

Habitat Management and Monitoring Plan

Survey site:

Borde Hill Garden, Borde Hill Lane, Haywards Heath, West Sussex RH16 1XP

Client:

Borde Hill

Report date:

21st May 2026

The survey results and recommendations contained within this report are valid for 18 months.

Project:

This report is prepared to inform a planning application with the Mid Sussex District Council. The proposal is described as:

Visitor and community hub, outdoor learning and adventure playground, community growing area and historic botanical propagation polytunnels, new and improved access and connectivity infrastructure, wider landscaping and biodiversity enhancements and associated works.

Limitations and Copyright

Arbtech Consulting Limited has prepared this report for the sole use of the above-named client or their agents in accordance with our General Terms and Conditions, under which our services are performed. It is expressly stated that no other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us. This report may not be relied upon by any other party without the prior and express written agreement of Arbtech Consulting Limited. The assessments made assume that the sites and facilities will continue to be used for their current purpose without significant change. The conclusions and recommendations contained in this report are based upon information provided by third parties. Information obtained from third parties has not been independently verified by Arbtech Consulting Limited.

© This report is the copyright of Arbtech Consulting Limited. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

Guidelines

A Habitat Management and Monitoring Plan (HMMP) is a key document in the long-term stewardship of habitats created, enhanced, or restored as part of a development. It is essential in the context of Biodiversity Net Gain (BNG), a legal requirement under the Environment Act 2021, which mandates that developments must deliver a minimum 10% net gain in biodiversity and ensure its maintenance for at least 30 years. The HMMP outlines how newly created or enhanced habitats will be managed, monitored, and maintained to achieve their intended ecological value over time, ensuring compliance with BNG commitments.

The HMMP is designed to align with UK regulatory frameworks, including Natural England's guidance on habitat management, local planning authority policies, and the National Planning Policy Framework (NPPF) such as the 'British Standard 42020 (2022) 'Biodiversity – Code of Practice for Planning and Development'.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

This approach is enshrined in Government planning guidance, for example, section 15 of the National Planning Policy Framework for England.

The desk studies and field surveys undertaken to provide a preliminary ecological appraisal (PEA) might in some cases be all that is necessary.

(BS 42020:2022)

In consequence of the scale and intensity of the proposed development, this plan-led report is considered adequate and proportionate. It communicates all relevant information necessary to determine a planning application or support the recommendations for further surveys.

Version control			
Status	Issue	Name	Date
Draft	0.1	Amal Waheed, MSc, BSc (Hons), Graduate Ecologist	21/05/2026
Review	0.2	Georgina Rennie BSc (Hons), MSc. Consultant Ecologist.	09/06/2026
Final	1.0	Amal Waheed, MSc, BSc (Hons), Graduate Ecologist	10/06/2026

Contents

1.0 Introduction and Context 5

1.1 Background5

1.2 Planning Conditions.....5

1.3 Project Description 6

1.4 Site Context6

1.5 Scope of This Report 7

2.0 Ecological Baseline Conditions Relevant to This Report 8

2.2 BNG and Proposed Habitat Creation.....8

2.3 Significant on-site Enhancements10

2.4 Scope for Management.....10

3.0 HMMP 12

3.1 Site Monitoring12

3.2 Habitat Creation and Management.....16

4.0 Bibliography..... 44

Appendix 1: Proposed Development Plan 45

Appendix 2: Site Location Plan..... 47

Appendix 3: Post Development Habitat Plan 50

1.0 Introduction and Context

1.1 Background

Arbtech Consulting Ltd were commissioned by Borde Hill to produce a Habitat Management and Monitoring Plan (HMMP) for a proposed development at Borde Hill Garden, Borde Hill Lane, Haywards Heath, West Sussex RH16 1XP (hereafter referred to as the site).

The site has been subject to previous ecological assessments of relevance to this report, comprising:

- A Biodiversity Net Gain (BNG) statutory version reporting file note (Arbtech Consulting Ltd, 2024).
- Botanical Walkover File Note (Arbtech Consulting Ltd, 2025).
- Fungi Walkover File Note (Arbtech Consulting Ltd, 2024).
- Ecological Impact Assessment (EIA) (Arbtech Consulting Ltd, 2023).
- Breeding Bird Survey (Arbtech Consulting Ltd, 2023).
- Great Crested Newt eDNA Survey (Arbtech Consulting Ltd, 2023).
- Non – Licenced Water Vole Construction Method Statement (Arbtech Consulting Ltd, 2024).

1.2 Planning Conditions

Following the submission of planning application DM/25/3104, planning permission was conditionally granted. The decision notice includes conditions that relate to ecology; of relevance to this report, condition 14 states:

“Prior to the first use of any part of the development for either the South Park or Sugworth Farm, a Biodiversity Enhancement Layout, providing finished details and locations of the enhancement measures contained within the Botanical Walker File Note – Ecological Walker Addendum (Arbtech Ltd, August 2025), Biodiversity Enhancement Layout (Submitted 14th August 2024) and Construction Ecological Management Plan and Ecological Enhancement and Management Plan (Arbtech Consulting Ltd, January 2023), shall be submitted to and approved in writing by Mid Sussex District Council for that part of the site.”

This Habitat Management and Monitoring Plan (HMMP) has therefore been prepared to support the discharge of Condition 14 and provides the long-term management, monitoring and maintenance measures required to ensure the successful establishment and ongoing ecological functionality of the proposed biodiversity enhancement measures across the site.

The HMMP should be read alongside the approved Biodiversity Enhancement Layout, Ecological Enhancement Plan (EEP), Construction Ecological Management Plan (CEMP), and associated ecological documentation submitted in support of the application.

1.3 Project Description

The planning application pertaining to the site (Mid Sussex District Council reference: DM/25/3104) describes the development as: Visitor and community hub, outdoor learning and adventure playground, community growing area and historic botanical propagation polytunnels, new and improved access and connectivity infrastructure, wider landscaping and biodiversity enhancements and associated works. (hereafter referred to as the proposed development). A plan showing the proposed development is provided in **Appendix 1**.

1.4 Site Context

The site is centred upon National Grid Reference TQ 3236 2610 comprising an area of approximately 24ha of woodpasture, parkland and formal gardens with some infrastructure such as car parks. Individual habitats across the wood pasture mosaic comprise grassland, scattered trees and blocks of woodland as well as a series of four waterbodies associated with Robertsmere Lake, which is fed by watercourses arising from springs ~500m to the west and ~100m to the south. There are a further two ponds within Dinosaur Wood (Dinosaur Wood) which also contains a network of watercourses, together forming part of a complex of water courses feeding waterbodies from both east and west. ~380m east of Dinosaur Wood there is connectivity via habitats around the lakes a stretch of woodland (Lulling Gill) which is

defined as ghyll woodland (a Sussex/Surrey speciality). The wider landscape beyond the parkland is a predominantly pastoral one with some arable defined by small fields delineated by tree lined, pre-enclosure hedgerows.

Geology and soils are complex. The car park and eastern part of the site is underlain by mudstone. Sandstone and sand underlie the parkland between the car park and Robertsmere lake, which itself is underlain by sands, silts and mudstones up to the northern pond around Dinosaur Wood, which is underlain by clays and mudstone to the east, sandstone to the west and a calcareous sandstone bed in a strip along the plateau to the far eastern edge. The overlying soils are slightly acid loamy and clayey ones with impeded drainage and moderate fertility, suited to a wide range of woodland and pasture types. A site location plan is provided in **Appendix 2**.

1.5 Scope of This Report

This Habitat Management and Monitoring Plan (HMMP) has been prepared to support the delivery of Biodiversity Net Gain (BNG) in accordance with the Environment Act 2021 and the approved Biodiversity Gain Plan for the development. BNG has been calculated using the Statutory Biodiversity Metric, and all habitat creation, enhancement, and retention detailed within this HMMP is intended to achieve and maintain the target habitat types and condition assessments specified within the approved metric.

The habitats managed under this HMMP are required to be maintained for a minimum period of 30 years from the completion of establishment works. Target habitat condition scores set out in the Statutory Biodiversity Metric define the required standard of success for each habitat parcel. Monitoring outcomes will be assessed against these target condition criteria.

Where monitoring identifies that habitats are not progressing towards, or are failing to achieve, their target condition, remedial management actions will be implemented in accordance with the adaptive management framework set out in this HMMP. This ensures that the required biodiversity gains are secured and maintained for the full management period.

Any biodiversity gains delivered off-site, where required to meet statutory BNG obligations, are secured through separate legal mechanisms and do not rely on the successful delivery of this HMMP.

2.0 Ecological Baseline Conditions Relevant to This Report

The baseline ecological conditions of relevance to this report were determined as a result of the PEA PRA and BNG Assessment.

2.1 Habitat Degradation

The site has not been subject to any degradation since 30th January 2020, and as such, the baseline biodiversity value of the site is derived from the site as observed during the Preliminary Ecological Appraisal (Arbtech Consulting Ltd., 2024).

2.2 BNG and Proposed Habitat Creation

The development, as currently proposed, is anticipated to result in a **+56.57 % net gain** for area-based habitat units. The post-development habitat coverage and their target conditions in accordance with the BNG Assessment are detailed in **Table 1** below.

Table 1. Proposed post-development habitats.

