Homes England

The Housing and Regeneration Agency

West of Ifield, Crawley
Phase 1 Landscape & Ecological Management Plan

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Landscape & Ecological Management Plan

West of Ifield Phase 1 Infrastructure

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1 Introduction

1.1 Scope of the Document

1.1.1 This Landscape and Ecological Management Plan (LEMP) describes the proposed maintenance, management and monitoring for the landscape and ecological mitigation features for the West of Ifield Phase 1 Infrastructure scheme. It has been prepared by Arcadis Consulting (UK) Ltd (Arcadis) on behalf of Homes England as a requirement to support the planning application to Horsham District Council (HDC) for the construction of the enabling infrastructure at the West of Ifield site. This comprises the Crawley Western Multi-modal Corridor (Phase 1, including access from Charlwood Road and crossing points) and access infrastructure to enable servicing and delivery of secondary school site and future development, including access to Rusper Road (herein referred to as the 'Proposed Development.'

1.1.2 The overarching purpose of this plan is to set out the principles and standards required for the aftercare of the new and retained soft landscape treatments. It is intended to be used to support the planning application for the Infrastructure Scheme and subsequently be used by organizations who will have responsibility for the establishment, ongoing maintenance and upkeep of the landscape works implemented as part of the Land West of Ifield Infrastructure scheme. It is intended that the LEMP will be a live document that is reviewed and updated to include the detailed design information, changes to the scheme during the implementation on site and coordination with the wider land parcels as they are brought forward for development.

1.1.3 The LEMP is intended to provide guidance for the initial 30 year period after construction, covering the establishment, maintenance and future management of all landscaped areas, planting and ecology within the site. The duration of this LEMP has been selected to accord with the Biodiversity Net Gain requirements of the project, primarily to ensure the habitats created as part of the scheme have adequate aftercare provisions in place to provide certainty as to their intended outcomes.

1.2 Purpose of the Document

1.2.1 The overarching purpose of this LEMP is to provide clear objectives, quality standards and general principles for the establishment of planting and longer-term management of the planting proposals identified for the Proposed Development. Given that this LEMP covers the Phase 1 Infrastructure areas of the site, it is expected that it will be used alongside future LEMP's covering the remaining areas of the site as they come forward.

1.2.2 To achieve this the contents of the LEMP aim:

- To convey the original design intent and vision for the existing and proposed landscape treatments and ensure they are realised and maintained;
- To provide clear objectives for the management and maintenance of the existing and proposed landscape;
- To set clear standards for the performance of landscape maintenance work following handover from the Landscape Contractor at the beginning for the operational phase;
- To clarify who is responsible for the maintenance, management and monitoring of each asset;
- To identify, manage and resolve possible conflicts between different users of the site;
- To ensure the protection and management of target species/groups, including bats, badgers, birds, reptiles, amphibians, invertebrates and local flora;
- To establish work programmes and schedules for landscape maintenance staff;

- To help with the future allocation of financial resources for landscape maintenance;
- To provide management prescriptions for the habitat features to ensure that the ecological interest of the site is protected in the long term; and
- To help monitor success and progress against management targets.

1.2.3 This LEMP has been carefully prepared to provide information for all of the above items, which will ensure that the existing and new landscape proposals are managed to ensure successful long-term establishment and achieve required biodiversity benefits.

1.2.4 The LEMP will be a key document for use by all those individuals and organisations who, at any time, will have responsibility for the establishment, ongoing maintenance and upkeep of the landscape and habitat works implemented as part of the Proposed Development including the relevant Contractors working on the scheme, who will have responsibility for works during the project's aftercare/defects liability period and beyond.

1.2.5 The LEMP should be read in conjunction with the following documents also submitted as part of the Hybrid Planning Application for the Land West of Ifield Housing Development:

- Biodiversity Net Gain Report (Arcadis, 2024);
- Ecological Mitigation Strategy (Arcadis, 2024);
- Arboricultural Impact Assessment (Tim Moya Associates, 2023);
- Landscape Typology Plans (Arcadis, 2024).

1.3 Structure of the Document

1.3.1 This LEMP is set out to cover the initial period following the completion of construction (Practical Completion) up to year 30. It has been prepared in accordance with the requirements of BS 42020 *'Biodiversity – Code of practice for planning and development'*, which recommends the coordination of the management of biodiversity features with other site management requirements and especially with the management of landscape features.

1.3.2 The report is structured as follows:

- Background information about the scheme.
- An overview how this plan is intended to be implemented.
- Description of the site features to be managed and ecological constraints on site that could influence management.
- Outline of the landscape and ecological design proposals.
- Aims and objectives along with general principles of management.
- Detailed management and maintenance prescriptions, including a schedule of tasks.
- Principles for monitoring and review.

2 Site Description

2.1 Location

2.1.1 The site falls mainly within the administrative area of Horsham District Council whilst a small portion of the site to the east is located within Crawley Borough Council and included to provide access via

active travel links into existing communities only. The site is located south of Charlwood Road, beyond which lies Gatwick Airport. The site lies to the north of the Arun Valley railway line and adjoins the existing neighbourhoods of Ifield and Langley Green in Crawley. To the east, the site is bounded by trees and Ifield Village. Ifield West and ancient woodland are to the south and the River Mole and ancient woodland to the west. The River Mole passes through the northern part of the site.

Figure 3.1. Site location (Google Maps)

2.1.2 The Site is currently occupied by a mixture of arable and pastoral fields, which include the Ifield Golf Course and County Club in the south. An area to the east of the site is occupied by Ifield Meadow, which is designated as a Local Wildlife Site (LWS) and a Site of Nature Conservation Importance (SNCI) – this will be retained as part of the Proposed Development. This Meadow adjoins a wooded area that extends into an area of ancient woodland. The Ifield Mill Stream and Ifield Brook are located in the SNCI. They flow from south to north across the eastern part of the site and are connected to a number of smaller tributaries and drainage channels. Small woodland blocks are located along sections of the River Mole and Ifield Brook.

2.1.3 The Site topography is generally low-lying, with ridges to the south and west. The low-lying land between these two ridges lies at approximately 60-70m AOD and is dissected by the narrow watercourses of Ifield Brook and the River Mole.

2.1.4 The Site boundary covered by this LEMP is shown on Figure 3.2, and comprises the area within the red line boundary (and does not include the various shaded areas outside the red line boundary).

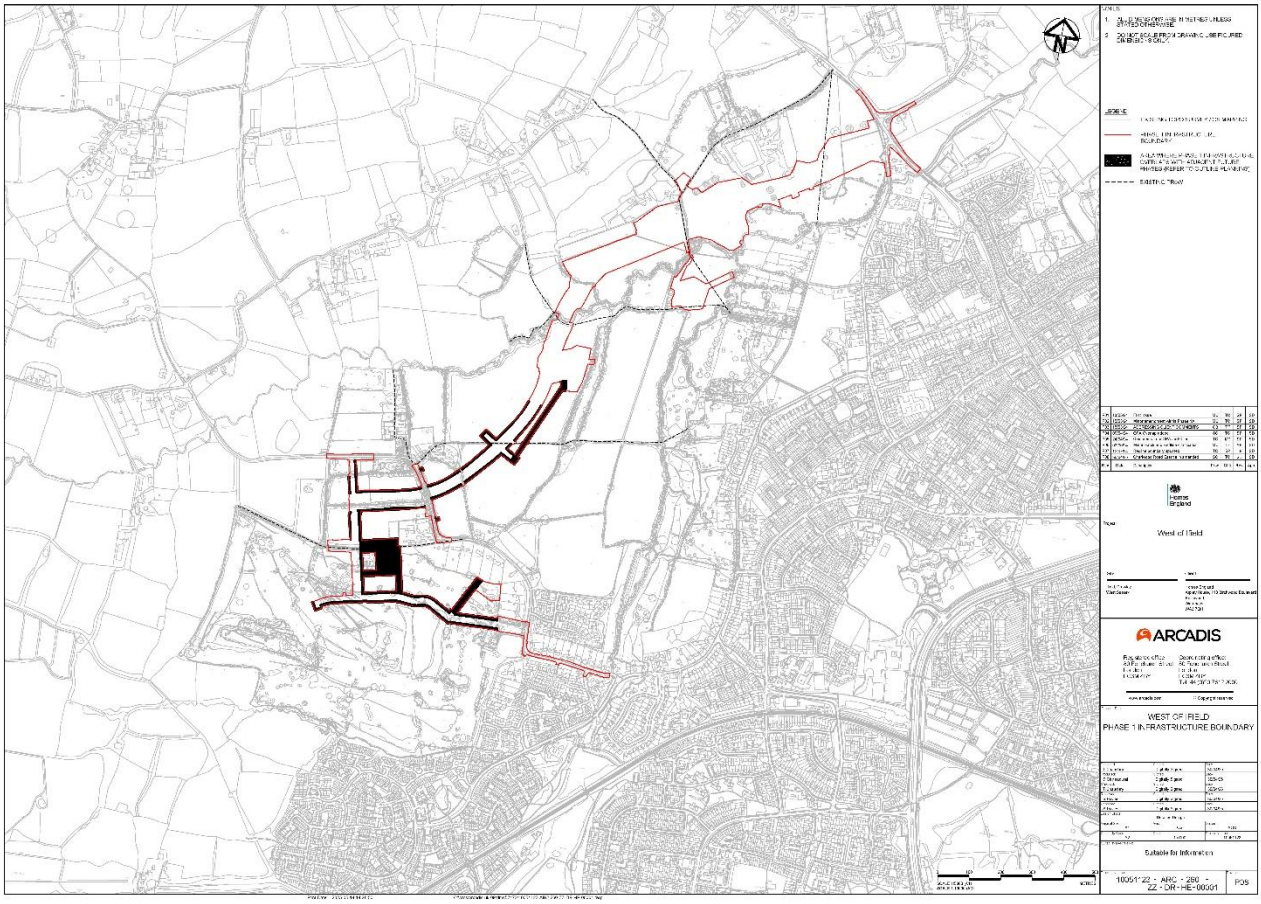


Figure 3.2. Phase 1 Infrastructure Boundary (Drawing 10051123-ARC-260-ZZ-DR-HE-00001), contained in Appendix E.

2.2 Existing Landscape

2.2.1 The Site comprises predominately agricultural land in the northern and central areas, with Ifield Golf Course in the south. This consists of large areas of modified grassland, interspersed with scattered trees, tree lines, hedgerows and woodland, along with occasional areas of dense scrub and long-sward neutral grassland habitat. A single pond is present, and a number of drainage ditches run across the Site. In addition, The River Mole flows from west to east through the northern part of the site, and Ifield brook runs south to north along the eastern boundary. This forms the eastern boundary of the site, with Ifield Meadows LWS on the opposing side.

2.2.2 The works associated with the Proposed Development would result in a change to landscape elements and features within the Site including impacting upon existing woodland and tree planting, hedgerows, grassland habitat, the golf course and agricultural crops.

2.2.3 The Site benefits from good tree coverage along its boundaries. An arboricultural impact assessment was undertaken in April 2023 by Tim Moya Associates. This survey recorded the condition of a total of 625no. arboricultural items within the study area. This survey recorded that there were 121no. arboricultural items of high quality and 276no. of moderate quality. The remaining trees were of low quality including 22no. that were unsuitable for retention. Refer to the following for further details:

- Arboricultural Impact Assessment (Ref: 230265-PD-11b);
- Arboricultural Assessment (Ref: NJCL 892); and

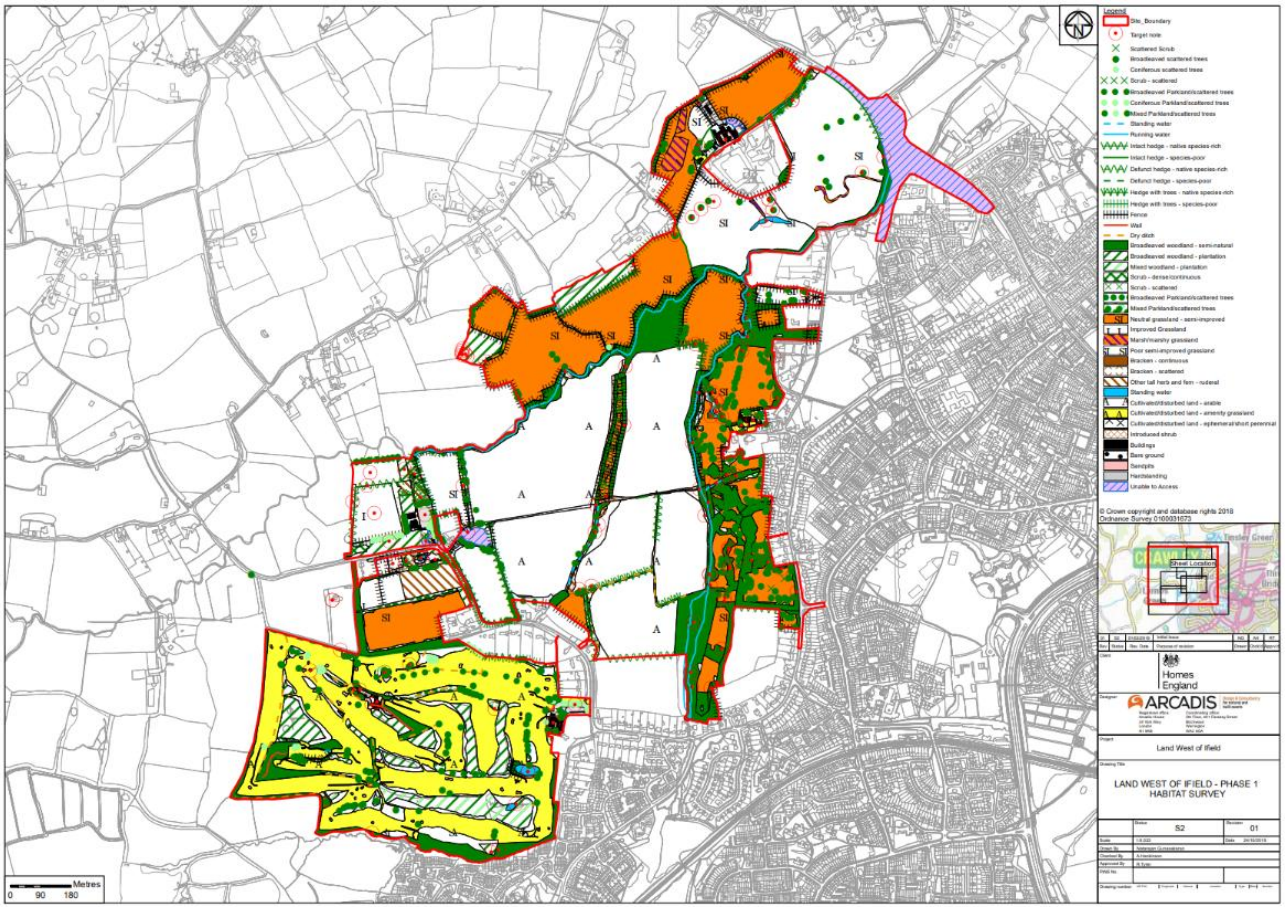


Figure 3.3. Phase 1 Habitat Plan, Drawing 10051123-ARC-260-ZZ-DR-HE-00001), contained in Appendix 4 .

