EM2 – Standard general purpose meadow mixture, or equivalent diversity) will be sown around the attenuation ponds and along the southern extent of the Site. It will contain a mix of grassland wildflower species, such as common knapweed (*Centaurea nigra*), red campion (*Silene dioica*), salad burnet (*Poterium sanguisorba* - (*Sanguisorba minor*), cowslip (*Primula veris*), crested dogtail (*Cynosurus cristatus*) and red fescue (*Festuca rubra*).
- 6.2.3 An amenity grass seed mix will be planted (or existing grassland enhanced into a better condition) in the surrounds of the LEAP/play area.
- 6.2.4 Species-rich grassland provides highly suitable foraging areas for invertebrates, birds, great crested newt, amphibians, badger, hedgehogs and small mammals, particularly where the sward is not intensively mown. In addition, an increase in invertebrate abundance will provide suitable foraging opportunities for bats. Grassland areas will also provide suitable basking and foraging habitat for reptiles.

Management

- 6.2.4.1 During the first year of implementation grassland will be cut three times to help stop the faster growing species becoming dominant by outcompeting slower growing species. During this first year of implementation, weed species will be removed, where possible, by hand or by using safe herbicides (such as glyphosate and 2, 4-D amine).
- 6.2.4.2 The wildflower grassland should be cut once a year between mid-August and late September, with at least one year in three leaving the cut until late September. The cut vegetation should be collected and deposited off-site.

- 6.2.4.3 The amenity grassland should be cut two times a year; once in the spring (between early March and early April) and once in the autumn (mid-August and late September). Cuttings should always be removed and deposited off-site to prevent nutrients returning to the soil. Strips 1-2m wide along edges can be left unmown on rotation to provide refuge for wildlife.
- 6.2.4.4 This cutting regime will prevent the grassland from succeeding into scrub and woodland, whilst allowing the flowers to set seed for the following year, thus producing a sustainable and viable habitat.

6.3 HEDGEROW AND SHRUB PLANTING

- 6.3.1 A new species-rich native hedgerow will be planted in the southeast extent of the Site (as shown on the Detailed Landscape Proposals in Appendix E1). Species used will include native species of local provenance including hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), dog rose (*Rosa canina*), holly (*Ilex aquifolium*) and field maple (*Acer campestre*).
- 6.3.2 Ornamental shrubs and hedgerows will also be planted across the Site as part of the Permitted Development.
- 6.3.3 Planting will be undertaken during winter months (October - March) when trees and shrubs are dormant and within the first planting season following completion of the Permitted Development.
- 6.3.4 The creation of a new hedgerow will provide additional commuting routes and foraging area for bats, nesting habitat for birds and provide additional habitat for invertebrates, badger, hedgehog and other mammals.

Management

- 6.3.5 Hedgerows should be cut only once every two to three years, not annually. Cutting annually will prevent hedgerow species from flowering and fruiting, thus reducing their wildlife benefit.
- 6.3.6 Hedgerows will be cut during late winter, which is considered the optimal time and avoids the bird nesting season.
- 6.3.7 Cutting of shrubs will be undertaken on a two-yearly basis (once whips have established) to maintain a stable level of flowering and fruiting every year; thereby providing feeding, sheltering and nesting opportunities for wildlife.
- 6.3.7.1 Post-planting maintenance will include mulching, weed control, application of fertiliser and pruning to ensure good health and appearance of the plants.

6.4 TREE PLANTING

- 6.4.1 New trees will be planted throughout the Permitted Development, with a high concentration planted in the green space around the attenuation ponds. Species used will include native and/or fruiting species of local provenance such as field maple, hawthorn, wild cherry (*Prunus avium*), alder (*Alnus glutinosa*), sycamore (*Acer pseudoplatanus*), silver birch (*Betula pendula*) oak (*Quercus robur*) and rowan (*Sorbus aucuparia*).
- 6.4.2 The proposed tree species will provide benefits to biodiversity as several of the tree species are

flowering and fruit-bearing species, thereby providing food sources for invertebrates and birds.

- 6.4.3 An increase in invertebrate abundance on Site will increase prey items for bats, providing benefit to this species group also. Tree planting will provide additional commuting routes for bats across the Site and potentially create roosting opportunities once trees have matured.

