Brooks Ecological

Grounded advice

Biodiversity Management Plan & Water Vole Mitigation Strategy

Lady Anne Road, Soothill, Batley

D. Noble Ltd

ER-3787-02-B

November 2022

Report Reference:	Biodiversity Management Plan & Water Vole Mitigation Strategy Lady Ann Road, Soothill, Batley
Report Reference:	ER-3787-02-A
Written by:	Christopher Shaw BSc (Hons) MCIEEM Principal Ecologist
Technical review:	Peter Brooks BSc (Hons) MA, MCIEEM, CEnv Managing Director
QA review:	Victoria Baker BSc (Hons) MSc GradCIEEM Ecologist
Approved for issue:	Peter Brooks BSc (Hons) MA, MCIEEM, CEnv Managing Director
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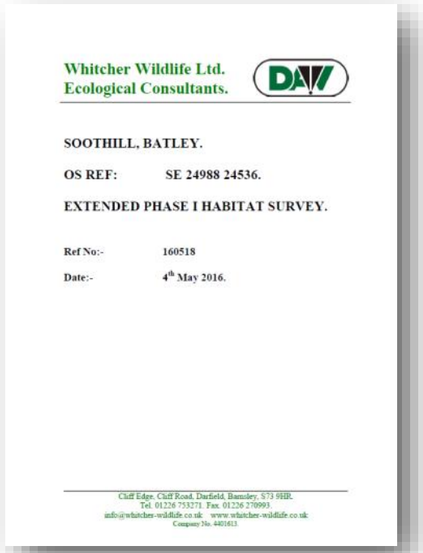
The information which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions. This report does not constitute legal advice.

Unit A, 1 Station Road, Guiseley, Leeds, LS20 8BX
Phone: **01943 884451**
01943 879129
www.brooks-ecological.co.uk
Registered in England Number 5351418

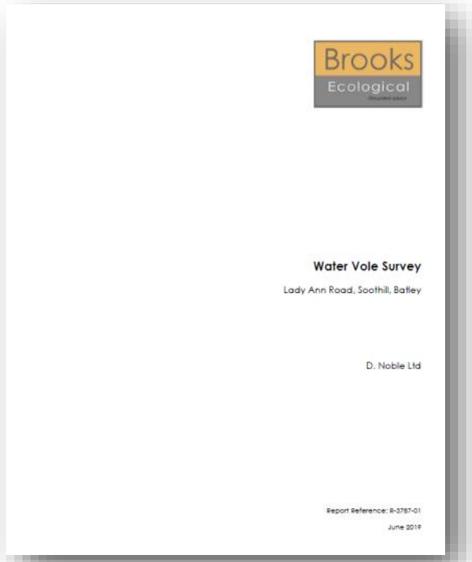
Introduction

The Site has been subject to a series of baseline studies which have helped to inform the layout, demonstrating its engagement with the 'mitigation hierarchy'. Input into the design of the landscape proposals has allowed the ecological value of new Public Open Space (POS) to be maximised, generating the greatest possible biodiversity score post-development. The final layout has been Impact Assessed showing the proposed development is policy compliant.

This report is the final delivery document, and shows how retained and created habitats can attain the condition scores that were predicted in the Ecological Impact Assessment and Biodiversity Metric 2.0 Calculation tool.

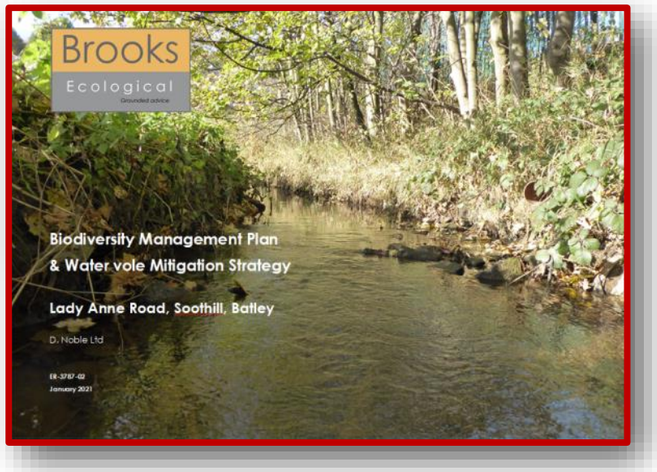


1 Baseline assessment



2 Detailed Studies

3 Impact Assessment



4 Delivery (BMP)

In addition to meeting habitat condition objectives, this document presents all the measures included to maximise the value of the Site for fauna, in particular to maintain suitable habitat for water vole.