Broad Habitat		Proposed Habitat Type	Area (ha) / Length (km)	Condition
Retained	Woodland and Forest	Lowland Mixed Deciduous Woodland	0.04911 ha	Good
		<u>Irreplaceable Habitat: Ancient Woodland</u>	0.00946 ha	Moderate
		Other Woodland Broadleaved	0.0474 ha	Moderate
	Lakes	Ornamental Lake or Pond	0.0015 ha	
	Heathland and Shrub	Bramble Scrub	0.03636 ha	Condition N/A

	Grassland	Other Lowland Acid Grassland	0.00135 ha	Poor
Created	Grassland	Traditional Orchards	0.05073 ha	Moderate
		Other Neutral Grassland	0.58988 ha	Poor
		Modified Grassland	0.25454 ha	Moderate
	Woodland	Lowland Mixed Deciduous Woodland	0.51496 ha	Poor
	Urban	Bioswale	0.00524ha	Condition N/A
		Artificial Unvegetated; Unsealed Surface	0.10525 ha	
		Developed Land; Sealed Surface	0.55027 ha	
	Heathland and Shrub	Mixed Scrub	0.23742 ha	Good
	Cropland	Horticulture	0.25348 ha	Condition N/A
	Hedgerow	Native Hedgerow	0.022862 km	Moderate

Enhanced	Woodland and Forest	Other Woodland Broadleaved	3.25465 ha	From Poor to Moderate
	Grassland	Other Neutral Grassland	0.14965 ha	From Poor to Good
	Heathland and Shrub	Bramble Scrub to Mixed Scrub	1.6454 ha	From Condition N/A to Good

2.3 Significant on-site Enhancements

Significant on-site enhancements are defined as habitat creation or habitat enhancement measures that make a material contribution to the biodiversity net gain (BNG) delivered by the development, relative to the pre-development baseline biodiversity unit value as calculated using the Statutory Biodiversity Metric. The retention of existing habitats, where no improvement in condition or distinctiveness is achieved, does not constitute a significant on-site enhancement for the purposes of BNG.

For this development, the following measures are considered to represent significant on-site enhancements:

- The creation of habitats of medium distinctiveness.
- Enhancements to baseline habitats that increase their condition or create a habitat of higher distinctiveness.

2.4 Scope for Management

Urban habitat types that generate negligible post-development biodiversity units do not require specific management or monitoring and are not considered further within this HMMP. Habitats of low distinctiveness and retained baseline habitats do not require targeted enhancement to meet BNG objectives; however, their retention is necessary to maintain compliance with the approved BNG assessment. These habitats will therefore be subject to periodic monitoring over the 30-year management

period. Created and enhanced habitats of medium distinctiveness or above constitute significant on-site enhancements and will be subject to specific management and monitoring to ensure they achieve their target condition within the 30-year term.

Considering the above, the following management and monitoring is required for post-development habitats:

- **No management**

Bramble scrub, Artificial Unvegetated; Unsealed Surface, Developed Land; Sealed Surface.

- **Monitoring only**

Retained Lowland Mixed Deciduous Woodland, Other Woodland; Broadleaved, Ornamental Lake or Pond and Other Lowland Acid Grassland

- **Management and Monitoring**

Newly Created Traditional Orchards, Other Neutral Grassland, Modified Grassland, Lowland Mixed Deciduous Woodland, Bioswale, Mixed Scrub, Horticulture and Native Hedgerow

Enhanced Other Woodland Broadleaved, Other Neutral Grassland, Bramble to Mixed Scrub Enhancement

3.0 HMMP

3.1 Site Monitoring

Site monitoring detail is provided in **Table 2** below.

Table 2. Site monitoring

Mitigation	Specification				
Persons Responsible and Lines of Communication	The details of the responsible persons and organisation(s) for delivering this management plan are outlined below.				
	Table 2.1. Organisation responsible for providing HMMP				
	Project Ecologist or Other Professional Responsible for HMMP				
	Name or Initials		Amal Waheed, MSc, BSc (Hons), Graduate Ecologist		
	Organisation		Arbtech Consulting Ltd		
	Responsibility	Start Date:	Commencement of works	End Date:	30 years following completion of the last establishment works
	Arbtech Consulting Ltd is responsible for producing this HMMP and providing ecological advice for the creation, management, and monitoring of the habitats on site, as well as other constraints to achieving the site's aims, e.g., any protected species presence. Any other competent persons required are to be appointed by the landowner. This will ensure that the HMMP is implemented in full and that all created habitats are in a fit state to meet objectives.				
	Statement of Competency				
	Arbtech Consulting has provided ecological consultancy services since 2006 and has expertise with Biodiversity Net Gain, including the statutory metric, BNG plans and management plans. The author of the HMMP is an ecologist of 3 years' experience and is an Accredited Agent on Natural England Bat Licence Number: (2018-33540-CLS-CLS).				
	Table 2.2. Landowner or land manager				
	Landowner or Land Manager				

	Name or Initials		N/A		
	Organisation		Savills		
	Responsibility	Start Date:	Commencement of works	End Date:	30 years following completion of the last establishment works
	Table 2.3. Organisation Responsible for Implementing the HMMP				
	Organisation Responsible for Implementing the HMMP				
	Name or Initials		N/A		
	Organisation		Borde Hill Charity		
	Responsibility	Start Date:	Commencement of works	End Date:	30 years following completion of the last establishment works
	Borde Hill Charity has been selected as the Development Biodiversity Champion for the habitat creation phase of the development. Borde Hill Charity will be responsible for ensuring all actions outlined in this document are implemented. Any queries with regards to the mitigation and enhancement prescriptions will be addressed to the project ecologist, and communication will be retained between the Borde Hill Charity and the project ecologist throughout the project. Borde Hill Charity will be responsible for understanding when an Ecological Clerk of Works is required on site to supervise works, requirements of which are detailed within each mitigation section where necessary. Once the development is complete, Borde Hill Charity will act as the Post-Development Biodiversity Champion and will be responsible for implementing the proposed long-term management. Borde Hill Charity will be responsible for ensuring all recommended management is undertaken and any associated remedial measures are completed where necessary.				
	Table 2.4. Organisation responsible for reviewing HMMP				
	LPA or Responsible body Reviewing HMMP				
	Name or Initials		N/A		
	Organisation		Mid Sussex District Council		

	Responsibility	Start Date:	Commencement of works	End Date:	30 years following completion of the last establishment works
	To ensure that the HMMP and legal agreement are followed, the objectives of the HMMP are delivered, and to take enforcement action should a breach occur.				
Creation Period	Habitat enhancement and creation works will be scheduled to take place following the completion of major development works to ensure newly created habitats are not damaged during construction activities. On-site biodiversity gain works will be implemented within 6 months of the completion of construction, and the 30-year management period will commence from the date of completion of all biodiversity enhancement works. The proposed timeline is as follows: 1. Pre-Development (Prior to Construction) • Identify and protect any existing ecological features that must be retained • Implement measures and avoid to areas designated for habitat creation to prevent soil compaction or contamination. 2. Post-Development (After Major Construction Works) • Soil Preparation Remove any construction debris and de-compact soil as necessary. Introduce appropriate soil treatments to optimise conditions for target grassland species. Undertake any excavation or reprofiling works for pond enhancement, including removal of nutrient-rich sediments where necessary. Prepare suitable pond margins for reedbed establishment, ensuring appropriate water depths (c. 0.1–0.5m). Seed Sowing and Planting (in autumn or spring) Plant reedbed zones with native species such as <i>Phragmites australis</i> at suitable densities (60-80% of reedbed area). Introduce plug plants of key forbs to accelerate species establishment. • Initial Establishment and Maintenance (First 1–2 Years) Implement a sensitive cutting regime as to not destroy the habitats. Control competitive species such as dominant grasses to encourage plant diversity. Avoid the use of herbicides and artificial fertilisers to maintain habitat integrity. • Long-Term Management Continue appropriate management strategies outlined in Table 3. Adjust management practices if required, having discussed this with the SQE. This phased approach ensures that the habitat establishment aligns with best practices and maximises biodiversity benefits while avoiding damage from construction activities.				

Post-Development Monitoring	Post-development site visits will be undertaken by a Suitably Qualified Ecologist (SQE) over the 30-year management period to confirm the successful installation, establishment and ongoing management of habitats and species-specific enhancements. Monitoring visits will be completed in years 1, 2, 5, 10, 15, 20, 25 and 30 following occupation of the development. The success of habitat creation and enhancement will be assessed with reference to the target habitat condition criteria defined within the Statutory Biodiversity Metric. Monitoring will focus on habitat structure, species composition and evidence of appropriate management, rather than absolute species richness targets, and will be informed by professional judgement of the SQE. Success indicators may include, but are not limited to: • Establishment of characteristic species appropriate to the target habitat type; • Habitat structure consistent with the intended condition category (e.g. sward height variability, age and structural diversity of trees and shrubs); • Absence, or effective control, of invasive non-native species or dominant undesirable species; and • Evidence that management prescriptions are being implemented at the required frequency and intensity. A monitoring report will be produced following each SQE visit, detailing findings, photographic evidence and any required remedial actions. Remedial management may be triggered where monitoring identifies a failure to meet interim or target habitat condition criteria, where habitat establishment has been compromised by unforeseen factors (such as drought, flooding, soil compaction, vandalism or disease), or where management prescriptions have not been implemented as specified. Where remedial action is required, the SQE will recommend proportionate corrective measures, which may include adjustments to management regimes, re-seeding or re-planting, soil remediation, or enhanced control of undesirable species. The scale of evidence required to confirm implementation of remedial actions will be defined by the SQE and may include additional site visits or photographic evidence provided by the Post-Development Biodiversity Champion.
Adaptive Management	Adaptive management is a structured and systematic approach to natural resource management that involves the ongoing monitoring and evaluation of management actions, followed by informed adjustments to improve outcomes over time. It is an iterative process whereby management actions are implemented, monitored against defined objectives, and reviewed to inform subsequent management decisions. Monitoring results will be used to inform any necessary changes to management practices in order to support the achievement of Biodiversity Net Gain (BNG) targets set out in the statutory biodiversity metric and this Habitat Management and Monitoring Plan (HMMP). Monitoring also enables the early identification of unforeseen external influences that may affect the delivery of objectives, such as the emergence of plant disease, the spread of invasive species influenced by climate change, or changes to site accessibility resulting from flooding.