2.3.3 Habitats and plant species present on the Site are of up to National Level importance, with most habitats of Local Level importance and lower with detailed habitat descriptions presented in the Phase 1 Habitat Report.

2.3.4 Two non-statutory designated sites have been identified within the boundary of the overall Proposed Development and need to be considered as part of the Phase 1. They are Ifield Book Wood and Meadows Local Wildlife Site (LWS) and Hyde Hill LWS. Whilst these sites should not be directly affected by the Phase 1 works, mitigation measures are required for potential indirect impacts.

Invertebrates

2.3.5 The desktop and site surveys have recorded numerous invertebrates within the Site. A number of these were noted to be of recognized conservation status in the UK, with one classed as nationally 'endangered', two as 'vulnerable', two classed as 'rare' and four as 'near threatened'.

2.3.6 Habitats considered to be most important for invertebrates at the Site include mature woodland/scrub edge (including wood decay habitat) and the tall and short grassland habitats associated with woodland edges; particularly these habitats present in the Golf Course and in the central area of the Site. The large arable fields and open areas of the Site, particularly in the north and central areas, are of lower conservation importance for invertebrates.

2.3.7 The invertebrate assemblage as a whole should be considered to be of importance at the Regional Level, with woodland and scrub edge habitats and adjacent tall and short grassland at the Golf Course in the south of the Site and around the central area of the Site of highest invertebrate importance.

Reptile

2.3.8 Three reptile species have been recorded on the Site (grass snake, slow worm, and common lizard) and the overall reptile population on the site is assessed as being indicative of a 'Good' population. These were found within the golf course and the pastoral and arable fields.

2.3.9 A number of habitat types were identified across the Site as being suitable for use for reptiles and/ or confirmed as supporting local reptile populations. These habitat types included other neutral grassland, hedgerows and areas of standing open waters such as ditches and ponds.

Breeding Birds

2.3.10 Surveys undertaken have found a number of different breeding birds within the wider site, along with wintering birds and farmland birds. The site and its immediate surroundings support scrub, hedgerow, mature trees, arable and grassland habitat suitable for breeding birds.

Bats

2.3.11 Surveys undertaken since 2018 have consistently recorded several day roosts of common and soprano pipistrelle at buildings and trees within the Site (although not in the numbers or exhibiting behavior indicative of maternity roosts). Whilst roosting bats have been confirmed at various locations across the Site, **no** bat roosts have been identified within the redline boundary of Phase 1 highways infrastructure works and therefore at this stage, no protected species bat development license is required from Natural England.

2.3.12 Crossing point surveys are recommended where the scheme corridor intersects key commuting routes. These should be carried out over the course of the survey season prior to vegetation clearance and construction works commencing. The purpose of these surveys is to provide a baseline and then undertake construction and post-construction monitoring to understand the effectiveness of the mitigation once implemented.

Otters

2.3.13 Whilst there is suitable habitat for Otters within the wider landscape with three main rivers on or adjacent to the Site, targeted surveys have found no evidence of Otters within the study area. Given the nature of the Site there is potential for Otters to colonize the area in the future.

Dormouse

2.3.14 Surveys have been undertaken within the Site and have found no confirmed evidence of dormouse at this stage. However further surveys are recommended prior to works commencing in the north of the Site given the potential for this area to support them.

Badgers

Surveys have found three Badger groups to be present across the Site, with territories contained within the Phase 1 area. This includes badgers setts, one of which will be affected by the Phase 1 works.

2.4 Planning Requirements

2.4.1 The LEMP should comply with local planning policies to ensure the Proposed Development contributes to the conservation and enhancement of biodiversity within the Site and wider area. For this document the following policies of the Horsham District Planning Framework are seen as relevant:

2.4.2 Horsham District Planning Framework 2015

- Strategic Policy 25: The Natural Environment and Landscape Character

The Natural Environment and landscape character of the District, including the landscape, landform and development pattern, together with protected landscapes and habitats will be protected against inappropriate development. The Council will support a development proposal which:

1. Protects, conserves and enhances the landscape and townscape character, taking into account areas identified as being of landscape importance, the individual settlement characteristics, and maintains settlement separation;
2. Maintains and enhances the Green Infrastructure Network and addresses any identified deficiencies in the District;
3. Maintains and enhances the existing network of geological sites and biodiversity, including safeguarding existing designated sites and species, and ensures no net loss of wider biodiversity and provides net gains in biodiversity where possible; and
4. Conserves and where possible enhances the setting of the South Downs National Park.

- Strategic Policy 26: Countryside Protection

Outside built-up area boundaries, the rural character and undeveloped nature of the countryside will be protected against inappropriate development. Any proposal must be essential to its countryside location, and in addition meet one of the following criteria:

1. Support the needs of agriculture or forestry;
2. Enable the extraction of minerals or the disposal of waste;
3. Provide for quiet informal recreational use; or
4. Enable the sustainable development of rural areas.

2.5 Description of the Scheme

2.5.1 Homes England (HE) intends to redevelop approximately 170.8 hectares (ha) of land to the West of Ifield (from henceforth to be referred to as 'the site') as a residential led mixed use development. This scheme forms part of the wider West of Ifield scheme, covering 25.9ha and comprises the initial infrastructure only, including roads, footpaths, drainage, retained trees/vegetation and proposed landscape planting and habitat creation.

Figure 1.1: Emerging Masterplan of the entire scheme (Prior+Partners), with neighborhood zones highlighted.

2.5.2 The Proposed Development has adopted a phased construction approach as follows:

- Primary Access Roads in the southern area of the overall development site on land currently occupied by Ifield Golf Club, including a junction on to Rusper Road near to the existing golf club entrance.
- The construction of the new Crawley Western Multi-modal corridor from Charlwood Road in the north, extending southwards to tie into the proposed Primary Access Road.

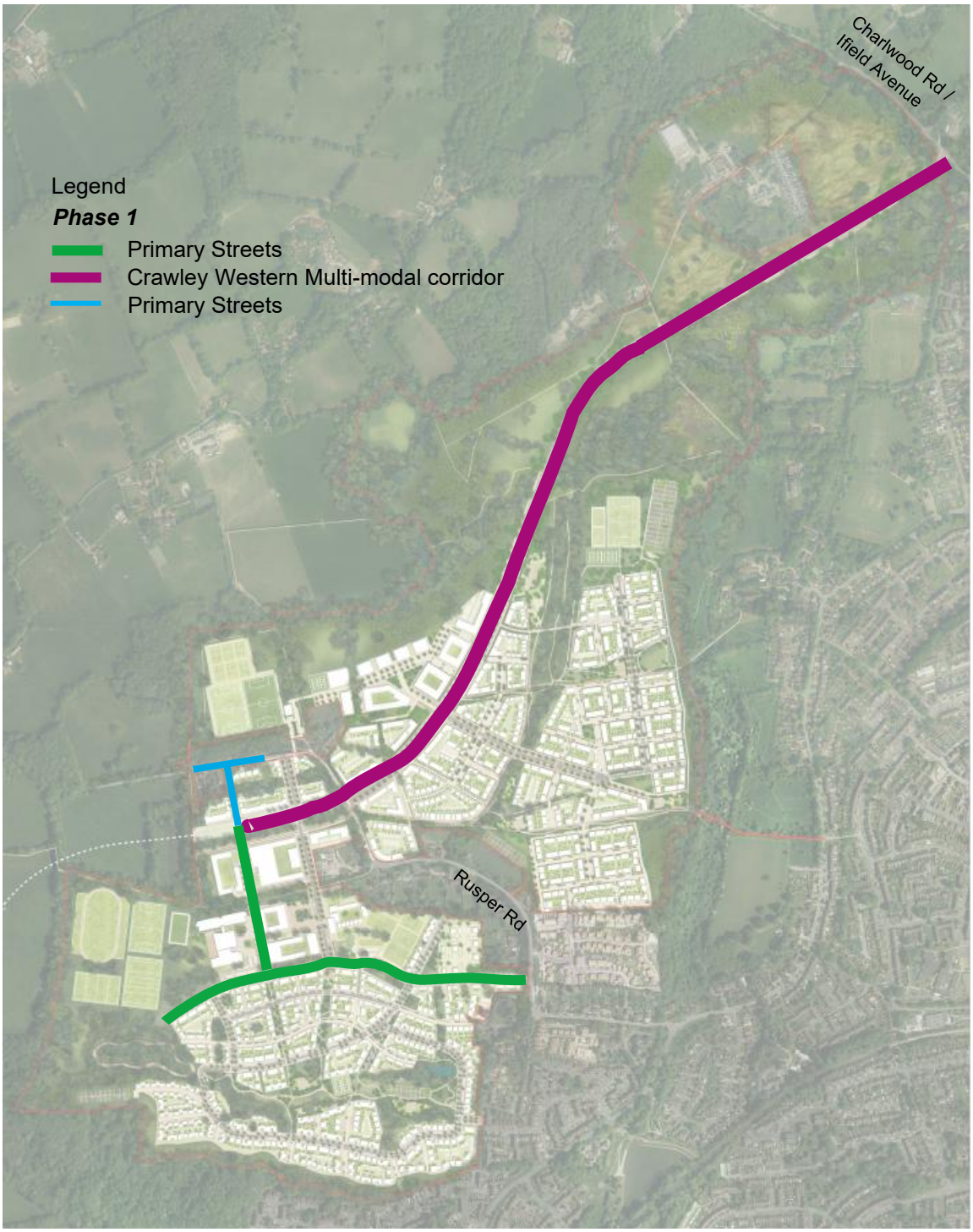


Figure 1.2: Emerging Masterplan (Prior+Partners) highlighting the Phase 1 elements.

2.5.3 The Proposed Development includes the following components:

- The new Crawley Western Multi-modal corridor from Charlwood Road into the site, comprising a dual carriageway of 2.15 km in length along with new footways.
- Two primary streets between the Crawley Western Multi-modal corridor and Rusper Road, comprising single carriageways, footways and dedicated cycle lanes along with tree planting and verges;
- Five secondary streets leading from the primary streets, comprising single carriageways, footways and verges.
- New junctions to Rusper Road and Charlwood Road.
- Pedestrian crossings
- Attenuation basins, swales and associated sustainable drainage infrastructure, and,
- A bridge structure over the River Mole.

3 Implementation of the Landscape and Ecological Management Plan (LEMP)

3.1 Duration

3.1.1 This Plan has three key time periods:

- Defects / Rectification Period (the period immediately after the completion of the construction where the appointed Landscape Contractor during the constructure period remains responsible for aftercare). Typically, 0-2 years.

- Establishment Period (post the defects period, where responsibility is handed over from the construction phase Contractor to the owner / operator. For soft landscape elements this covers the time whilst planting grows to reach maturity). Typically, 2-10 years.

- Long Term (post establishment, where assets are fully established and in use. This covers general upkeep to maintain their functionality). Typically from 10 years onwards.

3.1.2 The overall management for the initial Defects / Rectification Period has a duration typically of 12-24 months and would be undertaken by the commercial landscape company which implements the scheme. After this period, the construction contractor would hand over responsibility for management to either Homes England or another nominated body – who would be responsible for ensuring suitable arrangements are in place to undertake maintenance during the establishment period. At the time of preparing this LEMP the arrangements for this are yet to be determined and could include responsibility being transferred to a Stewardship body or to Homes England Estates. These arrangements are to be explored and resolved as part of the Long-Term Stewardship workstream, and once finalized this LEMP shall be updated accordingly.

3.1.3 The aftercare period is due to commence after Practical Completion is awarded and will expire 24 months later when contractual agreements are in place to ensure this happens.

3.1.4 This Plan will be reviewed at the end of the Rectification Period, and every 5 years thereafter in accordance with Section 7.

3.2 Roles and responsibilities

3.2.1 The table below sets out the various asset types and who is anticipated to be responsible for the management and maintenance for the three key time periods. It is envisaged that this table will be updated over time as agreements are finalised.

<table>
<tr><th colspan="2">Assets</th><th colspan="2">Time Period</th></tr>
<tr><th>Areas to be managed</th><th>Defects Period
(12-24 months)</th><th>Establishment Period
(varies per asset)</th><th>Long Term</th></tr>
<tr><td>Highway elements (noise bund, verges, street trees).</td><td rowspan="8">Landscape Contractor (appointed under the construction contract)</td><td colspan="2">Highway Authority</td></tr>
<tr><td>Attenuation basins.</td><td colspan="2" rowspan="2">TBC
Options are: Adopted by Highway Authority (for drainage serving Highway only) Adopted by Water Authority (for drainage serving combined Highways and plots) or HE appointed Management Company.</td></tr>
<tr><td>Other SuDS drainage features (swales, rain gardens).</td></tr>
<tr><td>Native woodland planting</td><td rowspan="5">TBC
Anticipated by a suitable Landscape Maintenance Contractor (appointed by Homes England or under the Long-Term Stewardship workstream).</td><td rowspan="5">TBC
(To be finalised as part of the Long-Term Stewardship Workstream)</td></tr>
<tr><td>Other habitats retained or enhanced as part of the Biodiversity Net Gain Strategy.</td></tr>
<tr><td>Existing trees and woodland</td></tr>
<tr><td>Habitat mitigation features (hibernacula, bird/ bat boxes)</td></tr>
<tr><td>FCAs (cross refer to 10051123-ARC-260-ZZ-TR-ZZ-002 Phase 1 FRA Addendum for further information)</td></tr>
</table>

4 Design Strategy and Proposed Enhancements

4.1 Design Principles

4.1.1 A site wide Design Code has been developed for the West of Ifield Site which provides a holistic overview of the full scheme. The overarching vision for West of Ifield is for it to be a well-designed place with a thriving community. This is to be achieved through 10 key vision principles, which are shown below.

