

Landscape Report

Landscape Ecological Management Plan

Kings Way
Burgess Hill
West Sussex
RH15 0TH

January 2025

201224-TMA-RP-L-4700

P06

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SUMMARY REPORT

Planning permission has been granted for the proposed development located at Kings Way, Burgess Hill, RH15 0TH. The proposals consist of the erection of a 68 Bed Residential Care Facility, with associated access works, car parking, servicing, private amenity space, landscaping and boundary treatments.

This Landscape and Ecological Management Plan has been commissioned by Whitberry Ltd in relation to in order to discharge planning condition 16 of the decision notice Ref: DM/21/3385 dated 5th September 2022.

The report is based on the landscape proposals prepared by TMA Environmental Consultants and has been prepared as a collaboration between Siobhan Daniels, Principal Landscape Architect and Brooke Waites, Principal Ecologist.

Siobhan Daniels is a Landscape Architects with an MLA in Landscape Architecture and is a Chartered Member of the Landscape Institute (CMLI).

Brooke Waites is a suitably qualified Ecologist as follow: BSc in Ecology; Practising Principal Ecologist with over 7 years' experience; Associate Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

The LEMP will comprise proposals for the protection of existing biodiversity on site and management measures to ensure that biodiversity value is enhanced and maintained in the long-term.

The scheme will include mitigation measures and on-going management and monitoring relating to protected species that have potential to be present.

This scheme aims to satisfy the requirements of the National Planning Policy Framework (MHCLG, 2019), the British Standard, Biodiversity Code of Practice for Planning and Development and local planning policies. The strategy will aim to maximize the ecological value of the enhanced areas and minimize the impact of the development on biodiversity.

The content of the LEMP shall include the following:

- Landscape design to achieve stated objectives.
- Locations of proposed enhancement measures on a plan.

- Persons responsible for implementing the enhancement measures.
- Details of initial aftercare and long-term maintenance.

Scope and limitations

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1 SITE DESCRIPTION AND BACKGROUND

- 1.1 The proposed development is located on the outskirts of Burgess Hill. Land to the north, south and west is dominated by sub-urban residential development. A railway line runs adjacent to the southern boundary of the site with Kings Way Road to the West. To the north-east are areas of mature tree belts and woodland with a new residential development beyond. To the south-east the site borders designated Ancient Woodland with mature tree belts and grassland.
- 1.2 The central grid reference for the site is TQ 32643 18676.

Ecological Reports

- 1.3 This Landscape and Ecological Management Plan has been compiled with reference to the findings and recommendations of previous ecological surveys and reports, as follows:
- Preliminary Ecological Appraisal, Tim Moya Associates, July 2021, ref. 201224-ED-01a
 - Reptile Survey, Tim Moya Associates, October 2021, ref. 201224-ED-02
 - Botanical Survey Report, Tim Moya Associates, November 2021 ref. 201224-ED-03
 - Great Crested Newt eDNA Report, Tim Moya Associates, August 2021, 201224-ED-02
- 1.1 Key results of the above ecological reports are as follows:
- The site is dominated by grassland habitats with mature tree belts along the periphery. An area of ancient woodland is present outside the site, along the south-eastern boundary.
 - To confirm that badger setts continue to be absent from the site and surrounding area prior to works commencing, it is recommended that update badger walkover inspections are carried out by an experienced ecologist.

- The majority of the site comprises a grassland community that includes species of common and widespread prevalence and which does not conform to a Natural Environment and Rural Communities (NERC) Act Habitat of Principal Importance and Priority Habitat.
- Great crested newt eDNA Surveys have been undertaken in 2021 and 2023. The surveys have demonstrated probable absence of great crested newts from the Ponds P1 – P4 located between 180 m and 290 m away from the site. However, historical records show GCN were present in the area in 2016; as such, precautionary measures are recommended.
- The site supports a breeding population of common lizards and a likely non-breeding population of slow-worm.

2 LANDSCAPE DESIGN AND BIODIVERSITY OBJECTIVES

2.1 The proposed soft landscape scheme has been designed to balance considerations of biodiversity and visual amenity.

2.2 The objectives are;

- To provide a landscape that blends the development with its suburban surroundings.
- To provide both short-term and long-term screening of the site to mitigate any visual impacts the development may have on the surrounding area.
- Preserve existing habitats and species on site.
- Provide suitable habitats and planting for wildlife within the development.
- To include, wherever possible, native plant species that will attract wildlife.
- To increase the overall species diversity of the site.
- Create a welcoming and useable landscape for the residents.