	In addition to formal monitoring, observations and records arising from routine site management are a critical component of effective adaptive management. Appropriate mechanisms should be established to ensure that such information is captured, reviewed, and incorporated into revisions of management prescriptions, and subsequently reflected in monitoring reports. Regular, robust monitoring and reporting to the responsible authority will enable potential issues to be identified at an early stage, allowing timely and proportionate management responses to be implemented. Where external factors significantly affect the achievement of BNG objectives, any proposed amendments to management prescriptions or targets should be agreed with the responsible authority. Following such reviews, all changes will be clearly documented within this management plan and the associated management and monitoring schedule.
Legal Responsibility	It is expected that compliance with this HMMP will be legally enforced through a planning condition or Section (s) 106 agreement. As part of this legal agreement, habitat creation and management detailed within this HMMP will need to be retained and appropriately managed for the entire 30-year term to meet legislative objectives outlined in the Environment Act (2021). Should any future development at the site be proposed that will impact habitats that deliver the required gain as part of the planning conditions/s106 agreement, this will need to be considered and suitably compensated for in accordance with any future plans.

3.2 Habitat Creation and Management

Best practice habitat creation and management over a 30-year term to ensure a BNG consistent with that reported within the BNG Assessment is provided in **Table 3** below. The final BNG Habitat Plan is provided in **Appendix 3**.

Table 3. *Habitat Creation and Management Prescriptions*

Ecological receptor	Specification
Habitats with N/A or poor target conditions	It is noted that bramble scrub does not require any specific management to achieve its BNG objective. This is because bramble scrub is predetermined as condition N/A within the Statutory Biodiversity Metric. As such, management prescriptions for these habitat types are not included in this HMMP.
Traditional Orchards	Overview It is proposed to create 0.05073 ha of traditional in moderate condition. Objectives To create traditional orchard in moderate condition by passing condition criteria A, B, C and D (as a minimum) in accordance with

	the Orchard Habitat Type Condition Sheet. - To create a traditional orchard that will provide foraging and refuge opportunities for protected and/ or notable species, including invertebrates, nesting birds and hedgehogs. Traditional Orchard Creation Method Ground preparation and planting for trees The locations for tree planting will be cleared and reduced to compacted permeable bare ground in preparation for planting. Planting substrate must comprise site-won material with any deficiencies made up of imported topsoil compliant with BS 3883:2015. Each tree will be pit planted upright within the centre in accordance with BS 4428:1989, within a hole at least 500mm greater than the root system when fully spread and at a depth 250mm greater than the root system. Root balls will be soaked thoroughly in water and loosened to expose restricted roots before planting. The planted trees will then be backfilled, ensuring there are no air pockets around roots or any roots protruding out of the ground. Timing The land will be prepared during the summer, ready for planting between November and March. Planting trees before the new year helps ensure better rooting and subsequent establishment, including faster growth during the first growing season. Ground preparation and planting for ground flora Deep ploughing to a minimum depth of 30cm will bring the lower subsoil to the surface through soil inversion. After inversion, the area needs further preparation by harrowing to create a fine, firm seedbed for sowing. - The seeding will follow the manufacturer's guidelines (Emorsgate EM1 Basic General Purpose Meadow Mixture), with sowing occurring in either autumn or spring. The seed mix can be evenly spread by hand and tread in or distributed by machinery if feasible. During the first growing season, a cut in mid to late summer is recommended to help seeds establish and to remove weed species from the seed bank. All arisings should be removed and composted to prevent soil enrichment. Post-sowing rolling is crucial to compress the soil, retain moisture in the seedbed, and enhance seed-to-soil contact for successful germination. The chosen seed mix should include yellow rattle to reduce the competitiveness of dominant grasses and promote a varied sward structure, fostering a species-rich grassland. Risks: - Poor establishment and/or tree failure – poor-quality stock, unsuitable soil conditions, drought, waterlogging, or planting at an inappropriate time may result in high mortality - Inappropriate variety or species selection – varieties not suited to local soil, climate, or pollination requirements may fail to establish or reduce long-term productivity and biodiversity value
--	--

- Damage from pests, disease, or browsing – rabbits, deer, livestock, fungal pathogens, or insect pests may damage young trees and reduce establishment success
- Competition from weeds and grasses – excessive weed growth may suppress young trees and reduce flowering and fruiting
- Damage during maintenance operations – mowing, strimming, or machinery may damage stems, roots, or tree guards
- Extreme weather – drought, frost, flooding, or high winds may negatively affect establishment, flowering, and fruit set
- Failure of protective measures – absence or failure of tree guards, fencing, or mulching may increase risk of browsing, desiccation, or vandalism
- Inadequate aftercare and monitoring – lack of watering, inspections, pruning, replacement planting, or pest management may compromise long-term orchard health, structure, and ecological value.

Management prescriptions for new trees covering a 30-year term:

Table 3.0: Traditional orchard management prescriptions.

Management	When	Rationale	BNG condition criteria compliance
Plant native whips between November and March.	Year 1	Planting should be carried out between November and March. Specimens should be spaced approximately 1.5m apart	N/A
If required, provision of stakes and biodegradable guards. Guards to be left on for a minimum of 5 years	Year 1 - 5	To protect young establishing shrubs from damage	E
Stakes will be checked, and any broken or damaged stakes will be removed and replaced where necessary	When required -checked annually in Autumn	To maintain the protection of shrubs	E
Watering will be undertaken before and after planting out, and as necessary for the continued thriving of all planting.	When required. Provide more water during periods of drought and less water during times of prolonged rain	Ensures plants do not dry out and subsequently fail	A
Annually, prune scrub species until	Year 3+	To prevent woodiness, remove	D

	they are established		dead branches, and promote a dense, bushy structure	
	Ensure young and middle-aged trees are left to develop naturally with little human intervention to ensure they develop features consistent with veteran trees.	To be monitored annually over the 30-year term in late autumn.	Maintain a regenerating woodland containing multiple age classes and a three-storey (upper, middle, lower) or complex (unstratified) structure, with at least 2 veteran trees per block of woodland retained as existing trees or promoted as future veterans. Ensure tree mortality remains under 10% and pests, diseases and crown die back are prevented insofar as possible.	A & E
	Leave all naturally occurring deadwood in-situ	At all times.	To ensure a frequent source of deadwood at varying degradation states.	B
	Remove weeds	Year 1+. Checked twice annually in early spring and in Autumn, and treatment applied when required	Reduce competition for resources and nutrients, etc., by weeds	C & H
	Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow	C
	Maintain the grassland through annual hay cuts or low-density grazing unless a management review suggests an alternative approach. This dynamic review will ensure that the condition of the	Year 1+	This ensures the grassland does not grow excessively long and become rank but allows wildflowers to set seed and invertebrates to breed. This will also allow a diverse	C, F & H

	grassland is not compromised by inappropriate management practices. The stock density should be reviewed annually as part of the monitoring process. If the grassland condition is improving, maintain the current grazing density. If the grassland condition is stable or declining, the stock density must be reduced to alleviate pressure on the grassland.	sward of varying lengths to naturally occur in accordance with the growth characteristics of each species.		
	At the end of each growing season, all plant failures are to be 100% replaced	When required - checked annually in Autumn	To maintain amenity and wildlife value	A & B
Other Neutral Grassland	Overview: It is proposed to create 0.58988 ha of other neutral grassland in poor condition. Objectives: - To achieve a poor condition for existing grassland by passing condition criteria A, C, & D (as a minimum) in accordance with the Grassland – Medium, High, and Very High distinctiveness Habitat Type Condition Sheet and BNG Assessment. Risk: - Failure to establish target sward – unsuitable soil conditions, excessive nutrient levels, drought, waterlogging, or inappropriate seed mix may result in poor establishment - Dominance of competitive grasses – coarse or agricultural grasses may outcompete forbs, preventing achievement of the target condition - Encroachment of undesirable or invasive species – invasive non-native or ruderal species may establish following soil disturbance, reducing habitat condition - Inappropriate management regime – cutting at unsuitable times, insufficient frequency, or failure to remove arisings may limit flowering, seed-setting, and species diversity			

- Nutrient enrichment – nutrient inputs from adjacent land uses, fertiliser drift, runoff, or retained cuttings may increase grass dominance and reduce botanical diversity
- Extreme weather events – drought, prolonged wet conditions, flooding, or unseasonal weather may adversely affect establishment and long-term condition
- Physical disturbance – trampling, vehicle movements, or site operations may cause soil compaction, bare ground, or localised degradation
- Inadequate aftercare and monitoring – failure to undertake monitoring, adaptive management, or remedial works may prevent the grassland from achieving or maintaining the target condition.

Management prescriptions covering a 30-year term:

Table 3.1: Wildflower meadow creation management prescriptions.

