



## QA

### Two Waters Road – Landscape and Ecological Management Plan

Issue/Revision:	Draft	Final
Date:	January 2021	January 2021
Comments:		
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File Reference:	551620ogDec20DV01_LEMP.docx	551620ogJan21FV01_LEMP.docx

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## 1.0 EXECUTIVE SUMMARY

- 1.1 Greengage Environmental Ltd was commissioned by Taylor French Developments to produce a Landscape and Ecological Management Plan (LEMP) to address condition 22 of the granted planning permission (ref: 4/00834/18/MFA) relating to the development at Two Waters Road, Hemel Hempstead in the Borough of Dacorum.
- 1.2 Targeted ecological enhancements have been specified in light of baseline conditions, contemporary best practice, local conservation targets (such as Biodiversity Action Plan priorities), relevant planning policy, and proposed development details. Enhancements have been incorporated into the landscaping proposals and will seek to create habitat suitable for supporting rare, protected and notable ecological receptors, ensuring net gains in biodiversity value.
- 1.3 Ecological enhancement measures outlined in this document include:
- Creation of wildlife friendly habitat in the form of meadow grassland and appropriate management regime;
  - Providing habitat structure and focused enhancements for notable invertebrate species;
  - Providing enhanced nesting and roosting opportunities for BAP priority bird and bat species; and
  - Providing enhanced habitat structure for reptiles.
- 1.4 A framework for monitoring the success of these enhancement features, and for ensuring their continued maintenance is also detailed within.
- 1.5 The prescribed interventions overall seek to deliver measurable biodiversity net gains at the site.

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## 2.0 INTRODUCTION

- 2.1 Greengage was commissioned by Taylor French Developments to produce a Landscape and Ecological Management Plan (hereafter 'LEMP') for a site known as Two Waters Road, Hemel Hempstead in the Borough of Dacorum.

### AIMS AND OBJECTIVES

- 2.2 This document aims to collate the site wide ecological enhancements actions and on-going management regime for the site into a single document.
- 2.3 Enhancements are targeted at specific ecological receptors of note reflecting contemporary best practice and objectives of local conservation groups, Biodiversity Action Plans (BAPs) and planning policy.
- 2.4 This document has been produced to address the following Condition 22 of the planning consent, which states:

*"Prior to first occupation of the development hereby approved, a Landscape and Ecological Management (LEMP) to include details of parties responsible for the ongoing implementation and future monitoring and management of the plan as well as the management aims (to preserve and enhance the existing ecological element of the area) and proposed management and maintenance practices shall be submitted to and approved in writing by the Local Planning Authority".*

### BACKGROUND

#### Site Location & Description

- 2.5 The survey area extends to approximately 0.4 hectares and is centred on National Grid Reference TL054058, OS Co-ordinates 505475, 205811.
- 2.6 The site is adjacent to Two Waters Road, on the southwest side and comprises a parcel of land split horizontally in its middle by the River Bulbourne. South of the river, the site was formerly developed on and comprises hardstanding with ephemeral/short perennial species growing through cracks in the concrete. The section to the north of the River Bulbourne consists of a mix of rough grassland, ruderal vegetation and bramble scrub.
- 2.7 The site is located approximately 0.5km south of Hemel Hempstead town centre on a triangular parcel of land bound by three roads; Two Waters Road to the east and west and London Road to the south. The surrounding landscape consists of industrial and residential developments with associated infrastructure belonging to Hemel Hempstead. The River Bulbourne which runs horizontally through the landscape in two distinct arms has its most southern part running through the site.

**Figure 2.1 Site boundary**



**Baseline Conditions**

- 2.8 A preliminary ecological survey was undertaken in November 2013 by Greensand Trust. This was followed by a second site walkover on the 13<sup>th</sup> June 2014.
- 2.9 The site was identified as having potential to support the following notable and/or protected species:
  - Potential for nesting birds;
  - Potential for bats; and
  - Potential for reptiles and amphibians.
- 2.10 A further bat activity survey was therefore undertaken on the 13<sup>th</sup> June 2014 and recorded occasional common pipistrelles (*Pipistrellus pipistrellus*) foraging around the mature sycamore trees along the northeast edge of the site and along the line of Lime trees towards the southern part of the site.
- 2.11 Reptile surveys were undertaken throughout April, May and June 2014 and confirmed the likely absence of reptiles from the site. A common frog was observed on site on the 9<sup>th</sup> May 2014.
- 2.12 Four breeding bird surveys were undertaken on site throughout April and May 2014. The survey found 13 common bird species exhibiting breeding behaviour in site and 10 other species recorded as present but not showing evidence of breeding including a kingfisher recorded flying along the River Bulbourne, great spotted woodpecker and song thrush.

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## PROPOSED DEVELOPMENT

- 2.13 The granted development (planning permission ref: 4/00834/18/MFA) is for construction of 39 apartments, associated parking, landscaping, cycle storage, refuse and recycling enclosures.

## ECOLOGIST COMPETENCIES

- 2.14 Olivia Guindon, who wrote this report, has a Bachelor's degree in Ecology and Wildlife Conservation (BSc Hons), a Master's degree in Species Identification and Survey Skills and is a Qualifying member of CIEEM. Olivia has over three years' experience in the commercial sector.
- 2.15 Mike Harris, who reviewed this report, has a Bachelor's degree in Environmental Biology (BSc Hons), a Natural England Great Crested Newt Licence (2015-17819-CLS-CLS) and Dormouse Licence (2016-21291-CLS-CLS), is a Chartered Environmentalist (CEnv) and is a Full member of CIEEM. Mike has over 17 years' experience in ecological surveying and has undertaken and managed numerous ecological surveys and assessments.
- 2.16 This report was written by Olivia Guindon and reviewed and verified by Mike Harris who confirms in writing (see the QA sheet at the front of this report) that the report is in line with the following:
- Represents sound industry practice;
  - Reports and recommends correctly, truthfully and objectively;
  - Is appropriate given the local site conditions and scope of works proposed; and
  - Avoids invalid, biased and exaggerated statements.

## BIODIVERSITY ACTION PLANS AND CONSERVATION AIMS

- 2.17 In accordance with the aims and objectives of this document a review of the relevant biodiversity action plans and local conservation targets was undertaken. This review, along with the result of the preliminary ecological appraisal, is then able to form the context for ecological enhancement at the site.
- 2.18 UK Biodiversity Action Plans (BAPs) have been developed which set priorities for nationally important habitats and species. To support the BAPs, Species/Habitat Statements (otherwise known as Species/Habitat Action Plans) were produced that provide an overview of the status of the species and set out the broad policies that can be developed to conserve them. A list of priority species of conservation importance was also developed.
- 2.19 The UK BAP was succeeded in 2012 by the *UK-Post 2012 Biodiversity Framework* which informed the creation of the *Biodiversity 2020* strategy; England's contribution towards the UK's commitments under the *United Nations Convention of Biological Diversity*.

