Land off Hermitage Park, Lepton

Report to discharge conditions 8, 15 and 27

Miller Homes Limited

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Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1	13 January 2025	Lucy Sumner Ellie Tew Peter Wigglesworth	Ellen Miller	Tom Redman
2	4th August 2025	Lucy Sumner Ellie Tew Peter Wigglesworth	Ellen Miller	Gary Oliver

Basis of Report

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Acronyms and Abbreviations

BEMP	Biodiversity Enhancement and Management Plan
BPZs	Biodiversity Protection Zones
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
ECoW	Ecological Clerk of Works
EcIA	Ecological Impact Assessment
GCN	Great Crested Newt
LIA	Lighting Impact Assessment
POS	Public Open Space
RPA	Root Protection Area
SuDS	Sustainable Drainage System

1.0 Introduction and Background

A Section 73 application for 80 dwellings and associated work at Land off Hermitage Park, Lepton, Huddersfield, HD8 0JU pursuant to Outline Application 2022/60/91735/W was approved by Kirklees Council on the 10 November 2024.

This report seeks to address the associated conditions 8, 15 and 27 which relates to ecology:

"8. *Plans and particulars relating to the Reserved Matters of landscaping, notwithstanding the submitted information, shall include a lighting design strategy. The strategy shall:*

a) identify those areas / features on site that are particularly sensitive for local species and that are likely to cause disturbance in, or around their breeding sites and resting places, or along important routes used to access key areas of their territory, for example, for foraging; and

b) show how and where external lighting will be installed (through the provision of appropriate lighting contour plans and technical specifications) so that it can be clearly demonstrated that areas to be lit will not disturb or prevent the above species using their territory or having access to their breeding sites and resting places.

c) With due regard to the requirements of points a and b, detail how appropriate lighting would be installed to mitigate and protect against crime.

All external lighting shall be installed in accordance with the specifications and locations set out in the strategy, and these shall be maintained thereafter in accordance with the strategy. Under no circumstances should any other external lighting be installed on dwellings facing either Lepton Great Wood or areas of Public Open Space without prior consent from the local planning authority.

Reason*: To avoid indirect impacts to bats and other local species in the interest of ecological mitigation, to comply with Policy LP30 of the Kirklees Local Plan.*

15. *Prior to development commencing, (including demolition, ground works, vegetation clearance) a Construction Environmental Management Plan: Biodiversity (CEMP: Biodiversity) shall be submitted to, and approved in writing by, the Local Planning Authority. The CEMP: Biodiversity shall include the following:*

a) Risk assessment of potentially damaging construction activities.

b) Identification of "biodiversity protection zones".

c) Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during construction (may be provided as a set of method statements).

d) The location and timing of sensitive works to avoid harm to biodiversity features.

e) The times during construction when specialist ecologists need to be present on site to oversee works.

f) Responsible persons and lines of communication.

g) The role and responsibilities on site of an ecological clerk of works (ECoW) or similarly competent person.

h) Use of protective fences, exclusion barriers and warning signs. The approved CEMP shall be adhered to and implemented throughout the construction period strictly in accordance with the approved details, unless otherwise agreed in writing by the local planning authority.

Reason*: To ensure avoidance of impacts to protected and priority species in order to prevent significant ecological harm in accordance with Policy LP30 of the Kirklees Local*

Plan. This is a pre-commencement condition to ensure appropriate measures are designed and agreed prior to any potentially damaging operations associated to the construction phase.

27. *Prior to above ground works commencing, a Biodiversity Enhancement and Management Plan (BEMP) to ensure that a biodiversity net gain is achieved post-development shall be submitted to and agreed in writing by the Local Planning Authority. The BEMP shall accord with the submitted biodiversity net gain calculations dated 17th October 2022 which state that the development will result in a minimum 10% net gain in habitats and a minimum 10% net gain in hedgerows. The BEMP shall also lay out provisions for protected species, that are to be incorporated into the design. The BEMP shall include the following:*

a) Description and evaluation of features to be managed and enhanced;

b) Extent and location/area of proposed enhancement works on appropriate scale maps and plans;

c) Ecological trends and constraints on site that might influence management;

d) Aims and Objectives of management;

e) Appropriate management Actions for achieving Aims and Objectives;

f) An annual work programme (to cover an initial 5-year period capable of being rolled forward over a period of 30 years);

g) Details of the management body or organisation responsible for implementation of the BEMP;

h) Ongoing monitoring programme and remedial measures; and

i) The BEMP will be reviewed and updated every 5 years and implemented for a minimum of 30 years

The BEMP shall set out (where the results from the monitoring show that the Aims and Objectives of the BEMP are not being met) how contingencies and/or remedial action will be identified, agreed and implemented so that the development still delivers the fully functioning biodiversity objectives of the originally approved BEMP. The approved BEMP will be implemented in accordance with the approved details.

Reason*: In order to ensure the development provides ecological enhancement and creation measures sufficient to provide a biodiversity net gain in accordance with Policy LP30 of the Kirklees Local Plan and the National Planning Policy Framework*."

1.1 Evidence of Technical Competence and Experience

This report was written by SLR Consulting Senior Ecologist Lucy Sumner, Project Ecologist Ellie Tew and Project Consultant Peter Wigglesworth. Lucy is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM), with over five years' experience in ecological consultancy, including supervision of construction works. Ellie is Qualifying Member of CIEEM with over two years' experience in ecological consultancy. Peter Wiglesworth has over five years' experience including working in the third sector for environmental organisations and more recently for SLR in the ecology and natural capital teams on a variety of projects.

The report has been reviewed by Ellen Miller MA (Hons) ACIEEM. Ellen is an Associate ecologist with over five years' experience in ecological consultancy. Ellen is an experienced botanist and is proficient in a variety of ecological survey techniques. Ellen also holds Natural England survey licences for bat and great crested newt (*Triturus cristatus*) (GCN). Ellen has extensive experience in ecological assessment and reporting.

The original version of this report (version v1, dated 13th January 2025) was approved by Tom Redman BSc (Hons) MSc, who is a full member of CIEEM (MCIEEM). Tom is an Associate Ecologist with over seven years' experience in ecological consultancy and is proficient in a variety of ecological survey and assessment techniques. Tom also holds Natural England survey licences for bats (class 4), GCN (class 2) and barn owl (*Tyto alba*).

This version (v2) has been amended and approved by Gary Oliver BSc (Hons) MSc, following revisions to the landscape masterplan. Gary is a Principal Ecologist with over 29 years' relevant experience within ecological consultancy. Gary holds Natural England survey licences for bats (class 2) and GCN (class 2).

2.0 Lighting Design Strategy

This section seeks to fulfil condition 8 and pulls the details from the Lighting Impact Assessment (LIA) written by BWB Consulting Ltd[1] for Miller Homes and relevant ecology sections reviewed by SLR Consulting Ltd. Relevant sections of the LIA report are signposted in the sections below.

2.1 Light Sensitive Site Areas/Features

There are four areas identified, in consultation with BWB, as sensitive ecological areas or features. These are detailed in Section 4.11 of the LIA and are:

- E1 & E3 which consist of a moderate sensitivity area of woodland boundary along the eastern side of the Site;
- E2 which is the area of central public open space in the middle of the proposed development identified as moderate sensitivity; and
- E4 which is Great Lepton Wood which lies outside the Site boundary but is close enough to be affected by potential lighting and identified as high sensitivity.

A map showing the areas can be found as Figure 3 of the LIA.

2.2 Proposed Site Lighting

The layout of the Site lighting is detailed in sections 5.1-5.8 of the LIA and mapped in Appendices 2 and 3 of the same report.

The proposed layout was reviewed and deemed suitable and demonstrated adherence to ecological principles minimising impacts to sensitive areas. It was informed by and prepared with reference to the Institute of Lighting Professionals (ILP) Guidance Note 8 on Bats and Artificial Lighting[2]. This guidance recommends 2700 Kelvin or lower lighting; however, Kirklees Council have requested that 4000 Kelvin lighting, as is deployed across the Kirklees Highway Network, which has been discussed and accepted by the Kirklees Council Ecology / Planning on other developments. Bat boxes will be situated so as to avoid direct illumination.

2.3 Mitigation and Protection Against Crime

Measures in the lighting strategy to mitigate and protect against crime to fulfil condition 8c are in accordance with requirements of conditions 8a and b and thus do not impinge on those ecologically sensitive areas.

[1] Lighting Impact Assessment, BWB Consulting Ltd, 2024

[2] Institute of Lighting Professionals (ILP) (2023) Guidance Note 08/23: Bats and Artificial Lighting at Night.

3.0 CEMP: Biodiversity

3.1 Risk Assessment of Potentially Damaging Operations

The establishment of the Site, including deliveries and Site clearance to provide access for the construction works (comprising residential properties, surface water attenuation basins and swales, footpaths, natural play space and landscaping works to the centre of the Site and along the eastern boundary and land to the west) have potential to harm or disturb the following protected / notable species and ecological receptors:

- Lepton Great Wood, a Local Wildlife Site which also contains Ancient Semi-Natural Woodland, supports >20% bluebell cover and forms part of the Kirklees Wildlife Habitat Network, is located immediately east of the Site;
- Semi-improved neutral grassland, areas marked as G1 and G2 in Drawing 1 of the Ecological Impact Assessment (EcIA)[3];
- Hedgerows, tree lines and mature trees;
- Commuting and foraging bats; and
- Breeding birds.

Therefore, measures outlined in the sections below shall be implemented prior to the commencement of each operation/activity on-Site to safeguard the relevant protected/notable species and ecological receptors.

3.2 Biodiversity Protection Zones

Biodiversity Protection Zones (BPZs) shall be established for Lepton Great Wood which shall overlap with BPZs required for areas of the semi-improved neutral grassland (G1 and G2), retained hedgerows, tree lines, mature trees and trees with potential for roosting bats above negligible potential.

As part of the establishment of these BPZs, these shall be accompanied by appropriate signage, with specific details outlined in the sections below. Signage must be weather-proof and attached to any protective fencing used for the relevant BPZ. All signs must have a common title of “Construction Exclusion Zone” or “Biodiversity Protection Zone” with the relevant restrictions provided below the title to explain the restrictions which apply within the BPZ, and all Site personnel must be made aware of these restrictions (Plate 3-1).