Management	When	Rationale	BNG condition criteria compliance
Cut meadow twice annually	Late March / early April and late August/ early Sept	This ensures the meadow does not grow excessively long and become rank but allows wildflowers to set seed and invertebrates to breed. This will also allow a diverse sward of varying lengths to naturally occur in accordance with the growth characteristics of each species. Cutting twice annually will also prevent encroachment of scrub and bracken.	A, B, F, & G.
Cut grass as to provide a heterogeneous habitat structure, aiming to maintain at least 20% of grass <7cm and 20% >7cm. As such, each cutting phase must cut 20% of the area to ground	Late March / early April and late August/ early Sept	To retain a diverse sward whilst limiting impacts to protected species potentially present at ground level and ensuring the natural germination of seeds.	B

	level, 60% of the area to 15cm, and the remainder to 30cm. These areas must be rotated each year to maintain a diverse sward. <table><tr><td>Turn and dry the cut grass over 3-5 days before removing arisings off Site</td><td>Post cut</td><td>This allows the seeds to drop, encouraging species diversity and invertebrates to relocate unharmed.</td><td>A, B, & F.</td></tr><tr><td>Do not apply chemical fertilisers</td><td>At all times.</td><td>The use of chemical fertilisers will encourage vigorous grasses and weeds to grow or cause large areas of bare ground due to inhospitable growing conditions,</td><td>C</td></tr></table>	Turn and dry the cut grass over 3-5 days before removing arisings off Site	Post cut	This allows the seeds to drop, encouraging species diversity and invertebrates to relocate unharmed.	A, B, & F.	Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow or cause large areas of bare ground due to inhospitable growing conditions,	C
Turn and dry the cut grass over 3-5 days before removing arisings off Site	Post cut	This allows the seeds to drop, encouraging species diversity and invertebrates to relocate unharmed.	A, B, & F.						
Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow or cause large areas of bare ground due to inhospitable growing conditions,	C						
Woodland	Overview: It is proposed to retain 0.04911 ha of lowland mixed deciduous woodland in good condition, 0.00946 ha in moderate condition, to create 0.51496 ha of lowland mixed deciduous woodland in poor condition and enhance 3.25465 ha of other woodland broadleaved from poor to moderate condition. Objective: - To enhance sections of the existing other broadleaved woodland on site from moderate to good condition by targeting the following condition scores in accordance with the Woodland Habitat Type Condition Sheet and BNG Assessment: (33/39) - To enhance woodland that will provide roosting, pollinating, foraging, commuting, and refuge opportunities for protected and/ or notable species groups, including badgers, hedgehogs, herptiles, invertebrates, bats, and birds. - To undertake landscaping works in compliance with BS 4428:1989 – The Code of Practice for General Landscape Operation. Creation Method: Ground preparation and planting Each tree should be planted within a hole three times as wide as the supplied pot and of a similar depth. Root balls should be soaked thoroughly in water before planting, and root balls should be loosened to expose restricted roots before planting. The planted trees should then be backfilled, ensuring there are no air pockets around roots or any roots protruding out of the ground. Spacing								

	The trees must be planted a minimum of 2.5m away from any other newly planted tree to allow enough space for the adjacent tree to establish effectively. For woodland creation, this provides a suitable broadleaved tree density of 1600 trees per ha. A spatial variation should also be considered, such as that recommended in Figure 5.1 of the Woodland Trust Woodland Creation Guide (Woodland Trust 2022). • Timing It is best to prepare the land during the summer, ready for planting between November and March. Planting trees and shrubs before the new year helps ensure better rooting and subsequent establishment, including faster growth during the first growing season. • Proposed species and composition All new trees will comprise native species of local provenance and will be of feathered size as a minimum or of increased maturity. The proposed species have been selected to reflect the loss as a result of the development. The following species and composition are therefore recommended: English oak <i>Quercus Robu</i> (20%), Hawthorn <i>Crataegus monogyna</i> (20%), Hazel <i>Corylus avellana</i> (20%), European beech <i>Fagus sylvatica</i> (20%) and Alder <i>Alnus glutinosa</i> (20%). Risks: • Poor establishment and/or tree failure – poor stock quality, unsuitable soil conditions, drought, waterlogging, or planting at an inappropriate time may result in high mortality • Damage from pests, disease, or browsing – deer, rabbits, livestock, pests, or tree diseases may damage young trees and reduce establishment success • Competition from weeds and grasses – excessive weed growth may suppress young trees and slow establishment • Damage during maintenance operations – mowing, strimming, or use of machinery may damage stems or root systems • Extreme weather – drought, flooding, frost, high winds, or unseasonal weather may negatively affect establishment and early growth • Failure of protective measures – absence or failure of tree guards, fencing, or mulching may increase risk of browsing, desiccation, or vandalism • Inadequate aftercare and monitoring – lack of watering, replacement planting, inspections, or long-term management may compromise the success and resilience of the woodland Management prescriptions covering a 30-year term:
--	---

Table 3.2: *Woodland management prescriptions*

Management	When	Rationale	BNG condition criteria compliance
Remove all invasive species from the woodland, including the existing rhododendron and Japanese knotweed,	Year 1	To remove all non-native, invasive species from the woodland	C
Remain vigilant for the return of non-native invasive species and ensure any new stands are removed as soon as possible.	To be monitored annually over the 30-year term in late autumn.	To maintain an absence of non-native, invasive species from the woodland.	C
Ensure young and middle-aged trees are left to develop naturally with little human intervention to ensure they develop features consistent with veteran trees.	To be monitored annually over the 30-year term in late autumn.	Maintain a regenerating woodland containing multiple age classes and a three-storey (upper, middle, lower) or complex (unstratified) structure, with at least 2 veteran trees per block of woodland retained as existing trees or promoted as future veterans. Ensure tree mortality remains under 10% and pests, diseases and crown die back are prevented insofar as possible.	A, H, J, & K
Use rabbit fencing, dead hedging, protective tubes, and tree guards for young trees.	Year 1 - Monitor for damage and breaches annually over the 30-year term in late autumn.	To ensure browsing pressure from deer, rabbit and squirrel does not prevent regeneration or significant deterioration of woodland and is kept at below 20% of extant vegetation	B
Leave all naturally occurring deadwood in-situ	At all times.	To ensure a frequent source of deadwood at varying	L

	Maintain a species-rich woodland with five or more native tree species. A woodland survey will be undertaken by the SQE during the post-development sites visits after year 1, 2, & 5 following occupation. Remediation may require new native tree planting.	Years 1, 2 and 5 following occupation.	degradation states. To maintain a high diversity woodland landscape of benefit to a wide range of species that is of a locally appropriate species assemblage. To maintain local ecological integrity and preserve native semi-natural communities, with the aim of conforming to a locally appropriate NVC subtype.	D & I
	Maintain a woodland with three layers, comprising the canopy layer, a shrub layer, and ground flora. A woodland survey will be undertaken by the SQE during the post-development sites visits after year 1, 2, & 5 following occupation. Remediation may require new native shrub planting and utilisation of a ground flora seed mix within redundant open areas for enhancement.	Years 1, 2 and 5 following occupation.	To maintain a high diversity woodland landscape of benefit to a wide range of species that is of a locally appropriate species assemblage. To maintain local ecological integrity and preserve native semi-natural communities, with the aim of conforming to a locally appropriate NVC subtype.	J, I, & E
	Glades will be created via selective thinning and planting in the woodland. Thinning to be undertaken in rotation to create temporary areas of open woodland space covering between 10 and 20% of the woodland coverage. A woodland survey will be undertaken by the SQE during the post-development sites visits after year 1, 2, & 5 following occupations. Remediation may require additional thinning.	Coppicing of under shrubs in selected locations for thinning to occur annually in late autumn on up to a 9-year rotation.	To enhance structural diversity, facilitate higher light levels and provide habitat value for clearing specialists via selective thinning and coppicing with the aim of maintaining around 20% of open space.	F
	Ensure no fertilisers are used, and any rubbish is cleared from the site, including tree guards once defunct. No livestock	At all times.	No nutrient enrichment or damaged ground (e.g. trampling, compaction,	M

	should ever enter the woodland. machinery, animal poaching, litter) should be evident. evident
Hedgerows	Overview It is proposed to create 0.22862 km of native hedgerows in moderate condition. Objectives - To achieve a moderate condition for newly planted native hedgerows by passing condition criteria A1, A2, B1, B2, & D1 (as a minimum) in accordance with the Hedgerows Habitat Type Condition Sheet and BNG Assessment. - To create hedgerows that will provide pollinating, foraging, commuting, and refuge opportunities for protected and/ or notable species groups, including badgers, hedgehogs, herptiles, invertebrates, bats, and birds. - To undertake landscaping works in compliance with BS 4428:1989 – The Code of Practice for General Landscape Operation. Creation Method: Ground preparation Prepare the ground by digging over a strip approximately 60-90cm (2-3ft) wide and one spit (or spade blade) deep. Soils that become waterlogged in winter may require a permanent drainage system. Alternatively, form the soil into a ridge about 15-20cm (6-8in) high and 50-70cm (20-28in) across to plant into. Planting Plants should be positioned set back from hardscape boundaries to allow space for the hedgerow to develop and mature prior to requiring any significant management/ cutting back. Plant density should focus on achieving a hedgerow width >1m; as such, plants should be planted in a staggered double row approximately 45-60cm apart, where individual plants are planted 90cm apart within each row. Timing It is best to prepare the land during the summer ready for planting between November and March. Planting before the new year helps ensure better rooting and subsequent establishment including faster growth. Risks: - Poor establishment and/or plant failure – poor stock quality, unsuitable soil conditions, drought, waterlogging, or planting at an inappropriate time of year may result in high mortality

- Damage from pests, disease, or browsing – rabbits, deer, livestock, pests, or plant diseases may damage young plants and reduce establishment success
- Competition from weeds and grasses – excessive weed growth may suppress young hedgerow plants and slow establishment
- Damage during maintenance operations – strimming, mowing, or use of machinery may damage young plants or root systems
- Extreme weather – drought, frost, flooding, or prolonged wet conditions may negatively affect establishment and early growth
- Failure of protective measures – absence or failure of guards, fencing, or mulching may increase risk of damage from browsing, desiccation, or vandalism
- Inadequate aftercare and monitoring – lack of watering, weed control, replacement planting, or monitoring may compromise the long-term success and structure of the hedgerow.

Management prescriptions covering a 30-year term:

Table 3.3: Hedgerow management prescriptions.

