Barratt Homes

Havant Road, Emsworth

Ecological Mitigation and Management Plan

February 2017

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1.0 Introduction

1.1 Background

WYG was commissioned by Barratt Homes to prepare an Ecological Mitigation and Management Plan (EMMP) for Havant Road, Emsworth in February 2017. This plan addresses the following items with a view to maintaining and enhancing the biodiversity value of the site in the long-term:

1. Mitigation for protected and notable habitats and species that may be impacted by the proposals; and
2. Management of retained, enhanced and created habitats.

This EMMP has been produced by Assistant Ecologist Max Ward GradCIEEM, developed using information collected during the initial ecological assessment and protected species surveys completed in 2014, update visits in June 2016 and February 2017 and from recommendations outlined within the following WYG reports to inform the planning application for the development and to guide ecological mitigation, compensation and enhancement proposals:

- WYG (2017) Havant Road, Emsworth: Extended Phase 1 Habitat Survey
- WYG (2017) Havant Road, Emsworth: Reptile Presence/Likely Absence Survey Report
- WYG (2017) Havant Road, Emsworth: Bat Activity Survey Report
- WYG (2017) Havant Road, Emsworth: Wintering Bird Survey Report

1.2 Site Location

The site covers an area of approximately 6.1 hectares, located to the east of the town Havant in Hampshire, centred on Ordnance Survey grid reference SU 734 062. The site is bordered to the north west by the A27, residential development to the east and to the south by the A259.

The site comprises very short, cattle grazed improved grassland, areas of bare ground, scattered scrub and trees, bramble and defunct hedgerows. Along the north western boundary adjacent to the A27 is young tree belt plantation mainly comprising field maple and hawthorn. The south eastern boundary comprises back garden fencing with planted shrubs with scrub and tall ruderal vegetation. A hedgerow runs adjacent to the footway of the A259 comprising mainly sycamore. Scrub dominates the north eastern extent of the site and three defunct hedgerows; ; two if which run north to south and one runs east to west separating the fields from one another.

1.3 Development Proposals

It is proposed to develop the site for 161 residential properties, with associated parking, access, gardens, hard and soft landscaping and areas created for local wildlife. An area of open space will be retained within the southern area of the site , in addition to several areas of public open space throughout the scheme including a buffer varying between 5.6m and 8.3m along the south eastern boundary which will be managed as tall grassland with one cut a year in September along with a tall grassland-scrub mosaic area along the eastern extent of the site. The scheme will be accessed from the southern boundary, with additional foot access provision along the south eastern boundary. There will be a trim trail that forms the circular route surrounding the development boundaries. For the most up to date layout plan please refer to Layout Plan drawing No. 18-2059-100, contained in Appendix A.

2.0 Baseline

Below is a summary of the findings of the ecological surveys completed at the site to date. Full details can be found in the individual reports as referenced below.

This information has helped inform the design of the planning layout (Simon Cooper Associates Ltd. 18-2059-100). Figure 1 shows the location and extent of the existing ecological features on site. These features will either be:

- Protected; or
- Appropriately mitigated for where directly impacted.

All retained and/or created ecological features will be:

- Appropriately managed; and where necessary
- Monitored.

Table 1: Surveys completed in 2014

Survey Type	Survey Date	Summary of Results
Extended Phase 1 Habitat Survey	1st July 2014 (additional visit 20th August 2014)	The site comprises very short, cattle grazed grassland with scattered scrub, bramble and defunct hedgerows. A young plantation woodland belt runs along the north western boundary comprising field maple and hawthorn. Scrub habitat dominates the south eastern boundary. A sycamore hedgerow runs along the southern site boundary adjacent to the A259. Scrub dominates the north eastern extent of the site and three defunct hedgerows are present; two run north to south and one east to west separating the fields from one another. Suitable habitat was identified with the potential to support the following protected and notable species: • Reptiles • Bats • Breeding birds • Wintering birds • Badgers Full details are presented in the Havant Road, Emsworth: Extended Phase 1 Habitat Survey Report (WYG, 2017).
Reptile	Seven visits between 5th	**A maximum count of two adult slow worms was**

Survey Type	Survey Date	Summary of Results
presence / likely absence	September and 6th October 2014	**recorded**. The population onsite was confirmed to be breeding as a juvenile slow worm was also recorded. A low population of slow worms is therefore considered to be present onsite. Full details are presented in the Havant Road, Emsworth: Reptile Presence / Likely Absence Survey Report (WYG, 2017).
Bat Activity	Carried out on three occasions between August and September 2014	Up to six species of bats were recorded foraging and commuting within the site boundary: common pipistrelle, soprano pipistrelle, serotine, noctule, and bats of the *Myotis* genus (most likely whiskered / Brandt's). These species were found to be predominantly using the north western wooded boundary as a commuting pathway, and foraging along the wooded edge and over the grassland. Based on the assessment using Wray *et al* (2010) both the foraging and commuting values of the site are considered to be of '**district, local or parish**' importance. Full details are presented in the Havant Road, Emsworth: Bat Activity Survey Report (WYG, 2017).
Wintering Birds	Two high tide surveys per month between October 2013 and March 2014	A total of 34 species were recorded using the site, eleven of these being birds of conservation concern (BoCC). Four species identified are Red Listed and even are Amber Listed. In addition to this, two species are also listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) – Firecrest and Redwing. The legal status of this species relates only to breeding birds; redwings do not breed within Hampshire whilst the site does not contain suitable habitats for breeding firecrest. No SPA/Ramsar qualifying species were recorded on site during the surveys at high tide. The site does not contain suitable habitats for waders or Brent geese due to the enclosed nature of the site. Full details are presented in the Havant Road, Emsworth: Wintering Birds Survey Report (WYG, 2017).

2.1 Protected Sites and Landscape Scale Interest

2.1.1 Statutory sites

Six statutory sites are present within 2km of the site. The details of these sites and their proximity to the development site are outlined below in Table 2.

Table 2: Details of statutory sites within 2 km

Designated site	Distance and direction from site	Reasons for designation
Warblington Meadow Site of Special Scientific Interest (SSSI)	1.0 km south of the site.	Warblington Meadow SSSI is an unimproved grazing marsh adjoining Chichester Harbour and is of special interest for its gradation from fresh water, base-rich marsh to old reclaimed salt marsh and for its associated flora, with a total of 158 species of flowering plants having been recorded.
Chichester and Langstone Harbour Special Protection Area (SPA)	1.1 km south of the site.	Chichester and Langstone Harbour SPAs are located on the south coast of England in Hampshire and West Sussex. They are large, sheltered estuarine basins comprising extensive sand- and mud-flats exposed at low tide. The two harbours are joined by a stretch of water that separates Hayling Island from the mainland. Tidal channels drain the basin and penetrate far inland. The mud-flats are rich in invertebrates and also support extensive beds of algae, especially Enteromorpha species, and eelgrasses Zostera spp. The basin contains a wide range of coastal habitats supporting important plant and animal communities. The site is of particular significance for waterbirds, especially in migration periods and in winter. It also supports important colonies of breeding terns.
Solent Maritime Special Area Conservation (SAC)	1.1 km south east of the site.	The Solent encompasses a major estuarine system on the south coast of England with four coastal plain estuaries (Yar, Medina, King's Quay Shore, Hamble) and four bar-built estuaries (Newtown Harbour, Beaulieu, Langstone Harbour, Chichester Harbour). The site is the only one in the series to contain more than one physiographic sub-type of estuary and is the only cluster site. The Solent and its inlets are unique in Britain and Europe for their hydrographic regime of four tides each day, and for the complexity of the marine and estuarine habitats present within the area. Sediment habitats within the estuaries include extensive estuarine

Designated site	Distance and direction from site	Reasons for designation
		flats, often with intertidal areas supporting eelgrass *Zostera spp.* and green algae, sand and shingle spits, and natural shoreline transitions. The mudflats range from low and variable salinity in the upper reaches of the estuaries to very sheltered almost fully marine muds in Chichester and Langstone Harbours. Unusual features include the presence of very rare sponges in the Yar estuary and a sandy 'reef' of the polychaete *Sabellaria spinulosa* on the steep eastern side of the entrance to Chichester Harbour.
Chichester and Langstone Harbour Ramsar Site	1.1 km south-east of the site.	The site comprises two large, interconnected sheltered estuarine basins providing extensive intertidal mud and sand flats with eelgrass *Zostera spp.* beds, large areas of mixed saltmarsh and extensive cord-grass *Spartina spp.* swards in an advanced state of degeneration. Fringing habitats includeshingle spits, saline, brackish and freshwater lagoons, coastal grazing marsh and deciduous woodland. The site supports important overwintering populations of migratory waterfowl. The information sheet on Ramsar wetlands within this area shows the following winter peak counts: • Dark-bellied brent goose, *Branta bernicla bernicla*, 12987 individuals, representing an average of 6% of the population. • Common shelduck , *Tadorna tadorna*, 1468 individuals, representing an average of 1.8% of the GB population. • Grey plover, *Pluvialis squatarola*, 3043 individuals, representing an average of 1.2% of the population. • Dunlin, *Calidris alpina alpina*, 33436 individuals, representing an average of 2.5% of the population.
Brook Meadow Local Nature Reserve (LNR)	1.5 km east of the site.	The site consists of 5 acres of grassland, surrounded by woodlands and flanked by two streams. Brook Meadow supports a range of birds, insects and wild flowers, with water voles present in the river.
Chichester and Langstone Harbour Site of Special Scientific	1.6 km south east of the site.	Chichester Harbour is a large estuarine basin in which at low water extensive mud and sandflats are exposed, drained by channels which unite to make a common exit to the sea. The site is of particular significance for wintering wildfowl and waders and also breeding birds both within the Harbour and in the surrounding permanent pasture fields and woodlands. There is a wide

Designated site	Distance and direction from site	Reasons for designation
Interest (SSSI)		range of habitats which have important plant communities.