[3] SLR Consulting (2022) Land off Hermitage Park, Lepton EcIA v1. 424.064656.00001.

Plate 3-1: Example of BPZ Signs.

3.2.1 Lepton Great Wood

Lepton Great Wood is located immediately east of the Site and is designated as a Local Wildlife Site. It also contains Ancient Semi-Natural Woodland, supports >20% bluebell cover and forms part of the Kirklees Wildlife Habitat Network. A minimum 15 m buffer / BPZ shall be established between the Site and Lepton Great Wood. The BPZ shall be planted with a semi-natural transitional habitat comprising of individual tree planting, native scrub and woodland, and species rich meadow planting to safeguard the Root Protection Area of the Ancient Woodland and provide an improved and more natural 'edge habitat'. Shallow swales and mown footpaths of species rich flowering lawn shall also be installed within this BPZ. Further details on the exact planting proposals are outlined in Section 4.1. Temporary construction Site fencing shall also be installed alongside the planting work to provide a physical barrier for the BPZ, ensuring its protection and the fencing shall be maintained until the completion of the main construction works.

Heras fencing (or similar) could be utilised to create the BPZ, which would be erected as specified and directed by the project arboriculturist[4].Fencing should also have signage (as described above) sited every 10 metres highlighting that access is prohibited within this BPZ for Lepton Great Wood, Ancient Woodland and Local Wildlife Site. The BPZ shall be regarded as sacrosanct, and once installed, barriers and ground protection shall not be removed or altered without due consideration to the potential impact upon the rooting zone. Fencing or ground protection shall not be taken down or relocated at any time without prior consultation with an arboriculturist.

3.2.2 Semi-Improved Neutral Grassland

The establishment of the BPZ for Lepton Great Wood shall also protect existing grassland habitat to be retained (areas labelled as G1 and G2) and grassland habitat that shall be enhanced (eastern sections of Fields 1, 2 and 3), as shown indicatively in Plate 3-2.

[4] Smeeden Foreman (2025) Arboricultural Survey Report Hermitage Park, Lepton.

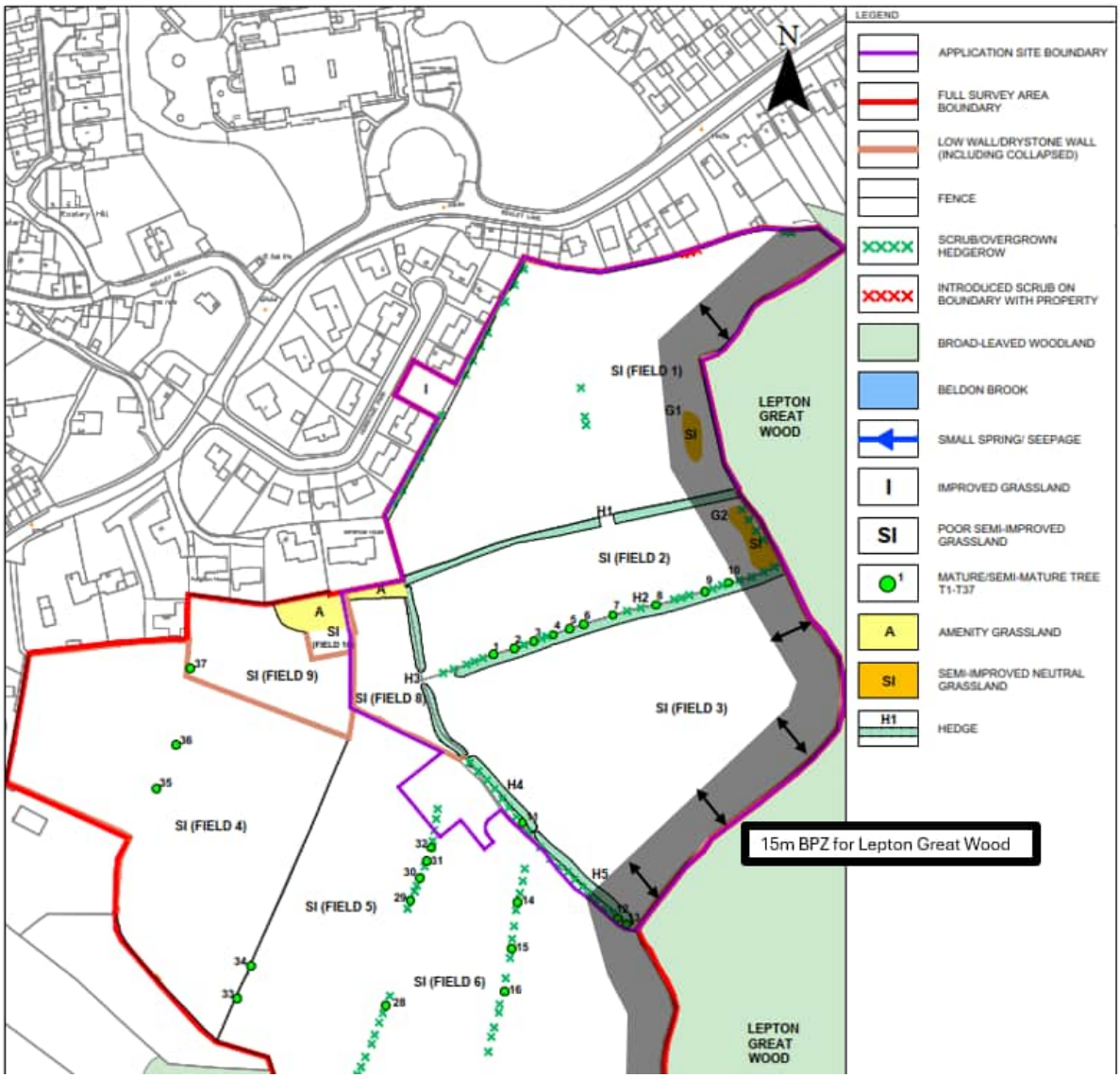

Plate 3-2: Indicative mark up of BPZ for Lepton Great Wood and overlap with semi-improved grassland areas.

During the construction phase, areas of semi-improved neutral grassland shall also be created outside of the BPZ for Lepton Great Wood (Appendix A). These areas shall be protected by perimeter fencing and signage of the seeded areas. Fencing shall comprise of orange mesh barriers, or similar, such that it creates a clearly physical and visible barrier to construction access (pedestrian and vehicular) which shall be maintained until the completion of the main construction works.

3.2.3 Hedgerows, Tree Lines and Mature Trees

Tree and hedgerow references used within this section follow the same references from Drawing 1 of the EcIA and are also labelled in Plate 3-2, which differ from the Arboricultural Survey Report. The existing hedgerows and tree lines H1-5 shall be retained apart from approximately 20 m of tree line H2 and approximately 10 m sections of both tree line H1 and hedgerow H4. All of the mature trees present within the hedgerows and tree lines shall be retained.

All retained trees, tree lines and hedgerows as well as their RPA shall be protected by BPZs, which shall be established, as described in Arboricultural Survey Report. Any alterations to BPZs must be agreed with the project arboriculturist and ECoW prior to alteration and will be reinstated to protect the retained hedgerows and trees immediately following removal or enhancement works.

3.3 Precautionary Working Measures

In addition to the BPZs, practical measures (both physical and sensitive working practices, such as timing) are outlined below to avoid or reduce impacts on the protected / notable species and ecological receptors during Site clearance and construction.

Good practice environmental and pollution control measures shall be employed with regard to current best practice guidance such as, but not limited to, the following:

- CIRIA C532, 'Control of water pollution from construction sites: guidance for consultants and contractors' (2001); and
- CIRIA C741, 'Environmental good practice on site guide' (2015 4th Ed.).

3.3.1 Lepton Great Wood, Retained Hedgerows, Tree Lines and Mature Trees

Precautionary working measures in relation to Lepton Great Wood, trees, hedgerows and tree lines are detailed in the Arboricultural Survey Report and shall be adhered to.

3.3.2 Commuting and Foraging Bats

The vegetation removal works will not impact on trees with above negligible potential for roosting bats[3] other than potentially Tree T11 (refer to Section 3.4.1 for more information).

During construction, works will minimise the need for site lighting as they shall be undertaken in daylight hours unless otherwise agreed in writing by the planning authority. Any lighting required during construction shall avoid directly illuminating Lepton Wood and the retained vegetation, until it is removed. In addition, indirect illumination of these features should be kept below an increase of 1 Lux. This will be achieved using methods outlined in the ILP Guidance Note[2], which includes but is not limited to:

- Using appropriate luminaire specifications that achieve as many criteria as outlined by ILP Guidance as practicable;
- Maintenance of dark buffers using careful positioning and as a 'last resort' screening;
- Dimming, part night lighting, motion sensor activated lighting; and
- Hoods, cowls or louvres as a 'last resort' to direct light away from this bat habitat.

3.3.3 Breeding Birds

Site clearance will require removal of vegetation which could be utilised by nesting birds and should therefore be undertaken outside of the peak nesting bird season, i.e. removal between March and August inclusive. If this is not feasible, a search for active nests would first be undertaken by the ECoW or a suitably qualified ecologist within the 24 hours prior to vegetation clearance of trees, hedgerows and scrub along the existing field margins. If an active nest was identified, it would be left *in situ* until the breeding attempt was concluded and the young had fledged.

3.4 Ecological Clerk of Works

3.4.1 Roles and Responsibilities

An ECoW is deemed necessary for this project as it is a role to work on-Site with construction contractors to:

- Advise on protecting valued biodiversity features on construction sites.
- Provide practical, Site-specific and proportionate assistance on how their clients can achieve compliance with environmental legislation.
- Avoid unexpected costs, delays to project timetables, or adverse publicity that may have future negative commercial implications; and ultimately risk of enforcement action and/ or potential prosecution.
- Manage ecological operatives engaged in ecological mitigation activities – such as undertaking ecological watching briefs and translocation of protected species.

The ECoW would be responsible for undertaking a watching brief, or dusk emergence and/ or dawn re-entry bat surveys, or climb-and-inspect surveys of the tree T11 (accompanied by another surveyor) and nesting bird checks (if required), overseeing any ecologically sensitive works, and advising on any arising ecological issues as required prior to and during the construction period.