Management	When	Rationale	BNG condition criteria compliance
At the end of each growing season, all plant failures are to be 100% replaced	When required - checked annually in Autumn.	To maintain amenity and wildlife value.	B1 & B2
If required, provision of stakes and guards. Guards to be left on for a minimum of 5 years	N/A	Protect from damage	A1 & A2
Stakes should be checked, and any broken or damaged stakes during this time would be removed (as above) and replaced with ties re-fixed	When required - checked annually in Autumn.	Maintain protection	D2
Remove weeds	When required - checked twice annually in early spring and in Autumn.	Reduce competition for resources and nutrients, etc., by weeds	D1
Application of bark mulch at a depth of 50 mm	Immediately after planting and then	Reduce competition for resources and nutrients, etc.,	D1

		when required, checked annually in Autumn.	by weeds	
	Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow	C2
	Apply a light dressing of well-rotted manure	Annually in the winter	Note that the overuse of manure fertilisers will encourage vigorous grasses and weeds to grow.	A1 & A2
	Watering should be undertaken before and after planting out, and as necessary for the continued thriving of all planting.	When required - provide more water during periods of drought and less water during times of prolonged rain.	Ensures plants do not dry out and subsequently fail.	A1, A2, B1, & B2
	Check and replace any plant failures once a year	For the first 5 years	To ensure no gaps form.	A1, A2, B1, & B2
	Once the hedgerow reaches an average height of 1.5m or above along the hedgerow length, this height or above must be retained.	To be checked annually once the hedgerow reaches 1.5m in height.	To ensure the hedgerow is not maintained at a low level of value to biodiversity.	A1
	Once the hedgerow reaches an average width of 1.5m or above along the hedgerow length, this width or above must be retained.	To be checked annually once the hedgerow reaches 1.5m in width.	To ensure the hedgerow is not maintained at a thin density of worse value to biodiversity.	A2
	A minimum 1m strip of natural vegetation will be maintained on either side of the hedgerow base.	At all times.	To maintain a valuable ground flora.	C1
Modified grassland	Overview: It is proposed to create 0.25454 ha of modified grassland in moderate condition. Objectives: To create modified grassland in moderate condition by passing criteria A, B, C and D (as a minimum) in accordance with the Grassland – Low distinctiveness Habitat Type Condition Sheet and BNG Assessment.			

	- To create grassland that will be suitable for amenity purposes whilst also providing pollination, foraging, and commuting opportunities for protected and/ or notable species groups, including badgers, herptiles, hedgehogs, invertebrates, bats, and birds. - To undertake landscaping works in compliance with BS 4428:1989 – The Code of Practice for General Landscape Operation. Creation Method: Ground preparation A soft strip of the current base substrate must be undertaken in the first instance and removed from the area to provide bare soil suitable for sowing the seed mix. The bare soil will be subject to light rolling or trampling to provide a firm base prior to seeding Seeding To be undertaken in the spring between April and May or in the Autumn between September and October. The following seed rates are recommended: 40kg/ha or 4g/m² Proposed seed mix: It is proposed to seed the grassland with Emorsgate EM2 General Purpose Meadow Mixture. This seed mix contains 5no. grass species and 15no. wildflower species. The mixture contains no dominant grass species. Due to this diversity and absence of dominant species, the number of grass and wildflower species present per m² is increased; it is therefore considered reasonable to assume a species diversity of 6-8 species per m². For exact specifications, please refer to: https://wildseed.co.uk/about-us/. Enhancement Method: Seeding To be undertaken in the spring between April and May or in the Autumn between September and October. The following seed rates are recommended: 40kg/ha or 4g/m² Proposed seed mix: It is proposed to seed the grassland with Emorsgate EM2 General Purpose Meadow Mixture. This seed mix contains 5no. grass species and 15no. wildflower species. The mixture contains no dominant grass species. Due to this diversity and absence of dominant species, the number of grass and wildflower species present per m² is increased; it is therefore considered reasonable to assume a species diversity of 6-8 species per m². For exact specifications, please refer to: https://wildseed.co.uk/about-us/. Risks: - Poor establishment – unsuitable soil conditions, drought, waterlogging, or inappropriate seed mix may result in poor germination and establishment
--	---

- Dominance of undesirable or competitive species – aggressive grasses or ruderal species may outcompete target species, reducing botanical diversity
- Colonisation by invasive or problem species – invasive non-native or undesirable species may establish following soil disturbance, reducing habitat condition by failing criterion G
- Extreme weather – prolonged drought, heavy rainfall, flooding, or unseasonal weather may negatively affect the establishment and ongoing condition of the grassland
- Damage from public access or site operations – trampling, vehicle movements, or machinery may cause soil compaction or localised damage to the sward
- Inadequate aftercare and monitoring – lack of appropriate management, monitoring, or remedial action may compromise the long-term success of the grassland.

Management prescriptions covering a 30-year term:

Table 3.4: *Modified Grassland management prescriptions.*

Management	When	Rationale	BNG condition criteria compliance
Cut monthly during the growing season	Between April and October. Cutting frequency may be adjusted following monitoring, where required to achieve the target condition.	Cutting monthly will allow a neat and tidy appearance whilst allowing more species to effectively colonise.	A, C, F, & G.
Turn and dry the cut grass over 3-5 days before removing arisings off-site	Following cuts in May and September.	This allows any seeds present to drop, encouraging species diversity and invertebrates to relocate unharmed.	A.
Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow or cause large areas of bare ground due to inhospitable growing conditions.	D & E.

Lowland Acid Grassland	Overview: It is proposed to retain 0.00135 ha of other neutral grassland in poor condition. Objectives: - To achieve a poor condition for lowland acid grassland by meeting the relevant criteria within the Grassland – Medium, High and Very High Distinctiveness Habitat Type Condition Sheet and Biodiversity Net Gain Risk: - Nutrient enrichment – fertiliser application, runoff from adjacent land, atmospheric deposition or retained cuttings may increase soil fertility, favouring coarse grasses and reducing acid grassland species diversity. - Encroachment of scrub and bracken – unmanaged scrub, bracken or tree regeneration may progressively shade out characteristic acid grassland species and reduce habitat extent. - Dominance of competitive grasses – vigorous grass species may outcompete characteristic forbs and acid grassland species, reducing structural and botanical diversity. - Invasive and undesirable species – invasive non-native species, ruderal species or agricultural weeds may colonise disturbed areas and negatively affect habitat quality. - Inappropriate management regime – cutting or grazing at unsuitable times, failure to remove arisings, or insufficient management may lead to rank vegetation and loss of species diversity. - Soil disturbance and compaction – vehicle movements, trampling or storage of materials may damage the sward, compact soils and create areas of degradation. - Extreme weather events – drought, prolonged rainfall, flooding or other adverse weather conditions may affect species composition and habitat condition. - Inadequate monitoring and adaptive management – failure to undertake regular monitoring and remedial works may prevent the habitat from achieving or maintaining its target condition. Risks & Remedial Actions - Scrub Encroachment and Re-growth (Primary Risk): There is a high risk of successional woody scrub species re-establishing within the grassland. To mitigate this, the site must be monitored regularly for scrub re-growth. If any emerging scrub is identified, it must be promptly removed (either by hand-pulling or targeted cutting) to prevent it from shading out the specialized flora and to allow the acid grassland to successfully re-develop.
-------------------------------	---

- Dominance of Competitive Grasses: Coarse or agricultural grasses may outcompete delicate calcareous forbs, particularly if nutrients are allowed to accumulate.
- Inappropriate Management Regime: Failure to undertake the annual cut or failure to remove the arisings (rakings) will lead to nutrient enrichment, reducing botanical diversity.
- Nutrient Enrichment: Runoff or localized fertilizer drift from adjacent land uses may increase soil fertility, favouring competitive weed species over target acid communities.
- Inadequate Aftercare and Monitoring: A lack of regular monitoring may allow scrub or invasive species to become dominant before remedial action can be taken, jeopardizing the target habitat condition.

Management prescriptions covering a 30-year term:

Table 3.5: Lowland Acid Grassland management prescriptions.

Management	When	Rationale	BNG condition criteria compliance
Cut meadow twice annually	Late March / early April and late August/ early Sept	This ensures the meadow does not grow excessively long and become rank but allows wildflowers to set seed and invertebrates to breed. This will also allow a diverse sward of varying lengths to naturally occur in accordance with the growth characteristics of each species. Cutting twice annually will also prevent encroachment of scrub and bracken.	A, B, C, & D.
Cut grass as to provide a heterogeneous habitat structure, aiming to maintain at least 20% of grass <7cm and 20% >7cm. As such, each cutting phase must cut 20% of the area to ground level, 60% of the area to 15cm, and the remainder	During each cutting event	To retain a diverse sward whilst limiting impacts to protected species potentially present at ground level and ensuring the natural germination of seeds.	B, D

	to 30cm. These areas must be rotated each year to maintain a diverse sward.			
	Turn and dry the cut grass over 3-5 days before removing arisings off Site	Post cut	This allows the seeds to drop, encouraging species diversity and invertebrates to relocate unharmed.	A, B, & C
	Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow or cause large areas of bare ground due to inhospitable growing conditions,	C
	Remove scrub, bracken and tree saplings where they are trying to establish within the grassland	Annually during autumn/winter	Prevents succession to scrub and woodland, maintains the extent of acid grassland habitat	D,E
	Monitor annually for invasives	Annually	Prevents degradation of habitat quality	E
	Prevent vehicle access	At all times	Protects sward integrity and prevents soil compaction	A,D,E
Ornamental Pond/Lake	Overview: A pond measuring 0.0015 ha in moderate condition will be retained on site. Objectives: - To retain a pond of moderate condition by passing A, B C and D (as a minimum) in accordance with the BNG Assessment; - To develop a habitat suitable to support a range of protected and/ or notable species, including aquatic and terrestrial invertebrates, amphibians and reptiles. - To create a pond in accordance with current guidance provided by the Freshwater Habitat Trust, as detailed within the following documents: <i>Pond Creation Tool Kit Sheet 4: Pond Design</i>¹ and <i>Creating Ponds for Amphibian and Reptiles</i>². To achieve this, the following core structural principles will be adhered to for pond creation. Figures 10, 11, and 12 below exemplify the benefits of these key structural principles.			