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- 2.20 Despite this, the UK BAP priority species lists and conservation objectives still remain valid through integration with local BAPs (which remain valid), and in the form of the Habitats and Species of Principle Importance list (as required under section 41 of the Natural Environment and Rural Communities (NERC) Act).
- 2.21 Local Biodiversity Action Plans (LBAPs) ensure that national action plans (the UK BAP/Biodiversity 2020) are translated into effective action at the local level, and establish targets and actions for locally characteristic species and habitats.
- 2.22 The site is subject to the Hertfordshire BAP. Aspects of the Hertfordshire BAP of relevance to the proposed development include:
- Urban Habitat Action Plan (HAP);
  - Wetlands including rivers HAP;
  - Natterer's bat Species Action Plan (SAP);
  - Song thrush SAP; and
  - Stag beetle SAP.



### 3.0 HABITAT STRATEGY

- 3.1 There is significant scope to enhance the biodiversity value of terrestrial ecology on the site.
- 3.2 Gains in biodiversity will primarily be achieved through the introduction of features within the built form and landscaping proposals, alongside actions within the long-term management regime for the site, targeting specific ecological receptors of note.
- 3.3 Proposed landscaping plans can be found at Appendix 1.
- 3.4 The creation of specific habitats and attraction of notable and protected ecological receptors will complement policy targets for the area, follow best practice<sup>1</sup>, and reflect targets of the UK, regional and local BAPs.
- 3.5 Specifically, the proposals will seek to enhance the on-site habitat for the following species:
- Foraging, commuting and roosting bats (UK and Hertfordshire priority species’);
  - Birds (including song thrush and house sparrow);
  - Invertebrates (including targeted Lepidoptera species through the inclusion of larval and nectar plants and Coleoptera such as stag beetles through the provision of dead wood habitat); and
  - Reptiles species.
- 3.6 The following enhancements are to be included at the site:
- Wildlife friendly landscaping;
  - Bird and bat boxes;
  - Provision of reptile hibernacula;
  - Provision of invertebrate enhancement features including a stag beetle loggery amongst ground floor landscaping; and
  - Wildlife sensitive management.

#### MEADOW GRASSLAND

- 3.7 Several areas of meadow grassland will be created throughout the site to the north of the river Bulbourne and just below it within areas marked as ‘shared amenity areas’ on Figure 1. These will be scalloped to create structure and pattern. Emorsgate Seeds EM4 Meadow Mixture for clay soils will be used for this. Seeds will be sown by hand at a rate of 1.5g/m<sup>2</sup> in the Autumn following ground preparation, ahead of the first winter frosts. Seed will be sown with an inert carrier such as sand.

- 3.8 In the second and subsequent years these meadow areas will be subject to a main summer hay cut (with mower to 50mm) with the 'hay' left to dry and shed seed for 1-7 days before it is removed. The re-growth will then be mown again in Autumn (October) to a height of 50mm.
- 3.9 A careful mowing regime will help to encourage floral diversity and prevent any one species from taking over the sward.

### **HORTICULTURAL BEST PRACTICE**

- 3.10 The landscaped areas will require maintenance once established. Detail on horticultural management has been provided as part of the landscape specification which can be found at Appendix 1.
- 3.11 The use of pesticides (herbicides, insecticides, fungicides and slug pellets) will be fully avoided.
- 3.12 All plants will be sourced from UK nurseries and will be grown in peat free compost.

### **Plant Care Principles**

- 3.13 Typically, selective spot trimming of annual plants in autumn, or spring once per year, using hand tools or strimmer, removing some plant material and re-incorporating some of the trimmed plant material into the substrate.
- 3.14 Removal of undesirable plants, as needed, will take place.
- 3.15 The maintenance team will ensure that sufficient water is applied to maintain healthy vigorous growth of trees/shrubs/plants and grass. Care will be taken not to over-water plant material and grass. It will be the responsibility of the maintenance contractor to ensure that plants thrive and to replace any plants if they die or are in a poor condition. If legislation is brought in to prevent the use of hose pipes for the irrigation of trees during periods of drought, the maintenance company is to obtain alternative supplies of water including grey water. After establishment (3-5 years for trees) – the maintenance team should continue watering during significant periods of drought, to ensure survival of plants.

### **Nesting birds**

- 3.16 Care for nesting birds will be taken during vegetation maintenance on site. Pruning of trees and shrubs suitable for nesting birds will take place outside of the nesting bird season (taken to run from March to August inclusive) during the winter months or following confirmation of absence by a suitably qualified ecologist.

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### **Green Waste and Litter removal**

- 3.17 Unless otherwise expressly stated, all green waste shall either be composted on site as agreed with the site management team or removed from the site to a licensed disposal facility.
- 3.18 The maintenance team should keep the site free from rubbish and debris as it occurs. Litter picking of the landscaped areas should be carried out during each maintenance visit. All grass areas should be litter picked prior to cutting. All non-green waste is to be removed from site to a local authority licensed general waste or waste recycling facility as appropriate.

### **Biosecurity**

- 3.19 Works should follow appropriate biosecurity protocols to avoid introduction of non-native/invasive species to the site. This should involve sourcing of plants and materials from the UK and checking for the presence of potential high-risk species.

### **Surface Water Discharge**

- 3.20 Water quality of discharged surface water or construction wastewater should be managed to avoid introduction of high sediment loads or pollutants.
- 3.21 Suitable mechanisms should be in place to prevent spillage into the river during works and the lifetime of the scheme, although no high-risk activities are predicted which may stand to result in pollution spillage.

### **Plastics**

- 3.22 All products should avoid the use of plastic which may degrade to release microplastic particles.
- 3.23 Plastic waste and debris should be collected when encountered with a general site check for plastic litter at least once every two months.

### **BIRD BOXES**

- 3.24 13 species of breeding birds were confirmed as present on site during the surveys and 10 others were recorded as present. There are opportunities to provide nest boxes for a number of Hertfordshire BAP priority bird species within the retained areas and areas of soft landscaping.
- 3.25 Integrated boxes cannot be included as the development has already been constructed. Therefore, generalist bird boxes will be attached to mature trees on site.
- 3.26 Bird boxes come in a variety of forms providing nesting habitat for numerous bird species. Circular 32mm entrance hole boxes will provide opportunities for cavity nesting

birds such as tree sparrows (*Passer montanus*), house sparrows (*Passer domesticus*) and tits (*Paridae* family) Open fronted boxes will provide opportunities for wrens (*Troglodytes troglodytes*), robins (*Erithacus rubecula*), song thrushes (*Turdus philomelos*) and blackbirds (*Turdus merula*).

- 3.27 Two 32mm nest boxes and two open nest boxes will be attached to the mature trees on site. The boxes should be attached to the trees facing east at least 2m high. Locations are shown at Figure 1.
- 3.28 The products shown below are suitable examples, however Greengage does not officially endorse any products.

**Figure 3.1 Example generalist bird boxes - Vivara Pro Seville 32mm nest box (left)<sup>1</sup> and Vivara Pro Barcelona Woodstone Open Nest Box (right)<sup>2</sup>**



**BAT BOXES**

- 3.29 Common pipistrelle bats (known to be in the area) are known to use bat boxes. Bat’s social and metabolic requirements vary throughout the year. As such, bats will use a variety of roost sites, each subject to varying environmental conditions; the variety of box types and locations at the site will reflect this.
- 3.30 Integrated bat boxes cannot be included within the buildings as the development has already been constructed. It is therefore recommended that, in addition to the bird boxes, four bat boxes should be fitted to retained mature trees on site.
- 3.31 These should be installed at least 3m high and facing south. Locations are shown at Figure 1.