2.1.2 Non-Statutory sites

Seventeen non-statutory sites are located within 2km of the development site. Four of these sites are located less than 500m away from the development site. The details of all non-statutory sites within 2km is sumamrised below in Table 3.

Table 3: Details of statutory sites within 2 km

SINC Name	Distance and direction from site	Reason for designation	Species supported by SINC
Brook Farm B	0.1 km south west of the site.	Criteria 6A: Sites which support one or more notable species4. Criteria 6B: Sites which regularly support a significant population of a species which has a restricted distribution or has substantially declined in population or range. Such sites may be used seasonally or for only one part of a species life-cycle.	Dark-Bellied Brent (*Goose Branta bernicla bernicla*), Weasel's Snout (*Misopates orontium*) and Corn Spurrey (*Spergula arvensis*).
Warblington Castle Farm East D	0.1 km south of the site.	Criteria 6B: Sites which regularly support a significant population of a species which has a restricted distribution or has substantially declined in population or range. Such sites may be used seasonally or for only one part of a species life-cycle.	Dark-Bellied Brent Goose (*Branta bernicla bernicla*)
Conigar Point Meadows	0.5 km south of the site.	Criteria 2A: Agriculturally unimproved grasslands Criteria 4A: Semi-natural coastal and estuarine habitats, including saltmarsh, intertidal mudflats, sand dunes, shingle, brackish ponds, grazing marsh and maritime grasslands. Criteria 6A: Sites which support one or more notable species. Criteria 6B: Sites which regularly support a significant population of a	Wild Celery (*Apium graveolens*) Field Brome (*Bromus arvensis*) Slender Hair's Ear (*Bupleurum tenuissimum*), Divided Sedge (*Carex divisa*), Long-Bracted Sedge (*Carex extensa*), Golden-Samphire (*Inula crithmoides*) and

SINC Name	Distance and direction from site	Reason for designation	Species supported by SINC
		species which has a restricted distribution or has substantially declined in population or range. Such sites may be used seasonally or for only one part of a species life-cycle.	Lax-flowered sea lavender (*Limonium humil*).
Warblington Castle Farm East E	0.5 km south of the site.	Criteria 6B: Sites which regularly support a significant population of a species which has a restricted distribution or has substantially declined in population or range. Such sites may be used seasonally or for only one part of a species life-cycle.	Dark-Bellied Brent Goose (*Branta bernicla bernicla*)
Warblington Castle Farm West	0.7 south west of the site.	Criteria 6B: Sites which regularly support a significant population of a species which has a restricted distribution or has substantially declined in population or range. Such sites may be used seasonally or for only one part of a species life-cycle.	Dark-Bellied Brent Goose *(Branta bernicla bernicla*)
Land West of Emsworth Recreation Ground	0.9 km east of the site.	Criteria 2B: Semi-improved grasslands which retain a significant element of unimproved grassland.	N/A
Nore Grassland & Saltmarsh	1.1 km south-east of the site.	Criteria 6A: Sites which support one or more notable species4. 6B: Sites which regularly support a significant population of a species which has a restricted distribution or has substantially declined in population or range. Such sites may be used seasonally or for only one part of a species life-cycle.	Slender Hair's Ear (*Bupleurum tenuissimum*) and Sea Wormwood (*Seriphidium maritimum*)
Stream West of Emsworth Recreation Ground	1.1 km east of the site.	Criteria 6A: Sites which support one or more notable species4.	Narrow-Leaved Water-Plantain (*Alisma lanceolatum*)
Westbrook Stream, Bridge Road	1.1 km east of the site.	Criteria 6A: Sites which support one or more notable species4.	Narrow-Leaved Water-Plantain (*Alisma lanceolatum*)
Emsworth Millpond	1.1 km north west of the site.	Criteria 4A: Semi-natural coastal and estuarine habitats, including saltmarsh, intertidal mudflats, sand dunes, shingle, brackish ponds, grazing marsh and maritime grasslands.	N/A
Lumley Meadow	1.3 east of the site	Criteria 2A: Agriculturally unimproved grasslands	Distant Sedge (*Carex distans*) and Divided

SINC Name	Distance and direction from site	Reason for designation	Species supported by SINC
		Criteria 6A: Sites which support one or more notable species4.	Sedge (*Carex divisa*)
Southleigh Forest (South)	1.4 km north east of the site.	Pasture woodland and wooded commons, not included in any of the above, which are of considerable biological and historical interest.	N/A
Langstone Mill Pond	1.5 km south west of the site.	Criteria 4A: Semi-natural coastal and estuarine habitats, including saltmarsh, intertidal mudflats, sand dunes, shingle, brackish ponds, grazing marsh and maritime grasslands. Criteria 5B: Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permanent) conditions. Criteria 6A: Sites which support one or more notable species. Criteria 6B: Sites which regularly support a significant population of a species which has a restricted distribution or has substantially declined in population or range. Such sites may be used seasonally or for only one part of a species life-cycle.	Large-Leaved Lime (*Tilia platyphyllos*)
Nore Grassland & Saltmarsh	1.6 km north of the site.	Criteria 4A: Semi-natural coastal and estuarine habitats, including saltmarsh, intertidal mudflats, sand dunes, shingle, brackish ponds, grazing marsh and maritime grasslands. Criteria 6A: Sites which support one or more notable species4.	Slender Hair's Ear (*Bupleurum tenuissimum*) and Sea Wormwood (*Seriphidium maritimum*)
Barton's Copse & The Slip	1.9 km north of the site	Criteria 1A: Ancient semi-natural woodlands.	N/A
Wade Court Park	1.8 km south of the site.	Criteria 6B: Sites which regularly support a significant population of a species which has a restricted distribution or has substantially declined in population or range. Such sites may be used seasonally or for only one part of a species life-cycle. Criteria 6C: Sites which support an	Little Egret (*Egretta garzetta*) - Colony

SINC Name	Distance and direction from site	Reason for designation	Species supported by SINC
		outstanding assemblage of species.	
Land East of 54 Long Copse Lane	2.1 km north east of the site	Criteria 2B: Semi-improved grasslands which retain a significant element of unimproved grassland.	N/A

3.0 Relevant Wildlife Protection Legislation and Planning Policy

3.1 National Policy

The Government sets out its objectives for conserving and enhancing biodiversity in National Planning Policy Framework and Biodiversity & Geological Conservation (Office of the Deputy Prime Minister - ODPM, 2005). This is the main source of Government Guidance on Nature Conservation and considers the integration of nature conservation policies and land use planning.

The Government's objectives for planning are:

- To promote sustainable development by ensuring that biodiversity is conserved and enhanced as an integral part of economic, social and environmental development, so that policies and decisions about the development and use of land integrate biodiversity with other considerations;
- To conserve, enhance and restore the diversity of England's wildlife and geology by sustaining, and where possible improving, the quality and extent of natural habitat and geological and geomorphological sites; the natural physical processes on which they depend; and the populations of naturally occurring species which they support;
- To contribute to rural renewal and urban renaissance by:
    - enhancing biodiversity in green spaces and among developments so that they are used by wildlife and valued by people, recognising that healthy functional ecosystems can contribute to a better quality of life and a sense of well-being; and
    - ensuring that developments take account of the role and value of biodiversity in supporting economic diversification and contributing to a high quality environment.

3.2 Local Planning Policy

As the site is situated within the Havant Borough, the relevant planning policy pertaining to the site is contained within the Havant Borough Adopted Core Strategy 2011-2026.