Management

- 6.4.4 Trees will be managed to allow them to flower and fruit as these will provide an important food resource for wildlife.
- 6.4.5 Pruning and maintenance of trees will be undertaken during winter months (October – March), avoiding periods when trees are in blossom or bearing fruit. This will also coincide with avoidance of the nesting bird season.
- 6.4.1 The biodegradable tree ties will be inspected annually and adjusted, if required. Tree ties and stakes will be removed within three years of planting, unless establishment is deemed to be unusually slow.
- 6.4.2 It is recommended that any fallen deadwood or removed deadwood be retained and moved to the green space around the attenuation ponds and left to decompose naturally. This will provide benefits to invertebrates.

7 OBJECTIVE 2: FAUNAL ENHANCEMENT

- 7.1.1 In total 14 bird boxes, 5 bat boxes, 2 hibernacula for great crested newt/reptiles, and 1 invertebrate hotel have been recommended.

7.2 BIRD BOXES

- 7.2.1 The provision of nest boxes will provide increased nesting opportunities for birds at the Site.
- 7.2.2 This will include provisions for starling (*Sturnus vulgaris*) (such as Vivara Pro WoodStone Starling Nest Box) on external walls of buildings, and integrated boxes into buildings for swifts (*Apus apus*) and house sparrows (*Passer domesticus*) (such as (WoodStone Build-in Swift Nest Box B).
- 7.2.3 Bird boxes will also be attached to retained trees at the Site which will attract a range of cavity dwelling species (such as 1B Schwegler Next Box 32mm and 26mm hole).
- 7.2.4 All bird boxes will be installed at a height of 3m from ground level (5m for swift nest boxes), will face a northerly or easterly direction, and be placed so that birds have a clear flight path to the bird box.
- 7.2.5 Boxes will be installed by a contractor on the northern and eastern aspects of buildings and trees, where safe maintenance will be possible.
- 7.2.6 Indicative locations are shown on Figure E9 in Appendix E2.
- 7.2.7 Full details are provided in the EDS (Crestwood Environmental Ltd., 2020).

Management

- 7.2.8 Swift boxes require no maintenance or cleaning unless other species occupy the nest box (i.e. house

sparrows and starlings). It is recommended that bird boxes be cleaned out annually between September and January.

- 7.2.9 Maintenance of bird boxes does not require ecologist supervision.

7.3 BAT BOXES

- 7.3.1 The provision of bat boxes will provide increased roosting opportunities for bats at the Site.
- 7.3.2 A total of 5 Ibstock Enclosed Bat Box 'C' (for pipistrelle species) will be integrated into the buildings of the Permitted Development.
- 7.3.3 Boxes will be installed by a contractor on the southern and south-eastern aspects of buildings, where any future inspection, maintenance and replacement can be conducted safely.
- 7.3.4 Indicative locations are shown on Figure E9 in Appendix E2.
- 7.3.5 Full details are provided in the EDS (Crestwood Environmental Ltd., 2020).

Management

- 7.3.6 It is recommended that the bat boxes be subject to an annual ground level external inspection (which can be carried out by the individual homeowners) to determine any signs of damage, deterioration or are no longer in place.
- 7.3.7 The ground level external inspection does not require ecologist supervision. However, as bats and their roosts are protected, should the box require an internal check, repairs, or to be replaced, then a suitably experienced bat licensed ecologist must be contacted.
- 7.3.8 The bat boxes are self-cleaning and do not require any maintenance as droppings fall straight out of the bottom entrance. Bat droppings have a highly fragile composition, deteriorating easily in rain/wind; therefore, self-cleaning bat boxes are not considered to pose aesthetic or health and safety concerns to residents.

7.4 HIBERNACULA

- 7.4.1 The creation of hibernacula will provide shelter and hibernation habitat for great crested newts and reptiles. Other species which will benefit from the creation of hibernacula include amphibians, invertebrates and small mammals (such as hedgehog).
- 7.4.2 At least 2 hibernacula designed for amphibians will be created in the southeast extent of the Site. These will be located within 5m of the attenuation basins. The hibernacula will be above ground structures, at least 2m in width and 1m in height, containing a variety of inert waste material and wood, covered with turf to maintain humidity within. These will be positioned in sunny locations as this will provide optimal basking opportunities for reptiles and invertebrates.
- 7.4.3 Indicative locations are shown on Figure E9 in Appendix E2.
- 7.4.4 Full details are provided in the CEMP (Crestwood Environmental Ltd., 2020).

Management

- 7.4.5 It is recommended that the hibernacula be inspected annually to ensure that vegetation is not becoming overgrown and causing the hibernacula to be too shaded. Additionally, where necessary hibernacula might need additional materials adding to ensure they provide adequate sheltering opportunities.
- 7.4.6 Ecologist supervision is not required whilst maintaining hibernacula.