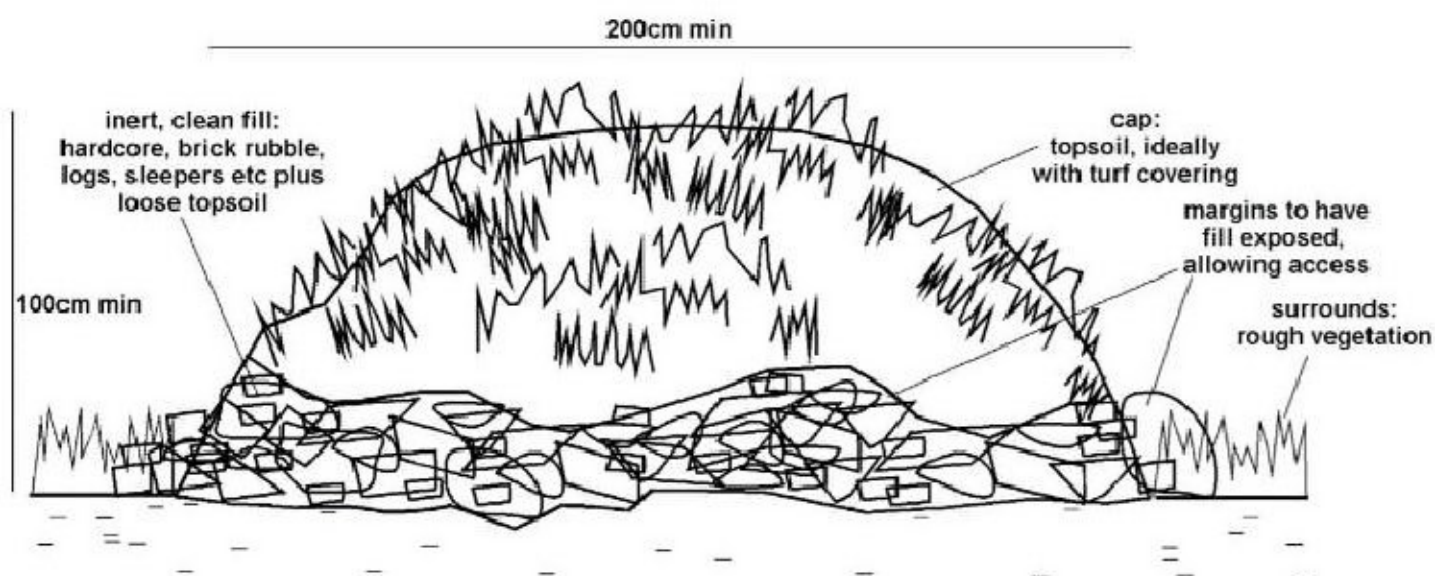
**Figure 3.2 Example bat box<sup>3</sup>**



**REPTILE AND AMPHIBIAN HIBERNACULUM**

- 3.32 A suitable hibernaculum will be created for amphibians and reptiles within the retained shared amenity area to the north of the River Bulbourne.
- 3.33 The hibernaculum will be constructed to act as a suitable place for reptiles to seek refuge and hibernate over winter. The hibernaculum is to be constructed through the placement of coarse rubble mixed with leaf mould (from strimmed or cleared scrub/grassland) and coarse pieces of wood in shallow pits, orientated east-west, so one side is south facing. The hibernaculum will be a minimum of 2m length, 1m width and 1m height.

**Figure 3.3 Suggested hibernaculum design (Image source: Great Crested Newt Mitigation Guidelines, Natural England 2001)**



**WILDLIFE FRIENDLY LIGHTING**

- 3.34 Lighting has the potential to impact the foraging, commuting and roosting behaviour of bats<sup>4</sup> as well as impact a wide range of bird and invertebrate species. It is important that the use of lighting is carefully considered to ensure impacts on wildlife is minimised.
- 3.35 Lighting will follow guidance provided by the Institute of Lighting Professionals and Bat Conservation Trust<sup>5</sup>. This guidance, when combined with the habitat enhancements

described within this report, will encourage bats to access the site for roosting, foraging and commuting. The implemented lighting design should include:

- The use of low-UV warm-white LED bulbs with directional, downward facing and shielded lights which point away from the newly implemented green infrastructure (street trees and terrace garden). Lighting should only be directed where necessary for health and safety reasons e.g. along the pedestrian walkway;
- The external lights should be subject to curfew controls where possible with lights on movement sensors to reduce light pollution when not needed;
- Trees in particular should remain unlit particularly trees which have bat or bird boxes them particularly between April and October, inclusive; and
- Light spill onto the vertical plane through windows should be minimised through the use of baffles, hoods, louvres or a window glaze.

### **INVERTEBRATE HABITAT FEATURES**

- 3.36 The soft landscaping areas will include invertebrate habitat features, adding nesting and shelter opportunities to the forage resource.

#### **Bee posts**

- 3.37 A 'Bee post' will be installed within the soft landscaping on site. It will form unique pollinator habitat, which is of particular value for solitary bee species. It will be installed in sunny south facing locations amongst areas of planting to provide a nearby pollen source for the bees. The entrance holes should be unobstructed.
- 3.38 Bee posts can be bought off the shelf as products or simply made.

**Figure 3.4 Example of bee post products (left) and handmade bee posts(right)**



### **Stag beetle loggery**

- 3.39 A stag beetle loggery will be included underneath mature trees to the north of the river Bulbourne within the shared amenity area.
- 3.40 Deciduous, untreated wood will be used, sourced from site or locally. Log sizes will range from ~100mm up to ~400mm diameter and 500mm to 1000mm length, with approximately one third of the logs buried in the soil. Friable soil which allows for burying should be used. Plants such as ferns, bulbs and other woodland understorey plants will be planted amongst the loggery.

**Figure 3.5 Example stag beetle loggery**





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## 4.0 MANAGEMENT AND MONITORING

### MANAGEMENT RESPONSIBILITIES

- 4.1 During the implementation and establishment phase, the responsibility for the protection of existing features and the establishment of new features will rest with the principal contractor. The landscape contract will include a requirement to undertake maintenance works during the establishment period (twelve months) following completion of the works.
- 4.2 Following the establishment period, the responsibility for the maintenance of new landscape features will pass to the developments long term maintenance team. It will be the responsibility of the maintenance team to maintain the landscape features and to implement the objectives of the plan. The following maintenance team has been instructed by the client:

#### **Thrive Homes**

Customer Service Centre 0800 917 6077

Email: [enquiries@thrivehomes.org.uk](mailto:enquiries@thrivehomes.org.uk)

Website: [www.thrivehomes.org.uk](http://www.thrivehomes.org.uk)

