Brooks Ecological

Grounded advice

Biodiversity Management Plan

Land off Lundhill Lane, Wombwell

R-3845-01A

February 2018

Report Reference:	Biodiversity Management Plan Land off Lundhill Road, Wombwell
Report Reference:	R-3485-01A
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The information which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions. This report does not constitute legal advice.

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Introduction

This Biodiversity Management Plan (The Plan) is produced for Persimmon Homes to show how biodiversity has been designed into their proposed development at land off Lundhill Road, Wombwell. This plan is produced to assist with the dicharge of condtion 34.

34. *Prior to commencement of development full details of the mitigation measures identified in sections 68-72 of the updated Brooks Ecological report (September 2017) and section 5 of the Whitcher Wildlife Report (160588, July 2017), including a timetable for their implementation, shall be submitted to and approved in writing by the Local Planning Authority. The development shall be implemented in accordance with the approved details and photographic evidence of incorporation of the features provided to the satisfaction of the Local Planning Authority.*

The Plan is produced in accordance with Chapter 11 of British Standard 42020.

Reports which set out how wildlife interests will be enhanced, restored and maintained go under a variety of names, generated by the planning case officer or their internal consultant. As these names refer to the same output we standardise the name of our reports regardless of what appears in a planning condition as 'Biodiversity Management Plans' (BMPs), a term is referenced in BS42020 Clause D.4.5.

In producing this plan, the following information sources are referred to:

- Brooks Ecological Report R-2667-01.3 Ecological Appraisal, Land off Lundhill Road, Barnsley
- Brooks Ecological Report R-2667-02 Water Vole & Crayfish Survey, Land off Lundhill Road, Wombwell, Barnsley
- Brooks Ecological Report R-2667-04 Great Crested Newt Survey Land off Lundhill Road, Wombwell, Barnsley
- Whitcher Wildlife Ltd Report 160588, July 2017



Delivering the Plan

Persimmon Homes is responsible for the creation and establishment works for a five-year period.

Persimmon Homes will appoint either a Specialist Ecological Management Company (SEMC) or a company working under the direction of an Ecological Clerk of Works (ECoW) to oversee the delivery of this plan prior to any work commencing on site.

The ECoW would be a qualified Ecologist and member of the Chartered Institute for Ecology and the Environment, or be otherwise approved by the LPA.

After year five, this plan will be the responsibility of a Site Management Company.

This plan and the use of an ECoW or SEMC will be included in the terms of reference of the Site Management Company and incorporated in their long -term Management Plan.

Legal and Funding Mechanisms

Persimmon Homes will award a contract appointing either a Specialist Ecological Management Company or a suitable company working under the direction of an Ecological Clerk of Works (ECoW) to implement this plan to year 5, prior to commencement of any works. In-perpetuity management will be secured from the Site Management Company's management fund.

Funds needed to manage the site in perpetuity will be set by the Developer before the Site Management Company is instructed so that it is itemised and budgeted into any tenants' Management Company subscription.

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Opportunities and Themes





Wildflower habitats: food for invertebrates and pollinators

Loss of wildflower grasslands from farming practices in the countryside has had a catastrophic impact on invertebrates . Development sites present an opportunity to create flower filled habitat with the mix of cover and food opportunities they require. The figure above is a wildflower grassland created by Brooks Ecological on a housing site. It has had a hugely beneficial effect in an areas with previously poor opportunities for invertebrates.

Wildflowers in amenity grass:

Substitute grass only mixes for seed mixes with flowers with low growth points and are resistant to regular cutting

Clovers (*Trifolium spp*), Bird's-foot trefoil (*Lotus corniculatus*), daisy (Bellis perennis), autumn hawkbit (Leontodon autumnalis).







Food and cover for wintering birds

Birds on passage are often attracted to dense cover where they can recuperate away from predators. Landscaping can include areas which will allow for the creation and long term maintenance of thickets which will also provide winter food sources (berries).



Waxwing on Crataegus







Homes for declining garden wildlife

New builds often fail to provide opportunities for nesting birds, roosting bats and invertebrates, with the eaves and verges being well sealed.

A wide range of deigns are now available on the market which can either be fixed to the masonry, or built discretely into the fabric of new walls.

Flowery grassland with mown edges

Rationale

Wildflower grasslands look better when there is a neat edge along paths. They make places look cared for and deliberate, not neglected. Mown edges really help secure the acceptance, and long- term of success of wildflower areas.





① Amenity cutting 1m along either side of path



Objectives

1. Path edges look cared for and neat
2. Not less than 30% of mown sward is broad -leaved plants (forbs) from sown mix

Specification

Seeding as per **Pegasus Landscape Plan and Management document** areas shown as close mown grass on the Pegasus Document will be sown with a flowery lawn mix such as Emorsgatre EL1, areas indicated as EM8 will rationalised as per the wet grassland section later

Paths and path edges and paths will be mown as in conjunction with the other amenity grassland on the rest of the Site - ideally at 3 week intervals throughout the growing season.