Relevant Landscape plans and documents

2.3 As well as any other approved plans and particulars the following are to be read in conjunction with this statement and are attached to this report in the appendices.

Document	Reference	Location
Soft Landscape Plan	201224-TMA-XX-DR-L-4200	Appendix 1
Soft Landscape Plan	201224-TMA-XX-DR-L-4210	Appendix 1
Soft Landscape Details	201224-TMA-XX-DR-L-4300	Appendix 1
Management Schedule		Appendix 2
Reptile Mitigation Strategy	201224-ED-04	Appendix 3
Lighting Guidance Note (Ecology)	201224-ED-05	Appendix 4

3 LANDSCAPE MANAGEMENT OBJECTIVES

3.1 The establishment and success of the landscape proposals are largely dependent on the standard and frequency of the subsequent maintenance and management it receives.

3.2 The objectives are:

- To ensure successful establishment of the soft landscape scheme as shown on drawing 201224-TMA-XX-DR-L-4200 and 201224-TMA-XX-DR-L-4210 and continued growth through to maturity reflecting the original design intentions.
- To ensure establishment of the plants.
- To ensure the long-term future for the new tree, hedge, shrub, perennial and grass planting to achieve ecological enhancement, conservation and visual amenity.
- To retain the natural growth and form of plants and maximise seasonal potential.

4 HABITAT MANAGEMENT

- 4.1 Habitat management measures are detailed below. Appendix 4 summaries the requirements.

Pre-development measures

Invasive Plant Species.

- 4.2 Buddleia was recorded within the site. Buddleia is not listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) as invasive plant species, but is known to be invasive in some circumstances.

- 4.3 Invasive Species Management Measure: The spread of Buddleia within the site will be avoided. If removal of these plants is required as part of the works, they will be disposed of responsibly (e.g. mulching, burning on site or removal to landfill) so that the plants cannot spread.



Example image of Buddleia.

Trees

- 4.4 There are a number of mature trees on the site boundary, the majority of which are due to be retained.

- 4.5 Protection Measure: All trees proposed for retention will be suitably protected from harm during construction works following the British Standard: BS5837 (2012). Tree protection areas and methods stipulated by a suitably qualified arboricultural consultant will be followed (TMA, 2023 ref. 201124-PD-25).

Off-site area of Ancient Woodland

- 4.6 Protection Measure Ancient woodland is listed as being present of the site (MAGIC, 2021) and an exclusion zone of at least 15m will apply here for any activities likely to lead to damage of this habitat.



Area of Ancient Woodland shown in green thatch (Image from DEFRA's MAGIC Website)

Dead wood management

- 4.7 Protection Measure: Existing log piles, dead wood and brash located within the site, but outside the construction footprint, will be retained *in situ*. Where log piles and dead wood need to be relocated, they will be kept within the site as habitat features. Log piles will not be moved or disturbed during the winter, when animals may be hibernating.

Throughout Works and Post-development Measures

Monitoring of ecological enhancements

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| 4.8 | Monitoring measure: All ecological enhancements detailed within this document will be checked annually by a suitably qualified ecologist for five years, starting one year after completion of the development, to ensure that they are still present, undamaged and that management has been effective. The ecologist will produce a brief report to detail the results of the inspection. Any damage, loss or degradation will be rectified by repair, replacement or changes to management. |
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Monitoring of Reptile Receptor Area

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| 4.9 | Monitoring Measure: Details of the ongoing monitoring for the reptile receptor area are detailed within the Reptile Mitigation Strategy (TMA, 2023, ref. 201224-ED-04). In order to ensure the receptor area is protected throughout the construction process, site visits every 2-4 weeks throughout the construction to ensure the reptile fence is maintained. |
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Management of Reptile Receptor Area

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| 4.10 | Monitoring Measure: Details of the ongoing monitoring for the reptile receptor area are detailed within the Reptile Mitigation Strategy (TMA, 2023, ref. 201224-ED-04). Monitoring surveys will include reptile surveys in years 2 and 4 after development to ascertain the status of the reptile population on site. During the visit in the second year, the wildlife habitat will also be monitored to confirm its suitability for reptiles and advise on any required changes in habitats. |
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5 PROTECTED SPECIES – MITIGATION

- 5.1 Ecological mitigation measures are detailed below. Appendix 4 summaries the requirements.