Policy CS11: Protecting and Enhancing the Special Environment and Heritage of Havant Borough states that planning permission for development within the Borough will be granted when it:

- *'Protects and where possible enhances the borough's statutory and non-statutory designated landscape, habitats and features of biological, hydrological or geological interest... Achieved by appropriate adaptation and mitigation measures*;
- *Has particular regard to the following hierarchy of nature conservation designations within the borough:*
    - *Special Protection Area (SPA), Special Areas of Conservation (SAC) and Ramsar.*
    - *Sites of Special Scientific Interest (SSSI) and National Nature Reserves.*
    - *Sites of Importance for Nature Conservation (SINC), Local Nature reserves (LNR), other Ancient Woodland;*
- *'Supports an ongoing programme of survey of habitats and species...'*
- *'Protected wildlife habitats and wildlife corridors to prevent the fragmentation of existing habitats and to allow species... to respond to the impacts of climate change by making provision for habitat adaptation.'*

The Core Strategy 2011-2026 asserts that special regard must be given to the Chichester Harbour Area of Outstanding Natural Beauty (AONB), which sits approximately 0.03km south of the application site. Policy CS12 Chichester Harbour Area of Outstanding Natural Beauty (AONB) states that development will be permitted where it:

- *'Carefully assesses the impact of individual proposals, and their cumulative effect, on the Chichester Harbour AONB, and its setting';*
- *'Is appropriate to the economic, social and environmental wellbeing of the area or is desirable for the understanding and enjoyment of the area';*
- *'Conserves and enhances the special qualities of the Chichester Harbour AONB (as defined in the Chichester Harbour AONB Management Plan)';*
- *'Provides mitigation of any detrimental effects including where appropriate the improvement of existing damaged landscapes relating to the proposal.'*

Furthermore, Policy DM8 Conservation, Protection and Enhancement of Existing Natural Features states that development will only be permitted where it:

- *'Protects natural features of nature conservation and/or amenity importance on the site, for example trees, woodlands, hedgerows, soils, streams, stream corridors, springs, ditches or ponds from damage, destruction and a deterioration in quality';*

- *'Sympathetically incorporates existing features into the overall design of the scheme including measures taken to ensure their continued survival';*

- *'Provides new landscape works that integrate successfully with the local environment and existing natural features, using local materials and plant species and making provision for future maintenance of new landscape works associated with new developments';*

- *'Ensures sequences of greenspaces are maintained and protects the attractiveness and visual amenity of all green open spaces that contribute to the identity of the borough.'*

3.3 UK Species Protection

The site has potential to support protected and notable species and as such the following aspects of wildlife legislation should be noted:

3.3.1 Reptiles

Slow worm are present on site and are protected under the *Wildlife and Countryside Act 1981* (as amended). This legislation makes it an offence to:

- Intentionally or recklessly kill or injure these animals; and

- Sell, offer for sale, possess or transport for the purpose of sale or publish advertisement to buy or sell individual reptiles.

3.3.2 Bats

All 18 British bat species are listed in Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and under Schedule 2 of the *Conservation of Habitats and Species Regulations 2010* (as amended), as European Protected Species. Furthermore, the *Countryside and Rights of Way Act 2000* (Schedule 12, Paragraph 5) has amended Section 9 of the 1981 Act. They are, therefore, fully protected under Section 9 of the 1981 Act and under Regulation 41 of the *Conservation of Habitats and Species Regulations 2010* (as amended), which transposes the Habitats Directive into UK law.

This makes it an offence to:

- Deliberately capture, injure or kill any bat;

- Deliberately disturb bats, in particular where it is likely to:
    - Impair their ability to breed or reproduce, or to rear or nurture their young;
    - Impair their ability to hibernate or migrate; or
    - Affect significantly the local distribution or abundance of bats.
- Intentionally or recklessly damage, destroy or obstruct the access to the place of shelter or protection; and
- Damage or destroy a bats breeding site or resting place.

The direct loss or modification of bat roosts are therefore offences under this legislation. So too is the disturbance of roosting bats while they occupy a place of rest. Any construction or demolition works to, or in proximity to, a bat roost may require an EPSM licence in order to proceed without causing an offence.

Section 41 (S41) of the NERC Act 2006 requires the Secretary of State to publish a list (in consultation with Natural England) of habitats and species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies including local and regional authorities, in implementing their duty under Section 40 of the NERC Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal (e.g. planning) functions. The S41 list includes seven species of bat; barbastelle (*Barbastellus barbastellus*), Bechstein's bat (*Myotis bechsteinii*), noctule (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pipistrellus*), brown long-eared bat (*Plecotus auritus*), greater horseshoe (*Rhinolophus ferrumequinum*) and lesser horseshoe (*Rhinolophus hipposideros*).

3.3.3 Breeding Birds

All birds, their nests and eggs are protected by the *Wildlife and Countryside Act 1981* (as amended), Part 1. It is therefore an offence to intentionally:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird while it is in use or being built;
- Take or destroy the egg of any wild bird:
- (Intentionally or recklessly) disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

The presence of breeding birds should be considered a constraint to development if vegetation clearance is carried out during the bird breeding season (usually considered to be February – August

inclusive). If presence of breeding birds is confirmed then the development timetable will have to be revised to take account of this and delay vegetation clearance.

3.3.4 Wintering Birds

Annex 1 of the EU 'Birds' Directive (1979) lists 194 species that are subject to special conservation measures concerning their habitat in order to ensure their survival and reproduction. Member States are required to designate Special Protection Areas (SPAs) for the Annex 1 and all migratory species. SPAs are scientifically identified areas critical to the survival of the targeted species. The SPAs form part of the Natura 2000 EU network of protected nature sites. The designation of an area as an SPA gives it a high level of protection from potentially damaging developments (European Commission (EC) 1979).

Brent geese are afforded protection under Section 4.2 of the Wild Birds Directive 79/409/EEC. Section 4.2 of the Directive states that all Member States are required to:

"…take similar measures for regularly occurring migratory species not listed in Annex I, bearing in mind their need for protection in the geographical sea and land area where this Directive applies, as regards their breeding, moulting and wintering areas and staging posts along their migration routes. To this end, Member States shall pay particular attention to the protection of wetlands and particularly to wetlands of international importance."

Measures taken by the UK Government in fulfilment of this duty include designating wildlife sites where the species occur. Brent geese are a principle feature of Langstone Harbour Special Protection Area (SPA) and a feature of the Chichester and Langstone Harbour Ramsar Site and Langstone Harbour Site of Special Scientific Interest (SSSI). About 16% of the UK migratory/wintering population of Brent geese are present within this SPA. The SPA is also designated for significant numbers of black-tailed godwit, dunlin, grey plover (*Pluvialis squatarola*), redshank and ringed plover (*Charadius hiaticula*), with the area classed as a Wetland of International Importance regularly supporting a population of 93,000 individual wintering waterfowl (JNCC, 1996).

3.3.5 Badgers

Badgers are protected in the UK under the *Protection of Badgers Act 1992*, making it an offence to:

- Kill, injure or take a badger;
- Intentionally or recklessly interfere with a badger sett.

Sett interference includes damaging, destroying or obstructing access to a sett and disturbing badgers while they occupy a sett.

The *Natural Environment and Rural Communities Act 2006* places a duty on authorities to have 'due regard for' biodiversity and nature conservation during the course of their operations.

Works within 20-30m of any active sett entrance has the potential to affect a sett (Natural England, 2007 and 2009). Works which would otherwise cause an offence under current legislation may in some cases be permitted under licence from the relevant statutory authority, which in this case is Natural England. Licences are usually only issued between July and November of any year inclusive.

4.0 Mitigation Methodology

The following principles and hierarchy are used when determining mitigation measures at this site:

- Prevention – to avoid adverse effects as far as possible by designing out or using preventative measures during the construction process thus resulting in an environmental effect of neutral significance.
- Reduction – to minimise adverse effects as far as possible.
- Compensation – involves measures of the same value to off-set the impact.
- Enhancement – to identify opportunities where enhancement can be incorporated into the scheme where effects have been neutralised, where the feature is enhanced.

Similarly, a distinction is made between types of mitigation measures and how they can be incorporated as follows:

- Inherent Mitigation – This is prevention through design, i.e. the design of the site is altered to accommodate an important feature, or changed in order to prevent or reduce a predicted impact;
- Additional Mitigation – identified where it is considered that as a result of the assessment process that measures, in addition to the Inherent Mitigation within the scheme design, are required to reduce the scheme's environmental impact further. This forms the main focus of the mitigation description below.

The key objective of mitigation is to address the impacts considered to be of moderate and major significance on the identified ecological receptors of this site.