Tree T11 is located at the eastern edge of hedgerow H4, close to the southern Site boundary, as illustrated in Plate 3.3.

3.4.2 Responsible Persons and Lines of Communication

Miller Homes Ltd and their appointed construction contractors will be responsible for ensuring that the pre-commencement surveys, precautionary working measures, BPZs and enhancement works are implemented on Site.

The ECoW for this project is Gary Oliver, who can be contacted via email (goliver@slrconsulting.com) or mobile phone (07971 462696).

The protection of retained hedgerows, tree lines, trees and Lepton Great Wood, would be overseen by an arboriculturist.

3.5 Conclusion

A summary of the BPZs, pre-commencement surveys and precautionary working measures with timing of implementation is outlined in Table 3-1.

Table 3-1: Timing of BPZs, pre-commencement surveys and precautionary working methods.

Ecological Receptor	BPZs, pre-commencement surveys and precautionary working measures	Timing
Lepton Great Wood	Establish BPZ.	Prior to commencement of works.
	Precautionary working measures within RPA and BPZ. Follow Arboricultural Survey Report measures, CIRIA C532 and C741.	During construction.
Semi-improved neutral grassland	Establish BPZ.	Prior to commencement of works.
	Establish BPZ for newly created areas of semi-improved neutral grassland.	Immediately following creation of new areas of semi-improved neutral grassland.
	Precautionary working measures within BPZ. Follow CIRIA C532 and C741.	During construction.
Hedgerows, tree lines and mature trees	Establish BPZ.	Prior to commencement of works.
	Precautionary working measures within RPA and BPZ. Follow Arboricultural Survey Report measures, CIRIA C532 and C741.	During construction.
Commuting and foraging bats	Establish BPZ.	Prior to commencement of works.
	Precautionary working measures following ILP Guidance with regard to lighting. Watching brief, or (if necessary) dusk emergence survey and/ or dawn re-entry survey, or climb-and-inspect survey of Tree T11 (if due to be removed or otherwise impacted, depending on its current bat roosting potential)	During construction. Prior to any impacts taking place to the tree
Breeding birds	Undertake Site/vegetation clearance works, no check required by suitably qualified ecologist/ECoW. Or:	September to February, inclusive Or:
	Undertake check for nesting birds by suitably qualified ecologist/ECoW. If nests are found, implementation of exclusion zone until the young have fledged.	March to August, inclusive. Check to be undertaken 24 hours prior to clearance.
	Follow CIRIA C532 and C741.	During construction.

4.0 Biodiversity Enhancement and Management Plan

The landscape masterplan was produced in January 2025, but updated in July 2025 (Appendix A).

The details of the landscaping is outlined in the section below and corresponds to an updated BNG metric completed on the 4th of August 2025 (Appendix B) to reflect the updated landscaping plan.

Based on this, the site is still predicted to achieve a large gain in both habitat units and hedgerow units, with 54.17% and 105.63% gains targeted respectively.

4.1 Proposed Biodiversity Features

Proposed biodiversity features included as part of the scheme within the EcIA are described below and illustrated in the Landscape Masterplan (Appendix A) for habitats. This includes:

- Native hedgerow planting;
- Native tree planting;
- Amenity grassland;
- Species rich flowering lawn;
- Species rich meadow grassland; and
- Native shrub and tree planting; and
- Sustainable Drainage System (SuDS) detention basins.

4.1.1 Hedgerow

Species rich native hedgerow planting is proposed around the Public Open Space (POS) areas on Site, particularly on the edge of the eastern buffer to Lepton Great Wood. In total, a further 476 metres of new hedgerow will be planted on Site, with a further 340 metres of current hedgerow retained and 135 metres enhanced. The native hedgerow will be comprised of guelder rose (*Viburnum opulus*), dog rose (*Rosa canina*), blackthorn (*Prunus spinosa*), common crab apple (*Malus sylvestris*), common honeysuckle (*Lonicera periclymenum*), holly (*Ilex aquifolium*), common spindle (*Euonymus europaeus*), common dogwood (*Cornus sanguinea*), field maple (*Acer campestre*), hawthorn (*Crataegus monogyna*), and common hazel (*Corylus avellana*).

4.1.2 Tree Planting

Existing trees on Site will be retained wherever possible and these will be supplemented with further planting of 71 native species trees, and 10 ‘orchard fruit trees’. All trees will be planted in accordance with BS8535:2014. Of the 71 native trees, 63 will be standard with a 8-10cm girth and 18 will be extra heavy standard trees with a 14-16cm girth. Both standards will be comprised of species such as field maple, rowan (*Sorbus aucuparia*), whitebeam (*Sorbus aria*), scots pine (*Pinus sylvestris*), English oak (*Quercus robur*), small leaved lime (*Tilia cordata*), and silver birch (*Betula pendula*). The 10 fruit trees will be planted together to form a community orchard in the central POS.

4.1.3 Amenity Grassland

A 0.0711 ha area of amenity grassland will be turfed in the centre of the Site, surrounding the natural play space.

4.1.4 Species Rich Flowering Lawn

A species rich flowering lawn mixture, such as Emorsgate EL1[5], will be sown across 0.4687 ha of the Site. This seed mix will be sown in areas which will receive a higher level of disturbance and recreational use such as the mown paths within the eastern POS and around the SuDS basin in the centre of the Site. This seed mix tolerates a stricter mowing schedule while still providing a good diversity of flowering species.

Table 4-1: Typical species composition of Emorsgate EL1 'Flowering Lawn Mixture'

Species	Composition
Wildflowers (20%)	
Yarrow (*Achillea millefolium*)	1.00%
Kidney Vetch (*Anthyllis vulneraria*)	1.00%
Betony (*Betonica officinalis*)	0.40%
Common knapweed (*Centurea nigra*)	1.50%
Hedge bedstraw (*Calium album*)	0.40%
Lady's bedstraw (*Galium verum*)	1.50%
Field scabious (*Knautia arvensis*)	0.40%
Rough hawkbit (*Leontodon hispidus*)	0.50%
Oxeye daisy (*Leucanthemum vulgare*)	1.00%
Black medick (*Medicago lupulina*)	1.00%
Ribwort plantain (*Plantago lanceolata*)	0.40%
Hoary plantain (*Plantago media*)	2.00%
Cowslip (*Primula veris*)	2.00%
Selfheal (*Prunella vulgaris*)	0.40%
Meadow buttercup (*Ranuculus acris*)	0.40%
Bulbous buttercup (*Ranunculus bulbosus*)	1.60%
White clover (*Trifolium repens*)	4.00%
Grasses (80%)	
Common bent (*Agrostis capillaris*)	8.00%
Crested dogstail (*Cynosurus cristatus*)	28.00%
Red fescue (*Festuca rubra*)	24.00%
Smaller cat's-tail (*Phleum bertolonii*)	4.00%
Smooth-stalked meadow-grass (*Poa pratensis*)	16.00%

4.1.5 Species Rich Meadow Grassland

Two types of species rich meadow grassland will be sown across the Site. The swales and SuDS basins will be sown with 0.1665 ha of wetland tolerant grassland mix, such as

[5] EL1 Flowering Lawn Mixture - Emorsgate Seeds (wildseed.co.uk)

Emorsgate EM8[6], and large areas of the POS in the west and east will be sown with 1.3183 ha general purpose wildflower mix, such as Emorsgate EM1[7]. A further 0.08 ha of meadow grassland is currently present of Site and will be retained as part of the proposed development, and a further 0.48 ha of species poor grassland will be enhanced using Emorsgate EM1 seeding.

Table 4-2: Typical species composition of Emorsgate EM1 'Basic General Purpose Meadow Mixture'

Species	Composition
Wildflowers (10%)	
Common knapweed (*Centurea nigra*)	1.50%
Wild carrot (*Daucus carota*)	0.60%
Lady's bedstraw (*Galium verum*)	0.50%
Oxeye daisy (*Leucanthemum vulgare*)	1.50%
Musk mallow (*Malva moschata*)	1.50%
Ribwort plantain (*Plantago lanceolata*)	1.90%
Salad burnet (*Poterium sanguisorba spp sanguisorba*)	1.50%
Yellow rattle (*Rhinanthus minor*)	0.50%
Red campion (*Silene dioica*)	0.50%
Grasses (90%)	
Common bent (*Agrostis capillaris*)	9.00%
Crested dogstail (*Cynosurus cristatus*)	31.50%
Red fescue (*Festuca rubra*)	27.00%
Smaller cat's-tail (*Phleum bertolonii*)	4.50%
Smooth-stalked meadow-grass (*Poa pratensis*)	18.00%

Table 4-3: Typical species composition of Emorsgate EM8 'Meadow Mixture for Wetlands'

Species	Composition
Wildflowers (20%)	
Yarrow (*Achillea millefolium*)	0.70 %
Agrimony (*Agrimonia eupatoria*)	0.60%
Wild angelica (*Angelica sylvestris*)	0.10%
Betony (*Betonica officinalis*)	0.20%
Common knapweed (*Centurea nigra*)	3.20%
Meadowsweet (*Filipendula ularia*l)	1.40%
Hedge bedstraw (*Calium album*)	0.40%

[6] EM8 Meadow Mixture for Wetlands - Emorsgate Seeds (wildseed.co.uk)

[7] EM1 Basic General Purpose Meadow Mixture - Emorsgate Seeds (wildseed.co.uk)

Species	Composition
Lady's bedstraw (*Galium verum*)	2.00%
Meadow vetchling (*Lathyrus pratensis*)	0.80%
Rough hawkbit (*Leontodon hispidus*)	0.60%
Oxeye daisy (*Leucanthemum vulgare*)	1.20%
Birdsfoot trefoil (*Lotus corniculatus*)	0.60%
Greater birdsfoot trefoil (*Lotus pedunculatus*)	0.10%
Black medick (*Medicago lupulina*)	1.00%
Ribwort plantain (*Plantago lanceolata*)	2.00%
Cowslip (*Primula veris*)	0.40%
Selfheal (*Prunella vulgaris*)	0.80%
Meadow buttercup (*Ranuculus acris*)	1.20%
Yellow rattle (*Rhinanthus minor*)	0.80%
Common sorrel (*Rumex acetosa*)	0.80%
Great burnet (*Sanguisorba officinalis*)	0.30%
Ragged robin (*Silene flos-cuculi*)	0.50%
Dandelion (*Taraxacum officinale*)	0.20%
Tufted vetch (*Vicia cracca*)	0.30%
Grasses (80%)	
Common bent (*Agrostis capillaris*)	4.00%
Sweet vernal-grass (*Anthoxanthum odoratum*)	4.00%
Grey sedge (*Carex divulsa subsp. divulsa*)	0.80%
Crested dogstail (*Cynosurus cristatus*)	33.60%
Tufted hair grass (*Deschampsia cespitosa*)	1.60%
Red fescue (*Festuca rubra*)	20.00%
Meadow barley (*Hordeum secalinum*)	3.20%
Smaller cat's-tail (*Phleum bertolonii*)	5.60%
Smooth-stalked meadow-grass (*Poa pratensis*)	5.60%
Tall fescue (*Schedonorus arundinaceus*)	1.60%

4.1.6 Native Shrub and Woodland Planting

A 0.069 ha sward of native shrubs (containing some tree species) will be planted in the north-east of the Site. The planting will be comprised of species such as gorse (*Ulex europaeus*), rowan, silver birch, alder (*Alnus glutinosa*), elder (*Sambucus nigra*), blackthorn, European beech (*Fagus sylvatica*), hazel, field maple, wild privet (*Ligustrum vulgare*), and hawthorn.

