



Biodiversity Management Plan

East Bierley Playing Fields
East Bierley Community Sport Associates

Report Ref: ER-6506-01

Report Reference:	East Bierley Community Sport Associates Long Lane, Driffield (Phase2)
Report Reference:	ER-6506-01
Written by:	Micah Duckworth BA MSc MCIEEM CSJK Biodiversity Manager
Technical review:	Peter Brooks BSc (Hons) MA, MCIEEM, CEnv Managing Director
Approved for issue:	Peter Brooks BSc (Hons) MA, MCIEEM, CEnv Managing Director
Date:	22.02.23

Introduction

This Biodiversity Management Plan is produced in order to discharge requirements under Condition 30 (reproduced in Appendix) of the approved planning application, for re-development of sports pitches as facilities.

The Plan is produced in accordance with Chapter 11 of British Standard 42020 defining the requirement for Biodiversity Management Plans which set out how wildlife interests will be enhanced, restored and maintained through development.

This site has been subject to baseline ecological assessment and Biodiversity Net Gain calculations by Deltasimons Limited in 2021 which has informed the layout, demonstrating its engagement with the 'mitigation hierarchy'. Designs have been drawn up that allow the scheme to deliver Biodiversity Units through habitat creation and management within the site and in adjacent off-site areas.

The final layout has been assessed under the Defra Metric 3.1 for Biodiversity Net Gain showing the proposed development can achieve 14.41 habitat units and 2.62 hedgerow units on site. This report is the final delivery document, and shows how retained and created habitats can attain the condition scores that were predicted in the Biodiversity Net Gain proposals

In addition to meeting habitat condition objectives, the plan presents all additional measures to enhance the value of the Site for fauna.

In producing this plan the following sources have been referred to:

- Preliminary Ecological Appraisal Report, Deltasimons Ltd. October 2021
- Proposed Site Plan. Martin Welsh Architectural October 2022
- Soft Landscape Proposals, Topia Landscape Architects, February 2023



Figure 1 Proposed Site Layout - dwg. P21:5512:01 rev. G (JRP Associates, April 2022).

Aims

Aims

The aim of this plan is to maximise delivery of the wildlife potential and condition of habitats on site, creating areas of robust semi-natural landscape that offset some pre-existing habitat lost through development and provide enhancements which benefit invertebrates, mammals and birds.

Objectives

The following sections of the Plan detail management objectives relevant to each habitat or ecological feature as appropriate. These include management options and monitoring to ensure features achieve their target objectives and habitat conditions over the course of the management period. An overall work schedule is provided to summarise annual works.

Scope of Plan

This plan relates to the whole development as contained within the red line illustrated in Figure 2. The creation and maintenance of some features which also delivery biodiversity units are specified separately in the Landscape Masterplan as these features fall within built and amenity spaces subject to landscaping standards and estate maintenance. This includes native trees, amenity grassland and ornamental hedgerows.

Delivering the Plan

The Developer is responsible for the creation and establishment works for a thirty-year period. 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, this plan will be reviewed and plan prescriptions revised in response to target conditions as identified through ecological monitoring. Further review at 5 yearly intervals will be implemented to Year 30.

