



Smithy Bridge, Rochdale

Habitat Management and Monitoring Plan

Prepared For: Taylor Wimpey Strategic Land

Document Reference: 8776.011

October 2024

Version 2.0

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Version	Date	Modified by	Check/ Approved by	Reason	Status
1.0	22/10/24	CT	RT/RM	Draft for comment.	Superseded
2.0	24/06/2025	CT	RT	Amended following updated BNG Metric.	Issued

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The conclusions and recommendations contained in this document are based upon information gathered by TEP and provided by third parties. Information provided by third parties and referred to herein has not been independently verified by TEP, unless otherwise expressly stated in the document.

Nothing in this report constitutes legal opinion. If legal opinion is required, the advice of a qualified legal professional should be secured.

Site Overview

Site name and address	Land West of Smithy Bridge Road, Littleborough
Central OS grid reference	SD 920 153
Central w3w	Marked.Truck.Gear
Project type	Residential development: erection of up to 199 dwellings including vehicular access on to Smithy Bridge Road, with internal highways, car parking, footpaths, cycle paths, boundaries, gardens, open space and other associated works
Landowner / Organisation for habitat creation	Taylor Wimpey Strategic Land
Land Manager/Management Company responsible for long term management	Management Company to be confirmed
Author organisation	The Environment Partnership (TEP) Ltd
Planning authority	Rochdale Borough Council
National Landscape Character Area	National Character Area 54 Manchester Pennine Fringe
BNG Metric reference	TEP ref: x8776.003
Irreplaceable habitats	None present within HMMP area

Summary of Habitat Management Plan

Habitats to be Retained, Created and Enhanced	Modified grassland (Amenity Grassland); Other neutral grassland (Wildflower Meadow); Ponds (Non-priority Habitat); Mixed scrub (Mixed scrub planting); Introduced shrub (Ornamental shrub planting); Urbans trees (Tree planting); Other lowland acrid grassland (Wetland meadow grass); and Wetland reedbeds (Wet area).
Timescales for Actions	Establishment period estimated 0-5 years HMMP Plan period minimum 30 years
BNG Monitoring Requirements	Habitat condition monitored against UK Habitat criteria in years 2, 3, 5, 7, 10, 15, 20, 25 and 30
HMMP update requirements	The HMMP will be informally reviewed on an annual basis to ensure management prescriptions appropriate to the habitats on site particularly during the establishment period. The HMMP will undergo a formal review every 5 years to ensure the plan is meeting the changing needs of the site.
Required Consents and Licences	n/a
Funding	Section 106 payment: To be agreed
Legal Agreement	Land covered under this HMMP would be incorporated into an appropriately worded Section 106 Agreement

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Drawing 3: Existing Habitat Conditions and Strategic Significance (TEP ref: G8776.013A)

Drawing 4: Proposed Development Conditions and Strategic Significance (TEP ref: G8667.016D)

1.0 Introduction

Purpose of the Management Plan

- 1.1 This Habitat Management and Monitoring Plan (HMMP) has been produced by The Environment Partnership (TEP) Limited on behalf of Taylor Wimpey Strategic Land. This HMMP provides a framework for supporting the delivery of on-site Biodiversity Net Gain (BNG) provision at Smithy Bridge, Rochdale (hereby referred to as 'the Site').

Scope of the Management Plan

- 1.2 This HMMP sets out a coordinated, overarching approach to the management of the habitats, open space and landscaping within the Site. The HMMP covers all areas of open space within the Site, specifically soft landscaping within Public Open Space (POS) areas. It excludes the residential gardens which are to be maintained by the property occupiers.
- 1.3 At a strategic level, the HMMP will be used to guide decision making and management interventions, as well as monitoring mechanisms to ensure the successful establishment of each habitat across a 30-year period. At an operational level, the HMMP will be used to inform the day-to-day practical landscape maintenance operations.
- 1.4 This HMMP has been informed by the design proposals, ecological baseline and Arboricultural information and should be read in conjunction with the following documents:
- Landscape Masterplan (Pegasus Group ref: P21-2628.100);
 - Planting Plans Sheet 1 through to 8 (Pegasus Group ref: P21-2628_EN_102_1_C through to P21-2628_EN_102_8_C);
 - Arboricultural Impact Assessment (Urban Green ref: UG11711); and
 - Ecological Assessment (TEP ref: 8776.006).
- 1.5 This HMMP has been informed by British Standard 8683:2021 Process for Designing and Implementing BNG and BNG Good Practice Principles for Development, A Practical Guide¹.

Structure of the Management Plan

- Chapter 2.0 provides an overview of the site's baseline landscape and ecological features;

¹ [Biodiversity net gain. Good practice principles for development. A practical guide \(cieem.net\)](https://www.cieem.net/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide/)

- Chapter 3.0 provides details of the site's planning, development and BNG rationale and commitment;
 - Chapter 4.0 includes roles and responsibilities for the long-term management of the Site;
 - Chapter 5.0 details the management intentions and maintenance operations associated with the delivery of BNG; and
 - Chapter 6.0 sets out how the success of the HMMP will be monitored, reviewed and updated over time.
- 1.6 The following appendices are included and support this Plan:
- Appendix A provides a table of maintenance operations;
 - Appendix B summarises relevant legislation; and
 - Appendix C is the BNG monitoring schedule and summary of the BNG commitment for the Site.
- 1.7 The following drawings are included and support this HMMP:
- Landscape Masterplan (Pegasus Group ref: P21-2628.100);
 - Planting Plans Sheet 1 through to 8 (Pegasus Group ref: P21-2628_EN_102_1_C through to P21-2628_EN_102_8_C);
 - Existing Habitat Conditions and Strategic Significance (TEP ref: G8776.013A); and
 - Proposed Habitat Conditions and Strategic Significance (TEP ref: G8776.016D).

2.0 Overview of Baseline Site

Site Location

- 2.1 The Site lies approximately 3km northeast of Rochdale town centre. The Site is bound by existing residential dwellings to the north, further residential dwellings within Dearnley to the east, the River Roch to the south and further dwellings to the west.

Land use summary

- 2.2 **Error! Reference source not found.** summarises the baseline environmental information for the Site.

Table 1: Summary of baseline environmental information

Baseline feature	Feature description relevant to HMMP
Baseline Habitat Survey	Baseline habitats are illustrated in Phase 1 drawing (TEP ref: G8776.007) and the Baseline UK Habitat Plan (TEP ref: 8776.012A). Baseline habitats comprised a mix of Modified Grassland, Other Lowland Acid Grassland, Other Neutral Grassland, bramble scrub, urban trees, native hedgerow, line of trees, ponds and tall forbs.
Ecological Surveys	The following ecological survey have been completed on site: Bat Activity Transect Survey (TEP, 2017); Breeding Bird Survey (TEP, 2017); Great Crested Newt Survey (TEP, 2021); Daytime Bat Assessment (TEP, 2022); Nocturnal Roost Surveys (TEP, 2021); Riparian Mammals Survey (TEP, 2021); and Extended Phase 1 Habitat Survey (TEP 2022).
Environmental designations	There are two designated sites within 1km of the nearest boundary: - Rochdale Canal Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI) and a Site of Biological Importance (SBI) identified 200m southeast of the Site; and - Hollingworth Lake and Surrounds (SBI) situated 1km southeast of the Site.
Landscape Character Designations	National Character Area 54 Manchester Pennine Fringe
Protected and notable species	Water vole evidence and feeding stations were identified during ecological surveys on the banks of the River Roch with latrines also

Baseline feature	Feature description relevant to HMMP																		
	identified. The findings detail a low population of water vole across the watercourse and near the Site.																		
Protected and notable habitats	The Arboricultural Impact Assessment details no trees within a Tree Preservation Order (TPO) or within a Conservation Area. Several trees and groups will be removed to facilitate the proposed development. Compensatory tree planting will be implemented as detailed on the Landscape Masterplan. Further details regarding baseline trees are detailed within the Arboricultural Impact Assessment (Urban Green ref: UG11711).																		
Invasive Species	The Extended Phase 1 Habitat survey detailed within the Ecological Assessment (TEP ref: 8776.006) and illustrated on the Phase 1 Habitat Survey Plan (TEP ref: G8776.007) identified three species of Invasive Non-Native Species (INNS) these are identified as Himalayan balsam, Variegated yellow archangel and Japanese knotweed. An Invasive Species Management Plan prepared in 2019 (TEP ref: 7504.001) details appropriate management and monitoring requirements. This HMMP should be read in conjunction with the INNS Management Plan and work already undertaken to treat INNS across the site.																		
Climate ²	<table> <tr> <td>Days of rain per year</td><td>17.05 mm</td></tr> <tr> <td>Average annual rainfall</td><td>1197.22 mm</td></tr> <tr> <td>Wettest month</td><td>December (138.88 mm)</td></tr> <tr> <td>Driest month</td><td>May (65.67 mm)</td></tr> <tr> <td>Average annual temperature</td><td>9°C</td></tr> <tr> <td>Warmest month</td><td>July (20.01°C average)</td></tr> <tr> <td>Coldest month</td><td>January (1.50°C average)</td></tr> <tr> <td>Average annual hours of sunshine</td><td>1265.48 hrs</td></tr> <tr> <td>Sunniest month and average hours of sunshine</td><td>May 175.45 hrs</td></tr> </table>	Days of rain per year	17.05 mm	Average annual rainfall	1197.22 mm	Wettest month	December (138.88 mm)	Driest month	May (65.67 mm)	Average annual temperature	9°C	Warmest month	July (20.01°C average)	Coldest month	January (1.50°C average)	Average annual hours of sunshine	1265.48 hrs	Sunniest month and average hours of sunshine	May 175.45 hrs
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Geology and Topography	The geology and topography of the Site is detailed within the Archaeological Desk-Based Assessment: Smithy Bridge (RPS ref: 24200). The Site is predominately situated on underlying bedrock identified as Milnrow Sandstone with a narrow band of mudstone, siltstone and sandstone of the Pennine Lower Coal Measures Formation through the east side of the Site.																		

² Rochdale - Climate Station (Greater Manchester) UK climate averages - Met Office

Baseline feature	Feature description relevant to HMMP
Agricultural Land Status	Review of the Natural England Agricultural Land Classification map for the Northwest identified the land status as land predominantly in urban use.
Soils and Substrates	Soils and substrate details are provided within the Agricultural Land Classification and Soil Resources report (Reading Agricultural Consultants ref: RAC7959). In summary the topsoil typically consists of a very dark greyish brown, slightly stony clay loam, over a greyish brown loam upper subsoil showing evidence of gleying. Further specification of soils and substrates are provided within the report.
Contaminated Land	The Agricultural Land Classification and Soil Resources report (Reading Agricultural Consultants ref: RAC7959) classified the area to the south-east of the site along Smithy Bridge Road as non-agricultural land due to the high proportion of structures in this area. No indication of contaminated land has been noted on-site.
Hydrology and Drainage	A Flood Risk Assessment and Outline Drainage Strategy has been produced for the proposed development at Smithy Bridge, Rochdale (LK ref: FRA21 1165). The nearest water feature is the River Roch adjacent to the southern boundary, with a pond also noted on-site with an ordinary watercourse adjacent to the northeast boundary that is collected into a land drain and outfalls into the river. An additional dry gully was noted within the Site and may indicate a seasonal flow path. This HMMP should be read in conjunction with the SUDS and Drainage Operation & Maintenance Plan For Surface Water Drainage System Smithy Bridge, Rochdale (Ironside Farrar Limited ref: 30329/SUDS Maint Plan).
Flood Risk Zones	The Flood Risk Assessment and Outline Drainage Strategy (LK ref: FRA21 1165) notes that the proposed development falls within flood zone 1 and partially within flood zone 3. There is a moderate risk of groundwater emergence on the lower slopes due to the potential for groundwater to flow along superficial deposits and bedrock interface and emerge through the variable superficial soil.
Historic Environment and Land Use	The Archaeological Desk-Based Assessment: Smithy Bridge (RPS ref: 24200) details no notable findings associated with the historic environment and land use on-site.

Protected Species or habitats of Importance

Water Vole

Water vole has been recorded within 2km of the Site with the closest record approximately 200m to the southeast of the Site. During surveys evidence was noted of water vole activity along the banks of the River Roch, directly adjacent to the southern boundary of the Site, including latrines and a feeding station. Habitats surrounding and situated along the river are suitable for supporting foraging, commuting and burrowing water vole.

- 2.3 Water voles are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981) and are listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities Act (2006).

Birds

- 2.4 Various notable bird species have been indemnified on site and within influencing distance to the Site including S41 species Dunnock, Skylark and Reed bunting. Existing habitat including hedgerow and scrub habitat will be lost as part of the development. Proposed soft landscaping will compensate the loss of including hedgerow planting, tree planting and grassland establishment providing suitable habitat for nesting, foraging and commuting bird species. Further bird species results are provided within the Ecological Assessment (TEP ref: 8776.006).
- 2.5 All UK wild birds are protected while at the nest under the Wildlife and Countryside Act (1981). Effectively, this means that if removal of habitats (which can include buildings, trees, hedges, scrub and grassland) cannot be timed to avoid the bird breeding season (March to August inclusive), then a survey by a suitably experienced ecologist will be required to ensure no nesting birds will be affected. There is generally no process to gain a licence to disturb nesting birds; therefore, if active nests are present works will need to avoid the area of the nest until the young have fledged.

Bats

- 2.6 Desktops records identified several bat species within 1km of the Site with three trees on Site (T1, T3 and T4) as having low potential to support roosting bats. These trees will be retained as part of the development proposals. Proposed soft landscaping will provide suitable commuting and foraging habitat for locally identified bat species. Further details on bat survey results are detailed within the Ecological Assessment (TEP ref: 8776.006).
- 2.7 Bats and their roosts are protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended and the Conservation of Habitats and Species Regulations 2017 (as amended).

3.0 Planning, Development and BNG Rationale

- 3.1 A Full planning application has been submitted to Rochdale Borough Council (Planning ref: 22/01364/FUL) for a residential development of up to 199 dwellings including vehicular access on to Smithy Bridge Road, with internal highways, car parking, footpaths, cycle paths, boundaries, gardens, open space and other associated works.
- 3.2 This HMMP has been written to support the approval of the planning application and to inform the long-term management of the Site.

Biodiversity Net Gain (BNG)

- 3.3 Developers are required to deliver a BNG minimum of 10% to ensure the natural environment is in a measurably better condition than it was pre-development.
- 3.4 The National Planning Policy Framework (NPPF) (December 2023), states that:

"planning policies and decisions should contribute to and enhance the natural and local environment by:

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures".

- 3.5 BNG is measured in biodiversity units (BU). BU are allocated to each existing habitat present on a site based on their condition, distinctiveness, and strategic significance.
- 3.6 The Department for Environment Food & Rural Affairs' (DEFRA) Statutory Biodiversity Metric Calculation Tool is used to:
- Quantify and score the baseline BU's on site for each habitat;
 - Identify and score the BU's to be lost due to the proposed development; and
 - Identify and score the BU's to be retained, enhanced and created.

Baseline Calculation

- 3.7 A baseline biodiversity calculation of the Site was undertaken (TEP, 2022) in line with Phase 1 habitat survey assessment methods (JNCC, 2010) /UK Habitat Classification User Manual (2020) and the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).
- 3.8 The BNG commitment has been recalculated using DEFRA's Statutory Biodiversity Metric (TEP ref: x8776.003).
- 3.9 Table 2 summarises the baseline biodiversity calculation for the Site.
-

Table 2: Biodiversity Baseline Calculation

Primary Habitat Description (Corresponding to UKHAB classification type)	Ecological Baseline Total BU
Other neutral grassland	94.71
Modified grassland	5.28
Lowland acid grassland	0.74
Tall forbs	0.26
Bramble Scrub	0.89
Ponds (non-priority habitat)	0.33
Bare ground	0.10
Reedbeds	1.85
Urban tree	3.98
Line of trees	0.42
Native hedgerow	1.41
Total on-site baseline habitat units	108.14
Total on-site baseline hedgerow units	1.83

- 3.10 The baseline habitat units have been calculated as 108.14 units. To achieve 10% BNG enhancements to existing habitats and creation of new habitats (taking into account the loss of habitats required to facilitate the development) will be needed to provide an additional 10.81 BU's.