### MANAGEMENT PLAN

- 4.3 This section provides an overview of the relevant management and monitoring features of the ecological enhancements at the site.
- 4.4 The Landscape and Ecological Management Plan will follow a clearly defined 5-year timetable in the first instance that will be used as a reference point for site maintenance, monitoring and any future planting and enhancement works that may be necessary.
- 4.5 Habitats are dynamic, and the species composition is anticipated to change over time, due to plant selection resulting from the prevailing climatic conditions, natural colonisation, and succession. As a result, some of the actions within the first 5 years will be dependent upon rate of growth or success of initial planting/sowing and enhancements. In general, where measures have not been stated it is due to a non-intervention policy once the features have been established.
- 4.6 This Plan will also be iterative in the medium to long-term, adapting in a staged process to the changes in soil composition and in response to the feedback from monitoring exercises. Suggestions can be made to alter the enhancement measures or supplement the planting regime as necessary. Primarily, the Landscape and Ecological Management Plan will include actions to maintain the ecological objectives for the habitat strategy, which are:

- Optimise biodiversity measured by the range of wildlife benefiting plant species, invertebrate and bird species using the landscaped areas, and enhancement features.
  - Encourage invertebrates through diverse range of floral species and suitable invertebrate niche habitats;
  - Encourage species highlighted in the UK and Hertfordshire BAP and Red Data Book such as the song thrush and stag beetle.
- 4.7 A Suitably Qualified Ecologist (SQE) will undertake the monitoring programme, by observing any natural colonisation within the retained and planting areas, the success of the soft landscaping and use of the habitat features by birds, bats and invertebrates as key biodiversity indicators.
- 4.8 At or just after Practical Completion of the site, an ecologist will inspect the ecological enhancements implemented as a result of the recommendations in this strategy.
- 4.9 The success of the wildlife planting and utilisation of the ecological features (including bird nest boxes, bat boxes and terrestrial invertebrate features) should be monitored. The monitoring for bats and birds, in particular, should occur annually for the first 3 years and is recommended biennially thereafter. Monitoring should focus on the priority receptors outlined in this report, with success measured through increased abundance and diversity of these species/habitats.
- 4.10 Indicators of success should include:
- The effective establishment of a wide variety of plant species;
  - Evidence of invertebrates inhabiting the ecological features;
  - Evidence of bird activity such as target species using the nest boxes; and
  - Signs that bats are roosting in bat boxes and foraging across the landscaped areas.
- 4.11 After the initial 3 years of establishment and annual surveys, we highly recommend that biennial site surveys over the following 10 years are undertaken to monitor the effectiveness of the ecological enhancement and amend the Ecological Management Plan accordingly.
- 4.12 Table 4.1 below summarises management actions for the first 5 years.

Year after completion and season	Habitat Management Plan
Upon project completion	<b>Monitoring Actions</b>
	<ul style="list-style-type: none"> <li>• Post-Construction Review (PCR)</li> <li>• Confirm installation of bat/bird boxes, stag beetle loggery and reptile hibernaculum</li> <li>• Confirm compliance of landscape enhancements</li> </ul>
	<b>Reporting Procedure</b>
	<ul style="list-style-type: none"> <li>• Post-construction review report</li> </ul>
	<b>Remedial Actions/Management Interventions</b>
Years 1-3 Spring/Summer	<b>Monitoring Actions</b>
	<ul style="list-style-type: none"> <li>• Annual monitoring programme to commence between May and August</li> <li>• Single remote bat activity monitoring period of river corridor and bat emergence/re-entry survey of bat boxes installed</li> <li>• Check bird and bat boxes are intact and inspect for signs of occupancy. Inspection of invertebrate features including bee posts</li> <li>• Full botanical inventory of meadow grassland</li> </ul>
	<b>Reporting Procedure</b>
	<ul style="list-style-type: none"> <li>• Annual monitoring programme report produced</li> <li>• Assessment of the effectiveness and validity of monitoring programme</li> <li>• DEFRA Biodiversity Metric used to calculate actual change in ecological value</li> </ul>
	<b>Remedial Actions/Management Interventions</b>
Years 1-3 Autumn/Winter	<b>Monitoring Actions</b>
	<ul style="list-style-type: none"> <li>• None</li> </ul>
	<b>Reporting Procedure</b>
	<ul style="list-style-type: none"> <li>• Submission of all biological records obtained to Hertfordshire Environmental Records Centre (HERC)</li> </ul>
	<b>Remedial Actions/Management Interventions</b>
<ul style="list-style-type: none"> <li>• Litter removal</li> </ul>	

Year after completion and season	Habitat Management Plan
	<ul style="list-style-type: none"> <li>Pruning of shrubs within landscaping as required</li> <li>Autumn cut of meadow grassland</li> <li>Cleaning out of nest boxes</li> </ul>
Year 4	<b>Monitoring Actions</b>
	<ul style="list-style-type: none"> <li>Single site walkover conducted by ecologist to check enhancement features remain intact</li> </ul>
	<b>Reporting Procedure</b>
	<ul style="list-style-type: none"> <li>Production of a file note confirming findings</li> </ul>
	<b>Remedial Actions/Management Interventions</b>
<ul style="list-style-type: none"> <li>Summer and autumn hay cut of meadow grassland area</li> <li>Removal of invasive species/unwanted weeds prior to setting seed</li> <li>Litter removal</li> <li>Cleaning out nest boxes in autumn/winter</li> <li>Re-seeding/plug-planting of retained amenity area (as required)</li> </ul>	
Year 5, 7 and 10 Spring/Summer	<b>Monitoring Actions</b>
	<ul style="list-style-type: none"> <li>Biennial monitoring programme to commence between May and August</li> <li>Single remote bat activity monitoring period of river corridor and bat emergence/re-entry survey of bat boxes installed</li> <li>Check bird and bat boxes are intact and inspect for signs of occupancy. Inspection of invertebrate features including bee posts</li> <li>Full botanical inventory of meadow grassland</li> </ul>
	<b>Reporting Procedure</b>
	<ul style="list-style-type: none"> <li>Biennial monitoring programme report produced</li> <li>Assessment of the requirement for continued monitoring</li> <li>DEFRA Biodiversity Metric used to calculate actual change in ecological value</li> </ul>
	<b>Remedial Actions/Management Interventions</b>
<ul style="list-style-type: none"> <li>As identified by annual report</li> <li>Litter removal</li> <li>Re-seeding/plug-planting of retained amenity area (as required)</li> <li>Summer hay cut of meadow grassland area</li> <li>Removal of undesirable plant species prior to setting seed</li> </ul>	
Year 5, 7 and 10 Autumn/Winter	<b>Monitoring Actions</b>
	<ul style="list-style-type: none"> <li>None</li> </ul>
	<b>Reporting Procedure</b>

Year after completion and season	Habitat Management Plan
	<ul style="list-style-type: none"> <li>Submission of all biological records obtained to Hertfordshire Environmental Records Centre (HERC)</li> </ul>
	<b>Remedial Actions/Management Interventions</b>
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**Table 4.1 Table Showing Key Stages of the 5 Year Management Plan**

