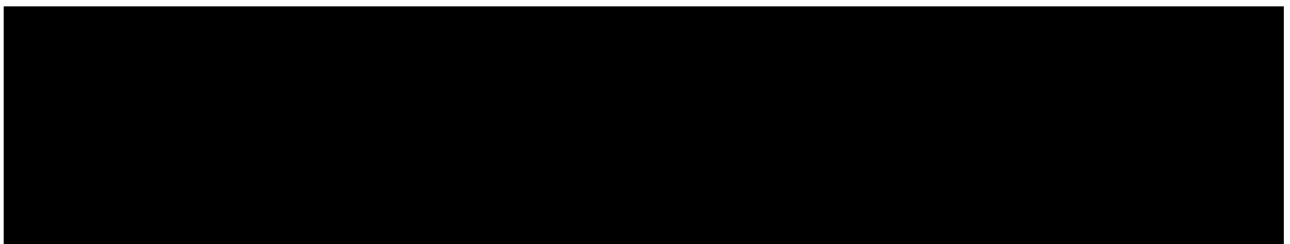


**NORTH LITTLEHAMPTON (LAND PARCELS A2 AND
B6), TODDINGTON LANE, WEST SUSSEX**

**ECOLOGICAL MITIGATION AND MANAGEMENT
PLAN**

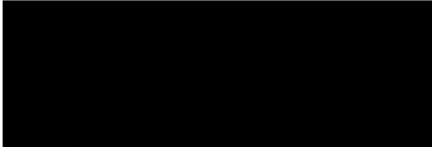
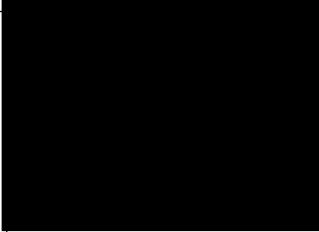
Final Document (Revision 3)

April 2020



ECOSA Quality Assurance Record

This report has been produced in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Report Writing 2017¹.

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¹ Chartered Institute of Ecology and Environmental Management (2017). *Guidelines for Ecological Report Writing*. Technical Guidance Series. <http://www.cieem.net/publications/23/ecological-report-writing>

NORTH LITTLEHAMPTON (LAND PARCELS A2 AND B6), TODDINGTON LANE, WEST SUSSEX

ECOLOGICAL MITIGATION AND MANAGEMENT PLAN

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1.0 INTRODUCTION

1.1 Background

Ecological Survey & Assessment Limited (ECOSA) have been appointed by Persimmon Homes Limited to prepare an Ecological Mitigation and Management Plan for North Littlehampton (Land Parcels A2 and B6), Toddington Lane, West Sussex.

Parcels A2 and B6 are located within the wider North Littlehampton development which comprises the construction of up to 1,260 dwellings, associated facilities, employment areas and open space (Arun District Council planning reference LU/47/11).

Within this document where reference is made to 'the site' this refers to parcels A2 and B6 and reference to the 'wider site' relates to the wider North Littlehampton development. The location of the site in relation to the wider site is shown in **Map 1**.

This Ecological Mitigation and Management Plan has been written to support a Reserved Matters application to Arun District Council for the site. Under LU/47/11 there are three conditions relating to ecology (**Table 1**).

Table 1: Ecological conditions

Condition	Details
17	Prior to the submission of any reserved matters applications, a scheme shall be submitted for the creation of the proposed central wetland area and the restoration of habitat onsite. The scheme shall be submitted to and approved in writing by the Local Planning Authority. Thereafter the development shall be constructed as set out in the approved scheme and any subsequent amendments shall be agreed in writing with the Local Planning Authority.
19	Development shall not begin until further ecological surveys have been carried out and submitted to the Local Planning Authority. These surveys shall relate to water voles, bats, birds, invertebrates and reptiles.
20	Prior to the commencement of development on any phases of development east of the new road than spans the railway line (running north – south), details of appropriate mitigation, and a programme of implementation, in relation to water voles, bats, birds, invertebrates and reptiles shall be submitted to an approved in writing by the LPA.
21	No development within any phase or sub phase shall commence until details of an ecological management plan for the construction phase of that element of the development has been submitted to and approved in writing by the Local Planning Authority. The management plan shall be implemented in accordance with the approved plans.