4.1.7 SuDS Detention Basin

Two SuDS basins will be created within POS on Site, one in the centre of the Site and one adjacent to the western boundary. Both SuDS basins will be sown with a water tolerant

wildflower mix, Emorsgate EM8 and the area immediately surrounding both will be sown with a general purpose meadow mix, Emorsgate EM1. The central SuDS basin will then also be surrounded by a flowering lawn mixture.

4.2 Location of Proposed Enhancements

The locations of the proposed enhancements are as described within this report and in Appendix A.

4.3 Management Objectives

4.3.1 Hedgerows

Line of trees H1 and H2 will be predominantly retained, with just 10 metres lost from H1 and 20 metres lost from H2 to facilitate the construction of access roads and pedestrian footpaths. Both lines of trees are targeted to retain their good condition post development. Hedgerows H3, H4, and H5 will be retained as part of the proposed development, with just 10 metres lost from H4, and; H3 and H5 retained in full.

Hedgerows H3 and H4 will also be enhanced from native hedgerows in moderate condition to species rich native hedgerows in good condition by using additional native planting to increase the species diversity. Hedgerow H5 is targeted to retain its good condition post development.

A further 476 metres of species rich native hedgerow will be planted along the southern boundary of the POS. It is targeted that this hedgerow will only fail criteria C2 once established, thus obtaining good condition.

4.3.2 Trees

81 native trees will be planted within the POS and road verges within the Site (further tree planting is also proposed within private garden curtilages, but these are not counted within the metric calculations, as they are outside of management control, and would not be included within the HMMP). Moderate condition is targeted for this habitat, with four criteria, A, B, D and F expected to be achieved.

- Criteria A: the tree is a native species (or at least 70% within the block are native species);
- Criteria B: the tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5m wide (individual trees automatically pass this criterion);
- Criteria D: There is little or no evidence of an adverse impact on tree heath by human activities and there no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height; and
- Criteria F: more than 20% of the tree canopy area is oversailing vegetation beneath.

4.3.3 Amenity grassland

The natural play space in the centre of the Site will be turfed with 0.0711 ha of quality amenity turf. This area will experience heavy footfall and damage from high human activity levels. It will also undergo a strict mowing schedule to facilitate the heavy recreational use. Therefore, poor condition is targeted for this area of grassland with just criteria C, F and G expected to be achieved.

- Criteria C: any scrub present accounts for less than 20% of the total grassland area;

- Criteria F: cover of bracken (*Pteridium aquilnum*) is less than 20%; and
- Criteria G: there is an absence of invasive non-native species.

4.3.4 Species rich flowering lawn

The central POS area surrounding the SuDS basin, as well as the mown paths through the eastern POS buffer, will be sown with flowering lawn seed mixture such as Emorsgate EL1 Flowering Lawn Mixture. This area totals 0.4687 ha. This seed mixture responds well to a regular mowing schedule and provides good diversity in flowering species while also withstanding heavy footfall.

Good condition is targeted for this habitat, with essential criteria A expected to be achieved as well as criteria C, D, E, F, and G.

- Criteria A: there are six to eight vascular plants per m^2 present, including at least two forbs;
- Criteria C: any scrub present accounts for less than 20% of the total grassland area;
- Criteria D: physical damage is evident in less than 5% of total grassland area;
- Criteria E: cover of bare ground is between 1% and 10%;
- Criteria F: cover of bracken (*Pteridium aquilnum*) is less than 20%; and
- Criteria G: there is an absence of invasive non-native species.

4.3.5 Species rich meadow

Certain areas of POS will all be sown two types of other neutral grassland comprised of:

- 1.3183 ha of Emorsgate EM1 Basic General Purpose Meadow Mixture[8] across the entire POS;
- 0.1665 ha of Emorsgate EM8 Meadow Mixture for Wet Soils[9] sown within the two seeded central SuDS basins and within the swales running through the eastern POS;
- A further 0.48 ha of poor condition modified grassland currently present of Site will be enhanced to moderate condition other neutral grassland through reseeding with Emorsgate EM1. These areas of enhanced grassland are located in the eastern POS, adjacent to Lepton Great Wood; and
- The Site currently supports 0.08 ha of other neutral grassland in moderate condition, located to the east of the Site, adjacent to Lepton Great Wood. This grassland will be retained in full, with its moderate condition retained post development.

Moderate condition is targeted for all these grassland areas habitats, with at least three criteria, A, C and D expected to be achieved.

- Criteria A: the parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type;
- Criteria C: cover of bare ground is between 1% and 5%; and

[8] EM1 Basic General Purpose Meadow Mixture - Emorsgate Seeds (wildseed.co.uk)

[9] EG8 Meadow Grass Mixture for Wet Soils - Emorsgate Seeds (wildseed.co.uk)

- Criteria D: cover of bracken is less than 20% and cover of scrub (including bramble (*Rubus fructicosus agg.*) is less than 5%.

4.3.6 Shrub and woodland planting

A large sward of the western POS and an area along the north-eastern boundary, adjacent to Lepton Great Wood will be planted with a native scrub and woodland planting mixture.

Moderate condition is targeted for this habitat, with three criteria, A, C and D expected to be achieved.

- Criteria A: the parcel represents a good example of its habitat type – the appearance and composition of the vegetation closely matches it UKHab description
    - At least 80% of the scrub is native;
    - There are at least three native woody species; and
    - No single species comprises more than 75% of the cover (except hazel, common juniper (*Juniperus communis*), sea buckthorn (*Hippothae rhamnoides*) or box (*Boxus sempervirens*))
- Criteria C: the is an absence of invasive non-native plant species and species indicative of suboptimal condition make up less than 5% of ground cover; and
- Criteria D: the scrub has a well-developed edge with scattered scrub and tall grassland and/ or forbs present between the scrub and adjacent habitat.

4.4 Management, Monitoring and Remediation Actions

4.4.1 Hedgerows

The following annual works shall be undertaken, with information taken from the Landscape Masterplan (Appendix A) to ensure that the hedgerows obtain or retain their targeted good condition.

General native hedge maintenance:

Top up mulch levels for new hedges where necessary, using the same or similar product to that previously supplied. Single cuts will provide a more natural appearance and a second cut will ensure a neater profile – more suitable to urban areas, located to the western side of the eastern POS.

Pruning native hedges:

Prune any diseased or rotten wood (including the removal of main stems and limbs) back to sound wood. Remove all stems and limbs which are unsafe or are in danger of falling or breaking up during gales. Remove all cut material from site and cart away to tip. Do not site burn. Top out native hedgerows to the intended height, and face up the sides, using an electric hedge cutting device, to form an even and tidy hedge alignment. Cut larger stems with a shrub pruning tool.

Any pruning should be carried out in accordance with good horticultural practices, outside of the March – August bird nesting season.

The following occasional works shall be undertaken.

Gapping up native hedges:

Remove failed plants for new native hedges and replace with a plant of the same species, to a minimum size of an open ground whip, 0.9-1.2m high, planted between the months of December and mid-March inclusively, when the height can be 500mm minimum and be

supplied in a 3L pot. Gap up areas of less dense growth with additional plants as required to achieve a continuous hedge alignment, taking due allowance for natural growth and regeneration of cut material.

Occasional surgery to larger native hedges:

Native hedges which have grown out into tree lines, should be faced up only, retaining taller trees, unless there are weaknesses in the root stock and stumps from rot. Such trees shall be pollarded to the given hedge height above. Retain any sound stems.

4.4.2 Trees

General tree maintenance during establishment: Check all trees for firmness and stability in the ground. Check and adjust tree ties, replacing if necessary. Top up bark mulch levels where necessary around the base of new trees, using the same or similar product to that previously supplied to maintain an approximate depth of 50mm to reduce competition from weeds and retain soil moisture. Where trees are in grass areas, remove weed growth by hand and retain a circle of bark mulch (approximate radius of 500mm) to aid mowing and prevent damage to the main stem. All trees shall be fertilised using a suitable and approved liquid feed (N10:P15:K10) at a rate of 60g/m² during early May and again in late September. Prune back any diseased or rotten wood (including the removal of main stems and limbs) back to sound wood as required. Remove all cut material from site.

Any pruning should be carried out in accordance with good horticultural practices, outside of the March – August bird nesting season.

Watering trees: Water trees when required, as set out in BS 8545:2014. The Landscape Management Contractor shall be entirely responsible for monitoring the requirement for watering, as set out in the British Standard, in varying the frequency of these visits according to climatic conditions and for contacting the responsible party and agreeing the timing of any additional watering visits if required and where restrictions are placed on the use of water, sources and costs of obtaining second class water. The Landscape Management Contractor shall be responsible for any tree failures or excessive die back from drought stress during the management contract.