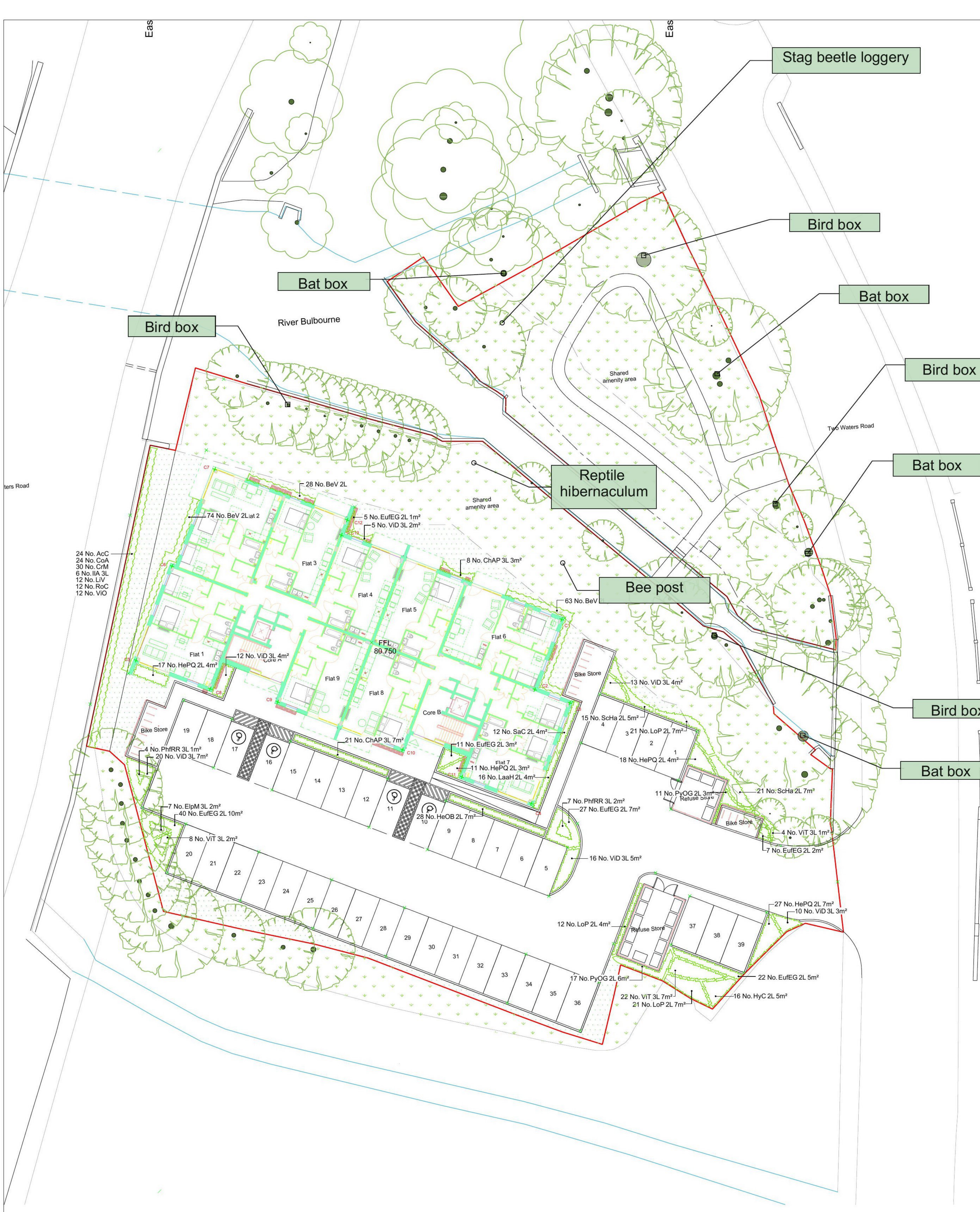
4.13 Table 4.1 outlines the necessary responsibilities and key objectives for the next 10 years. Should the Management Plan need to be extended beyond 10 years, it will be done so in appropriate stages, considered to be 10 – 15 and up to 25 years. Hence, the Management Plan is iterative and feedback from the monitoring exercises will inform and develop the Plan, which will be amended and updated accordingly to maintain the objectives.

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## 5.0 SUMMARY & CONCLUSION

- 5.1 Greengage was commissioned by Taylor French Developments to produce a Landscape and Ecological Management Plan for supporting on the condition discharge relating to the development at Two Waters Road, Hemel Hempstead in the Borough of Dacorum.
- 5.2 This document has been produced to fully discharge Condition 22 of the planning permission at the site.
- 5.3 Targeted ecological enhancements have been specified in light of baseline conditions, contemporary best practice, local conservation targets (such as Biodiversity Action Plan priorities), relevant planning policy, and proposed development details. Enhancements have been incorporated into the landscaping proposals and will seek to create habitat suitable for supporting rare, protected and notable ecological receptors, ensuring net gains in biodiversity value.
- 5.4 Enhancements for the site include bird and bat boxes, stag beetle loggery, reptile hibernaculum and on-going wildlife sensitive management.
- 5.5 Greengage will be present to oversee the placement and installation of the key ecological enhancement actions described in this report. If this is to change the Local Planning Authority will be notified.
- 5.6 Provision for on-going management and monitoring is described.

**FIGURE 1 LANDSCAPING PLAN AND LOCATION OF ECOLOGICAL FEATURES**



**Landscaping Notes**

All planting, seeding or turfing comprised in the details of this drawing shall be carried out in the first planting and seeding seasons following occupation of the buildings or the completion of the development, whichever is the sooner and the client is to replace any trees, hedgerows or plants contained in the approved planting scheme which within a period of 5 years from the completion of the development die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of similar size and species, unless the local planning authority gives written consent to any variation.

All plants shall comply with BS 3936  
All topsoil to comply with BS3882 - multi-purpose use

All shrub beds to receive a 450mm topsoil  
All grass areas to receive 150mm of topsoil

Prior to planting all areas are to be cultivated to an even tilth any debris larger than 50mm to be removed from site

Shrub beds are to be mulched with 50mm of bark mulch  
Ornamental shrubs are to be planted at a minimum of 3m<sup>2</sup>  
Shrubs to be planted as indicated on plans adding fertilizer to the backfill

Standard Trees are to be planted in pits 600 x 600 x 600mm  
Heavy Standard Trees are to be planted in pits 900 x 900 x 900mm  
Semi-mature Trees are to be planted in pits 1000 x 1000 x 1000mm

Tree pits to be backfilled with a mixture of topsoil, planting compost and fertilizer  
Bare-root trees to be supported by 1no stake and 2no ties  
Rootballed / containerised trees to be supported by 2no stakes and crossbar

All trees are to be planted as shown ensuring a minimum of 5 metres from buildings and 3 metres from drainage. A suitable system for controlling the roots of the trees should be installed where necessary. Where tree abut footpaths or highways a suitable root barrier to be installed along the footpath/highways edge of the planting pit. Re-root 100 or similar.

All plants to be watered in as necessary

Grass areas are to be cultivated to 100mm and raked to a fine tilth, any debris over 50mm to be removed from site

All turf to be used is to be of cultivated type and is to be laid in accordance with the British Standards

It is assumed that none of the landscaping proposals conflicts with any onsite services, please advise if not correct

**Maintenance**

The Maintenance Period for soft landscaping will be 12 months and should be undertaken by a competent contractor.

