Habitat Management and Monitoring Plan

Site Name:	Dunham Bush Site, Downley Road, Havant
Date:	21/05/2025
Version:	1

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To deliver BNG, a robust strategy is critical to monitor successes and challenges. Routine monitoring informs progress and facilitates the required management plan updates at set intervals. ... 39

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Version Control

The version control is used for updates to the content. Record the initial version and further version control details in this table each time the management plan is altered throughout the management and monitoring period.

Version	Issue Status	Prepared by / Date	Approved by / Date
1.0	Issue	IRM & LPL / 05.11. 24	APD / 19.05.25

Document Details

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Field Code Changed

Field Code Changed

1. Project Background

Summarise the key aspects of your management plan in this section. Table PB-B01 can be extended to suit the specific needs of individual projects.

Site Overview PB-B01	
Project type	On-site
Development Name and Address	Dunham Bush Site, Downley Road, Havant
BNG Project Name and Address	Dunham Bush Site, Downley Road, Havant
Author Organisation	FPCR Environment and Design Ltd
Landowner	Canmoor Developments Ltd
Land Manager	TBC
Responsible person/organisation for creating or enhancing the habitat	TBC
Period covered by this management plan	2025-2055
Planning authority	Havant Borough Council
Planning reference (if applicable)	APP/24/00600
BNG register reference (if applicable)	Applicable for off-site only – N/A if using for on-site
Central OS grid reference	SU 72822 07640
Metric revision/title	Statutory biodiversity metric, July 2024
Are any Irreplaceable Habitats present onsite	Yes: ☐ No: ☒

Summary of Management Plan

Habitats to be Retained, Created and Enhanced PB-B02

The majority of the predevelopment site comprises of developed sealed surface with some scattered areas of introduced scrub, one area of bramble scrub, seven existing urban trees and areas of modified grassland. Proposed is the retention of two trees, in good condition, in the southeast corner of the site.

Created habitats will include 44 small individual urban trees, introduced mixed scrub of medium distinctiveness, modified grassland of low distinctiveness, neutral grassland of medium distinctiveness, and a medium distinctive species-rich native hedge. Two existing broadleaved trees will be retained as part of the proposals.

Timescales for Actions PB-B03

The habitats will be managed by Canmoor Development Ltd for the lifetime of the development (30 years +) once all BNG creation and enhancement works have been implemented. Commencement of habitat creation and enhancement will begin in 2025 and take 30 years to complete.

Monitoring Requirements PB-B04

Monitoring and reporting on this site will begin in year 5 and again in year 10 by a qualified ecologist following the completion of the habitat retention, creation and enhancement works. Monitoring will occur for the lifetime of the development (30 years).

Required Consents and Licences PB-B05

No consents are known to be required for the proposed changes of habitats or management activities. There are no known protected or notable species present within the site that would require licensing.

Funding PB-B06

This project is to be funded by Royal London Property Fund.

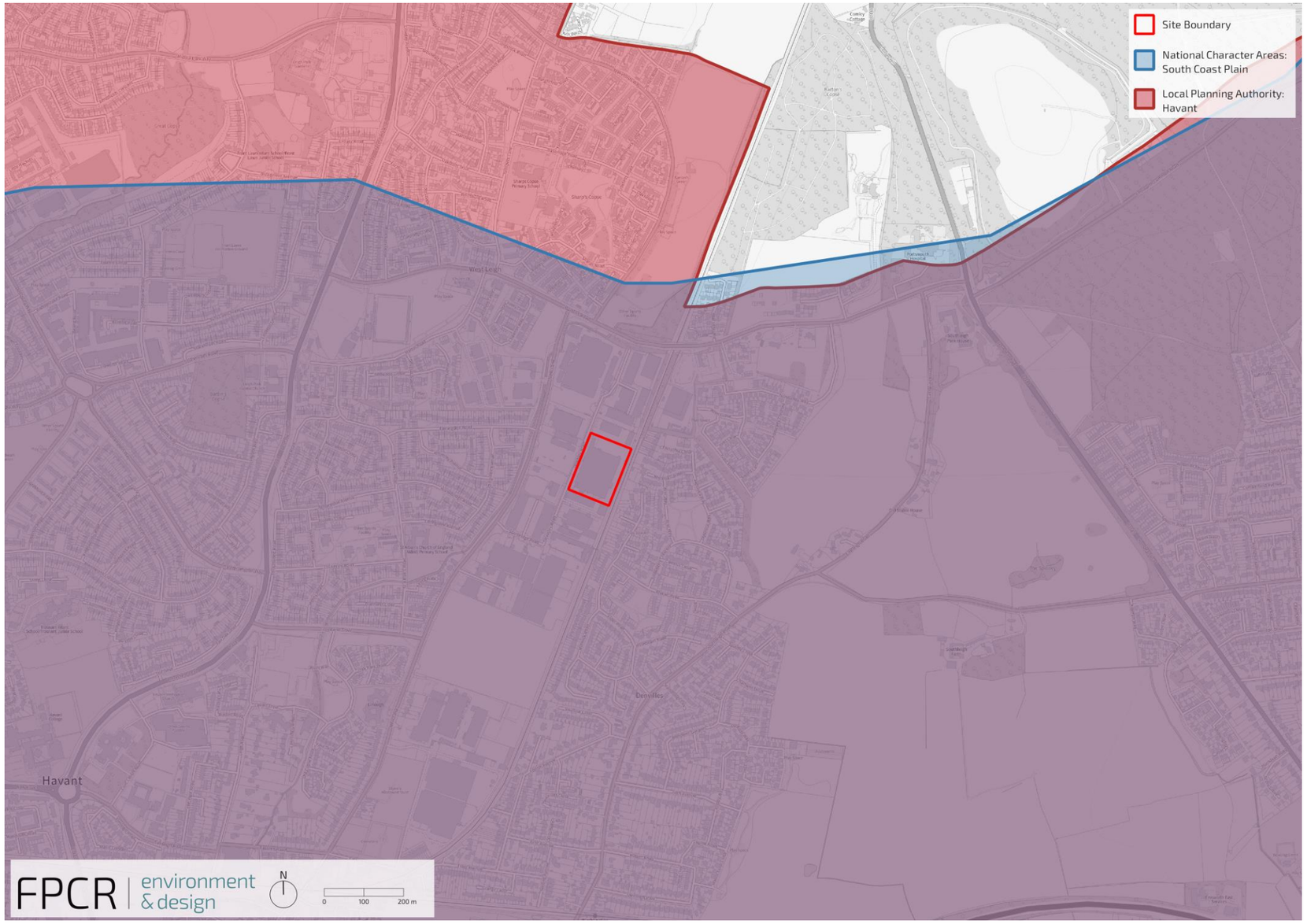
Legal Agreement PB-B07

TBC with LPA Ecologist and Legal team.

Site Boundary Plan PB-F01

Site Context Plan PB-F02

This plan should show the location of the site, including the LPA, boundary, national character area, and any relevant landscape scale policy or guidance information.



Phasing strategy

Will the proposed work measures be delivered in phases? PB-B08	Yes: ☐ No: ☒
N/A	

Roles and Responsibilities

Provide details of the responsible persons and organisation(s) for delivering this management plan.

Ecologist or Other Professional Responsible for HMMP PB-B09				
Name or Initials				
Organisation		FPCR Environment and Design Ltd		
Responsibility	Start Date:	2025	End Date:	2055
FPCR are responsible for the production of this HMMP based on data collected by FPCR staff, providing advice to land managers as required				
Statement of Competency				
As one of the leading consultancies in the advancement and delivery of Biodiversity Net Gain (BNG), FPCR Environment & Design has worked with a broad range of landowners, Local Authorities, and government bodies to establish banks of biodiversity units. The experienced team at FPCR has a proven record and competency in delivering HMMPs and is well placed to advise on Biodiversity Net Gain and habitat management for development. The FPCR ecologist who completed the survey has over 7 years of experience in the ecology sector with a focus on botanical and habitat surveying; holding a BSBI Field Identification Skills Certificate (FISC) Level 3.				

Landowner or Land Manager PB-B10				
Name or Initials		TBC		
Organisation		Canmoor Developments Ltd		
Responsibility	Start Date:	~~TBC~~2025	End Date:	~~TBC~~2055
The landowner will be responsible for ensuring that this HMMP is adhered to, including arranging and organising the monitoring as set out in this document				

Statement of Competency				
Demonstrate management and monitoring competency and, or, relevant site knowledge and skills through relevant training, qualifications or experience, or a combination of these.				
Management Organisation(s) Responsible for Implementing the HMMP PB-B11				
Name or Initials		TBC		
Organisation		TBC		
Responsibility	Start Date:	2025	End Date:	2055
TBC				
Statement of Competency				
TBC				
LPA or Responsible Body for Reviewing HMMP PB-B12				
Name or Initials		Havant Borough Council		
Organisation		Havant Borough Council		
Responsibility	Start Date:	2025	End Date:	2055

Land Use Summary

Overview of Baseline Site Use PB-B13

The site is 1.75ha in size and is, located in the northeastern region of Havant, Portsmouth. The current habitats on site comprise of sealed surface (hard-standing ground and buildings) with small areas of modified grasslands and ruderal/ephemeral vegetation along the fence lines. Additionally, there are five Cherry sp. Prunus sp. trees scattered across the site.

Large expanses of industrial units and residential housing bound the Site on all sides. Just beyond the residential area to the east, arable fields and woodland blocks dominate the landscape. The wider landscape beyond this includes the A27 which lies approximately 1.3 km south of the Site and the urban sprawl of Havant.

Overview of Proposed Site Use PB-B14

The site land use of Industrial will be maintained post development. The proposals include the demolition of the current buildings and the replacement of these with warehouse and office units. In addition, there will be vehicular access points, parking, landscaping and structural planting.

The proposals will result in the retention of two trees on site and the creation of; modified grassland, neutral grassland, species rich native hedgerow, mixed scrub, introduced scrub and finally the addition of small urban trees.

Site Context Photos PB-F03

Please include two overview photographs of the site in its current form here. Include additional photographs in an appendix if needed. Tick if additional photographs are provided in the Appendices
☐ Reference: Click or tap here to enter text.

Site Baseline, Environmental Information and Associated Impacts Checklist PB-T01

Consider the Baseline and Environmental Information listed below. These are likely to be appropriate factors informing your proposals and project design. They can provide the reviewer with important contextual information for the management prescriptions provided later in this document. Use your professional judgement to determine which factors are relevant to your specific project. Please use the check box to indicate which are included in your plan. For any not included, provide brief reasons why the factor is not relevant to your project using your professional judgement. Where this information is provided elsewhere, you can reference existing reports and, or, plans that have informed your decisions. For the templates for each heading see pages 3-20 of the Companion Document.