¹ <https://freshwaterhabitats.org.uk/wp-content/uploads/2013/09/pond-design.pdf>

² <https://freshwaterhabitats.org.uk/wp-content/uploads/2013/09/Amphibians- Common-Toad-Great-Crested-Newt-and-Grass-Snake -new-logo.pdf>

- a. Ensure that almost all pond slopes are shallow, less than 1:5 (12°) and preferably less than 1:20 (3°);
- b. Create underwater bars and shoals to benefit aquatic plants;
- c. Ensure a clean water supply;
- d. Create variable pond depths;
- e. Plant submerged and emergent vegetation;
- f. Ensure an absence of fish; and
- g. Attempt to deter Waterfowl from utilising ponds.

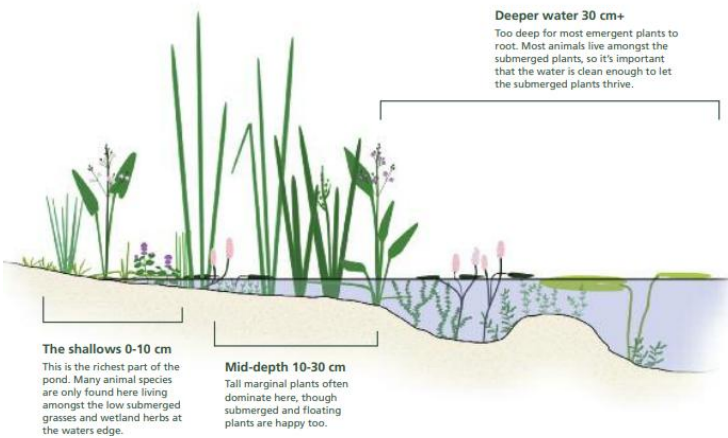


Figure 1. A schematic representation of pond characteristics that provide the best opportunities for biodiversity. (Source: *Pond Creation Tool Kit Sheet 4: Pond Design* guidance document.)

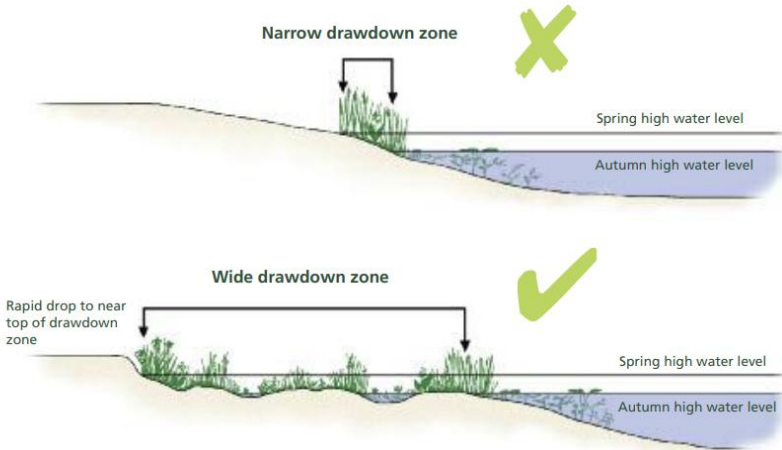


Figure 2. A schematic representation of an optimal pond drawdown zone. (Source: *Pond Creation Tool Kit Sheet 4: Pond Design* guidance document.)

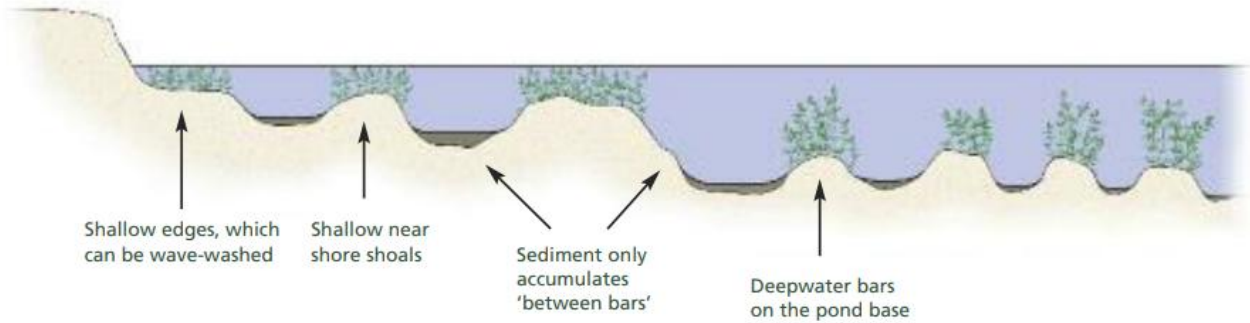


Figure 3. A schematic representation of the value of internal shoals/ islands that prevent domination of sediment accumulation. (Source: *Pond Creation Tool Kit Sheet 4: Pond Design* guidance document.)

Risks:

- Failure to retain water – unsuitable ground conditions, liner failure, or poor sealing may result in excessive water loss or seasonal drying
- Poor water quality – nutrient enrichment, sediment runoff, or pollution from surrounding land uses may reduce suitability for

aquatic species

- Colonisation by invasive or undesirable species – invasive non-native plants or fish may establish, reducing biodiversity value and ecological function
- Extreme weather events – drought, flooding, or unseasonal weather may affect water levels, water quality, and establishment of aquatic and marginal vegetation
- Disturbance from people, livestock, or machinery – trampling, bank erosion, or damage during maintenance or site operations may degrade pond margins and water quality
- Insufficient buffer zones – lack of adequate terrestrial buffer may increase nutrient inputs, disturbance, and pollution risk
- Inadequate aftercare and monitoring – lack of monitoring, vegetation management, or remedial works may compromise the long-term ecological value of the pond.

Management prescriptions covering a 30-year term:

Table 3.6: Pond management prescriptions

Management	Detail	Rationale	BNG condition criteria compliance
Weed growth will be cut back regularly upon the banks and amongst emergence vegetation.	Twice annually in early March/ and in Autumn	Encourages establishment of good perennial ground cover and prevents colonisation of non-native species.	6, & 9
When removing vegetation, do not focus on one plant community but evenly remove from all to maintain a suitable habitat and species diversity.	Twice annually in early March/ and in Autumn	Ensure not just one habitat within the pond is removed at the same time	3, 6, & 8
Keep approximately 90% of the water surface free of dense macrophyte coverage.	Check annually in Autumn	To prevent significant duckweed and other filamentous algae coverage; amphibians use open water for breeding display.	1, 3, & 6
Remove plant detritus and litter.	Check annually in Autumn	Prevents organic matter and litter building up and preventing exposure to sunlight.	1 & 8

	<table><tr><td>Remove non-native or other unwanted plants and dispose. Where possible rinse the removed plants and replace water in the pond.</td><td>Check annually in Autumn</td><td>Prevents organic matter building up Puts back wildlife in pond living within the removed plants</td><td>6</td></tr><tr><td>Will the pond freeze over a hole in the ice will be created.</td><td>Check annually in Winter</td><td>Allows air breathing wildlife to gain oxygen</td><td>n/a</td></tr><tr><td>Never artificially stock with fish.</td><td>At all times</td><td>Fish predate amphibians and their young.</td><td>7</td></tr></table>	Remove non-native or other unwanted plants and dispose. Where possible rinse the removed plants and replace water in the pond.	Check annually in Autumn	Prevents organic matter building up Puts back wildlife in pond living within the removed plants	6	Will the pond freeze over a hole in the ice will be created.	Check annually in Winter	Allows air breathing wildlife to gain oxygen	n/a	Never artificially stock with fish.	At all times	Fish predate amphibians and their young.	7
Remove non-native or other unwanted plants and dispose. Where possible rinse the removed plants and replace water in the pond.	Check annually in Autumn	Prevents organic matter building up Puts back wildlife in pond living within the removed plants	6										
Will the pond freeze over a hole in the ice will be created.	Check annually in Winter	Allows air breathing wildlife to gain oxygen	n/a										
Never artificially stock with fish.	At all times	Fish predate amphibians and their young.	7										
Mixed Scrub	Overview It is proposed to create 0.23742 ha of mixed scrub in good condition and to enhance 1.6454 ha of bramble scrub to mixed scrub in good condition. Objectives - To create mixed scrub in good condition by passing condition criteria A, B, C, D and E (as a minimum) in accordance with the Scrub Habitat Type Condition Sheet. - To plant mixed scrub that will provide foraging and refuge opportunities for protected and/ or notable species, including invertebrates, nesting birds and hedgehogs. Mixed Scrub Creation Method Ground preparation and planting Shrubs will be planted in holes three times the width of their supplied pots and of a similar depth. Before planting, root balls will be thoroughly soaked in water and gently loosened to free any restricted roots. Once positioned, the shrubs will be backfilled carefully, ensuring that no air pockets remain around the roots and that no roots are left exposed above ground. To create a natural vegetation structure, shrubs will be planted in small, single-species clumps rather than in rows, preventing the formation of wind tunnels. Plants will be in groups of three, at a density of 3 plants per m2. Irregular spacing will be used to encourage natural infill and promote biodiversity. Timing It is best to prepare the land during the summer, ready for planting between November and March. Planting trees and shrubs before the new year helps ensure better rooting and subsequent establishment, including faster growth during the first growing season. Species												

All shrub species will be native, and a mixture of species will be planted to prevent one species from dominating. Suitable species include Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*), Hazel (*Prunus spinosa*), Goat willow (*Prunus spinosa*) and Buckthorn (*Prunus spinosa*).

Ornamental species such as laurel, rhododendron and non-native cotoneasters listed on the schedule 9 invasive species list must be avoided.