The Ecological Mitigation and Management Plan is based on the results of ecological surveys and assessments carried out by ECOSA and White Young and Green (WYG) between 2008 and 2018 (**Table 2**). Further details of the species surveys and results are provided in Section 4.0.

Table 2: Summary of ecological surveys

Species Group/Species	2008	2009	2014	2017	2018
Ecological scoping Phase One habitat survey ²	✓	-	-	-	-
Ecological constraints appraisal ³	-	-	✓	-	-
Updating walkover survey ⁴	-	-	-	✓	✓
Bat emergence surveys	-	-	-	✓	
Reptile survey ⁵	-	✓	-	✓	-
Breeding Bird Survey ⁶	✓	-	✓	-	-

The results of the surveys have been used to provide mitigation and enhancement proposals within the central wetland. Surveys for birds, have not been updated since 2014 as the site provides limited habitat for this species group. This current document is the third revision of the original Ecological Mitigation and Enhancement Plan issued on the 2nd March 2020. It contains addition information in relation to water vole and invertebrates, as requested by the Chichester District Council Environmental Officer during April 2020.

Whilst surveys undertaken by WYG in 2008² and 2014³ identified the presence of water vole within the Black Ditch (river) in the north of the wider site, the subsequent surveys conducted by ECOSA in January 2017 and January 2018 did not record water vole evidence in the wider site. The Black Ditch is situated approximately 570 metres north of Parcel A2 and Parcel B6, and without any watercourses on, or adjacent to, the site to connect it to the riverine habitat, in addition to the physical barriers presented by the new development and the Lyminster Bypass, water vole are considered likely absent from the site. The species is subsequently not considered further in this ecological mitigation and management plan.

1.2 The Site

The site is located in Littlehampton, West Sussex, centred on National Grid Reference (NGR) TL 1806 2890 (**Map 1**).

The site is located to the south of the wider development site and covers an area of 1.5 hectares. Prior to demolition and clearance works taking place on site during 2017 the site contained a nursery with greenhouses, a residential dwelling with a garage,

² White Young and Green (2009) Proposed Lyminster Bypass (South) North Littlehampton - Ecological Scoping / Phase 1 Habitat Survey. White Young and Green, Droxford, Hampshire

³ White Young and Green (2014) Toddington Lane, North Littlehampton - Ecological Constraints Appraisal. White Young and Green, Droxford, Hampshire

⁴ An ecological walkover survey was undertaken by ECOSA on 13th January 2017

⁵ White Young and Green (2014) Proposed Lyminster Bypass (South) North Littlehampton - Reptile Presence / Absence Survey Report. White Young and Green, Droxford, Hampshire

⁶ White Young and Green (2014) Toddington Lane, North Littlehampton – Breeding Bird Report. White Young and Green, Droxford, Hampshire

grassland, scattered scrub and boundary trees. During 2017 the site was cleared of all existing buildings and grassland habitats.

The wider landscape comprises the agricultural land associated with the floodplain of the Black Ditch (a river) to the north, an allotment to the west and housing to the east and south of the wider site. The main south coast railway line and its associated bankside vegetation is located close to the sites southern boundary. Littlehampton is town centre is located approximately 1.3 kilometres south.

1.3 Aims and Scope of Report

The aim of this document is to outline the proposed ecological mitigation and management required at the site. The mitigation and management plan sets out the mitigation and management prescriptions for the site in order to retain the long-term ecological value. This plan covers a period of 10 years following the commencement of the development.

1.4 Site Proposals

The proposals for the site are for the construction of 50 residential units with areas of garden landscaping and carparking. A small area of open greenspace is to be constructed to the east of parcel A2. The two land parcels will be divided by the proposed Lyminster Bypass. Site access will come from the Toddington Lane to the north.

The report is based on the North Littlehampton Landscape Layout by WYG (Drawing no. LA300) Revision R (**Appendix 1**).

2.0 MITIGATION AND MANAGEMENT PLAN OBJECTIVES

2.1 Introduction

This section provides an overview of the objectives of the Ecological Mitigation and Management Plan for the site. Specific objectives for each individual habitat type are detailed within the management prescriptions.

2.2 Overview of Mitigation and Management Plan Objectives

The overarching objective of the Ecological Mitigation and Management Plan is to retain and enhance the long-term ecological value of the site. These will be achieved through the following measures:

- The protection of retained habitats within the site;
- Creation of new, native species-rich and wildlife friendly habitats to enhance biodiversity at the site; and
- Establishment of long-term management prescriptions for new and retained habitats to ensure the habitat diversity and suitability for wildlife is maintained.