Baseline and Environmental Information	Prompts for when these may be relevant.	Check box if included	Document Reference or Reason if not included
Statutory / Non-statutory Designated Sites	Will your proposals lead to direct or indirect effects on designated sites?	☒	Detailed within the Dunham Bush Site, Downley Road, Havant Ecological Appraisal (FPCR, July 2024) A desk study carried out by FPCR as part of the Ecological Impact assessment found that the closest designated site is that of Solent Maritime Special Area of Conservation (SAC) at 2.41km South, Solent & Isle of Wight Lagoons SAC at 2.85km south and Chichester and Langstone Harbours SPA, RAMSAR at 3.50km to the southeast. No Sites of Special Scientific Interest (SSSIs) or Local Nature Reserves (LNRs) are identified within a 2km radius of the Site boundary.
Protected and Notable Species	Does the presence or proximity of specific species on or near your site present any constraints or opportunities to project design or management?	☐	Detailed within the Dunham Bush Site, Downley Road, Havant. Ecological Appraisal (FPCR, July 2024)
Invasive Non-Native Species (INNS)	Are any INNS present onsite that could affect the proposals?		Detailed within the Dunham Bush Site, Downley Road, Havant. Ecological Appraisal (FPCR, July 2024)
Biological Records Plan - Sites and Species	Does the presence of designated sites or specific species on or near the site present any constraints or opportunities	☒	Detailed within the Dunham Bush Site, Downley Road, Havant. Ecological Appraisal (FPCR, July 2024)
Baseline Habitats Survey	Is this current and important HMMP information located in a separate document? If so, provide details on where it is	☒	Detailed within the Dunham Bush Site, Downley Road, Havant. Ecological Appraisal (FPCR, July 2024)
Public Access	Has public access, or proposals to allow public access, influenced your management prescriptions? If so, how?	☒	
Climate	Are local climate conditions and, or, climate change likely to impact the target habitat retention, creation or enhancement?	☒	Habitat creation targets are unlikely to be affected by local climate conditions as they comprise common and widespread, generic habitats that will be appropriate for England's climate
Geology and Topography	Any geological or topographical constraints or opportunities?	☒	The habitats targeted for creation and enhancement include common and widespread habitats that will not be significantly affected by geological conditions
Agricultural Land Status	Does the site support any land favourable for agricultural management? Could this affect the proposals?	☒	The site is not appropriate for use as arable land. The site has previously been and in the future will be utilised as industrial.
Soils and Substrates	Do soils and substrates present any constraints or opportunities?	☐	The habitats targeted for creation and enhancement include common and widespread habitats that will not be significantly affected by soil conditions.
Contaminated Land	If there is any contaminated land, will this present any constraints?	☐	No known contaminated land issues. Although the site has previously been used for industrial purposes, it will continue to be used for this purpose.
Hydrology and Drainage	Will the site hydrology present any constraints or opportunities?	☐	The landscape management company will check for below and above ground services inclusive of drainage in the vicinity and will give notice if them may be affected before continuing with proceedings.
Flood Risk Zones	Is the site within a flood risk zone? Will that present any site management risks?	☒	The site is located in a flood zone 1 indicating it has a low probability of flooding from rivers and the sea.

Landscape Character and Designations	Does the landscape character of the site present any constraints or opportunities?	☐	The site is not known to fall within any local landscape or protected landscape designations
Historic Land Use	Does the historic land use present any constraints or opportunities?	☐	The site was used for industrial purposes and will continue to do so under the proposals.
Historic Environment and Earth Heritage	Are there any historic environment designations? What are the implications for your plan?	☒	A desk-based assessment of Historic Environment and Earth Heritage Sites was undertaken and none are present on site.
Other – please specify	Any other details - for example underground services or overhead powerlines, which may impact habitat	☐	

1. Baseline and Environmental Information

Biological Records

Designated Sites (BI-T01)

Provide a concise summary of the designated features within the designated sites that could be affected by the project. Categorise any potential impacts from the project, whether positive, negative, or negligible, as determined by your professional judgement.

Site Name	Designation	Distance from Project Site	Potential Impact from Project
Chichester and Langstone harbours	SPA, SSSI, RAMSAR	Approximately 3500m	Negligible
Portsmouth Harbour	SPA, SSSI, RAMSAR	Approximately 8200m	Negligible
Solent Maritime	SAC	Approximately 2340m	Negligible
Solent & Isle of Wight Lagoons	SAC	Approximately 2850m	Negligible
Kingley Vale	SAC, SSSI	Approximately 8920m	Negligible
Battin's Copse	SINC	Approximately 856m	Negligible
Southleigh Forest	SINC	Approximately 1120m	Negligible
Barton's Copse & The Slip	SINC	Approximately 660	Negligible

Key: SPA – Special Protected Area; **SSSI** – Sites of Special Scientific Interest; **RAMSAR** - Ramsar sites are wetlands of international importance designated under the Ramsar Convention on Wetlands; **SAC** – Special Area of Conservation; **SINC** – Sites of Importance for Nature Conservation; **LNR** – Local Nature Reserve

Summary of Designated Sites (BI-B01)

Five internationally designated sites were located within a 10k radius of the site, including two SPAs and RAMSAR sites, and three SACs, as shown in Table BI-T01. Chichester and Langstone harbours and Portsmouth Harbour (both SPAs and RAMSAR sites) are estuaries designated for their importance as one of the most important sheltered intertidal areas on the south coast of England, supporting internationally and nationally important numbers of overwintering and breeding bird species. Solent Maritime SAC is designated for a major estuarine system which supports a range of rare sponges. Similarly, Solent & Isle of Wight Lagoons SAC encompasses a series of coastal lagoons, with a range of salinities and substrates, supporting a diverse fauna including large populations of foxtail stonewort *Lamprothamnium papulosum*, lagoon sand shrimp *Gammarus insensibilis* and starlet sea anemone *Nematostella vectensis.* Finally, Kingley Vale SAC is one of the largest areas of yew *Taxus baccata* woods on chalk in Britain. It is also an important orchid site.

Three non-statutory designated Sites of Importance for Nature Conservation (SINCs) were found within 1km of the site.

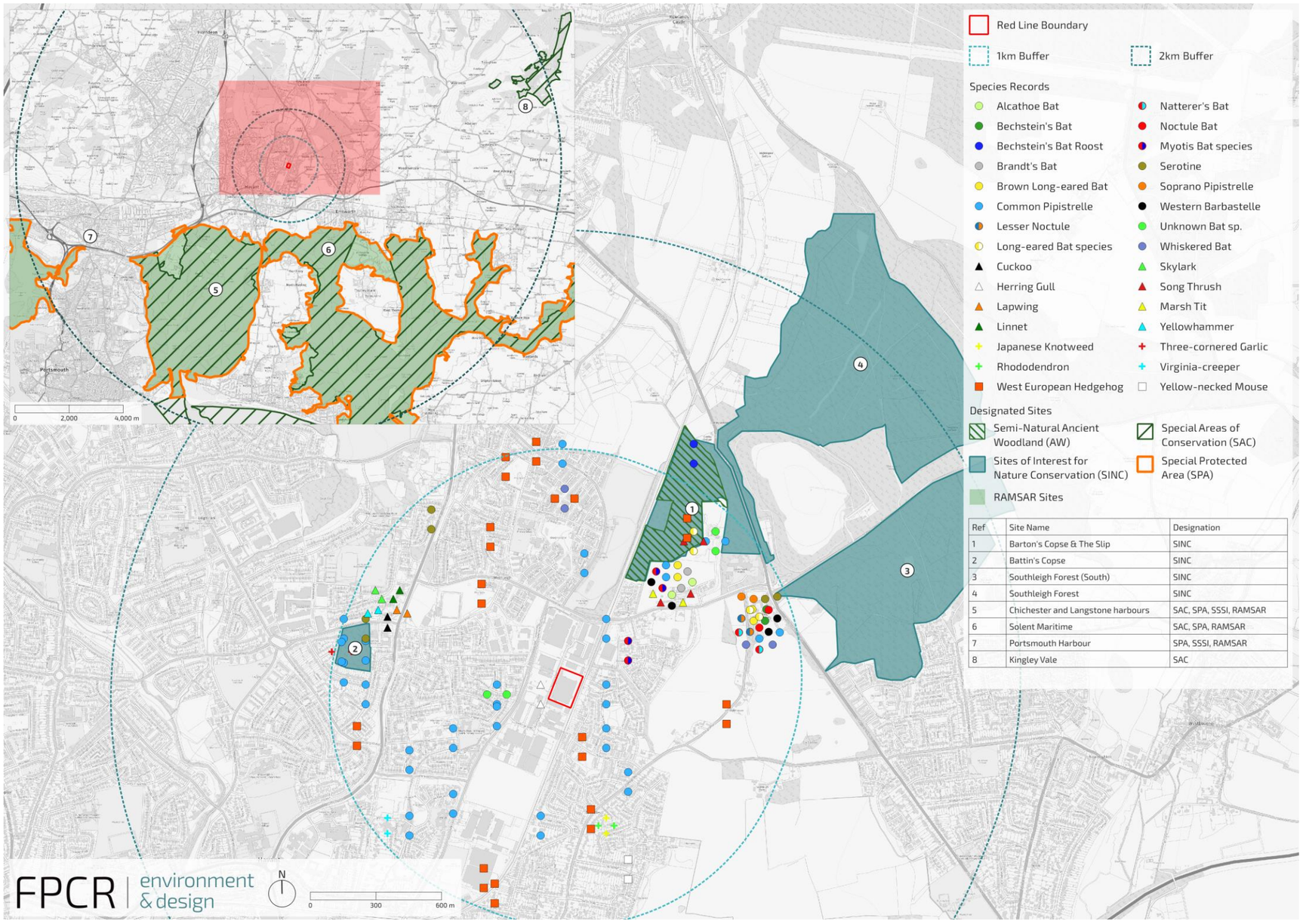
Constraints and Opportunities for Project (BI-B02)

Briefly outline any constraints or opportunities posed to this HMMP by any designated sites within the project's search area.

Due to the nature of the site, being on an already established industrial estate, it is unlikely any developments here will cause any major change or harm to these designated sites

The nearest designated site to the proposed development is Barton Copse, a Site of Interest for Nature Conservation and semi-natural ancient woodland. As this is separated from the site by a railway line it is not anticipated that the development will cause any negative impact here.

Biological Records Plan - Sites and Species (BI-F01)



Ref	Site Name	Designation
1	Barton's Copse & The Slip	SINC
2	Battin's Copse	SINC
3	Southleigh Forest (South)	SINC
4	Southleigh Forest	SINC
5	Chichester and Langstone harbours	SAC, SPA, SSSI, RAMSAR
6	Solent Maritime	SAC, SPA, RAMSAR
7	Portsmouth Harbour	SPA, SSSI, RAMSAR
8	Kingley Vale	SAC

Baseline Habitats Survey

Ecologist responsible for baseline surveys (BI-T03)	
Name or Initials	Laura Mynard
Organisation	FPCR Environment & Design Ltd
Survey Date	15 December 2023

Statement of Competency

The survey was undertaken by FPCR Ecologist Laura Mynard on the 15th of December 2023. Laura has over 7 years of experience in ecology and conservation and is experienced in botanical surveys, having achieved a Level 3 on the Botanical Society of Britain and Ireland's (BSBI) Field Identification Skills Competency (FISC). The survey followed the UKHab Survey technique as recommended by Natural England and the Chartered Institute of Ecology and Environmental Management.

Survey conditions and limitations

The extended phase 1 habitat survey (JNCC, 2010) was undertaken on 15th December 2023 which is outside the optimal survey season. However, the site was made up of sealed surface developed land, modified grassland, introduced scrub, bramble scrub and individual trees. Therefore, the timing at which the survey was undertaken is not a limiting factor to the survey, with limited habitats and the species present being widespread and common.

Habitat Degradation

Are there any signs or evidence that the baseline habitats have been purposefully degraded since 30th January 2020? (BI-B05)

Briefly outline the details of any evidence that the habitat may have been degraded since 30th January 2020.

Include notes of any management works observed during site surveys and, or, a review of historical mapping to determine whether any purposeful degradation may have occurred, that may have reduced the project site's value.

No evidence that habitat degradation was present.

If habitats have been purposefully degraded, provide details of how this has been accounted for (BI-B06)

Detail how the baseline for the site has been adjusted to account for any habitat degradation that is considered to have occurred on site since 30th January 2020.

N/A

Baseline Habitat Descriptions and Condition

Use the following tables to provide details of the relevant baseline habitats information. Provide a concise overview of the justification for the condition chosen for each parcel(s) in the appropriate column.