No fertiliser application to grasslands.

Management

<u>Year 1</u>

Five cuts, collect arisings and remove from site.

Use a weed wipe three times in year 1 to kill off weeds - Spear thistle, creeping thistle, broad-leaved dock, clustered dock, wood dock, curled dock, nettle, ragwort and others according to ECoW recommendations. Operative must be proven competent in identifying these in their early stages to prevent killing off sown wildflowers.

<u>Year two onwards</u>

Cut path edges as normal amenity grass as specified in the overall landscape maintenance contract. Cut flowery grassland at no more than once every 6 weeks. No weed treatment other than for those specified above. No fertiliser application.

Monitoring

Year 2 Ecologist survey to record relative cover values according to objective 1 and 2.

<u>Output</u>

ECoW report, to be submitted to the LPA by no later than the end of year 3.

<u>Remedial actions</u>

Localised weed control or over sowing with wildflower seed under the instructions of the ECoW.

Uncut edges

Rationale

Uncut rough grassland edges make great homes for moths. Small mammals enjoy the cover and forage when a dense thatch layer develops. Uncut grass can help buffer adjacent sensitive habitat such as water courses or hedge







Objectives

1. Vegetation is uncut at all times and a thatch layer builds
2. Evidence of use by moths and small mammals is found
3. Invasive non-native species do not colonise

Specification

<u>As per Pegasus Landscape Plan and Management document but this area will not be cut or re-seeded</u>

No fertiliser application.

Management

<u>Year 1</u>

Protect exiting vegetation in situ. No cutting. Monitor for any INNS

<u>Year two onwards</u>

No cutting , guard against encroachment of cutting machinery.

Monitoring

Year 2 and 5 Ecologist survey to record relative cover values according to objective 1 - 3.

<u>Output</u>

ECoW report, to be submitted to the LPA by no later than the end of year 3 and year 6 respectively.

<u>Remedial actions</u>

Localised weed control or over sowing with wildflower seed under the instructions of the ECoW.

Wildflower Management

Rationale

Annual cutting maintains floral and invertebrate diversity. Invertebrate and other small fauna refuges need to be included to reduce impacts at cutting time. The location should change every year to maintain floral diversity.





④ One cut in August then as flowery grassland with mown edges to the end of October

② Leave uncut for one year (fauna islands) change location every year



Objectives

1. Forbs to account for 40% of sward by year 5
2. 60% of sown species flowering by year 5
3. 'Weeds act' plants account for no more than 10% in any year

Specification

Seeding as per **Pegasus Landscape Plan and Management document** - areas shown as close mown grass on the Pegasus Document will be sown with a flowery lawn mix such as Emorsgate EL1, areas indicated as EM8 will be sown as such.

Management

Year 1

Five cuts in first growing season, expert weed treatment to avoid killing sown species.

Year two onwards

Management of the Flowery lawn mix areas is set out earlier in the document.

Each year leave uncut islands of at least 30m²

Change position of islands each year.

Monitoring

Year 2 and 5 Ecologist survey to record relative cover values according to objective 1 - 3.

Output

ECoW report, to be submitted to the LPA by no later than the end of year 3 and year 6 respectively.

Remedial actions

Localised weed control or over sowing with wildflower seed under the instructions of the ECoW.

Wet Grassland

Rationale

Areas associated with the wetter parts of the site provide an opportunity to introduce a new habitat type to the Site. Species will be seeded which can tolerate and respond to the varying amounts of soil water present in this area - providing new sources of nectar and new structures/ niches for wildlife.

Objectives

1. Forbs to account for 40% of sward by year 5
2. 60% of sown species flowering by year 5
3. 'Weeds Act' plants account for no more than 10% cover in any year.







Specification

Preparation

No more than 5cm of topsoil will be spread over the subsoil profile. This will be loose tipped and spread with back actor to avoid compaction, and harrowed to a fine tilth ready for seeding.

Seed Mixture

Emorsgate EM8 - Meadow Mixture for Wetlands. To be sown into the indicated area — 5

Seed according to supplier's instructions. If soils have been spread before September, any weed growth that has established in the meantime will be sprayed off with glyphosate and a seedbed be re-prepared.

Seed will either be broadcast by hand or by approved lightweight machinery at c. 40Kg /Ha. Following seeding the area will be lightly rolled to incorporate the seed with the growing substrate.

Management

Year 1

Five cuts, collect arisings and remove from site.

Use a weed wipe three times in year 1 to kill off problem species - Spear thistle, creeping thistle, broad-leaved dock, clustered dock, wood dock, curled dock, nettle, ragwort and others according to ECoW recommendations. Operative must be proven competent in identifying these in their early stages to prevent killing off sown wildflowers.