2.3 Structure of the Mitigation and Management Plan

The general overarching management prescriptions for the site are provided within Section 3.0, with species specific management and mitigation measures detailed in Section 4.0.

The main habitat types which are the focus of this management plan are grassland and native trees and scrub. Management prescriptions for each of these habitat types are detailed individually within Section 5.0.

3.0 GENERAL MANAGEMENT PRESCRIPTIONS

3.1 Introduction

This section provides an overview of the general management prescriptions for the site.

3.2 Review

As part of on-going monitoring and review process, the management plan will be periodically reviewed in order to ensure that the objectives are being met. Details of this review process are provided within Section 6.0.

3.3 Responsibilities

The implementation of the management plan will be the responsibility of the landowner, who will likely transfer the ownership of the land to a third party following the completion of the development. This third party will be responsible for implementing the management plan. For the purposes of this management plan the “management site” is the area of the site which will be retained by the third party and outside of residential ownership.

3.4 Contractors

The proposed management works will be undertaken by specialist contractors with suitable experience in the management measures proposed. Monitoring and review will be undertaken in conjunction with suitably qualified ecologists with other specialists, such as arboricultural consultants employed/consulted as necessary.

4.0 SPECIES-SPECIFIC MITIGATION AND MANAGEMENT

4.1 Introduction

This section provides an overview of the species-specific mitigation measures and management prescriptions for the site.

4.2 Bats

Pre-demolition the site contained a number of buildings comprising residential dwellings, garages and greenhouses. The residential buildings and associated garages were assessed to be of moderate suitability for roosting bats where the greenhouses were assessed as being of negligible suitability³. The location of these buildings is shown in **Appendix 2** and detailed in

Table 3: Building references and bat roost potential

Building Number ⁷	Description	Bat Roost Potential
7	Two-storey brick house	Moderate
8	Single storey garage / outhouse	Low to Moderate
9	Large greenhouse	Negligible

Two emergence surveys were undertaken by ECOSA on Buildings 7 and 8 between May and June 2017, the surveys did not record any roosting bats within the on-site buildings and therefore, roosting bats were considered to be absent. During the surveys low numbers of common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus* were recorded foraging and commuting within the vicinity of the buildings.

Prior to clearance the site provided limited bat foraging and commuting habitat through boundary vegetation in the form of hedgerows and treelines. This boundary vegetation has been retained on site however, much of this is to be removed to facilitate construction.

The new lighting scheme has been sensitively designed to take into account foraging and commuting bats which may be using the boundary hedgerows. External lighting will comprise hooded, downward pointing fittings directed away from vegetation and in particular, away from retained boundary vegetation.

Additional enhancement features for roosting bats will be provided through the provision of bat boxes, one Schwegler 1FF and one Schwegler 2F bat boxes will be erected onto suitably mature boundary trees on site. The exact location of the boxes

⁷ See **Appendix 2**

will be decided by the ecologist while on site, however, indicative locations are shown on **Appendix 1**.

4.3 Birds

During the Phase 1 Habitat survey undertaken by WYG during 2008 the site was considered to provide suitable habitat for nesting birds particularly within boundary hedgerows and treelines. Breeding bird surveys were carried out by WYG Ecology in 2008² covering the floodplain grazing land to the north of the wider development site. Updating surveys carried out by WYG Ecology in 2014⁶ covered the whole site, these surveys recorded eight red listed and seven amber listed Birds of Conservation Concern⁸.

Where possible, vegetation removal will be undertaken outside of the main bird nesting season which extends from March to August, inclusive. If this is not possible then the vegetation to be removed should be inspected by a suitably qualified ecologist immediately prior to works commencing.

The inclusion of new native tree, shrub and hedgerow planting (Paragraph 5.2) will enhance the site for breeding birds. As an additional enhancement measure, four bird boxes will be erected within the site. It is proposed that one Schwegler 1B hole nest and one Schwegler 2H open fronted nest boxes are erected on trees on the site. The location of these boxes is shown on **Appendix 1**.