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 Plan**s' (BMPs), a term is referenced in BS42020 Clause D.4.5.

Aims of the Plan

To deliver the Biodiversity Unit score predicted in the Ecological Impact Assessment, as well as to maintain and create suitable habitat for water vole and garden wildlife.

Scope of Plan

This plan relates to the whole development as contained within the red line, illustrated right.

Greenspace available for enhancement is situated along the eastern boundary, associated with Howley Beck. This will maintain the functionality of the Local Wildlife Habitat Network.

Delivering the Plan

The Developer is responsible for the creation and establishment works for a five-year period.

The Developer will appoint 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, this plan will be the responsibility of a Site Management Company whence it will be implemented in perpetuity.

On-site baseline	*Habitat units*	17.45
	Hedgerow units	0.83
	River units	2.63
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	*Habitat units*	11.34
	Hedgerow units	2.60
	River units	3.27
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement &	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	*Habitat units*	-6.11
	Hedgerow units	1.77
	River units	0.64
Total net % change (including all on-site & off-site habitat creation + retained habitats)	*Habitat units*	-35.04%
	Hedgerow units	214.30%
	River units	24.41%

Water vole Mitigation Strategy

Water voles have historically (2000 & 2009) been recorded within the northern section of the Site, and within off-site sections of Howley Beck to the north. However, recent Water vole surveys conducted in 2017 & 2019 have demonstrated that this species is now (likely) absent from the site, despite sections of Howley Beck still providing suitable habitat.

It is possible that water vole are still present within offsite sections of the beck to the north and there is a chance that the species could recolonise the Site in the future.

A combined water vole mitigation strategy and biodiversity management plan has therefore been designed, to ensure that suitable habitat is protected and enhanced for this species, so as to maintain the potential for recolonisation events to occur.

The following measures will be put in place during the construction phase, to ensure the beck's value to water vole is adequately protected.

Exclusion zones

Where feasible, a 6m standoff has been designed into the Site Layout between the toe of the bank of Howley Beck, and the development footprint. This will act to protect any burrows and bankside habitat from direct impacts of construction.

Where a 6m standoff can not be enacted, a pre-commencement water vole survey will be undertaken to confirm the continued likely absence of water vole. Should evidence of water vole be discovered at this point, work will be put on hold until the relevant mitigation / conservation licence has been secured with Natural England.

Barrier Fencing

BS5837 Tree protection fencing, with silt sheets will be installed along the edge of the development footprint, prior to any works commencing. This fence will be fitted with suitable signage, at regular intervals, alerting contractors to the presence of an ecologically sensitive exclusion zone, that must not be breached at any point.

A system will be put in place with the Site manager to undertake daily/ weekly checks of this fencing, to ensure it remains in good condition and that there are no breaches.

Tool Box Talk

Once barrier fencing has been installed, and prior to any works commencing, a suitably experienced ecologist will deliver a toolbox talk to the Site Manager. This information will then be included in the Site Induction delivered to any contractors working on Site.

Ecological Clerk of Works

An Ecological Clerk of Works, who is a suitably experienced ecologist, will be on hand to carry out site inspections/ surveys whenever the need arises.

Other Rivers & Streams
(Howley Beck)

Rationale

Better management of the beck to increase its condition will benefit not only water vole, but all local wildlife as well as contribute to human wellbeing.

Objectives

Delivering 2.85 River Units by improving Howley Becks DEFRA Condition score from poor to Fairly Poor by year 10.

Specification

Soil N/A.

Weeds: manage invasive non-native Himalayan balsam. No herbicide, pesticide or fertilizers to be used.

Seeding: N/A.

Planting: Localized plug planting of yellow flag iris, purple loosestrife and meadowsweet. Specify 50 number each species (150 in total) planted under ECoW direction).

Management

Annual litter pick of channel and banks.

Annual hand pull of Himalayan balsam in line with Invasive Weed Management Plan - prior to flowering and setting seed.