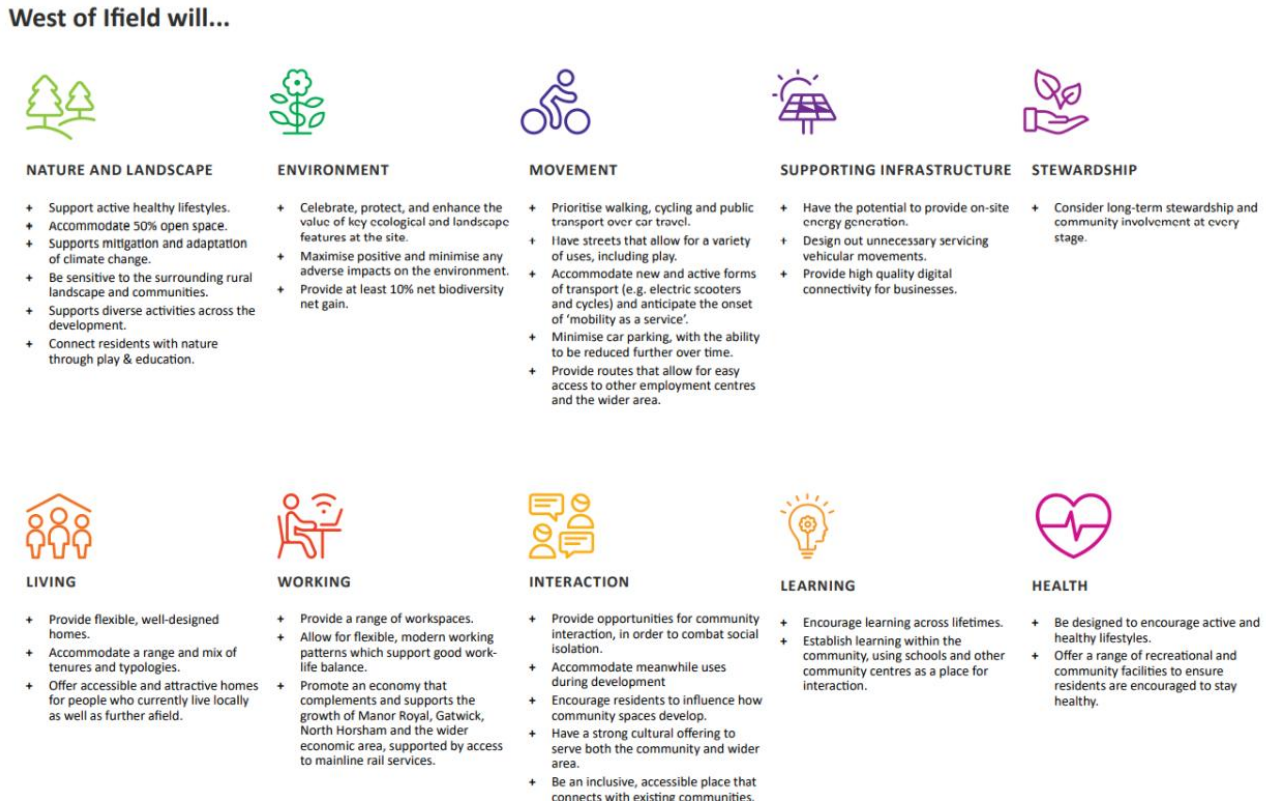


Figure 4.1: Key Vision Principles from the Design Code.

4.1.2 The Design Code sets out the Design Principles for the Landscape and Public Realm, providing the following Vision and Objectives:

'West of Ifield has been designed as a landscape-led scheme, where the existing mature landscape of woodlands, hedgerow and tree belts define the built form, open spaces and connecting infrastructure.

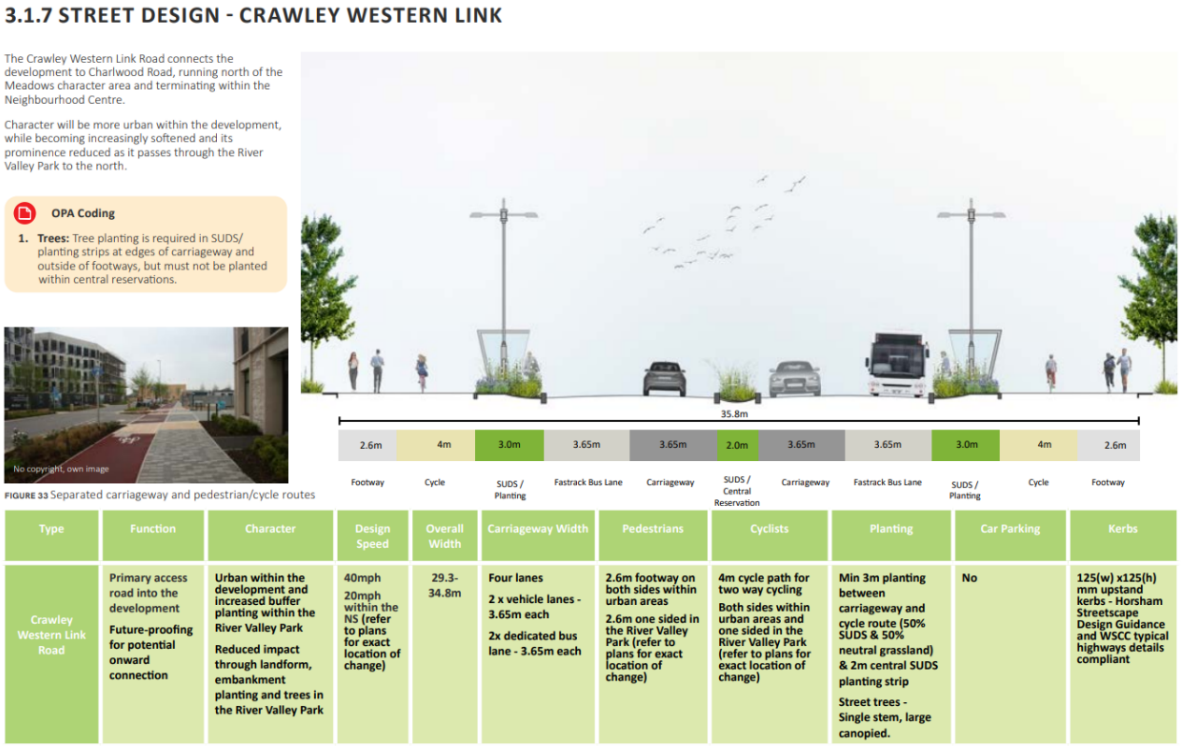
A series of landscape character areas have been developed based on the unique characteristics of each part of the site. These guide the development of plots and open spaces to ensure a rich variety of accessible green space throughout the masterplan.

Open space within the development is categorised into a series of landscape typologies. These ensure that the recreation and amenity needs of residents are met at all scales; giving access to local community greenspaces, neighbourhood parks and district level open spaces. Within these spaces play and activity spaces are provided for all ages.

These open spaces have been set out around the masterplan so that all residents are within Local Policy compliant distances of each amenity type.

They are also strategically connected to provide a network of open space that gives users access to the wider countryside and in ecology terms creates an interconnected landscape, so that West of Ifield can form part of a wider Nature Recovery Network'

4.1.3 The Design Code provides the basis of the street designs through illustrative cross sections. Relevant street types to be utilized within the Infrastructure works are provided below:



3.1.7 STREET DESIGN - CRAWLEY WESTERN LINK

The Crawley Western Link Road connects the development to Charlwood Road, running north of the Meadows character area and terminating within the Neighbourhood Centre.

Character will be more urban within the development, while becoming increasingly softened and its prominence reduced as it passes through the River Valley Park to the north.

OPA Coding

1. **Trees:** Tree planting is required in SUDS/ planting strips at edges of carriageway and outside of footways, but must not be planted within central reservations.

FIGURE 33 Separated carriageway and pedestrian/cycle routes

Type	Function	Character	Design Speed	Overall Width	Carriageway Width	Pedestrians	Cyclists	Planting	Car Parking	Kerbs
Crawley Western Link Road	Primary access road into the development Future-proofing for potential onward connection	Urban within the development and increased buffer planting within the River Valley Park Reduced impact through landform, embankment planting and trees in the River Valley Park	40mph 20mph within the NS (refer to plans for exact location of change)	29.3-34.8m	Four lanes 2 x vehicle lanes - 3.65m each 2x dedicated bus lane - 3.65m each	2.6m footway on both sides within urban areas 2.6m one sided in the River Valley Park (refer to plans for exact location of change)	4m cycle path for two way cycling Both sides within urban areas and one sided in the River Valley Park (refer to plans for exact location of change)	Min 3m planting between carriageway and cycle route (50% SUDS & 50% neutral grassland) & 2m central SUDS planting strip Street trees - Single stem, large canopied.	No	125(w) x125(h) mm upstand kerbs - Horsham Streetscape Design Guidance and WSCC typical highways details compliant

Figure 4.2: Typical cross section for the Crawley Western Link (Design Guide).

3.1.8 STREET DESIGN - PRIMARY STREETS

Primary Streets within the development will be the main connecting roads for vehicle users, as well as providing separate walking and cycling routes to help prioritise sustainable transport modes.

OPA Coding

1. **Trees:** Tree planting is required in SUDS/ planting strips at edges of carriageway, but must not be planted close to building facades or in privacy planting areas.

VEHICLE CARRIAGEWAY & DEDICATED CYCLE LANE

FIGURE 34 Street trees & SUDs planting

Type	Function	Character	Design Speed	Overall Width	Carriageway Width	Pedestrians	Cyclists	Planting	Car Parking	Kerbs
Primary Street	Key movement routes through the development for vehicles. Connects character areas and urban centre.	Urban, green streets	20mph	31m typically	6.75m typically - 3.375m shared car & bus lanes Can reduce to 6m on straight sections 5m in Local Centre Shared Street - No bus access	2.5m footway on both sides	3m cycle path for two way cycling Cycle route on shared carriageway in Local Centre Shared Street	3-5.5m planting strips between carriageway and cycle route (50% SUDS & 50% neutral grassland) Street trees - Single stem, regular spacing	Groups of parallel parking bays located in SUDs planting strip zone	125(w) x 125(h) mm upstand kerbs to carriageway edge 125mm wide flush kerbs to pedestrian and cycle routes

Figure 4.3: Typical cross section for Primary Streets (Design Guide).

Figure 4.4: Typical cross section for Secondary Streets (Design Guide).

4.1.4 The Design Code sets out the following key principles:

- Existing Features: Mature landscape features (trees, hedgerows etc.) must be retained and enhanced through complementary planting.
- Key Views: Views along the River Mole valley at the site entrance must be protected and celebrated.
- Parkland Setting: The landscape surrounding Ifield Court must preserve and enhance the existing historic character and improve biodiversity value. This will be achieved through new Lowland Meadow enhancement, and new feature mature tree planting.
- Re-wilding: The river valley landscape must be enhanced through the introduction of a re-wilding management regime to create a more biodiverse and naturalistic character.
- New Tree Planting: New belts of tree planting must be provided in strategic locations to help mitigate the visual impact of the CWLR on the landscape and adjacent properties.
- Public Rights of Way: Existing PRoW must be retained, in their current alignment or minor diversion if required. Surfacing must be improved or decking provided so as to be passable in winter. Safe crossings must be provided for the PRoW across the CWLR.
- Recreational Routes: New pedestrian and cycle connections must be provided to strengthen connections to Ifield Brook Valley and Ifield Meadows.
- SUDs: New wet grassland detention basins must be provided as part of the sitewide SUDS and flood alleviation strategy. These must be designed so that any standing water drains away within 24 hours. All SUDs features which hold water will be designed to drain down within 24 hours to avoid increasing Gatwick birdstrike risk.

4.1.5 The Proposed Development utilises these design principles and includes a range of measures designed to mitigate for potential effects on biodiversity, landscape character and visual amenity. The design of the Proposed Development has been an iterative process which has been developed through optioneering to identify the most suitable location for elements. This development of the design also sought to minimise adverse landscape and visual impacts whilst striving to retain existing vegetation and features, where possible, within the Proposed Development Site boundary.

4.1.6 The Mitigation Strategy proposed encompasses mitigation requirements and potential enhancements for the ecology and landscape assets.

4.1.7 The proposed Mitigation focuses on the following principles:

- Retaining and protecting existing mature trees and hedges wherever possible, maintaining important visual screening and biodiversity habitat. Where tree removal is unavoidable it is to be undertaken on a phased basis, removing only those required for the relevant phase.
- Biodiversity and ecology enhancements are location specific, connect into the wider nature recovery network, and complement the existing landscape typologies and character.
- Replacing any habitat losses and achieving a minimum of 10% Biodiversity Net Gain.
- Retaining natural character and planting local native species.
- Robust tree planting of native broadleaved species of UK provenance, resilient to pests, diseases and climate change.

4.2 Landscape Design Strategy

4.2.1 The design was led by the need to integrate and soften the Proposed Development effectively into its landscape setting, whilst mitigating for the loss of vegetation and habitats.

4.2.2 The current landscape strategy is based on the findings described in the above sections of this document, and includes the following information:

- The findings of the Tree Survey Report and Arboricultural Impact Assessment identifying existing trees to be lost to the development; and
- The findings of the Biodiversity Net Gain Report identifying pre-development biodiversity units of the habitats on site and the potential units post-development;

4.2.3 Out of this baseline, the landscape mitigation principles have been developed, shown on the Proposed Landscape Typology Plans (See Appendix A)

4.2.4 The following landscape principles have been developed as follows:

- Maximise biodiversity and environmental benefits through creation or enhancement of new woodland, hedgerow, and meadow habitat;
- Landscaping to complement the Biodiversity Net Gain requirements as well as providing screening and site integration;
- Surface water runoff and flood risk within the development will be managed through Sustainable Drainage Systems (SUDs) in line with the approved drainage strategy. These features include planted biodiverse attenuation ponds, swales, and rain gardens.
- Tree planting proposed to replace the trees that were lost at a ratio of 2:1 at standard sizes (1.8-2.1m);
- Grass seeding is proposed to be hydroseeded to the embankments along the sides of the Crawley Western Multi-modal corridor.
- The visibility of the proposed works is to be reduced by planting of replacement and new trees, hedgerows and native grass mix seeding throughout the site; and
- Selection of plant species chosen and recommended are resistant to water logging.