4.4 Reptiles

Pre-clearance the grassland located within land parcel A2 was assessed to be suitable for foraging and basking reptiles. Surveys undertaken between September and October 2008 a peak count of one slow-worm *Anguis fragilis* within the site. Updating surveys undertaken by ECOSA during June and July 2017 recorded a low population of slow-worm with a peak count of three individuals and a low population of common lizard *Zootoca vivipara* with a peak count of a single individual. During October 2017 a turf strip of the grassland on site was undertaken and a small number of slow-worm were translocated to the embankment adjacent to the railway line south of the site.

The site will be enhanced for reptiles with the creation of one log pile within the area of open greenspace to the west of the Lyminster Bypass. The log piles will provide hibernation features for reptiles on site and provide habitat for additional species such as hedgehogs and invertebrates. Locations of the log pile is shown on **Appendix 1**.

⁸ The UK's birds are split in to three categories of conservation importance - red, amber and green. Red is the highest conservation priority, with species needing urgent action. Red List criteria include species which are: globally threatened; have been subject to historical population decline in UK during 1800–1995; are in severe (at least 50%) decline in UK breeding population over last 25 years, or longer-term period, or; subject to severe (at least 50%) contraction of UK breeding range over last 25 years, or longer-term period.

4.5 Invertebrates

The site provides some suitable habitat for invertebrates in the form of treeline boundaries. The site currently supports common and widespread plant species which are unlikely to support any rare or notable assemblages of terrestrial invertebrates. A small amount of habitat suitable for invertebrates will be lost in the form of scattered trees throughout the treeline boundaries.

New landscaping proposals will compensate for the loss of suitable invertebrate habitat and enhance the site for invertebrates as a whole, in particular areas adjacent to the Lyminster Bypass where new tree and shrub planting is proposed.

Newly planted shrubs will include non-native species known to benefit invertebrates, including lavender species (see Paragraph 5.2.2 for further recommendation details). New tree planting shall comprise native species including field maple *Acer campestre*, rowan *Sorbus aucuparia*, amongst other species, which will provide habitat for a range of invertebrate species and assemblages.

5.0 HABITAT-SPECIFIC MANAGEMENT

5.1 Introduction

This section provides an overview of the habitat-specific management objectives and prescriptions for the site.

5.2 Native Trees and Shrubs

Native trees are present around the boundary of the site, some of which are to be retained. Native tree and shrub planting is also to be undertaken across the site.

5.2.1 Objectives for Native Trees and Shrubs

The specific objectives for native trees and shrubs habitat are to:

- Protect existing retained trees on site; and
- Establish and maintain new tree/shrub planting.

5.2.2 Mitigation and Enhancement

All retained trees will be protected from construction activities in line with BS 2012:5387 with root protection zones marked with a visible barrier such as Heras-fencing (or similar) in order to prevent root damage through compaction.

New tree and shrub planting is proposed, particularly within the areas adjacent to the Lyminster Bypass (see **Appendix 1**). The new landscaping will incorporate native tree species such as field maple *Acer campestre*, Norway maple *Acer platanoides*, pedunculate oak *Quercus robur*, whitebeam *Sorbus aria* and rowan *Sorbus aucuparia*. Shrub planting is to include dogwood *Cornus alba*, hazel *Corylus avellana*, hornbeam *Carpinus betulus* and English lavender *Lavandula angustifolia*.

A number of non-native shrubs are also to be include which are included in the RHS perfect for pollinators list. These include leatherleaf viburnum *Viburnum rhytidophyllum* and shrubby cinquefoil *Potentilla fruticosa*.

5.2.3 Management Prescriptions

Management works should be undertaken over winter (October to February) in order to avoid the nesting bird period.

Any plants dying within the first year will be replaced with matching species. Light, regular, trimming of the trees and shrubs in the first five years will encourage dense, bushy growth and is recommended. After five years, cutting will occur on a biennial basis (every two years) to provide a bushy habitat with suitability for a range of species including common breeding birds.

5.3 Grassland

Areas of grassland, away from residential gardens, will be created to the north of the land parcels, east of parcel A2 and west of B6. These areas are small and have limited potential for ecological enhancement.

5.3.1 *Objectives for Grassland*

The specific objectives for grassland habitat are to create a longer sward in perimeter grassland.

5.3.2 *Management Prescriptions*

The grassland will be mown regular apart from a 1.5 metre strip along the perimeter (see **Appendix 1**). This area will be cut once a year between late July and late August. Arisings will be removed to reduce the nutrient loading (over a long period of time).