Targeted cut and remove of scrub - where deemed necessary by EcOW.

Monitoring

Ecological Clerk of Works Years 1, 3 and 5 monitoring visit to check trajectory to condition requirement.

Output

ECoW report year 1, 3 and 5.

Remedial action options

- Increase weed control if undesirable species establish
- Increase frequency of litter picks
- Additional seeding / plug planting of locally native plants

Tall herb Community

Rationale

Managing the existing tall herb vegetation will increase floral diversity and condition, which in turn will provide habitat and food resource for water vole, should they recolonise the beck.

Objectives

Delivering 2.12 Habitat Units by retaining 0.24ha of Tall Herb Community habitat, and managing it so as to improve its DEFRA Condition score from poor to moderate by Year 20.

Specification

Soil retain and protect in situ.

Weeds: manage invasive non-native Himalayan balsam. No herbicide, pesticide or fertilizers to be used.

Seeding: N/A.

Planting: N/A

Management

Annual litter picks.

Annual hand pull of Himalayan balsam in line with Invasive Weed Management Plan - prior to flowering and setting seed.

Pocket strimming and raking to remove plant litter build up and open recruitment niches. - to be directed by EcOW. Different parcel to be stimmed every second year, with each parcel to amount to 1/3rd by area. Material will be raked and removed from site, or raked and left in on-site rot piles.

Monitoring

Ecological Clerk of Works Years 1, 3 and 5 monitoring visit to check trajectory to condition requirement.

Output

ECoW report year 1, 3 and 5.

Remedial action options

- Increase weed control if undesirable species establish
- Increase frequency of litter picks

	Condition Assessment Criteria: Grassland habitat type	Targeted?
1	Clearly and easily recognizable as a good example of this type of habitat.	**Yes**
2	Appearance and composition very closely matches the characteristics for the specific Priority Habitat	**No**
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.	**No**
4	Undesirable species and physical damage is below 5% cover.	**Yes**
5	Cover of bare ground less than 10%	**Yes**
6	Cover of bracken less than 20% & cover of scrub and bramble less than 5%.	**Yes**

Other Neutral Grassland
(Retained)

Rationale

Increasing diversity of existing grassland will provide food plants for water vole as well as attract invertebrates and contribute to human wellbeing.

Objectives

Delivering 1.88 Habitat Units by retaining 0.24a of Other Neutral grassland habitat, and managing it so as to improve its DEFRA Condition score from poor to moderate by year 10.

Specification

Soil retained and protected in situ.

Weeds: manage invasive non-native Himalayan balsam. No herbicide, pesticide or fertilizers to be used.

Seeding: overseed with Emorsgate EM1 General purpose meadow mixture and Yellow rattle - to supplier's specification. Seed into raked patches to open up germination niches.

Planting: N/A

Management

Year 1 two cuts (spring and autumn), rake and collect arisings; remove arising from site or place in rot piles. Sow EM1 seed straight mix after autumn cut and rake. Remove litter.

Year 2 onwards
Two cuts, once in August and again in October - remove arisings. Remove litter and manage INNS.

Illustrative cutting regime from year 2

Monitoring

Ecological Clerk of Works - years 1, 3 and 5 monitoring visit to check trajectory to condition requirement (see table overleaf).

Output
ECoW report year 1, 3 and 5.

Remedial action options
- Increase weed control if undesirable species establish
- Re-seed and replant locally
- Include third cut in spring to reduce nutrient levels.

Lady Anne Road, Soothill, Batley

Other Neutral Grassland
(Created)

Rationale

Creating flower-rich grassland on made habitats to provide food plants for water vole, as well as attract invertebrates and contribute to human wellbeing.

Objectives

Delivering 1.55 Habitat units by creating 0.24ha of Other Neutral grassland in moderate condition by year 10.

Specification

Soil should be checked by ECoW for suitability: this to be a friable low nutrient load neutral soil. Spread using back actor spread and firmed. Not driven over and compacted. All soil handling and spreading to be supervised by and sanctioned by ECoW.

Weeds: if the soil is likely to support viable weed seeds it should be allowed to grow to first flush then killed off with translocated non-persistent weedkiller. After this, no herbicide, pesticide or fertilizers to be used.

