

Land off Barugh Green Road, Barnsley



Biodiversity Management Plan

Report Ref. ER-4661-03B

Date: 05/12/2022

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Date	17.01.2022 Updated 05.12.2022 with Landscape Masterplan Rev. E

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 (BMP) is produced to show how biodiversity has been designed into the proposed residential development at the Site known as Land off Barugh Green Road, Barnsley (grid reference SE31810783).

The BMP is produced in accordance with Chapter 11 of British Standard 42020. 'Biodiversity Management Plans' (BMPs), are referenced in BS42020 Clause D.4.5.

Appropriate management objectives for the site have been devised in response to the requirements for achieving biodiversity net gains (BNG) in accordance with the recommended mitigation and compensation calculations set out in the Ecological Impact Assessment report (ER-4661-02A) and Wildscapes comments (P1310), with reference made to section 10.4 of Barnsley West Masterplan Framework (MU1). This plan sets out the habitat creation and enhancement elements which contribute to this.

This BMP provides creation and enhancement prescriptions for habitat and biodiversity features primarily in areas managed as public spaces. This compliments other green infrastructure specified in landscape plans which may be accounted for in calculating BNG contributions.

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

- **Preliminary Ecological Appraisal. Brooks Ecological ER-4661-01A March 2021**
- **Ecological Impact Assessment. Brooks Ecological ER-4661-02A August 2021.**
- **Landscape Masterplan. TPM Landscape 3612-101-E October 2022.**

Scope of Plan

This BMP relates to the development of 129 dwellings alongside associated infrastructure and public open space (see Figure 1).

All of the Site except the oak tree to the east will be lost to development.

The BMP addresses biodiversity enhancement across the site with particular management prescriptions for areas of retained natural habitat and new features to support biodiversity created through development.



Figure 1 Development proposal from Landscape Masterplan (Revision E)

Delivering the Plan

Countryside Properties (the Developer) is responsible for the creation and establishment works for the initial five-year period of the annual work plan presented in this documents, and in perpetuity. The Developer 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 of Ecology and Environmental Management, or be otherwise approved by the LPA.

After year five, a review of the Biodiversity Management Plan will be carried out and updated to set out aims and objectives for the subsequent 5 year period, and every 5 years until year 30.

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

The Developer 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 management prescriptions are itemised and budgeted for.

Description and Evaluation of features

Pre-existing habitats and baseline conditions have been identified through preliminary habitat and protected species surveys, the detailed findings of which are reported and summarised in the PEAR and EcIA reports accordingly.

The PEAR provides a summary of habitats and protected species within the proposed development as summarised below:

Semi-natural Habitats

Figure 2 shows the development footprint in relation to the mapped habitats (black hatch).

The development footprint shows the sum extent of proposed built development and associated clearance works.

The eastern oak tree will be retained.

Protected species relevant to the Site:

Bats

Breeding Birds

Hedgehog

Baseline habitat types classified according to the UK Habitats Classification are mapped in Figure 2.