Unit Type	Target	Baseline Units	Units Required	Unit Deficit
<i>Habitat units</i>	10.00%	108.14	118.95	52.04
<i>Hedgerow units</i>	10.00%	1.83	2.01	0.00
<i>Watercourse units</i>	10.00%	0.00	0.00	0.00

Figure 1: Showing unit deficit at Smithy Bridge Development

- 3.11 Retained habitats, or proposed as part of the development creates a shortfall of BU, therefore an off site provision has been facilitated to compensate the loss of BU. The units will be utilised from the Dewhirst Road Habitat Bank managed by Taylor Wimpey Strategic Land. A separate HMMP (TEP ref: 9995.01.002) has been produced for the off-site area at Dewhirst Road.

Securing BNG

- 3.12 Whilst the Site itself does not deliver a net gain of BU's, Taylor Wimpey Strategic Land has agreed to address any shortfall in BNG through the provision of off-site units associated with a proposed habitat bank at Dewhirst Road. The off-site provisions and further details are provided within the HMMP for Dewhirst Road (TEP ref: 9995.01.002).
- 3.13 The BU within the Site will be delivered as follows:

- Habitat enhancement: Most existing habitat is in poor condition and INNS species including Himalayan balsam, Japanese knotweed and Variegated yellow archangel have been recorded. It is intended that some of these habitats will be enhanced through targeted management interventions. The target condition for each habitat is defined in Chapter 5.0 alongside specific management activities to achieve this e.g., removal of INNS, overseeding with a specified wildflower mix, removal of noxious weed species, etc.
 - Habitat creation: New landscape features comprising of tree planting, hedgerow planting, native shrub planting, ornamental shrub planting, amenity grassland, wildflower meadow, wet meadow, bulb planting and ponds will be created on site. Each new habitat has a target condition that should be achieved within the lifetime of this HMMP. Some habitats reach their target condition quickly, others take considerably longer.
- 3.14 The BUs committed to as part of the planning process will be managed for at least 30 years to ensure a BNG commitments are met.
- 3.15 This HMMP is a key part of the delivery of the intended BU's. A monitoring and review strategy is included in Chapter 6.0, and BNG auditing schedule is in Appendix C. It requires a competent person to certify that:
- Newly created habitats are on course to meet their target condition;
 - Existing habitats are improving in line with commitments relating to target condition; and
 - Any remedial measures are in place to address shortfalls in target condition.
- 3.16 This HMMP has been prepared to support the submitted full planning application for the Site. The shortfall of BU will be compensated via the off-site Dewhirst Road Habitat Bank.

4.0 Roles and Responsibilities

Defects period

- 4.1 During the defect's liability period, landscape maintenance and replacement of failed planting will be completed by the landscape contractor who has implemented the scheme.

Practical Completion

- 4.2 BNG Good Practice Principles for Development, A Practical Guide³. recommends that a site audit is completed by a competent landscape/ecological professional to review the condition of all habitats which contribute to achieving BNG. The audit should be completed as part of practical completion and prior to the transfer of land to the managing organisation for long-term management.

Long-Term management

- 4.3 Following the defects liability period Taylor Wimpey Strategic Land will facilitate a managing organisation who will be responsible for operational management and maintenance of the habitats and landscape within the Site.
- 4.4 The managing organisation will require the necessary experience and certificates of competence to undertake landscape management operations on site. Where practical, contractors with experience in biodiversity management will be sought. The managing organisation will ensure that management complies with the guidelines set out in this Plan.

Mechanism to Secure Delivery

- 4.5 The appointed managing organisation will have a contractual responsibility to ensure the Site is maintained appropriately to deliver the BU's committed to as part of the development.
- 4.6 The appointed managing organisation will liaise with the Local Planning Authority during the lifetime of this HMMP (30 years), to ensure that any amendments or changes to management and maintenance are agreed to in writing.

Health and Safety

- 4.7 Management of the Site must be in line with all legislation relating to health and safety and the environment. A review of the relevant legislation affecting site management is at Appendix B.

³ [Biodiversity net gain. Good practice principles for development. A practical guide \(cieem.net\)](https://www.cieem.net/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide)

- 4.8 Taylor Wimpey Strategic Land will retain ultimate responsibility for the health and safety of the Site until such time as the open space and landscaping associated is transferred to a managing organisation(s). The Site will be subject to informal inspections and a formal annual inspection. Whenever the Site is visited, any deficiencies in safety provision will be noted and acted upon.
- 4.9 The appointed managing organisation is responsible for complying with the provisions of the Health and Safety at Work Act 1974. All machinery and apparatus brought onto the Site shall be safe and maintained to a standard that will not breach provisions within the Health and Safety at Work Act 1974 or any other statutory obligations.
- 4.10 The managing organisation shall be adequately trained and sufficiently competent to carry out maintenance operations without causing a Health and Safety risk to themselves or other uses of the Site.
- 4.11 All works shall be undertaken in accordance with the relevant codes of practice. Appropriate machinery shall be used inclusive of adequate personal protective equipment to avoid harm to themselves or any other persons.

Biosecurity

- 4.12 Himalayan balsam, Japanese knotweed and Variegated yellow archangel have been identified on site and an appropriate INNS Management Plan (TEP ref: 7504.001) has been produced which details the management, monitoring and biosecurity measures associated with INNS management.
- 4.13 The management company should have a sufficient awareness of new and ongoing biosecurity threats, and the necessary precautions to avoid their spread should be undertaken on sites where they are known or suspected.
- 4.14 New findings of suspected non-indigenous plant pests and diseases should be reported to the Plant Health and Seeds Inspectorate or Forestry Commission - Forest Research Tree Health Diagnostic and Advisory Service or both.

Management Plan Reviews

Informal Review

- 4.15 The appointed managing organisation will undertake an informal review of the maintenance operations annually to ensure that they are meeting the original management objectives and responding to the developing needs of the Site.
- 4.16 Informal reviews will identify the need for additional maintenance operations and inform future management decisions. This can be achieved by:

- Quarterly formal site inspections by the managing organisation to assess the appointed maintenance contractor's quality standards and deliverables in line with this Management Plan;
- An annual site meeting with the managing organisation and stakeholders and the appointed maintenance contractor to assess quality standards and deliverables in line with this HMMP; and
- Ad hoc unannounced inspections by the managing organisation to review quality of maintenance work and any potential Health and Safety issues.

Formal Review

- 4.17 A formal review will be undertaken at the end of year 5 and the establishment period prior to the transition into long term management. Subsequent formal reviews will be completed every 5 years unless there is the requirement to increase the monitoring frequency following the review process.
- 4.18 The formal review will include the key measures achieved, habitat condition assessments in line with the BNG audit program and will refer to any ecological reporting undertaken.
- 4.19 The formal review will also consider if any adaptations to existing landscape and habitat management activities are required to ensure habitats are on course to meet expected target conditions.
- 4.20 It is also recommended a cash-flow forecast as part of the formal review process to ensure sufficient funds are in place to deliver long term management of the Site.

BNG Monitoring

- 4.21 The condition of each habitat will be reviewed during the audit process to ensure they are on track to achieve the anticipated target condition and BU. Ongoing monitoring will ensure adaptive management can be undertaken in good time if required. BNG monitoring requirements are included in Chapter 6 and a monitoring schedule is included in Appendix C.

5.0 Management Intentions and Operations

Management Objectives

5.1 The long term management objectives of this plan are:

- To ensure new planting establishes to create a high-quality landscaping scheme to provide an attractive and desirable setting to the development;
- To maximise the BU's delivered by habitats on Site;
- To ensure the scheme is successfully maintained;
- To safeguard and enhance the biological and integrity of the Site;
- To improve existing habitats and meet BNG commitments;
- To enhance public awareness and appreciation of the habitats and associated flora and fauna of the Site; and
- To comply with legal obligations and constraints.

Landscape Elements

5.2 The Site will comprise the following landscape elements as shown on the Landscape Masterplan (Pegasus Group ref: P21-2628.100_Rev B), and Planting Plans Sheet 1 through to 8 (Pegasus Group ref: P21-2628_EN_102_1_C through to P21-2628_EN_102_8_C). Habitats associated with BNG include:

- Existing Trees (Retained);
- Proposed Trees (Created);
- Proposed Native Hedgerow (Created);
- Proposed Native Shrub Mix (Created and Enhanced);
- Proposed Ornamental Shrub Planting (Created);
- Proposed Amenity Grassland (Created);
- Proposed Bulb Planting (Created);
- Proposed Wildflower Meadow (Created and Enhanced);
- Proposed Wet Meadow (Created); and
- Ponds and Reeds (Created and Enhanced).

Landscape features associated with site wide management include:

- Footpaths;
- Timber Knee Rail and Five-Bar Gate Entrance Feature; and
- Benches.

- 5.3 This chapter details management intentions for each element listed above.
- 5.4 The current and target condition for each habitat associated with BNG are included alongside key issues which require addressing to achieve the target condition. These are indicative only and based on site assessment and landscape drawings and will be re-evaluated based on As Built Drawings at completion of the landscape scheme.

General Management Principals

Site Inspections

- 5.5 Regular inspections will ensure any health and safety hazards are identified and made safe. Site inspections will be undertaken monthly to identify any health and safety hazards and arrange for them to be made safe as far as is practicable.
- 5.6 Results from the monthly site inspections will be compiled and presented within the annual report which will be used in the review of the Plan as detailed in Chapter 6.0.

Tree Risk Management Strategy

- 5.7 This HMMP does not prescribe how tree risk management must be delivered. The responsibility of tree risk lies with the landowner on which trees are located unless it is transferred to another party by agreement.
- 5.8 By virtue of their location and/or size some trees have an inherently greater capacity to cause injury than others. Prior to transfer of public open space land into stewardship of the appointed management company a qualified arboriculturist should carry out an inspection of mature trees within or adjacent to areas of public access to check for damage and disease and to maintain appropriate height clearances for safe pedestrian access.
- 5.9 Following the inspection a tree risk management strategy should be developed by a qualified arboriculturist which will differentiate between frequency of inspection and thresholds of tolerable risk proposed by tree stock.

Site Cleansing

- 5.10 A litter pick of the Site will be carried out monthly (and will include the ponds and wetland areas). All litter will be removed and disposed of in an authorised manner.

Chemical Use and Weeding

- 5.11 It should be recognised that plants considered as weeds can provide suitable habitat for invertebrates.

- 5.12 Ragwort and thistles are important food sources pollinators, provide seeds for birds and habitat for a range of invertebrates. Weeding should be an adaptive process. Monitoring of habitats will identify occurrence of problem species and if any species is becoming over-dominant or problematic appropriate action should then be taken.
- 5.13 Weed control where feasible should be undertaken by hand pulling, however in certain instances herbicide may be the most effective measure to remove unwanted species. Where herbicide application is undertaken this should be in small, controlled areas and should only target the undesirable species. Herbicides should comply with the Control of Pesticides Regulations as amended (1997) and be on the current list of approved products.
- 5.14 Consideration would need to be given to the fact that chemicals can prevent growth of grasses and woody species in landscape schemes.
- 5.15 Where herbicides are to be used within 10m of waterbodies care must be taken to only use formulations of Glyphosate which are approved for use close to water. It is essential that the Environment Agency is notified and an authorisation letter obtained (Form AqHerb01: Agreement to use herbicides in or near water).
- 5.16 Fertiliser is not to be applied to any of the meadow areas in order to conserve the development of a diverse sward.

Existing Trees

Management Intentions

- 5.17 Existing trees will be retained across the Site including five medium category size A trees, one large category A tree, three small category B trees, six small category C trees and one medium category U tree. These trees vary in maturity and structure. Retained trees will provide mature canopy structures for ecological value including nesting and foraging habitat for local wildlife. All existing trees will be retained in their current condition with no management enhancements.
- 5.18 The overall condition of retained trees (referred to as individual tree habitat within the UKHab classification criteria) is calculated by the number of criteria it passes:
- Good condition = Pass 5-6 criteria;
 - Moderate condition = Pass 3-4 criteria; and
 - Poor condition = Pass 2 or fewer criteria.
- 5.19 The current condition of retained trees is detailed within the Statutory Biodiversity Metric Calculator (TEP ref: x8776.003). The table below summarises the condition the current condition of existing trees.

Table 3: BNG Target Condition Criteria for Retained Trees

Individual Trees UKHab Community: Urban Trees	Current Condition: Good, Moderate and Poor	Target Condition: n/a	Time to achieve target condition: n/a
Retained individual trees: G29, T30, G32, T4, T5, T19, T20, T31, T34 and T26	Good – G29 and T30; Moderate – G32; and Poor - T4, T5, T19, T20, T31, T34 and T26	All existing trees will be retained in current condition as detailed under their baseline's conditions.	

Maintenance Operations

Formative Pruning

- 5.20 Pruning to facilitate the development of good form and to remediate developing structural defects will be undertaken at the discretion of a qualified arboriculturist and form part of Tree Risk Management (sections 5.7 to 5.9).
- 5.21 Tree and branch failures will be removed where they present an obstruction or hazard.

Crown Maintenance

- 5.22 Crown lifting above marked, surfaced vehicle and pedestrian routes may be undertaken as necessary. Crown lifting for pedestrian access will be to 2.4m. Crown lifting for vehicle access will be dependent on the size of vehicle up to a maximum of 5.2m.

Proposed Trees

Management Intentions

- 5.23 Tree planting is proposed to provide connectivity to the wider environment, foraging and nesting opportunities and screening for the development. Tree planting will predominately comprise large feathered and extra heavy standards across the Site and will include English oak, rowan and common hazel. Proposed tree planting will support existing trees by providing a variation in age and canopy heights across the Site supporting the aesthetic and amenity value.

- 5.24 Tree planting will be subject to additional maintenance during the establishment period (for the first 5 years) and thereafter managed to encourage healthy development.
- 5.25 The overall condition of proposed trees (referred to as individual tree habitat within the Statutory Biodiversity Metric Calculator (TEP ref: x8776.003 is calculated by the number of criteria it passes:
- Good condition = Pass 5-6 criteria;
 - Moderate condition = Pass 3-4 criteria; and
 - Poor condition = Pass 2 or fewer criteria.
- 5.26 Proposed tree planting is detailed within the Statutory Biodiversity Metric Calculator (TEP ref: x8776.003). The table below summarises the target condition for tree planting.

Table 4: BNG Target Condition Criteria for Proposed Trees in Moderate Condition

Individual Trees UKHab Community: Urban Trees		Target Condition: Moderate		Time to achieve target condition: 27 Years
Condition Assessment Criteria		Proposed	Management Intentions	
A	Tree is a native species (70% in block are native)	Pass	Proposed tree planting is detailed on the planting plans (Pegasus Group ref: P21-2628_EN_102_1_C through to P21-2628_EN_102_8_C) and comprises of a 70% block of native species.	
B	Tree canopy is predominantly continuous	Pass	Long-term monitoring will assess the establishment of planting to ensure trees form a continuous canopy throughout. Adaptive management should be implemented to encourage growth and establishment.	
C	Tree is mature (50% within block is mature)	Fail	n/a	

Individual Trees UKHab Community: Urban Trees		Target Condition: Moderate		Time to achieve target condition: 27 Years
D	Little or no evidence of adverse impact on tree health	Pass	During the 30-year management period of the Site, a monthly site walkover will be conducted whereby any litter or debris located within POS will be collected and removed off-site. Tree risk management and annual monitoring will assess tree health and will inform adaptive management for tree planting.	
E	Natural ecological niches	Fail	n/a	
F	20% of tree canopy area is oversailing	Pass	Monitoring reviews should assess the canopy structure to determine if implemented trees over sail by at least 20%. A reduction of oversailing canopy may need to be reduced if it begins to exceed 20% and impact public health.	