Seeding: seed with Emorsgate seeds EM1 General purpose meadow mixture to supplier's specification.

Planting: N/A

Management

Year 1 Five cuts, collect arisings and remove from site, or add to rot pile. Remove litter.

Year 2 onwards
Two cuts, once in August and again in October—remove arisings. Continue. Remove litter. Manage INNS.

Monitoring

Ecological Clerk of Works - year 1, 3 and 5 monitoring visit to check trajectory to condition requirement (see table below).

Output
ECoW report Year 1, 3 and 5.

Remedial action options

- Increase weed control if undesirable species establish
- Re-seed and replant locally
- Include third cut in spring to reduce nutrient levels.

	Condition Assessment Criteria: Grassland habitat type	Targeted?
1	Clearly and easily recognizable 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 less than 10%	**Yes**
6	Cover of bracken less than 20% & cover of scrub and bramble less than 5%.	**Yes**

Modified Grassland
(Created)

Rationale

Creating flower-rich grassland on made habitats to provide food plants for invertebrates, as well as contributing to human wellbeing.

Objectives

Delivering 0.19 Habitat units by creating 0.06ha of Modified grassland in moderate condition by year 10.

Specification

Soil should be checked by ECoW for suitability: this to be a friable low nutrient load neutral soil. Spread using back actor spread and firmed. Not driven over and compacted. All soil handling and spreading to be supervised by and sanctioned by ECoW.

Weeds: if the soil is likely to support viable weed seeds it should be allowed to grow to first flush then killed off with translocated non-persistent weedkiller. After this, no herbicide, pesticide or fertilizers to be used.

Seeding: seed with Emorsgate seeds EL1 General purpose meadow mixture to supplier's specification.

Planting: N/A

Management

Year 1 Five cuts, collect arisings and remove from site, or add to rot pile. Remove litter.

Year 2 onwards

Mow regularly as a lawn but not too short (25-40mm). To permit flowering, mowing can be relaxed from late June. Cut again when the sward gets untidy (after 4-8 weeks). Mowing may be suspended earlier in the year to allow cowslips to flower. Heavy quantities of cuttings should be 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 - year 1, 3 and 5 monitoring visit to check trajectory to condition requirement (see table below).

Output

ECoW report Year 1, 3 and 5.

Remedial action options

- Increase weed control if undesirable species establish
- Re-seed and replant locally
- Include third cut in spring to reduce nutrient levels.

	Condition Assessment Criteria: Grassland habitat type	Targeted?
1	Clearly and easily recognizable 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 less than 10%	**Yes**
6	Cover of bracken less than 20% & cover of scrub and bramble less than 5%.	**Yes**

Mixed scrub
(Retained)

Rationale

Creating an area of dense mixed native scrub and trees, which will provide shelter, nesting opportunities and nectar/ food resources for a wide range of wildlife.

Objectives

Delivering 2.11 Habitat Units by retaining 0.25ha of poor condition Bramble scrub, and managing it so as to create mixed scrub in moderate by year 5.

Specification

Soil retained and protected in situ.

Weeds: manage invasive non-native Himalayan balsam. No herbicide, pesticide or fertilizers to be used.

Seeding: N/A.

Planting: from schedule in Landscape Masterplan.

Management

Year 1 Cut bramble to ground level in October and plant whips.

Year 2-5 Check shelters are fitted properly, stakes are firm and ties in place. Replace failures. Cut half of bramble to ground layer once a year in October, alternating annually.

Year 10 Cut bramble to ground level (outside nesting period) and remove tree guards. Thin planted scrub if required - must be ECoW directed. Leave all felled timber in situ to rot down.

Monitoring

Ecological Clerk of Works year 2 and 5 monitoring visit to check trajectory to moderate condition assessment. Output ECoW report year 2 and 5.

Remedial action options

- Increase weed control if undesirable species establish
- Replant failures
- Amend cutting regime (bramble)
- Increase thinning rate

	Condition Assessment Criteria: Scrub habitat type	Targeted?
1	There are 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	**No**
3	Pernicious weeds and invasive species make up less than 5% of the ground cover.	**Yes**
4	The scrub has a well-developed edge with un-grazed tall herbs.	**Yes**
5	There are many clearings and glades within the scrub.	**No**

Mixed scrub
(Created)

Rationale

Creating an area of dense mixed native scrub, which will provide shelter, nesting opportunities and nectar/ food resources for a wide range of wildlife.