Trees (bats)

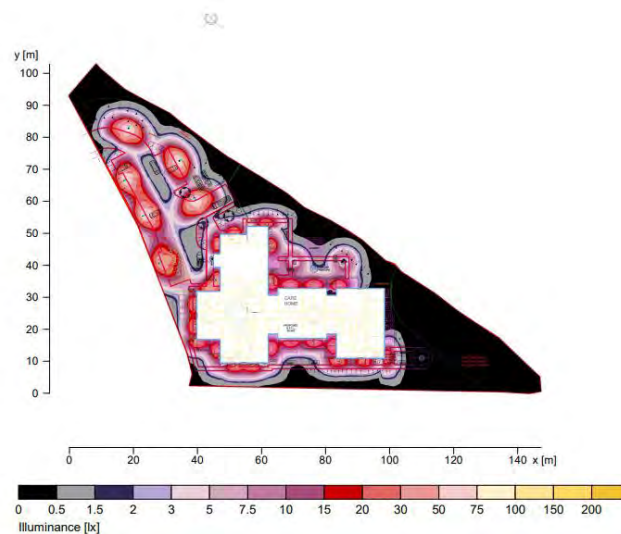
- 5.2 No trees identified as having bat roosting potential are due to be removed as part of the works. As such, no further mitigation is required.

Foraging and commuting bats (lighting)

- 5.3 Due to the habitats present within the site and the local landscape, it is considered likely that foraging or commuting bats use the site to a certain extent. The foraging and commuting behaviour of bats is known to be altered by artificial lighting and bats may avoid illuminated areas (ILP, 2018).

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| 5.4 | Protection Measure: To avoid a detrimental impact on bats using the site, there will be no increased light spillage on to suitable habitats, particularly on the periphery of the site on the eastern and southern boundary, where bats are most likely to forage and commute. Lighting will be restricted to the interior of the site and should be kept to a low level. See separate Lighting Guidance Note for more details (TMA, 2023, ref 201224-ED-05). |
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- 5.5 A detailed lighting assessment of the proposed development has been provided. The assessment has confirmed that lighting will be concentrated in the centre of the site, toward the building and car parking areas. The boundaries of the site, where bats are most likely to foraging and commute are due to remain unlit. See below anticipated lux levels within the site:



See Lighting Assessment for details (Ainslie Sharp LTD, July 2023 ref.0900/BUR)

- 5.6 This has been achieved with the use of LED luminaires which have a sharp cut off, lower intensity lighting and the use of downlighting to prevent upward spill.
- 5.7 Based on the plan above, the proposed lighting is considered unlikely to have a significant detrimental impact on wildlife, particularly bats.

Badgers

- 5.8 During the initial Preliminary Ecological Appraisal, no evidence of badgers was recorded during the site visit. However, due to the site's location and proximity to areas of highly suitable habitat such as woodland and grassland, badgers are likely to be present within the local area. As such, an updated walkover was recommended prior to work commencing.
- 5.9 An update walkover survey was undertaken on 24th August 2023 by Brooke Waites, ACIEEM, of TMA, an experienced Principal Ecologist.
- 5.10 No evidence of use by badgers was found within the site or surrounding areas, however dense vegetation within the site limited visibility. It would be expected that frequent use by badgers would be visible, such as presence of mammal runs of which none were observed. Therefore, it is considered unlikely that badgers frequently visit the site.

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| 5.11 | Protection Measure: A final inspection of the site should be undertaken during the vegetation clearance by a suitably qualified ecologist to confirm the continued absence of badger setts within the site and immediate surrounding area. |
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Nesting birds

- 5.12 All birds are protected against killing, injury or capture, and eggs and active nests are protected. Some bird species are also protected against disturbance. The site includes, trees, woodland and grassland, all of which are suitable for nesting birds during the nesting season (typically March to August inclusive).

5.13	Protection Measure: To avoid destruction of active bird nests, it is recommended that vegetation removal is only undertaken outside the bird nesting season. Vegetation removal may only be undertaken during the nesting season if a careful check by a suitably experienced ecologist can confirm that no active bird nests are present. If bird nests are present within vegetation to be removed, they must be left in place and not disturbed until all the young have fledged and cease to return to the nest.
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- 5.14 The typical nesting season for birds (March to August) coincides with the majority of the active season for reptiles (March to September, weather dependent). When removing habitats where both may be present, careful timing is required to avoid impacting active bird nests whilst also protecting reptiles from killing or injury. Ideally, dense vegetation should be removed in September, when birds have largely finished nesting, but reptiles are still active and are therefore at lower risk of harm. Ground clearance should be undertaken under the supervision of a suitably experienced ecologist to minimise the risk of harm to reptiles. Alternatively, vegetation should be removed down to 15 cm height during the winter (October to February) to remove bird nesting habitat, and then cleared completely to ground level or below during the summer (March to September), when reptiles are active. This phased timing minimises the risk to both reptiles and nesting birds.