The following occasional work should be undertaken:

Checking and removal of tree stakes and ties: Review the need for tree stakes and ties annually for up to six years. Remove stakes and ties between four to six years after planting, but be sure trees are firm and stable. Stakes and ties removed shall be cut at ground level, below lowest grass height (to prevent snagging mower blades) or pulled from the ground and the post holes filled with suitable topsoil. If the tree is found to be weak or unstable after the stakes have been removed, then check the base of the tree for signs of rot. If rotten or unlikely to stabilise, remove the tree and replace. If the tree is free from rot or other cause of its instability, then re- instate a tree support, using 100mm diameter chestnut stake and single tie. The stake should be pushed into the ground with a post rammer, to a depth of 600mm and cut to one third the height of the tree. Fix the tree stem with a rubber tie and spacing device attached to at a point no more than 25- 35mm below the top of the post, in order to prevent chaffing against the post in high winds. Remove old posts and ties and arisings and dispose off site.

Long-term tree surgery works: After 10-20 years of maintenance as above (or earlier if required), newly planted trees will reach semi-maturity and at this time may be in need of corrective surgery and any works required shall be carried out in accordance with amenity grassland management.

Tree replacement and enhancement of tree cover: Any tree that dies or is necessarily felled, but which is not removed as part of a programme of tree removals, shall be replaced

with a tree of appropriate species and stock size. Such replacement shall be with a tree of either the same or similar species as those existing. The option for replacing with a different species is to allow some flexibility avoiding problems encountered with 'Same Species Disease' and to ensure sustainable tree cover in the interests of visual amenity. Possible damage to drainage/services and adjoining building foundations must be considered before choosing a replacement tree species and location. Where alternative species are considered, the species should be suitable to the character of the location and adjoining trees. Trees should be a minimum stock size of standards (10-12cm girth) and implemented and maintained in accordance with good horticultural practice. Replacement and enhancement planting is best undertaken during the planting season (November through to March inclusive).

4.4.3 Amenity Grassland

The following annual works shall be undertaken.

Cutting of amenity grassland: The area of amenity grassland turf will undergo a strict mowing schedule. The grassland's first cut should be using the mower on a higher setting (50mm+) ensuring that the grass is only cut back by one third of its height. As the first season progresses, the grassland can be gradually mown shorter until the desired height is reached. Any arisings will be removed immediately. Typically the lawn will be mowed once a fortnight during the spring and summer months, unless weather has been uncharacteristically poor in which case longer periods between mowing is recommended.

General care: Hand weed pernicious, ruderal and aggressive or invasive weeds in in order to maintain the visual amenity of the area. Do not herbicide or fertilise.

The following occasional works shall be undertaken.

Replacement of failed amenity grassland: Areas where there is significant damage to the grassland and where areas of bare ground has developed can be re-seeded using an amenity grass seed such as Emorsgate EG22 Strong Lawn Grass Mixture[10], or similar. If areas of bare ground are extensive, it may be more practical to re-turf the area. Re-seeding should occur in mid-spring or autumn when temperatures are mild and there is plenty of rainfall to keep the soil moist to encourage germination.

4.4.4 Species Rich Flowering Lawn

The following annual works shall be undertaken.

Cutting of flowering lawn: The majority of wildflower seeds within this seed mix are perennial and will not be apparent until the second growing season. A flush of annual weeds are to be expected in the first year but can be controlled with frequent short mowing to a height of 40-60mm. Any persistent perennial weeds should be manually dug out. Once the flowering lawn has established it can undergo a regular mowing schedule, similar to the amenity grassland but kept at a height of 25-40mm. Ideally mowing should be withheld during the main flowering season (from late-June). Large quantities of arisings should be collected and removed as agreed.

General care: Hand weed pernicious, ruderal and aggressive or invasive weeds in in order to maintain the visual amenity of the area. Do not herbicide or fertilise.

The following occasional works shall be undertaken.

Replacement of failed flowering lawn: Flowering lawn that is species poor shall be enhanced. In areas of low fertility, closely strimming or mow the existing sward and remove

[10] EG22 Strong Lawn Grass Mixture - Emorsgate Seeds

all cuttings in August. Rake or scarify to disturb the ground and overseed with new flowering lawn seed mix, firming in with a roll or treading to give good soil/seed contact. For more wholesale degradation, cultivate the affected area until a fine, level tilth is achieved, removing stones greater than 20mm diameter. Do not fertilise or apply herbicide. Evenly seed with an appropriate seed mix (80% grasses: 20% wildflowers) selected to the microclimatic and soil conditions at the specified rate. Carefully rake in thoroughly to ensure that the seed is a few millimetres below the surface and roll using a very light roller or a cylinder mower, ensuring the surface is even and level. Water thoroughly and maintain the soil in a moist condition, removing stones, weeding and mowing until the grass is established.

4.4.5 Species Rich Meadow

The following annual works shall be undertaken.

Cutting of wildflower areas: Both the general purpose meadow mixture and the wetland tolerant meadow mixture shall be strimmed only once a year to a height of 100mm in late August. To ensure that soil fertility is reduced, rake up the arisings immediately, or in hot dry weather, they can be left in situ for a maximum of two days to set seed before raking. In a warm and wet year, a second cut may be required and if so this should be carried out either in October or March as appropriate. The timing of all cutting operations should take into consideration any protected species (such as nesting birds during the nesting season). Should works be required within the March – August nesting bird season, a check must be undertaken by a suitably qualified ecologist. Once cut and raked up, all arisings shall be collected and removed off site as agreed.

General care: Hand weed pernicious, ruderal and aggressive or invasive weeds in in order to maintain the visual amenity of the area. Do not herbicide or fertilise. Arising's from tree surgery work can be retained on site and used to create hibernacula and wildlife refuges as required.

The following occasional works shall be undertaken.

Replacement of failed wildflower grassland areas: Wildflower sward that is species poor shall be enhanced. In areas of low fertility, closely strimming or mow the existing sward and remove all cuttings in August. Rake or scarify to disturb the ground and overseed with a suitable mix of wildflowers selected to the microclimatic and soil conditions and repeatedly tread over the area. After sowing mow the grass to a height of 60mm in height to allow light and air to the emerging seedlings for a full growing season. In areas where soil fertility is too high, or the sward has failed the area will require re-cultivating and re-seeding. Remove dead material and re-cultivate the topsoil to a depth of 100mm. Small areas may be reseeded following the autumn cut by spreading the cut arisings onto the bare soil to set seed. For more wholesale degradation, cultivate the affected area until a fine, level tilth is achieved, removing stones greater than 20mm diameter. Do not fertilise or herbicide. Evenly seed with an appropriate seed mix (80% grasses: 20% wildflowers) selected to the microclimatic and soil conditions at the specified rate. Carefully rake in thoroughly to ensure that the seed is a few millimetres below the surface and roll using a very light roller or a cylinder mower, ensuring the surface is even and level. Water thoroughly and maintain the soil in a moist condition, removing stones, weeding and mowing until the grass is established.

4.4.6 Native Shrub and Woodland Planting

The following annual works shall be undertaken.

Weeding: Remove all weed growth by hand as necessary to ensure weed free and tidy planting areas. Six to eight visits are required per growing season. Visits should occur

approximately monthly in the growing season, subject to weather conditions from April to October, with an extra visit outside of the growing season in December or January to inspect the condition of the beds. Take great care not to disturb sheet or bark mulch; top up bark mulch levels where necessary for the first three years, using the same or similar product to that previously supplied.

Note: For planting using a non-biodegradable weed suppressant membrane, reduce visits to four times per year in the growing season. Where a biodegradable weed suppressant fabric has been used, this will have disappeared within the establishment phase. Weeding frequency should therefore be varied according to the site and density of vegetation cover and in any event should be between four and eight i.e. whatever is required to achieve a weed free scheme. All weeds shall be removed from the site.

Spot herbicide treatments: Where required, persistent perennial weeds can be controlled using herbicide. The use of herbicides should only be made following a risk assessment to consider potential effects on the environment and on human health, but also spray drift killing the wrong plants. All pesticides shall be applied in suitable calm weather conditions; allow for repeat spraying as required to achieve a complete kill. Apply herbicide as required and at intervals to ensure no regeneration of weed, usually equating to four sprays per year during the growing season at 6-week intervals, from late April onwards.

The timing of visits may vary according to weather conditions. Extreme care must be taken to avoid damage to surrounding plants and grass, and to avoid spray drift. Any damage resulting from incorrect usage, spillage, and spray drift, to be rectified at the Landscape Management Contractor's expense.

General planting maintenance: At each visit firm in and straighten any loose plants. Top up bark mulch levels where necessary for the first three years, using the same or similar product to that previously supplied to maintain an approximate depth of 50mm to reduce competition from weeds and retain soil moisture.

Pruning of planting: Prune back shrubs in the period between October to February (avoiding the bird nesting season) in accordance with sound horticultural practices, pruning back to a node, shoot or bud; prune out dead, leggy and broken branches, without damage to the natural habit or appearance of plant without box clipping or rounding off plants. Prune out crossover branches, invasive suckers, dead wood, damaged stems, any spindly growths and any epicormic growth that will weaken the plant. Prune back *Rosaceous* and quick and leggy growing plants much harder than other species but prune back by no more than 30% in any one year. Prune *Cornus* varieties back to 200mm above ground every third year but retaining any young growths.

Watering: For the first year after planting, water both shrubs and whips during dry periods (being any period without substantial rainfall for 14 days or more). Water all shrubs to field capacity (minimum 10 litres per m²) and water all large specimens at 10 litres each. Apply water at a frequency of up to two times per week from April to the end of September (to a maximum of 15 visits in any one calendar year) as required during any continuous hot weather lasting more than seven days. The Landscape Management Contractor shall be entirely responsible for varying the frequency of these visits according to climatic conditions and for contacting the responsible party and agreeing the timing of any additional watering visits if required and where restrictions are placed on the use of water, sources and costs of obtaining second class water. The Landscape Management Contractor shall be responsible for any tree failures or excessive die back from drought stress during the management contract. Following the first year after planting watering should be unnecessary as all of the species are native and should be tolerant of drought conditions.

The following occasional works shall be undertaken.