Habitats (BI-T04)

Parcel Refs	Habitat Type and Code	Irreplaceable	Priority	Description and Condition Justification	Condition	Area (ha)
G1, G2, G3, G4 and G5	Modified grassland	No	No	Four small areas totalling approximately 0.1172 hectares of modified grassland. Dominant was perennial ryegrass *Lolium perenne* and frequent creeping bent *Agrostis stolonifera.* Herbaceous composition included frequent ribwort plantain *Plantago lanceolata* and creeping buttercup *Ranunculus repens* and occasional herb robert *Geranium robertianum*, selfheal *Prunella vulgaris* and rarewild strawberry *Fragaria vesca*. The modified grassland is a low distinctiveness habitat, and this compartment was assessed as being in Poor condition, due to being species-poor, the presence of tyre damage and Schedule 9 species *Cotoneaster sp*. and *Rhododendron sp.*	Poor	0.1172
S1	Bramble Scrub	No	No	A small area of Bramble *Rubus fruticosus agg.* is located in the northeastern corner of the site. The scrub is a medium distinctiveness habitat in poor condition due to comprising of bramble species.	Condition Assessment N/A	0.0059
-	Individual trees	No	No	A total of eight trees of various age classes are present on the site of medium distinctiveness. These trees are assessed as being in good condition due to passing all criteria other than being native species.	Good	0.0489
-	Individual trees	No	No	A total of eight trees of various age classes and of medium distinctiveness are present on the site. These trees are assessed as being in moderate condition.	Moderate	0.0122
IS1, IS2, IS3, IS4 and IS5	Urban - Introduced shrub	No	No	Low distinctiveness introduced scrub on the western side of the site.	Condition Assessment N/A	0.0037
-	Urban – Developed land; sealed surface	No	No	Very low distinctiveness habitat made up of sealed surface development.	Condition Assessment N/A	1.5736

Priority and Irreplaceable Habitats

Summary of Priority and Irreplaceable Habitats (BI-B07)
None present.

Potential Constraints and Opportunities for Project (BI-B08)
N/A

Baseline Habitats Plan (BI-F02)

Baseline Distinctiveness and Condition Plan (BI-F03)

Baseline Habitats Photos (BI-F04)

Sealed Surface and scrub on site.

Introduced Scrub

Modified Grassland on western boundary

Developed land, sealed surface and Urban tree on site.

Land Tenure and Public Access

Relevant Land Tenure Information (EI-B01)

Land within the site boundary is owned by Canmoor Developments Ltd

Potential Impact to Scheme (EI-B02)

All management prescriptions detailed within this management plan will be the responsibility of the landowner and their land Managers. Therefore, there will be no constraints to completing the management prescriptions in relation to land tenure.

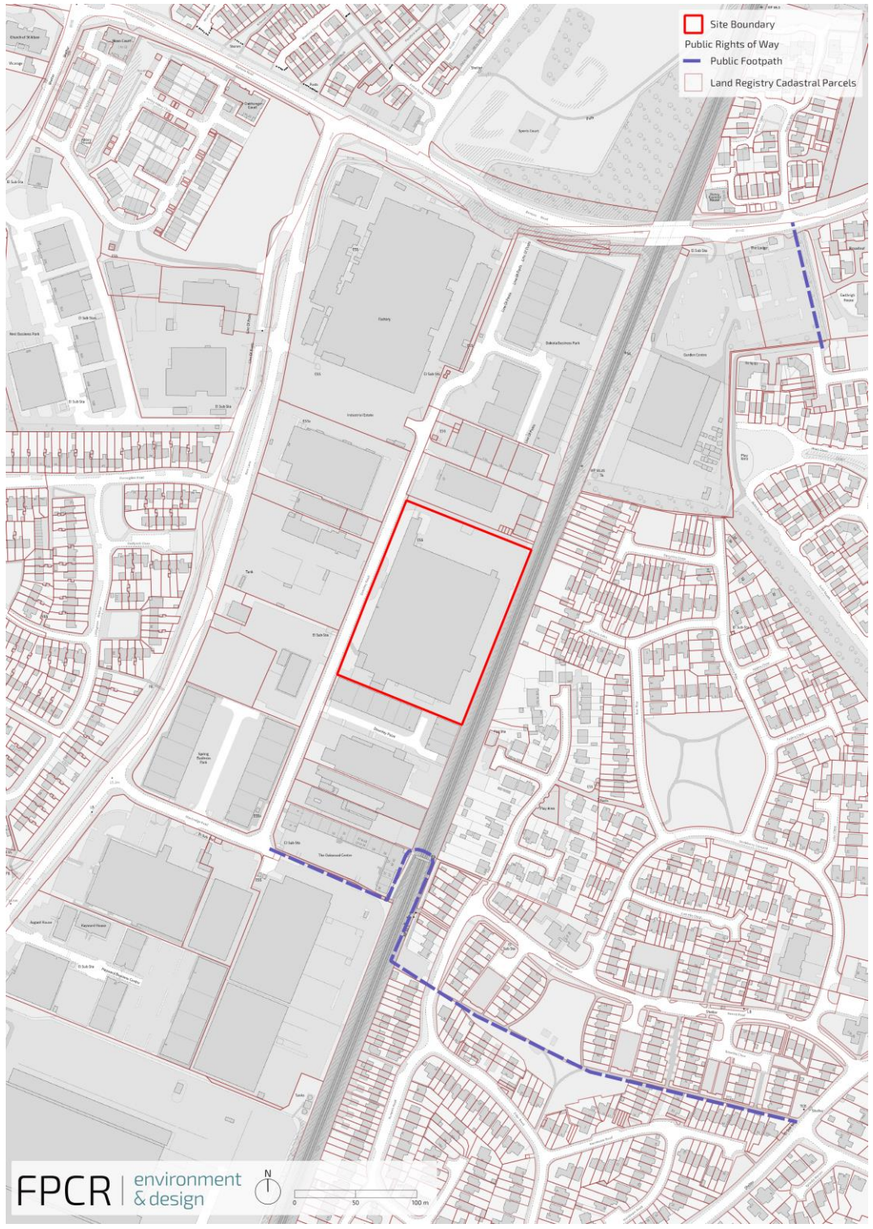
Public Access Information (EI-B03)

There are no Public Rights of Way (PRoW) on site.

Potential Impact to Scheme (EI-B04)

Potential disturbance from construction vehicles by access to the south of the site although this should be marginal.

Land Tenure and Public Access Plan (EI-F01)



Climate

Current Climate Information (EI-T01)	
Nearest weather station details	Thorney Island
Days of rain per year	9.85 days
Average annual rainfall mm	63.97mm
Average temperature °C	15.085
Highest temperature – Month and temperature °C	21.83 - July
Lowest temperature – Month and temperature °C	8.34 - January
Average annual hours of sunshine	147.89 hours
Sunniest month and average hours of sunshine	232.11 hours - July
Average number of days with air frost	2.62 days
Frostiest month and number of days	8.15 days – December

Potential impact of current climate on project (EI-B05)

The climate is typical of South Britain and so species mixes selected for planting and/or seeding should be appropriate for this climate, with frost resistant perennial species that are tolerant of seasonal variations in soil moisture. This will be easily achievable for the habitats proposed.

Potential Impact of Climate Change on Proposals (EI-B06)

Whilst the development is a low-risk flood zone 2, there is a river to the east of the site running north to south. The site is relatively coastal, being 2370m from the Emsworth harbour.

As full impacts are unknown at the time of writing, the plan will be implemented using an adaptive management approach. This approach allows the scope to introduce new management responses to achieve the same objectives. For instance, this may involve changing the timing of a hay cut to reflect earlier plant growth and flowering.

Drier conditions will favour stress-tolerant and ruderal species. Higher spring soil moisture levels, combined with higher spring temperatures, may favour more competitive species, impacting less tolerant species and reducing botanical diversity.

Adaptive responses to management may include but are not limited to:

- Flexibility in site management, such as varying the timing of hay cuts, to respond to increased variation in seasonal growing conditions.
- Monitoring and ensuring the control of invasive species, including previously unknown species as they occur.
- Reducing other pressures such as human, pollutants and deer pressures.
- Threats posed by climate change, such as introducing new pests and diseases, must be carefully assessed, and any changes to management objectives will be discussed with the responsible body first.
- Reflect management changes and potential changes in native tree composition in management objectives.

Geology and Topography

Geological Information (EI-B07)

The site is made up of one type of bedrock: London Clay Formation – clay, silt and sand. These sedimentary rocks are marine in origin. They are detrital and comprise coarse- to fine-grained slurries of debris from the continental shelf flowing into a deep-sea environment, forming distinctively graded beds[1].

Additionally, the site is within Head – clay and gravel and River terrace deposits – sand, silt and clay superficial deposits.

Potential Impact to Scheme (EI-B08)

The bedrock type across the site is typical of those throughout the region and unlikely to have any negative impacts on the proposals.

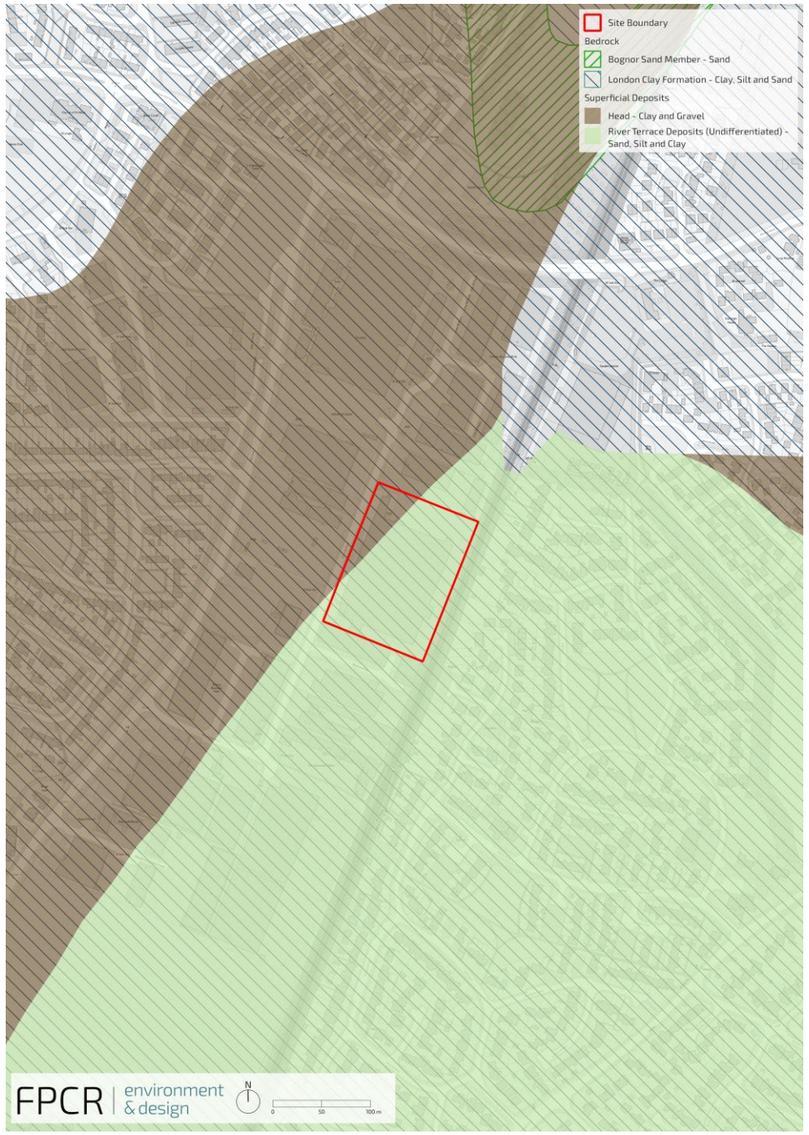
Topography (EI-B09)

The altitude on site is 19m above sea level.

Potential Impact to Scheme (EI-B10)

The topography should not impact any of the habitat enhancement that is prescribed.