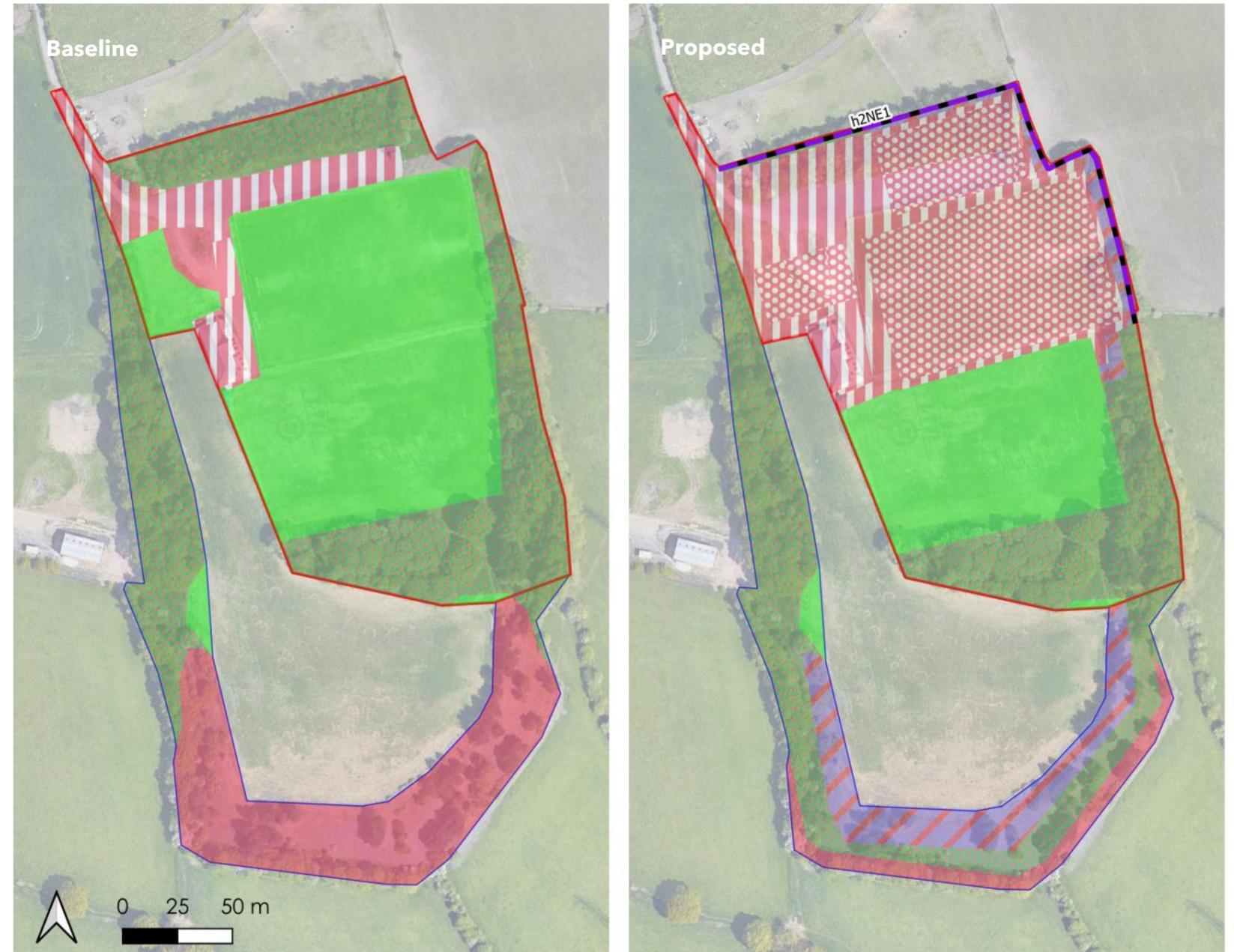


Figure 2 Baseline habitat (left) and post-development habitat types (right) resulting from planned development.

This shows habitat type, though target condition of each habitat will vary and details for specific areas re provided in the BNG calculations spreadsheet and the management prescriptions for each habitat type in this plan.

- Red Line Boundary
- Off-site habitat areas
- Native Species Rich Hedgerow with trees (h2NE1)
- Artificial unvegetated, unsealed surface
- Developed land; sealed surface
- Mixed scrub
- Modified grassland
- Other woodland; broadleaved
- Vacant/derelict land/ bareground

Biodiversity Net Gain

Biodiversity Net Gain Assessment

Baseline habitats have been remapped from the original ecology survey into the UK Habitats Classification for data entry to the Defra Metric 3.1 for assessing Biodiversity Net Gain on this development.

This exercise identifies that the development can achieve an overall Net Gain of 2,04 Habitat Units (16.49% gain), and 2.62 Hedgerow Units (100% gain) over baseline units.

Post-development habitat gains are derived from creation of new areas of native scrub with areas of on site woodland enhanced from poor to good condition. Following consultation with the LPA additional off-site to the east of the site will be enhanced through creation of woodland and scrub to the south of the existing pasture.