Objectives

Delivering 0.74 Habitat units by creating 0.09ha of mixed scrub in moderate condition by year 5.

Specification

Soil should be spread using back actor spread and firmed. Not driven over and compacted. All soil handling and spreading to be supervised by and sanctioned by ECoW.

Weeds: if the soil is likely to support viable weed seeds it should be allowed to grow to first flush then killed off with translocated non-persistent weedkiller.

Seeding: N/A

Planting: from schedule in Landscape Masterplan.

Management

Year 1-2 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.

Year 3-5 Monitor for competitive weed growth away from planting stations.

Year 10 remove tree guards. Thin if required. Must be ECoW directed. Leave all felled timber in situ to rot down.

Monitoring

Ecological Clerk of Works - year 2 and 5 monitoring visit to check trajectory to moderate condition assessment. Output ECoW report year 2 and 5.

Remedial action options

- Increase weed control if undesirable species establish
- Replant failures
- Increase thinning rate

	Condition Assessment Criteria: Scrub habitat type	Targeted?
1	There are 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	**No**
3	Pernicious weeds and invasive species make up less than 5% of the ground cover.	**Yes**
4	The scrub has a well-developed edge with un-grazed tall herbs.	**Yes**
5	There are many clearings and glades within the scrub.	**No**

Hedgerows

Rationale

Increase species diversity and improve structure.

Objectives

Delivering 1.77 Hedgerow units by planting 344m of mixed native species hedgerow, and managing it to moderate condition by year 5.

Specification

Soil should be spread using back actor spread and firmed. Not driven over and compacted. All soil handling and spreading to be supervised by and sanctioned by ECoW.

Weeds: No herbicide to be used. Strim and rake out planting stations in areas to be gapped up immediately prior to planting.

Seeding: N/A

Planting: from schedule NH1: Plant hedge single line of whips along edge of exiting hedgerows. Use double staggered row to fill in any gaps . Plant at rate of 5 per linear metre. Plant in staked tree tubes.

Management

Year 1 keep weed growth around planted whips stimmed back to prevent over topping. Two visits in the growing season. Cut 50% of each identifiable hedge in late winter. Identify any trees that can be left to grow into hedgerow standards. Mark with a flag to prevent cutting. Look to achieve a random scattering of standards averaging at 1 per 40m.

Year 2. Cut the remaining uncut 50% of each identifiable hedge in late winter. Keep flags to prevent cutting until a very obvious standard has developed.

Year 3-25 repeat cutting treatment alternating areas cut between years.

Monitoring

Ecological Clerk of Works - year 2 and 5 monitoring visit to check trajectory to moderate condition assessment.

Output ECoW condition report.

Remedial action options

- Replace failures

Scientific	English	%	Stock	Groupings	Centres and style
Corylus avelanna	Hazel	25	1+1 BR	groups 3-8	Double staggered row
Prunus spinosa	Blackthorn	10	1+1 BR	groups 5-9	Double staggered row
Ilex aquifolium	Holly	5	1ltr Pot	Scattered individuals	Double staggered row
Crataegus monogyna	Hawthorn	25	1+1 BR	groups 3-8	Double staggered row
Rosa canina	Dog Rose	5	1+1 BR	groups 3-8	Double staggered row
Malus sylvestris	Crab apple	5	1+1 BR	groups 3-5	Double staggered row
Viburnum opulus	Guelder Rose	5	1+1 BR	groups 3-5	Double staggered row
Cornus sanguinea	Dogwood	5	1+1 BR	groups 3-8	Double staggered row
Acer campestre	Field Maple	10	1+1 BR	groups 3-8	Double staggered row
Lonicera periclymenum	Honeysuckle	5	1ltr Pot	Individuals	Scattered*

Orchard

Rationale

Provide a source of fruit and nectar for local wildlife.

Objectives

Delivering 0.04 Habitat units by planting an Orchard that is 0.01ha within POS.

Specification

Soil should be checked by ECoW for suitability: this to be a friable low nutrient load neutral soil. Spread using back actor spread and firmed. Not driven over and compacted. All soil handling and spreading to be supervised by and sanctioned by ECoW.