4.2.5 In principle, the primary landscape mitigation will include planting that will help integrate the Proposed Development into the local landscape. Landscape types and associated native planting and seeding are proposed to be in line with the local landscape character and for prioritising biodiversity objectives.

4.3 Ecological Design Strategy & Biodiversity Net Gain

4.3.1 Important elements within the design are focused around the following important ecological features:

- Habitats including veteran trees and terrestrial invertebrates;
- Reptiles;
- Nesting Birds;
- Bats;
- Dormice;
- Otter;
- Badger;

4.3.2 The strategy to retain and enhance these features are provided within the Ecological Mitigation Strategy, which is included at Appendix E.

4.3.3 The scheme is aiming for 10% Biodiversity Net Gain through the implementation of the developments landscape scheme. At the time of writing this LEMP the BNG calculations are being finalized, however the anticipated requirements to achieve this are embedded within the management approach. Once available the BNG report should be included at Appendix F to allow for ongoing monitoring.

4.4 Mitigation During Construction

4.4.1 Mitigation has been embedded into the landscape, biodiversity, and visual mitigation measures, which are considered integral to the design of the Proposed Development discussed in Section 4. These measures are designed to reduce disruption, visual intrusion and to assist in landscape integration, and are summarised as:

- Construction programme kept to the minimum practicable time to reduce the duration of any landscape and visual impact.
- Construction plant and materials storage areas appropriately sited to minimise their landscape and visual impact.
- Construction managed such that the loss of any existing vegetation not affected by the permanent works is minimised.
- Profile shapes and habitat created naturalistically to reflect the existing surroundings, with the footprint of the Proposed Development minimised to avoid unnecessary tree removal and ensuring future obligations for maintenance during the operation phase are reduced.
- Embedded mitigation measures have been incorporated into design of the Proposed Development to avoid and prevent adverse effects. This includes environmental working practices to ensure adequate pollution control measures are implemented and use of precautionary methods of working (PMW) during construction to minimise risks to individual animals and/or protected species where licences would not be required.

4.4.2 Essential mitigation has been provided for protected species to maintain and safeguard local populations. For example, the provision of a clear-span bridge structure embedded into the design crossing the River Mole, avoids fragmentation effects. The River Mole will be retained as a dark corridor and will be unlit thereby providing a commuting route for bats as well as a means of safe crossing beneath the carriageway for otters. In addition, a mammal pipe is to be incorporated into the scheme design to the north of the River Mole and bat hop-overs have been incorporated into strategic locations along the scheme where the vertical alignment does not permit mitigation to allow for protected species to cross beneath the scheme. Further mitigation measures (including a range of bat/bird nesting boxes will be incorporated into the wider development mitigation strategy). There will also be the provision of reptile hibernacula in the vicinity of the pond locations distributed throughout the Proposed Development.

4.4.3 Some mitigation measures will also be stipulated under licence (for badgers) will be required due the legal protection afforded to these species.

4.4.4 The post-development landscape plans have created and enhanced areas of grassland, trees, woodland and hedgerows which will contribute to the biodiversity net gain target.

4.5 Key Design Constraints

4.5.1 The landscape and ecological mitigation (and compensation) is provided in response to the potential adverse effects on landscape and visual receptors and biodiversity resources, the landscape character of the area and the historical land-use.

4.5.2 The Proposed Development takes into account the requirements of legally protected species that will be subject to licenses from Natural England to undertake the works. This includes a European Protected Species Mitigation (EPSM) license for bats and a protected species license for badgers. These will be applied for upon successful approval of the planning application.

4.5.3 Constraints considered as part of the landscape and ecological mitigation (and compensation) design:

- The predicted state of the Site following construction activities, including any damage due to disturbance to the habitat and soils from earthworks and utilities diversions,
- Restrictions to maintenance and operational activities within the highway boundary arising from safety requirements to undertake operations. As such the design seeks solutions which require the minimum practicable interventions, while meeting the objectives of the landscape and biodiversity mitigation; and
- As far as reasonably possible at this stage, the interests of the adjacent existing and future landowners and any effects the mitigation design might have on external stakeholders.

4.6 Landscape and Ecological Design

4.6.1 The landscape and ecological proposals associated with the Proposed Development are designed to mitigate its adverse effects and enhance existing biodiversity features. The designed scheme includes the following landscape and ecological proposals to mitigate the effects associated with the development and ensure enhancement of existing biodiversity features.

4.6.2 The table below details the new soft landscape typologies:

Landscape Typology	Intention / Application	Requirements
Woodland Planting.	Small parcels of woodland are located along the northern part of the Crawley Western Multi-modal corridor providing visual screening and habitat creation while maintaining the existing parkland character.	Species rich woodland planting and wildflower seeding for instant impact for visual mitigation.
Lowland Mixed Deciduous Woodland Planting	Woodland planting immediately to the south of existing woodland for habitat creation and increasing biodiversity and a woodland edge character of the existing woodland block.	Species rich woodland planting and wildflower seeding for instant impact for habitat creation meeting the definition of a UK Biodiversity Action Plan Priority Habitat 'Lowland Mixed Deciduous Woodland.
Street / Individual Trees	Every street contains street tree planting in verges, raingardens and bunds.	Semi-mature tree planting provides green lined streets and integrate the Crawley Western Multi-modal corridor into the existing landscape. Both native and non-native species are proposed to ensure species are adapted to clay soil or periodically dry and waterlogged conditions.
Native Hedgerows	Create a green linear feature connecting existing and new landscape elements and habitats	Utilise native planting only within a species rich hedgerow that provides screening and biodiversity at the same time.
Rain Gardens (comprising Meadow, Ornamental and Transitional variants)	Providing SUDS in street verges incorporating street trees and three different mixes of species reaching from a native meadow mix to raingardens with ornamental planting for key locations such as junctions / ped crossings	A range of native and wildlife friendly planting provides biodiversity along all streets. Avoid species with a tendency to invasively spread. Both native and non-native species are proposed to ensure species are adapted to periodically dry and waterlogged conditions whilst providing for local wildlife.
Grass swale and Attenuation Pond	Swales and attenuation ponds are a key feature of the drainage strategy. Both	Species rich seed mix suitable for wet soil conditions.

	features provide species rich areas that provide	
Ditches	Ditches are a key feature of the drainage strategy and It provides species rich areas.	Species rich seed mix suitable for wet soil conditions.
Grass Verges	Enhancing the existing grassland with native wildflowers and grasses, tying together new and existing landscape features	Species rich seed mix suitable for existing clay soil and imported soil.
Enhancement of existing vegetation to Other Neutral Grassland	Enhancing the existing vegetation with species rich grassland	Species rich seed mix suitable for diversifying the existing vegetation

Table 4.1 – Landscape Typologies.

4.6.3 The Ecological Mitigation Strategy sets out the required mitigation, with the table below providing a summary to these ecological elements of the design:

Ecological Aspect	**Intention**	**Mitigation / Compensation Requirements**
Habitats and Invertebrates	Protection of habitats and protected species and habitat creation.	Watercourse & Ditch vegetative buffer provisions
Habitats and invertebrates, bats and otter	Maintain connectivity and avoid fragmentation.	Clear-span bridge structure
Habitats and invertebrates, amphibians and otter	Protection of habitats and protected species and habitat creation.	SuDS
Habitats and invertebrates	Protection of habitats and protected species and habitat creation.	Buffer planting
Veteran trees	To provide maximum benefit following the loss of a veteran tree using the materials felled.	Vertical stack provision

Ecological Aspect	Intention	Mitigation / Compensation Requirements
Veteran trees, invertebrates and bats	To provide further veteran tree features to benefit local biodiversity.	Artificial veteranisation
Invertebrates- Brown Hairstreak Butterfly	To maintain and enhance the Brown Hairstreak local population.	Blackthorn planting provisions and appropriate management
Invertebrates, Reptiles and Amphibians	To maintain and enhance local invertebrate, reptile and amphibian populations	Retention of large woody material from felled trees into log piles and consideration of retaining standing dead wood
Invertebrates	To maintain and enhance local invertebrate assemblages.	Incorporation of sparsely-vegetated, south-facing banks and slopes (i.e. bee banks) to provide invertebrate nesting, hunting and basking opportunities
Reptiles	To maintain and enhance local reptile population.	Reptile hibernacula to be provided in locations adjacent to ponds
Bats	To maintain and enhance the local bat population and avoid habitat fragmentation.	Habitat enhancement and creation strategy, including creation of areas of habitat within natural and semi-natural green space, ecological buffers and green corridors retaining connectivity through the site. Particularly mimicking existing habitats found at the golf course, such as grassland and scrub mosaics
Otter	To maintain habitat connectivity and avoid road traffic accidents.	Ensure the River Mole corridor retains accessible, provision of ledge and dry pipes along the scheme corridor.
Badger	To maintain the local badger population and ensure legal compliance, maintain habitat connectivity and avoid road traffic accidents.	Likely requirement for an artificial badger sett. Location to be confirmed following completion of the badger bait marking study. Provision of mammal pipes.

Table 4.2 – Ecological elements.

4.7 Landscape and Ecological Execution

4.7.1 The layout and nature of the landscape and ecological designs are shown upon the Landscape Typologies Plan drawings (references: 10051123-ARC-300-1A-DR-LA-00001, 10051123-ARC-300-1B-DR-LA-00001, and 10051123-ARC-300-1B-DR-LA-00002). This includes planting palettes for each landscape typology along with the location of the proposed hibernacula.

4.7.2 All works are to be carried out in accordance with the Landscape construction drawings, details and specifications. Planting is to take place within the first available planting season following completion of the engineering works and shall meet the requirements of the landscape specification produced as part of the detailed design.

4.7.3 At the completion of the implementation works, all planting works are to be inspected by the projects Landscape Architect for compliance with the design and ensure the maintenance requirements set out within this LEMP are still valid. Any defects, issues or changes are to be documented and provided to the client's management team, with defects being resolved during the Rectification Period. Further inspections by the projects Landscape Architect should be undertaken to ensure issues are resolved by the end of the Rectification Period.

4.7.4 A handover meeting and site walk over between all parties should be undertaken at the end of the Rectification Period to ensure a smooth transition between management and maintenance parties. This is to ensure that the condition of the Site at the point of handover is adequate.

5 Landscape & Ecological Management

5.1 Management Aims and Objectives

5.1.1 This section sets out the Aims and Objectives for the Management of the soft estate. This includes the initial maintenance period within the Rectification period and the Establishment period to establish the landscape treatments and the long-term Management to achieve the habitat target conditions for BNG purposes. The Aims and Objectives are used to set the strategic requirements of the management, which are in turn linked to the required management tasks defined later in this LEMP.

5.1.2 The general long-term management aims and objectives of this LEMP are:

- To ensure a well maintained and attractive landscape setting for visual impact mitigation and landscape character;
- To ensure habitat creation, and biodiversity and green infrastructure enhancements which achieve a 10% increase for Biodiversity Net Gain;
- To retain and enhance habitats and to deliver the ecological mitigation required as per the Ecological Mitigation Strategy;
- To comply with health and safety duties relating to the management and maintenance of the Site;
- To comply with all UK legislation relating to protected species and habitats;
- To ensure the successful establishment and growth to maturity of all trees, shrubs, hedges, and grassland areas;
- To ensure management practices are carried out with highest consideration for reducing CO_2 emissions (e.g. electric powered equipment/vehicles);
- To monitor and review landscape management prescriptions in accordance with this LEMP on an annual basis;
- To define management prescriptions that ensure the ongoing maintenance of the landscape planting, once established, to achieve its desired aim.

5.1.3 Several separate, yet interrelated, vegetation types exist and are proposed within the Proposed Development with various aims and objectives. They are set out within the table below. These vegetation types are used within all manner of assets:- for example the noise bund utalises *Woodland* and *Grass Verge* vegetation types, and the flood compensation areas using the *Grass Swale and Attenuation Pond* and *Grass Verge* types. As such when considering the aims and objectives on an asset by asset basis, multiple vegetation types may apply.

Asset ID	Features	Aims	Objectives	Performance indicator
WD	Woodland	To create structural screening planting along the highway corridor which comprises a rich mix of native planting types within the Proposed Development and provides the intended habitat type.	• Successful establishment of a significant proportion of the planting stock to achieve the design concept as a dense structure which provides year-round screening. • Undertake targeted management which is sympathetic to the surrounding woodlands. • Mix of min 80% native species to reflect local landscape character. • Introduction of diversity to the age structure from year 15 onwards through selective thinning and promotion of natural regeneration.	Consistent canopy cover with mixed species present. Canopy of over 60% to the upper story and 10-20% canopy cover to the understory at year 25. Mixed age structure at year 25, with min 10% natural regeneration. Flora rich understory.
LMDW	Lowland mixed deciduous woodland	To create additional habitat along the highway corridor providing a new woodland edge to existing woodland W334.	• Successful establishment of a significant proportion of the planting stock to achieve the design concept as a dense structure which provides year-round screening. • Undertake targeted management which is sympathetic to the surrounding woodlands. • Mix of min 80% native species to reflect local landscape character. • Introduction of diversity to the age structure from year 15 onwards through selective thinning and promotion of natural regeneration.	Consistent canopy cover with mixed species present. Canopy of over 60% to the upper story and 10-20% canopy cover to the understory at year 25. Mixed age structure at year 25, with min 10% natural regeneration. Flora rich understory. Achieve 'poor' condition by year 10.
NH	Native Hedgerow	A broad linear band of a diverse mix of native hedge species creating a wildlife corridor and habitat.	•Typically a hedgerow of significant width, which allows the formation of an ecological corridor that can host a multitude of species, and provide a thriving environment for the local biodiversity. • Composition: 100% low shrubs	Consistent cover of mixed species to form a broad, dense band of hedge planting which can be clipped to the target size.
ST	Individual / Street Trees	To achieve tree lined streets through avenue tree planting. To achieve the anticipated result as soon as possible through the use of tree stock with good stature.	• Successful establishment of all new trees to achieve the design concept. • Tree to be disease free and structurally safe, with enough room to grow to maturity	Individual standard trees to be upright, and disease free with a balanced crown.
ExT	Existing Trees	Tree to be upright, disease free and structurally safe.	• Conserve existing specimen trees.	Individual standard trees to be upright, and disease free with a balanced crown.