2.04 Hedgerow Units are gained through the planting of species rich native hedgerow with trees to the north and north eastern boundary where some loss of existing trees is required to extend the car park in this location.

The client has been provided with a copy of the Biodiversity Metric 3.1 Calculation Tool Excel spreadsheet. This will be made available for review if required.

In calculating the Net Gain under Metric 3.1, baseline habitat scores have been converted from Metric 2.0. As the majority of development does not impact higher value habitat, any differences are anticipated to be minor, and acceptably mitigated by the calculated Net Gains being in excess of the minimum 10% required.

Habitat Trading Rules

The current Soft Landscape Plan satisfies DEFRA's 3.1 habitat trading rules, which demand like-for-like or like-for-better compensation of lost habitats. This is achieved through the creation of broadleaved woodland on land adjacent to the site which offsets the loss of a smaller area of woodland to the north of the site.

Headline Results		Return to results menu
On-site baseline	Habitat units	12.37
	Hedgerow units	0.00
	River units	0.00
On-site post-intervention <small>(Including habitat retention, creation & enhancement)</small>	Habitat units	14.41
	Hedgerow units	2.62
	River units	0.00
On-site net % change <small>(Including habitat retention, creation & enhancement)</small>	Habitat units	16.49%
	Hedgerow units	0.00%
	River units	0.00%
Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention <small>(Including habitat retention, creation & enhancement)</small>	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change <small>(including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	2.04
	Hedgerow units	2.62
	River units	0.00
Total on-site net % change plus off-site surplus <small>(including all on-site & off-site habitat retention, creation & enhancement)</small>	Habitat units	16.49%
	Hedgerow units	100.00%
	River units	0.00%
Trading rules Satisfied?	Yes ✓	

Figure 2 Headline Results from the Defra Metric 3.1

Native Species Rich Hedgerow with Trees

Rationale

Creating species rich linear features provide site connectivity, forage, shelter and nesting resources to birds, small mammals and invertebrates.

Objectives

Maintaining a DEFRA condition score of **Moderate** by Year 10.

Specification

Planting to Landscape Plan specification schedules with native shrubs interplanted with standards of oak and Small leaved lime. Hedge establishment over the initial 5 year period will be managed to promote conditions in accordance with the condition criteria targeted in the table below.

Management action options:

- Increase weed control if undesirable species establish.
- Replant hedge gaps with native hedge stock or re-seed and replant locally as required.
- Vary cutting profile and leave hedge trees to grow to maturity where required.
- Install fencing or other measures to limit damage from human activity.

Monitoring

ECoW to conduct monitoring visits in years 2 and 4 to check maintenance of target conditions.

Output ECoW report, years 3, 5 and 10.

	Attribute	Targeted?	Score	Criteria for favourable condition
A1	Height	Yes	1	>1.5m average along length
A2	Width	Yes	1	>1.5m average along length
B1	Gap - hedge base	Yes	1	Gap between ground and base of canopy <0.5m for >90% length
B2	Gap - hedge canopy continuity	Yes	1	Gaps make up <10% of total length and no canopy gaps >5m
C1	Undisturbed ground and perennial vegetation	Yes	1	>1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length, measured from the outer edge of the hedgerow & present on one side of hedge at least
C2	Undesirable perennial vegetation	Yes	1	Plant species indicative of nutrient enrichment of soils dominate <20% cover of area of undisturbed ground
D1	Invasive and neophyte species	Yes	1	>90% of hedgerow and undisturbed ground is free of invasive non-native and neophyte species
D2	Current damage	Yes	1	>90% of hedgerow of undisturbed ground is free of damage caused by human activities
E1	Tree age (hedgerows with trees only)	Yes	1	At least one mature tree per 30m of hedgerow
E2	Tree health (hedgerows with trees only)	Yes	1	At least 95% of hedgerow trees are in healthy condition, excluding veteran features. Little or no evidence of adverse impacts from livestock, wild animals, pests, diseases, or human activity.
Overall condition			Target: Moderate	
Refer to <i>The Biodiversity Metric 3.0 Technical Supplement</i> for assessment criteria details				



Mixed Native Scrub

Rationale

New scrub planting to create a diverse boundary habitat with rich wildlife resources between sports pitches and surrounding woodland and grasslands.