- 5.27 Individual tree habitat will achieve a moderate condition within the Site by targeting four criteria following the above table and achieving an overall score of 4.

Maintenance Operation

Weed Control

- 5.28 To reduce excessive competition, a weed free area will be retained around and will be maintained to a diameter of 0.5m around the base of the trees. Mulch will be replenished annually to a depth of 50mm.
- 5.29 Once trees have established successfully (Years 1-5), the maintenance of a weed free base can be discontinued.

Re-firming

- 5.30 Newly planted trees will require re-firming as required.

Stakes and Ties

- 5.31 Where trees are staked, the stakes and ties will be checked quarterly and it is anticipated that they will need adjusting at least twice annually. Any broken or damaged stakes will be replaced and ties re-fixed at a slightly lower position, allowing for growth since planting.

- 5.32 Remove stakes as necessary, when the tree is suitably established, approximately in Year 5.

Formative Pruning

- 5.33 Young trees will require formative pruning until a height of 3m is attained to maintain a desirable shape as well as to maintain health and vigour. Pruning and thinning of trees will be in accordance with BS 7370-4:1993 Recommendations for Maintenance of Soft Landscape (Other Than Amenity Turf).
- 5.34 Once trees are established crown pruning is desirable and any dead or severely damaged trees will be felled and replaced accordingly.

Replacement of Failed Planting

- 5.35 Failed planting will be removed and replaced with the same species between November and March for deciduous species and between September and April for evergreen species.
- 5.36 If there is a continuous failure of a certain species, this will be reviewed and, if appropriate, an alternate appropriate species will be planted instead.

Watering

- 5.37 Watering may be required during periods of drought in the first couple of years following planting. Water should be applied to the base of the tree and should not be more than 20 litres every other day, as required, between April and September.

Fertiliser

- 5.38 Apply slow release multi-purpose plant food and soil improver in Autumn during the first 5 years after planting.
- 5.39 Any bark or other weed suppressant should be carefully removed/lifted and fertilizer applied direct to the top layer of soil at the manufactures recommended rate.

Post Establishment Maintenance

- 5.40 Following the establishment period review condition assessment criteria and consider what additional management intervention is needed to ensure tree planting achieves the Target Condition.

Proposed Ornamental and Native Hedgerow

Management Intentions

- 5.41 Native hedgerows are proposed to replace the loss of species-poor and defunct hedgerow. Native hedgerows will include hawthorn and field maple which will provide additional screening for residential units and improve on the site's baseline hedgerow provision.
- 5.42 Ornamental hedgerow will support the amenity and aesthetic value of the Site and will be implemented as a single species hedgerow comprising of *Prunus laurocerasus* 'Otto Luyken'.
- 5.43 Hedgerows are scored against 10 criteria (A1 to E2) with these separated into 5 functional groups. Criteria E1 and E2 is only applicable to hedgerows with Trees. For hedgerow with trees 5 criteria are required:

Hedgerow without Trees

- 5.44 Hedgerow without trees are scored against 8 criteria (A1 to D2) with these separated into 4 functional groups (A to D).
- To achieve poor condition the habitat must not fail more than 4 criteria or fails both criteria in more than one functional group (e.g. fails A1, A2 & B1, B2).
 - To achieve moderate condition the total habitat must not fail 4 criteria in total and does not fail both criteria in more than one functional group (e.g. fails A1, A2, B1 & C2).
 - To achieve good condition the total habitat must not fail more than 2 criteria in total and no more than 1 failed criteria in a functional group.
- 5.45 The target condition of hedgerow planting is detailed within the Statutory Biodiversity Metric Calculation Tool (TEP ref: x8776.003). The table below summarises the target condition and timeframes to achieve them. Hedgerows for the purpose of assigning condition and management prescriptions within this HMMP have been included as H1 – Native Hedgerow with a target condition of moderate and H2 – Ornamental hedgerow with a target condition of poor.

Table 5: BNG Target Condition Criteria for proposed Hedgerows in Moderate Condition

Hedgerows UKHab Community: Species-rich native hedgerow		Target Condition: Moderate		Time to achieve target condition: 5 years	
Condition Assessment Criteria		Proposed	Management Intentions - H1	Management Intentions - H2	
A1	Height (>1.5 average along length)	H1	Maintain hedgerows at a height of >1.5m average along its/their length	n/a	
A2	Width (>1.5 average along length)	H1	Maintain a closed canopy along minimum of >90% of the hedgerow length.	n/a	
B1	Gap (Between ground and base of canopy <0.5m for >90% of length)	H1	n/a	n/a	
B2	Gaps make up <10% of total length; and no canopy gaps >5m	H1	Review implemented hedgerow planting to ensure gaps are filled and adaptive management is implemented to encourage growth.	n/a	
C1	Undisturbed ground and perennial vegetation	H1	Provide buffer areas along hedgerows of undisturbed ground with perennial vegetation.	n/a	
C2	Nutrient- enriched perennial vegetation	H1	n/a	n/a	

Hedgerows UKHab Community: Species-rich native hedgerow		Target Condition: Moderate		Time to achieve target condition: 5 years
D1	Invasive and neophyte species	H1	INNS will be removed and managed accordingly. Management will focus on removing all INNS and monitoring for future infestations.	Noted INNS will be removed and managed accordingly. Management will focus on removing all INNS and monitoring for future infestations.
D2	Current damage (>90% free of damage)	H1	n/a	n/a

- 5.46 Native Hedgerow (habitat will achieve a moderate condition within the Site by targeting 5 criteria out of an overall score of 8.

Maintenance Operations

Weed Control

- 5.47 To reduce excessive competition, a weed free area will be retained around the base of ornamental hedgerow plants to a diameter of 0.5m around the base. Mulch will be replenished annually to a depth of 50mm.

Guards

- 5.48 Where planting is protected by protective spiral guards these will be checked quarterly. Any broken or damaged spiral guards will be replaced.
- 5.49 Remove guards as necessary, when the planting is suitably established, approximately in Year 5.

Re-firming

- 5.50 Newly planted hedgerow plants will require re-firming as required.

Replacement of Failed Planting

- 5.51 Failed planting will be removed and replaced with the same species between November and March for deciduous species and between September and April for evergreen species.

- 5.52 If there is a continuous failure of a certain species, this will be reviewed and, if appropriate, an alternate appropriate species will be planted instead.

Hedgerow Cutting

Species Rich Native Hedgerow Cutting

- 5.53 Hedgerows will be cut in an 'A' shape to maintain a wide base for bird nesting and roosting. Hedgerow cutting will be cut on a rotational basis with one third cut every three years to retain foraging and sheltering opportunities. If possible, a 1m grass strip of species rich tussock grass will be left uncut next to the hedgerow to increase habitat potential and increasing connectivity. The grass strip is to be cut simultaneously with the hedge cutting regime. Arisings will be collected and removed from the Site.
- 5.54 Any hedgerow management will be carried out outside of the bird nesting season (between March and August inclusive). Should any works be required within the bird nesting season an assessment will be undertaken by a suitably qualified ecologist before any works commence.

INNS Management

- 5.55 INNS will be managed and monitored as outlined in the INNS Management Plan (TEP ref: 7504.001).

Proposed Native Scrub (Created and Enhanced)

Management Intentions

- 5.56 Native Scrub provides suitable terrestrial habitat for wildlife including terrestrial mammals, birds and bat. Additionally shrub provides foraging habitat, green links and a naturalistic appearance for the Site. Native species will be implemented within the shrub and scrub planting including common hazel, common holly and common dogwood.
- 5.57 An existing area of bramble scrub habitat is situated to the south of the Site, adjacent to the existing pond. This area will be enhanced alongside the proposed native scrub planting and will provide mature foliage and vegetation for the Site.
- 5.58 The overall condition of the scrub habitat is calculated by the number of criteria it passes:
- Good condition = Pass 5 criteria;
 - Moderate condition = Pass 3-4 criteria; and
 - Poor condition = Pass 2 or fewer criteria.

5.59 The current condition of existing scrub, and proposed enhancement is detailed within the Statutory Biodiversity Metric Calculation Tool (TEP ref: x8776.003). The table below summarises the condition change and timeframe to achieve the target condition.

Table 6: BNG Baseline Assessment for Bramble Scrub

UKHab Summary	Baseline Condition	Proposed Habitat Intervention
Bramble scrub	Condition Assessment n/a	Enhanced to Mixed scrub habitat in moderate condition

Table 7: BNG Target Condition Criteria for Native Scrub Creation and Enhancement

Scrub UKHab Community: Mixed scrub		Target Condition: Moderate BU: 0.65	Time to achieve target condition: 5 years
Condition Assessment Criteria		Proposed	Management Intentions
A	Scrub is good representation of habitat type	Pass	Maintain appropriate species diversity so that mixed scrub is representative of UKHab description (No one species comprising 75% of the cover);
B	Seedlings, saplings, young shrubs and mature shrubs are all present	Pass	Maintain and develop a good age range across the scrub.
C	Absence of INNS	Pass	Routine monitoring will ensure any presence of INNS is identified early and appropriate management undertaken.
D	The scrub has a well-developed edge with scattered scrub	Fail	n/a
E	There are clearings, glades and rides	Fail	n/a

5.60 Native shrub planting will achieve a moderate condition within the Site by targeting three criteria out of a possible 5.

Maintenance Operations

Assessment of Scrub Encroachment

- 5.61 Scrub planting provides an array of habitat opportunities and as such it may be appropriate to allow weed species to develop within the scrub. Weeds provide a vital source of food for pollinators and intern foraging opportunities for birds and mammals.
- 5.62 An annual visual inspection in September will determine whether weeds are becoming too dominant or scrub is encroaching onto neighbouring grassland.

Reduction of Scrub

- 5.63 Where reduction of coverage is required, scrub growth will be controlled along its advancing face using brush cutters, arisings will be chipped and used sustainably on site for mulching. If required dominant weed species will be hand pulled.
- 5.64 Scrub cutting will be scheduled at a time when there is no risk of disturbing breeding or nesting birds or mammals and to enable berry-bearing scrub species to fruit for the benefit of foraging wildlife (e.g. between December and early February).
- 5.65 In the long term, consideration will be given to active management, e.g. cyclical cutting of 5% annually to create greater structural diversity.

INNS Management

- 5.66 INNS will be managed and monitored as outlined in the INNS Management Plan (TEP ref: 7504.001).

Proposed Ornamental Shrub Planting

Management Intentions

- 5.67 Management of ornamental planting will focus on maintaining a neat and tidy appearance, which will also encourage plant growth through appropriate horticultural techniques. Ornamental species will provide seasonal interest throughout the year supporting the site's amenity and aesthetic value. Ornamental planting will comprise of various species including Japanese laurel, Blueblossom and Hebe 'Red Edge'.
- 5.68 Ornamental shrub planting within the POS will provide BU, but does not require a condition assessment. Shrub planting will contribute 0.41 habitat units across the 30-year management period.

Maintenance Operations

Mulching

- 5.69 A mulch composted wood chip or bark mulch will be maintained around the base of all young plants to suppress weed growth and will be maintained to a depth of 50mm.

Pruning

- 5.70 Pruning will be undertaken to clear deadwood, promote healthy growth and produce desired growth of flowers, fruit, foliage or winter colour as appropriate. Pruning will also include for clearing out crossing and damaged branches.
- 5.71 Branches to be removed should be taken back to an outward facing node and cut cleanly approximately one inch above on a diagonal angle. Pruning will be undertaken carefully by manual means with appropriate hand tools such as secateurs or loppers; which should be regularly sharpened and cleaned after use to prevent the potential spread of disease.
- 5.72 Where pruning is limited to the extent of the current year's growth, work can be carried out at any time of year. If the pruning will be extensive then the works should be undertaken outside of bird nesting season.

Weed Control

- 5.73 Weed control will be undertake annually between April and September and where feasible should be undertaken by hand pulling and should remove all noxious weeds such as docks, thistles, nettles, ragwort and willowherb.
- 5.74 In certain instances, herbicide maybe the most effective measure to remove unwanted species. Where herbicide application is needed this should be in small, controlled areas and should only target the undesirable species. Shields should be used as appropriate to prevent drift into sensitive areas. Herbicides should comply with the Control of Pesticides Regulations as amended (1997) and be on the current list of approved products.

Replacement of Failed Planting

- 5.75 Failed planting will be removed and replaced with the same species in the first five years following implementation. If there is a continuous failure of a certain species, this will be reviewed and, if appropriate, an alternate appropriate species will be planted instead.

Proposed Amenity Grassland

Management Intentions

- 5.76 Open areas of grassland will be managed as required to maintain a tidy appearance as well as facilitating safe public usage. Amenity grassland will provide POS for use recreationally, supporting the site's amenity value and also providing foraging and commuting habitat for notable wildlife species including bats and birds. A large area of modified grassland is present within the southern landscape buffer which will be maintained for amenity usage.
- 5.77 The overall target condition of the proposed amenity grassland (referred to as modified grassland in the Statutory Biodiversity Metric Calculator (TEP ref: x8776.003) is calculated by the number of criteria it passes:
- Good condition = Pass 6-7 criteria, including Condition Assessment Criteria A which is essential;
 - Moderate condition = Pass 4-5 criteria, including Condition Assessment Criteria A; and
 - Poor condition = Pass 3 or fewer criteria, including Condition Assessment Criteria A or passes 4-6 criteria, excluding Condition Assessment Criteria A
- 5.78 The table below summarises the target condition and timeframe to achieve the target condition.

Table 8: BNG Target Condition Criteria for Amenity Grass (modified grassland) in Moderate Condition

Grassland Low UKHab Community: Modified grassland		Target Condition: Moderate BU: 4.87	Time to achieve target condition: 4 years
Condition Assessment Criteria		Proposed	Management Intentions
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description	Pass	Amenity grassland will be reviewed during the monitoring period to ensure it represents the characteristic of modified grassland habitat as defined by UKHab.

Grassland Low UKHab Community: Modified grassland		Target Condition: Moderate BU: 4.87	Time to achieve target condition: 4 years
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Fail	n/a
C	Some scattered scrub (Including bramble) may be present, but scrub accounts for less than 20% of total grassland area.	Pass	Routine cutting will prevent scrub encroachment
D	Physical damage is evident in less than 5% of total grassland area.	Fail	n/a
E	Cover of bare ground is between 1% and 10%, including localised areas.	Fail	n/a
F	Cover of bracken is less than 20%	Pass	No bracken on-site, where identified during long-term monitoring bracken will be managed accordingly.
G	Absence of Invasive Non-native Species	Pass	Implement INNS management plan accordingly and assess INNS presence across the Site annually.

5.79 Amenity grassland habitat will achieve a moderate condition within the Site by targeting 5 criteria out of 7.

Maintenance Operations

Grass Cutting

5.80 The grass will be kept as medium 'walk on' length of 35-50 mm. Arisings will be removed and disposed of appropriately. This will also be conducted across all mown footpath areas.

Cultivating and Re-seeding

- 5.81 Any bare ground will be cultivated and re-seeded as required to successfully establish sward. This will be carried out twice annually between August and October.