During this period the Landscape Contractor shall carry out the maintenance of the planted areas as follows:

- Make visits at approximately monthly intervals depending on the time of year
- Control weeds in beds by the use of approved herbicide (Handweeding may also be carried out when part of the specification)
- Check condition of stakes, ties guys and guards at each maintenance visit
- Adjust ties if necessary to prevent rubbing of bark
- Litter pick planting beds at each visit only (excludes fly tipping)

During this period the Landscape Contractor shall carry out the maintenance of the grass areas as follows:

- Make visits at intervals of between two and four weeks depending on the time of year
- Before each visit remove litter and debris from grass areas (excluding fly tipping)
- At the time of each cut trim grass edges around trees / manholes etc. and sweep cuttings from hard areas
- Arisings to be left on site unless otherwise stated in the specification

At the end of each visit the site will be left in a tidy condition.

The Contractor will report any damages, fly tipping or losses at regular intervals to the Client.

In the late Autumn each year prepare a report on losses, damaged areas and pruning requirements for the Client.

After the first 12 month establishment period any shrub and tree planting outside garden space to be maintained by applicant for a further 4 years.

- Make visits at approximately monthly intervals during the growing season
- Control weeds in beds by the use of approved herbicide
- Shrubs to be kept in tidy form and prevented from encroaching hard areas
- Any dead/damaged tree branches to be removed
- Check condition of stakes, ties guys and guards at each maintenance visit
- Adjust ties if necessary to prevent rubbing of bark
- Litter pick planting beds at each visit only (excludes fly tipping)

Bark mulch to be topped up bi-annually, any failed shrubs or trees to be replaced and the end of the each year.

**Landscape Schedule**

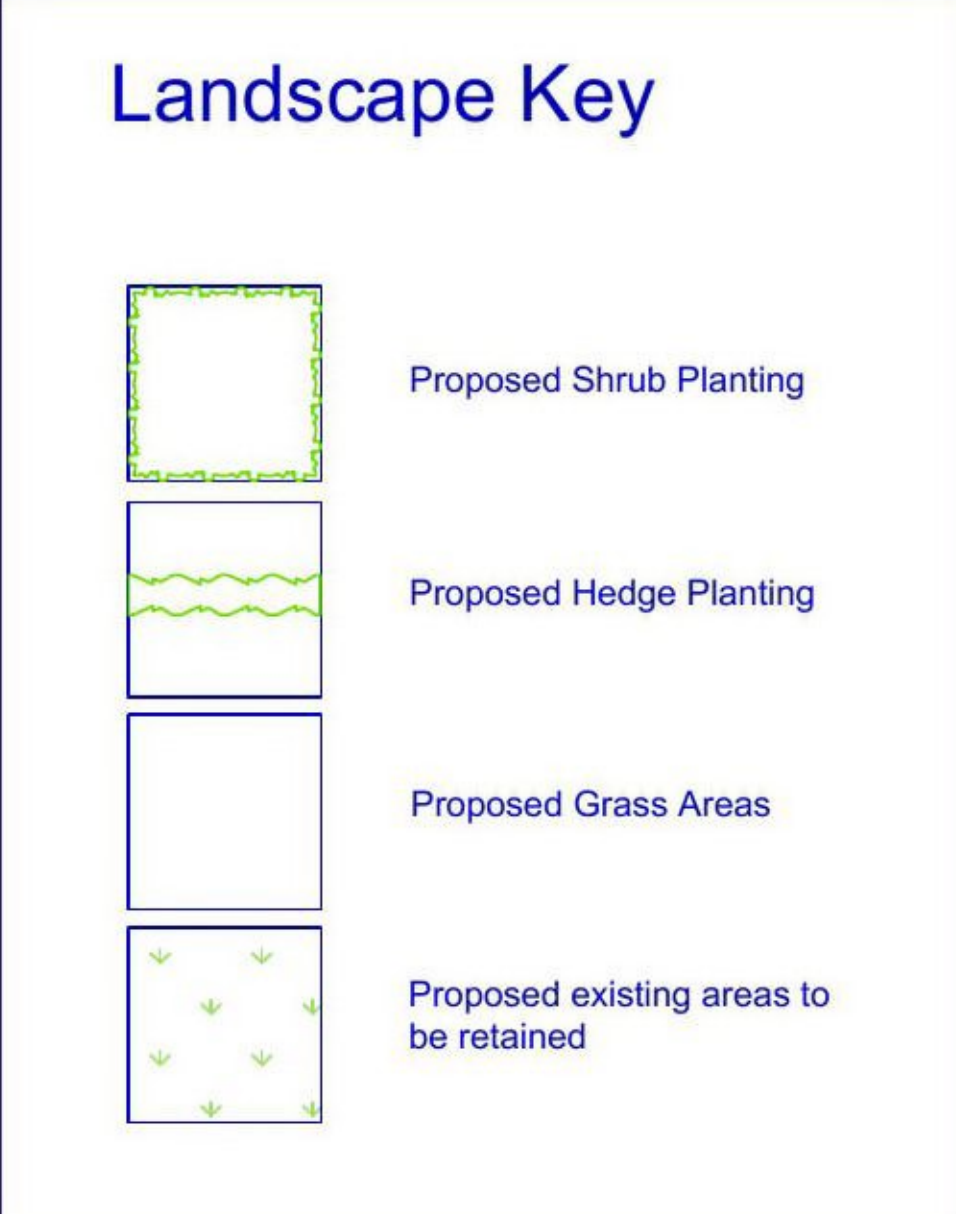
Native Hedge							
Abbreviation	Species	Specification	Pot Size	Density	Number	Length	
AcC	Acer campestre	BR	0.5Cr	Double Staggered at 0.3m offset	24 No.	5.87m	
CoA	Corylus avellana	BR	0.5Cr	Double Staggered at 0.3m offset	24 No.	5.87m	
CrM	Crataegus monogyna	BR	0.5Cr	Double Staggered at 0.3m offset	30 No.	7.34m	
IIA	Ilex aquifolium		3L	0.5Cr	Double Staggered at 0.3m offset	6 No.	1.47m
LIV	Ligustrum vulgare	BR	0.5Cr	Double Staggered at 0.3m offset	12 No.	2.93m	
RoC	Rosa canina	BR	0.5Cr	Double Staggered at 0.3m offset	12 No.	2.93m	
VIO	Viburnum opulus	BR	0.5Cr	Double Staggered at 0.3m offset	12 No.	2.93m	
					<b>Total :120 No.</b>	<b>Total :29.34m</b>	

**Ornamental Hedge**

Abbreviation	Species	Height	Pot Size	Density	Number	Length
BeV	Berberis verruculosa	20-30cm	2L	4m	165 No.	40.85m
					<b>Total :165 No.</b>	<b>Total :40.85m</b>