Geology and Topography Plan (EI-F02)



[1] Retrieved from: https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=LC

Agricultural Land Status

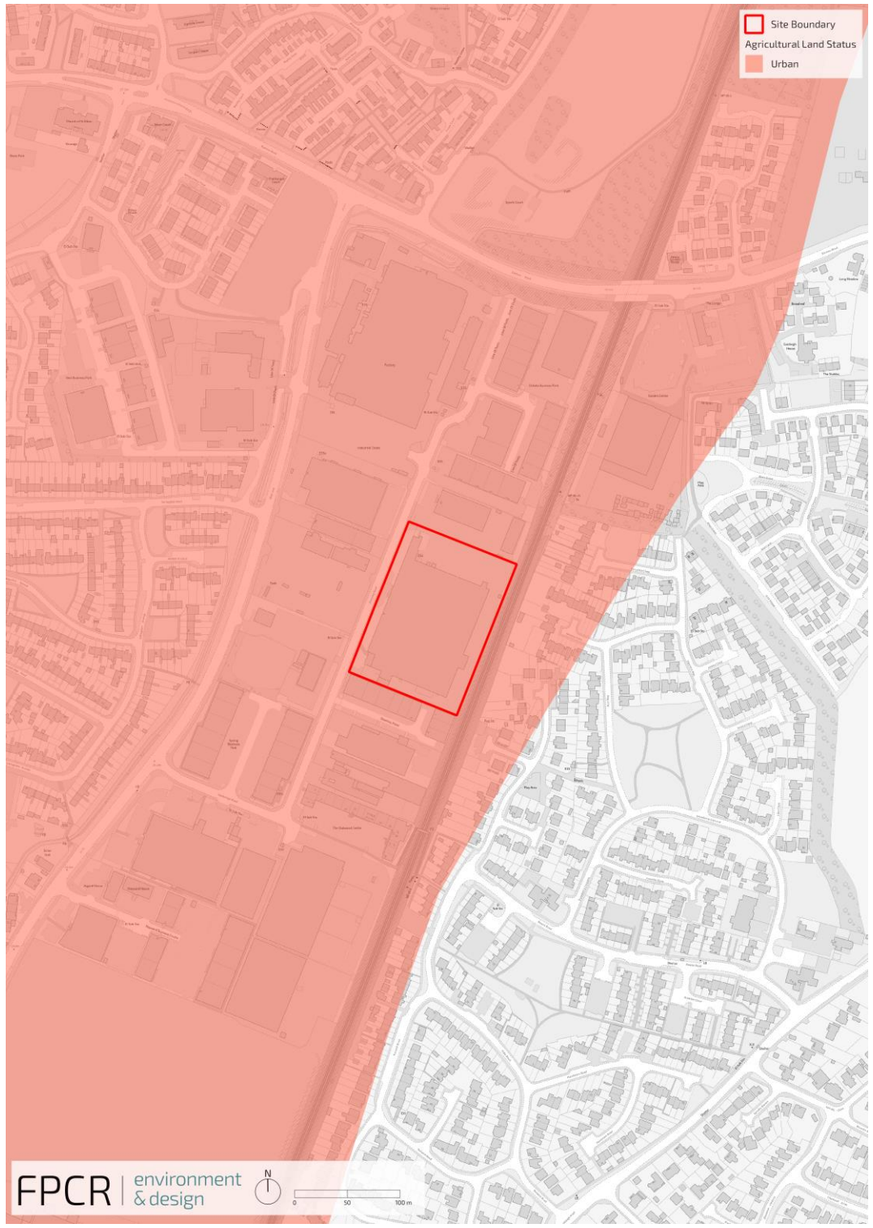
Agricultural Land Status (EI-B11)

The site is situated on an industrial estate and has urban classification.

Potential Impact on Project (EI-B12)

N/A

Agricultural Land Status Plan (EI-F03)



Soils and Substrates (EI-T02)

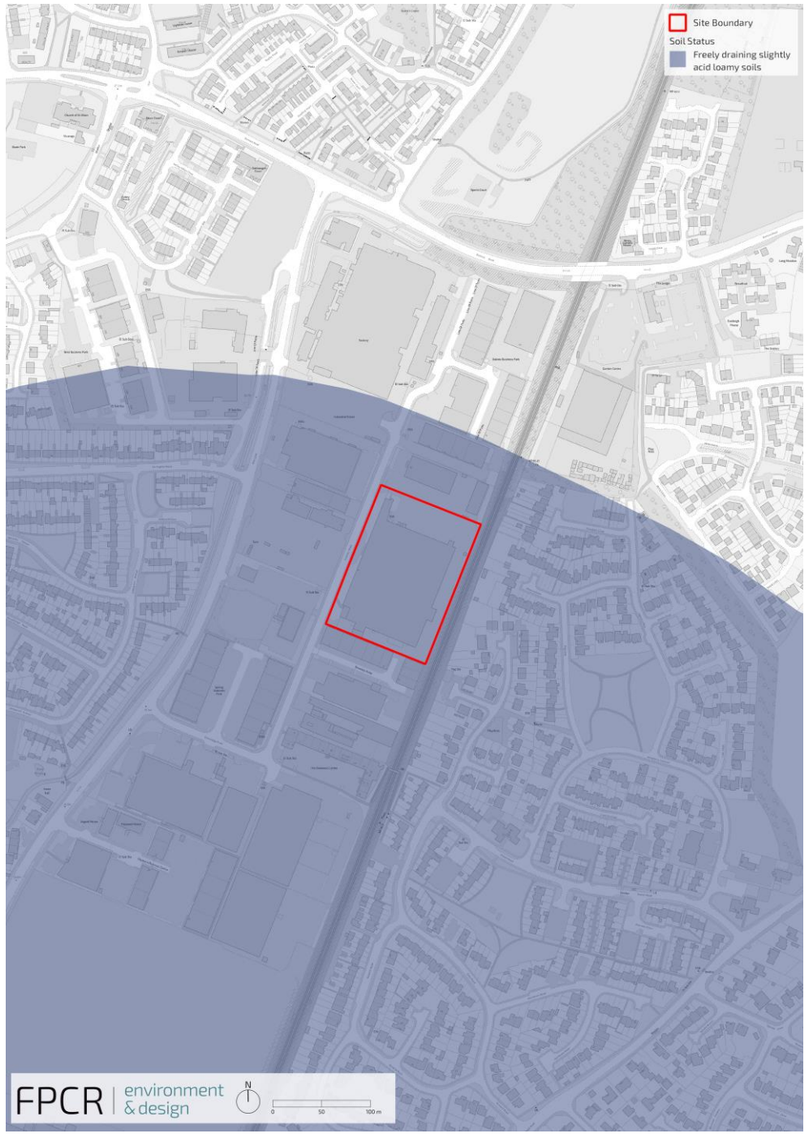
Summary of Soils Information (EI-B13)

The soil is made up of free draining, slightly acidic loamy soil. This soil type is ideal for neutral and acid pastures and deciduous woodlands, and for acid communities such as bracken and gorse in the uplands[2].

Potential Impact on Project (EI-B14)

The soil type should not impact any of the habitat enhancement that is prescribed.

Soils and Substrate Plan (EI-F04)



[2] Retrieved from: https://www.landis.org.uk/soilsguide/soilscapes.cfm?ssid=6

Flood Risk Zones

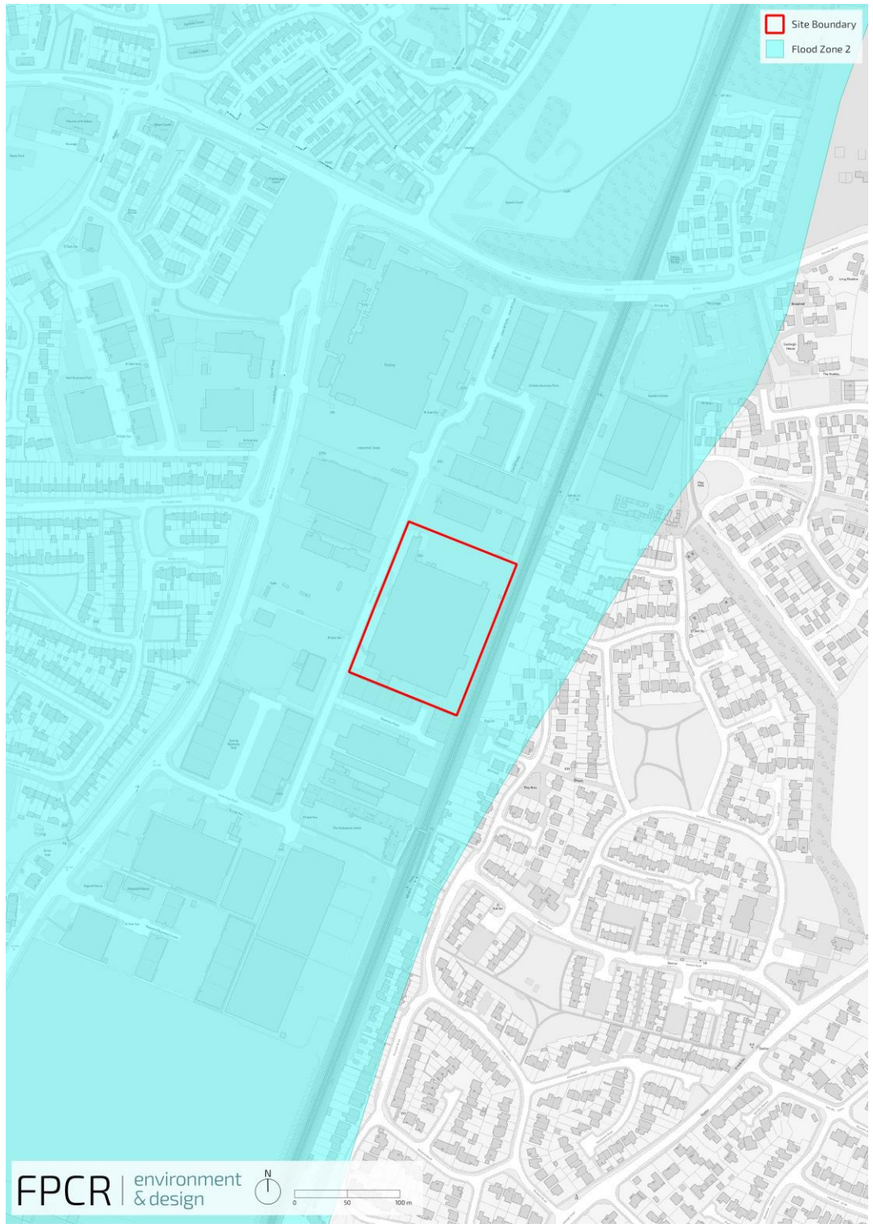
Summary of Flood Risk Information (EI-B19)

The site is situated in flood risk zone two which encompasses the whole of Havant town and encroaches on the site from the western side. Flood Zone Risk 2 has a medium probability of flooding. In any year the land in this area has between a 1% and 0.1% chance of flooding from rivers and between a 0.5% and 0.1% chance of flooding from the sea.

Potential Impact on Project (EI-B20)

The risk of flooding to the site is low in accordance with the guidelines stated on gov.uk and is approximately 100m from the nearest main river to the west.