6.0 MONITORING AND REVIEW

A review of the mitigation and enhancement measures implemented will be undertaken by a suitably qualified ecologist following the completion of the development. Following the implementation of the proposed mitigation and enhancement measures, any necessary revisions to the Ecological Mitigation and Management Plan will be made.

It is proposed that the party responsible for implementation of this mitigation and management plan carry out regular *ad hoc* monitoring at the site to establish any obvious deviations or faults. Where any issues are highlighted, a suitably qualified ecologist will be consulted for advice where necessary.

An integral part of the mitigation and management plan process will be a system of monitoring and a formal progress review. There will be a review meeting at the end of five years, post-completion, attended by the landowner and management contractor, to discuss the progress of the activities undertaken. This will enable issues to be identified and resolved where required. The meeting will take place to judge the effectiveness of the plan's aims, objectives and prescriptions.

The monitoring and review process will comprise a review report to include the following elements:

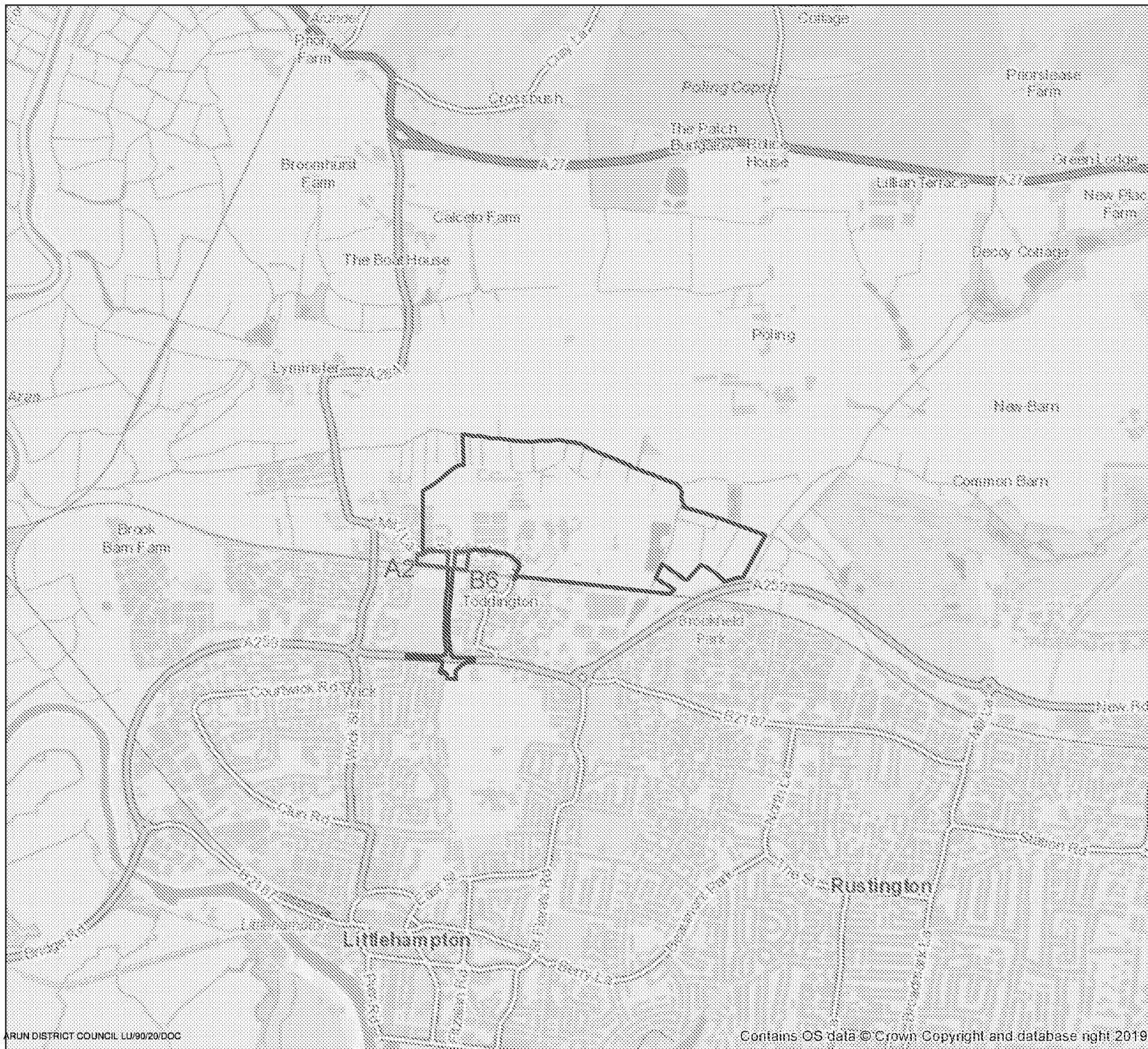
- Details of extent, timing and outcome of all works undertaken in the previous five years;
- Managing agent's assessment of effectiveness of works undertaken and the Ecological Mitigation and Management Plan as a whole; and
- Recommendations for next five year's management requirements.