Weeds: if the soil is likely to support viable weed seeds it should be allowed to grow to first flush then killed off with translocated non-persistent weedkiller.

Seeding: seed with Emorsgate seeds EM 1 General purpose meadow mixture to supplier's specification.

Planting: N/A

Management

Trees

Year 1-2 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 3-5 Monitor for competitive weed growth away from planting stations. Spray or weed wipe as required to keep cover to less then 10%. Adjust tree guard and tree tie as required.

Year 10 remove tree guards / stakes and tree ties.

Grassland—as per Other neutral grassland.

Monitoring

Ecological Clerk of Works year 2 and 5 monitoring visit to check trajectory to condition requirement.

Output

ECoW report year 1, 3 and 10.

Remedial action options

- Replant any failed specimens
- Increase weed control if undesirable species establish
- Remove or adjust tree guards / stakes / tree ties—as required.

	Condition Assessment Criteria: Orchard habitat type	Targeted?
1	Between 50 and 150 fruit or nut trees per hectare	**No**
2	There should be an absence of scrub growing between or up the trees	**Yes**
3	At least 80% of the trees should be free from damage caused by browsing, bark stripping or rubbing on non-adjusted ties.	**Yes**
4	The average height of the grass sward should be between 5 cm and 30 cm.	**No**
5	There should be less than 5% cover of bare ground, injurious weeds or scrub.	**Yes**

Homes for Wildlife

Birds

Rationale

Ready made roosting boxes can be readily incorporated into developments to provide shelter and breeding sites for declining garden birds.

Integrated Swift boxes

Specification

Mansthorpe Swift Brick - https://www.nhbs.com/manthorpe-swift-brick

(Or equivalent approved by an Ecologist)

Although designed for swift, these boxes have been shown to be used by other bird species, including House sparrow and blue tit.

Location Notes

Sited as high as possible, directly under the apex of the verge or below the eaves, with clear flight line.

Boxes will not be positioned above windows, to prevent potential conflict with new homeowners.

Number 27 (in groups of 3)

When erected? During construction.

Verification ECoW Certificate.

Note all locations and specifications may be varied under agreement with ECoW

Homes for Wildlife

Bats

Rationale

Ready made roosting boxes can be incorporated into developments to provide shelter and roosting sites for crevice dwelling bats.

Integrated Bat boxes

Specification

Ibstock Enclosed Bat Box - https://www.nhbs.com/ibstock-enclosed-bat-box-c

(Or equivalent approved by an Ecologist).

Location Notes

Sited as high as possible under the eaves with good access to unlit vegetated corridors.

Number 10

When erected? During construction.

Verification ECoW Certificate.

Note all locations and specifications may be varied under agreement with ECoW

Homes for Wildlife

Hedgehog

Gardens can provide very good habitat for hedgehogs and other small mammals, but modern fencing often excludes them. Providing access between gardens can greatly increase the amount of habitat available to these species.

Specification

Accessible gaps, measuring at least 13m x 13cm, will be installed in fence panel - to the approval of the Ecological Clerk of Work.

At least one gap to be created in each boundary fence line, for all gardens following the blue line in the plan opposite.

Holes labelled with 'Hedgehog Highway' signs—to avoid conflict with occupants.

Location Notes

Encourage access through gardens, linking to POS and retained habitat.

Number As figure.

When installed? Prior to occupation.

Verification ECoW Certificate .

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ECoW Activities Years 1 to 5

Activity	1	2	3	4	5
Check tree management and planting and seeding					
Check soiling and seeding of grassland and scrub					
Weed control and monitoring					
Check Faunal boxes installed into new builds					
Check hedgehog access as built					
Habitat monitoring					
Habitat Condition assessment report					

Task	ECoW to direct	ECoW to carry out	Year 1	Year 2	Year 3	Year 4	Year 5	6+
Soiling of new habitats	Yes		To construction	To construction				
Seeding and planting of new habitats			October-February	October-February				
Manage wildflower grassland	Yes (in year 1-2)			April-Sept	April-Sept	April-Sept	April-Sept	April-Sept
ECoW Monitoring		Yes	Yes		Yes		Yes	
Faunal boxes erect			As built	As built				
ECoW verification Faunal boxes			As built	As built				