Hedgehog

- 5.15 The site includes habitats suitable for hedgehogs to be present. Whilst not a strictly protected species, the hedgehog is listed as a Species of Principal Importance.

5.16	Protection Measure: Care should be taken when removing scrub/shrub vegetation to avoid harm to hedgehogs which may be present. Once vegetation has been removed to a height of 150-300 mm, it should be checked by a member of site staff to ensure that no hedgehogs are present. If any hedgehogs are present, they may be moved to suitable habitat nearby.
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Reptiles

5.17 Protection Measure: The site supports a breeding population of common lizards and a likely non-breeding population of slow worms. A detailed reptile mitigation strategy has been produced (TMA, 2023). Mitigation measures include;

- An on-site receptor area.
- Exclusion fencing and a translocation programme with a minimum of 30 days trapping.
- Habitat management and enhancement of the chosen receptor site for reptiles.
- Vegetation clearance work will be undertaken when reptiles are active (broadly April to October inclusive).
- Ongoing management of the receptor area to ensure its suitability for reptiles in the future.

5.18 For full details, please see the separate Reptile Mitigation Strategy (ref.201224-ED-04).

Great Crested Newts (GCN)

5.19 Environmental DNA (eDNA) testing has demonstrated the probable absence of great crested newts from the surveyed ponds (P1, P2, P3 and P4 located between 180 and 290 m away from the site) which were surveyed in 2021 (TMA, 2021).

5.20 Additional eDNA surveys were undertaken of the Ponds in on 30th June 2023 by Bradley Collins, Consultant Ecologist of TMA (Class Licence Registration 2020-44815-CLS-CLS) which demonstrated continued probable absence of great crested newts in ponds P1 and P3. Pond P2 was dry and could not be sampled. Pond P4 was assessed as indeterminate due to high levels of white precipitate in the water sample. Pond P4 is currently part of an ongoing construction site which has likely resulted in an increase in deposits into the pond, altering the water chemistry. As Pond P2 was dry during the key newt breeding season, and previously found to be negative of great crested newt DNA (2021) it is considered unlikely GCN are present. Pond P4 was previously found to be negative for great crested newt eDNA (2021) the change in water quality and ongoing construction works immediately surrounding

the pond mean it is considered unlikely great crested newts are present within the pond.

- 5.21 However, great crested newt surveys carried out in on the land of the new development to the east recorded a population of great crested newts as recently as 2016 in ponds P1 and P3. As such, although the results of the 2021 pond sampling suggest that no great crested newts were present within the ponds at the time of the 2021 eDNA sampling, great crested newts have been present previously, are likely to be present in the wider landscape, and may recolonise these ponds in the future and from there disperse into the proposed development site. It is not known why great crested newts would have been present in 2016 and not in 2021. Since no great crested newt presence could be demonstrated in Ponds P1, P2, P3 and P4 during 2021, there is no basis on which to form a mitigation strategy or obtain a licence from Natural England for works impacting great crested newts.

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| 5.22 | Precautionary Measure: Although the risk of harm to GCN is considered to be very low, contractors working on site should be made aware of the legislation around great crested newts and what to do should they be found on site. A toolbox talk is included in Appendix 3. |
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6 ECOLOGICAL ENHANCEMENTS

- 6.1 Ecological enhancement measures are detailed below. Appendix 4 summaries the requirements.

Bat Boxes

- 6.2 Bat boxes are artificial roosts designed to provide bats with alternative resting places or to encourage bats into areas where there are few existing suitable roost sites.

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| 6.3 | Enhancement Measure: 4 bat boxes will be installed within the building and on trees within the site. Boxes will be orientated south when possible but can be placed in a variety of orientations in order to avoid artificial lighting. The boxes will be placed over 3 m above the ground. Where possible, boxes located on the building should be integrated into the structure to increase longevity. Recommended makes and models are shown below (see Appendix 1 for recommended locations). |
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Ibstock Enclosed Bat Box 'C'	Beaumaris Woodstone Bat Box
	
Integrated Eco Bat Box	Large Multi Chamber WoodStone Bat Box

Bird Boxes

House Sparrow

- 6.4 The House Sparrow is listed on the UK Biodiversity Action Plan as priority species for conservation. Monitoring suggests a severe decline in the UK house sparrow population recently estimated as dropping by 71 per cent between 1977 and 2000 with substantial declines in both rural and urban populations (RSPB). House Sparrows nest in colonies; therefore, Sparrow terraces can be added into the building to encourage nesting.