Objectives

Reaching a DEFRA condition score of **Moderate** by year 5.

Specification

Soil Retained and protected.

Weeds Treat weeds in new tree and shrub planting stations.

Planting From landscape plan schedules

Management

Years 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 than 10%.

Years 3-5 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.

Year 10 Thin by 20% to remove canopy trees if these are outcompeting scrub. Must be ECoW directed. Leave all felled timber *in situ* to rot down. Selectively seed with 1kg of native woodland seeds at ECoW discretion in locations with suitable soil and light conditions (10-40% ambient daylight in summer).

Monitoring

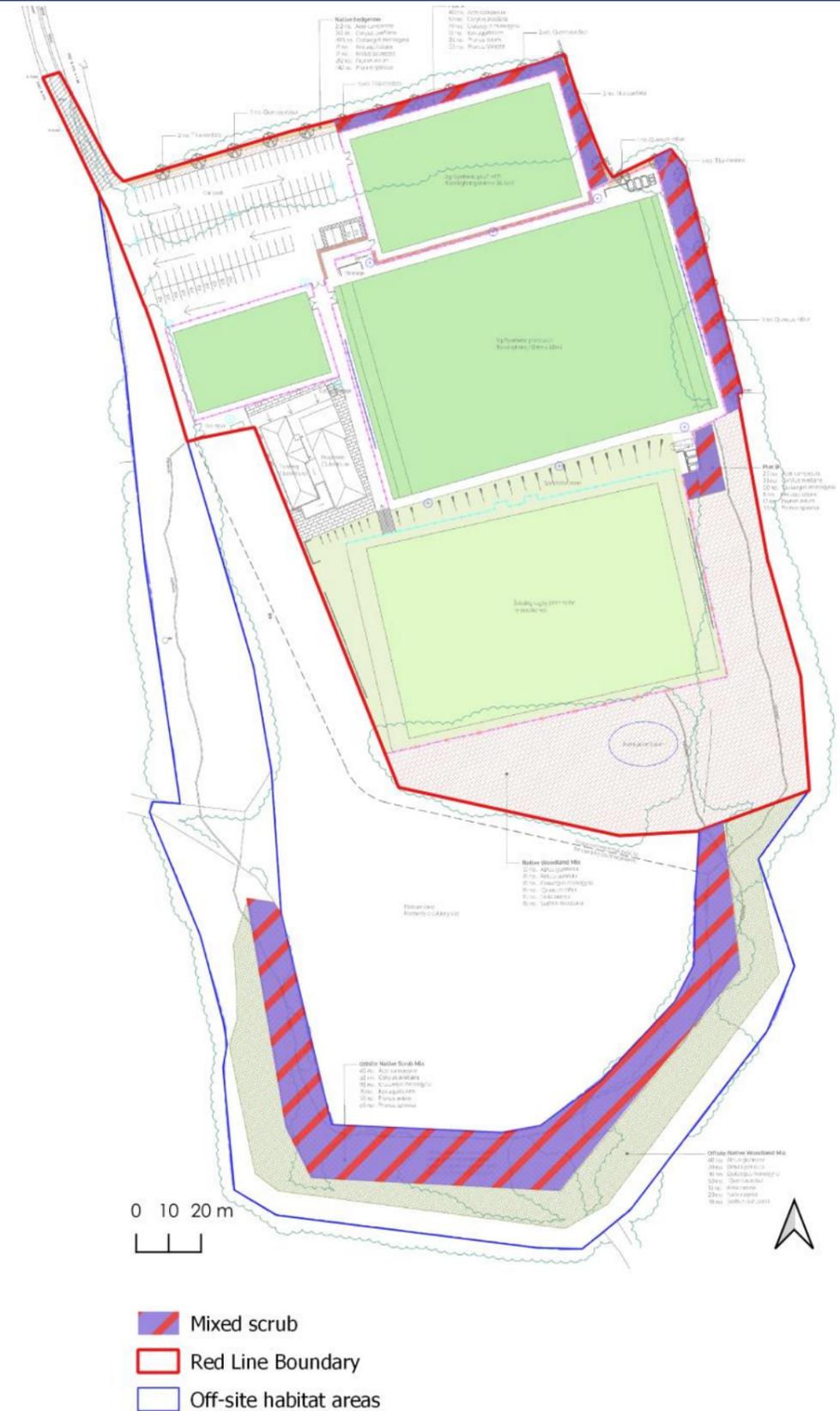
ECoW to conduct monitoring visits in years 2 and 5 to check trajectory to Moderate condition.