Asset ID	Features	Aims	Objectives	Performance indicator
ExVT	Existing Veteran Trees	Establish buffer zones to protect veteran trees and retain for their habitat value. Tree to be structurally safe.	• Avoid damage to existing veteran trees.	Buffer zone comprises a semi natural habitat free from recreational pressure.
EnNG	Enhancement of existing vegetation to Other Neutral Grassland	Enhance the Area of existing vegetation to grassland (85% grass 15% wildflower)	• Consistent hard-wearing sward that is regularly cut to designed height. Kept weed free and free of bare patches, disease or moss areas.	Consistent cover of sward with no weeds, bare patches, fungus or moss areas. Litter free.
GV	Grass Verge	A robust vegetated strip adjacent to the carriageway, which is species rich.	• Consistent hard-wearing sward that is regularly cut to designed height. Kept weed free and free of bare patches, disease or moss areas. • A biodiverse grass verge which reflect local grassland/meadow communities.	Consistent cover of sward with no weeds, bare patches, fungus or moss areas. Litter free.
GS	Grass swale	To vegetate the banks of the drainage swales and attenuation ponds whilst promoting biodiversity.	• Vegetate quickly yet require low maintenance in the long term. • Be species rich and provide habitat value.	Consistent cover of sward with no weeds, bare patches, fungus or moss areas. Litter free.
DT	Ditches	To vegetate the banks of the drainage ditches whilst promoting biodiversity.	• Vegetate quickly yet require low maintenance in the long term. • Be species rich and provide habitat value.	Consistent cover of sward with no weeds, bare patches, fungus or moss areas. Litter free.
MRG	Meadow Rain Gardens	To form a meadow feature which is capable of collecting rainwater from areas of hardstanding and allow water to infiltrate into the drainage system.	• Vegetate quickly yet require low maintenance in the long term. • Provide erosion control by slowing heavy rain fall and stabilising soils. • Be species rich and provide habitat value.	Consistent cover of sward with no weeds, bare patches, fungus or moss areas. Litter free.
ORG	Ornamental Rain Gardens	To form an ornamental landscape feature which is capable of collecting rainwater from areas of hardstanding and allow water to infiltrate into the drainage system.	• Provide year round coverage and interest which can tolerate dry and wet periods, yet require low maintenance in the long term. • Provide erosion control by slowing heavy rain fall and stabilising soils. • Be species rich and provide habitat value.	Consistent cover of sward with no weeds, bare patches, fungus or moss areas. Litter free.
TRG	Transitional Rain Gardens	To form a meadow feature containing ornamental planting which is capable of collecting rainwater from areas of hardstanding and allow water	• Vegetate quickly yet require low maintenance in the long term. • Provide erosion control by slowing heavy rain fall and stabilising soils.	Consistent cover of sward with no weeds, bare patches, fungus or moss areas. Litter free.

Asset ID	Features	Aims	Objectives	Performance indicator
		to infiltrate into the drainage system.	• Be species rich and provide habitat value.	
N/A	SuDS	To protect controlled waters and provide valuable habitat conditions for invertebrates.	• To provide a means of water treatment and avoid the dispersal of pollutants into controlled waters.	Chemical water quality monitoring of watercourses and ditches crossed by the Proposed Development demonstrating that water quality remains the same or betterment has been achieved.
N/A	Bats	To provide continued suitable habitat for use by foraging, commuting and roosting bats as well as ensuring connectivity and permeability throughout the Proposed Development is retained.	• To maintain and ideally grow the local bat population.	Bat boxes will be installed as part of the wider site mitigation strategy and will be subject to monitoring. Crossing point monitoring could be undertaken at the River Mole as well as at proposed hop-over locations to establish the degree of effectiveness confirming species and numbers.
N/A	Otter	To provide continued suitable habitat for use by otters.	• To maintain and ideally enhance the Site to benefit otters.	Monitoring of crossing point locations such as the River Mole and mammal pipe locations to confirm extent of use and if otters are using the site.
N/A	Brown Hairstreak	To provide site wide Blackthorn of value to brown hairstreak for life cycle success.	• To establish successfully throughout the Proposed Development. Brown Hairstreak to remain present within the locality.	Established and appropriately managed blackthorn incorporated as part of the landscape design.
N/A	Badgers	Monitoring Conditions to be set out in the development licence conditions. Will not be detailed any further within the Phase 1 LEMP	N/A	N/A
N/A	Reptiles	Monitoring of reptiles to be detailed as part of the wider project mitigation strategy and not detailed any further within the Phase 1 LEMP.	N/A	N/A

Table 5.1: Management Aims and Objectives

5.2 General Maintenance and Management Considerations

5.2.1 The success of on-site mitigation and compensation for landscape, arboricultural and ecological effects will be dependent not just on aftercare and management, but also on ensuring the value of retained and created habitats is not compromised by negative influences arising due to proximity to the operational development. This section sets out key principles which are to be followed when undertaking management and maintenance operations.

5.2.2 The following general maintenance and management considerations apply to all areas of the Site.

'Use of Herbicides & Fertilisers

5.2.3 Do not use herbicides or fertilisers for any maintenance or management operations that may cause harm to existing land uses (i.e. publicly accessible areas, or agricultural areas), or existing habitats.

Other Vegetation

5.2.4 If species listed under Schedule 9 (Non-Native Invasive Species) of the Wildlife and Countryside Act 1981 (as amended) are encountered on the Site (such as himalayan balsam, giant hogweed, or Japanese knotweed) the appointed Landscape or Maintenance Contractor/Contract Administrator and Ecological Clerk of Works (ECoW) will immediately inform the Overseeing Organisation and await instructions.

Maintenance of Ecological Features

5.2.5 To ensure the continued effectiveness of ecological mitigation features, regular inspection and maintenance of badger fencing and tunnels will be undertaken. The following measures will be implemented,

- Annual inspections will be carried out to check the structural integrity and functionality of all ecological features (e.g., badger fencing and tunnel structures).
- Any damage or breaches in the fencing will be recorded and repaired promptly to maintain a continuous barrier and prevent badger access to unsafe areas.
- Vegetation and debris obstructing the tunnel entrances or compromising tunnel use will be cleared as part of scheduled maintenance visits.
- Checks will include ensuring that tunnel entrances remain unblocked, undisturbed, and accessible to wildlife.
- A record of all inspections and any remedial works carried out will be maintained as part of ongoing site management.
- Maintenance of other ecological features such as bird boxes, bat boxes, or similar enhancements will focus on ensuring they remain securely in place, unobstructed, and available for use by wildlife, with checks undertaken annually.

5.2.6 Be aware of any dangerous, dead, dying or diseased trees or limbs within the site or overhanging the site, that pose a potential hazard. Unless these pose an immediate risk to the health of operatives or users of the site the appointed Landscape or Maintenance Contractor/Contract Administrator and Ecological Clerk of Works (ECoW) will immediately inform the Overseeing Organisation and await instructions. There would be an assumption against removing dead or dying trees unless confirmed to be a health and safety issue.

Material Arising from Management Works

5.2.7 Ensure that vegetative arisings resulting from maintenance or management works, are used to form habitat piles, instead of burning or removing from Site and placement in landfill.

5.2.8 Ensure any litter and non-biodegradable arisings are removed from site and taken to a licensed disposal site.

Watering

5.2.9 The Landscape Contractor and appointed Maintenance Contractor shall water all seeding/turf and planting at the frequency necessary to ensure establishment and survival, until all establishment works are completed.

5.2.10 Watering shall be temporarily suspended in areas where ponding occurs or where there is a risk of surface run-off. Once any surface water has soaked away, repeated applications shall be applied until the watering operation has been completed.

5.2.11 Any damage caused as a result of watering operations shall be reinstated including the replacement of any soil lost from pits or beds due to washing off.

Protection of the Site

5.2.12 Ensure the nature and timing of works to trees and native shrubs do not cause an offence to be committed against the Wildlife and Countryside Act 1981 (as amended) or the Conservation of Species and Habitat Regulations 2017. Vegetation clearance should be limited to the period mid-August to mid-February, outside of the bird nesting season. Mature trees shall be subject to an assessment to determine their potential for supporting bat roosts prior to works being undertaken. Where appropriate, advice shall be sought from a qualified Ecologist.

5.2.13 Any damage or disturbance to soil structure, planting, hard landscaping, or structures, resulting from management works shall be reinstated by the Landscape Contractor and appointed Maintenance Contractor to its original condition.

5.2.14 The Sites shall be left in a clean, tidy condition at completion and after any management operation. At each visit any extraneous rubbish/litter found within the planted/seeded areas shall be collected and removed from Site.

Weed Control

5.2.15 Weed killing: weed control relates to infestations of injurious weeds as follows: broad-leaved dock, curled dock, common ragwort, creeping thistle, spear thistle, indian (himalayan) balsam, giant hogweed, Japanese knotweed.

5.2.16 An invasive weeds specialist should develop an Invasive Weeds Management Plan in the event that species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) are encountered on the Site (such as Himalayan balsam, giant hogweed, or Japanese knotweed). This will specify the treatment methods and measures to prevent the spread of these species.

5.2.17 Where weed killing is by a selective translocated herbicide, the herbicide shall be applied during a period of active growth in accordance with the manufacturer's instructions. Weed-killing shall be achieved by the total die-back of weeds. In the case of selective weed control there shall be not more than 5% re-growth during the season.

5.2.18 Where weed control is by spot application a translocated herbicide shall be applied with a device that ensures that the herbicide touches weed species only.

5.2.19 Where weed control by pulling/hand-weeding, the work shall consist of the removal of the entire weed, including roots, by digging, forking, hoeing or pulling. Weeds shall be removed prior to flowering and the arisings removed from Site.

5.3 Aftercare Requirements

5.3.1 Aftercare works are to be carried out by an accredited Landscape Contractor (i.e. registered with the British Association of Landscape Industries (BALI) or equivalent) in accordance with good horticultural practice or the current British Standard (BS) with specific reference to:

- BS 4428: Code of practice for general landscape operations;
- BS 7370: Grounds maintenance;
- BS 8545: Trees: from nursery to independence in the landscape – recommendations; and
- BS 5837:2012: Trees in relation to design, demolition and construction – recommendations.

5.3.2 During the Rectification Period, the Landscape Contractor undertaking the maintenance operations shall undertake regular inspections (min monthly during March – November) and report the findings to the clients appointed management team, paying particular attention to:

- The success of establishment including disease, damage or death of planting;
- Inappropriate use or vandalism;
- General appearance and condition;
- The presence of invasive or non-native species that may require treatment; and
- Any evidence of protected species that could have implications for future management.

5.3.3 The findings of these inspections should be reviewed between then Contractor, client and management team to review if the aims and objectives are being met by the operations and if action needs to be taken to achieve them. If action is required, it should be document within this LEMP and forthcoming maintenance operations adjusted accordingly.

5.3.4 As the planting establishes, maintenance requirements are expected to reduce, although this is dependent on the success of establishment which can be affected by a number of unpredictable factors. Continual monitoring shall inform a rolling maintenance programme as the planting matures to ensure that effective maintenance is carried out at the appropriate time.

5.3.5 Programmed reviews of this LEMP shall take place in accordance with Section 7..

6 Maintenance and Management Prescriptions

6.1.1 This section defines the management approach to each Landscape Typology, with detailed prescriptions provided in the Programme of Maintenance & Management Operations at Appendix A.

6.1.2 The landscape typologies are used within all manner of assets and areas of the design. For example, the noise bund utalises *Woodland* and *Grass Verge* vegetation types, and the flood compensation areas using the *Grass Swale and Attenuation Pond* and *Grass Verge* types. As such when considering the maintenance requirements on an asset-by-asset basis, multiple vegetation types may apply. The 'Area Utalised' column provides assistance for this within the table below.

Typology ID	Typology Name	Areas Utilised	Management Approach
WD	Woodland	Noise Bund, Adjacent to Crawley Western Multi-modal corridor as visual screening	• Undertake the initial programme of maintenance during the rectification and establishment period as defined within Appendix A. • Undertake the long-term management prescriptions as defined within Appendix A comprising initial thinning at year 15, and every 5 years thereafter.
LMDW	Lowland mixed deciduous woodland	Adjacent to existing woodland W334	• Undertake the initial programme of maintenance during the rectification and establishment period as defined within Appendix A. • Undertake the long-term management prescriptions as defined within Appendix A comprising initial thinning at year 15, and every 5 years thereafter.
NH	Native Hedgerow	Boundary treatments	• Undertake the initial programme of maintenance during the rectification and establishment period as defined within Appendix A. • Undertake the long-term management prescriptions as defined within Appendix A comprising cutting to maintain a compact hedgerow. Cut the hedge top in year 3 to 1.2m, then undertake cutting as required from year 5 to maintain the desired height. Cut the sides from year 5. • Hedges are to be cut on a rotational basis, where hedgerows are cut no more than once every 2 years and no more than half the hedges are cut each year
ST	Individual / Street Trees	Adjacent to carriageways	• Undertake the initial programme of maintenance during the rectification and establishment period as defined within Appendix A. • Undertake the long-term management prescriptions as defined within Appendix A comprising safety inspections and remedial tree works
ExT	Existing Trees	Retained trees.	• Undertake the long-term management prescriptions as defined within Appendix A comprising safety inspections and remedial tree works.
ExVT	Existing Veteran Trees	Retained trees	• Follow requirements for existing trees. • Follow best practice in retaliation to veteran tree management.
EnNG	Enhancement of existing vegetation to Other Neutral Grassland	Existing vegetation	• Undertake the initial programme of maintenance during the rectification and establishment period as defined within Appendix A. • Undertake the long-term management prescriptions as defined within Appendix A comprising safety inspections and remedial tree works

GV	Grass Verge	Verges, embankments, meadow grasslands.	• Undertake the initial programme of maintenance during the rectification and establishment period as defined within Appendix A. • Undertake the long-term management prescriptions as defined within Appendix A comprising regular mowing during the growing season.
GS	Grass swale	Attenuation ponds, swales, flood compensation areas.	• Undertake the initial programme of maintenance during the rectification and establishment period as defined within Appendix A. • Undertake the long-term management prescriptions as defined within Appendix A comprising yearly mowing.
DT	Ditches	Ditches	• Undertake the initial programme of maintenance during the rectification and establishment period as defined within Appendix A. • Undertake the long-term management prescriptions as defined within Appendix A comprising yearly mowing.
MRG, ORG, TRG	Rain Gardens (all types)	Adjacent to carriageways.	• Undertake the initial programme of maintenance during the rectification and establishment period as defined within Appendix A. • Undertake the long-term management prescriptions within Appendix A comprising periodic thinning / mowing.