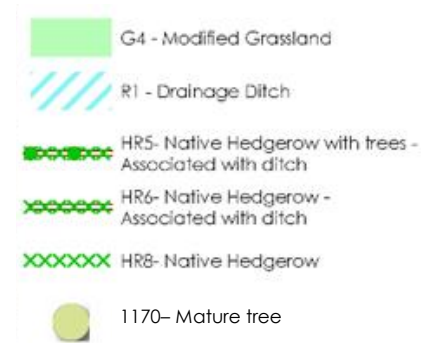
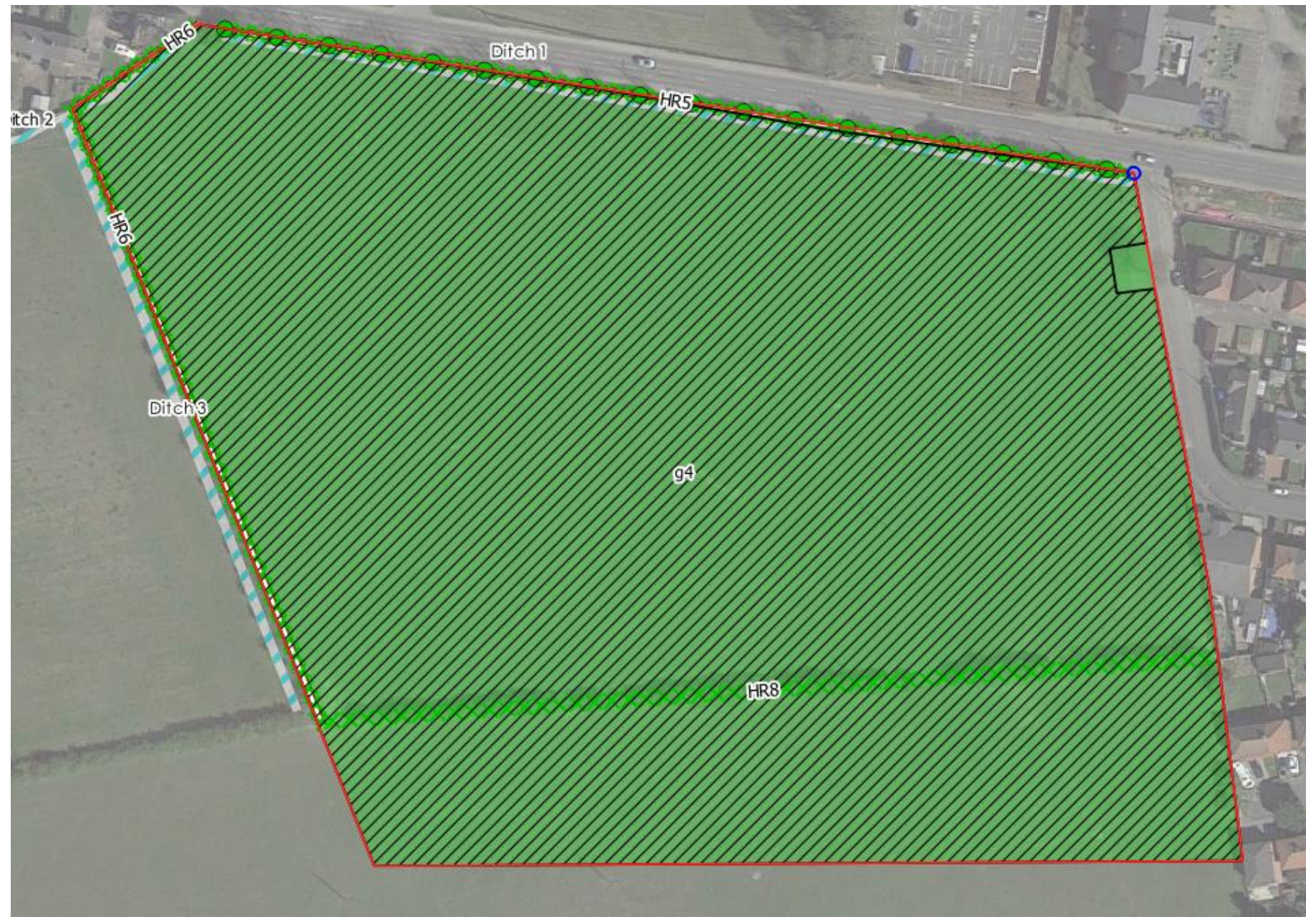
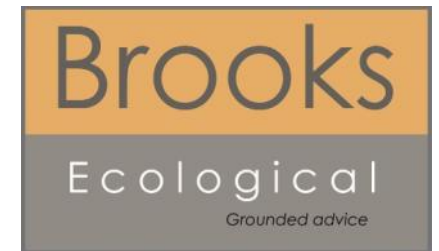


Figure 2 Baseline habitats as identified in the Preliminary Ecological Appraisal and development footprint shown in black hatch

Opportunities and Themes



Species-rich native hedgerows, shrub borders, street trees and orchard

New hedgerows, shrub areas, street trees and orchard planted up with a variety of native species, will provide shelter and a food resources for a wide variety of local wildlife including nesting birds, small mammals and invertebrates. These also provide connectivity allowing wildlife to move between habitat areas.