Risks:

- Poor establishment and/or plant failure – unsuitable soil conditions, poor-quality planting stock, drought, waterlogging, or inappropriate planting may lead to high mortality
- Inappropriate species selection – species not suited to local soil, hydrology, climate, or site conditions may fail to establish or reduce habitat diversity
- Damage from pests, disease, or browsing – rabbits, deer, livestock, or plant diseases may damage young shrubs and reduce establishment success
- Competition from grasses or weeds – aggressive grasses, ruderal, or invasive species may suppress shrub growth and reduce biodiversity value
- Damage during site operations – mowing, strimming, or machinery may damage plants or disturb soil, impacting establishment
- Extreme weather – drought, flooding, frost, or high winds may negatively affect establishment and early growth
- Failure of protective measures – absence or failure of guards, fencing, or mulching may increase risk of browsing, desiccation, or vandalism
- Inadequate aftercare and monitoring – lack of inspections, replacement planting, or adaptive management may compromise long-term scrub structure and ecological function

Management prescriptions for new shrubs covering a 30-year term:

Table 3.7: New scrub management prescriptions.

Management	When	Rationale	BNG condition criteria compliance
Plant native whips between November and March.	Year 1	Planting should be carried out between November and March. Specimens should be spaced approximately 1.5m	A

		apart	
If required, provision of stakes and biodegradable guards. Guards to be left on for a minimum of 5 years	Year 1 - 5	To protect young establishing shrubs from damage	A & B
Stakes will be checked, and any broken or damaged stakes will be removed and replaced where necessary	When required -checked annually in Autumn	To maintain the protection of shrubs	A & B
Watering will be undertaken before and after planting out, and as necessary for the continued thriving of all planting.	When required. Provide more water during periods of drought and less water during times of prolonged rain	Ensures plants do not dry out and subsequently fail	A, B & C
Annually, prune scrub species until they are established	Year 3+	To prevent woodiness, remove dead branches, and promote a dense, bushy structure	A
Remove weeds	Year 1+. Checked twice annually in early spring and in Autumn, and treatment applied when required	Reduce competition for resources and nutrients, etc., by weeds	C
Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow	C
Apply a light dressing of well-rotted manure	Annually in the winter	Note that the overuse of manure fertilisers will encourage vigorous grasses and weeds to grow	C
Rotational coppicing of the scrub, whereby a separate 20% section of the scrub is cut to ground level each year	Year 3+. Annually in the early spring.	To promote the diversification of age classes and create open glades	B & E
At the end of each growing season,	When required - checked	To maintain amenity and	A & B

	all plant failures are to be 100% annually in Autumn wildlife value replaced
Bioswale	Overview <i>It is proposed to create 0.00525 ha of bioswale.</i> A bioswale will be created and managed to enhance biodiversity while providing effective stormwater management. The bioswale will use native SuDS (Sustainable Drainage Systems) plant species seed mix to improve infiltration, reduce runoff, and support local wildlife. Objectives - To establish a functional bioswale ecosystem that incorporates native species and achieves a net gain for biodiversity in accordance with the BNG Assessment. - To provide habitat for pollinators and invertebrates, supporting foraging opportunities for bats, birds, hedgehogs, and other notable wildlife species. - To create a self-sustaining system with minimal maintenance requirements by employing techniques that prioritise organic fertilisers and limit the use of chemical treatments. Creation Method Ground Preparation <i>Excavation:</i> A shallow trench, 30–45 cm deep with sloping sides (3:1 or 4:1 ratio), will be dug following the land's natural contours to slow and capture water flow. <i>Layering:</i> Base Layer: Coarse gravel or crushed stone to aid infiltration. Top Layer: Sand, compost, and topsoil mixture suitable for plant growth will be added above the gravel. Soil in planting zones will be lightly compacted or rolled to create a stable base for vegetation. Timings Seeding and planting will occur in April/May or September/October, during calm, frost-free, and dry weather conditions. Planting and Seeding

	Neutral Grassland Zone: To maximise biodiversity and support SuDS functionality, a SuDS-specific meadow seed mix will be used. These mixes are designed for areas subject to occasional wet and dry conditions, making them ideal for bioswale environments. Recommended Seed Mix Options: ○ https://www.turfonline.co.uk/product/suds-and-slopes-seed-mix/ ○ https://wildflowerturf.co.uk/products/establishanewhabitat/meadowsow/suds/ These mixes contain a diverse range of native grasses and wildflowers suited for effective stormwater management, erosion control, and biodiversity enhancement. Seeding Rates: ○ Apply seed at the recommended rates provided by the mix supplier (e.g., 4g/m²). ○ Bulk seed with an inert carrier, such as sand, to ensure even distribution. ○ Seed will be sown in two equal sowings in transverse directions to ensure full coverage. ○ After seeding, lightly roll the soil to ensure good seed-to-soil contact without burying the seed. Risks • Failure to achieve designed hydraulic performance - Incorrect levels, compaction, inlet/outlet installation, or sediment build-up may reduce storage capacity or restrict discharge rates. • Bank instability - Inadequate profiling, insufficient establishment of vegetation, or high flow velocities may cause erosion, slumping, or sediment mobilisation. • Poor vegetation establishment - Unsuitable soil conditions, fluctuating water levels, drought, or competition from ruderal species may prevent successful habitat creation. • Invasive or undesirable species colonisation - Rapid colonisation by invasive non-native species or aggressive ruderal plants may outcompete target habitats and reduce biodiversity value. • Sediment accumulation and pollution - Excessive sediment input from the catchment may reduce storage capacity and smother vegetation. Runoff pollutants may degrade water quality and ecological function. • Litter and fly-tipping - Accumulation of waste materials may affect hydraulic performance, ecological condition, and visual amenity. • Disturbance from maintenance activities - Over-intensive or poorly timed maintenance may damage marginal habitats and reduce biodiversity value.
--	---

- Extreme weather events - Increased rainfall intensity or prolonged drought associated with climate change may exceed design assumptions, affecting both hydraulic performance and ecological objectives.

Management Prescriptions

Table 3.8: Bioswale management prescriptions.

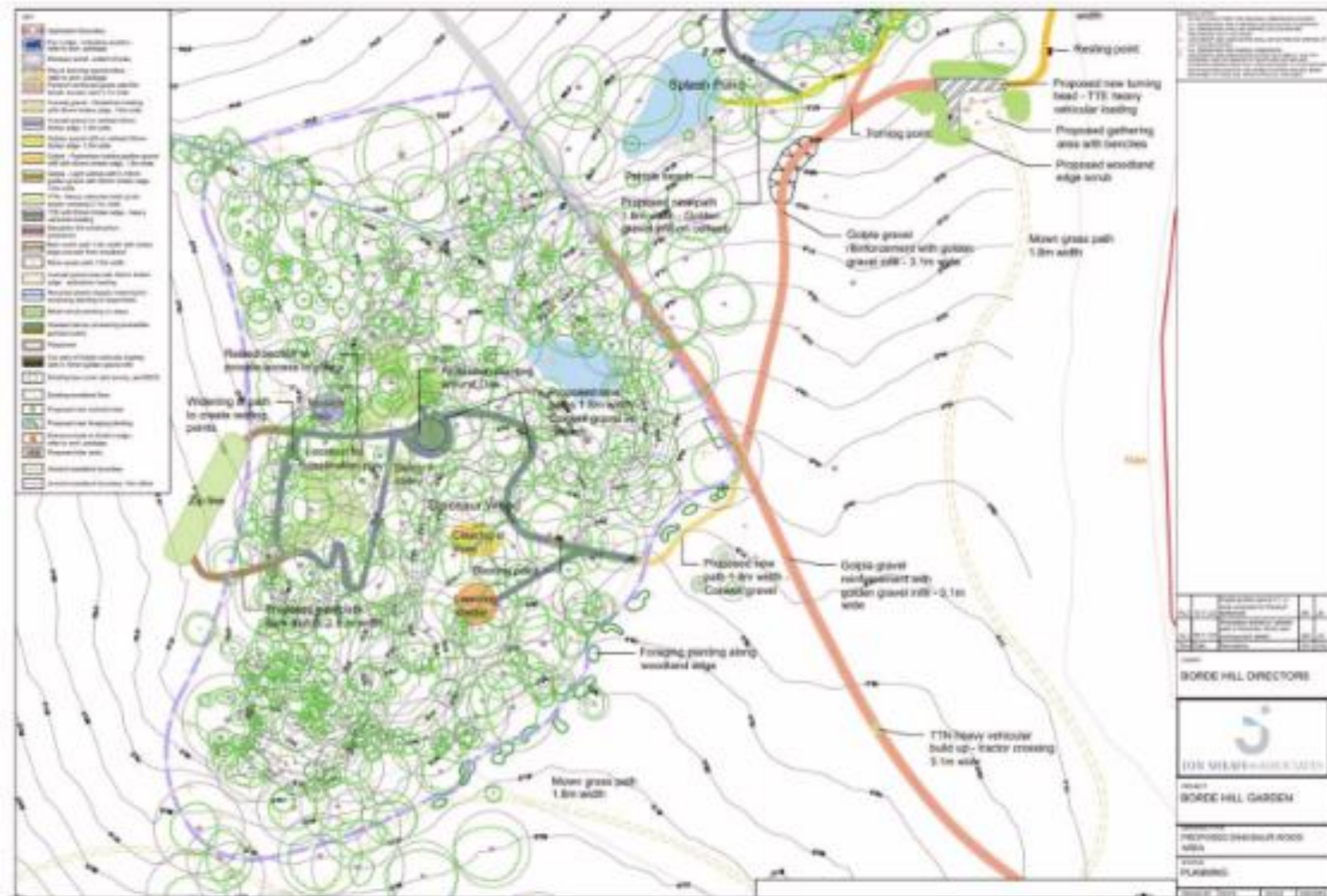
Management	When	Rationale
Water newly established plants in dry spells during the first growing season.	During first season	Ensures successful establishment of plants during their vulnerable initial growth stages.
Remove invasive or problematic species such as thistles or dock that outcompete desired plants.	Annually	Maintains species composition and prevents dominance by undesired species.
Mow or cut vegetation annually in late summer. Remove cuttings after 24–48 hours to prevent nutrient buildup in the soil. Avoid mowing all areas at once.	Late summer	Encourages reseeding of desirable species while maintaining habitat for invertebrates and wildlife.
Inspect bioswale inlet and outlet for sediment buildup and remove excess	Annually	Maintains water flow and filtration capacity of the bioswale.

	sediment.		
	Avoid the use of chemical fertilisers.	At all times	Prevents promotion of vigorous, unwanted grass growth and maintains conditions favourable to neutral grassland species.