Weed Control

- 5.82 Weed control will be undertaken annually between April and September and where feasible should be undertaken by hand pulling and should remove all noxious weeds such as docks, thistles, nettles, ragwort and willowherb.
- 5.83 In certain instances, herbicide maybe the most effective measure to remove unwanted species. Where herbicide application is needed this should be in small, controlled areas and should only target the undesirable species. Shields should be used as appropriate to prevent drift into sensitive areas. Herbicides should comply with the Control of Pesticides Regulations as amended (1997) and be on the current list of approved products.

Bulb Planting

Management Intentions

- 5.84 Proposed bulb planting will add visual interest and provide an early food source for pollinators. Maintenance Operations

Grass Cutting

- 5.85 Approximately 6-8 weeks after flowering, the bulb planted area will be cut with the surrounding grass.

Proposed Wildflower Meadow (Created and Enhanced)

Management Intentions

- 5.86 Wildflower meadow is proposed to introduce ecological diversity and valuable wildlife habitat. The timing and frequency of grass cuts will be determined by management procedures required to maximise conservation benefits of desirable flora species and maintaining grassland habitats. Some areas of wildflower meadow will be created via the development, with additional areas enhanced from existing grassland areas to wildflower meadow habitat.
- 5.87 Areas of existing grassland will be enhanced on site this includes:
- An area of modified grassland at Target Note (TN)13 and TN12 - summarised in table 9.
 - Other neutral grassland (TN1 Part of) summarised in table 10;

- Other neutral grassland (TN1 Partly, TN2, TN14, TN15, TN7 and TN9) summarised in table 11; and
 - Other lowland acid grassland (TN17) summarised in table 12.
- 5.88 Grassland parcels detailed above will be enhanced to Other Neutral Grassland (Wildflower meadow) in good condition.
- 5.89 The overall target condition of the proposed wildflower grassland habitat (referred to as other neutral grassland in the Statutory Biodiversity Metric Calculator (TEP ref: x8776.003) is calculated by the number of criteria it passes:
- Good condition = Pass 5 or 6 criteria including essential A and F;
 - Moderate condition = Pass 3-4 criteria (A is essential for moderate condition); and
 - Poor condition = Passes 2 or fewer criteria.
- 5.90 The tables below summarise the condition change and timeframe to achieve the target condition.

Table 9: BNG Baseline Assessment for Modified Grassland (TN13 and TN12)

Grassland UKHab Summary	Baseline Condition	Proposed Habitat Intervention
Modified Grassland	Poor	Enhanced to Other Neutral Grassland in Good condition - 15 years

Table 10: BNG Baseline Assessment for Other Neutral Grassland (TN1 Partly)

Grassland UKHab Summary	Baseline Condition	Proposed Habitat Intervention
Other neutral Grassland	Poor	Enhanced to Other Neutral Grassland in Good condition - 15 years

Table 11: BNG Baseline Assessment for Other Neutral Grassland (TN1 Partly, TN2, TN14, TN15, TN7 and TN9)

Grassland UKHab Summary	Baseline Condition	Proposed Habitat Intervention
Other neutral Grassland	Moderate	Enhanced to Other Neutral Grassland in Good condition in 10 years

Table 12: BNG Baseline Assessment for Other Lowland Acid Grassland (TN17)

Grassland UKHab Summary	Baseline Condition	Proposed Habitat Intervention
Other lowland Acid Grassland	Moderate	Enhanced to Other Neutral Grassland in Good condition in 10 years

Table 13: BNG Target Condition Criteria for Created and Enhanced Wildflower Grassland (other neutral grassland) in Good Condition

Grassland Med High and V.High UKHab Community: Other neutral grassland		Target Condition: Good	Time to achieve target condition: Created wildflower meadow targeting good condition and tables Tables 9 and 10 – 15 years 11 and 12 areas -10 Years
Condition Assessment Criteria		Proposed	Management Intentions
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description	Pass	Wildflower areas will be representative of the UKHab definition and long-term monitoring will review the establishment of floral species. Continuous failure will require the seeding mix to be reviewed and amended to ensure establishment.
B	Sward height is varied (at least 20% of the sward is less than 7 cm and 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Fail	n/a
C	Cover of bare ground is between 1% and 5%, including localised areas.	Pass	Where bare ground is exceeds 5%, cultivating and overseeding will be required to establish grass areas. Species mix will be reviewed if the seed continues to fail.

Grassland Med High and V.High UKHab Community: Other neutral grassland		Target Condition: Good	Time to achieve target condition: Created wildflower meadow targeting good condition and tables Tables 9 and 10 – 15 years 11 and 12 areas -10 Years
D	Cover of bracken is less than 20% and scrub is less than 5%	Pass	Bracken is not established within the grassland areas but is located with the woodland groups. Where bracken is identified within grassland areas this will be removed by bashing or strimming.
E	Combined cover of species is less than 20% and cover of scrub is less than 5%	Pass	The species mix will be reviewed following the establishment of wildflower meadow to ensure no one species forms more than 20% of coverage with scrub reduced to prevent encroachment.
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type.	Pass	Implemented species mix will be reviewed following the establishment of wildflower meadow, where seeding has failed the species mix will be reviewed and re-implemented for establishment. Adaptive management will be implemented to establish a diverse meadow grassland.

Table 14: BNG Target Condition Criteria for Created Wildflower Grassland (other neutral grassland) in Moderate Condition – area previously identified as tall forbs adjacent to the river to the east of the site.

Grassland Med High and V.High UKHab Community: Other neutral grassland	Target Condition: Moderate	Time to achieve target condition: Created wildflower meadow targeting moderate condition - 10 years
Condition Assessment Criteria	Proposed	Management Intentions

Grassland Med High and V.High UKHab Community: Other neutral grassland		Target Condition: Moderate	Time to achieve target condition: Created wildflower meadow targeting moderate condition - 10 years
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description	Pass	Implemented wildflower mix will be representative of the UKHab definition and long-term monitoring will review the establishment of floral species. Continuous failure will require the seeding mix to be reviewed and amended to ensure establishment.
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Fail	n/a
C	Cover of bare ground is between 1% and 5%, including localised areas.	Pass	Where bare ground is more than the defined 1-5%, cultivating and overseeding will be required to establish grass areas. Species mix will be reviewed if the seed continues to fail.
D	Cover of bracken is less than 20% and scrub is less than 5%	Pass	Bracken encroachment will be monitored and where bracken is identified within grassland areas it will be removed by bashing or strimming.
E	Combined cover of species is less than 20% and cover of scrub is less than 5%	Pass	Implemented species mix will be reviewed following the establishment of wildflower meadow to ensure no one species forms more than 20% of coverage with scrub reduced to prevent encroachment.

Grassland Med High and V.High UKHab Community: Other neutral grassland		Target Condition: Moderate	Time to achieve target condition: Created wildflower meadow targeting moderate condition - 10 years
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type.	Fail	n/a

5.91 Wildflower meadow grassland targeting good condition within the Site will achieve 5 criteria achieving an overall score of 5 out of 6 criteria.

5.92 Wildflower meadow grassland targeting moderate condition within the Site will achieve 4 criteria achieving an overall score of 4 out of 6 criteria.

Capital Works to Grassland areas

5.93 Capital works will be required to assist in developing the floristic diversity of the grassland areas and to increase growth of herb species and wildflower diversity.

5.94 The grassland areas will be topped in spring to a height of 7cm with all arisings removed.

5.95 During the summer weed control will be undertaken across all habitat parcels and will remove all unwanted perennial weeds including docks and other injurious weeds such as ragwort *Senecio jacobaea*, where possible weeds will be dug out and removed from site.

5.96 A hay cut will be undertaken in late summer to a height of approx. 150mm with arisings collected and removed from site this will reduce nitrogen re-entering the soil from the cut sward. Following the hay cut if weather conditions are favourable for grass, it may be necessary to complete another cut in September/October, flailing the vegetation as low as possible with arisings collected and removed. Following the cut and collect the grassland areas will be harrowed and scarified to break up the thatch and create areas of bare soil, providing the opportunity for herbs and forbs to develop within the perennial grasses.

Overseeding

5.97 After harrowing in autumn, the area will be overseeded with a wildflower mix immediately. The wildflower mix will consist of 100% wildflower and will include yellow rattle at a minimum of 5% of the total percentage.

Maintenance Operations

Grass Cutting

- 5.98 The wildflower sward will be cut to a height of no less than 150mm twice between April and September in the second year. Arisings will be collected and removed off-site after 24 hours.
- 5.99 From year three onwards, the grass will be cut annually once seed heads have dropped in late September.
- 5.100 Arisings will be left in situ for 24 hours to allow flower seed to disperse. The arisings will then be raked and removed from the Site to prevent nutrient enrichment and to retain the desired species composition.

Cultivating and Re-seeding

- 5.101 Any bare ground will be cultivated and re-seeded as required to successfully establish the sward. This will be carried out twice annually between August and October.

Weed Control

- 5.102 Weed control will be undertaken annually between April and September and where feasible should be undertaken by hand pulling and should remove all noxious weeds such as docks, thistles, nettles, ragwort and willowherb.
- 5.103 In certain instances, herbicide maybe the most effective measure to remove unwanted species. Where herbicide application is needed this should be in small, controlled areas and should only target the undesirable species. Shields should be used as appropriate to prevent drift into sensitive areas. Herbicides should comply with the Control of Pesticides Regulations as amended (1997) and be on the current list of approved products.

Fertiliser Use

- 5.104 Fertiliser is not to be applied to any of the wildflower areas to conserve the development of a diverse sward.

Proposed Wet Meadow (Created)

Management Intention

- 5.105 The intention is to maintain and promote structural and botanical diversity of wetland grassland and prevent the grassland from scrubbing over. Wetland habitat will provide a buffer to the River Roch to the south of the Site. Wetland meadow will provide suitable habitat for wildlife across the Site and will provide floral diversity during the growing season.

5.106 The overall target condition of the wet meadow habitat (referred to as Other neutral grassland in the Statutory Biodiversity Metric Calculator (TEP ref: x8776.003) is calculated by the number of criteria it passes:

- Good condition = Pass 5 criteria including essential A and F;
- Moderate condition = Pass 3-4 criteria including essential A; and
- Poor condition = Passes 2 or fewer criteria.

5.107 The table below summarises the condition change and timeframe to achieve the target condition.

Table 15: BNG Target Condition Criteria for Wet Grassland in Good Condition

Grassland Med High and V.High UKHab Community: Other neutral grassland		Target Condition: Good		Time to achieve target condition: 10 years
Condition Assessment Criteria		Proposed	Management Intentions	
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description	Pass	Implemented grassland will be representative of the UKHab definition and long-term monitoring will review the establishment of floral species. Continuous failure will require the seeding mix to be reviewed and amended to ensure establishment.	
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Fail	n/a	
C	Cover of bare ground is between 1% and 5%, including localised areas.	Pass	Where bare ground exceeds 5%, cultivating and overseeding will be required to establish grass areas. Species mix will be reviewed if the seed continues to fail.	

Grassland Med High and V.High UKHab Community: Other neutral grassland		Target Condition: Good		Time to achieve target condition: 10 years
D	Cover of bracken is less than 20% and scrub is less than 5%	Pass	Bracken is not established within the grassland areas but is located with the woodland groups. Where bracken is identified within grassland areas this will be removed by bashing or strimming.	
E	Combined cover of species is less than 20% and cover of scrub is less than 5%	Pass	Implemented species mix will be reviewed following the establishment of wildflower meadow to ensure no-one species forms more than 20% of coverage with scrub reduced to prevent encroachment.	
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type.	Pass	Implemented species mix will be reviewed following the establishment of wildflower meadow, where seeding has failed the species mix will be reviewed and re-implemented for establishment. Adaptive management will be implemented to establish a diverse meadow grassland.	

5.108 Wet grassland habitat will achieve a good condition within the Site will achieve 5 criteria achieving an overall score of 5 out of 6 criteria.

Maintenance Operations

Grass Cutting

- 5.109 The grass will be cut to a height of approximately 150mm annually in September.
- 5.110 Arisings will be lightly raked off and removed to prevent nutrient enrichment and retain the desired species composition.
- 5.111 Grass cutting will be avoided between mid-March and August (inclusive) to prevent risk of disturbance and destruction to nesting birds.
- 5.112 Great care will be taken to avoid disturbance to amphibians or damaging refugia hidden in the grass.

Cultivating and Re-seeding

- 5.113 Any bare ground will be cultivated and re-seeded as required to successfully establish sward. This will be carried out twice annually between August and October.

Weed Control

- 5.114 Weed control will be undertaken annually between April and September and where feasible should be undertaken by hand pulling and should remove all noxious weeds such as docks, thistles, nettles, ragwort and willowherb.
- 5.115 In certain instances, herbicide maybe the most effective measure to remove unwanted species. Where herbicide application is needed this should be in small, controlled areas and should only target the undesirable species. Shields should be used as appropriate to prevent drift into sensitive areas. Herbicides should comply with the Control of Pesticides Regulations as amended (1997) and be on the current list of approved products.

Fertiliser Use

- 5.116 Fertiliser is not to be applied to the grassland to conserve the development of a diverse sward.

Proposed Ponds and Reedbed (Created and Enhanced)

Management Intention

- 5.117 Throughout the waterbodies the maintenance of open water and provision of dense stands of emergent, tall herbs and wet grasslands are important to support local wildlife species. Management should focus primarily on maximising the nature conservation potential of component features.
- 5.118 Ponds should be managed to retain at least 35-60% of the surface area as open water through the cutting back of marginal and emergent vegetation. Waterbodies will also be managed to minimise health and safety issues. Vegetation will be regularly managed to ensure the top and bottom of the bank and the water level of the waterbody is clearly visible.
- 5.119 The overall target condition of the proposed pond habitat (referred to as ponds within the Statutory Biodiversity Metric Calculator (TEP ref: x8776.003) is calculated by the number of criteria it passes:
- Good condition = Pass 9 criteria;
 - Moderate condition = Pass 6-8 criteria; and
 - Poor condition = Pass 5 or fewer criteria.

- 5.120 The table below summarises the condition change and timeframe to achieve the target condition. Two ponds are proposed, one pond will be retained in the east of the Site and will be surrounded by reed bed habitat. A new pond is proposed within the SUDS basin which will be planted with marginal and aquatic plants.

Table 16: BNG Baseline Assessment for Existing Ponds

Lakes-Ponds UKHab Summary	Baseline Condition	Proposed Habitat Intervention
Ponds (non-priority habitat)	Poor	Enhanced to Moderate condition in 4 years (non-priority habitat)

Table 17: BNG Target Condition Criteria for Created (P1) and Enhanced Ponds P2) - (Non-priority habitat) in Moderate condition

Ponds UKHab Community: Ponds (Non-priority habitat)		Target Condition: Moderate	Time to achieve target condition: 4 years
Condition Assessment Criteria		Proposed	Management Intentions
A	The pond is of good water quality, with clear water indicating no obvious sign of pollution.	P1 & P2 - Pass	Water quality will be reviewed during the long-term monitoring and will review signs of debris, or signs of pollution. Maintenance will be undertaken to reduce debris and pollution as required.
B	There is semi-natural habitat completely surrounding the pond, for at least 10m from the pond edge of its entire perimeter.	P1 & P2 - Pass	Wetland vegetation planting and surrounding wet meadow and reedbeds will be established. Long-term monitoring will review reedbed structure and thinning will be undertaken if reeds are becoming too dominant within the marginal planting areas.
C	Less than 10% of the water surface is covered with duckweed or algae.	P1 & P2 - Pass	Management will review extent of surface cover aquatic vegetation and remove as required.