Replacement and enhancement planting: Cut back any shrubs and herbaceous plants where they have become old, misshapen, leggy or they have lost their vigour. Specimens, shrubs, trees, or herbaceous plants that fail to show growth or develop full foliage (including plants damaged during management operations), where such plant failure leaves a gap in the foliage not filled by adjacent plants, shall be replaced with stock of the size, species and quality originally specified. Include any plants that are destroyed by vandalism, theft or similar cause through no fault of the Landscape Management Contractor, up to and not exceeding 5% of the plant stock. Specimens, shrubs, trees, or herbaceous plants so replaced shall be the same as those specified, previously supplied and approved. Nursery stock shall be open grown whips (60-90 cm high) or where evergreen species a minimum stock size of a 3L pot. Planting should be implemented and maintained in accordance with good horticultural practice. Include any works necessary to enable planting to be properly carried out i.e. removal and disposal of dead material off site and for topping up/replacement of bark mulch. Once annually the site shall be considered for the need for any strategic replacement or enhancement planting, to broaden the age class of vegetation in the interests of the long-term sustainability of strategically important vegetation.

Thinning and coppicing: Thinning and coppicing will allow trees and shrubs to develop diversity of form and different types of nesting, feeding and foraging habitat and extend the potential life of individual plants. Additional thinning of the buffer planting areas may be required at intervals following an initial selective thin. The timing of thinning should be informed by an assessment on site. A competent person, such as a qualified arboriculturist should plan thinning and coppicing operations in advance. All thinning operations should be undertaken between October and February.

4.5 Annual Work Programme

Table 4-4 overleaf details the annual programme of works required for the first five years of habitat creation and management on Site.

Table 4-4: Annual work programme for the first five years of management.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Year 1												
Sow wildflower seed												
Sow flowering lawn seed												
Lay amenity turf												
Frequent mowing of flowering lawn to suppress weeds												
Mowing of amenity grass once established												
Plant shrubs, saplings and hedgerows												
Year 2												
Re-seeding of grassland if necessary												
Strimming of wildflower grassland												
Mowing of flowering lawn												
Mowing of amenity grassland												
Weeding of scrub and woodland												
Herbicide of scrub and woodland												
Pruning of shrubs, saplings and hedgerow												
Watering of shrubs, saplings and hedgerow												
Year 3												
Replacement of failed trees, shrubs and hedgerow												
Re-seeding of grassland if necessary												
Strimming of wildflower grassland												
Mowing of flowering lawn												
Mowing of amenity grassland												
Weeding of scrub and woodland												
Herbicide of scrub and woodland												
Pruning of shrubs, saplings and hedgerow												
Year 4												

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Replacement of failed trees, shrubs and hedgerow												
Re-seeding of grassland if necessary												
Strimming of wildflower grassland												
Mowing of flowering lawn												
Mowing of amenity grassland												
Weeding of scrub and woodland												
Herbicide of scrub and woodland												
Pruning of shrubs, saplings and hedgerow												
Year 5												
Replacement of failed trees, shrubs and hedgerow												
Re-seeding of grassland if necessary												
Strimming of wildflower grassland												
Mowing of flowering lawn												
Mowing of amenity grassland												
Weeding of scrub and woodland												
Herbicide of scrub and woodland												
Pruning of shrubs, saplings and hedgerow												

4.6 Management Organisation Details

Miller Homes Limited as the developer will be responsible for the implementation of the BEMP, including initial habitat creation and enhancement and the following management and maintenance of on-Site habitats. Following the completion of construction activities on Site, Miller Homes Limited may choose to hand on the management responsibilities to qualified management company.

Appendix A Landscape Masterplan

Land off Hermitage Park, Lepton

Report to discharge conditions 8, 15 and 27

Miller Homes Limited

SLR Project No.: 424.065417.00001

4 August 2025

ROWLEY LANE

HERMITAGE PARK

EXISTING CONIFER HEDGES WITHIN PRIVATE GARDENS

PROPOSED ATTENUATION BASIN

NATIVE SCRUB PLANTING WITH GLADE

NATIVE SPECIES-RICH HEDGEROWS TO DEFINE PUBLIC/PRIVATE REALM BOUNDARY AND CONTRIBUTE TO BIODIVERSITY NET GAIN

SHALLOW SWALE TO COLLECT OVERLAND SURFACE WATER FLOWS AS PART OF THE SUSTAINABLE DRAINAGE NETWORK

LEPTON GREAT WOOD

BOARDWALK FOOTPATH TO BE PROVIDED FOR SLOPED AREAS WITHIN WOODLAND BUFFER

WOODLAND BUFFER AREAS TO BE MANAGED AS SPECIES-RICH MEADOW, FORMED BY A COMBINATION OF RETAINED GRASSLAND AND NEWLY SOWN MEADOW TO REGRADED AREAS

NATIVE SPECIES-RICH THORNY HEDGEROW TO DISOURAGE ACCESS TO WOODLAND AND CONTRIBUTE TO BIODIVERSITY NET GAIN

NATURAL PLAY SPACE, TO INCLUDE FEATURES SUCH AS PLAY TREES, BOULDERS, EMBANKMENT SLIDE, MOUNDING AND TIMBER PLAY EQUIPMENT, WITH NATURAL LOOSE FILL SAFETY SURFACING

SEATING
TREE TUNNEL
SWINGS
BOULDERS
LOOKOUT
PLAY FRAME
SEATING
EMBANKMENT SLIDE
SPINNING DISH

LANDSCAPE MASTERPLAN KEY:

- EXISTING TREES AND HEDGES RETAINED
- EXISTING TREES AND HEDGES REMOVED
- EXTRA HEAVY STANDARD TREE (14-16cm GIRTH)
- STANDARD TREE (8-10cm GIRTH)
- FRUIT TREE (COMMUNITY GROWING AREA)
- FLOWERING LAWN TO ALL VERGES AND OPEN SPACE AREAS (EXCEPT THOSE SHOWN AS MEADOW)
- SPECIES RICH MEADOW - GENERAL PURPOSE MIX
- SPECIES RICH MEADOW - WETLAND MIX
- ORNAMENTAL SHRUB
- NATIVE SCRUB AND WOODLAND PLANTING
- EVERGREEN HEDGE
- DECIDUOUS HEDGE (INCLUDING NATIVE MIXED)
- NATIVE SPECIES-RICH THORNY HEDGEROW TO DISOURAGE ACCESS TO WOODLAND
- EXISTING STONE WALL
- EQUIPPED PLAYSPACE, TO LEAP STANDARD 800m²
- SEAT WITHIN OPEN SPACE AREA

LANDSCAPE DESIGN STRATEGY

The landscape strategy for the site is based on the outline Landscape Masterplan and aims to achieve the following:

- Retain existing trees and hedges wherever possible
- Provide public open space and easy-to-read play space
- Provide an attractive and distinctive environment for residents through the use of ornamental tree, hedge and shrub planting on internal streets and in front gardens
- Provide mitigation for the loss of vegetation through the native planting of new meadows, hedgerows, specimen trees, and scrub areas.

PLAY SPACE

A naturalistic area for play set amongst the trees and meadow, to include predominantly natural features such as a tunnel made from a natural tree trunk, boulders, embankment slide, mounding with a lookout and other timber play equipment, with natural loose fill safety surfacing.

Equipment includes:
Tree tunnel
Inclusive Swings
Spinning Dish
Glacial boulders
Timber climbing feature
Embankment slide 4 Lookout

Two seating areas are also created overlooking the playspace to provide for carers and social interaction.
Equipment is to be set within a safety surface of a depth and extent sufficient for the free fall height/impact area of the specific equipment. All installations to be in accordance with manufacturers recommendations and relevant British Standards, including but not limited to BS EN 1176.

LANDSCAPE TREATMENTS

TREE PLANTING

Extensive planting of semi mature and extra heavy standard and standard trees are proposed throughout the development to create a structure to the new housing which is in keeping with the scale and context of the development and helps to filter views into the site, breaking up the roofines of the housing when viewed from a distance. Planting at the site entrance, the public open space areas and focal points will aid navigation within the scheme and complement the existing mature trees and hedgerows on site.
Where practical there will be an emphasis of native species which are locally provenant and trees will be procured and planted in accordance with BS8545:2014.
Over the area of each planting pit, the true topsoil shall be removed and set to one side for re-use. Pits for Extra Heavy Standard shall be excavated to 1000 x 1000 x 750mm. Pits for Standard trees shall be excavated to 800 x 800 x 600mm.
Trees shall have a sturdy, reasonably straight stem and a well-balanced head with a clearly defined straight and upright leader and no main branch crossing the crown. They shall be in a healthy condition with a strong fibrous root system and of a normal habit for the particular species.
All semi mature and extra heavy standard trees shall be guyed underground using a Platipus rootball disc system (available from Platipus Anchors Ltd) or other form of approved deadman anchor system with frame suitable for the purpose. All other trees, Heavy Standard and smaller, shall be double staked using two short stakes (1.5-1.8 metres long) driven into the ground to leave approximately 1 metre above ground and a cross rail secured across the top. Trees shall be firmly secured to the cross member with ties and spacers with a minimum life expectancy of 4 years. The stakes are to be placed to prevent damage to the tree trees. The stake must not cause rubbing of the tree trunk. All planting ties, cushions etc should be from sustainable sources and plastic free e.g. Green-tech : Natural tree tie is made entirely of natural fibres and is fully bio-degradable.
The tree pits must include an irrigation tube with a cap. All trees to receive a minimum of 60 litres watering at time of planting.
Adequate soil volume is one of the most critical aspects of tree establishment. Soil volume requirements are proportional to the mature size of tree species. Where the verge or planting area does not meet the area requirement a load bearing soil system is to be used beneath the footway to extend the rooting volume into garden areas. A product such as GreenBlue Urban Stratacell should be used, cells are to be filled with sandy loam topsoil to BS3882 or suitable site won soil. Module dimensions 500mm x 500mm x 250mm to be used 2 modules deep, providing 500mm depth of uncompacted rooting. Refer to tree pit detail P1C 5043 113. Landscape proposals plans show the load bearing soil areas required as a blue cross hatch.

SHRUB PLANTING

A mix of evergreen and deciduous shrubs/ climbing plants and herbaceous perennials will be planted throughout the site to give enclosure and structure to the development and all year round interest. This follows the same principles as previously approved.
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The evergreen hedges will be planted in various sizes according to species availability.