5.0 Roles and Responsibilities

5.1 Ecological Clerk of Works

An Ecological Clerk of Works (ECoW) who is a qualified ecologist will be appointed by Barratt Homes and nominated to oversee the site activities in relation to ecology where required (as detailed below) during construction works in line with the recommendations of this EMMP.

5.1.1 Construction Phase

It will be the responsibility of the ECoW to provide advice to the construction teams during all phases of the scheme on all pertinent ecological issues and to check that the ecological protection and mitigation measures, as specified in this document, are implemented. Recommendations will be passed to Barratt Homes who will be responsible for ensuring implementation.

The EMMP will be distributed to all relevant personnel involved with the construction phase of the development including Barratt Homes and any contractors who may be working on the site.

General responsibilities of the ECoW during the Construction Phase are:

The ecological clerk of works will have specific responsibilities which will include:

- Provision of advice on the location of protected species e.g. reptiles;
- To supervise and monitor the implementation and maintenance of protective or mitigation measures in accordance with legal requirements or the terms set out in this document;
- Liaison with the main contractor's site manager, Hampshire County Council (where necessary) ecologist and others relevant stakeholders as appropriate; and

Specific responsibilities of the client, Barratt Homes, in relation to this EMP will include:

- To adhere to the relevant provisions made within this document;
- To comply with the advice of the ecological clerk of works as appropriate;
- Monitoring of new habitats;
- Checking the condition of ecological features such as bird boxes, bat boxes, reptile hibernacula
- To ensure that this Ecological Management Report is distributed to all relevant parties: and

- To ensure that all persons working within the area covered by this Plan are briefed on relevant aspects. Once the initial tool box talk has taken place (prior to works commencing on the site), briefing notes will be left in the site office for future visitors/contractors.

5.1.2 Post Construction

Barratt Homes will appoint a management company and the management company should be familiar with this report and have sufficient authority and presence on site to influence activities.

Post construction management will at least initially be the responsibility of Barratt Homes and passed to the management company once appointed.

General responsibilities of Barratt Homes (or management company once appointed) during the Operation Phase are:

- Overseeing that the retained and created habitats on site are managed as per this EMMP;
- Checking the success of new habitats and ensuring that remedial action is taken where necessary. It maybe that an ecologist needs to be consulted for advice;
- Checking that the bat roosting features and bird boxes are not removed / damaged and ensuring that remedial action is taken where necessary; and
- Cleaning bird boxes.

Where additional issues are identified that are not currently covered in this document, or where it is considered that revised maintenance regimes are needed to maximise the ecological value of the site, Barratt Homes or the appointed management company should contact a suitably qualified ecologist who can make changes to management prescriptions as appropriate. Any revisions made to this document, following the five year review period will be re-issued to Barratt Homes and Havant Borough Council.

6.0 Toolbox Talk

Contractors working on the site will be given a site briefing (tool box talk) with regards to working methods, and protection of habitats and species during works (in particular bats and breeding birds), before they begin working on the site. This will include general avoidance measures including; noise management, lighting, access and parking, storage of materials and cleaning. It will also provide an introduction to this document (and ensure that the most up to date version is supplied), and how it is to be used.

7.0 Identification of Ecological Features & Habitats

The following habitats and ecological features will be created and protected:

Retained/enhanced habitats and ecological features

- Trees and scrub along the north eastern boundary retained and protected;
- Retained trees with be protected during construction with tree protection fencing;
- Reptiles onsite will be relocated into the eastern retained habitat and excluded from the construction area with one way fencing. In the long-term a 5.6-8.3m grassland buffer has been retained along the south eastern boundary and will be managed as tall wildflower grassland;
- Semi-improved grassland at the eastern extent of the site to be retained and enhanced.

Created habitats and new ecological features

- Areas of amenity grassland will be created across the site;
- Nesting features to increase opportunities for breeding birds on the site will be installed;
- Roosting features to increase opportunities for bats on the site will be installed;
- A bat friendly lighting scheme will be implemented;
- A native mix of shrub and herbaceous planting will be completed across the site;
- Three hibernacula will be built in the reptile receptor area at the eastern extent of the site;
- Created habitats and ecological features will enhance the ecological value of the site and will fully comply with wildlife legislation and consider local planning policy.

A plan showing the habitats currently present on site is provided in Figure 1.

8.0 Mitigation and Enhancement: Habitats

8.1 Trees, Scrub and Hedgerows

8.1.1 Protection

All retained trees will be separated from construction and associated impacts through tree protective fencing in accordance with BS5837 (2012). The location of tree protective fencing is shown on ACD Tree Protection Plan, drawing number: BDWS20345-03.

Removal of all trees and hedgerows will take place outside of the breeding bird season (i.e. outside of March-September inclusive) or will be supervised by a qualified ecologist under ECoW.

8.1.2 Mitigation

The two central hedgerows (HR5, HR6) will be removed in order to facilitate the development, a loss of approximately 155m of species poor, defunct hedgerow. The northern half of H2 will also be removed (a further 60m). This will be mitigated by the planting of 50m of native species rich hedgerow planting adjacent to H1. Improved management will also be beneficial for the condition of the retained hedgerows, all of which are currently species poor and in a degraded condition, resulting in an overall higher suitability of hedgerow habitat onsite, mitigating for the loss of HR5 and HR6.

8.1.3 Enhancement

Scattered trees will be planted throughout the site as part of the soft landscaping scheme. Native species will be favoured (17 out of the 19 species to be planted are native to the United Kingdom) and include: rowan (*Sorbus aucuparia*); dogwood (*Cornus sanguinea*); grey willow (*Salix cinerea*); purple osier willow (*Salix purpurea*); almond willow (*Salix triandra*); wild service tree (*Sorbus torminalis*); common wayfaring tree (*Viburnum lantana*); guilder-rose (*Viburnum opulus*); alder buckthorn (*Frangula alnus*); silver birch (*Betula pendula*); oak (*Quercus robur*); common hornbeam (*Carpinus betulus*); crab apple (*Malus sylvestris*); white willow (*Salix alba*) and bird cherry (*Prunus padus*). The non-native broad-leaved cockspur thorn (*Crataegus prunifolia*) is fruit bearing and as such will offer important foraging for wildlife, whilst the non-native river birch (*Betula nigra*) has been selected to provide additional habitat around swale habitat. The full planting schedule is included in Drawing No. BDWS20345 11A Sheet 3 (ACD Environmental, 2016) provided in Appendix B.

The site will be enhanced through a sympathetic landscaping plan, including the planting of native shrubs including box (*Buxus sempervirens*); common hornbeam; hawthorn (*Crataegus monogyna*); box honeysuckle (*Lonicera nitida*); purple osier willow and guilder-rose. Additional non-native planting

will also be included within this mix, with fruit bearing species prioritised to maximise the foraging provision for local wildlife. The full planting schedule is included in Drawing No. BDWS20345 11A Sheet 3 (ACD Environmental, 2016) provided in Appendix B.

8.1.4 Management

New hedgerow planting will not be cut for at least five years to allow the new planting to become established.

Sympathetic management of the hedgerows will be adopted which will involve cutting every **three** years instead of each year. This will result in increased berry production in the second year for most shrub species which will enhance these habitats for small mammals, badgers, breeding birds and invertebrates.

Tree pruning, scrub and hedgerow planting will be cut outside of the nesting bird season between **November and February.**

Hand removal of any opportunistic tree species will be undertaken between season between **November and February.**

Any planting that fails will be replaced during the next suitable planting period for that species – this will be monitored in **September** each year.

8.2 Grassland

8.2.1 Protection

The grassland present on site is grazed and in an improved condition, with low species diversity. The majority of the grassland area will be removed in order to facilitate development, however approximately 0.42ha of grassland habitat will be retained in the easternmost tip of the site and 0.19ha retained in the southernmost point of the site maintained as open space. These two areas will be linked by a grassland buffer between 5.6-8.3m in width covering an area of approximately 0.65ha running up the south-eastern boundary in order to maintain connectivity around the site for wildlife. As these areas will be used as a receptor site for reptiles, they will be protected from impacts from construction through one-way semi-permanent reptile fencing.

8.2.2 Mitigation

The grassland currently dominating the site is species poor, and as such is of low value for wildlife. The retained area of grassland at the south eastern extent of the site will be managed as rough grassland, providing increased suitability for wildlife.