7.5 INVERTEBRATE HOTEL

- 7.5.1 The creation of an invertebrate hotel will provide opportunities for a range of terrestrial invertebrates and encourage them to use the habitats at the Site. This will also provide foraging opportunities for bats and birds.
- 7.5.2 At least 1 invertebrate hotel will be created in the southeast extent of the Site, located in close proximity to the attenuation basin. A range of materials will be used to create the invertebrate hotel including bricks, stones, dry leaves, twigs, hollow stems, dead grass, pinecones and pieces of bark.
- 7.5.3 Indicative locations are shown on Figure E9 in Appendix E2.
- 7.5.4 Full details are provided in the CEMP (Crestwood Environmental Ltd., 2020).

Management

- 7.5.5 It is recommended that the invertebrate hotel be inspected annually, and new materials added to replace natural materials which have decayed to a point where they provide minimal benefit to invertebrates.
- 7.5.6 Ecologist supervision is not required whilst maintaining invertebrate hotels.

8 OBJECTIVE 3: MANAGEMENT PROGRAMME

8.1 RESPONSIBLE PARTIES

- 8.1.1 The implementation of the management actions outlined in this LEMP, and any remedial measures (if required), will be the responsibility of Taylor Wimpey North Midlands. They will ensure funding is provided for all ecological responsibilities.
- 8.1.2 It will be the responsibility of Taylor Wimpey North Midlands to oversee the implementation of the habitat enhancement and creation works, the long-term Site management and any monitoring required.
- 8.1.3 Taylor Wimpey North Midlands will appoint a Suitably Qualified Ecologist ('SQE') and/or Ecological Clerk of Works ('ECOW') to ensure that all ecological responsibilities are delivered in line with this LEMP and the accompanying CEMP, EDS and Great Crested Newt Mitigation Strategy (Crestwood Environmental Ltd., 2020) (Crestwood Environmental Ltd., 2020) (Crestwood Environmental Ltd., 2020).

8.2 COMMUNICATION

- 8.2.1 Each dwelling will be transferred to private ownership once the construction has been completed. It is therefore the responsibility of the Taylor Wimpey North Midlands to make new homeowners aware of:
- The biodiversity enhancements on the Site, including planting of trees, provision of bird and bat boxes, hibernacula for great crested newt and invertebrate hotel;
 - Once a bat inhabits a roost, it can only be disturbed by a licensed bat work - homeowners should not enter/disturb bat roosts; and
 - Good horticultural practice for wildlife.
- 8.2.2 This can be included in a sales package or provided by other means and will aim to promote and encourage wildlife at the Site.
- 8.2.3 Occupants should be made aware of the benefits of encouraging wildlife at Site. For example, signage with the wording 'ecological feature' could be installed in proximity to the great crested newt hibernacula and invertebrate hotel. The signage will ensure the features are not damaged, whilst demonstrating to residents that the Permitted Development is dedicated to its' commitment to biodiversity.

8.3 ONGOING MONITORING AND REMEDIAL MEASURES

- 8.3.1 It is recommended that monitoring of the establishment of habitats be carried out after the first year of planting to determine whether remedial works are required. This should be undertaken in the summer months by an ecologist or landscape architect to ensure all created habitat areas have become successfully established. The timing of the management is to provide a sufficient timescale for habitats to develop whilst also providing opportunities to intervene and undertake any mitigation identified through the monitoring programme.
- 8.3.2 At the time of monitoring, the ecologist or landscape architect would also identify any individual plants within the habitats which require removal and either remove them themselves or inform Site staff of the location of plants requiring removal. A review of pesticide/fertiliser treatment (if used) should also be carried out by the ecologist or landscape architect to ensure that areas of created habitat are not being affected.
- 8.3.3 Annual monitoring and a review of management regimes should also be undertaken by a suitably qualified professional to ensure that the management of the habitats is appropriate. Whilst the management programme provided in Section 6 is to be adhered to, it is important to understand that management of any habitat will adapt as the habitat develops, and that not all habitats will develop as typically documented. This makes adoption of additional management regimes or the amendment of current management critically important to maintaining a habitat in the long-term.
- 8.3.4 If any of the enhancement measures put in place for faunal use at the Site become damaged or broken, these should be repaired or replaced as and when necessary.
- 8.3.5 Bird boxes will be repaired or replaced outside of the bird breeding season (March to August

inclusive) to avoid disturbance.