7.0 TIMETABLE OF MANAGEMENT AND MONITORING WORKS

Management Prescription		Section Reference	Year ⁹										
			0	1	2	3	4	5	6	7	8	9	10
Construction Phase Mitigation and Enhancement	Protection of retained trees in accordance with BS 2012:5387	5.2.2	+										
	Vegetation clearance necessary to be undertaken outside of nesting bird season (March to August)	0	+										
	Erection of new bat and bird boxes within the site	4.2, 0	+										
	Creation of hibernacula	4.4	+										
	New landscaping implemented at the site including new grassland seeding and tree and scrub planting and pond enhancements	5.2.2, 5.3.2	+										
Habitat Management	Grassland edge management	5.3.2	+	+	+	+	+	+	+	+	+	+	+
	Management of tree and scrub habitat to be undertaken outside of nesting bird season (March to August)	5.2.3	+	+	+	+	+	+	+	+	+	+	+
Monitoring and Progress Review	<i>Ad hoc</i> monitoring by management contractors	6.0		+	+	+	+	+	+	+	+	+	+
	Five-year management review	6.0						+					+

⁹ The exact timescales for the construction of the development are unknown. For the purposes of this mitigation and management plan, construction works are referred to as “Year 0” with the mitigation and management plan covering subsequent years “Year 1 – 10”.

Map 1 Site Location Plan



NORTH LITTLEHAMPTON (LAND PARCELS A2 AND B6) TODDINGTON LANE, WEST SUSSEX

ECOLOGICAL MITIGATION AND MANAGEMENT PLAN

Map 1 - Site Location Plan

Client:	Persimmon Homes
Date:	October 2019
Status:	Final

KEY

 Site Boundary (Parcels A2 and B6)

 Wider Site Boundary

Scale at A4: 1:25,000

0 500 1,000 Metres

N

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Appendix 1 Landscaping Plan



Persimmon Homes

North Littlehampton:
Parcel A2 & B6

Landscape
Layout

LA300
Revision R

- Site boundary
- Existing vegetation to be removed
- Trees to be removed - Category U
- Trees to be retained - Category C

Soft landscape proposals

- Tree planting:** refer to plant schedule. Note: where trees are positioned within narrow planting areas, an underground cellular / structure will be necessary to achieve minimum 8 cubic metres of soil (per tree).
- Shrub planting:** refer to Dwg no. LA302 for plant schedule
- Amenity grass:** refer to specification
- Proposed hedge planting:** refer to Dwg no. LA302 for plant schedule
- Proposed specimen shrub:** refer to Dwg no. LA302 for plant schedule

Hard landscape proposals

- Car park and driveway:** Permeable block paving
- Shared footpath and road:** Bitumen macadam
- Private footpath:** Marshalls Mistral paving (Harvest Buff colour) or equivalent approved, Size: 240x160x60mm
- LEAP:** Refer to DWG no. LA 303

Ecology: refer to Ecosa report for details

- Schwegler 1FF Bat Box
- Schwegler 1FF Bat Box
- Schwegler 1FF Bat Box
- Schwegler 1FF Bat Box
- Log pile
- 1.5 m unmown grassland strip

0 20 40 m
Scale @ A1 - 1:500

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Plant Schedule

Trees					
Number	Abbreviation	Species	Specification	Height	Girth
17 -	Ac	Acer campestre	Standard :3 brks :2x :B	250-300cm	8-10cm
7 -	ACECOLA	Acer platanoides 'Columnare'	Extra Heavy Standard :3x :Min 200 :RB	450-500cm	18-20cm
8 -	BETJACA	Betula utilis jacquemontii	Extra Heavy Standard :5 brks :3x	425-600cm	14-16cm
9 -	PcC	Pyrus calleryana 'Chanticleer'	Heavy Standard :5 brks :3x :RB	350-425cm	12-14cm
3 -	Qr	Quercus robur	Semi-Mature :Clear Stem min. 200 :3x/4x :RB	500-550cm	20-25cm
13 -	Sar	Sorbus aria	Selected Standard :4x :B	300-350cm	10-12cm

Outline specification

Ground Preparation:
Protection of existing woodland, trees and hedges against damage to be in accordance with the BS 5837:2012 - Trees in relation to design, demolition and construction - Recommendations. Protective fence to be approved.