8.2.3 Enhancement

The grassland buffer at the eastern extent of the site, where there is bare ground from poaching from cattle, will be scarified and sown with EM1 basic general purpose meadow mixture at 4 g/m^2 during mid-November. This mix contains a variety of wildflowers: yarrow (*Achillea millefolium*); common knapweed (*Centaurea nigra*); wild carrot (*Daucus carota*); lady's bedstraw (*Galium verum*); oxeye daisy (*Leucanthemum vulgare*); selfheal (*Prunella vulgaris*); meadow buttercup (*Ranunculus acris*); common sorrel (*Rumex acetosa*); red campion (*Silene dioica*) and; a mix of grasses: common bent (*Agrostia capilllaris*); crested dogstail (*Cynosurus cristatus*), slender-creeping red fescue (*Festuca rubra*) and smaller cat's-tail (*Phleum bertolonii*). The full planting schedule is included in Drawing No. BDWS20345 11A Sheet 3 (ACD Environmental, 2016) provided in Appendix B.

8.2.4 Management

The tall grassland areas along the east and south eastern buffer of the site will be cut at the end of the first year of the sowing (assuming the grassland is sown in March/April) and the grassland is well established. Prior to completing the cut, the grassland establishment will be assessed to determine whether it would be suitable to cut the grass. The first cut will be completed in August/September to a height of 150mm. The grass should be cut by a large wheeled vehicle driving slowly over the site, with a flail cutter is set to cut the grass no shorter than 150 mm to prevent the killing or injuring of reptiles. Grass should not be cut during wet weather as the machinery may damage the soil structure. The arisings will be left on the grassland floor for a few days and before being removed, to allow the seed to disperse. The grassland will be cut annually in August/September thereafter.

8.2.5 Monitoring

The establishment of the meadow will be monitored and the deterrent methods for birds will be assessed for their success. If required new methods will be considered. In the worse case, covering with an open wire mesh may be necessary.

The establishment of the meadow will also be monitored for competitive weeds, which will be spot sprayed where necessary or hand pulled. This will be undertaken every two months during the main growing period April to September for two years post sowing.

9.0 Mitigation and Enhancement: Protected Species

9.1 Reptiles

9.1.1 Protection

The site will be made unsuitable for reptiles through removal of suitable hedgerows that are not being retained as part of the development (HR5, HR6) during the active reptile season (which runs from March – October inclusive) under supervision by a suitably licenced ecologist under ECoW. After this work has been completed, the grassland to be lost as part of the development will be mown, moving from the south eastern corner of the site towards the north-western corner, again under supervision, leaving the retained areas of grassland at the southernmost tip, northernmost tip and the grassland buffer on the eastern boundary undisturbed. These areas will be separated from the construction area through exclusion fencing.

Fence Installation

Temporary reptile-proof fencing will be installed along the eastern and south eastern boundaries of the site (shown in Figure 2), preventing reptiles re-entering the works area. This will be completed under the supervision of an Ecological Clerk of Works. The fencing will either be specifically made reptile fencing or posts with plastic fencing, as detailed below:

- Fence constructed from polythene or similar impermeable material.
- It should be either purpose made 'one-way reptile fencing', or plastic sheeting placed at an angle of between 45° and 40°, so that in the unlikely event that reptiles are present within the unsuitable habitat of the arable field, they will be able to commute into the field boundaries, but will not be able to return to the centre of the field.
- The plastic will be buried with compacted backfill so that no gaps remain.
- The plastic will be nailed to the fence posts and folded over at the top, away from the working area, and stapled to form an overhang.
- The plastic must contain no holes and, at the meeting of two sheets, the join must be secured with 100mm waterproof tape.
- The fence must remain in place around the whole development area for the entire duration of the works phase.

- The areas where fencing is to be installed will be hand searched for reptiles by an ecologist prior to installation of the fence to ensure that no reptiles are harmed during this operation.

The fence will remain in place during the period of the works and will be monitored, and repaired if damaged. It is the responsibility of the client to make sure someone checks the fence on a daily basis and ensures repairs are made when necessary.

Reptile Exclusion and translocation Programme

The slow worm population on site has been recorded as 'low' in both the Aluco Ecology surveys in 2011 and WYG surveys in 2014. Usually 30 days translocation would be considered appropriate to re-locate reptiles from the development footprint to the retained habitat, but given only a maximum of 2 adult and one juvenile slow worms and previous to this in 2011 4 adults and 4 sub-adult slow worms were recorded on any one visit it is considered that the suitability of the habitat has declined for this species and from the 2014 survey results 20 days would be more appropriate to allow the development to continue within the constraints of the *Wildlife and Countryside Act 1981* (as amended). This will be undertaken during the reptile active season which runs from March / April to October This mitigation strategy will include;

- Enhancement of reptile receptor areas by installing three reptile hibernacula within the ecological receptor area and grassland buffer on site prior to works commencing; (Appendix B, Figure 2),

- **Reptile trapping can only be undertaken during the animals' active period which runs from March until October**. Reptile capture cannot take place between November and February, as reptiles are not active during this period. Suitable weather conditions may be less likely to occur frequently between July and September. Therefore it is important that the reptile translocation programme to the receptor site commences well before the habitat is due to be destroyed within the development sites;

- It is recommended that 20 day translocation will be undertaken however a judgment on the conclusion of the capture stage of the translocation will be made by the Ecologist Project Manager, but is usually accepted after five consecutive visits to a site without encountering any animals;

- All reptiles caught will be recorded, sexed and aged before being released into the relocation area.

- The fence will remain in place during the period of the works and will be monitored, and repaired if damaged. It is the responsibility of the client to make sure someone checks the fence on a daily basis and ensures repairs are made when necessary. If any reptiles are found within the site during any stage of the works, works must cease and a suitably qualified ecologist must be contacted immediately.

Post-Translocation Programme

Following the reptile translocation, a targeted destructive search will take place of areas of suitable reptile habitat (i.e. scrub and defunct hedgerows). Vegetation will be cut short followed by a destructive search in two parts, a hand search and a mechanical search, completed to the following specifications:

- A suitably qualified ecologist will supervise all aspects of the destructive search
- Hand searches will be conducted, including the removal of debris on the ground in order to remove potential refuges;
- Using a medium sized excavator (approximately 8-10 tonnes) with a toothed bucket carry out a gradual scrape of the top one to two inches (25 - 50mm) of top soil;
- Both the areas from where soil is removed and the subsequent spoil heaps should be checked for reptiles and amphibians;
- Carry out deeper scrapes where necessary, such as beneath root systems, buried material, cracks or holes in the ground;
- The excavated spoil will be stored as directed by the ECOW in consultation with the developers and in an area identified as unsuitable as reptile habitat.

Following the destructive search construction can proceed however, if any reptiles are found within the site during any stage of the works, works must cease and a suitably qualified ecologist be contacted immediately. During the construction phase, the grassland within the development area will be managed as short grassland to make sure it remains unsuitable for reptiles.

9.1.2 Mitigation

The areas of retained reptile habitat at the southernmost tip, north-easternmost tip and the grassland buffer along the south-eastern boundary will initially be maintained as rough grassland, providing increased suitability for reptiles during the construction phase.

Three hibernacula will be created in areas of retained habitat (within the north-eastern area of the site) in order to provide suitable hibernation opportunities for reptiles that would otherwise be lost through the removal of scrub and hedgerows throughout the construction area (see Figure 2 for hibernacula locations).

9.1.3 Enhancement

The grassland buffer running up south-eastern boundary and at the northernmost tip will be scarified and sown with EM1 basic general purpose meadow mixture at 4 g/m^2 during mid-November. This mix contains a mix of wildflowers: yarrow (*Achillea millefolium*); common knapweed (*Centaurea nigra*); wild carrot (*Daucus carota*); lady's bedstraw (*Galium verum*); oxeye daisy (*Leucanthemum vulgare*); selfheal (*Prunella vulgaris*); meadow buttercup (*Ranunculus acris*); common sorrel (*Rumex acetosa*); red campion (*Silene dioica*) and; a mix of grasses: common bent (*Agrostia capilllaris*); crested dogstail (*Cynosurus cristatus*), slender-creeping red fescue (*Festuca rubra*) and smaller cat's-tail (*Phleum bertolonii*). The resulting wildflower meadow habitat will offer significantly enhanced foraging and basking opportunities for reptiles on the site in comparison to the current condition.

9.1.4 Management and Monitoring

The management prescriptions for the retained grassland habitat are contained in Section 8.2.4 Management. The management regimen for the habitat has been formulated so that reptiles will not be harmed through this work.

No monitoring for reptiles is considered necessary.

9.2 Badgers

9.2.1 Protection

Considering the highly mobile nature of badgers and the seasonality of their activity, a pre-commencement badger survey will be undertaken two months prior to development commencing on site to check that no new badger setts have been created which may be impacted by the works area.

In the event badger setts are present and the proposed development will impact these species, a Natural England development licence will be required (please not badger setts can only be closed between July and November and the pre-commencement survey may need to be undertaken earlier to factor this in to the development programmed), however this is not detailed in this report as this is not envisaged at this stage.