NATIVE HEDGE PLANTING

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GRASS TREATMENTS

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Amenity Turf
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Areas indicated on the plan will be seeded with native wildflower-rich seed mixtures. These will create an attractive backdrop to the development, as well as provide a source of shelter, nectar and pollen for a wide range of insect life, and in turn, will attract the animals that prey upon them, such as birds and bats.

Species Rich Meadow Mixes
EL1 - Flowering Lawn Mixture
EM8 Meadow Mixture for Wetlands
EM1 - General Purpose Meadow Mixture
Seed mixtures supplied by Emorsgate Seeds - https://wildseed.co.uk/mixtures or smilar

PLANTING SCHEDULE SHOWN ON SHEET 3

Rev	Date	Description	Drawn	Check
F	25.07.25	LANDSCAPE UPDATED TO SITE LAYOUT REV R. BOARDWALK, SWALE AND TREE PLANTING UPDATED.	LB	JP
E	26.06.25	LANDSCAPE UPDATED TO SITE LAYOUT REV Q. BOARDWALK EXTENT UPDATED.	LB	VS
D	23.06.25	LANDSCAPE UPDATED TO SITE LAYOUT REV P. BOARDWALK FOOTPATH SHOWN.	LB	VS
C	12.06.25	LANDSCAPE UPDATED TO SITE LAYOUT REV N. LINK TO PROW ADDED ADJACENT PLOT 9	LB	VS
B	06.06.25	LANDSCAPE UPDATED TO SITE LAYOUT REV M. WOODLAND BOUNDARY HEDGE IDENTIFIED ON KEY AND DENOTED BY DIFFERENT COLOUR	LB	VS
A	14.05.25	LANDSCAPE UPDATED TO SITE LAYOUT REV L. PLOT 68's BOUNDARY HAS BEEN AMENDED AND REAR DOOR REMOVED DUE TO LEVELS. VERGE CROSSINGS & HIGHWAY RAMP POSITIONS HAVE BEEN ALTERED.	RAN	VS

jrp Architecture / Planning / Urban Design / Landscape

CLIENT: MILLER HOMES

DRAWING NUMBER: 22:5611:101

PROJECT: HERMITAGE PARK, LEPTON

SCALE @ A0: 1:250

DRAWING: LANDSCAPE PROPOSALS SHEET 1

DRAWN: LB DATE: APR 25

CHECKED: VS DATE: APR 25

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NORTH

1:500 SCALE

10m 50m

WOODLAND BUFFER AREAS TO BE MANAGED AS SPECIES-RICH MEADOW, FORMED BY A COMBINATION OF RETAINED GRASSLAND AND NEWLY SOWN MEADOW TO REGRADED AREAS

NATIVE SPECIES-RICH THORNY HEDGEROW TO DISOURAGE ACCESS TO WOODLAND AND CONTRIBUTE TO BIODIVERSITY NET GAIN

NATURAL PLAY SPACE, TO INCLUDE FEATURES SUCH AS PLAY TREES, BOULDERS, EMBANKMENT SLIDE, MOUNDING AND TIMBER PLAY EQUIPMENT, WITH NATURAL LOOSE FILL SAFETY SURFACING

NATIVE SPECIES-RICH THORNY HEDGEROW TO DISOURAGE ACCESS TO WOODLAND AND CONTRIBUTE TO BIODIVERSITY NET GAIN

NATIVE SPECIES-RICH HEDGEROWS TO DEFINE PUBLIC/PRIVATE REALM BOUNDARY AND CONTRIBUTE TO BIODIVERSITY NET GAIN

GAPPING UP AND NEW HEDGE PLANTING WHERE REQUIRED TO FORM A CONTINUOUS NATIVE HEDGE TO THE SOUTH WESTERN BOUNDARY

PROPOSED ATTENUATION BASIN

COMMUNITY ORCHARD

PRIVATE DRIVE

SWINGS

TREE TUNNEL

BOULDERS

SEATING

'LOOKOUT'

PLAY FRAME

SEATING

EMBANKMENT SLIDE

SPINNING DISH

LANDSCAPE MASTERPLAN KEY:

- EXISTING TREES AND HEDGES RETAINED
- EXISTING TREES AND HEDGES REMOVED
- EXTRA HEAVY STANDARD TREE (14-16cm GIRTH)
- STANDARD TREE (8-10cm GIRTH)
- FRUIT TREE (COMMUNITY GROWING AREA)
- FLOWERING LAWN TO ALL VERGES AND OPEN SPACE AREAS (EXCEPT THOSE SHOWN AS MEADOW)
- SPECIES RICH MEADOW - GENERAL PURPOSE MIX
- SPECIES RICH MEADOW - WETLAND MIX
- ORNAMENTAL SHRUB
- NATIVE SCRUB AND WOODLAND PLANTING
- EVERGREEN HEDGE
- DECIDUOUS HEDGE (INCLUDING NATIVE MIXED)
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- EXISTING STONE WALL
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The landscape strategy for the site is based on the outline Landscape Masterplan and aims to achieve the following:

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- Provide an attractive and distinctive environment for residents through the use of ornamental tree, hedge and shrub planting on internal streets and in front gardens
- Provide mitigation for the loss of vegetation through the native planting of new meadows, hedgerows, specimen trees, and scrub areas.

PLAY SPACE

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Two seating areas are also created overlooking the playspace to provide for carers and social interaction. Equipment is to be set within a safety surface of a depth and extent sufficient for the free fall height/impact area of the specific equipment. All installations to be in accordance with manufacturers recommendations and relevant British Standards, including but not limited to BS EN 1176.

LANDSCAPE TREATMENTS

TREE PLANTING

Extensive planting of semi mature and extra heavy standard and standard trees are proposed throughout the development to create a structure to the new housing which is in keeping with the scale and context of the development and helps to filter views into the site, breaking up the roofines of the housing when viewed from a distance. Planting at the site entrance, the public open space areas and focal points will aid navigation within the scheme and complement the existing mature trees and hedgerows on site.
Where practical there will be an emphasis of native species which are locally provenant and trees will be procured and planted in accordance with BS8545:2014.
Over the area of each planting pit, the true topsoil shall be removed and set to one side for re-use. Pits for Extra Heavy Standard shall be excavated to 1000 x 1000 x 750mm. Pits for Standard trees shall be excavated to 800 x 800 x 600mm.
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jrp Architecture Planning Urban Design Landscape

CLIENT: MILLER HOMES

DRAWING NUMBER: 22:5611:102

PROJECT: HERMITAGE PARK, LEPTON

SCALE @ A0: 1:250

DRAWING: LANDSCAPE PROPOSALS SHEET 2

DRAWN: LB DATE: APR 25

CHECKED: VS DATE: APR 25

NORTH

1:500 SCALE
10m 50m

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PLANTING SCHEDULE

Trees

Number	Abbreviation	Species	Girth	Height	Specification	Density
4 No.	SORAU	Sorbus aria 'Lutescens'	14-16cm	425-600cm	Extra Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
7 No.	SORAUCR	Sorbus aucuparia Cardinal Royal'	14-16cm	425-600cm	Extra Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
2 No.	ACEPLC	Acer platanoides 'Columnare'	14-16cm	425-600cm	Extra Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
5 No.	SORHYD	Sorbus hybrida 'Gibbs'	14-16cm	425-600cm	Extra Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
2 No.	SORAU	Sorbus aucuparia	14-16cm	425-600cm	Extra Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
2 No.	CRAMON	Crataegus monogyna 'Stricta'	14-16cm	425-600cm	Extra Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
6 No.	CORCOL	Corylus colurna	14-16cm	425-600cm	Extra Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
13 No.	PRUAVI_TL	Prunus avium 'Plena'	8-10cm	250-300cm	Standard: 3 links: 2x BR: Clear Stem 175-200	Counted
2 No.	TILCOR	Tilia cordata 'Greenspire'	14-16cm	425-600cm	Extra Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
10 No.	ACECAM	Acer campestre 'Elsrijk'	14-16cm	425-600cm	Extra Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
10 No.	ALNCO	Alnus cordata	14-16cm	425-600cm	Extra Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
4 No.	CARBETFP	Carpinus betulus 'Fastigiata Frans Fontaine'	12-14cm	350-425cm	Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
3 No.	MALTS	Malus trschonskii	14-16cm	425-600cm	Extra Heavy Standard: 5 links: 3x RB: Clear Stem 175-200	Counted
31 No.	Qr	Quercus robur	8-10cm	250-300cm	Standard: 3 links: 2x RB: Clear Stem 175-200	Counted
4 No.	APTCOP	Malus domestica 'Cox's Orange Pippin'		175-200cm	Half Standard: MM106 Rootstock: 3 links: B: Clear Stem 100-125cm	Counted
2 No.	PSACOW	Pyrus communis 'Conference'		125-150cm	Garden Quince A Rootstock: 3 yrs old: Well developed B	Counted
2 No.	APPBR	Malus domestica 'Bramley's Seedling'		175-200cm	Half Standard: MM106 Rootstock: 3 links: B: Clear Stem 100-125cm	Counted
262 No.	ACECAM	Acer campestre		60-80cm	1 + 1 : Transplant: B	6/m
2071 No.	CRAMON	Crataegus monogyna		60-80cm	1 + 1 : Transplant: B	6/m
70 No.	ACECAM	Acer campestre		60-80cm	1 + 1 : Transplant: B	1/m²
70 No.	ALNGL	Alnus glutinosa		150-175cm	Feathered: 3 links: 2x: B	1/m²
70 No.	BETPE	Betula pendula		60-80cm	1 + 1 : Transplant - seed raised: B	1/m²
70 No.	BETPU	Betula pubescens		125-150cm	Feathered: 2 links: 2x: B	1/m²
70 No.	PRUAV	Prunus avum		125-150cm	Feathered: 3 links: 2x: B	1/m²
104 No.	QUEPE	Quercus petraea		60-80cm	1 + 1 : Transplant - seed raised: B	1/m²
104 No.	QUIROO	Quercus robur		60-80cm	1 + 1 : Transplant: B	1/m²