Flood Risk Zone Plan (EI-F07)



Historic Environment and Earth Heritage

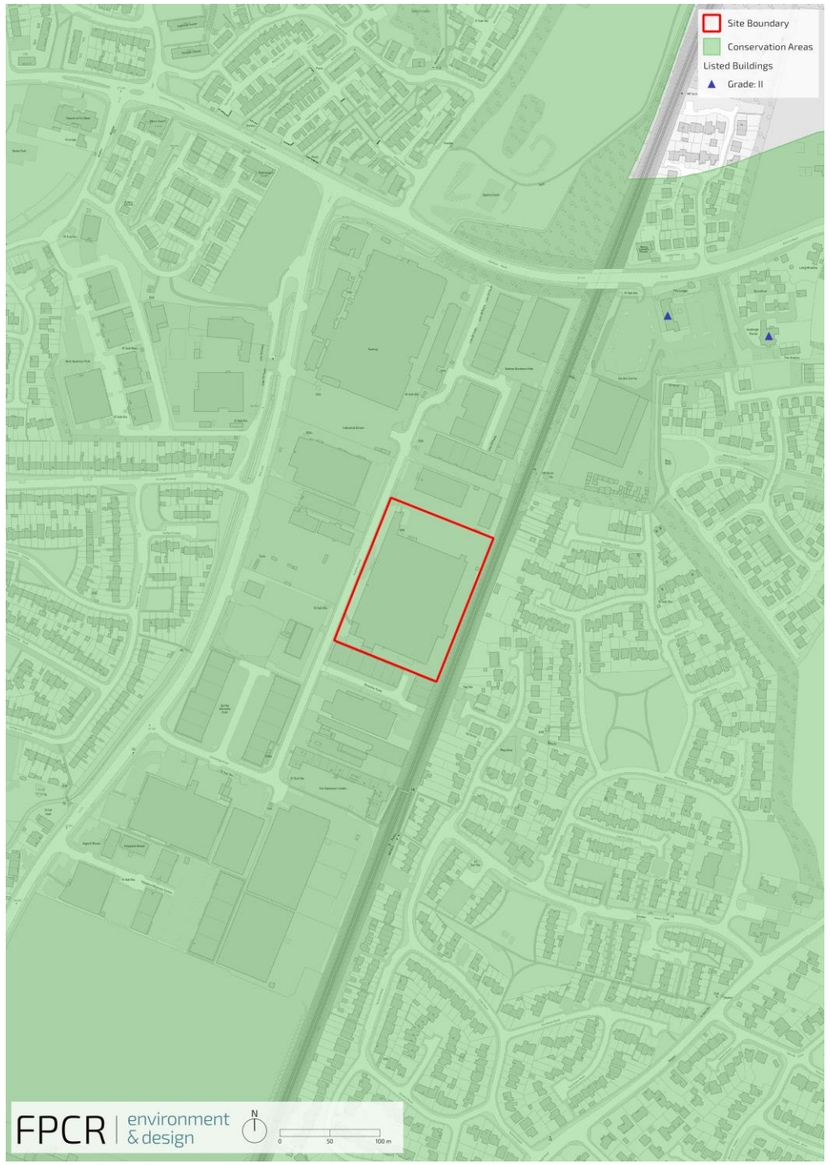
Summary of Historic Environment and Earth Heritage (EI-B22)

The site is situated in a conservation area due to the locality of designated sites. In relation to buildings, two Grade 2 listed buildings are situated to the North-East.

Potential Impact on Project (EI-B23)

The project will not physically affect any scheduled monument as these are all beyond the Site boundary.

Historic Environment and Earth Heritage Plan (EI-F09)



2. Planned Management Activities

Provide the site-wide aims and objectives. These should consider the Project Background information section outlined above as well as the outcomes of the Metric.

Management Plan Aims and Objectives PM-B01

Overall Management Plan Aims

The proposals are for the demolition and replacement of the existing buildings with a warehouse and office units including structural planting, landscaping, and vehicular access points, and therefore, the site management and HMMP aims align with this proposed usage of the space. A net gain has been achieved on the Site to meet the requirements of the Environment Act 2021, and therefore, the habitats will also be managed with regard to biodiversity.

Creating habitats has projected an uplift in habitat units. This will improve the botanical and structural diversity across the scheme, benefiting biodiversity.

The following management objectives outline the project's ecological goals. These objectives can be accomplished by following the management prescriptions in this plan. However, the management prescriptions may be modified throughout the project's life to achieve the same objectives in response to changing conditions.

Management Objectives

The aim of this plan is to create varied habitats which will provide amenity value in addition to increase opportunities for wildlife.

Amenity grassland creation:

Areas of modified grassland will be created at the northern and southern site boundaries by using Emorsgate Seeds 'Flowering Lawn Mixture EL1' or similar. This grassland will have a recreational function and will therefore be maintained by regular mowing.

Other neutral grassland creation:

Areas of other neutral grassland will be created along the eastern boundary of the site, by using a diverse wildflower native seed mix such as or similar to 'Standard General-Purpose Meadow Mixture' Emorsgate EM2. This area will be managed to have a varied sward height and promote biodiversity. Monitoring and supplementary seeding or remedial measures will be adopted.

Scrub creation:

Native and ornamental shrub will be created on site. Mixed native scrub will be planted along the eastern boundary of the railway line. This will be comprised of a mixture of species including common dogwood *Cornus sanguinea*, and European spindle *Euonymus europaeus*. Management will include pruning, and remedial measures will be employed to reduce the risk of non-native species growing. Additionally, ornamental shrub planting will be implemented around the car park.

Individual tree planting:

Several individual trees will be planted across the site. Remedial measures will be used where trees fail or struggle to establish but otherwise will be require minimal management to allow them to mature naturally.

Hedgerows:

Hedgerows of a native and species rich nature will be managed to enhance biodiversity and create habitat for numerous species.

Additional faunal enhancements:

FPCR recommends that nest boxes for birds be incorporated into the scheme

Principles Informed by Design Stage

The project's BNG target(s) should be set and documented early in the design process. Outline how background and baseline information influenced key design principles for the project from an early stage. This can provide useful context for the proposed retention, creation and enhancement measures.

Design Principles Informed by Baseline Information PM-B02

Careful consideration for biodiversity benefits has been a key guiding principle in the design of the habitat proposals. Collaboration between landscape architects and ecologists has been ongoing since initial designs of the scheme. Landscaping requirements such as screening and amenity areas have been designed to also benefit ecology and biodiversity, with the inclusion of native scrub planting, wildflower grassland and the inclusion of urban trees. Existing scrub has been retained where feasible.

Proposed species mixes have considered the habitat types common to the local area and suitability to the soil type present.

Habitat and Condition Targets PM-T01

This table presents a summary record of what you have agreed to deliver based on the biodiversity metric. These habitat condition targets form the basis of what the management plan is setting out to achieve. Include the relevant 'Area', 'Hedgerow', and 'Watercourse' types to be implemented and managed throughout the period of 30 years or more.

Baseline Habitat Type	Target Habitat Type	Parcel / Feature Refs	Baseline Condition	Targeted Condition	Years to Targeted Condition	Condition Assessment Targets	Comments
Modified Grassland	**Modified Grassland**	G1, G4	Poor	Poor	1	Poor condition will be targeted by achieving a pass in criteria C, F and G.	Poor condition will be targeted due to this habitat's proposed amenity function.
Developed land; sealed surface	**Modified Grassland**	-	N/A - Other	Poor	1	Poor condition will be targeted by achieving a pass in criteria C, F and G.	Poor condition will be targeted due to this habitat's proposed amenity function.
Bramble Scrub	**Other neutral Grassland**	S1	Condition Assessment N/A	Poor	2	Poor condition will be targeted by achieving a pass in criteria B, D and E.	It will be unlikely for this grassland to be a good example of this habitat type due to the small area and proximity to development; therefore, a higher condition cannot be attained.
Developed land; sealed surface	**Other neutral Grassland**	-	N/A - Other	Poor	2	Poor condition will be targeted by achieving a pass in criteria B, D and E.	It will be unlikely for this grassland to be a good example of this habitat type due to the small area and proximity to development; therefore, a higher condition cannot be attained.
Bramble scrub	**Mixed scrub**	S1	Condition Assessment N/A	Moderate	1	Moderate condition will be targeted by achieving a pass in criteria A, B and C.	Due to the proposed size, the scrub is not expected to be able to have clearings or a well-developed edge.
Developed land; sealed surface	**Mixed scrub**	-	N/A - Other	Moderate	1	Moderate condition will be targeted by achieving a pass in criteria A, B and C.	Due to the proposed size, the scrub is not expected to be able to have clearings or a well-developed edge.
Modified Grassland	**Introduced shrub**	G1, G2 and G3	Poor	Condition Assessment N/A	0	Condition Assessment N/A	Planting as per the LEMP.
Introduced shrub	**Introduced shrub**	IS5	Condition Assessment N/A	Condition Assessment N/A	0	Condition Assessment N/A	Planting as per the LEMP.
Developed land; sealed surface	**Introduced shrub**	-	N/A - Other	Condition Assessment N/A	0	Condition Assessment N/A	Planting as per the LEMP.
N/A – created	**Urban trees**	-	Poor	Poor	10	Trees will be targeted to poor condition in line with metric technical guidance.	44 trees to be planted.

N/A- created	**Species-rich native hedgerow**	-	N/A	Poor		Poor condition will be targeted.	91m of species-rich hedgerow along the site frontage on the Downley Rd boundary and 25m of species-rich hedgerow along the edge of the northern boundary will be created on site.
Urban Trees	**Urban Trees**	-			1	Maintain already established urban trees.	

Habitat and Condition Targets Further Comments
N/A

Habitat Retention

Provide a concise description of the habitats that are to be retained in their baseline condition. Habitats being retained may still require ongoing measures to maintain their baseline condition.

Measures to be Implemented to Protect Retained Habitats PM-03

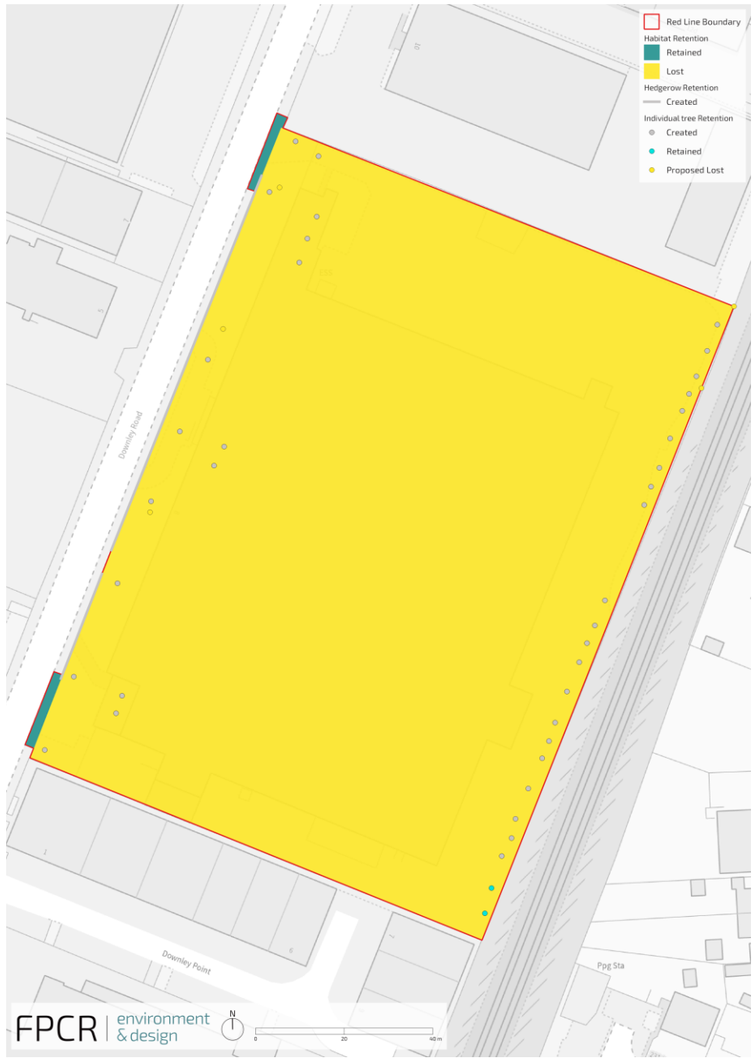
Two of the eight trees on site will be retained. These are broadleaved trees located on the eastern boundary, and they will be buffered with roof protection fencing.

Specification of Protective Measures to be Used PM-04

Retained trees will have fencing to act as a buffer for root protection.

Habitat Retention Plan PM-F01

Provide a plan with the locations of habitats to be retained (including whether to be protected and, or, enhanced) and those to be created under this HMMP. Include parcel references if needed. Tick box if any additional plans are provided in the Appendices ☐ . Reference: Click or tap here to enter text.