Deadwood for fungi and invertebrates

Wood piles make homes for hedgehogs invertebrates, amphibians and small mammals. They also slow the release of carbon into the atmosphere.



Food and cover for wintering birds

Landscaping can include areas of native tree and scrub planting which will provide a source of winter food sources (berries).



Homes for declining birds & bats.

A wide range of designs faunal boxes are now available which can either be integrated into built structures or positioned in optimal habitat locations



Wildflower grassland

Tall uncut areas make great refuges for small mammal which attract birds of prey and other predators. Voles are attracted to the dense 'thatch' of dead grass that accumulates and invertebrates that live out their lifecycle in undisturbed environment thrive here. Long grass is particularly important for late summer moths which rise out of the grass at dusk and attract bats to forage.





Meadow

DEFRA: Grassland (Other neutral)

Rationale: Creating functional yet flower rich amenity type grassland to attract invertebrates, pollinators and small mammals.

Objectives

Biodiversity units delivered by reaching a DEFRA condition score of **moderate** by year 10.

Specification

Emorsgate EM2 Standard General Purpose Meadow Mix or other ecologist approved mix.

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.

Seeding

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 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.

Year 2 onwards

3 cuts– 1 in Spring (no later than end of April), 1 in summer (late June— late August) and 1 in Autumn (end of August—late November). All arisings collected and removed from Site. Continue to spot treat competitive weed species each year until under control according to ECoW.

Monitoring

Ecological Clerk of Works annual monitoring visit to check trajectory to **Moderate condition** assessment. Soil testing and management regime amended if moderate condition is not being achieved.

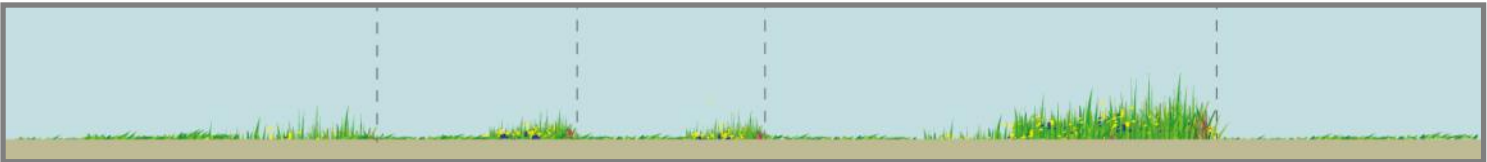
Output

ECoW report years 1, 2, 5, 10, 20 and 30.

Remedial actions

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

Soil testing and management regime amended.



	Condition Assessment Criteria Grassland habitat type	Targeted?	Notes
1	Clearly and easily recognisable as a good example of this type of habitat.	Yes	
2	Appearance and composition very closely matches the characteristics for the specific Priority Habitat	N/A	
3	Wildflowers, sedges and indicator species for the specific Priority grassland habitat are very clearly and easily visible throughout the sward and occur at high densities in high frequency.	N/A	
4	Undesirable species and physical damage is below 5% cover.	Yes	
5	Cover of bare ground greater than 10%	No	
6	Cover of bracken less than 20% & cover of scrub and bramble less than 5%.	Yes	



Orchard

DEFRA: Urban orchards

Rationale: Creating an area of mixed fruit bearing trees for wildlife including nesting birds, and invertebrates, whilst also providing amenity interest.

Objectives

Biodiversity units delivered by reaching a DEFRA condition score of **moderate** by year 15.

Specification

A mix of fruit bearing varieties according to Landscaping plans.

Management

Year 1 –3

Standard establishment. Keep a 0.5m diameter area weed free with herbicide. Check shelters are fitted properly, stakes are firm and ties in place. Hand weed grasses and weeds in tree shelters if present. Replace failures next growing season. Monitor for competitive weed growth away from planting stations. Spray or weed wipe as required to keep cover to less than 10%.

Year 4 onwards

Monitor for competitive weed growth away from planting stations. Spray or weed wipe as required to keep cover to less than 10%. Remove tree guards before year 5.

Monitoring

Ecological Clerk of Works annual monitoring visit to check trajectory to moderate condition assessment.