9.2.2 Mitigation

As part of the toolbox talk prior to works commencing, best practice methods will be implemented on the site to avoid any impacts to commuting and foraging badgers, these will include:

- Consideration should be given to the placement of any **topsoil storage**, or piles of materials that may create mounds suitable for sett creation. Any such piles are placed well away from identified badger activity, and are checked on a daily basis by construction staff to ensure that no badger activity has taken place. If the mounds are to be in place for a significant period of time, the earth will be temporarily fenced to ensure that badgers cannot access the fresh soil.

- There will be no **night working** to avoid disturbance to badgers, any works within 30m of a sett will cease at least two hours before sunset. There will be no lighting along the eastern boundary of the site to avoid any light spill where badger activity has previously been recorded.

- It any excavations are left open overnight, an **earth ramp** will be created or a wooden ramp installed to allow any animals that fall in to escape.

- Any **pipes** that need to be left over night on site will be capped to avoid animals becoming trapped.

9.2.3 Enhancement

The retention and enhancement of the hedgerows and retained grassland margin along the south eastern and eastern boundary will ensure some badger commuting routes and foraging areas are maintained across the development area. In addition to this, the creation of new wildflower and grassland habitat will provide additional foraging resource for badger onsite. The proposed development seeks to retain the majority of hedgerow habitat within the site thus maintaining connectivity to other suitable habitat.

9.2.4 Management and Monitoring

No management or monitoring is required for this species.

9.3 Bats

9.3.1 Protection

Tree protection fencing will not only protect retained trees onsite but will also provide a buffer to protect them from any damage during construction and this will provide a buffer of retained vegetation to allow bats to forage and commute

During the construction phase, security lighting will be positioned so as not to directly illuminate retained or created areas of wildlife value, notably the hedgerow and woodland strip along the western boundary. This will ensure that the bats which use the retained habitats on site for foraging and the surrounding habitat and will not be significantly disturbed during the construction phase.

As there are no roosts present in any trees onsite, no bats will be impacted by the removal of trees in order to facilitate the development. A bird box was present on an oak tree in a residential garden along the south eastern boundary, which faced towards the site. The retention of a 5.6-8.3m buffer will prevent any impacts to bats if in the unlikely event they are roosting in the bird box.

9.3.2 Mitigation

The operational lighting across the development footprint will be sensitively designed with bats in mind, so that potentially valuable foraging and commuting areas are retained and any new roost sites are not impacted by lighting. Lighting of areas during peak bat levels of bat activity e.g. dusk and dawn will be avoided and any security lighting (if required) will be motion sensitive so areas are not lit unnecessarily. Permanent lighting on site will be avoided in proximity to any areas of bat foraging and commuting habitat to be retained, particularly along the western site boundary. An ecologist will be appointed by Barratt Homes to advise on the lighting strategy to make sure it is ecologically sensitive.

9.3.3 Enhancement

Additional measures to enhance the site for bats include the provision of a species rich planting scheme to improve the foraging resource currently onsite, including wildflower meadow species in the areas of retained grassland, and infill planting of retained hedgerows. The planting scheme is made

up of predominantly native and fruit bearing species to maximise the value for foraging bats (see section 7.0 Mitigation and Enhancement: Habitats for details of the plant species to be used).

In addition to this, artificial roosting provision will be provided onsite in order to increase the suitability of the site for roosting bats. Six Schwegler Type 1F bat boxes will be installed on trees around the development (see Figure 2 for the locations of proposed bat box installations). The provision of additional roosting features along with the mitigation proposed will meet and exceed the requirements of Policy CS11 of the Havant Borough Adopted Core Policy 2011-2029.

9.3.4 Monitoring and Management

Bat boxes proposed are self cleaning and hence will not require management, however if the boxes have fallen into disrepair, appropriate new box should be placed in proximity as a replacement, and the old box left *in situ*.

9.4 Breeding birds

9.4.1 Protection

The majority of the hedgerows, with the exception of the internal defunct hedgerows; HR2, HR5 and HR6, will be retained as part of the development. As previously detailed, heras fencing is installed tree protective fencing will be installed along the hedgerows prior to commencement as shown on ACD Tree Protection Plan, drawing number: BDWS20345-03. This would protect any birds nesting within the hedgerows from disturbance during the construction stage of the development.

9.4.2 Mitigation

Removal of any vegetation will take place outside of the bird-breeding season (i.e. during October to February). In the event that removal must take place within the breeding season, an Ecological Clerk of Works will check the vegetation in advance for nests. If any active nests are found these will be left in situ and an appropriate buffer around the nest established for that species until all the young have fledged. The Ecological Clerk of Works will advise on buffer size and the likely timescale of fledging.

9.4.3 Enhancement

Five Schwegler No.17 swift boxes, five Schwegler 1SP 'sparrow terraces' and five Schwegler 1B bird boxes will be erected around upon buildings and trees throughout the site (detailed in Figure 2C).

9.4.4 Management

- Old nests in the bird boxes should be removed once a year in the autumn.
- Boiling water should be used to kill any remaining parasites, and the box allowed to dry out thoroughly before replacing the lid. Insecticides and flea powders must not be used.
- If there are unhatched eggs in the box, these may be removed legally only between August and January, and must be disposed of.
- A small handful of clean hay or wood shavings (not straw) placed in the box after cleaning may provide an ideal hibernation site for small mammals or a roost for some birds.
- Nest boxes in use should not be inspected.

9.4.5 Monitoring

Nor monitoring is required for this species.

9.5 Wintering Birds

9.5.1 Protection

The site has been assessed as having negligible potential for wintering waders and Brent geese due to its enclosed nature and relatively small size. Any construction noise impacts are likely to be limited by the mature trees and hedgerows to the south of the site. and is no clear line of sight from the site to fields south of the A259 further reducing likelihood of wintering waders or Brent geese.

The retention of boundary hedgerows onsite will provide shelter and a foraging resource for the wider bird assemblage recorded on site during the construction and post construction phases of the development.

9.5.2 Mitigation

The loss of any grassland, mixed scrub and fragmented hedgerows used by common starling, dunnock and house sparrows will be mitigated for by the creation of a habitat mosaic of hedgerows, trees and interconnected grassland within the site layout; this will offer foraging, roosting and nesting areas to these and other species. Garden habitats will also be utilised by these species.

The provision of a circular 'trim trail' on site which will include signage, dog waste bins, benches and natural play equipment will encourage dog walkers to remain on site and not walk to more sensitive areas closer to the closer to the coast.

In order to mitigate for in-combination impacts from all developments within 5.6km of Chichester and Langstone Harbour SPA a financial contribution of £176 per dwelling will be paid. This is considered likely to mitigate for any in-combination impacts from the development.

9.5.3 Enhancement

The retention and enhancement of the hedgerows and retained grassland margin along the south eastern and eastern boundary and the creation of new wildflower and grassland habitat will ensure continued and enhanced shelter and foraging opportunities for wintering birds. The proposed development seeks to retain the majority of hedgerow habitat within the site thus maintaining connectivity to other suitable habitat.