Habitat Creation, Enhancement and Management Plan EM-F01

Creation, Enhancement and Management Targets and Prescriptions

Grassland (Low Distinctiveness)

Creation, Enhancement and Management Summary (GL-T01)

Provide details of the approach to delivering each of the targeted condition criteria and habitat. Conditions from Statutory Biodiversity Metric habitat condition assessment sheets – Sheet 5. Grassland Low

Target Habitat:	Modified grassland – Poor condition

	Condition Assessment Criteria	**Targeted**	**Creation Approach**	**Management Approach**
A	There are 6-8 vascular plant species per m^2 present, including at least 2 forbs. **Note - this criterion is essential for achieving Moderate or Good condition.** Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m^2, please review the full UKHab description to assess whether the grassland should be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high or very high distinctiveness, please use the relevant condition sheet.	No	This habitat will be created using an amenity seed mix such as Emorsgate Seeds 'Flowering lawn mixture EL1' or similar. Therefore, it is unlikely to support the necessary diversity to achieve this condition criterion.	These grasslands will be mown regularly to maintain its amenity character and therefore, this criterion will not be targeted.
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	No	N/A	These grasslands will be managed to their amenity value. Areas mown every 6-8 weeks during the establishment year. In subsequent years cut in early spring and autumn, removing arisings.
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus* agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Yes	N/A	Seeding of a flowering lawn mix and management to reduce the likelihood of scrub becoming established. Regular mowing will prevent the establishment of scrub.
D	Physical damage is evident in less than 5% of total grassland area Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	No	Areas disturbed through landscape works will be seeded.	A minimum of 1.5 meters of close mown margins abutting buildings and hard surfaces.
E	Cover of bare ground between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens.)	No	-	-

F	Cover of bracken *Pteridium aquilinum* less than 20%.	Yes	Targeted through management.	Regular moving will limit the establishment of Bracken. Monitoring and management will ensure bracken is not allowed to cover greater than 20%, through mechanical removal or suitable herbicide use.
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA).	Yes	Targeted through management	Spot treat persistent pernicious weeds using herbicide following the first season's growth and/or manual hand strimming of target areas either in late summer when adjacent grassland is mown or in early spring. As per LEMP.

Additional Management Prescriptions (GL-B01)
This habitat has amenity function, so the management prescriptions are determined by the requirements of the general public and not BNG Targets.

Grassland (Low Distinctiveness)

Creation, Enhancement and Management Detailed Methods (GL-T02)

Provide detailed prescriptions for the creation and management of the habitat.

Action	Timing	Prescriptions
Sowing of grassland mix.	Year 1	Before seeding, soil must be cultivated using a rotovator or similar to produce a medium tilth that is subsequently allowed to settle for several days. Areas will then be sown with an amenity seed mix selecting a time when the soil is moist and can be worked. Sowing must be undertaken in still wind conditions when the soil is saturated but not flooded. After sowing, seed will be bedded in by rolling. Ideal timings for seeding are during cooler periods of the year in early spring or late autumn.
Establishment management	Year 1	Swards to be mowed regularly throughout the first year of establishment. Heavy use should be avoided during year 1 to prevent damage to the new turf. Mowing to these lawns will occur once 100mm is attained, cut to 40mm (50mm in shaded areas) at approximately 2-week intervals during their growing season. To allow flowering of these grasslands, mowing should be relaxed in late June for 4-8 weeks.
Long-term management	Year 2 +	As above. Spot treat persistent pernicious weeds using herbicide following the first season's growth and/or manual hand strimming of target areas either in late summer when adjacent grassland is mown or in early spring. Mowing will be reduced during prolonged dry periods and the mowing height increased to 50mm at such times. Similarly in very wet conditions all grass cutting operations will cease until conditions allow for grass cutting to take place
Supplementary seeding	Throughout	Any failed areas to be re-seeded in the appropriate seasons.

Grassland (Low Distinctiveness) Species Lists (GL-T03)

Provide a detailed species list for the habitat to be created.

Common Name	Scientific Name	Abundance / %	Comments
Yarrow	*Achillea millefolium*	1%	Yarrow
Kidney vetch	*Anthyllis vulneraria*	1%	Kidney vetch
Betony	*Betonica officinalis*	0.40%	Betony
Common knapweed	*Centaurea nigra*	1.5%	Common knapweed
Hedge bedstraw	*Galium verum*	1.5%	Hedge bedstraw
Field scabious	*Knautia arvensis*	0.40%	Field scabious
Rough hawkbit	*Leontodon hispidus*	0.50%	Rough hawkbit
Ox-eye daisy	*Leucanthemum vulgare*	1%	Ox-eye daisy
Black medick	*Medicago lupulina*	1%	Black medick
Ribwort Plantain	*Plantago lanceolata*	0.40%	Ribwort Plantain
Hoary plantain	*Plantago media*	2%	Hoary plantain
Cowslip	*Primula veris*	2%	Cowslip
Self-heal	*Prunella vulgaris*	0.40%	Self-heal
Meadow buttercup	*Ranunculus acris*	0.40%	Meadow buttercup
Bulbous buttercup	*Ranunculus bulbosus*	1.6%	Bulbous buttercup
White clover	*Trifolium repens*	4%	White clover
Common bent	*Agrositis capillaris*	8%	Common bent
Crested Dogs-tail	*Cynosurus cristatus*	28%	Crested dogstail
Red fescue	*Festuca rubra*	24%	Red fescue
Smaller cat's-tail	*Phleum bertolonii*	4%	Smaller cat's-tail
Smooth-stalked meadowgrass	*Poa pratensis*	16%	Smooth-stalked meadowgrass
Yarrow	*Achillea millefolium*	1%	Yarrow

Other Supporting Information

Supporting Information (GL-B02)
EL1 Flowering Lawn Mixture - Emorsgate Seeds The composition of this mix comprises of 20% wildflower and 80% Grasses.

What Does Success Look Like? (GL-F01)

Grassland (Medium, High, and Very High Distinctiveness)

Creation, Enhancement and Management Summary (GH-T01)

Provide details of the approach to delivering each of the targeted condition criteria and habitat. Conditions from Statutory Biodiversity Metric habitat condition assessment sheets – Sheet 6. Grassland Med High and V. High.

Target Habitat			Other neutral grassland – poor	
Condition Assessment Criteria		**Targeted**	**Creation Approach**	**Management Approach**
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type. **Note – this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**	No	A suitable species-rich wildflower grassland mix, such as 'Standard General-Purpose Meadow Mixture EM2' from Emorsgate will be sown to encourage a diverse, native wildflower rich grassland to establish. This will be unlikely to be a good example of this habitat type due to the small area and proximity to development.	Following establishment grassland will be mown on a rotational basis with areas either being mown once during early spring (March) and autumn (October). A later cut will benefit moth species by providing a food source for longer, and subsequently provide increases foraging opportunities for bats in their active season of April to October
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Yes	A diverse range of grasses and wildflowers will be used in the approved species mix which will encourage a diverse sward to establish.	Following establishment grassland will be mown on a rotational basis with areas either being mown once during early spring (March) and autumn (October). See LEMP.
C	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	No	This will not be targeted	This will not be targeted
D	Cover of bracken *Pteridium aquilinum* less than 20% and cover of scrub (including bramble) less than 5%.	Yes	N/A	Monitoring and management will ensure bracken and scrub is not allowed to cover greater than 20% for bracken or 5% for scrub. These will be managed through mechanical means or with a suitable herbicide if required.
E	Combined cover of species indicative of suboptimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging activities) accounts for less than 5% of total area. If any invasive non-native species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.	Yes	N/A	The site will be monitored for the establishment of non-native invasive species, and these will be removed where they have established. Pernicious weed will be spot treated as required to prevent their widespread establishment. These will be managed through mechanical means or with a suitable herbicide if required.
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type. **Note – this criterion is essential for achieving Good condition for non-acid grassland types only.**	No	This will not be targeted	This will not be targeted

Grassland (Medium, High, and Very High Distinctiveness)

Creation, Enhancement and Management Detailed Methods (GH-T02)

Provide detailed prescriptions for the creation and management of the habitat.

Action	Timing	Prescriptions
Sowing of grassland	Year 1	Areas to be sown will be first rotovated and raked or harrowed to produce a medium fine, firm tilth. Grass areas to be seeded in accordance with BS: 4428:1989 during March, April or September. Fertiliser will not be applied as this will lead to dominance of nutrient loving species such as broad-leaved grasses, nettles and docks. Weeds are to be irradicated through repeated cultivation prior to sowing. The seed mix will be sown at a density as per the general manufacturer's recommendation to allow space for each species to establish and to produce good ground cover.
Establishment management	Year 1	Lightly rake area after sowing and keep well-watered. Areas to be kept free of unwanted plants. Mown every 6-8 weeks during establishment year removing arisings.
Short-term management	Years 2-5	Cut in early spring and autumn after setting seed (in accordance with manufacturers recommendations)
Long-term management	Year 6+	A minimum 1.5-meter close mown margin is to be maintained abutting buildings and hard surfacing. Spot treat persistent pernicious weeds using herbicide following the first season's growth and/or manual hand strimming of target areas either in late summer when adjacent grassland is mown or in early spring (as required).
Supplementary seeding	Throughout	Seeds to be supplied by Emorsgate seeds and applied in accordance with the suppliers' recommendations

Grassland (Medium, High, and Very High Distinctiveness) Species Lists (GH-T03)

Provide a detailed species list for the habitat to be created

Common Name	Scientific Name	Abundance / %
Yarrow	*Achillea millefolium*	0.75
Common Knapweed	*Centurea nigra*	2.25
Wild Carrot	*Daucus carota*	1.20
Lady's Bedstraw	*Galium verum*	0.30
Field Scabious	Knautia arvensis	0.60
Oxeye Daisy	*Leucanthemum vulgare*	1.95
Musk Mallow	*Malva moschata*	0.75
Ribwort Plantain	*Plantago lanceolata*	2.25
Salad Burnet	*Poterium sanguisorba ssp sanguisorba*	1.50
Cowslip	*Primula veris*	0.45
Meadow Buttercup	*Ranunculus acris*	1.50
Yellow Rattle	*Rhinanthus minor*	0.75
Bladder Campion	*Silene vulgaris*	0.75
Common Bent	*Agrostis capillaris*	8.50
Crested Dogstail	*Cynosurus cristatus*	29.75
Red Fescue	*Festuca rubra*	25.50
Smaller Cat's tail	*Phleum bertolonii*	4.25
Smooth-stalked Meadow-grass	*Poa pratensis*	17.00

Other Supporting Information

Supporting Information (GH-B02)
EM2 Standard General-Purpose Meadow Mixture - Emorsgate Seeds

What Does Success Look Like? (GH-F01)

Scrub

Creation, Enhancement and Management Summary (SC-T01)

Provide details of the approach to delivering each of the targeted condition criteria and habitat. Conditions from Statutory Biodiversity Metric habitat condition assessment sheets – Sheet 19. Scrub.

Target Habitat:	Mixed scrub – Moderate condition

	Condition Assessment Criteria	**Targeted**	**Creation approach**	**Management Approach**
A	The parcel represents a good example of its habitat type – the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). At least 80% of scrub is native, there are at least three native woody species, no single species comprising more than 75% of the cover (except hazel Corylus avellana, common juniper Juniperus communis, sea buckthorn Hippophae rhamnoides or box Buxus sempervirens, which can be up to 100% cover).	Yes	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).	Selective thinning will ensure no one species comprises more than 50% of the canopy cover.
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	Yes	There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.	Selective thinning and supplementary planting of existing scrub blocks will introduce a diverse age range by introducing saplings alongside existing canopy and understorey plants.
C	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.	Yes	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981 (as amended) and species indicative of sub-optimal condition make up less than 5% of ground cover.	Any undesirable species such as common nettle will be managed through a programme of control of this pernicious species through spot-spraying will reduce its cover.
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	No	This will not be targeted.	This will not be targeted.
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	No	This will not be targeted.	This will not be targeted.