**Shrubs**

Abbreviation	Species	Height	Pot Size	Density	Number	Area
ChAP	Choisya 'Aztec Pearl'	30-40cm	3L	3m <sup>2</sup>	29 No.	9.3m <sup>2</sup>
ElpM	Elaeagnus pungens 'Maculata'	30-40cm	3L	3m <sup>2</sup>	7 No.	2.31m <sup>2</sup>
EuFEG	Euonymus fortunei 'Emerald 'n' Gold'	20-30cm	2L	4m <sup>2</sup>	112 No.	27.15m <sup>2</sup>
HeOB	Hebe 'Oratio Beauty'	20-30cm	2L	4m <sup>2</sup>	28 No.	6.9m <sup>2</sup>
HePQ	Hebe 'Purple Queen'	20-30cm	2L	4m <sup>2</sup>	73 No.	17.81m <sup>2</sup>
HyC	Hypericum calycinum	20-30cm	2L	3m <sup>2</sup>	16 No.	5.28m <sup>2</sup>
Laah	Lavandula angustifolia 'Hidcote'	20-30cm	2L	4m <sup>2</sup>	16 No.	3.88m <sup>2</sup>
LoP	Lonicera pileata	20-30cm	2L	3m <sup>2</sup>	54 No.	17.29m <sup>2</sup>
PhRR	Photinia x fraseri 'Red Robin'	30-40cm	3L	3m <sup>2</sup>	11 No.	3.03m <sup>2</sup>
PyOG	Pyracantha 'Orange Glow'	40-60cm	2L	3m <sup>2</sup>	28 No.	8.94m <sup>2</sup>
SaC	Sarcococca confusa	20-30cm	2L	3m <sup>2</sup>	12 No.	3.72m <sup>2</sup>
SchA	Symphoricarpos chenaultii 'Hancock'	20-30cm	2L	3m <sup>2</sup>	36 No.	11.58m <sup>2</sup>
VID	Viburnum davidii	30-40cm	3L	3m <sup>2</sup>	76 No.	24.51m <sup>2</sup>
VIT	Viburnum tinus	30-40cm	3L	3m <sup>2</sup>	34 No.	10.77m <sup>2</sup>
					<b>Total :532 No.</b>	<b>Total :152.47m<sup>2</sup></b>



Rev.	Date	Details
A	29.11.19	Revised to architects comments
	08.11.19	Initial design and scheme

Taylor French Developments  
Two Waters Road Hemel Hempstead  
Landscaping

Drawing No: ADL287  
Revision: A  
Scale: 1:200 @ A1



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## APPENDIX 1 RELEVANT LEGISLATION AND POLICY

### LEGISLATION

Current key legislation relating to ecology includes the Wildlife and Countryside Act 1981 (as amended)<sup>6</sup>; The Conservation of Habitats and Species Regulations 2019 ('Habitats & Species Regulations')<sup>7</sup>, The Countryside and Rights of Way Act 2000 (CRoW Act)<sup>8</sup>, and The Natural Environment and Rural Communities Act, 2006<sup>9</sup>.

#### **The Conservation of Habitats and Species 2017**

The Conservation of Habitats & Species Regulations replace The Conservation (Natural Habitats, etc.) Regulations 1994 (as amended)<sup>10</sup>, and transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora ('EU Habitats Directive')<sup>11</sup>, and Council Directive 79/409/EEC on the Conservation of Wild Birds ('Birds Directive')<sup>12</sup> into UK law (in conjunction with the Wildlife and Countryside Act).

Regulation 43 and 47 respectively of the Conservation of Habitats & Species Regulations makes it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2 (European protected species of animals), or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 5 (European protected species of plant). Development that would contravene the protection afforded to European protected species requires a derogation (in the form of a licence) from the provisions of the Habitats Directive.

Regulation 63 (1) states: 'A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which —

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects); and

(b) is not directly connected with or necessary to the management of that site;

must make an appropriate assessment of the implications for that site in view of that site's conservation objectives.'

#### **Wildlife and Countryside Act 1981 (as amended)**

The Wildlife and Countryside Act 1981 (as amended) is the principal mechanism for the legislative protection of wildlife in Great Britain. This legislation is the means by which the Convention on the Conservation of European Wildlife and Natural Habitats<sup>13</sup> (the 'Bern Convention') and the Birds Directive and EU Habitats Directive are implemented in Great Britain.

#### **The Countryside and Rights of Way Act 2000**

The Wildlife and Countryside Act has been updated by the CRoW Act. The CRoW Act amends the law relating to nature conservation and protection of wildlife. In relation to threatened species it strengthens the legal protection and adds the word 'reckless' to the offences of damaging, disturbing, or obstructing access to any structure or place a protected species uses for shelter or protection, and disturbing any protected species whilst it is occupying a structure or place it uses for shelter or protection.

### **The Natural Environment and Rural Communities Act 2006**

The Natural Environment and Rural Communities Act 2006 states that every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity. Biodiversity Action Plans provide a framework for prioritising conservation actions for biodiversity.

Section 41 of the Natural Environment and Rural Communities Act requires the Secretary of State to publish a list of species of flora and fauna and habitats considered to be of principal importance for the purpose of conserving biodiversity. The list, a result of the most comprehensive analysis ever undertaken in the UK, currently contains 1,149 species, including for example, hedgehog (*Erinaceus europaeus*), and 65 habitats that were listed as priorities for conservation action under the now defunct UK Biodiversity Action Plan<sup>14</sup> (UK BAP). Despite the devolution of the UK BAP and succession of the UK Post-2010 Biodiversity Framework<sup>15</sup> (and Biodiversity 2020 strategy<sup>16</sup> in England), as a response to the Convention on Biological Diversity's (CBD's) Strategic Plan for Biodiversity 2011-2020<sup>17</sup> and EU Biodiversity Strategy (EUBS)<sup>18</sup>, this list (now referred to as the list of Species and Habitats of Principal Importance in England) will be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 41 of the Natural Environment and Rural Communities Act 2006 'to have regard' to the conservation of biodiversity in England, when carrying out their normal functions.

### **Biodiversity Action Plans**

Non-statutory Biodiversity Action Plans (BAPs) have been prepared on a local and regional scale throughout the UK over the past 15 years. Such plans provide a mechanism for implementing the government's broad strategy for conserving and enhancing the most endangered ('priority') habitats and species in the UK for the next 20 years. As described above the UK BAP was succeeded in England by Biodiversity 2020 although the list of priority habitats and species remains valid as the list of *Species of Principal Importance for Nature Conservation*.

Regional and local BAPs are still valid however and continue to be updated and produced.

Detail on the relevant BAPs for this site are provided in the main text of this report.

### **Legislation Relating to Nesting Birds**

Nesting birds, with certain exceptions, are protected from intentional killing, destruction of nests and destruction/taking of eggs under the Wildlife and Countryside Act 1981 (as amended) and the CRow Act. Any clearance of dense vegetation should therefore be undertaken outside of the nesting bird season, taken to run conservatively from March to August (inclusive), unless an ecologist confirms the absence of active nests prior to clearance.

### **Legislation Relating to Bats**

All UK bats and their roosts are protected by law. Since the first legislation was introduced in 1981, which gave strong legal protection to all bat species and their roosts in England, Scotland and Wales, additional legislation and amendments have been implemented throughout the UK.

Six of the 18 British species of bat have Biodiversity Action Plans (BAPs) assigned to them, which highlights the importance of specific habitats to species, details of the threats they face and proposes measures to aid in the reduction of population declines.