Output

ECoW report years 1, 2, 5, 10, 20 and 30.
Increase weed control if undesirable species establish.
Re-seed and replant locally.



	Condition Assessment Criteria Grassland habitat type	Targeted?	Notes
1	Between 50 and 150 fruit or nut trees per hectare.	No	
2	Absence of scrub growing between or up the trees.	Yes	
3	At least 80% of trees should be free from damage.	Yes	
4	Average height of grass sward should be between 5cm and 30cm.	Yes	
5	Less than 5% cover of bare ground, injurious weeds and scrub.	Yes	



Native hedge and shrub borders

DEFRA: Native Hedgerow

DEFRA: Mixed scrub

Rationale: New native hedges provide shelter and act as dispersal corridors. Native shrub area provide diverse forage and shelter for birds and other fauna throughout the seasons.

Objectives

Hedgerow- Biodiversity units delivered by reaching a DEFRA condition score of **moderate** by year 10.

Scrub- Biodiversity units delivered by reaching a DEFRA condition score of **moderate** by year 3.

Specification

Native shrub planting according to NS1 and native hedgerow planting according to Landscaping plans.

Management

Year 1 –3

Hedgerow- Standard establishment. Maintain base weed free. In the first spring trim lateral branches back by 50% (not Holly). Prune damaged, diseased or dead wood immediately after first leaf break. Follow with a light trim in Year 2 and 3, allowing the hedge to increase in size each time.

Shrub- standard establishment. Keep a 0.5m diameter area weed free with herbicide. Check shelters are fitted properly, stakes are firm and ties in place. Hand weed grasses and weeds in tree shelters if present. Replace failures next growing season. Monitor for competitive weed growth away from planting stations. Spray or weed wipe as required to keep cover to less then 10%.

Year 4 onwards

Hedgerow- Cut no more than 90% of hedge in February, spread chippings under the hedge. Leave remaining sections to grow for 1 further year. Vary the location of sections which are left for two years each year.

Shrub- Monitor for competitive weed growth away from planting stations. Spray or weed wipe as required to keep cover to less then 10%. Remove tree guards before year 5.

Monitoring

Ecological Clerk of Works annual monitoring visit to check trajectory to moderate condition assessment.

Output

ECoW report years 1, 2, 5, 10, 20 and 30.

Increase weed control if undesirable species establish.

Re-seed and replant locally.

Increased thinning of canopy species.

NS1– Native shrub				
Scientific	English	%	Stock	Groupings
<i>Sorbus aucuparia</i>	Rowan	5	1+1 BR	random
<i>Corylus avelanna</i>	Hazel	5	1+1 BR	random
<i>Prunus spinosa</i>	Blackthorn	20	1+1 BR	random
<i>Crataegus monogyna</i>	Hawthorn	20	1+1 BR	random
<i>Rosa canina</i>	Dog Rose	40	1+1 BR	random
<i>Viburnum opulus</i>	Guelder Rose	10	1+1 BR	random
<i>Lonicera periclymenum</i>	Honeysuckle	5	1ltr Pot	random



	Condition Assessment Criteria: Scrub habitat type	Targeted?	Notes
1	At least three woody species, with no one species comprising more than 75% of the cover	Yes	
2	There is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs	Yes	
3	Pernicious weeds and invasive species make up less than 5% of the ground cover	Yes	
4	Well-developed edge with un-grazed tall herbs	Yes	
5	Many clearings and glades within the scrub	No	

	Condition Assessment Criteria: Native Hedgerow habitat type	Targeted?	Notes
A1	Height — >1.5 m average along length	Yes	
A2	Width — >1.5 m average along length	Yes	
B1	Gap—base of hedge—Gap between ground and base of canopy <0.5 m for >90% of length	Yes	
B2	Gap -hedge canopy continuity— Gaps make up <10% of total length and No canopy gaps >5 m	Yes	
C1	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length	No	
C2	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	No	
D1	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Yes	
D2	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Yes	



All other habitats

Street trees & Introduced shrub

Under the Biodiversity Metric 2.0 Calculator Tool, Street trees and Introduced shrub are automatically allocated a condition score of Poor. These habitats therefore achieve a Condition score of poor irrespective of management prescription.