10.0 References

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- Department for Communities and Local Government (2012) National Planning Policy Framework.
- English Nature, (2004). *Reptiles: Guidelines for Developers*. English Nature, Peterborough.
- Office of the Deputy Prime Minister (2005). Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS 9). H.M.S.O., London.
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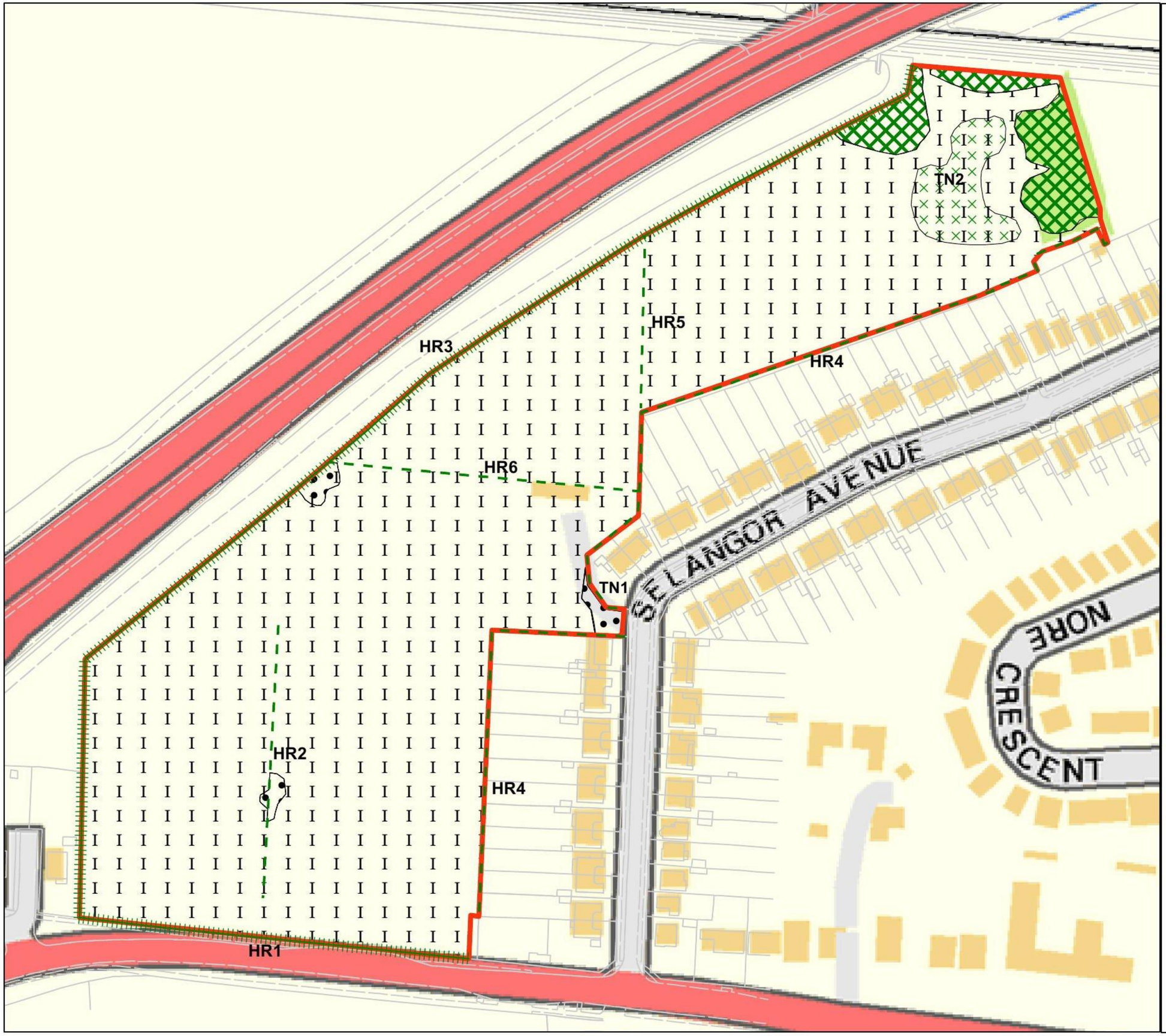
- The Conservation of Habitats and Species Regulations (2012) (S.I. 490) available at: http://www.opsi.gov.uk/
- WYG (2017) Havant Road, Emsworth: Extended Phase 1 Habitat Survey Report
- WYG (2017) Havant Road, Emsworth: Reptile Presence/Likely Absence Survey Report
- WYG (2017) Havant Road, Emsworth: Wintering Birds Survey Report
- WYG (2017) Havant Road, Emsworth: Bat Activity Report

FIGURES

Figure 1 – Phase 1 Habitat Plan

Figure 2 – Enhancement Plan



N

Legend

- Species poor, defunct hedgerow
- Species poor hedge/trees
- Site boundary
- <all other values>
- Bare ground
- Dense/continuous scrub
- Scattered scrub
- Improved grassland

0 25 50 100 Metres

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creative minds safe hands

Land at Havant Road Warblington

Phase 1 habitat survey map

Scale at A3:	Drawn by: Date:	Checked By: Date:	Approved By: Date:
	EA 03/12/14	EH 03/12/14	CM 03/12/14

Project No:	Office	Type	Drawing No.	Revision
A088368	45	94	Figure 1	

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N

Legend

- Schwegler 1F Bat Box
- Schwegler 1B Bird Box
- Schwegler 1SP Sparrow Terrace
- Schwegler 17 Swift Box
- Reptile Exclusion Fencing
- Retained and Enhanced Grassland
- Hibernacula

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Havant Road, Emsworth

Mitigation and Enhancement Plan

	Drawn by: Date:	Checked By: Date:	Approved By: Date:
	MW 01/03/17	JS 01/03/17	DW 01/03/17

Project No:	Office	Type	Drawing No.	Revision
A088368	45	94	Figure 2	2

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APPENDIX A – Proposed Layout Plan

APPENDIX B – Planting Scheme

OPEN SPACE
OPEN SPACE
OPEN SPACE
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Planting Schedule

Trees

Species Name	Girth	Height	Density	Specification	No.
Cornus sanguinea 'Midwinter Fire'		40-60cm	1Ctr	Branched ;BR	1No
Salix cinerea		60-80cm	1Ctr	0/1 ;5/6 brks ;BR ;Branched	2No
Salix purpurea		60-80cm	1Ctr	0/1 ;5/6 brks ;BR ;Branched	1No
Salix triandra		60-80cm	1Ctr	0/1 ;5/6 brks ;BR ;Branched	2No
Sorbus torminalis		60-80cm	1Ctr	1+2 ;Transplant ;Multi-Stemmed ;BR	1No
Viburnum lantana		60-80cm	1Ctr	1+1 ;Bushy ;BR	1No
Viburnum opulus		60-80cm	1Ctr	1+1 ;Bushy ;BR	1No
Frangula alnus		80-100cm	1Ctr	Transplant ;BR	1No
Betula nigra		175-200cm	1Ctr	Feather ;2x ;BR	1No
Acer campestre 'Streetwise'	12-14cm	350-425cm	Counted	Heavy Standard ;Clear Stem 175-200 ;RB	18No
Betula pendula 'Youngii'	12-14cm	350-425cm	Counted	Heavy Standard ;Clear Stem 175-200 ;RB	17No
Sorbus aucuparia 'Cardinal Royal'	12-14cm	350-425cm	Counted	Heavy Standard ;Clear Stem 175-200 ;RB	26No
Quercus robur	12-14cm	350-425cm	Counted	Heavy Standard ;Clear Stem 175-200 ;RB	2No
Crataegus prunifolia	12-14cm	350-425cm	Counted	Heavy Standard ;Clear Stem 175-200 ;RB	8No
Carpinus betulus 'Frans Fontaine'	12-14cm	350-425cm	Counted	Heavy Standard ;Clear Stem 175-200 ;RB	22No
Carpinus betulus	12-14cm	350-425cm	Counted	Heavy Standard ;Clear Stem 175-200 ;RB	5No
Betula nigra	12-14cm	350-425cm	Counted	Heavy Standard ;Clear Stem 175-200 ;RB	2No
Malus sylvestris	12-14cm	350-425cm	Counted	Heavy Standard ;Clear Stem 175-200 ;RB	14No
Salix alba	12-14cm	350-425cm	Counted	Heavy Standard ;Clear Stem 175-200 ;RB	2No
Prunus padus	12-14cm	350-425cm	Counted	Heavy Standard ;Clear Stem 175-200 ;RB	2No