Output ECoW report, years 3 and 5.

Remedial action options

- Increase weed control if undesirable species establish.
- Re-seed and replant locally.
- Increased thinning of canopy species.

Condition Assessment Criteria: Scrub broad habitat type		Targeted	Score	Notes
1	Representative of UKHabs description (where in natural range). 3+ woody species, none exceeding 75% cover (except common juniper, sea buckthorn, or box, up to 100% cover permissible)	Yes	1	
2	There is a good age range—a mixture of seedlings, saplings, young shrubs and mature shrubs	Yes	1	
3	Absence of INNS, and undesirable species make up <5% of ground cover	Yes	1	
4	Well-developed edge with scattered scrub and tall grassland and/or herbs between scrub and adjacent habitats	Yes	1	
5	Clearings, glades, or rides present within the scrub, providing sheltered edges	No	0	
Overall condition			4	Moderate
Refer to <i>The Biodiversity Metric 3.0 Technical Supplement</i> for assessment criteria details				



Broadleaved Woodland—created

Rationale

A planted strip of new broadleaved woodland will be planted adjacent to new scrub habitat on the bare shaley embankment to the south of the off-site pasture

Objectives

Reaching a DEFRA condition score of **Moderate** by year 15.

Specification

Soil Due to bare shaley soils planting pits may require some top soil supplement to aid establishment.

Weeds Treat weeds in new tree and shrub planting stations.

Planting From landscape plan schedule “Native Woodland Mix—Colliery Shales”

Management

Years 1-2

- Make sure everyone involved in the management of the new woodland knows where the trees are to avoid mowing them or causing any accidental damage.
- Keep a 0.5m diameter around each tree clear of weeds to minimise competition during establishment.
- If there is a prolonged dry spell, check soil moisture and water each tree station to saturation at a sufficient frequency to ensure health of the tree.
- Check the trees continue to grow upright and don't lean.
- Check tree guards and stakes are firmly secured in the ground.
- Check trees for pest damage and remove any grass or weeds growing inside tree guards.

Years 3-5

- Monitor and replace dying trees. Remove any invasive non-native weeds that may colonise.