Ponds UKHab Community: Ponds (Non-priority habitat)		Target Condition: Moderate	Time to achieve target condition: 4 years
D	The pond is not artificially connected to other waterbodies	P1 – Fail P2 - Pass	As per the Landscape Masterplan the pond features and structure will not be connected to other waterbodies. The next nearest waterbody is the River Roch to the south of the Site.
E	Pond water levels can fluctuate naturally throughout the year. No signs of artificial dam, pumps or pipework.	P1 – Fail P2 - Pass	Ponds will be allowed to naturally fluctuate depending on seasonal conditions.
F	There is an absence of INNS plants and animal species.	P1 & P2 - Pass	Ongoing monitoring will identify if INNS become present within the ponds and an appropriate management plan will be implemented to eradicate the identified INNS.
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage.	P1 & P2 - Pass	Pond will not be stocked with any artificial fish stock, any fish stock that established during the long-term monitoring of the Site will be removed accordingly.
H	Emergent, submerged or floating plants cover at least 50% of the pond area which is less than 3m.	P1 & P2 – Fail	n/a
I	The pond surface is no more than 50% shaded by adjacent trees and scrub.	P1 & P2 - Pass	Surrounding vegetation including scrub and individual trees provide shade to the pond and will be reviewed to ensure no more than 50% overshadow the pond surface area. Canopy management will be required.

Table 18: BNG Baseline Assessment for Existing Reeds

Wetland - Reedbeds UKHab Summary	Baseline Condition	Proposed Habitat Intervention
Reedbeds	Poor	Enhanced to reedbeds in Moderate condition in 7 years

Table 19: BNG Target Condition Criteria for Created and Enhanced Reedbed in Moderate condition

Wetlands UKHab Community: Reedbeds		Target Condition: Moderate	Time to achieve target condition: 7 years
Condition Assessment Criteria		Proposed	Management Intentions
A	The water table is at, or near the surface throughout the year - this could be open water or saturation of soil at the surface. There is no artificial drainage, unless specifically to maintain water levels as specified.	Pass	No artificial drainage within the ponds and reedbed areas. Annual monitoring will review the water tables associated with the ponds and reedbeds to ensure they are holding water throughout the year.
B	The parcel is a good representation of the wetland habitat type it has been identified as, based on its UKHab description.	Pass	Reedbeds and surrounding wet meadow will provide suitable representation of wetland habitat and will provide ecological value to the Site. The enhancement of reedbeds will be reviewed annually to ensure they are managed accordingly, and annual growth is occurring.
C	The water supplies (groundwater, surface water and or rainwater) to the wetland are of good water quality, with clear water.	Pass	Water quality of the pond and reedbed area will be reviewed annually to ensure water quality is good with pollution monitored and any debris removed from the reedbed and pond areas.
D	Cover of scrub and scattered trees are less than 10%.	Pass	Surrounding scrub and trees areas will be reviewed and cut where required to prevent encroachment of no more than 10% coverage.

Wetlands UKHab Community: Reedbeds		Target Condition: Moderate	Time to achieve target condition: 7 years
E	Cover of bare ground is less than 5%.	Pass	Annual reedbed growth will be reviewed to ensure ground coverage across the reedbed is developing accordingly, planting may be required if gaps occur more than 5%.
F	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA ³) and species indicative of sub-optimal condition.	Pass	Management and monitoring will identify if INNS become present within the ponds and an appropriate management plan will be implemented to eradicate the identified INNS.
I	The reedbed has a diverse structure with between 60 and 80% reeds <i>Phragmites australis</i> . Other areas may include open water (at least 10%), species-rich fen and or wet woodland.	Fail	n/a

5.121 Pond habitat will achieve a moderate condition within the Site by targeting 7 criteria and achieving an overall score of 6 out of 9 criteria.

5.122 Reedbed habitat will achieve a moderate condition within the Site by targeting 6 criteria and achieving an overall score of 6 out of 9 criteria.

Maintenance Operations (Ponds and Reed Beds)

Inspections and Remedial Measures

5.123 A visual inspection will be carried out as part of the monthly site inspection. This will include an inspection of the water quality for any signs of pollutants (e.g. scum, excessive algal growth and discolouration), extent of vegetation zones and open water, presence of invasive species (including fish) and presence of rubbish and debris.

5.124 If pollutants are detected, options for remedial action will be discussed with the landowner and appropriate authorities.

5.125 In the event invasive or harmful species are identified, a treatment plan will be drawn up; spot treatment or pulling by hand will be the preferred method. Any other remedial actions will be implemented accordingly.

- 5.126 It should be noted that the Environment Agency no longer issue consents for Rotenone application for this type of activity.

Removal of Debris and Rubbish

- 5.127 Any debris and rubbish identified during the monthly visual inspections will be removed.

Aquatic and Emergent Vegetation Removal

- 5.128 Maintenance of open water and provision of dense stands of emergent vegetation, tall herbs and wet grasslands are important for maximising biodiversity.
- 5.129 Regular and gentle removal of aquatic and emergent vegetation to maintain 35% to 60% open water. Cutting or pulling by hand is the preferred method to minimise disturbance and will be carried out annually between late October and mid-November. The works will be carried out on a three-year rotation (i.e. a 1/3 each year) or as required according to pond condition. Reedbed management is detailed below.
- 5.130 Vegetation will be removed according to a wedge rotation and laid on terram (or similar matting) at the pond's edge for a minimum 24hrs. The vegetation and terram will then be removed from the Site.
- 5.131 Vegetation removal will, wherever possible, avoid the amphibian breeding and bird nesting season.

Marginal Vegetation Management

- 5.132 The marginal vegetation around the pond will be cut to no less than 150mm on a rotation basis. The inner fringe of vegetation immediately by the water's edge will be retained throughout the year to serve as a buffer and to maintain food and cover sources.
- 5.133 Arisings will be removed and disposed of appropriately.

Scrub Control

- 5.134 Encroachment of scrub, grassland and other vegetation will be monitored and reduced so that no more than 25% of the banks of the ponds will be covered by scrub.
- 5.135 Scrub to be cut back on a rotational basis between October and mid-November. All arisings will be chipped and used sustainably on the Site. Larger brush will be utilised to create deadwood features within woodland.

Fertiliser and Herbicide Use

- 5.136 No fertilisers, pesticides or herbicides will be used on or around the ponds.

De-silting

- 5.137 Should the water levels within the deepest area of the pond fall below half a metre in two consecutive years, de-silting will be required. De-silting will be carried out approximately every five years depending on the condition of the pond and will be undertaken between November and January.
- 5.138 Desilting will be undertaken by a long-armed excavator and entry and access to the pond will be limited to one point or section of bank. Ground protection will be utilised to reduce damage to marginal habitats.
- 5.139 The top third of a metre of silt will be temporarily placed around the margins of the excavated pond, onto protective membrane, to allow amphibians and invertebrates to return to the pond and to be used on completion of works to repopulate the invertebrate assemblage within the ponds.
- 5.140 All other materials generated will be placed on protective membrane around the pond for a minimum 48hrs to allow amphibians and invertebrates to return to the pond. After a period of 48hrs, the silt and the protective membrane will be removed from site.

Reedbed Maintenance

- 5.141 Dominant species (particularly reed, bulrush and reed sweet grass) will be cut back to prevent them from encroaching on areas of open water.
- 5.142 Vegetation will be strimmed back (to 150mm) annually between November and January. Approximately 25-30% of wetland vegetation will be removed to retain between 60% and 30% of open water each year with arisings removed from the Site.
- 5.143 It is important that cutting does not take place over the entire reedbed area, and should therefore be cut in alternate sections on annual rotation leaving uncut areas as refuge for wildlife.

Landscape Features Associated with Site Wide Management

- 5.144 The below features will be implemented or retained as part of the proposed development. These features are not included within the BNG metric calculations and do not contribute to the Site's overall BNG. However, these features do contribute to the aesthetic and amenity value of the Site and should undergo management operations and monitoring as detailed in the HMMP.

Footpaths

Management Intention

- 5.145 Footpaths will be safe and useable. Maintenance will focus on clearing any obstacles to the use of footpaths and ensure they are free of slip and trip hazards.

Maintenance Operations

Inspections and Remedial Measures

- 5.146 Footpaths and cycle paths will be inspected during the monthly site inspection and will be kept safe and usable and cleared of overhanging vegetation and broken branches. Any item considered unsafe must be removed or made safe and replaced as soon as possible.
- 5.147 Repairs will be carried out as required, the surfacing will be replaced in line with the manufacturer's recommendations. The use of materials for repairs and replacements will conform to the original design specification for external works.

Encroaching Vegetation

- 5.148 Encroaching vegetation will be managed manually using an appropriate edging tool.

Timber Knee Rail Fence and Five-Bar Gate Entrance

Management Intention

- 5.149 The fencing and gate will be maintained for their functionality and aesthetic value. Routine inspections will ensure that any damaged fencing is repaired or replaced as quickly as possible to prevent a risk to health and safety.

Maintenance Operations

Inspections and Remedial Measures

- 5.150 The fencing and gate will be inspected during the monthly site inspection.
- 5.151 Any fencing or gate considered unsafe will be removed or made safe and/or replaced as soon as possible. The use of materials for repairs and replacements will conform to the original design specification for external works.
- 5.152 Graffiti removal will be carried out as required.

Re-painting

- 5.153 Railings will be re-painted to retain a tidy appearance approximately every five years, dependent on condition.

Benches

Management Intention

- 5.154 Benches on the Site will be maintained to a safe, clean and functional condition.

Maintenance Operations

Inspections and Remedial Measures

- 5.155 Benches will be inspected during the monthly site inspection. Any bench considered unsafe will be removed or made safe and/or replaced as soon as possible. The use of materials for repairs and replacements will conform to the original design specification for external works.
- 5.156 Graffiti removal will be carried out as required.

6.0 Habitat Monitoring and Review Schedule

BNG Monitoring

- 6.1 British Standard 8683 2021 and BNG Good Practice Principles for Development, A Practical Guide⁴ include the requirement for a robust and detailed monitoring and review strategy to ensure that new and enhanced habitats associated with the BNG design are establishing as expected, and on-going management, and maintenance is being undertaken and that adjustments in management practices can be undertaken if required.
- 6.2 The BNG Good Practice Principles for Development, A Practical Guide requires the organisation responsible for management of the Site and delivering the BU's to 'communicate all net gain activities in a transparent and timely manner, sharing the learning with all stakeholders'. The monitoring report should include clear, timed and measurable objectives for BNG, a commitment to adaptive management (where this is required in response to monitoring) and a formal review process to review success against expectations.
- 6.3 To ensure the delivery of the predicted target conditions and the success of BNG the management organisation may need to employ an adaptive management strategy. If required, this will be evidenced based through ecological monitoring and any required practical steps will be devised by an appropriately qualified and competent person and agreed with the local authority as part of its ongoing monitoring of the habitats within the Site.

Responsibility

- 6.4 As part of practical completion and prior to handover to the agreed management organisation a full site walkover will be completed by the management company and/or a suitably qualified representative. The site walkover will ensure all new and enhanced landscape and habitat features are implemented to the required standards and where required, habitat enhancements have been completed or are underway.
- 6.5 The managing organisation will be responsible for undertaking the informal and formal reviews of this HMMP and updating management and maintenance operations to ensure the long-term success of the habitats and compliance with BNG commitments.
- 6.6 Monitoring reports will be submitted to the local authority at appropriate intervals to demonstrate the management organisations success in delivering the required BNG. If habitats are not achieving the predicted target conditions, the report will outline why,

⁴ [Biodiversity net gain. Good practice principles for development. A practical guide \(cieem.net\)](https://www.cieem.net/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide)

and detail appropriate management actions required to amend management and maintenance operations.

Habitats

- 6.7 Habitats which contribute to BNG on site will require monitoring by a suitably qualified and competent person at the required intervals derived from the UK Habitat Condition Assessment Criteria in accordance with the UK Habitat Definitions.

Table 20: Key Measures for Monitoring Habitat Features: Trees

Baseline Habitat Condition	Target Habitat Condition	Monitoring Interval	Anticipated timeframe to achieve BNG
Individual Trees – Urban Trees	Moderate	1,5,10,15,20,25 and 27	27 Years
Key Measures Proactive pruning and crown maintenance will be reviewed to ensure new growth occurs and that new planting is establishing well. Tree risk management will also need to be implemented to ensure no branches of stems are causing a risk to the energy centre or the informal footpaths adjacent to the energy centre.			

Table 21: Key Measures for Monitoring Habitat Features: Hedgerow

Baseline Habitat Condition	Target Habitat Condition	Monitoring Interval	Anticipated timeframe to achieve BNG
Species-rich native hedgerow	Moderate	1,2, 3 and 5	5 years
Non-native and ornamental hedgerow	Poor	Year 1	1 year
Key Measures Ensure gap planting is establishing well and filling out. Replace any failed plants and remove supports if required. Monitor browsing rabbits and deer and review requirement for protective fencing if required. For native species rich hedgerows ensure management is maintaining a minimum height and width of 1.5m with the base of the hedge left slightly wider (A shape) to provide nesting opportunities. Review cutting operations along the base of the hedge to ensure a diverse mix of flora is establishing at various heights and age range. A review of rotational cutting may be required to maximise floral diversity. There may be a requirement to introduce additional wildflower mix at the base of the hedge if a diverse species			

Table 22: Key Measures for Monitoring Habitat Features: Native Shrubs

Baseline Habitat Condition	Target Habitat Condition	Monitoring Interval	Anticipated timeframe to achieve BNG
Mixed scrub	Moderate	1,2, 3 and 5	5 years
Key Measures Long-term monitoring of proposed native shrub planting will ensure planting has established appropriately. Any failed planting will be replaced and reviewed to ensure establishment. Continuous failure of planting will require the planting mix to be reviewed and amended as required until established. Diverse structure of saplings and young shrubs should be reviewed and managed accordingly to maintain a diverse structure. Prune and remove vegetation where required to allow new growth and retain mature individuals throughout the shrub areas. If INNS are identified during the long-term monitoring an approved management methodology should be implemented to ensure control and eradication of the identified INNS.			

Table 23: Key Measures for Monitoring Habitat Features: Amenity Grassland

Baseline Habitat Condition	Target Habitat Condition	Monitoring Interval	Anticipated timeframe to achieve BNG
Modified Grassland	Moderate	1,2,3 and 4	4 years
Key Measures First reviews will consist of ensuring management and grass cutting operations are being undertaken as detailed in this management plan. Any areas that are not establishing will be reseeded. Management will review recreational usage and undertake adaptive management as required.			

Table 24: Key Measures for Monitoring Habitat Features: Meadow Grassland

Baseline Habitat Condition	Target Habitat Condition	Monitoring Interval	Anticipated timeframe to achieve BNG
Other neutral grassland	Good	1,3,5,10 and 15	10 years and 15 years
Other neutral grassland	Moderate	1,3,5,10	10 years
Key Measures First reviews will consist of ensuring management and grass cutting operations are being undertaken as detailed in this management plan. Cutting and collecting and in the first year is vital to reduce nutrients within the soil and amenity use is not impacting on the development of the habitat.			

Baseline Habitat Condition	Target Habitat Condition	Monitoring Interval	Anticipated timeframe to achieve BNG
Monitoring in years 2 and 3 will focus on recording species diversity within the sward to review what species are present and if additional overseeding is required.			

Table 25: Key Measures for Monitoring Habitat Features: Wet Meadow Grassland

Baseline Habitat Condition	Target Habitat Condition	Monitoring Interval	Anticipated timeframe to achieve BNG
Other neutral grassland	Good	1,3,5,10	10 years
Key Measures First reviews will consist of ensuring management and grass cutting operations are being undertaken as detailed in this management plan. Cutting and collecting and minimal disturbance from recreational activity within the first year. Monitoring in years 2 and 3 will focus on recording species diversity within the sward to review what species are present and if additional overseeding is required.			