- 6.5 Enhancement Measure: A total of 3 Sparrow terraces will be included within the site. These can be built into the building during the construction phase. This style of nesting boxes last longer as they aren't exposed the elements as much as externally mounted boxes. Alternatively, sparrow terraces can be attached the exterior of the building post construction. All boxes will be installed at a height of 2 m or higher. Recommended makes and models are shown below (see Appendix 1 for recommended locations).



Vivara Pro WoodStone House Sparrow Nest Box



1SP Schwegler Sparrow Terrace

General bird nest boxes

- 6.6 Enhancement Measure: Three general purpose bird boxes will be installed on the proposed building on the site. These boxes will attract a wide range of species including great tit (*Parus major*) and blue tit (*Cyanistes caeruleus*). Recommended makes and models are shown below (see Appendix 1 for recommended locations).

	
Vivara Pro Seville 28mm WoodStone Nest Box	WoodStone Build-in Open Nest Box

Wildflower Meadows

- 6.7 A wildflower meadow will support a wide variety of plant species including native species or species with a known attraction or benefit to local ecology. These areas will provide an improved foraging opportunity for many species such as invertebrates, birds and bats.
- 6.8 Emorsgate EM3 mix or similar will be used. Species within the wildflower mix will include a mix of 80% grass seed and 20% wildflowers. Species will include: *Centaurea scabiosa*, *Plantago lanceolata*, *Rhinanthus minor*, *Primula veris*, *Galium album*, *Galium verum* and *Malva moschata*.
- 6.9 The proposed location of the recommended wildflower meadow is shown Appendix 1.

Shrub Planting

- 6.10 The planting scheme throughout the site will incorporate flowering shrubs and evergreen shrubs providing food for birds, small mammals and invertebrates (see Appendix 1 for locations).
- 6.11 Species including *Cornus sanguinea*, *Lavandula angustifolia*, *Lonicera periclymenum*, *Rosa*, 'Climbing Iceberg' and *Achillea millifolium* will be included.

Log piles

- 6.12 Log piles can be added to enhance the site for a range of species, depending on their positioning. Log piles have the potential to support a number of hibernating reptiles and amphibians, as well as support diverse populations of invertebrates.

6.13 Enhancement Measure: As part of ongoing reptile mitigation, 3 additional log piles we be created along the boundary of the site to provide suitable shelter for reptiles. Log piles will measure at least 2 m long by 1 m wide. Log piles will set within existing vegetation so that there is cover immediately surrounding, or adjacent to the log pile (see Appendix 1 for recommended locations).

- 6.14 If tree removal is taking place; Additional log piles can be created using the felled branches from native trees within the site. Log piles will provide suitable hibernacula for reptiles and amphibians and provide a feeding and shelter resource for small mammals and invertebrates.

Hibernaculum

6.15 Enhancement Measure: As part of ongoing reptile mitigation within the site, 1 no-dig hibernaculum will be installed (See Appendix 1 for recommended location). These will provide refuge, basking and hibernation habitat for invertebrates, amphibians, small mammals and reptiles. The hibernaculum will be at least 3 m long, 2 m wide and 1 m tall. Hibernacula will be located in sunny, well-drained and sheltered positions that are neither too dry nor prone to winter flooding or freezing. Due to tree protection areas within the receptor area, the hibernacula will be located at ground level and will be made without the requirement for excavating a pit. A base layer will be made using a mixture of topsoil, rubble, brash and logs/wood. Wood chippings or

loose topsoil can be used to pack the largest cavities. This will then be loosely covered in soil and vegetation allowed to colonise.

Invertebrate boxes

- 6.16 Enhancement Measure: 2 invertebrate boxes will be provided within the site. Boxes will be located as close as possible to large areas of pollen and nectar forage; and sited away from bird feeders and bird nest boxes. Recommended makes and models are shown below (see Appendix 1 for recommended locations).



Schwegler Invert Box



Invert Tower

Hedgehogs

- 6.17 The habitats within the proposed development, including meadow areas, tree belts and shrubbery which will provide foraging opportunities for hedgehogs (*Erinaceus europaeus*).