Table 6.1: Management Approach for Landscape Typologies.

7 Monitoring and Review

The monitoring of landscape features is necessary and of fundamental importance to determine whether the maintenance & management objectives are being met and to take account of the development or colonisation of desirable or undesirable species.

7.1 Annual Monitoring Approach

7.1.1 The Site shall be visited annually by a suitably qualified Environmental Clerk of Works who can assess the performance of the landscape and ecological habitats. The objective of the annual walkover shall be to assess the condition of retained and created habitats against target objectives and where relevant the requirements of protected species licences and mitigation strategies.

7.1.2 Following the walkover inspection, an annual monitoring report shall be produced detailing any remedial actions or interventions determined to be necessary in order to meet the relevant species or habitat objectives.

7.1.3 With respect to monitoring habitat creation, it is important that ongoing annual habitat surveys are undertaken of these areas, to establish the current biodiversity and inform future management policies concerning matters such as protected species and vegetation control. The requirements are set out in the table below.

Monitoring Type	**Requirements**	**Timing**	**Frequency**
Biodiversity Monitoring Assessment	Assessment of condition and type of habitats on site	March-October	Detailed in section 7.2.1

Table 7.1 Summary of required monitoring

7.2 Annual Monitoring Specification

7.2.1 Monitoring surveys should be undertaken to ensure the target habitats and conditions will be met within the proposed timescales. This will include a biodiversity assessment utilising the condition assessments for each of the habitat types. Site visits are likely to be required in the following years:

- Year 1
- Year 2
- Year 3
- Year 4
- Year 5
- Year 7
- Year 9
- Year 11
- Year 14

- Year 17
- Year 20
- Year 25
- Year 30

7.3 5 Year Survey and Review

7.3.1 Thie LEMP will be reviewed on an annual basis to ensure that it is meeting the original management aims and objectives and responding to the developing needs of the Site.

7.3.2 More specific monitoring shall include botanical surveys of open grassland habitats in year five following implementation. The following surveys, at a minimum, shall be included in the five-year reviews:

- Botanical surveys - The species diversity of open grassland shall be assessed and their coverage recorded along with tussock cover (estimate of cover assessed within 1m radius of 20 random sample points) and sward height, using a sward stick.
- Protected species surveys: Monitoring surveys of bat and bird boxes, and the reptile population.

7.3.3 The results of the surveys shall be reviewed to identify any revisions to the management prescriptions deemed to be required to meet the objectives for the medium and long-term. Revised prescriptions shall be produced to guide the next five years. This information shall be presented as a 'Five Year Monitoring Report' to be shared with relevant stakeholders.

7.3.4 Following the end of the initial five-year period of this management programme, this LEMP will be re-assessed and updated. This can be facilitated by undertaking site surveys as detailed above. These will identify the need for additional operations and inform future management decisions in relation to continual improvement of biodiversity and the amenity value of the landscape as a whole.

8 Programme of Maintenance and Management Operations

8.1.1 The Programme of Maintenance and Management Operations (Appendix A, 10051123-ARC-XXX-XX-SH-LA-0001) provides a series of aftercare tasks in conjunction with a timetable for undertaking them. This builds upon the management approach detailed above in Section 6.

8.1.2 The Programme includes a dynamic review period at year 5, for which a holistic review of the Programme should be undertaken and adjustments made where necessary in order to best meet the aims and objectives set out within this LEMP. This will consider the rate of establishment of the new planting, results from the monitoring of habitat conditions against the set targets, impacts of climate change and future stewardship requirements.

Appendix A

Programme of Maintenance and Management Operations

Design & Consultancy for natural and built assets

10051123-ARC-XXX-XX-SH-LA-0001
Date: Jun-25
P03

Programme of Maintenance and Management Operations

West of Ifield
Phase 1 Infrastructure

Task Code	Feature Code	Landscape Typology	Time Peroid	Task Description	Broad frequency	Optimum time to undertake task	6 months	Year 1	Year 2	Year 3	Year 4	Year 5	Dynamic Review	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 20	Year 25	Year 30
LMM-01	WD	Woodland	Rectification Period	Inspect planting for failures during the rectification period. Record findings and undertake replacement planting during the next planing season.	Annually	Inspection in August, replacement planting October - November																				
LMM-02	WD	Woodland	Rectification Period	Undertake watering during the rectification period.	On a performance basis, when no rainfall for 5 weeks.	April to September.																				
LMM-03	WD	Woodland	Rectification Period	Monitor and control pests & diseases, wild animal and livestock damage during the **rectification** period.	3 times per year	March / June / September																				
LMM-04	WD	Woodland	All	Monitor weather and check vegetation and planting accessories after extreme events. Undertake remedial works as required.	As required	N/A																				
LMM-05	WD	Woodland	Rectification Period	Undertake targetted weed control during rectification period.	3 times per year	May, July, October																				
LMM-06	WD	Woodland	Establishment Period	Monitor and control pests & diseases, wild animal and livestock damage during the **establishment** period.	3 times per year	March / June / September																				
LMM-07	WD	Woodland	Management Period	Monitor and control pests & diseases, wild animal and livestock damage during the **management** period.	Once a year	June																				
LMM-08	WD	Woodland	Rectification Period	Inspect protective fencing during **rectification** period. Adjust, repair, replace as required.	3 times per year	May, July, October																				
LMM-09	WD	Woodland	Establishment Period	Inspect protective fencing during the **establishment** period. Adjust, repair, replace as required.	Annually	June to October																				
LMM-10	WD	Woodland	Establishment Period	Remove protective fencing.	One time activity	September - October																				
LMM-11	WD	Woodland	All	Undertake inspections for non-native invasive species during the establishment periods. Report any non-native invasive species encountered and take action to treat.	As necessary (dependant upon invasive species	As determined with eradication plan																				
LMM-12	WD	Woodland	All	Undertake a litter and debris pick. Report incidents of fly tipping	Annually	November - February.																				
LMM-13	WD	Woodland	Establishment Period	Inspect planting for gaps / open areas where screening function is not being achieved during the establishment period. Undertake replacement planting.	Annually	Inspection in July, replacement planting in October - November.																				
LMM-14	WD	Woodland	Management Period	Inspect planting for gaps / open areas where screening function is not being achieved during the establishment period. Undertake replacement planting.	Every 5 years	Inspection in July, replacement planting in October - November.																				
LMM-15	WD	Woodland	Rectification Period	First establishment grass cut - to achieve a sward height of 40mm	First cut	Spring of first establishment season																				
LMM-16	WD	Woodland	Rectification Period	Grass cutting during growing season to achieve a sward height between 40 and 60mm.	7-8 times per year	From early Spring till late Autumn																				
LMM-17	WD	Woodland	Rectification Period	Overseeding during establishment period where sward coverage is not fully established.	Once a year	In March-May or September-October																				

Task Code	Feature Code	Landscape Typology	Time Peroid	Task Description	Broad frequency	Optimum time to undertake task	6 months	Year 1	Year 2	Year 3	Year 4	Year 5	Dynamic Review	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 20	Year 25	Year 30
LMM-18	WD	Woodland	Establishment Period	Woodland grass cutting during the establishment period.	Once a year	August-September																				
LMM-19	WD	Woodland	Management Period	Undertake thinning operations to diversify the woodland edge structure and promote natural regenation.	Once a year	November - February.																				
LMM-20	LMDW	Lowland Mixed Deciduous Woodland	Rectification Period	Inspect planting for failures during the rectification period. Record findings and undertake replacement planting during the next planing season.	Annually	Inspection in August, replacement planting October - November																				
LMM-21	LMDW	Lowland Mixed Deciduous Woodland	Rectification Period	Undertake watering during the rectification period.	On a performance basis, when no rainfall for 5 weeks.	April to September.																				
LMM-22	LMDW	Lowland Mixed Deciduous Woodland	Rectification Period	Monitor and control pests & diseases, wild animal and livestock damage during the **rectification** period.	3 times per year	March / June / September																				
LMM-23	LMDW	Lowland Mixed Deciduous Woodland	All	Monitor weather and check vegetation and planting accessories after extreme events.	As required	N/A																				
LMM-24	LMDW	Lowland Mixed Deciduous Woodland	Rectification Period	Undertake targetted weed control during rectification period.	3 times per year	May, July, October																				
LMM-25	LMDW	Lowland Mixed Deciduous Woodland	Establishment Period	Monitor and control pests & diseases, wild animal and livestock damage during the **establishment** period.	3 times per year	March / June / September																				
LMM-26	LMDW	Lowland Mixed Deciduous Woodland	Management Period	Monitor and control pests & diseases, wild animal and livestock damage during the **management** period.	Once a year	June																				
LMM-27	LMDW	Lowland Mixed Deciduous Woodland	Rectification Period	Inspect protective fencing during **rectification** period. Adjust, repair, replace as required.	3 times per year	May, July, October																				
LMM-28	LMDW	Lowland Mixed Deciduous Woodland	Establishment Period	Inspect protective fencing during the **establishment** period. Adjust, repair, replace as required.	Annually	June to October																				
LMM-29	LMDW	Lowland Mixed Deciduous Woodland	Establishment Period	Remove protective fencing.	One time activity	September - October																				
LMM-30	LMDW	Lowland Mixed Deciduous Woodland	All	Undertake inspections for non-native invasive species during the establishment periods. Report any non-native invasive species encountered and	As necessary (dependant upon invasive species	As determined with eradication plan																				
LMM-31	LMDW	Lowland Mixed Deciduous Woodland	All	Undertake a litter and debris pick. Report incidents of fly tipping	Annually	November - February.																				
LMM-32	LMDW	Lowland Mixed Deciduous Woodland	Establishment Period	Inspect planting for gaps / open areas where screening function is not being achieved during the establishment period. Undertake replacement planting.	Annually	Inspection in July, replacement planting in October - November.																				
LMM-33	LMDW	Lowland Mixed Deciduous Woodland	Management Period	Inspect planting for gaps / open areas where screening function is not being achieved during the establishment period. Undertake replacement planting.	Every 5 years	Inspection in July, replacement planting in October - November.																				
LMM-34	LMDW	Lowland Mixed Deciduous Woodland	Rectification Period	First establishment grass cut - to achieve a sward height of 40mm	First cut	Spring of first establishment season																				
LMM-35	LMDW	Lowland Mixed Deciduous Woodland	Rectification Period	Grass cutting during growing season to achieve a sward height between 40 and 60mm.	7-8 times per year	From early Spring till late Autumn																				
LMM-36	LMDW	Lowland Mixed Deciduous Woodland	Rectification Period	Overseeding during establishment period where sward coverage is not fully established.	Once a year	In March-May or September-October when temperature is not less then 10C																				
LMM-37	LMDW	Lowland Mixed Deciduous Woodland	Establishment Period	Woodland grass cutting during the establishment period.	Once a year	August-September																				
LMM-38	LMDW	Lowland Mixed Deciduous Woodland	Management Period	Undertake thinning operations to diversify the woodland edge structure and promote natural regenation.	Once a year	November - February.																				

Task Code	Feature Code	Landscape Typology	Time Peroid	Task Description	Broad frequency	Optimum time to undertake task	6 months	Year 1	Year 2	Year 3	Year 4	Year 5	Dynamic Review	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 20	Year 25	Year 30
LMM-39		Existing Trees	Rectification Period	Remove tree protection fencing at the end of the **construction period**.	One time operation.	November - February.																				
LMM-40		Existing Trees	Rectification Period	Undertake an Arboricultural assessment of existing trees to be retained pre construction and during the construction period. This should define ongoing inspection requirements and any management	Annually	October- January																				
LMM-41		Existing Trees	All	Targeted felling, clearance, or branch removal to existing trees with woodland areas as required as a result of the inspections. Note - undertake Ecological checks (bats, birds etc) prior to	Anticipated Annually	October- January																				
LMM-42		Individual / Street Trees	Rectification Period	Check and adjust guards and stakes during the rectifciaton period.	2 times per year	March and September																				
LMM-43	ST	Individual / Street Trees	Establishment Period	Check and adjust guards and stakes during the establishment period.	2 times per year	March and September																				
LMM-44	ST	Individual / Street Trees	Establishment Period	For trees planted witih soft areas, remove guards and stakes.	One time operation	September																				
LMM-45	ST	Individual / Street Trees	Rectification Period	Undertake watering during the rectification period.	On a performance basis, when no rainfall for 5 weeks.	April to September.																				
LMM-46	ST	Individual / Street Trees	Rectification Period	Undertake weed control around stem during rectification period.	3 times per year	May, July, October																				
LMM-47	ST	Individual / Street Trees	Rectification Period	Inspect planting for failures during the rectification period. Record findings and undertake replacement planting.	Annually	Inspection in August, replacement planting October - November																				
LMM-48	ST	Individual / Street Trees	All	Monitor weather and check vegetation and planting accessories after extreme events. Undertake remedial works as required.	As required	N/A																				
LMM-49		Individual / Street Trees	Rectification Period	Monitor and control pests & diseases, wild animal and livestock damage during the rectification period.	3 times per year	March / June / September																				
LMM-50	ST	Individual / Street Trees	Establishment Period	Monitor and control pests & diseases, wild animal and livestock damage during the establishment period.	3 times per year	March / June / September																				
LMM-51	ST	Individual / Street Trees	Rectification Period	Undertake formative pruning to assist establish intended crown shape during the rectification period.	Once a year	As agreed																				
LMM-52	ST	Individual / Street Trees	Establishment Period	Undertake formative pruning to assist establish intended crown shape during the establishment period.	Once a year	As agreed																				
LMM-53	ST	Individual / Street Trees	All	For trees located within areas of hardstanding, undertake litter picking around tree grill / guard and remove arirings from site.	Once a year	As agreed																				
LMM-54	ST	Individual / Street Trees	All	For trees located within areas of hardstanding, collect leaf litter post leaf fall and sweep surrounding areas of hardstanding	Once a year	As agreed																				
LMM-55	ST	Individual / Street Trees	Establishment Period	Undertake an Arboricultural assessment of feature trees end the end of the establishment period and define the required follow on inspection regime.	One time operation	August																				
LMM-56	NH	Native Hedgerow	Rectification Period	Inspect planting for failures during the rectification period. Record findings and undertake replacement planting during the next planing season.	Annually	Inspection in August, replacement planting October - November																				
LMM-57	NH	Native Hedgerow	Rectification Period	Undertake watering during the rectification period.	On a performance basis, when no rainfall for 5 weeks.	April to September.																				