Shrubs

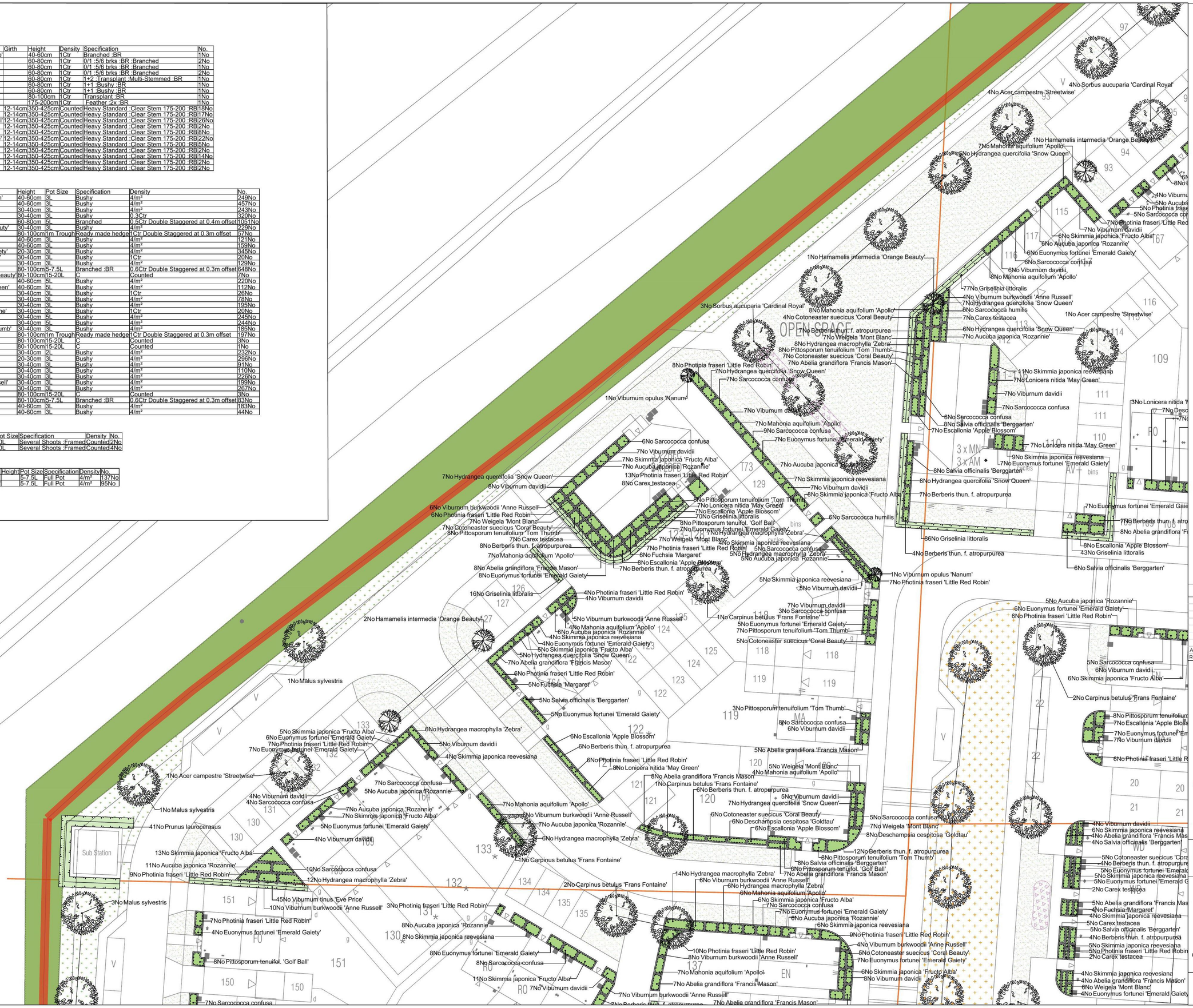
Species Name	Height	Pot Size	Specification	Density	No.
Abelia grandiflora 'Francis Mason'	40-60cm	3L	Bushy	4/m²	249No
Aucuba japonica 'Rozannie'	40-60cm	3L	Bushy	4/m²	457No
Berberis thun. f. atropurpurea	30-40cm	3L	Bushy	4/m²	243No
Buxus sempervirens	30-40cm	3L	Bushy	0.3Ctr	320No
Carpinus betulus	60-80cm	5L	Branched	0.5Ctr Double Staggered at 0.4m offset	1051No
Cotoneaster suecicus 'Coral Beauty'	30-40cm	3L	Bushy	4/m²	229No
Crataegus monogyna	80-100cm	1m Trough	Ready made hedge	1Ctr Double Staggered at 0.3m offset	57No
Deutzia gracilis 'Nikko'	40-60cm	3L	Bushy	4/m²	121No
Escallonia 'Apple Blossom'	40-60cm	3L	Bushy	4/m²	159No
Euonymus fortunei 'Emerald Gaiety'	20-30cm	3L	Bushy	4/m²	345No
Euonymus fortunei 'Silver Queen'	30-40cm	3L	Bushy	1Ctr	20No
Fuchsia 'Margaret'	30-40cm	3L	Bushy	4/m²	129No
Griselinia littoralis	80-100cm	5-7.5L	Branched ;BR	0.6Ctr Double Staggered at 0.3m offset	648No
Hamamelis intermedia 'Orange Beauty'	80-100cm	15-20L	C	Counted	7No
Hydrangea macrophylla 'Zebra'	40-60cm	5L	Bushy	4/m²	220No
Hydrangea quercifolia 'Snow Queen'	40-60cm	5L	Bushy	4/m²	112No
Lonicera nitida 'Maigrun'	30-40cm	3L	Bushy	1Ctr	26No
Lonicera nitida 'May Green'	30-40cm	3L	Bushy	4/m²	78No
Mahonia aquifolium 'Apollo'	30-40cm	3L	Bushy	4/m²	195No
Mahonia aquifolium 'Orange Flame'	30-40cm	3L	Bushy	1Ctr	20No
Photinia fraseri 'Little Red Robin'	30-40cm	5L	Bushy	4/m²	245No
Pittosporum tenuifol. 'Golf Ball'	30-40cm	5L	Bushy	4/m²	244No
Pittosporum tenuifolium 'Tom Thumb'	30-40cm	3L	Bushy	4/m²	185No
Prunus laurocerasus	80-100cm	1m Trough	Ready made hedge	1Ctr Double Staggered at 0.3m offset	197No
Salix caprea	80-100cm	15-20L	C	Counted	3No
Salix purpurea	80-100cm	15-20L	C	Counted	1No
Salvia officinalis 'Berggarten'	30-40cm	2L	Bushy	4/m²	232No
Sarcococca confusa	20-30cm	3L	Bushy	4/m²	296No
Sarcococca humilis	30-40cm	3L	Bushy	4/m²	91No
Skimmia japonica 'Fructo Alba'	30-40cm	3L	Bushy	4/m²	110No
Skimmia japonica reevesiana	30-40cm	3L	Bushy	4/m²	226No
Viburnum burkwoodii 'Anne Russell'	30-40cm	3L	Bushy	4/m²	199No
Viburnum davidii	30-40cm	3L	Bushy	4/m²	267No
Viburnum opulus 'Nanum'	80-100cm	15-20L	C	Counted	3No
Viburnum tinus 'Eve Price'	80-100cm	5-7.5L	Branched ;BR	0.6Ctr Double Staggered at 0.3m offset	83No
Weigela 'Mont Blanc'	40-60cm	3L	Bushy	4/m²	183No
Weigela 'Praecox Variegata'	40-60cm	3L	Bushy	4/m²	44No

Climbers

Species Name	Height	Pot Size	Specification	Density	No.
Hydrangea petiolaris	80-100cm	10L	Several Shoots ;Framed	Counted	2No
Jasminum officinale	80-100cm	10L	Several Shoots ;Framed	Counted	4No

Grasses

Species Name	Height	Pot Size	Specification	Density	No.
Carex testacea		5-7.5L	Full Pot	4/m²	137No
Deschampsia cespitosa 'Goldtau'		5-7.5L	Full Pot	4/m²	95No



SPECIFICATION
All works generally, to comply with the written Soft Landscape Specification.

NOTE: DO NOT SCALE FROM DRAWING

Existing trees to be retained and protected during construction

Proposed tree planting within soft landscape. See detail on sheet 1

Proposed specimen shrub planting to receive short angular staking on half standards with expandable tree ties.

Proposed climbing plants to be trained up adjacent wall/ fence/pergola with galvanised wires and hook set 250mm apart with support canes removed prior to planting

Proposed *Buxus* (box) hedge planting to be planted in a single row at 300mm centres

Proposed *Carpinus* (hornbeam) hedge planting to be planted in a double staggered row 300mm apart and at 500mm centres in each row. To be maintained at 1m height

Proposed mixed native hedge planting to be planted in a double staggered row 300mm apart and at 500mm centres in each row. To be maintained at 1m height and 1.8m height adjacent to site boundaries

Proposed shrub planting to receive 75mm bark mulch after planting operations

Proposed decorative mix shrub planting to be planted in groups of 5-7no. of each species and as above

Proposed grass areas to receive good quality amenity grass turves laid in line with good horticultural practices

Existing grassland to be retained where possible, where disturbed re-seed with EM1 Basic General Purpose Meadow Mixture as supplied by Emorsgate and sown at 4 grams per msq, or similar and approved

Areas of species rich turf to be laid in line with good horticultural practices, unless existing grassland areas are in good condition and can be retained.

Proposed SUDs areas, to be seeded with Pond Edge Mixture (EP1) seed mix as supplied by Emersgate and sown at 4 grams per msq, or similar and approved

Hoggin footpath with timber edging. No dig construction where required. To be installed following engineer's details.

Proposed bulb planting mix to include *Galanthus nivalis, Hyacinthoides non-scripta, Narcissus 'WP Milner'* and *Eranthis cilicica* at 25no/m²

Cut lines

Planting Schedule on Sheet 3

Rev	Date	Details	Drawn
A	01.03.17	Revised Layout	JD

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BARRATT HOMES

scheme: Land at Havant Road, Emsworth
client: Barratt Homes
drawing: Landscape Proposals
date: July 2016
scale: 1:200@A1
drawing no: BDWS20345 11A Sheet 3
drawn: JD checked: AE

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