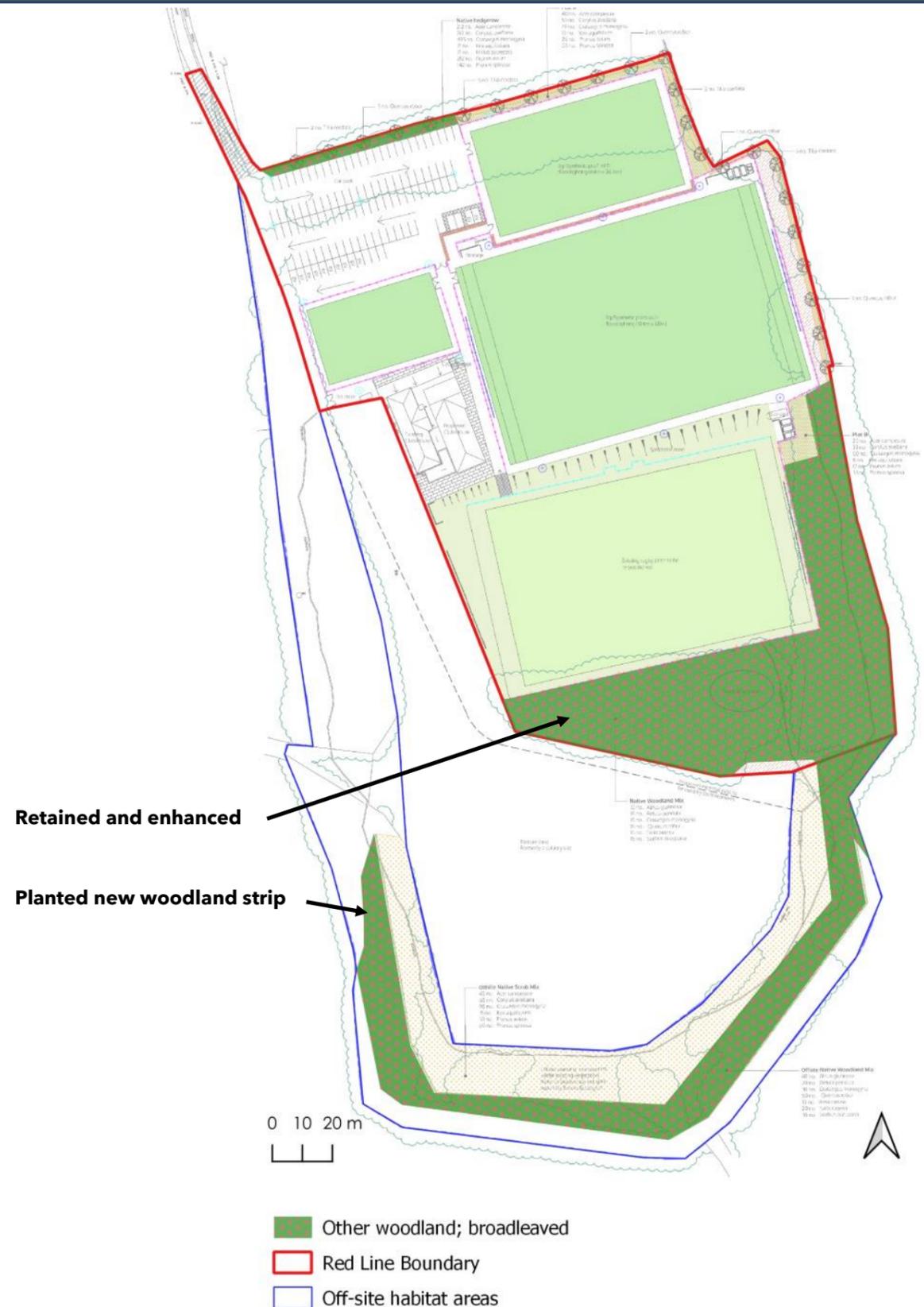
Monitoring

ECoW to conduct monitoring visits in years 2 and 5 to check trajectory to Moderate condition. See Target condition Table on following page

Output ECoW report, years 3 and 5.

Remedial action options

- Increase weed control if undesirable species establish.
- Re-seed and replant locally.
- Increased thinning of canopy species.



Broadleaved Woodland—enhanced

Rationale

Areas of existing woodland adjacent to the rugby pitch in poor condition will be enhanced through interplanting and targeted management to improve the woodlands biodiversity and structure.

Objectives

Reaching a DEFRA condition score of **Good by year 20**.