4.0 Bibliography

- CIEEM. (2017, updated 2023). Guidelines for Preliminary Ecological Appraisal Institute of Ecology and Environmental Management http://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/GPEA/GPEA_April_2013.pdf
- CIRIA. (2025). The SuDS Manual (C753) https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C753
- HMSO: Wildlife and Countryside Act 1981 (as amended) <http://jncc.defra.gov.uk/page-1377>
- HMSO: Countryside & Rights of Way Act (2000) <http://jncc.defra.gov.uk/page-1378>
- HMSO: Natural Environmental and Rural Communities Act (2006) <http://www.legislation.gov.uk/ukpga/2006/16/contents>
- HMSO: The Conservation of Habitats and Species Regulations 2017 (as amended) <https://www.legislation.gov.uk/uksi/2017/1012/contents>
- HSE. (2002). Control of Substances Hazardous to Health (COSHH) regulations. <https://www.hse.gov.uk/coshh/basics/whatdo.htm>
- National Planning Policy Framework. (2021). <https://www.gov.uk/government/publications/national-planning-policy-framework--2>
- Woodland Trust. (2022). Woodland Creation Guide. <https://www.woodlandtrust.org.uk/plant-trees/woodland-creation-guide/>

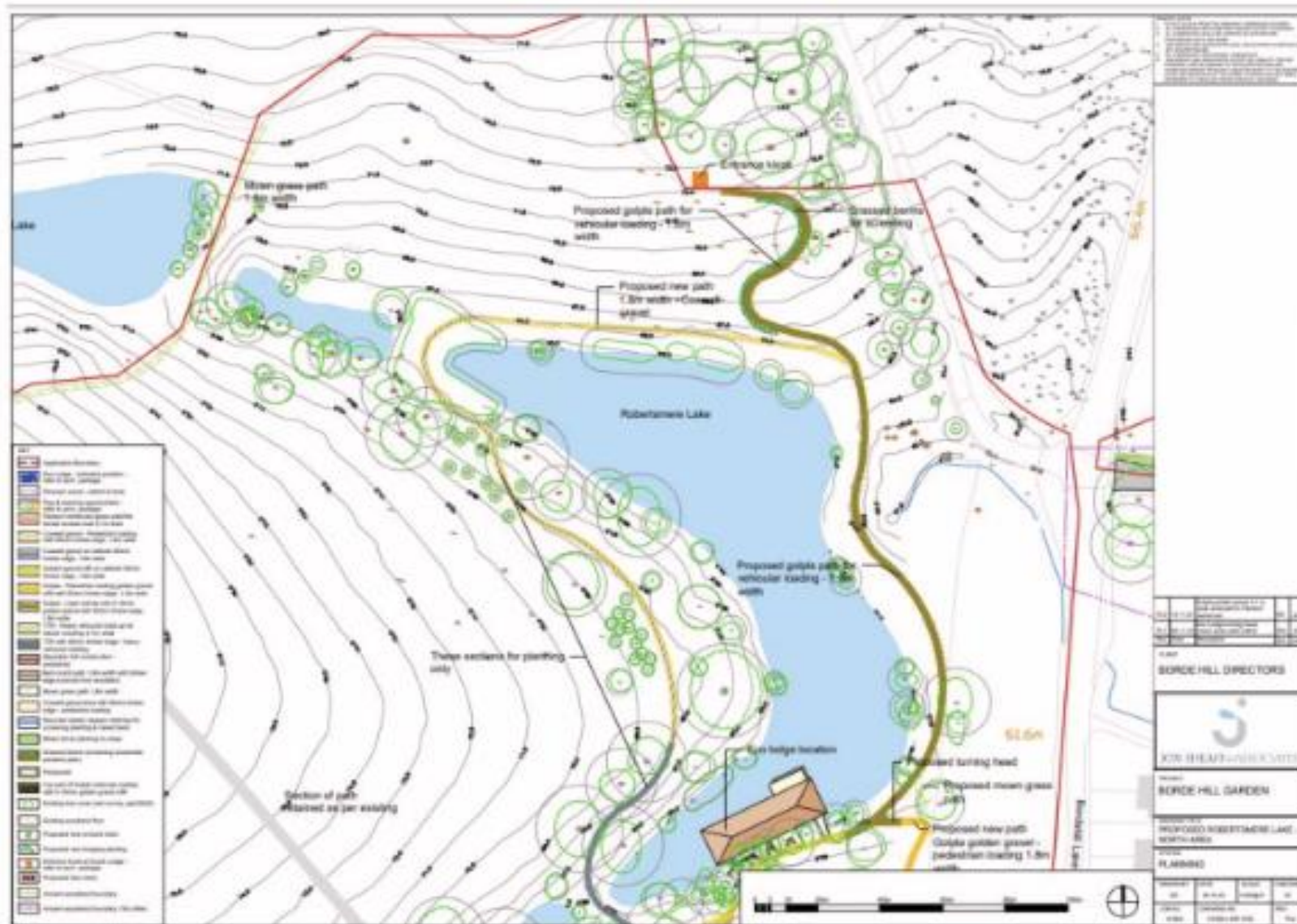
Appendix 1: Proposed Development Plan – Dinosaur Wood



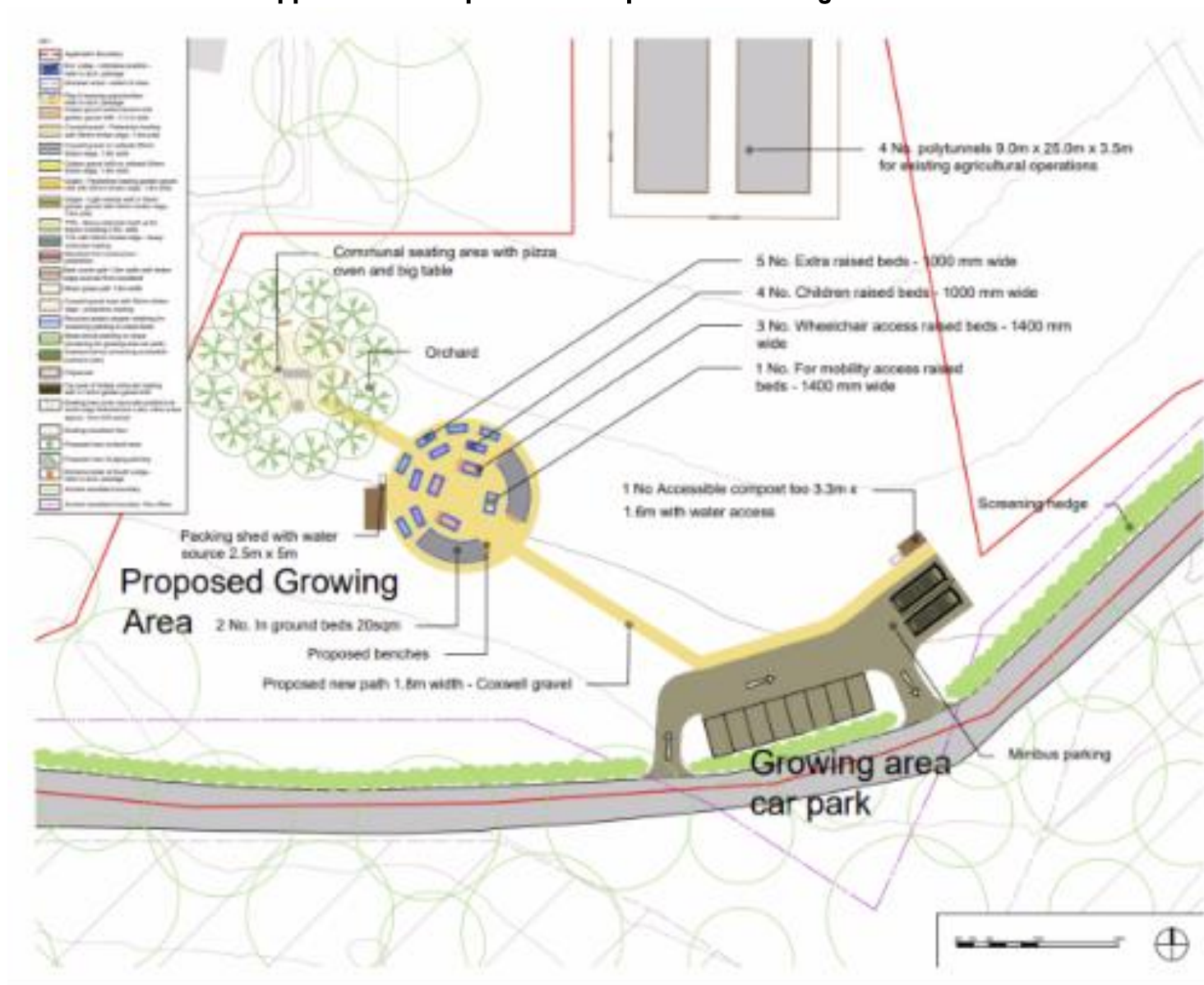
- 1 Accessible play
- 2 Net play
- 3 Look out point
- 4 Slide
- 5 Scrambling logs
- 6 Dinosaur bridge traverse
- 7 Hazel tree seating
- 8 Zip line



Appendix 1a: Proposed Development Plan – Eco Lodge Robertsmere Lake



Appendix 1b: Proposed Development Plan – Sugworth Farm



Appendix 2: Site Location Plan



Appendix 3: Post Development Habitat Plan