Task Code	Feature Code	Landscape Typology	Time Peroid	Task Description	Broad frequency	Optimum time to undertake task	6 months	Year 1	Year 2	Year 3	Year 4	Year 5	Dynamic Review	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 20	Year 25	Year 30
LMM-58	NH	Native Hedgerow	Rectification Period	Monitor and control pests & diseases, wild animal and livestock damage during the **rectification** period.	3 times per year	March / June / September																				
LMM-59	NH	Native Hedgerow	All	Monitor weather and check vegetation and planting accessories after extreme events. Undertake remedial works as required.	As required	N/A																				
LMM-60	NH	Native Hedgerow	Rectification Period	Undertake weed control during rectification period	3 times per year	May, July, October																				
LMM-61	NH	Native Hedgerow	Rectification Period	Undertake the first hedge cut to the top during the **establishment** period. Target post cut height is 1.2m, with the sides left uncut . Hedgerow trees to remain uncut.	One time action	Autumn.																				
LMM-62	NH	Native Hedgerow	Establishment Period	Undertake hedgecutting during the **establishment** periods. Target post cut height is 2m and a topped A shape . Hedgerow trees to remain uncut.	Once a year.	Autumn.																				
LMM-63	NH	Native Hedgerow	Management Period	Undertake hedgecutting during the **management** periods. Target post cut height is 2m and a topped A shape . Hedgerow trees to remain uncut.	Once a year.	Autumn.																				
LMM-64	EnNG	Enhancement of existing vegetation to Other Neutral Grassland	Rectification Period	First establishment cut (to be undertaken min 6 month after seeding). Height of the first cut to be 50-75 mm. Leave arisings in situ for three days for seed dispersal and then collect + remove off site.	First cut after flowering heads dropped their seeds	September-October																				
LMM-65	EnNG	Enhancement of existing vegetation to Other Neutral Grassland	All	Wildflower grass cutting during the establishment/management period. Wildflower sward must be cut to 70 and 100 mm after flowering during in dry weather. Leave arisings in situ for three days for seed dispersal and then remove off site.	Once or potentially twice a year	September-October																				
LMM-66	EnNG	Enhancement of existing vegetation to Other Neutral Grassland	All	Inspect meadow for undesirable weeds and undertake isolated herbicide spot treatments.	Twice a year for first 2 years then Annually	From Spring till Autumn																				
LMM-67	EnNG	Enhancement of existing vegetation to Other Neutral Grassland	All	Inspect meadow for undesirable weeds which are not responding to herbicide treatments and undertake isolated hand weeding.	Twice a year for first 2 years then Annually	From Spring till Autumn																				
LMM-68	EnNG	Enhancement of existing vegetation to Other Neutral Grassland	All	Litter picking remove of site prior to grass cutting	Undertake as part of grass cutting visits.	From early Spring till late Autumn																				
LMM-69	EnNG	Enhancement of existing vegetation to Other Neutral Grassland	Rectification Period	Overseeding during establishment period where sward coverage is not fully established.	Twice a year	In March-April or September-October																				
LMM-70	GV	Grass Verges	Rectification Period	Undertake 'First cut'. Height of the first cut to be 50mm. All arisings to be collected and removed.	First cut after flowering heads dropped their seeds	Early August																				
LMM-71	GV	Grass Verges	Rectification Period	Monitor and remove residiual perennial weeds (such as dock) after the first cut.	During each establishment cut.	September-October and February - March																				
LMM-72	GV	Grass Verges	Rectification Period	Undertake regular cutting after the first cut to help estalish the grass sward. Cut when the sward reaches 75mm in height to 40mm once cut. Collect and remove all arisings.	2 visits per month during the establishment period.	September-October and February - March																				
LMM-73	GV	Grass Verges	All	Litter picking remove of site prior to grass cutting	Undertake as part of grass cutting visits.	From early Spring till late Autumn																				
LMM-74	GV	Grass Verges	Rectification Period	Overseeding during recticiation period where sward coverage is not fully established.	Twice a year	In March-April or September-October																				
LMM-75	GV	Grass Verges	Rectification Period	Inspect meadow for undesirable weeds and undertake isolated herbicide spot treatments.	Twice a year for first 2 years then Annually	From Spring till Autumn																				
LMM-76	GV	Grass Verges	Establishment Period	Undertake grass cutting during the establishment period. Cutting is to be undertaken on a rotational basis, leaving approximately half of each area uncut.	Once every 2 years.	October and February																				
LMM-77	GV	Grass Verges	Management Period	Undertake grass cutting during the management period. Cutting is to be undertaken on a rotational	Once every 2 years.	October and February																				
LMM-78	GV	Grass Verges	All	Monitor grass swards within Visibility Splays adjacent to highways for plants growing higher than 500mm in height. If species are found to be present, remove in accordance with Task ### (herbicide) and / or #### (grass cutting).	Once every 3 months.	From Early Summer - Early Autumn.																				
LMM-79	GV	Grass Verges	All	Undertake grass cutting for areas of verge sited within the Visibility Splays adjacent to highways when required due to the monitoring task to manage growth	As required	From Early Summer - Early Autumn.																				

Task Code	Feature Code	Landscape Typology	Time Peroid	Task Description	Broad frequency	Optimum time to undertake task	6 months	Year 1	Year 2	Year 3	Year 4	Year 5	Dynamic Review	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 20	Year 25	Year 30
LMM-80	GS	Grass Swale	Rectification Period	Undertake first cut to be done 6 month after seeding. Height of the first cut to be 50-75 mm.	First cut after flowering heads	August-September																				
LMM-81	GS	Grass Swale	All	From second season undertake a cut in spring and a hay cut in late Summer/Autumn in dry weather. Cut back to 50-75mm. Leave arisings in situ for	Once or potentially twice a year	(March), August-September																				
LMM-82	GS	Grass Swale	Rectification Period	Inspect grassland/planting for undesirable weeds and undertake isolated herbicide spot treatments or hand weeding.	Once a year	From Spring till Autumn																				
LMM-83	GS	Grass Swale	All	Litter picking remove of site prior to grass cutting	Once or potentially twice a year	(March), August-September																				
LMM-84	GS	Grass Swale	Rectification Period	Overseeding during establishment period where marginal wetland zone is not fully established.	Twice a year	In March-April or September-October																				
LMM-85	DT	Ditches	Rectification Period	Undertake first cut to be done 6 month after seeding. Height of the first cut to be 50-75 mm. Leave arisings in situ for three days for seed dispersal and then remove off site. Note: Seek Ecological checks for protected species prior to undertaking works.	First cut after flowering heads dropped their seeds	August-September																			
LMM-86	DT	Ditches	All	From second season undertake a cut in spring and a hay cut in late Summer/Autumn in dry weather. Cut back to 50-75mm. Leave arisings in situ for three days for seed dispersal and then remove off site. Note: Seek Ecological checks for protected species prior to undertaking works.	Once or potentially twice a year	(March), August-September																			
LMM-87	DT	Ditches	Rectification Period	Inspect grassland/planting for undesirable weeds and undertake isolated herbicide spot treatments or hand weeding.	Once a year	From Spring till Autumn																				
LMM-88	DT	Ditches	All	Litter picking remove of site prior to grass cutting	Once or potentially twice a year	(March), August-September																				
LMM-89	DT	Ditches	Rectification Period	Overseeding during establishment period where marginal wetland zone is not fully established.	Twice a year	In March-April or September-October																				
LMM-90	MRG	Meadow Rain Gardens	Rectification Period	Undertake first cut to be done 6 month after seeding. Height of the first cut to be 50-75 mm. Leave arisings in situ for three days for seed dispersal and then remove off site. Note: Seek Ecological checks for protected species prior to undertaking works.	First cut after flowering heads dropped their seeds	August-September																			
LMM-91	MRG	Meadow Rain Gardens	All	From second season undertake a cut in spring and a hay cut in late Summer/Autumn in dry weather. Cut back to 50-75mm. Leave arisings in situ for three days for seed dispersal and then remove off site.	Once or potentially twice a year	(March), August-September																				
LMM-92	MRG	Meadow Rain Gardens	Rectification Period	Inspect grassland/planting for undesirable weeds and undertake isolated herbicide spot treatments or hand weeding.	Once a year	From Spring till Autumn																				
LMM-93	MRG	Meadow Rain Gardens	Rectification Period	Litter picking remove of site prior to grass cutting	Once or potentially twice a year	(March), August-September																				
LMM-94	MRG	Meadow Rain Gardens	Rectification Period	Overseeding during establishment period where marginal wetland zone is not fully established.	Twice a year	In March-April or September-October																				
LMM-95	ORG	Ornamental Rain Gardens	Rectification Period	Inspect planting for failures during the **rectification** period. Record findings and undertake replacement planting.	Annually	Inspection in August, replacement planting October - November																				

Appendix B

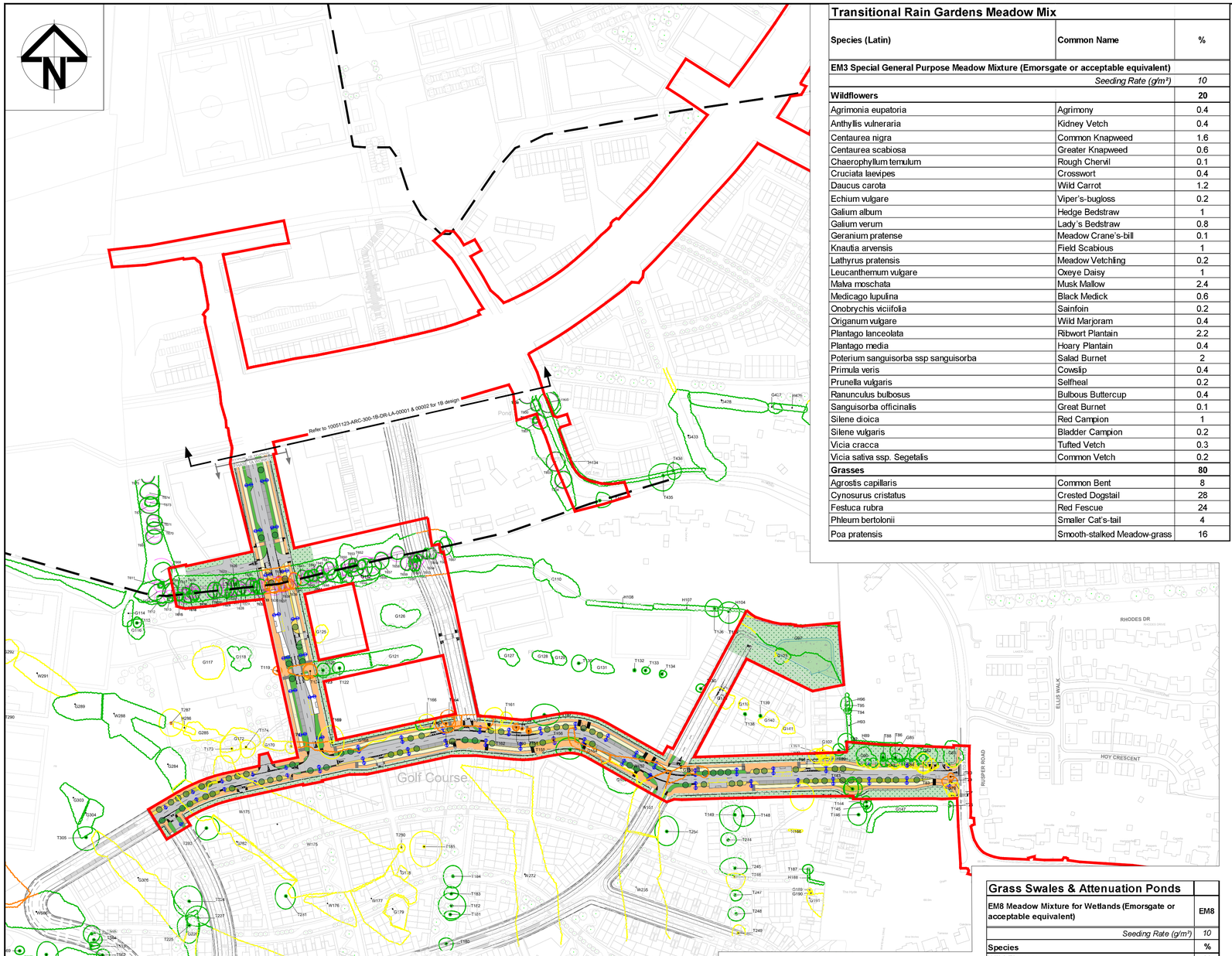
Landscape Proposal Drawings

This LEMP is to be read in conjunction with the following drawings:

10051123-ARC-300-1A-DR-LA-00001 – Phase 1a Landscape Typologies Plan,

10051123-ARC-300-1B-DR-LA-00001 – Phase 1b Sheet 1 Landscape Typologies Plan, and