Table 26: Key Measures for Monitoring Habitat Features: Ponds and Reeds

Baseline Habitat Condition	Target Habitat Condition	Monitoring Interval	Anticipated timeframe to achieve BNG
Ponds (non-priority habitat)	Moderate	1,2,3 and 4	4 Years
Reedbeds	Moderate	1,2,4 and 7	7 Years
Key Measures During the long-term monitoring of the site pond management will be adaptive to ensure targeted criteria are achieved. Water quality will be reviewed annually to ensure pollution and debris is managed accordingly and to ensure good water quality is maintained for ecological value. If during the long-term monitoring of the sit fish have established within the ponds on site this will be reviewed and managed to ensure fish are removed following the detailed criteria. Any identified INNS species which begins to establish during the 30-year management period will be managed accordingly and where noted will follow the INNS Management Plan (TEP ref: 7504.001). Reedbed habitat will be enhanced from poor to moderate condition, reedbed will need to managed to ensure they do not encroach the entirety of the ponds and to allow pond systems to occur naturally including to naturally fill from rainwater and surface run offs.			

Site Wide Monitoring

- 6.8 The below table includes key measures for monitoring landscape and community features within the Site to ensure the Site continues to support the needs and requirements of its site visitors.

Table 27: Key Measures for Monitoring Landscape Features

Feature	Key Measures
Site wide	Is the landscape establishing well and attractive to residents and wildlife overall? Is the Site in a clean and tidy condition? Is public access to the Site maintained? Are there any health and safety hazards / deficiencies which require rectification? Does the Site comply with the relevant environmental and health and safety legislation (as set out in Appendix B of this Plan)? Are there any instances where planting is repeatedly failing? If so, has an Arboricultural consultant or landscape architect been consulted with to specify an alternative species?
Footpath	Carry out an inspection to ensure weed free appearance and remove trip or slip hazards. Note any damage and carry out repairs as required.
Fencing and railings	Carry out an inspection to note any damage which poses a risk to public health and safety and carry out repairs.
Benches	Carry out an inspection to note any damage and carry out repairs/ replacement.

Appendix A: Landscape Maintenance Schedules

Key

✓ Works to be carried out in these months

Works not to be carried out in these months

*Bird breeding and nesting season (March to August inclusive) no works that may have an impact on nesting birds are to be undertaken

Activity	Frequency per Annum	Years	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Inspections, Surveys and Cleansing														
Health and Safety														
Undertake a formal inspection to review hazards identified by original assessment.	12	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Specialist Surveys														
Instruct a trained arboriculturist to undertake a tree hazard and condition survey of mature trees.	0.3	Every 3 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site Cleansing														
Cleanse the whole site monthly.	12	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove fly-tipping and graffiti as soon as possible.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Soft Landscape Elements														
Existing Trees														
Tree survey to inform grown lifting and pruning as required to maintain healthy growth and public safety. Wood under 250 mm diameter collected from maintenance will, wherever possible, be chipped and used on site for mulching. Wood greater than 250 mm diameter will be logged and used to create deadwood piles to increase biodiversity within the woodland areas.	N/A	As required	✓	✓								✓	✓	✓
Proposed Trees														
Top up mulch to maintain a depth of 50mm around the base of all young plants.	1	1 to 5										✓	✓	
Re-firm newly planted trees as required.	1	1 to 5	✓	✓								✓	✓	✓
Check stakes and ties quarterly, adjust twice annually.	4	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replace any damaged or missing stakes and ties.	1	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove stakes and ties.	1	Year 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Formative prune to maintain health and vigour.	N/A	5 to 10	✓	✓								✓	✓	✓
Replace failed or damaged species with the same species.	1	1 to 5	✓	✓	✓	✓						✓	✓	✓
Water new planting during periods of drought	As required	1 to 5				✓	✓	✓	✓	✓	✓			
Apply slow release multi-purpose plant food and soil improver.	1	1 to 5									✓	✓	✓	
Assessment of condition and structure of new tree planting.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Proposed Native Hedgerow														
Top up mulch to maintain a depth of 50mm around the base ornamental hedgerow	1	1 to 5										✓	✓	
Replace any damaged spiral guards annually.	1	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove spiral guards.	1	Year 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Re-firm new planting as required.	1	1 to 5	✓	✓								✓	✓	✓
Replace failed or damaged species with the same species dependant on the hedge type (Species Rich Native Hedgerow and Non-native and Ornamental Hedgerow) See planting plans for specifications.	1	1 to 5	✓	✓	✓	✓						✓	✓	✓
Strim vegetation between trees and remove arisings from the Site until the canopy layer closes over.	1	1 to 5				✓	✓	✓	✓	✓				
Species Rich Native Hedgerow cutting: Cut in an A shape one established in year 3+ allowing where possible a 1m grass strip at the base of the hedgerow.	1	Year 2/3+	✓	✓								✓	✓	✓
Proposed Native Scrub Mix														
Assessment of scrub encroachment and whether weeds are becoming too dominant.	1	All years										✓		
Reduction of Scrub: Cut 5% of the scrub back annually.	1	5+	✓	✓										✓
INNS Management if identified within scrub habitat.	1	All years				✓	✓	✓	✓	✓	✓			
Proposed Ornamental Shrub Planting														
Top up mulch to maintain a depth of 50mm around the base of all implemented shrub planting.	1	1 to 5										✓	✓	
Formative prune to maintain health and seasonal foliage.	N/A	All years	✓	✓								✓	✓	✓
Weed control, remove noxious weed species.	1	All years				✓	✓	✓	✓	✓				

TEP Ref: x8776.004



✓

Works to be carried out in these months

Works not to be carried out in these months

*Bird breeding and nesting season (March to August inclusive) no works that may have an impact on nesting birds are to be undertaken

[illegible]

Name of Site: Smithy Bridge, Rochdale
Landscape Maintenance Schedules
TEP Ref: x8776.004



Key

☒ Works to be carried out in these months

☐ Works not to be carried out in these months

*Bird breeding and nesting season (March to August inclusive) no works that may have an impact on nesting birds are to be undertaken

Activity	Frequency per Annum	Years	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Monitoring and Review														
Formal site inspections by managing organisation	4	All years			✓			✓			✓			✓
Annual site meeting with stakeholders	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Formal review of management plan and maintenance operations.	0.2	Every 5 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

NOTE Glyphosate formulations containing the surfactant Polyethoxylated tallow amine (POEA) should not be used within close proximity to waterbodies or other wetland habitats as it can cause high amphibian larvae mortality.

Appendix B: Legislation Context

Summary of Relevant Legislation

The following legal obligations, among others must be considered in carrying out any management operations:

Legislation	Obligations
Health and Safety Legislation	
The Health and Safety at Work Act (1974)	All operations carried out on the Site must only be undertaken by trained personnel, using methods and equipment approved by the Health and Safety Executive (HSE).
Occupiers Liability Act (1984)	Management organisation must ensure that every reasonable care is taken to remove any risks to both legitimate visitors and to any trespassers. In compliance it will be necessary: • To make sure that all footpaths and any other structures are safe; • To remove any hazardous objects; and • To conduct an annual safety audit in order to identify any further hazards.
Environmental Legislation	
Conservation of Habitats and Species Regulations 2017 (as amended)	The Habitat Regulations for England and Wales assign a greater level of protection to a variety of native species of animals and plants listed. The 2017 Regulations have been amended by the 2019 EU Exit Regulations.
Wildlife and Countryside Act (1981)	There is an obligation to comply with legislation for UK species protected (including amphibians, reptiles and bats) under this Act.
Environmental Protection Act (1990)	There is an obligation to keep the Site free from litter and refuse.
Countryside and Rights of Way Act (2000)	Imposes a new right of access on foot to registered common land and other areas of 'open countryside' which under certain circumstances allows access without being confined to footpaths.

Appendix C: BNG Monitoring Schedule

Table of Habitat Monitoring and Reporting

[illegible][illegible]

EXAMPLE: Habitat Condition Monitoring, Assessment Sheet							
Date of Assessment:		Assessment number:					
Landscape Feature	Parcel Ref:	UKHab Metric 4.0 Condition assessment criteria	Baseline Condition	Target Condition	Monitoring interval	Anticipated Timeframe to achieve BNG target	Biodiversity Units
Condition assessment summary:							
Progress towards UKHab and Condition summary (is the habitat on course to meet or has met target condition?):							
Adaptive Management: Any proposed changes to Management:							



THE
ENVIRONMENT
PARTNERSHIP

Drawings

Drawing 1: Landscape Masterplan (Pegasus Group ref: P21-2628.100)

Drawing 2: Planting Plans Sheet 1 through to 8 (Pegasus Group ref: P21-2628_EN_102_1_C through to P21-2628_EN_102_8_C)

Drawing 3: Existing Habitat Conditions and Strategic Significance (TEP ref: G8776.013A)

Drawing 4: Proposed Development Conditions and Strategic Significance (TEP ref: G8667.016D)

INDICATIVE PLANT SCHEDULE

Front Garden Trees

Plant Species	Size (girth cm)
Malus 'Ereasta'	RB 10-12 cm 300-350 cm ht
Malus triplotata	RB 10-12 cm 300-350cm ht
Prunus subhirtella 'Autumnalis Rosea'	RB 10-12 cm 300-350 cm ht
Sorbus 'Eastern Promise'	RB 10-12 cm 300-350 cm ht

POS Trees

Plant Species	Size (girth cm)
Acer campestre	14-16cm, 400-450cm ht
Alnus glutinosa	14-16cm, 400-450cm ht
Betula pendula	14-16cm, 400-450cm ht
Carpinus betulus	14-16cm, 400-450cm ht
Corylus avellana	Multistem 300-350cm ht
Fagus sylvatica	14-16cm, 400-450cm ht
Malus sylvestris	14-16cm, 400-450cm ht
Prunus avium	14-16cm, 400-450cm ht
Quercus robur	14-16cm, 400-450cm ht
Sorbus aria	14-16cm, 400-450cm ht
Sorbus aucuparia	14-16cm, 400-450cm ht

Ornamental hedges

Plant Species	Size
Choisya ternata	3L, 30-40cm
Elaeagnus x ebbingei	3L, 40-60cm
Escallonia 'Apple Blossom'	5L, 40-60cm
Eucymus fortunei 'Emerald n Gold'	3L, 20-30cm D, 20-25cm ht
Hebe 'Red Edge'	5-7.5L, 30-40cm D
Hypericum 'Hidcote'	3L, 30-40cm
Ligustrum ovalifolium	3L, 60-80cm
Prunus laurocerasus 'Otto Luyken'	5L pot, 40-60cm
Viburnum davidii	3L, 30-40cm

Native Mixed Hedges

Plant Species	Size	%
Acer campestre	B, 40-60cm, ht 1+0	10
Crataegus monogyna	B, 40-60cm ht, 1+0	60
Ilex aquifolium	2L, 40-60cm ht	5
Prunus spinosa	B, 40-60cm ht, 1+0	15
Rosa canina	B, 40-60cm ht, 1+0	5
Viburnum opulus	B, 40-60cm ht, 1+1	5

Existing vegetation along site boundary to be retained where possible to maintain the buffer between the proposed and existing development



POS Native Shrub Mix

Plant Species	Size (height cm)	%
Cornus sanguinea	B 60-80cm	30
Corylus avellana	B 60-80cm	15
Hedera helix	1L 40-60cm	5
Ilex aquifolium	3L 40-60cm	10
Lonicera periclymenum	2L 40-60cm	5
Prunus spinosa	B 60-80cm	15
Sambucus nigra	B 60-80cm	10
Viburnum opulus	B 60-80cm	10

POS Native Shrubs Near SUDs Basin

Plant Species	Size
Cornus sanguinea	60-80cm ht, 1+1, B
Corylus avellana	60-80cm ht, 1+1, B

Ornamental Shrubs

Plant Species	Size
Aucuba japonica 'Rozanne'	3L, 30-40cm
Bergenia cordifolia 'Silverlicht'	3L full pot
Ceanothus thyrsiflorus repens	3L, 30-40cm D
Cornus sericea 'Flaviramea'	3L pot, 60-80cm
Festuca glauca 'Elijah Blue'	2L full pot
Hebe 'Autumn Glory'	5L, 30-40cm
Hebe 'Purple Queen'	3L, 30-40cm
Hebe 'Red Edge'	3L, 20-30cm D
Hebe pinguifolia 'Sutherlandii'	3L, 20-30cm D
Helleborus lividus corsicus	5L cover pot
Heuchera 'Palace Purple'	3L cover pot
Heuchera 'Peach Flambe'	3L full pot
Lavandula angustifolia 'Hidcote'	5L pot, 20-30cm
Lonicera nitida 'May Green'	3L, 30-40cm D
Mahonia aquifolium 'Apollo'	3L, 20-30cm
Pachysandra terminalis	3L, 15-20cm D
Rudbeckia fulgida 'Goldsturm'	2L full pot

Specimen Shrubs

Plant Species	Size
Amelanchier 'Ballerina'	4-8cm 6, 250-300cm ht
Fatsia japonica	10L pot, 60-80cm
Magnolia 'Susan'	10L pot, 100-125cm
Phormium 'Cream Delight'	10-12L, 40-60cm, Triple crown
Phormium tenax 'Purpureum'	10L pot, 60-80cm
Viburnum plicatum f. tomentosum Kilimanjaro	10L pot, 60-80cm

Marginal/Aquatics

Plant Species	Size
Alisma plantago-aquatica	0.5L Full pot
Caltha palustris	0.5L Full pot
Cardamine pratensis	0.5L Full pot
Carex flacca	0.5L Full pot
Carex nigra	0.5L Full pot
Carex riparia	0.5L Full pot
Filipendula ulmaria	0.5L Full pot
Geum rivale	0.5L Full pot
Iris pseudacorus	0.5L Full pot
Juncus effusus	0.5L Full pot
Juncus inflexus	0.5L Full pot
Lychnis flos-cuculi	0.5L Full pot
Lythrum salicaria	0.5L Full pot
Mentha aquatica	0.5L Full pot
Myosotis scorpioides	0.5L Full pot
Potentilla palustris	0.5L Full pot
Sparganium erectum	0.5L Full pot
Typha latifolia	0.5L Full pot
Veronica beccabunga	0.5L Full pot

KEY

Site boundary

EXISTING

Trees/vegetation

Trees/vegetation to be removed or cut back

8m offset from the River Roch. Existing landscape to be retained

Wet area (Refer to Ecological Assessment) to be retained

Drainage within POS (Refer to Drainage Proposals)

Public Right of Way

PROPOSED

Mown paths

Wildflower meadow grass such as Emorsgate EMI Basic General Purpose Meadow Mixture or similar and approved. (To be overseeded in southern POS area)

Wetland meadow grass such as Emorsgate EM8 meadow Mixture for Wetlands or similar and approved. (To be overseeded in southern POS area)

Public open space grass

Bulb planting

Ornamental shrub planting

Native shrub mix

Marginal planting to SUDs basin

Rear gardens: Grass seed

Front gardens: Turf

Trees

Specimen shrubs

Ornamental hedgerow

Native hedgerow

Hard surfaced footpath

Ornamental Gravel

Pedestrian link

Indicative location of seating within POS

Indicative location of active zone (20m from properties)

Underground Drainage feature (Refer to Drainage Proposals by others)

Timber knee rail fence

B	20/02/24	ARW	Landscape amended to layoutP21-2628_003KK
A	02/08/22	KG	Minor amends
Rev	Date	By	Note

LANDSCAPE MASTERPLAN

Smithy Bridge

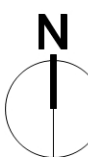
Client: Taylor Wimpy REV: B

DRWG No: P21-2628.100 Approved by: KC

Drawn by : KG

Date: 19/07/22

Scale: 1:1250 @ A1



LANDSCAPE SPECIFICATION NOTES

Topsoil
All soil is to be site topsoil, or imported to meet BS topsoil requirements for 'General Purpose' use.