Street trees– automatically allocated a score of 2 (moderate).

Introduced shrub– automatically allocated a score of 1 (poor).

Specific ecological based management is therefore not required, and thus is not detailed within this BMP. Instead, details for standard landscape establishment and management works are detailed in the accompanying Landscaping Plans.

Amenity grassland

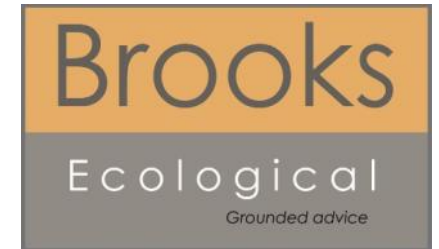
The metric assessment has assumed this habitat type will be managed to achieve a 'poor' condition. This is the lowest condition score that can be achieved and thus creating amenity grassland within the Landscape Plans will default to 'poor' condition score as standard.

Specific ecological based management is not required, and thus is not detailed within this BMP. Instead, details for standard landscape establishment and management works are detailed in the accompanying Landscaping Plans.





Access and habitat for hedgehogs



Access specification

At least one hedgehog access hole (measuring at least 13cm by 13cm) will be installed in each new rear garden fence line along the blue route shown in the figure (right). These routes have been designed to allow hedgehogs to enter gardens from areas of POS. Hedgehogs will not be encouraged to cross roads, in an effort to reduce road casualties.

These will be either purpose made panels such as those supplied by Jackson Fencing or be cut into standard fences, by contractors, during installation.

Where concrete gravel boards are used either purpose built ramps to access holes in the fence panels, or underpasses beneath the boards will be made. These holes will be simply labelled so home owners know why there are there.



Habitat Specification

New areas of shelter, where hedgehogs are able to nest, will be installed in suitable habitat areas (see figure right). This will ideally take the form of log piles (using timber arising from on-Site trees / hedge clearance) or less preferably purpose built hedgehog houses.

Location Notes

As indicated in the figure right associated with retained hedgerow and new scrub areas.

Number

2 refuges.

Timing

Refuges put in place along with other habitat creation works in the areas they are to be located.



Dead wood log pile [2]



Indicative locations of hedgehog access points



Illustrative example: hedgehog refuges constructed from dead wood reclaimed during site clearance and from thinning to enhance boundary woodland

BARUGH GREEN ROAD

Chestnut Tree

79.8m

79.9m

Shelter

CLAYVILLE AVENUE

REVISION NOTES

Rev	By	Description	Date
E	AK	Tree Trail added in line with comments	06-10-22
D	AJ	Updated in line with latest layout	22-08-22
C	AJ	Updated in line with ecologist's comments	06-12-21
B	AK	Updated in line with revised site layout	13-06-21
A	AK	Updated in line with revised site layout	13-08-20

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Work Schedule

The work schedule overleaf covers the 5-year establishment period (Developer's responsibility) and the in-perpetuity period [years 6-30] (Site Management Company's responsibility).

'Year 1' is triggered as soon as any works commence on site. The following actions will be carried out by the site's landscape maintenance company under the direction of the ECoW where required.

Task	ECoW to direct	ECoW to carry out	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6-30
Ground forming and soil cultivation			Yes					
Prepare grassland areas for seeding			March-September	March-September				
Seed wildflower grassland			September-October	September-October				
Establish wildflower grassland	Yes		April-September	April-September				
Manage wildflower grassland	Yes		April-Sept	April-Sept	April-Sept	April-Sept	April-Sept	April-Sept
Monitor grassland including soil testing		Yes	June	June	June	June	June	June
Woody planting and hedgerows	Yes		November-February	November-February				
Manage scrub, hedges and trees	Yes		November-February	November-February	November-February	November-February	November-February	November-February
Monitor scrub, hedges and trees		Yes	Monitor June	Monitor June	Monitor June	Monitor June	Monitor June	Monitor June
Create hedgehog refuges	Yes		Any time					
Erect bird and bat boxes	Yes		Any time	Any time				
Planting defects maintenance				Yes	Yes	Yes	Yes	Yes