Management

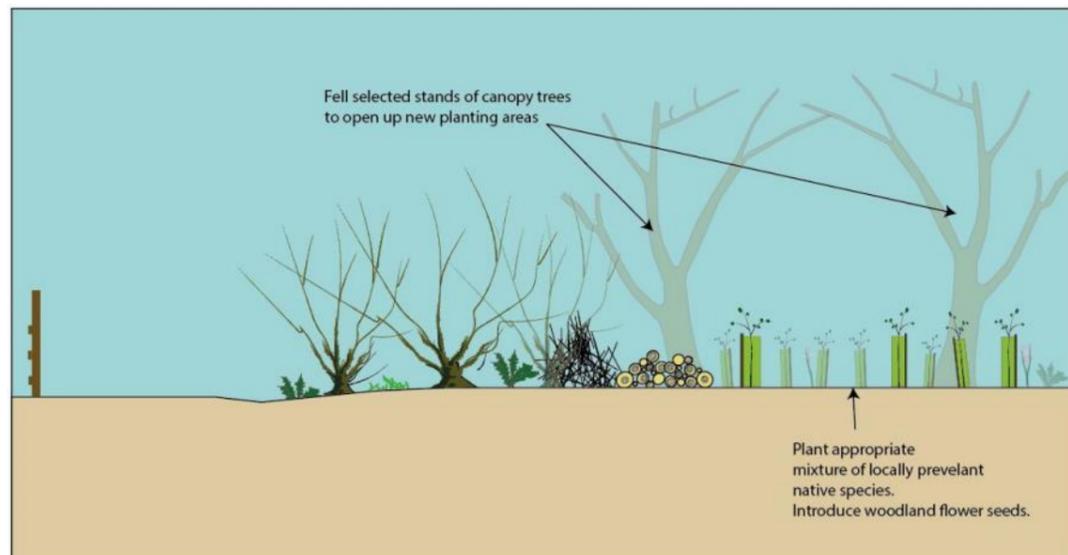
Years 1-2

- Control INNS— Himalayan balsam and Japanese knotweed to be controlled through an appropriate treatment programme aimed at removing these species.
- Keep a 0.5m diameter around each tree clear of weeds to minimise competition during establishment.
- If there is a prolonged dry spell, check soil moisture and water each tree station to saturation at a sufficient frequency to ensure the health of the tree.
- Check the tree guards and stakes are firmly secured in the ground.
- Check trees for pest damage and remove any grass or weeds growing inside the tree guards.
- Create standing deadwood by ring barking and creating monoliths from selected sycamore trees. To be done under the direction of the ECoW and arboricultural contractor.
- All timber and brash to be retained on Site, within woodland, in log/brash piles.

Years 3-10

- Monitor and replace dying trees.
- Remove any INNS that may colonise
- Create clearings within woodland covering 10-20% area in total.

Illustration of management to achieve required condition criteria



Target Condition Table

Existing woodland within the site will be enhanced to good condition by targeting the criteria below. Newly planted woodland targeted at moderate condition will be monitored and managed under the criteria suggested in the Moderate column, however ECoW monitoring will be required to assess the viability of the options proposed and alternative criteria selected if conditions or trajectory towards overall target conditions needs to be modified.

Condition Assessment Criteria: Woodland broad habitat type		Target condition		Notes
		GOOD	MODERATE	
1	Age distribution of trees	Yes		Two age classes present
2	Wild, domestic and feral herbivore damage	Yes	Yes	No significant browsing damage evident
3	Invasive plant species	Yes	Yes	no INNS present
4	Number of native tree species	Yes	Yes	Five or more native tree or shrub species found across woodland parcel
5	Cover of native tree and shrub species	Yes	Yes	> 80% of canopy trees and >80% of understory shrubs are native
6	Open space within woodland	Yes	Yes	10-20% of woodland has areas of temporary open space
7	Woodland regeneration	Yes	Yes	No classes or coppice regrowth present in woodland
8	Tree health	Yes		11% to 25% mortality and/or crown dieback or low risk pest or disease present
9	Vegetation and ground flora	Yes		recognizable NVC community present
10	Woodland vertical structure	Yes	Yes	Two storeys across all survey plots
11	Veteran trees			No veteran trees present in woodland
12	Amount of deadwood	Yes	Yes	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps
13	Woodland disturbance	Yes		More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground
Overall condition		Moderate (planted areas), Good (existing on site)		
Refer to <i>The Biodiversity Metric 3.1 Technical Supplement</i> for assessment criteria details				

Boxes for Bats and Birds

Rationale

Ready made roosting and nesting boxes will be incorporated into mature trees to provide shelter and breeding sites to support species that are nationally in decline.

Tree Mounted Bat boxes



Specification

- **Kent Bat Box** <https://www.nhbs.com/nhbs-kent-bat-box>
- Or equivalent approved by an Ecologist

Location Notes

Located in trees according to the ECoW instructions at minimum of 4m height with clear flight-lines and providing a range of orientation.