Soil depths:

- New shrub beds: minimum 450mm **topsoil** depth after compaction.
- Hedge lines: minimum 450mm **topsoil** depth after compaction.
- Grass areas (seed and turf): minimum 150mm **topsoil** depth after compaction.
- Wildflower seed areas: minimum 75mm **subsoil** depth after compaction.

Trees
Root barriers are to be employed near services. All standard trees are to be planted in separate pits 1m x 1m x 900mm which shall be backfilled with a mixture of approved top soil and tree and shrub planting compost at a rate of one part compost to two parts topsoil. Each tree shall be planted centrally within the pit to the original root collar and secured by two untreated softwood stakes 1.4m min. length with approved ties. After planting all trees shall be watered-in and a mulch layer of 1m diameter approved forest bark spread over the tree pit to 50mm depth. A spiral guard will be fixed to the base of each tree to protect it from rabbit attack and strimmer damage.

Hedgerows (native & ornamental)
Hedgerow trenches shall be dug 450mm x 450mm x 450mm depth the base of which shall be broken up before returning the approved topsoil backfill mixture to the trench at the rate of one part compost to two parts topsoil. Plants to be planted 5 per linear metre. All stock shall be planted to the root collar and well firmed in place. After planting a 50mm layer of approved compost fine bark (nominal size 1-10mm) shall be spread over the whole hedge length (1m wide). On completion all hedge plants shall be thoroughly watered in. Mixed native hedgerows on the perimeter of the site are to be protected from rabbit attack using spiral guards, tubes or rabbit proof fencing.

Ornamental shrubs and groundcover areas
Plants to be planted in variety groups with taller species to back of beds. All shrub beds shall be back-filled with good quality topsoil depth 450mm, the base ground being thoroughly broken up before placement. Tree and shrub planting compost shall be spread to a minimum depth of 50mm and thoroughly rotavated in during cultivation. All stock shall comply with the specification provided on the drawing. All plants shall be well firmed in after planting and watered if necessary. After planting all beds shall receive a 50mm layer of approved forest bark mulch over the extent of the bed.

Native shrub mix
Individual pits shall be dug 450mm x 450mm x 300mm depth the base of which shall be broken up before returning the approved topsoil backfill mixture to the trench at the rate of one part compost to two parts topsoil. All stock shall be planted to the root collar and well firmed in place. After planting a 50mm layer of approved compost fine bark (nominal size 1-10mm) shall be spread over each pit (1m wide). On completion all plants shall be thoroughly watered in. Area to be protected from rabbit damage by rabbit proof fencing or individual spirals/shrub guards as appropriate.

Amenity Grassed Areas (seed)
If there is an abundance of annual or perennial weeds, the site may be treated with an approved herbicide prior to seeding. All amenity grass seed areas shall be top-soiled to a minimum depth of 150mm the base for which shall be thoroughly broken up. Once placed, the topsoil shall be cultivated and fine graded to even running falls before raking and cross raking.

Seeding will take place in spring (late March to May) or autumn (August or September) following completion of construction and be broadcast by machine and rolled where possible to give good soil/seed contact.

Emorsgate EL1 Flowering Lawn Mixture seed - or similar and approved - shall be sown in accordance with good practice. Alternative seed mixes to the above must produce a sward with at least 6 species / m2 and be suitable to maintain this level of species diversity through management by regular mowing.

A - Development Areas: Meadow & Wetland Grassed Areas (seed)
In order to encourage a greater diversity of wild flowers, wild flower seed should be sown into 75mm of cultivated and fine-graded, low-nutrient subsoil before raking and cross raking.

Seeding will take place in spring (late March to May) or autumn (August or September) following completion of construction and be broadcast by machine and rolled where possible to give good soil/seed contact.

Emorsgate EM1 Basic General Purpose Meadow Mixture seed and Emorsgate EM8 Meadow Mixture for Wetlands (or similar & approved), shall be sown in accordance with good practice.

B - River Roch Offset Area: Meadow & Wetland Grassed Areas (seed)
No topsoil stripping or disturbance to occur within this no-construction zone offset. Grassland enhancement will be achieved by cutting and removing arisings to reduce fertility, the removal of 'weeds' such as thistles in one field along with scarification and seeding with a wild flower mix only (further specification to be set out in a BNG Implementation Plan.)

Bulbs in POS
Bulbs are to be broadcast throughout the areas shown and planted where they land for a naturalistic effect.

Marginal/ aquatics
Keep plants watered and in shade until planted and do not allow to dry out. Planting shall be into the existing subsoil. Remove stones and roots over 5mm in any dimension. Subsoil shall be nutrient poor and not have any fertiliser or herbicide added. Plant marginals/ aquatics at the original soil mark, removing any plant containers from site.

MAINTENANCE

All planting in public areas shall be maintained as detailed below by the management company in good order with any plant material which dies within a five year period being replaced to the original specification. Planting and lawns in private areas will be maintained by the individual plot holders. Please note, maintenance of the following should be aligned with required Biodiversity Net Gain outcomes for this site.

Trees
All trees shall be regularly checked and any broken ties, guards or stakes replaced. Mulch shall be topped up to maintain original levels. In periods of dry weather all trees shall be regularly watered to field capacity. The area around the base of each tree is to be kept mulched to 50mm depth minimum and weed free to a minimum diameter of 1m. At the end of each growing season all trees shall receive an application of slow release fertiliser. After approximately 5 years stakes and ties are to be removed once trees have established.

Hedgerows
All hedgerows shall be maintained weed and rubbish free and any loose plants re-firmed. All canes and spirals where employed shall be regularly checked and adjusted or replaced as required. All hedge lines shall be regularly watered in times of drought to field capacity and shall receive an application of slow release fertiliser at the end of the growing season. Mulch shall be regularly topped up to original levels. All hedge lines shall be maintained to 1.6m high. After approximately 5 years stakes and ties are to be removed once trees have established.

Native shrub mix
Native shrub mixes within the development shall be left to grow freely.

Ornamental shrub and groundcover areas
Plant borders are to be kept weed and rubbish free and any loose plants re-firmed. All borders to be regularly watered in times of drought and receive an annual application of slow release fertiliser. Mulch shall be regularly topped up to original levels.

Amenity Grassed Areas (seed) and Bulbs
Mown paths through area of open space should be mown regularly to provide a suitable route through open space. Bulbs should be allowed to die back within long grass areas prior to regular summer mowing.

Meadow & Wetland Grassed Areas (seed)
The timing and frequency of grass cuts for wild flower and wet meadow will be determined by management procedures required to maximise biodiversity net gain units, comprising a rotational annual cut once seed heads have dropped in late September, with two thirds cut between 300mm and a minimum 150mm and the remaining third to be cut to a height of below 70mm.

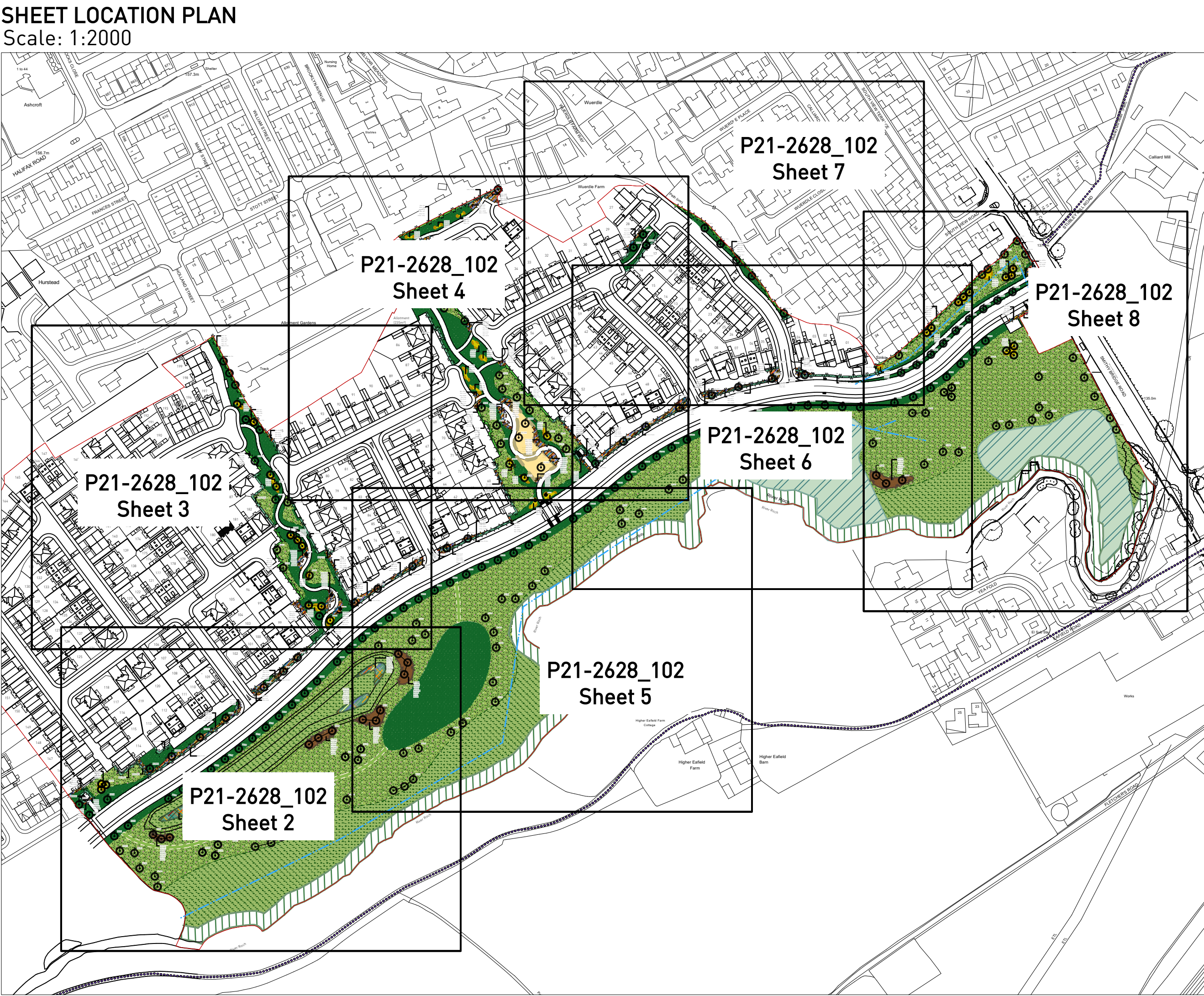
Marginal/aquatics
Remove any rubbish and scum, including weeds and litter, including adjacent to inlets and outlets. Cut down and remove dead flower stems, leaves or diseased plant as and when they are evident. Fallen leaves shall be removed from planting areas.

Notes

- Bare root plants specified for planting during planting season only. Containerised and rootballed stock to be employed when necessary as advised by supplier;
- No cultivation should be undertaken in wet/waterlogged conditions;
- Imported topsoil to accord with BS3882;
- Supplying nurseries shall be registered under the HTA Nursery Certification Scheme, and plant material should be of certified British provenance;
- All plants shall be packed and transported in accordance with the Code of Practice for plant handling as Published by The Committee for Plant Supply and Establishment (CPSE);
- All plant material to conform with BS:3936 and BS:4428;
- Planting operations to be undertaken during appropriate climatic conditions to avoid wet/waterlogged or frost bound soil conditions, frosts, droughts or during periods of excessive cold drying winds.

Note:
Landscape contractors to confirm potential build programme with house builder when pricing soft landscape works to allow for and accommodate potential out of season planting and phased release of plots for implementation. Allowances to potentially include for supply of containerised stock, additional attendance in relation to phasing and additional watering.

In September following implementation, plants to be checked for successful establishment and any losses replaced in the following planting seasons. Planting proposals to be checked and confirmed by project engineer for construction against ground conditions/soil types and foundation design.



PLANT SCHEDULE FOR PUBLIC OPEN SPACE TREES FOR POS			
ID	Qty	Species	Size (girth and height)
Ac.c	11	Acer campestre	14-16cm, 400-450cm ht, B, 3x, extra heavy standard, min 200cm cs, 5 breaks
A.g	24	Alnus glutinosa	14-16cm, 400-450cm ht, B, 3x, large feathered, 7 breaks
B.p	22	Betula pendula	14-16cm, 400-450cm ht, RB, 3x, large feathered, 7 breaks
C.b	15	Carpinus betulus	14-16cm, 400-450cm ht, RB, 3x, large feathered, 7 breaks
C.av	41	Corylus avellana	Multi-stem, 300-350cm ht, multi-stem, bushy, 5 stems minimum
F.s	23	Fagus sylvatica	14-16cm, 400-450cm ht, RB, 3x, large feathered, 7 breaks
Ma.s	97	Malus sylvestris	14-16cm, 400-450cm ht, B, 3x, extra heavy standard, 175-200cm cs, 5 breaks
P.Ra	3	Pinus radiata	300-350cm ht, RB, 5x, leader with laterals, feathered to base
P.a	26	Prunus avium	14-16cm, 400-450cm ht, B, 3x, extra heavy standard, 175-200cm cs, 5 breaks
Q.ro	36	Quercus robur	14-16cm, 400-450cm ht, RB, 3x, large feathered, 7 breaks
S.ar	10	Sorbus aria	14-16cm, 400-450cm ht, B, 3x, extra heavy standard, cs min 175-200cm cs, 5 breaks
S.a	30	Sorbus aucuparia	14-16cm, 400-450cm ht, B, 3x, extra heavy standard, cs min 175-200cm cs, 5 breaks

NATIVE BUFFER MIX (to be planted at 1.5m centres)				
ID	Qty	Species	%	Size
Co.sa	97	Cornus sanguinea	30	60-80cm ht, B, 1+1, transplant, seed-raised, branched, 3 breaks
C.ave	49	Corylus avellana	15	60-80cm ht, 1+2, B, 3brks, branched
H.he	17	Hedera helix	5	40-60cm ht, 1L, several shoots, 3 breaks
I.aqu.	32	Ilex aquifolium	10	60-80cm ht, 3L, leader with laterals
L.p	17	Lonicera periclymenum	5	60-80cm ht, 2L, caned, several shoots, 2 breaks
P.sp	49	Prunus spinosa	15	60-80cm ht, B, 1+1, 2 brks, branched
S.ni	32	Sambucus nigra	10	60-80cm ht, B, 1+1, transplant, branched, 3 breakks
V.op	32	Viburnum opulus	10	60-80cm ht, B, 1+2, 3 brks, branched

NATIVE HEDGEROW MIX (to be planted at 5/lin m in a double-staggered row)				
ID	Qty	Species	Size (girth and height)	%
A.c	248	Acer campestre	40-60cm ht, B, ht 1+0	10
C.mo	1486	Crataegus monogyna	40-60cm ht, B, ht 1+0	60
I.aq	125	Ilex aquifolium	40-60cm ht, 2L pot, leader with laterals	5
P.sp	372	Prunus spinosa	40-60cm ht, B, 1+0, leader	15
R.c	125	Rosa canina	40-60cm ht, 2L, branched, 3 breaks	5
V.o.	125	Viburnum opulus	40-60cm ht, B, 1+1, transplant, seed-raised, branched, 2 breaks	5

ORNAMENTAL HEDGES (to be planted at 5/lin m in a double-staggered row)			
ID	Qty	Species	Size
P.I.O.L	3758	Prunus laurocerasus 'Otto Luyken'	40-60cm ht, 5L-7.5L pot, bushy, 5 breaks