10051123-ARC-300-1B-DR-LA-00002 – Phase 1b Sheet 2 Landscape Typologies Plan



Transitional Rain Gardens Meadow Mix

Species (Latin)	Common Name	%
EM3 Special General Purpose Meadow Mixture (Emorsgate or acceptable equivalent)		
	Seeding Rate (g/m²)	*10*
Wildflowers		**20**
Agrimonia eupatoria	Agrimony	0.4
Anthyllis vulneraria	Kidney Vetch	0.4
Centaurea nigra	Common Knapweed	1.6
Centaurea scabiosa	Greater Knapweed	0.6
Chaerophyllum temulum	Rough Chervil	0.1
Cruciata laevipes	Crosswort	0.4
Daucus carota	Wild Carrot	1.2
Echium vulgare	Viper's-bugloss	0.2
Galium album	Hedge Bedstraw	1
Galium verum	Lady's Bedstraw	0.8
Geranium pratense	Meadow Crane's-bill	0.1
Knautia arvensis	Field Scabious	1
Lathyrus pratensis	Meadow Vetchling	0.2
Leucanthemum vulgare	Oxeye Daisy	1
Malva moschata	Musk Mallow	2.4
Medicago lupulina	Black Medick	0.6
Onobrychis viciifolia	Sainfoin	0.2
Origanum vulgare	Wild Marjoram	0.4
Plantago lanceolata	Ribwort Plantain	2.2
Plantago media	Hoary Plantain	0.4
Poterium sanguisorba ssp sanguisorba	Salad Burnet	2
Primula veris	Cowslip	0.4
Prunella vulgaris	Selfheal	0.2
Ranunculus bulbosus	Bulbous Buttercup	0.4
Sanguisorba officinalis	Great Burnet	0.1
Silene dioica	Red Campion	1
Silene vulgaris	Bladder Campion	0.2
Vicia cracca	Tufted Vetch	0.3
Vicia sativa ssp. Segetalis	Common Vetch	0.2
Grasses		**80**
Agrostis capillaris	Common Bent	8
Cynosurus cristatus	Crested Dogstail	28
Festuca rubra	Red Fescue	24
Phleum bertolonii	Smaller Cat's-tail	4
Poa pratensis	Smooth-stalked Meadow-grass	16

Meadow Rain Gardens

Species (Latin)	Common Name	%
EM3 Special General Purpose Meadow Mixture (Emorsgate or acceptable equivalent)		
	Seeding Rate (g/m²)	*10*
Wildflowers		**20**
Agrimonia eupatoria	Agrimony	0.4
Anthyllis vulneraria	Kidney Vetch	0.4
Centaurea nigra	Common Knapweed	1.6
Centaurea scabiosa	Greater Knapweed	0.6
Chaerophyllum temulum	Rough Chervil	0.1
Cruciata laevipes	Crosswort	0.4
Daucus carota	Wild Carrot	1.2
Echium vulgare	Viper's-bugloss	0.2
Galium album	Hedge Bedstraw	1
Galium verum	Lady's Bedstraw	0.8
Geranium pratense	Meadow Crane's-bill	0.1
Knautia arvensis	Field Scabious	1
Lathyrus pratensis	Meadow Vetchling	0.2
Leucanthemum vulgare	Oxeye Daisy	1
Malva moschata	Musk Mallow	2.4
Medicago lupulina	Black Medick	0.6
Onobrychis viciifolia	Sainfoin	0.2
Origanum vulgare	Wild Marjoram	0.4
Plantago lanceolata	Ribwort Plantain	2.2
Plantago media	Hoary Plantain	0.4
Poterium sanguisorba ssp sanguisorba	Salad Burnet	2
Primula veris	Cowslip	0.4
Prunella vulgaris	Selfheal	0.2
Ranunculus bulbosus	Bulbous Buttercup	0.4
Sanguisorba officinalis	Great Burnet	0.1
Silene dioica	Red Campion	1
Silene vulgaris	Bladder Campion	0.2
Vicia cracca	Tufted Vetch	0.3
Vicia sativa ssp. Segetalis	Common Vetch	0.2
Grasses		**80**
Agrostis capillaris	Common Bent	8
Cynosurus cristatus	Crested Dogstail	28
Festuca rubra	Red Fescue	24
Phleum bertolonii	Smaller Cat's-tail	4
Poa pratensis	Smooth-stalked Meadow-grass	16

Ornamental Rain Gardens - Typical species

Species (Latin)	Common Name	%
Achillea millefolium	Yarrow	2
Achillea 'Walther Funcke'	Yarrow	2
Betonica officinalis 'Hummelo'	Betony	2
Carex oshimensis 'Everest'	Japanese Sedge	20
Carex oshimensis 'Everillo'	Japanese Sedge	10
Sedum herbstfruede (Hylotelephium spectabile)	Stonecrop	2
Monarda didyma 'Bee Lieve'	Bergamot	2
Hakonechloa macra 'Aureola'	Golden Hakonechloa	20
Kniphofia 'Little Maid'	Red Hot Poker	5
Kniphofia 'Poco Red'	Red Hot Poker	5
Imperata cylindrica 'Rubra'	Japanese Blood Grasses	8
Geranium 'Light Dilys'	Cranebill	2
Geranium 'Rozanne'	Cranebill	2
Festuca glauca 'Blaufuchs'	Blue Fescue	8
Nepeta × faassenii	Cat Mint	5
Carex buchananii 'Red Rooster'	Sedge	5

Grass Swales & Attenuation Ponds

EM8 Meadow Mixture for Wetlands (Emorsgate or acceptable equivalent)	EM8
Seeding Rate (g/m²)	*10*
Species	**%**
Wild Flowers	**20**
Achillea millefolium (Yarrow)	2.00
Agrimonia eupatoria (Agrimony)	0.60
Centaurea nigra (Common Knapweed)	3.60
Filipendula ularia (Meadowsweet)	1.00
Galium verum (Lady's Bedstraw)	2.00
Geum rivale (Water Avens)	0.20
Lathyrus pratensis (Meadow Vetchling)	0.50
Leontodon hispidus (Rough Hawkbit)	0.10
Leucanthemum vulgare (Oxeye Daisy (Moon Daisy))	1.20
Lotus corniculatus (Birdsfoot Trefoil)	0.10
Lotus pedunculatus (Greater Birdsfoot Trefoil)	0.40
Plantago lancelata (Ribwort Plantain)	3.20
Primula veris (Cowslip)	0.20
Prunella vulgaris (Selfheal)	0.10
Ranunculus acris (Meadow Buttercup)	0.40
Rhinanthus minor (Yellow Rattle)	1.40
Rumex acetosa (Common Sorrel)	1.20
Sanguisorba officinalis (Great Burnet)	1.00
Silene flos-cuculi (Ragged Robin)	0.30
Succisa pratensis (Devil's-bit Scabious)	0.10
Vicia cracca (Tufted Vetch)	0.40
Grasses	**80**
Agrostis capillaris (Common Bent)	4.00
Anthoxanthum odoratum (Sweet Vernal-grass)	4.00
Carex divulsa subsp. divulsa (Grey Sedge)	1.60
Cynosurus cristatus (Crested Dogstail)	34.4
Deschampsia cespitosa (Tufted Hair-grass)	1.60
Festuca rubra (Red Fescue)	20.0
Hordeum secalinum (Meadow Barley)	4.00
Poa trivialis (Rough-stalked Meadow-grass)	8.00
Schedonorus arundinaceus (Tall Fescue)	2.40

Enhancement of Existing Vegetation to Other Neutral Grassland

Species (Latin)	Common Name	%
EM Wildflower Meadow Mixture (Emorsgate or acceptable equivalent)		
	Seeding Rate (g/m²)	10
Wildflowers		**15**
Achillea millefolium	Yarrow	0.75
Betonica officinalis	Betony	0.75
Centurea nigra	Common Knapweed	2.25
Daucus carota	Wild Carrot	1.5
Galium verum	Lady's Bedstraw	0.4
Geranium pratense	Meadow Crane's-bill	0.4
Leucanthemum vulgare	Oxeye Daisy	1.35
Plantago lanceolata	Ribwort Plantain	1.5
Poterium sanguisorba ssp sanguisorba	Salad Burnet	1.5
Primula veris	Cowslip	1
Prunella vulgaris	Selfheal	1.1
Ranunculus acris	Meadow Buttercup	1.2
Ranunculus bulbosus	Bulbous Buttercup	0.15
Rumex acetosa	Common Sorrel	0.4
Silene vulgaris	Bladder Campion	0.75
Grasses		**85**
Agrostis capillaris	Common Bent	8.5
Cynosurus cristatus	Crested Dogstail	29.75
Festuca rubra	Red Fescue	25.5
Phleum bertolonii	Smaller Cat's-tail	4.25
Poa nemoralis	Wood Meadow-grass	17

Ditches

EP1F Wild Flowers for Pond Edges (Emorsgate or acceptable equivalent)	EM8
Seeding Rate (g/m²)	*10*
Species	**%**
Wild Flowers	**20**
Angelica sylvestris (Wild Angelica)	5.00
Centurea nigra (Common Knapweed)	12.00
Dipsacus fullonum (Wild teasel)	3.00
Eupatorium cannabinum (Hemp Agrimony)	1.00
Filipendula ulmaria (Meadowsweet)	10.00
Galium album (Hedge Bedstraw)	5.00
Geum rivale (Water Avens)	3.00
Iris pseudacorus (Yellow Iris)	20.20
Lathyrus pratensis (Meadow Vetchling)	4.00
Lythrum salicaria (Purple Loosestrife)	1.50
Lycopus europeeus (Gypsywort)	0.50
Oenanthe pimpinelloides (Corky-fruited Water-dropwort)	1.00
Plantago lanceolata (Ribwort Plantain)	3.00
Prunella vulgaris (Selfheal)	4.00
Ranunculus acris (Meadow Buttercup)	5.00
Silene dioica (Red Campion)	14.00
Silene flos-cuculi (Ragged Robin)	6.00

Street Tree Planting - 1A

Species	SUDS	Girth (cm)	Height (cm)	Clear stem (cm)	Root
Acer campestre (Field Maple)	y	20 to 25	600-700	250 min	
Acer campestre 'William Caldwell' (Field Maple)	y	20 to 25	600-700	250 min	
Acer x freemanii (Freeman Maple)	y	20 to 25	600-700	250 min	
Alnus cordata (Italian Alder)	y	20 to 25	500-600	220 min	
Alnus incana 'Aurea' (Golden Alder)	y	20 to 25	500-600	220 min	
Alnus x spaethii (Spaeth's Alder)	y	18 to 20	500-600	220 min	
Amelanchier arborea 'Robin Hill' (Serviceberry)	y	18 to 20	500-600	220 min	
Betula albosinensis 'Fascination' (Chinese Birch / Paper Bark)	y	18 to 20	500-600	220 min	
Betula nigra (River Birch)	y	20 to 25	500-600	220 min	
Betula pendula (Birch)	y	18 to 20	500-600	220 min	
Carpinus betulus 'Fastigiata' (Hornbeam)	y	18 to 20	500-600	220 min	
Carpinus betulus (Hornbeam)	y	20 to 25	600-700	250 min	
Corylus avellana (Hazel)	y	20 to 25	500-600	220 min	
Corylus colurna (Turkish Hazel)	y	18 to 20	500-600	220 min	
Ginkgo biloba (Maidenhair Tree)	N	18 to 20	500-600	220 min	
Hamamelis intermedia (Witch Hazel)	y	18 to 20	500-600	220 min	
Liquidambar styraciflua (Sweet Gum)	y	18 to 20	500-600	220 min	
Liriodendron tulipifera (Tulip Tree)	y	20 to 25	600-700	250 min	
Pinus nigra 'Austriaca' (Austrian Pine)	N	20 to 25	600-700	250 min	
Pinus sylvestris (Scots Pine)	N	20 to 25	600-700	250 min	
Populus tremula (Aspen)	y	20 to 25	600-700	250 min	
Prunus avium (Wild Cherry)	y	20 to 25	600-700	250 min	
Prunus avium 'Plena' (Wild Cherry)	N	20 to 25	600-700	250 min	
Prunus Padus (Bird Cherry)	y	20 to 25	500-600	220 min	
Quercus frainetto (Hungarian Oak)	y	20 to 25	600-700	250 min	
Quercus robur (Pendunculate Oak)	y	20 to 25	600-700	250 min	
Sorbus aucuparia (Rowan)	N	18 to 20	500-600	250 min	
Sorbus torminalis (Wild Service Tree)	y	18 to 20	500-600	250 min	
Tilia cordata 'Greenspire' (Small Leaved Lime)	y	20 to 25	500-600	220 min	
Ulmus 'New Horizon' (Elm)	y	20 to 25	500-600	220 min	

LANDSCAPE KEY

- Detailed (Phase 1) Boundary

Existing Landscape Features

- Public Right of Way
- Retained existing trees
- Other retained existing woody vegetation (incl. tree, shrubs, hedgerows)
- Removed existing trees
- Removed existing woody vegetation (inclu. tree, shrubs, hedgerows)
- Retained if possible trees
- Retained if possible woody vegetation (inclu. tree, shrubs, hedgerows)
- Root Protection Area
- Enhancement of existing vegetation to Other Neutral Grassland (trees, woodlands, tree groups retained/removed as shown)
- Watercourse / Body

Proposed Engineering Features (Refer to Engineers' Proposals for details)

- Carriageway
- Footway / Hardstanding
- Cycleway
- Attenuation Basin
- Lighting column
- Mobility Hub

Proposed Landscape Features

- Specimen tree planting
- Meadow rain gardens
- Ornamental rain gardens
- Transitional rain gardens
- Grass Swale
- Ditches

Note: All hard copy drawings are to be checked against digital PDFs for consistency.

Rev	Date	Description	Prod.	Chk.	Rev.	App.
P09	23.06.25	Issued for planning	JL	AS	MH	MH
P08	28.05.25	Work in Progress	IDG	AS	MH	MH
P07	12.05.25	Issued for planning	IDG	AS	MH	MH
P06	04.04.25	Issued for planning	IDG	AS	MH	MH
P05	15.08.24	For Information	IDG	AS	MH	MH
P04	05.08.24	Updated layout	IDG	AS	MH	MH
P03	13.03.24	Preliminary	IDG	AS	MH	MH
P02	14.12.23	Preliminary	IDG	AS	BH	BH
P01	26.10.23	Preliminary	IDG	AS	BH	BH

Project:

West of Ifield

Site

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West Sussex

Client

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Drawing Title:

Phase 1B
Landscape Typologies Plan
Sheet 1 of 2

Designed: IDG	Signed: Digitally Signed	Date: 23.06.25	
Produced: IDG	Signed: Digitally Signed	Date: 23.06.25	
Checked: AS	Signed: Digitally Signed	Date: 23.06.25	
Reviewed: MH	Signed: Digitally Signed	Date: 23.06.25	
Approved: MH	Signed: Digitally Signed	Date: 23.06.25	
Design Stage: Detailed Design			
Original Size: A1	Grid: OS	Datum: AOD	
Suitability Code: A3	Scale: 1:2000	Project Number: 10051123	

Suitability Description:

Definition Design Stage Complete Authorized and Accepted

Drawing Number:

10051123 - ARC-300 -
1A - DR - LA - 00001

Revision:

P09