Additional Management Prescriptions (SC-B01)

All birds, their eggs, dependent young and active nests are protected from damage or destruction whilst breeding. Management of the scrub should be undertaken between September and February, outside of the breeding bird season. If management during this period is not possible, then a nesting bird check by a suitably experienced ecologist should be made of all areas requiring management no more than two days before works are scheduled. Should an active nest be found, works in this area must stop until the young have fledged or the nest is no longer active. A buffer around the affected area will be necessary to reduce disturbance effects that could cause a nest to be abandoned.

Scrub

Creation, Enhancement and Management Detailed Methods (SC-T02)

Provide detailed prescriptions for the creation and management of the habitat.

Action	Timing	Prescriptions
Introduce native scrub whip planting	Year 1	Shrub to be planted in accordance with BS 4428:1989. Transplants to be pit planted at 1 metre centres (or as scheduled) in random groupings of 3-5 and 7-10 shrub species depending on numbers of plants. Bare root transplants to be root dipped with 'Broadleaf Root Dip' with 'Rootgrow' mycorrhizal fungi granules (RGPro as supplied by Empathy) and Sierrablen N Mag Pre-planter Fertiliser sprinkled evenly into prepared planting pit in accordance with manufacturers recommendations prior to planting. Plants are to be well watered immediately after planting and prior to spreading of mulch. Planting areas to be covered with 75mm depth amenity grade bark mulch such as Melcourt 'Ornamental Bark Mulch' (or similar approved by the landscape architect) and kept weed free; on slopes greater than 1:3 a biodegradable geotextile i.e Ecomatt Weed Control Fabric is to be laid and securely pegged in place. Plants to be protected from rabbits, with rabbit fence and / or individual mesh tree guards securely fixed to timber stake(s).
Establishment	Years 1- 5	Scrub develops naturally if allowed to do so. Replace plants if less than 75% establishment of original planting. Weeding should be undertaken when plants are establishing to remove competing vegetation. Guards should be removed once standards have established. Following planting, water shrubs in periods of extreme drought (2 or more weeks without substantial rainfall).
Annual Management	Years 5 +	Prune back shrubs (no more than one third of woody growth) during October to March. Trim shrubs back from paths etc. Any pruning carried out must be during the period October - March (inclusive) to avoid disturbance to breeding birds. Care should be taken to avoid disturbing hibernating reptiles/ amphibians. Maintain free of self-seeded non-native plants. Remove weed growth by hand and top up mulch levels as necessary. Deadhead after flowering.
Replacement Planting	As required.	Replace failed specimens on a like-for-like basis.

Scrub Species Lists (SC-T03)

Provide a detailed species list for the habitat to be created.

Common Name	Scientific Name	Abundance / Number of individuals
Common Dogwood	*Cornus sanguinea*	156
European Spindle tree	*Enonymus europaeus*	23
Wild Privet	*Ligustrum vulgare*	67
Dog Rose	*Rosa canina*	23
Common Elder	*Sambucus nigra*	23
Wayfaring Tree	*Viburnum lanata*	67
Guelder Rose	*Viburnum opulus*	89

Other Supporting Information

Supporting Information (SC-B02)
N/A

What Does Success Look Like? (SC-F01)

Individual Trees

Creation, Enhancement and Management Summary (UT-T01)

Target Habitat:			Urban tree – Poor condition	
Condition Assessment Criteria		**Targeted**	**Creation Approach**	**Management Approach**
A	The tree is a native species (or more than 70% within the block are native species).	Yes	All planted trees will be native species	Any replacement planting of failed specimens required will be undertaken on a like-for-like basis
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Yes	Automatically passed as individual trees	N/A
C	The tree is mature (or more than 50% within the block are mature).	No	This criterion will not be targeted due to the limited time frame available within his management plan (30 years) which will not be sufficient to allow a tree to grow to full maturity.	N/A
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	No	This will not be targeted.	This will not be targeted; however, management should be restricted to only necessary works for tree health and safety of the public. No herbicides are to be used.
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	No	This criterion will not be targeted as it is unlikely that young, planted trees will be guaranteed to achieve this within the 30-year management period without artificial interventions.	N/A
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	No	This will not be targeted.	N/A

Additional Management Prescriptions (UT-B01)

All birds, their eggs, dependent young and active nests are protected from damage or destruction whilst breeding. Management of the trees should be undertaken between September and February, outside of the breeding bird season. If management during this period is not possible, then a nesting bird check by a suitably experienced ecologist should be made of all areas requiring management no more than two days before works are scheduled. Should an active nest be found, works in this area must stop until the young have fledged or the nest is no longer active. A buffer around the affected area will be necessary to reduce disturbance effects that could cause a nest to be abandoned.

Individual Trees

Creation, Enhancement and Management Detailed Methods (UT-T02)

Action	Timing	Prescriptions
Introduce standard tree planting	Year 1	Trees are to be planted in accordance with BS 4428:1989, double staked (10-12cm – 14016cm girth trees) tied and braced with flexible webbing loops/belts and spacer collars/sleeves (NB not with a timber cross bar) in prepared pits. Tree pits in open field /un-compacted ground conditions or shrub beds to be 1000 x 100m (at least 75mm greater than that of the root system) with pit depth to be based on the planting depth of the tree (distance from root flare to underside of root ball) in accordance with BS 8545:2012. Topsoil and subsoils to be excavated and stored separately for reuse. Tree pit to be backfilled with stored subsoil and topsoil at depth to replicate the existing soil horizons. Topsoil to be mixed enriched with 40L of peat free tree planting compost, incorporating 'Root grow' professional mycorrhizal fungi granules (RGPro as supplied by empathy) and Sierrablen N Mag pre-planter. Root balls are to be enriched by Root Rain Metro or similar irrigation pipe. Well water after planting. The base of trees planted in grass areas are to be covered with 75mm amenity grade bark mulch such as Melcourt 'Amenity' Bark Mulch (or similar approved by the landscape architect) to 1.0 metre diameter and kept weed free. Where trees are to be planted in heavily compacted ground, small tree pits (Mature canopy 3m) should have a minimum soil volume of 4.24m3, Medium tree pits (Mature Canopy 5m) should have a minimum soil volume of 11.83 m3, Large tree should have a minimum of (mature canopy 8m) should have a minimum of 24m3 (or to latest GreenBlue Urban, Topsoil Volume Guidelines. Tree pits are to be excavated subsoil and topsoil (as described above) mixed with 160L of peat free tree planting compost. Tree pits in poorly draining soils are to be positively drained connecting into the surface water drainage system to engineers' details. Planting will be undertaken from 1 November to 31 March, when the ground is not frozen or waterlogged. This will accord with BS 8545:2014. • Standard 60-80cm tree whips should be mixed and planted randomly. Species provided in the table below will create a diverse mix. • Plant with hand tools, such as spades – do not plough or cultivate. Trees should not be planted lower than the surrounding ground level, with the aim of planting to ensure that the base meets the soil level, which will be slightly above ground level, with an aim of 25mm above.
Replacement planting	As required	Supplementary planting will be undertaken as necessary where failed specimens occur. Planting will be undertaken between November and March.
Management	Year 1+	A weed-free mulched 1m diameter circle around the tree stem to a minimum depth of 75mm. When trees have reached independence, the sward can be allowed to grow up to the trunk, although tall weeds, bramble and ivy will be removed from around the trees. Care will be taken when using strimmers or mowers to avoid damaging trees. Weeds and grass within 100mm of the trunks will be removed by hand. Examine all tree stakes and ties, replace or adjust as appropriate. If the tree has yet to establish, replace or adjust ties, spacers and tree tubes as appropriate. If the tree has established well, then remove all stakes, ties, spacers, tubes etc. and make good surfaces disturbed – filling any holes with suitable topsoil. Where periods of extreme drought occur, trees that have not yet established (not healthy, not in full leaf, suppressed growth) need to be watered where their tolerance to drought is deemed to be insufficient. Management should be tailored to help each tree reach maturity.

Individual Trees Species Lists (UT-T03)

Common Name	Scientific Name	Quantity
European crab apple	*Malus sylvestris*	*5*
Broad-leaved cockspur thorn	*Crataegus prunifolia*	*6*
European hornbeam	*Carpinus betulus*	*3*
'Paul's Scarlet' Hawthorn tree	*Crataegus laevigata 'Paulus scarlet'*	*10*
Bird cherry	*Prunus padus 'Watereri'*	*2*
Majestica whitebeam	*Sorbus aria 'Majestica'*	*5*
Sheerwater seedling'	*Sorbus aucuparia*	*6*

What Does Success Look Like? (UT-F01)

Hedgerow

Creation, Enhancement and Management Summary (HD-T01)

Provide details of the approach to delivering each of the targeted condition criteria and hedgerow type. Conditions from Statutory Biodiversity Metric habitat condition assessment sheets – Sheet 8. Hedgerow

Target Hedgerow Type:			Species-rich native hedgerow – Poor condition	
Condition Assessment Criteria		**Targeted**	**Creation Approach**	**Management Approach**
A1	Height: >1.5m average along length.	No	Hedge plants to be pit planted in double staggered rows 450mm apart at 450mm centres (or as scheduled) with the growing tip (top 100mm) of the hedge removed to encourage spreading growth	All hedges are to be maintained to a maximum height of 1.5m.
A2	Width: >1.5m average along length.	No	Hedgerow plants (whips) will be planted in a double staggered row	Hedgerows should be managed as a bushy hedge, with biannual cutting undertaken, on at least one side, to maximise their benefit to wildlife, however this criterion is not being targeted as it is unlikely the hedgerows will meet >1.5m width.
B3	Gap – hedge base: Gap between ground and base of canopy <0.5m for >90% of length.	Yes	N/A	Regular pruning will ensure hedgerows do not become 'outgrown'. A-profile trimming should be implemented to encourage the establishment of a bushy base.
B2	Gap – hedgerow canopy continuity: Gaps make up <10% of total length; and no canopy gaps >5m.	Yes	Newly planted whips should be protected with rabbit guards and timber stakes until established.	Dead and diseased plants will be replaced on a like-for-like basis in the following planting season for the first 5 years following initial planting. During the first 3 years, hedgerows will be watered during prolonged periods of dry weather between April and October. Rabbit guards and wooden stakes will be replaced where necessary and removed once whips are well-established, to ensure lateral growth.
C1	Undisturbed ground and perennial vegetation: >1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: • measured from outer edge of hedgerow, and • is present on one side of the hedge (at least)	No	This will not be targeted.	This will not be targeted.
C2	Nutrient-enriched perennial vegetation: Plant species indicative of nutrient enrichment of soils dominates <20% cover of the area of undisturbed ground.	No	This will not be targeted.	This will not be targeted.
D1	Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species	Yes	Only native species will be planted.	The site will be monitored for the establishment of non-native invasive species, and these will be removed where they

	(including those listed on Schedule 9 of WCA) and recently introduced species.			have established. Pernicious weed will be spot treated as required to prevent their widespread establishment.
D2	Current damage: >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	No	This will not be targeted.	Although this criterion will not be targeted, excessive cutting back that may be detrimental to the hedgerow will be avoided by following a sensitive pruning regime.

Additional Management Prescriptions (HD-B01)
All birds, their eggs, dependent young and active nests are protected from damage or destruction whilst breeding. Management of the trees should be undertaken between September and February, outside of the breeding bird season. If management during this period is not possible, then a nesting bird check by a suitably experienced ecologist should be made of all areas requiring management no more than two days before works are scheduled. Should an active nest be found, works in this area must stop until the young have fledged or the nest is no longer active. A buffer around the affected area will be necessary to reduce disturbance effects that could cause a nest to be abandoned.

Hedgerow

Creation, Enhancement and Management Methods (HD-T02)

Provide detailed prescriptions for the creation and management of the habitat.