8.3.6 Bat boxes are to be repaired or replaced by a licenced ecologist only.

8.4 WORK SCHEDULE

8.4.1 Table 4 details the work schedule that should be applied to the management of the habitats and provision of faunal enhancements over a 10-year period at the Site.

Table 4 Biodiversity Enhancement and Management Schedule

Management	Timing	Year (0-10) Post-Construction											
		0	1	2	3	4	5	6	7	8	9	10	As Req.
Trees													
Planting, and Replanting where Required in Subsequent Years (incl. installation of tree guards, stakes, ties and bark mulch)	October - March	✓											✓
Vegetation Management (e.g. pruning, felling)	October - March		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Application of Bark Mulch	September – February		✓	✓	✓								
Removal of Tree Guards, Stakes and Ties (if establishment successful)	September – February				✓								
Hedgerow and Shrubs													
Planting, and Replanting where Required in Subsequent Years	October - March	✓											✓
Vegetation Management (e.g. pruning, hedge shaping works)	November – February			✓		✓		✓		✓		✓	
Attenuation Pond													
Monitoring of Water Levels and Establishment of Plants in Ponds	May - September		✓	✓	✓	✓	✓						
Removal of Vegetation Encroachment	November - February		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Removal of Overhanging Vegetation	September - February		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Grassland													

Management	Timing	Year (0-10) Post-Construction											
		0	1	2	3	4	5	6	7	8	9	10	As Req.
Sowing of Seed Mixes (to be repeated in subsequent season if failing to establish)	March-May or September-October	✓											✓
Annual Grassland Mow to c.4cm	July - August		✓										
Cutting/Mowing Regime (Amenity Grassland)	2x per year – March - early April and mid-August to late September		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Cutting/Mowing Regime (Wildflower Grassland)	1x per year – mid-August to late September		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Bird Boxes													
Installation of Integrated Bird Boxes	During construction	✓											
Installation of Bird Boxes on Buildings	Any time	✓											
Installation of Bird Boxes on Retained Trees	Any time	✓											
Recommended Annual Inspection of Bird Boxes (incl. annual clean & repair/replacement, where necessary)	October - March												✓
Bat Boxes													
Installation of Integrated Bat Boxes	During construction	✓											
Recommended Annual Inspection of Bat Boxes (incl. repair/replacement by licensed bat worker)	October - March												✓

Management	Timing	Year (0-10) Post-Construction												
		0	1	2	3	4	5	6	7	8	9	10	As Req.	
Creation of Hibernacula														
Installation of Hibernacula	Any time		✓											
Recommended Annual Inspection of Hibernacula (incl. replenishment of materials)	April - October													✓
Invertebrate Hotel														
Installation of Invertebrate Hotel	Any time	✓												
Recommended Annual Inspection of Invertebrate Hotel (incl. replenishment of materials)	April - October													✓
Monitoring														
Recommended Annual Monitoring of All Habitats	June - August		✓	✓	✓	✓	✓							

REFERENCES:

- Crestwood Environmental Ltd., 2020. *Construction Environmental Management Plan*, s.l.: s.n.
- Crestwood Environmental Ltd., 2020. *Ecological Design Strategy*, s.l.: s.n.
- Crestwood Environmental Ltd., 2020. *Great Crested Newt Mitigation Strategy*, s.l.: s.n.
- FPCR, 2016. *Water Vole Report*, s.l.: FPCR.
- FPCR, 2017. *Ecological Appraisal*, s.l.: s.n.
- PDP Associates, 2020. *Detailed Landscape Proposals*, s.l.: s.n.

APPENDIX E1:

Detailed Landscape Proposals (PDP Associates, 2020)