Year two onwards

Single annual cut in late summer (August / September), with all arisings collected and either removed from Site, or taken to an on-Site compost heap, location directed by ECoW.

Monitoring

Year 2 Ecologist survey to record relative cover values according to objective 1, 2 and 3.

Output

ECoW report

Remedial actions

Localised weed control, variation of mowing regime, or over sowing with wildflower seed under the instructions of the ECoW.

Restoration of Better Neutral Grassland

Rationale

Areas associated with the south facing bank will be managed in the long term to provide benefit for invertebrates. This will also provide a semi-natural habitat on the Site's boundaries. Grassland of some value already exists in this area. it will be protected from impacts of clearance and construction by fencing and managed through an appropriate cutting regime to provide habitat for invertebrates and other small fauna.

Objectives

1. Forbs account for 40% of cover.
2. Invasive non-native species do not colonise.
3. 'Weeds Act' plants account for no more than 10% cover in any year.







Specification

Habitats in these areas will not require re-seeding or planting but should instead be retained behind BS5387 protection fencing, or similar, and entered immediately into the management regime set out below.

Management

Two cuts April and late August / September, collect arisings and remove from site.

Use a weed wipe three times in year 1 to kill off weeds - Spear thistle, creeping thistle, broad-leaved dock, clustered dock, wood dock, curled dock, nettle, ragwort and others according to ECoW recommendations. Operative must be proven competent in identifying these in their early stages to prevent killing off wildflowers.

Monitoring

Year 2 & 5 Ecologist survey to record relative cover values according to objective 1, 2 & 3.

<u>Output</u>

ECoW report, to be submitted to the LPA by no later than the end of year 3 and year 6 respectively.

<u>Remedial actions</u>

Localised weed control or over sowing with wildflower seed under the instructions of the ECoW.

Native Hedgerow & Retention of Boundary Trees

Rationale

Native hedgerow and boundary trees provide nesting and foraging opportunities for birds and bats, along with habitat for invertebrate populations. Linear sections of hedgerow and associated boundary trees will additionally provide a small scale wildlife corridor and maintain connectivity across the landscape for birds and mammals.

Objectives

1. Minimum 5 native species present in year 5.
2. Hedgerow remains intact with no gappy or defunct areas
3. Corridor remains unlit.







Specification

Species and proportion as per **Pegasus Landscape Plan and Management document / Masterplan** comprising common holly (Ilex aquifolium) at 35%, field maple (Acer campastre) at 25%, common hawthorn (Crataegus monogyna) at 25%, common hazel (Corylus avellane) at 5%, honeysuckle (Lonicera periclymenum) at 5% and blackthorn (Prunus spinosa) at 5%.

Any trees of hedgerows to be retained will be protected as per BS5837 during clearance and construction.

Management

Once mature height is achieved hedgerows will be maintained at a height and depth of not less than 2m via an annual cut taking place between November and January.

Monitoring

Year 2 & 5 Ecologist survey to record relative cover values according to objective 1, 2 & 3.

<u>Output</u>

ECoW report, to be submitted to the LPA by no later than the end of year 3 and year 6 respectively.

<u>Remedial actions</u>

Beat up hedgerow as necessary, manage understorey.

Faunal Boxes: Starling

Rationale

Modern houses do not support features suited to nesting or roosting, these need to be designed in to accommodate wildlife.



Box

Target	Specification	Number
Starling	Vivara Pro Woodstone Starling Nest Box	5

Location Notes

As shown above
Boxes will be positioned as high up on buildings as possible, ideally directly below the eaves.

Installation

As per supplier instructions.

When erected?

Prior to sale/occupation of unit

Verification

Ecological Clerk of Works Certificate

Faunal Boxes: Bats

Rationale

Modern houses do not support features suited to nesting or roosting, these need to be designed in to accommodate wildlife.



Box

Target	Specification	Number
Bat	Ibstock Enclosed Bat Box 'C'*	5

Location Notes

As shown above
Boxes will be positioned as high up on buildings as possible, ideally directly below the eaves. Roosts closest to foraging corridors.

Installation

As per supplier instructions.

When erected?

Prior to sale/occupation of unit

Verification

Ecological Clerk of Works Certificate

Faunal Boxes: Sparrow

Rationale

Modern houses do not support features suited to nesting or roosting, these need to be designed in to accommodate wildlife.



Box

Target	Specification	Number
Bird	1SP Schwegler Sparrow Terrace	10

Location Notes

As shown above
Boxes will be positioned as high up on buildings as possible, ideally directly below the eaves. South facing elevations avoided.

Installation

As per supplier instructions.

When erected?

Prior to sale/occupation of unit

Verification

Ecological Clerk of Works Certificate