SPECIMEN SHRUBS			
ID	Qty	Species	Size
P.C	2	Phormium 'Cream Delight'	10-12L Triple crown
P.t.P	5	Phormium tenax 'Purpureum'	10L pot, 80-100cm

SHRUBS				
ID	Qty	Species	Density (/m2)	Size
A.j.R	485	Aucuba japonica 'Rozannie'	4	3L, 30-40cm, bushy, 3 breaks
B.m	108	Briza media	7	3L pot
C.t.r	615	Ceanothus thyrsiflorus repens	4	7.5L pot, 40-60cm, bushy, 5 breaks
C.t.S	193	Choisya ternata 'Sundance'	4	5L pot, 40-60cm, bushy, 5 breaks
C.s.F	130	Cornus sericea 'Flaviramea'	4	3L pot, 60-80cm, branched, 4 breaks
E.G.R	130	Euonymus 'Green Rocket'	4	3L pot, 30-40 cm, 7 breaks, bushy
E.f.E	485	Euonymus fortunei 'Emerald Gaiety'	4	5L, 30-40 cm D, 25-30 cm ht, bushy, 9 breaks
H.P.Q	160	Hebe 'Purple Queen'	5	3L cover pot, 30-40cm, bushy, 5 breaks
H.R.E	485	Hebe 'Red Edge'	4	5L pot, 30-40cm D, bushy, 7 breaks
H.p.S	156	Hebe pinguifolia 'Sutherlandii'	5	5L pot, 20-30cm
H.P.F	97	Heuchera 'Peach Flambé'	6	3L full pot
L.a.H	193	Lavandula angustifolia 'Hidcote'	4	5L pot, 20-30cm, bushy, 7 breaks
L.i.V	64	Lavandula x intermedia 'Vera'	4	7.5L, 30-40cm ht, Bushy, 9 breaks
L.n.M.G	485	Lonicera nitida 'May Green'	4	3L, 30-40 cm D, bushy, 6 breaks
P.te	321	Pachysandra terminalis	4	3L cover pot, several shoots

MARGINAL				
ID	Qty	Species	Density (/m2)	Size
B.um	195	Butomus umbellatus	4	0.5L full pot
C.pa	98	Caltha palustris	4	0.5L full pot
I.ps	195	Iris pseudacorus	4	0.5L full pot
L.sa	98	Lythrum salicaria	4	0.5L full pot
M.aq	49	Mentha aquatica	4	0.5L full pot
My.sc	49	Myosotis scorpioides	4	0.5L full pot
R.fl	98	Ranunculus flammula	4	0.5L full pot
T.la	195	Typha latifolia	4	0.5L full pot

BULBS				
ID	Qty	Species	Density (/m2)	Size (bulb grade)
C.bi	1876	Crocus bicolour mix	20	5-6
G.n	1876	Galanthus nivalis	20	5-6
N.p	1876	Narcissus pseudonarcissus	20	7+
T.s	1876	Tulipa sylvestris	20	6+



KEY

- Site boundary
- Trees/vegetation
- Trees/vegetation to be removed or cut back
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- Wet area (refer to Ecological Assessment) to be retained
- Drainage within POS (refer to Drainage Proposals)
- Public Right of Way

PROPOSED

- Mown paths
- Wildflower meadow grass; Emorsgate EM1 Basic General Purpose Meadow Mixture or similar and approved - areas within River Roch offset area to be overseeded with wild flower mix only
- Wetland meadow grass; Emorsgate EM8 meadow Mixture for Wetlands or similar and approved - areas within River Roch offset area to be overseeded with wild flower mix only
- River Roch no-construction offset area (refer to BNG Assessment); existing landscape to be retained and retained grasslands to be enhanced
- Amenity grass; Emorsgate EL1 Flowering Lawn mixture or similar and approved species-rich lawn mixture
- Bulb planting
- Ornamental shrub planting
- Native shrub mix
- Marginal planting to SUDs basin
- Trees
- Specimen shrubs
- Ornamental hedgerow
- Native hedgerow
- Timber knee rail fence
- Indicative location of seating within POS (Furnitubes 'Stark Seat' or similar & approved)
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- Proposed drainage feature (refer to Highways & Drainage Proposals by Ironside Farrar)
- Indicative location of active zone (20m from properties)
- Five-bar gate entrance feature

C	22/02/2024	VR	Update in line with new layout
B	30/01/2023	VR	Update in line with new layout
A	20/01/2023	KG	Update due to new layout
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SMITHY BRIDGE

Detailed Planting Plan – Sheet 3 of 8

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Issue: B
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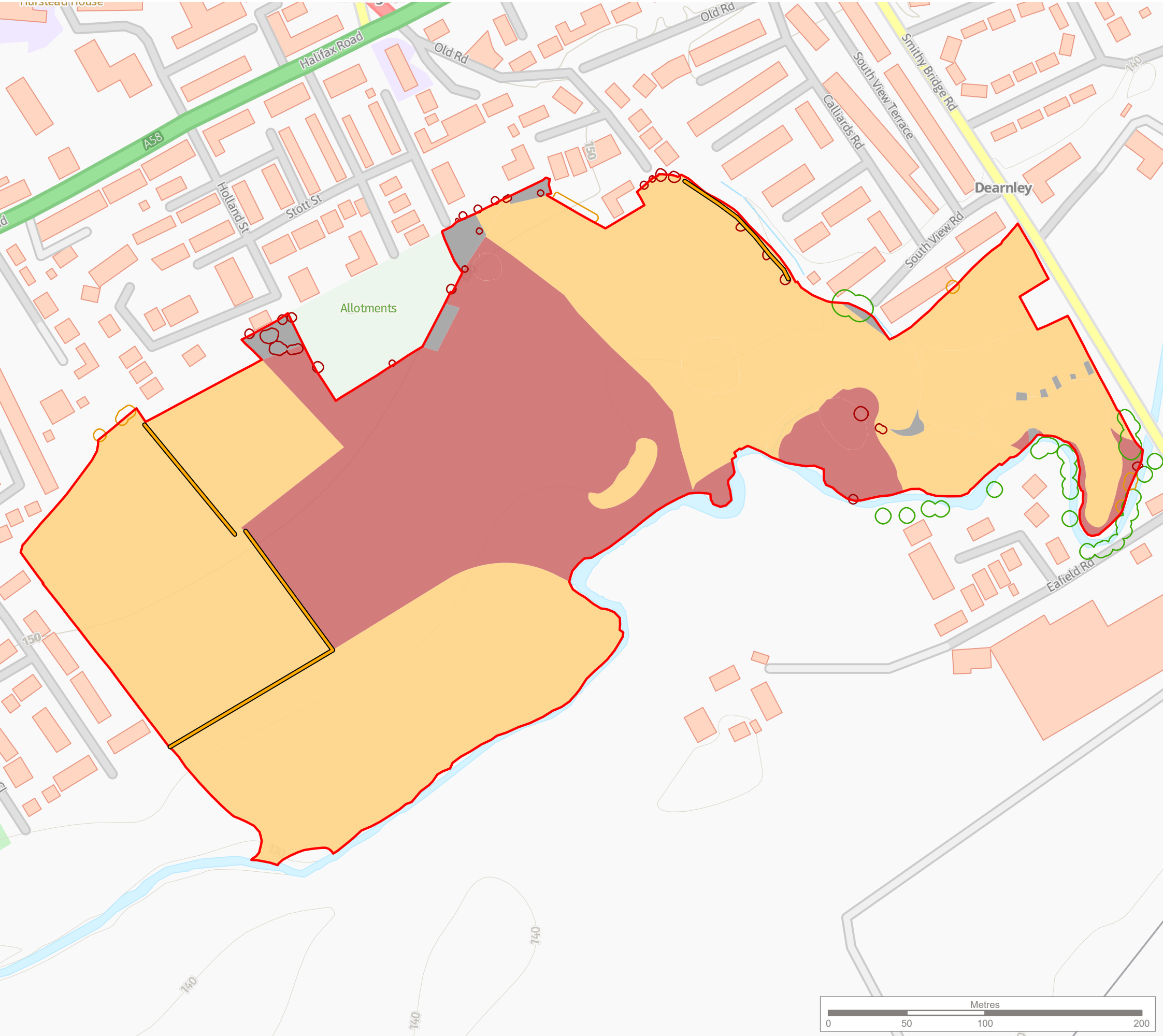
C	22/02/2024	VR	Update in line with new layout
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Indicative precedent images showing style of white-painted, five-bar gate entrance feature to eastern entrance; with gate features to be emphasised by attractive tree planting behind.

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Rev	Date	By	Note



KEY

Site boundary

Hedge row Condition

Moderate

Tree Condition

Good

Moderate

Poor

Habitat Condition

Moderate

Poor

Condition assessment not applicable

Strategic Significance

All habitats with strategic significance value of formally identified in local strategy

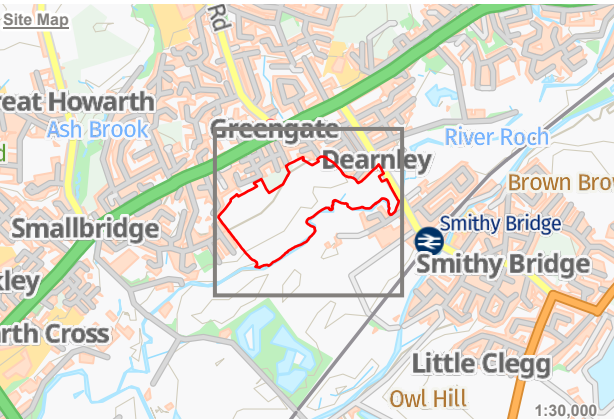
Note:

The locations of habitats and habitat features are indicative.



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A	Update to habitat condition	OH	AP	07/10/2024
Rev	Description	Drawn	Approved	Date



**THE
ENVIRONMENT
PARTNERSHIP**

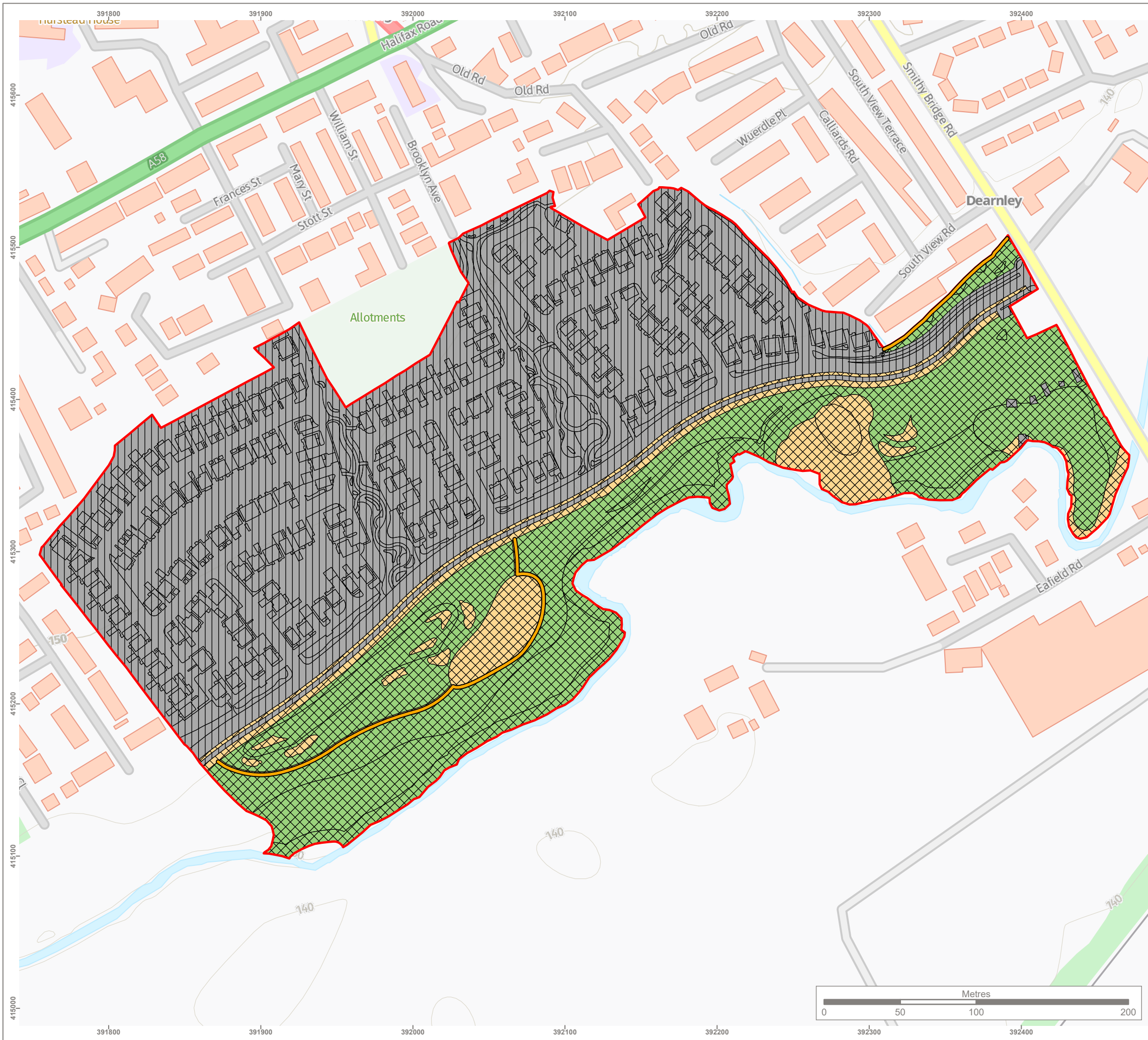
401 Faraday Street, Birchwood Park, Warrington, WA3 6GA
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Smithy Bridge Road, Rochdale

Title
Existing Habitat Conditions and Strategic Significance

Drawing Number
G8776.013A

Drawn	Checked	Approved	Scale	Date
CW	MH	ACP	1:2,500 @ A3	08/10/2024



KEY

Site boundary

Hedgerow Condition

Moderate

Habitat Condition

Good

Moderate

Condition assessment not applicable

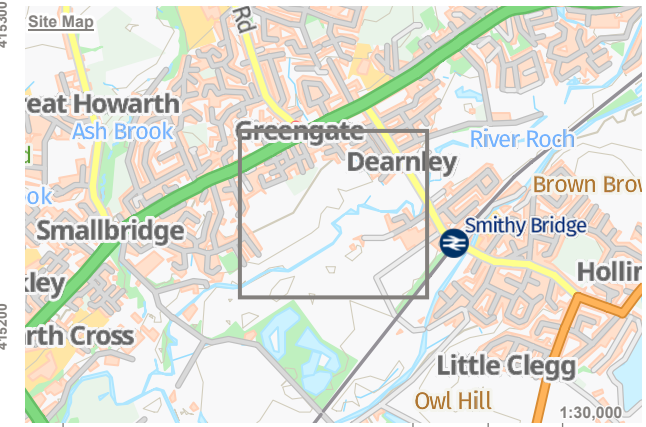
Strategic Significance

Formally identified in local strategy

Area/compensation not in local strategy/no local strategy

Note:
The locations of habitats and habitat features are indicative.
Based on drawing P21-2628.102 Landscape Masterplan provided by the client.

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D	Updated proposed development.	CW	ACP	04/06/2025
C	Updated proposed development.	CW	ACP	10/04/2025
Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Smithy Bridge Road, Rochdale

Title
Proposed Habitat Conditions and Strategic Significance

Drawing Number
G8776.016D

Drawn	Checked	Approved	Scale	Date
CW	CB	ACP	1:2,500 @ A3	04/06/2025



WARRINGTON

401 Faraday Street
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