Client
Taylor Wimpey North Midlands

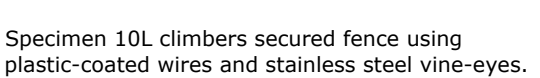
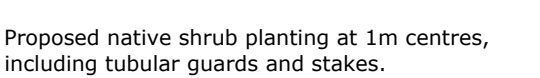
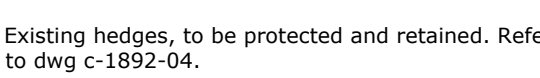
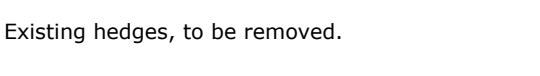
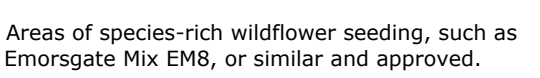
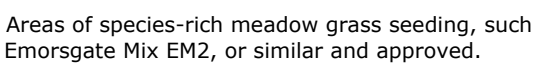
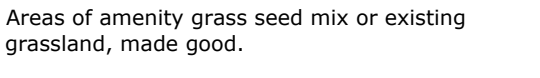
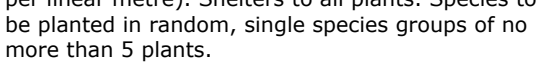
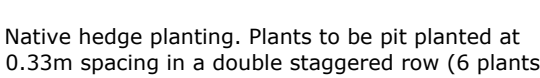
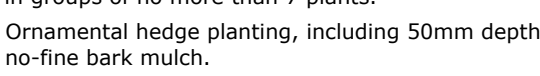
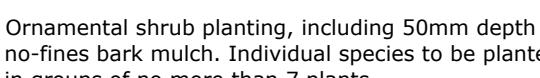
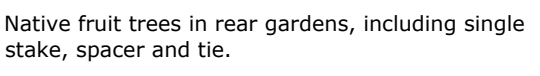
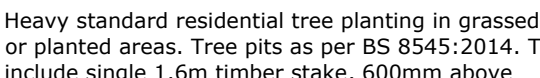
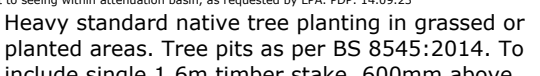
Project
Deepdale Lane, Derby
Phase 2 (sheet 2 of 2)

Detailed landscape proposals

Scale 1:250 @ A1 Drawn by PDP Date Nov 2020

Drawing No.
c-1892-03 Revision I

Revision A: Amendment to PGS area on east and south of parcel. PDP, 01.12.20
Revision B: Additional tree planting along southern PGS. PDP, 10.12.20
Revision C: Minor layout amendments across the phase and additional meadow seeding at LPA request. PDP, 22.06.21
Revision D: Minor layout amendments and additional planting proposed adjacent acoustic fences. PDP, 10.08.21
Revision E: Minor layout amendments. PDP, 20.09.21
Revision F: Substitution of Eucynurus Silver Queen for Hebe rakiaensis at request of LPA. PDP, 22.12.21
Revision G: Amendment to path arrangement in PGS. PDP, 10.03.22
Revision H: Minor layout amendments. PDP, 24.04.23

[illegible]

APPENDIX E2:

Figure E9 – Faunal Provisions Plan – Phase 2

Faunal Provision Key:

- Bird Provisions
- Bat Provisions
- △ Invertebrate Provisions
- ◇ Great Crested Newt Provisions

Legend:

- Site Boundary - Phase 2
- 26mm Hole 1B Schwegler Nest Box
- 32mm Hole 1B Schwegler Nest Box
- Vivara Pro WoodStone Starling Nest Box
- WoodStone Build-in Swift Nest Box B
- Ibstock Enclosed Bat Box 'C'
- Invertebrate Hotel
- Great Crested Newt Hibernacula
- Vivara Pro Barcelona WoodStone Open Nest Box

Bat Bricks will be installed on southern or south-western elevations of properties away from direct light sources including street lighting.

Bird Boxes/Bricks will be installed on northern or eastern elevations away from prevailing winds.

For detailed installation and maintenance information regarding each of the faunal provisions please refer to the EDS report (report ref: CE-DD-1751-RP04).

Consultant:
Crestwood Environmental Ltd
Science, Technology & Prototyping Centre,
University of Wolverhampton Science Park,
Glaisher Drive,
Wolverhampton WV10 9RU
Tel: 01902 229563
info@crestwoodenvironmental.co.uk
http://www.crestwoodenvironmental.co.uk/



Client:

Taylor Wimpey

Site: Deep Dale Lane, Derby - Phase 2

Drawing Title: Faunal Provision Plan - Phase 2

Date: 20 / 12 / 2024	Scale: 1/1,750	Paper Size: A3 (420×297mm)
Drawn By: MB / AB	Checked By: CRS	Status: Final
CAD Ref: CE-DD-1751-DW01	Drawing No: Figure E9	Final Revision: Rev E

Updated in December 2024 to provide additional nest boxes, and increase in invertebrate hotel and hibernacula:
Open nest boxes provide provisions for cavity nesting birds such as wrens, robins, spotted flycatchers, pied and grey wagtails, song thrushes and blackbirds. The box will be placed 1.5m and 3m high, north/east elevation, and sited in undergrowth such as ivy to provide cover for the nest. Maintenance as per report.

Imagery © Google Satellite
Layout provided by Taylor Wimpey. Drawing title: site layout PARCEL 2