Note we specify these boxes rather than Schwegler 2FF as we find these to be more successful for bats and less attractive to nesting birds.

Number 6

Open and hole fronted bird boxes



Specification

- **Vivara Pro Seville WoodStone Nest Box with 32mm Oval Hole**
 - **Vivara Pro Barcelona WoodStone Open Nest Box**
- Or equivalent approved by an Ecologist

Location Notes

Mounted on north side of mature trees around 4m high to avoid disturbance from predators.

Number 4 open fronted, 4 hole fronted



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

- Bird box - mounted
- Bat Box - mounted
- ▭ Red Line Boundary
- ▭ Off-site habitat areas

Faunal Access

Rationale

Hedgehogs have seen significant declines over the last few decades, with one of the major factors being loss of habitat. This species is listed under Section 41 of the NERC Act (2006) as a 'Species of Principle Importance'.

Simply providing a means of access between fenced off areas can very easily and cheaply increase the amount of habitat available to hedgehog, and avoid entrapment in areas which would not allow them to escape into surrounding habitat.

Hedgehog access holes

At least one hedgehog access hole (measuring at least 13cm x 13cm) will be installed every 10 metres along fence lines, allowing the site to remain connected. This will allow hedgehogs to move through the Site, as shown in the figure opposite (black arrows).

This will be done by contractors during the fence's installation. 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.



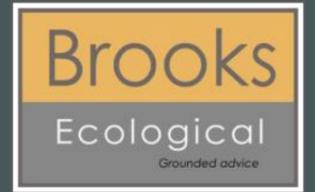
- - - Hedgehog access
- Red Line Boundary
- Off-site habitat areas

Timeline

* Time needed will depend upon factors beyond the ECoW's control and may vary significantly from this estimate.

Task	ECoW to direct	ECoW to carry out	Year 1	Year 2	Year 3	Year 4	Year 5	6 to 30
Planting of new scrub and woodland habitats	Yes		October-February	October-February				
Manage native hedgerows, woodland and scrub	Yes (in year 1-2)			October-February	October-February	October-February	October-February	October-February
Erect bat and bird boxes and hedgehog access			As built					
ECoW verification faunal boxes			As built					
ECoW Monitoring		Yes	Yes		Yes		Yes	
Management Plan review and update							Yes	Every 5 years

Condition 30



30. Prior to the commencement of superstructure works, a Biodiversity Enhancement and Management Plan (BEMP) shall be submitted to and agreed in writing by the Local Planning Authority. The BEMP shall include pre- and post-development assessments of the biodiversity value of the site (measured in accordance with the Biodiversity Metric 3.0 or subsequent version), shall ensure that no less than a 10% biodiversity net gain (i.e., 10% above the site's habitat units baseline) is achieved post-development, and shall include the following:

- Description and evaluation of features to be managed and enhanced;
- Details of the extent and location/area of proposed enhancement works on appropriate scale maps and plans;
- Details corresponding with landscaping details to be submitted pursuant to condition 29;
- Details of ecological trends and constraints on site that might influence management;
- Aims and Objectives of management;
- Appropriate management actions for achieving the Aims and Objectives;
- An annual work programme (to cover an initial five-year period capable of being rolled forward over a period of 30 years);
- Details of the management body or organisation responsible for implementation of the BEMP; and
- Details of an ongoing monitoring programme and remedial measures.

The BEMP will be reviewed and updated every five years and implemented for a minimum of 30 years. The BEMP shall include details of the legal and funding mechanisms by which the long-term implementation of the BEMP will be secured by the developer with the management body responsible for its delivery. The BEMP shall also set out (where the results from the monitoring show that the Aims and Objectives of the BEMP are not being met) how contingencies and/or remedial action will be identified, agreed and implemented so that the development still delivers the fully-functioning biodiversity objectives of the originally-approved BEMP. The development shall be implemented in accordance with the approved BEMP and all measures and features shall be retained in that manner thereafter.