Shrubs

Number	Abbreviation	Species	Pot Size	Specification	Density
329 No.	PHOFRIER	Photinia x fraseri 'Red Robin'	3L	Branched: 4 links: C	4/m
262 No.	CORAV	Corylus avellana		1 + 2: Branched: 3 links: BR.	4/m
262 No.	ILEAQ	Ilex aquifolium	2L	Leader 4 Laterals: C	4/m
1,028 No.	PRUSP	Prunus spinosa			4/m
262 No.	SAMNI	Sambucus nigra		1 + 1	4/m
452 No.	PRULU	Prunus lusitanica	3L	Bushy: 4 links: C	3/m
438 No.	LIGOV	Ligustrum ovalifolium	3L	Branched: 5 links: C	4/m
14 No.	GAREL	Garrya elliptica	3L	Leader 4 Laterals: 3 links: C	3/m²
136 No.	CYTSE	Cytisus x kewensis	1.5L	Bushy: 3 links: C	4/m²
64 No.	BRASU	Brachyglottis 'Sunshine'	3L	Branched: 4 links: C	2/m²
82 No.	POTPAM	Potentilla fruticosa 'Abbotswood'	3L	Bushy: 4 links: C	3/m²
82 No.	VIBOA	Viburnum alnoids	3L	Bushy: 3 links: C	3/m²
53 No.	LAVMYR	Lavandula angustifolia 'Hidcote'	2L	Bushy: 3 links: C	4/m²
28 No.	ALCJA	Ausobe japonica	3L	Bushy: 3 links: C	3/m
84 No.	SARCO	Sarcococca confusa	5L	Bushy: 6 links: C	3/m
58 No.	OLEHA	Olearia x haastii	3L	Bushy: 4 links: C	4/m
285 No.	ELAPUMA	Elaeagnus pungens 'Maculata'	3L	Branched: 3 links: C	3/m
42 No.	CEABLM	Ceanothus 'Blue Mound'	3L	Branched: 5 links: C	3/m²
17 No.	CHOTES	Choisya ternata 'Sundance'	3L	Bushy: 4 links: C	3/m²
107 No.	GRIJVA	Griselinia littoralis 'Variegata'	2L	Bushy: 3 links: C	3/m
58 No.	OSMHE	Osmanthus heterophyllus	3L	Bushy: 3 links: C	3/m
90 No.	ALCJA	Aucuba japonica	3L	Bushy: 3 links: C	4/m
443 No.	VIBTIEVP	Viburnum tinus Eve Price'	5L	Bushy: 5 links: C	3/m
50 No.	GAREL	Garrya elliptica	3L	Leader 4 Laterals: 3 links: C	4/m
154 No.	OLEHA	Olearia macrodonta	3L	Bushy: 4 links: C	3/m
57 No.	AUCAR	Aucuba japonica 'Rozanne'	3L	Bushy: 4 links: C	3/m
70 No.	CORAV	Corylus avellana		1 + 2: Branched: 3 links: BR.	1/m²
70 No.	PRUSP	Prunus spinosa			1/m²
127 No.	PRULAOL	Prunus laurocerasus 'Otto Luyken'	3L	Bushy: 3 links: C	3/m²
92 No.	LONPI	Lonicera pileata	3L	Bushy: 4 links: C	3/m²
36 No.	ESCAD	Escallonia 'Apple Blossom'	3L	Bushy: 4 links: C	3/m²
40 No.	HEMEB	Hebe 'Midsummer Beauty'	2L	Bushy: 3 links: C	3/m²
100 No.	LIGOVAU	Ligustrum ovalifolium 'Aureum'		GQ: Branched: 3 links: B	3/m
30 No.	GRIJVA	Griselinia littoralis 'Variegata'	2L	Bushy: 3 links: C	3/m²
24 No.	HEBGO	Hebe 'Great Orme'	2L	Bushy: 3 links: C	3/m²
24 No.	HEBKA	Hebe rakaensis	2L	Bushy: 3 links: C	4/m²
71 No.	ILEAGLT	Ilex aquifolium 'J.C. van Tol'	2L	Leader 4 Laterals: C	3/m
64 No.	HEBPS	Hebe pinguifolia 'Sutherlandii'	3L	Bushy: 5 links: C	3/m²
10 No.	CHOAP	Choisya 'Aztec Pearl'	3L	Bushy: 5 links: C	3/m²
70 No.	LAVMAL	Lavandula x intermedia 'Alba'	3L	Bushy: 5 links: C	3/m²
14 No.	EUPFORR	Euonymus fortunei 'Dart's Blanket'	2L	Bushy: 3 links: C	4/m²
15 No.	GRIJ	Griselinia littoralis	5-7.5L	Bushy: 5 links: C	3/m

Rev	Date	Description	Drawn	Check
F	25.07.25	LANDSCAPE UPDATED TO SITE LAYOUT REV R. BOARDWALK, SWALE AND TREE PLANTING UPDATED.	LB	JP
E	26.06.25	LANDSCAPE UPDATED TO SITE LAYOUT REV Q. BOARDWALK EXTENT UPDATED.	LB	VS
D	23.06.25	LANDSCAPE UPDATED TO SITE LAYOUT REV P. BOARDWALK FOOTPATH SHOWN.	LB	VS
C	12.06.25	LANDSCAPE UPDATED TO SITE LAYOUT REV N. LINK TO PROW ADDED ADJACENT PLOT 9	LB	VS
B	06.06.25	LANDSCAPE UPDATED TO SITE LAYOUT REV M. WOODLAND BOUNDARY HEDGE IDENTIFIED ON KEY AND DENOTED BY DIFFERENT COLOUR	LB	VS
A	14.05.25	LANDSCAPE UPDATED TO SITE LAYOUT REV L. PLOT 68's BOUNDARY HAS BEEN AMENDED AND REAR DOOR REMOVED DUE TO LEVELS. VERGE CROSSINGS & HIGHWAY RAMP POSITIONS HAVE BEEN ALTERED	RAN	VS

jrp Architecture Planning Urban Design Landscape

CLIENT: MILLER HOMES
DRAWING NUMBER: 22:5611:103
PROJECT: HERMITAGE PARK, LEPTON
SCALE @ A0: 1:250
DRAWING: LANDSCAPE PROPOSALS SHEET 3
DRAWN: LB DATE: APR 25
CHECKED: VS DATE: APR 25

NORTH
1:500 SCALE
10m 50m

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Appendix B Statutory Biodiversity Metric

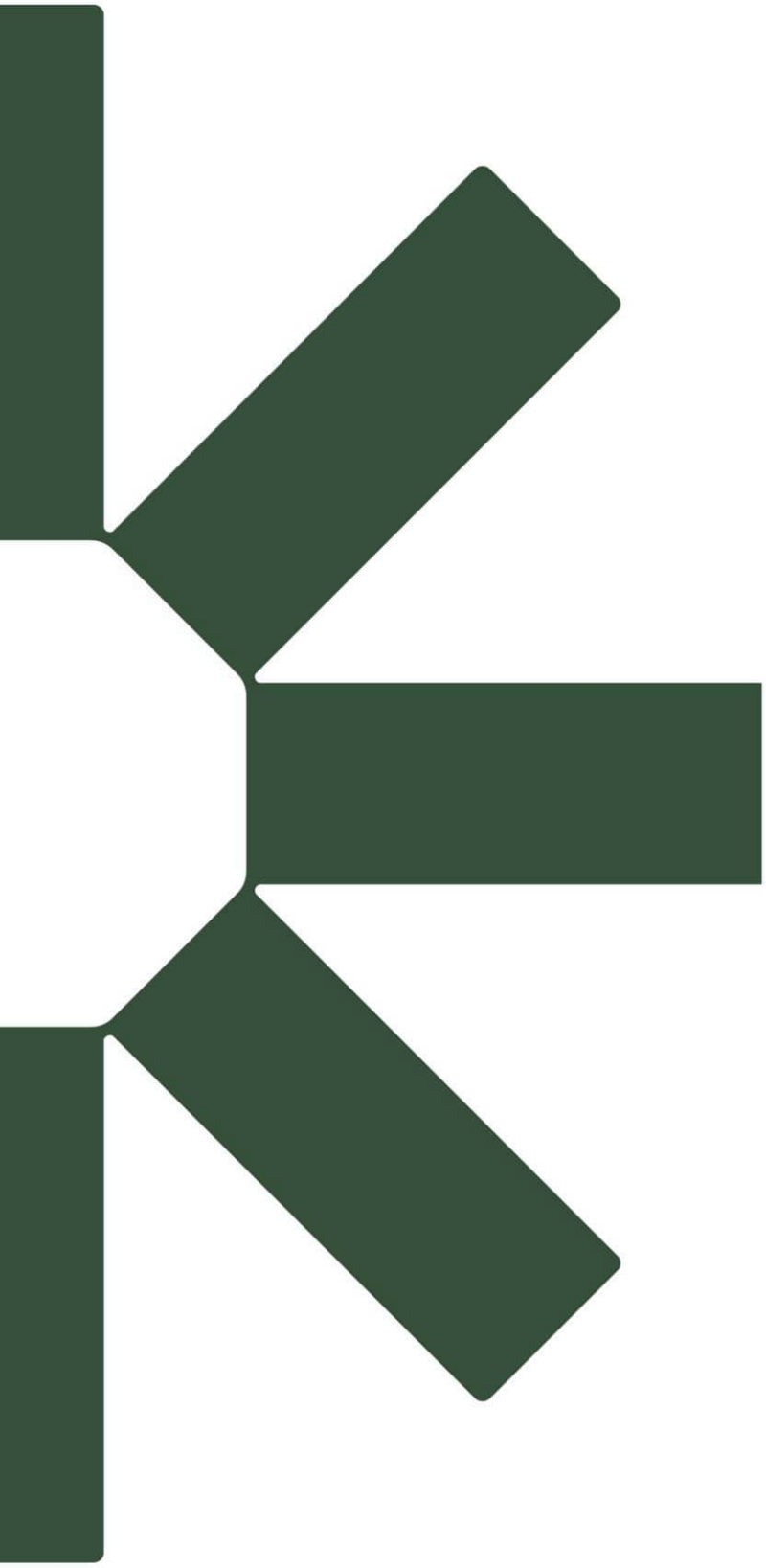
Land off Hermitage Park, Lepton

Report to discharge conditions 8, 15 and 27

Miller Homes Limited

SLR Project No.: 424.065417.00001

4 August 2025



Making Sustainability Happen