Although habitats that are important for bats are not legally protected, care should be taken when dealing with the modification or development of an area if aspects of it are deemed important to bats such as flight corridors and foraging areas.

The Wildlife & Countryside Act 1981 (WCA) was the first legislation to provide protection for all bats and their roosts in England, Scotland and Wales (earlier legislation gave protection to horseshoe bats only.)

All eighteen British bat species are listed in Schedule 5 of the Wildlife and Countryside Act, 1981 and under Annex IV of the Habitats Directive, 1992 as a European protected species. They are therefore fully protected under Section 9 of the 1981 Act and under Regulation 43 of the Conservation of Habitats and Species Regulations 2017, which transposes the Habitats Directive into UK law. Consequently, it is an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat; and
- Intentionally or recklessly obstruct access to a bat roost.

This legislation applies to all bat life stages.

The implications of the above in relation to the proposals are that where it is necessary during construction to remove trees, buildings or structures in which bats roost, it must first be determined that work is compulsory and if so, appropriate licenses must be obtained from Natural England.

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### **Legislation Relating to Reptiles**

All species of reptile native to the UK are protected to some degree under national and/or international legislation, which provides mechanisms to protect the species, their habitats and sites occupied by the species.

Sand lizards and smooth snakes are European protected species and are afforded full protection under Section 9 of the Wildlife and Countryside Act 1981 and Regulation 43 of the Conservation of Habitats and Species Regulations 2017. However, these species are rare and highly localised. Their occurrence is not considered as relevant in this instance, as the ranges and specialist habitats of these species do not occur at this site.

The remaining widespread species of native reptiles (adder, grass snake, slow worm and viviparous lizard) are protected under part of Section 9(1) and all of Section 9(5) of the Wildlife and Countryside Act 1981. They are protected against intentional killing and injury and against sale, transporting for sale etc. The habitat of these species is not protected. However, in terms of development, disturbing or destroying reptile habitat during the course of development activities while reptiles are present is likely to lead to an offence under the Wildlife and Countryside Act 1981. It is therefore important to identify the presence of these species within a potential development site. If any of these species are confirmed, all reasonable measures must then be taken to ensure the species are removed to avoid the threat of injury or death associated with development activities.

Each species of native reptile has specific habitat requirements but general shared features include a structurally diverse habitat that provides for shelter, basking, foraging and hibernating.

All reptiles are BAP species and as such are also of material consideration in the planning process due to the NPPF.

### **PLANNING POLICY**

#### **National**

##### ***National Planning Policy Framework***

The National Planning Policy Framework (NPPF) 2019<sup>19</sup> sets out the Government's planning policies for England, including how plans and decisions are expected to apply a presumption in favour of sustainable development. Chapter 15 of the NPPF focuses on conservation and enhancement of the natural environment, stating plans should 'identify and pursue opportunities for securing measurable net gains for biodiversity'.

It goes on to state: 'if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission

should be refused'. Alongside this, it acknowledges that planning should be refused where irreplaceable habitats such as ancient woodland are lost.

## **Local and Regional plans**

### ***Hertfordshire Local Plan Core Strategy 2011-203120***

Policy LD2 – Biodiversity and geodiversity Development proposals should conserve, restore and enhance the biodiversity and geodiversity assets of Herefordshire, through the:

1. retention and protection of nature conservation sites and habitats, and important species in accordance with their status as follows:

a) Development that is likely to harm sites and species of European Importance will not be permitted;

b) Development that would be liable to harm Sites of Special Scientific Interest or nationally protected species will only be permitted if the conservation status of their habitat or important physical features can be protected by conditions or other material considerations are sufficient to outweigh nature conservation on considerations;

c) Development that would be liable to harm the nature conservation value of a site or species of local nature conservation interest will only be permitted if the importance of the development outweighs the local value of the site, habitat or physical feature that supports important species.

d) Development that will potentially reduce the coherence and effectiveness of the ecological network of sites will only be permitted where adequate compensatory measures are brought forward.

2. restoration and enhancement of existing biodiversity and geodiversity features on site and connectivity to wider ecological networks; and

3. creation of new biodiversity features and wildlife habitats. Where appropriate the council will work with developers to agree a management strategy to ensure the protection of, and prevention of adverse impacts on, biodiversity and geodiversity features.

Policy LD3 – Green infrastructure Development proposals should protect, manage and plan for the preservation of existing and delivery of new green infrastructure, and should achieve the following objectives:

1. identification and retention of existing green infrastructure corridors and linkages; including the protection of valued landscapes, trees, hedgerows, woodlands, water courses and adjoining flood plain;

2. provision of on-site green infrastructure; in particular proposals will be supported where this enhances the network; and

3. integration with, and connection to, the surrounding green infrastructure network.

***Dacorum Local Planning Framework: Core strategy<sup>21</sup>***

*Policy CS5: Green Belt*

The Council will apply national Green Belt policy to protect the openness and character of the Green Belt, local distinctiveness and the physical separation of settlements. There will be no general review of the Green Belt boundary, although local allocations (under Policies CS2 and CS3) will be permitted.

Within the Green Belt, small-scale development will be permitted i.e. (a) for the uses defined as appropriate in national policy;

(b) building the replacement of existing buildings for the same use; existing houses; and

(c) limited extensions to existing buildings

(d) the appropriate reuse of permanent, substantial buildings; and

(e) the redevelopment of previously developed sites<sup>14</sup>, including major developed sites which will be defined on the Proposals Map provided that:

- i. it has no significant impact on the character and appearance of the countryside; and
- ii. it supports the rural economy and maintenance of the wider countryside.

Further guidance will be provided.

Development within selected small villages in the Green Belt will be permitted in accordance with Policy CS6.

**Policy CS24: The Chilterns Area of Outstanding Natural Beauty** The special qualities of the Chilterns Area of Outstanding Natural Beauty will be conserved. The scarp slope will be protected from development that would have a negative impact upon its skyline. Development will have regard to the policies and actions set out in the Chilterns Conservation Board's Management Plan and support the principles set out within the Chilterns Buildings Design Guide and associated technical notes.

**Policy CS25: Landscape Character** All development will help conserve and enhance Dacorum's natural and historic landscape. Proposals will be assessed for their impact on landscape features to ensure that they conserve or improve the prevailing landscape quality, character and condition and take full account of the Dacorum Landscape Character Assessment, Historic Landscape Characterisation and advice contained within the Hertfordshire Historic Environment Record.

**Policy CS26: Green Infrastructure** The Green Infrastructure Network will be protected, extended and enhanced. Habitat management zones, projects and more detailed policies will be set out in a Supplementary Planning Document and related Action Plan(s). National and local Biodiversity Action Plans will be supported. Designated sites will be

protected and opportunities taken to link them with the wider Green Infrastructure Network. Development and management action will contribute towards:

- the conservation and restoration of habitats and species;
- the strengthening of biodiversity corridors;
- the creation of better public access and links through green space; and
- a greater range of uses in urban green spaces.

Open spaces will be managed in accordance with the Council's Green Space Strategy.

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- <sup>21</sup> Dacorum Borough Council (2013) Adopted Core Strategy