Excavations to B.S. 8000 part 1:1989. Excavated material removed off-site; good quality subsoil/topsoil stored on-site for re-use.

Landscape planting areas to have a minimum depth of soil of 500mm and grass areas will have 300mm.

Loosen formation level with single tine ripper, driven 450mm deep at 1m centres, when ground conditions are dry.

Supply approved imported subsoil to B.S. 8601:2013 Specification for subsoil and requirements for use - Multipurpose subsoil to make up any deficiency in on-site subsoil. Spread and level to depth of: 200mm for planting areas 200mm for grass areas

Supply approved imported topsoil to B.S.

3882:2015 Specification for topsoil - Multipurpose topsoil to make up for any deficiency in on-site topsoil. Spread and level to depth of: 300mm for planting areas 100mm for grass areas

Excavate planting pits to the following dimensions:
Feathered Trees: 500 x 500 x 500mm depth
Standard/Selected Standard Trees: 1000 x 1000 x 500mm depth
Heavy/Extra Heavy Standard Trees: 1200 x 1200 x 700mm depth
Shrubs: 300 x 300 x 300mm depth

Backfill tree pits with 100/300mm depth subsoil and 400mm topsoil including Melcourt Topgrow peat free planting compost or similar approved at a rate of 0.125m³/pit.

Backfill shrub pits with topsoil including Melcourt Topgrow peat free planting compost or similar approved at a rate of 1.0m³/20m³.

Cultivate all landscape areas to a loose and friable tilth suitable for grass seeding or planting.

Collect and remove from site all stones, builders' rubble and other deleterious material over 50mm in any dimension.

Grass Areas:
Supply and spread pre-seeding N:P:K. fertiliser (10:15:10) at a rate of 30g/m²

Grass areas to be sown at a rate of 35g/m² with a suitable grass seed mix such as Germinol A19. Initial grass cutting and edge trimming down to 50mm

Planting Areas:
Tree planting pits to be in accordance with BS 8545 2014:Trees from nursery to independence in the landscape - recommendations.

Plant specification to be in accordance with the HTA National Plant Specification: 03/02

Supply and plant, incorporating slow release fertiliser N:P:K - 4:19:10 ENMAG or similar approved at the following rates:
Feathered Trees: 100g / tree pit
Standard/Selected Standard Trees: 100g / tree pit
Heavy/Extra Heavy Standard Trees: 130g / tree pit

Shrubs: 70g / m²
Trees shall be secured with underground anchors; tree stakes shall not be used.

Provide and spread evenly over all planting areas an organic graded bark flakes or similar approved bark mulch to a depth of 50mm.

Hedge Planting:
Planted in double staggered row with 0.25m spacing between the rows and 0.3m centres between plants.

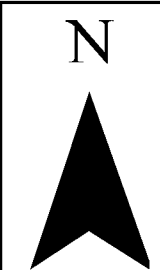
Maintenance:
All landscape areas to be maintained in accordance with B.S. 7370 Part 3:1991 and Part 4:1993; including weed control, and adjustment to tree stakes and ties.

General Notes:

Substitutions, if made, should be similar in size, form and water demand.

Plants shall be arranged to avoid straight lines and geometric patterns.

Appendix 2 Buildings Assessed for Bat Roost Potential (WYG)



Legend

-  Site boundary
-  Buildings assessed for bat potential
-  Building surveyed for bats
-  Trees assessed for bat potential
-  Tree surveyed for bats



The Pavillion, 1st Floor
 Botleigh Grange Office Campus
 Hedge End
 Southampton
 Hants
 SO30 2AF

Tel: 02382 022800
 email: ecology@wyg.cor

WYG Planning & Environment

creative minds safe hands

Toddington Lane, North Littlehampton

Buildings and trees surveyed for bats

Project No:		Office	Type	Drawing No.	Revision
A086068		45	94	Figure 1	

Base map provided by Persimmon Homes