Action	Timing	Prescriptions
Hedgerow planting	Year 0	New hedgerows will be planted in the planting season (October to March inclusive). Hedge plants to be pit planted in double staggered rows 450mm apart at 450mm centres (or as scheduled) with the growing tip (top 100mm) of the hedge removed to encourage spreading growth. Bare root transplants to be root dipped with 'Broadleaf Root Dip' and 'Rootgrow' mycorrhizal fungi granules (RGPro as supplied by Empathy) and Sierrablen N Mag Pre-planter Fertiliser sprinkled evenly into prepared planting pit in accordance with manufacturers recommendations prior to planting. In mixed species hedges; shrub species to be planted randomly throughout the length of hedge. Well water plants immediately after planting and prior to spreading of mulch. Planted areas to be covered with 75mm depth bark mulch and kept weed free. Plants to be protected from rabbits with rabbit fence and / or individual rabbit mesh guards securely staked.
Management	Year 2+	Examine all guards and replace or adjust as appropriate. Remove guards once hedgerows established. Spraying or strimming of weeds to reduce competition and aid establishment. Not required if weed suppression matting used. Side trimming of hedgerows in an 'A' profile to promote healthy hedgerow base. Starting in year 4 after planting new hedgerows will be cut along one side annually, alternating between the two sides of the hedgerow each year. Top up mulch as required. Hedges to be managed to a maximum of 1.5m and clipped/trimmed to the pavement edges. Prune any diseased or rotten wood back to sound wood. Remove all cut material from site.
Replace dead or diseased plants	Year 2 – 5	Dead and diseased plants will be replaced in the following planting season on a like-for-like basis for the first 5 years following initial planting.
Water during periods of droughts	Year 1 – 3	During the first 3 years, hedgerows will be watered during prolonged periods of dry weather between April and October.
Initial pruning of hedgerows	Year 2 - 3	The hedge should be pruned between November and March, within the first 2 – 3 years of growth, to encourage dense, bushy growth.
Removal of stakes	Year 4+	Rabbit guards and stakes will be removed once whips are established, to encourage lateral growth.
Pruning of hedgerows	Year 5	Hedgerows will be pruned no more than once yearly to an A-shaped cross section, with only a single side of each hedgerow cut each year where possible. Pruning must be undertaken outside of the breeding bird season (November to March) and should ideally wait until December to February to allow the provision of berries into the winter. Hedgerows should be allowed to increase in height incrementally and should not be cut to the same height each year. Hedges should be allowed to reach a minimum height of 1.5m to provide maximum benefit to wildlife.

Hedgerow Species Lists (HD-T03)

Provide a detailed species list for the habitat to be created

Common Name	Scientific Name	Quantity
Field Maple	*Acer campestre*	120
Common Hazel	*Corylus avellana*	81
Common Dogwood	*Corus sanguinea*	42
Common Hawthorn	*Crataegus monogyna*	239
Common Holly	*Ilex aquifolium*	81
Wild Privet	*Ligustrum vulgare*	81
Blackthorn	*Prunus spinosa*	42
Guelder Rose	*Viburnum opulus*	81
Scotch Rose	*Rosa pimpinellifolia*	26
Common Elder	*Sambucus nigra*	26

Other Supporting Information

Supporting Information (HD-B02)

Local whips / cuttings should be sourced where possible – plants should be pest and disease free and grown in the UK. Where possible source plants from Plant Health certified nurseries.

What Does Success Look Like? (HD-F01)

Habitat Creation and Management – Risk Register and Remedial Measures PM-T02

Provide a site-wide risk register associated with creating, enhancing and, or, managing each habitat type. Consider your approach to delivering the BNG targets in case the management prescriptions do not deliver as expected.

Risk Identification Date	Habitat Type	Risk Factor	Trigger for Action	Remedial Measure
Years 1-3	Other Neutral Grassland; Modified Grassland	Failed areas of seeding	Greater than 10% bare ground during years 2-5.	Apply additional seed in areas of failed establishment. Appropriate seed mix to be used for the compartment where reseeding is required.
Project life term	Other Neutral Grassland; Modified Grassland	Poor sward height diversity	Where <20% of the sward is <7cm and <20% of the sward is >7cm.	Implement appropriate mowing/strimming regime
Project life term	Other Neutral Grassland; Modified Grassland	Scrub or bracken encroachment	Scrub and or bracken cover greater than 5% or 20% respectively	Initiate programme of scrub and/or bracken removal as required. This can either be through mechanical removal or spot spraying with herbicide.
Project life term	Other Neutral Grassland; Modified Grassland	Establishment of species indicative of sub-optimal condition	Where species indicative of sub-optimal comprise >5% of sward	Initiate a programme of spot-spraying species indicative of sub-optimal condition using glyphosate herbicide.
Project life term	Other Neutral Grassland; Hedgerows; Mixed scrub	Establishment of non-native invasive species	Monitoring identifies the presence of any invasive non-native species within the sward	Initiate a programme of eradication of invasive non-native species. Specialist advice should be sought to ensure the appropriate eradication measures for the species identified.
Project life term	Other Neutral Grassland	Poor species diversity and representation of wildflowers, sedges and indicator species.	Wildflowers, sedges and indicator species are not very clearly and easily visible in the sward.	Initiate yellow-rattle and red bartsia seeding to reduce the competitiveness of grasses.
Project life term	Individual trees	Failed specimens	Failed specimens observed during the 30-year period.	Replacement planting with like for like species of failed specimens
Project life term	Individual trees, hedgerows, mixed scrub	Newly planted trees or whips failing to establish from drought etc	10% of newly planted whips found to be dead during years 1-10. Any trees to be found dead.	Undertake a second round of planting, replacing failed specimens on a like-for-like basis.
Project life term	Individual trees, hedgerows	Plant heath / disease ie *Phytophthora ramorum,* oak processionary moth	More than 10% mortality rate of trees; Any of the following high-risk disease or pests are present: Identify a tree pest or disease: overview - GOV.UK (www.gov.uk)	Phytophthora – Fell / remove as first intervention Oak processionary moth – report nests via TreeAlert and seek specialist help with treatment such a spraying to treat nests. Do not attempt to remove or treat nests without contacting a specialist company.

				Where significant mortality is observed (>10% of whips) or any trees seek ecological advice to initiate additional planting if required.

3. Monitoring Schedule

To deliver BNG, a robust strategy is critical to monitor successes and challenges. Routine monitoring informs progress and facilitates the required management plan updates at set intervals.

Monitoring Strategy

Provide details of the monitoring strategy to encourage successful implementation of the management plan (MS-B01)
The site will be monitored at varying degrees from establishment through to its long-term management. Initially, in years 2 and5, an ecologist will monitor the site to review how the establishment of the proposed habitat creation and enhancement is progressing. The key observations during this period will be to determine whether habitats are successfully establishing and improving and whether replacement planting or reseeding may be required. During years 5-10 after implementation the site management will begin to change to longer-term management. Monitoring will be undertaken at the beginning and end of this 5-10-year period, with a visit to review grassland condition in year 10. During years 11-30 monitoring will be undertaken every five years beginning at year 15. The key elements of this monitoring will be to review whether the long-term management practices maintain the site in the targeted condition scores for the proposals. During this period, adaptive management measures will be reviewed to determine whether there are any opportunities to alter management to encourage additional habitat enhancements.

Monitoring Methods and Intervals MS-T01

Provide details of the methods you will use to adequately monitor the progress towards the targets stated in the management plan and as agreed with the Local Planning Authority.

Habitat Type	Monitoring Methods	Monitoring Interval and Timing
Grassland	During the establishment phase of the grassland (years 1 to 5) monitoring will focus on determining the DAFOR abundances of plants present throughout the sward and whether a sufficient number of species within the seed mixes used have established. It will also be important to monitor the percentage coverage of palatable grasses. Quadrat sampling will be undertaken to identify the habitat type that is establishing and then number of species per m^2 and collect a botanical species list across grassland to check against target species list. As well as the above, the following should be monitored: • Estimate the percentage of bare ground, bramble and bracken cover. • Presence of non-native invasive species • Sward height diversity • Level of trampling damage If areas are exhibiting condition factors associated with the nearby higher distinctiveness habitats, the management plan will be updated to reflect this.	In years 2 and 5, and then every 5 years from year 10. Grassland monitoring will be undertaken between May-August.
Individual trees	During years 2 and 5 of the management plan period, individual specimen trees will be monitored for their health. • Examine stakes and ties replace, adjust or remove as appropriate. • Fill in any holes in soil with suitable top-soil as appropriate. • Replace failed specimens on like for like basis, top up mulch where necessary. (Years 2-5) • Water any trees that are not yet established through periods of drought (years 2-5)	In years 2 and5, then every 5 years starting at year 10. Tree monitoring will be undertaken between May-September.

	Years 10-30 remove stake guards unless required to support replaced specimens.	
Hedgerows	During years 2 and 5 of the management plan period monitoring of new planting will be taken and monitored for: • The number of species prevailing per 20m • Size of and % of gaps within the canopy • The height and width of the hedgerow • Presence of invasive non-native species The character of the edge habitats	In years 2 and5, then every 5 years starting at year 10. Hedgerow monitoring will be undertaken between May-September.
Mixed scrub	During years 2 and5 of the management plan period, individual specimen scrub plants will be monitored for their health. The abundance of species indicative of sub-optimal condition and the presence of non-native invasive species will also be reviewed. Throughout the remainder of management period, scrub will be monitored for: • The number of native scrub canopy species in each block • The percentage cover of various age ranges of scrub throughout scrub blocks • Percentage cover of species indicative of sub-optimal condition • Presence of non-native invasive species • The character of edge habitats	Years 2, 5, 10, 15, 25, 30 Surveys to be completed between May and August.

Monitoring Reports

Following completion of habitat creation and initial enhancement works, prepare for your monitoring report for the Local Planning Authority or Responsible Body. You should monitor each habitat type comprising the BNG project. Provide sufficient detail for the reviewing authority to assess the progress. The 'Monitoring Report Template' can help you do this. The requirements and regularity with which the monitoring reports are required are at the discretion of the LPA or Responsible Body. Prepare the monitoring requirements below.

Monitoring Report Schedule MS-T02

Provide details of the person or organisation that will be responsible for submitting the monitoring reports. Also state the responsible organisation for receiving and reviewing the reports.

Organisation Responsible for Submitting the Monitoring Reports	Organisation Receiving and Responsible for Reviewing Reports
TBC	Havant Borough Council

Provide details of when the monitoring surveys and reports will be undertaken and submitted. You can extend the table and adjust according to your required schedule.

Project Year	Month Report to be Submitted	Month Management Plan to be reviewed	Comments
Yr 1	Once planting completed	N/A	Summary report to be submitted to the council confirming habitat creation works
Yr 2	Once planting completed	N/A	Summary report to be submitted to the council confirming habitat creation works
Yr 5	October	October	~~TBC~~ Full monitoring report and any management plan changes required to be submitted in updated HMMP if appropriate
Yr 10	October	October	Full monitoring report and any management plan changes required to be submitted in updated HMMP if appropriate~~TBC~~
Yr 15	October	October	Full monitoring report and any management plan changes required to be submitted in updated HMMP if appropriate~~TBC~~
Yr 20	October	October	Full monitoring report and any management plan changes required to be submitted in updated HMMP if appropriate
Yr 25	October	October	Full monitoring report and any management plan changes required to be submitted in updated HMMP if appropriate
Yr 30	October	October	Summary report of site status to be submitted.

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Adaptive Management

Summary of Adaptive Management Approaches (MS-B02)
The appropriately experienced ecologist will receive and review the monitoring survey reports. When a recommendation is made to the landowner to ensure objectives compliance, it will be ensured through communication between the ecologist and the landowner that this is addressed within that year through adaptive management. The management plans for the Site will be reviewed in year 5 following creation and then every 5 years, which will capture any necessary changes in the management of the Site required to achieve the target habitat prescriptions and conditions.

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