- 6.18 Enhancement Measure: In order to allow hedgehogs to pass through the site, all fences will include a gap of at least 13 cm x 13 cm at ground level. 'Hedgehog Highway' labels can be purchased and installed if desired, to explain the purpose of the holes.
- Enhancement Measure: 2 hedgehog nest box/domes will be installed in undisturbed locations within the site. Recommended makes and models are shown below (see Appendix 1 for recommended locations).



Hedgehog Nest Box



Hedgehog Dome

7 SOFT LANDSCAPE IMPLEMENTATION

- 7.1 All planting as specified within the approved landscape scheme shall be carried out in the first available planting season following the proposed development works.
- 7.2 All works shall be carried out in accordance with the specifications detailed within this report and no variation shall be allowed unless specifically authorised in writing by the Landscape Architect or Local Planning Authority.
- 7.3 All landscape operatives must be appropriately trained, certified, and qualified to undertake the tasks required.
- 7.4 All landscape works are to be carried out in accordance with industry best practice British Standard 4428:1989 *Code of Practice for general landscape operations*.

Implementation Timetable

- 7.5 Planting should be carried out at the correct time of year:
- Rootballed trees and shrubs - Plant between end of October to end of March when the weather is not freezing, and ground is not waterlogged (preferably before January). If the soil is heavy clay, it may be best to wait until beginning of March as heavy frost can cause frost heave and expose roots.
 - Bareroot trees and shrubs - Plant in dormant season, between November to March when the weather is not freezing, and ground is not waterlogged.
 - Wildflower and grassland seeding – Sowing season: March to April or September.

Soil and Climatic Conditions

- 7.6 All planting must be carried out into moist (not waterlogged) friable soil when weather conditions are suitable.
- 7.7 Planting operations shall not be carried out when the ground is waterlogged or frozen or during periods of high winds.

Machines and Tools

- 7.8 Use only machinery and tools suitable for the site conditions and the work to be carried out.

- 7.9 Use hand tools within tree root protection areas, around existing plants, and in confined spaces where it is impractical to use machinery.

Preparation, Planting and Mulching Materials

- 7.10 Preparation, planting and mulching materials must be free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.

Protection of existing trees

- 7.11 All retained trees on the site are required to be protected in accordance with British Standard 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* throughout the proposed landscape operations as recommended by the arboricultural consultant.
- 7.12 No fires will be permitted within 20m of the crown of any tree.
- 7.13 No changes in soil levels will take place within the tree protection zones without prior written consent of the Local Planning Authority.
- 7.14 No materials, vehicles, plant or personnel will be permitted into the tree protection zones at any time without the prior consent of the arboricultural consultant.
- 7.15 Any liquid materials spilled on site will be immediately cleared up and removed from the site. If liquid fuel or cement products are spilled within 2m of the tree protection zone, the contractor will report the incident to the arboricultural consultant immediately.
- 7.16 The contractor will report any damage to trees or shrubs, whether caused by construction activities or from any other cause to the arboricultural consultant immediately.

Supervision

- 7.17 It will be the responsibility of the landscape foreman to ensure all works are carried out in line with this report and associated specifications.

8 SOFT LANDSCAPE SITE PREPARATION

Setting out

- 8.1 All plants shall be set out by the landscape contractor in accordance with the details specified within the approved Soft Works Plans listed.
- 8.2 All measurements must be taken from existing fixed points. The landscape contractor must ensure that all setting out conforms to the proposed plan before cultivation and planting works are carried out. Failure to do so may result in the rejection of works by the Landscape Architect and may require amendment at the contractor's expense.
- 8.3 Any alterations to the approved landscape scheme must be approved in advance by the Landscape Architect and Local Planning Authority.

Subsoil

- 8.4 Subsoil should be reclaimed from site and reused where possible. Where new subsoil is required, this shall be locally sourced and is required to have a similar structure and pH level to that of existing subsoil on site. Subsoil should conform with BS 8601:2013 Specification for subsoil and requirements for use.
- 8.5 Subsoil must be free from toxic substances, weed seeds, plastic, metals etc. Subsoil to be spread by hand or using a back-acting track vehicle to cause minimum compaction and loss of soil structure. No soil handling shall be undertaken when the soil is waterlogged.

Topsoil

- 8.6 Ideally existing topsoil will be stripped and stored prior to construction works commencing. Where topsoil is required to be imported to carry out landscaping works, General Purpose Grade topsoil as specified within BS3882:2007 Specification for Topsoil and Requirements for Use is required to be sourced and used.
- 8.7 Existing or imported soil must be stored in heaps not exceeding 1.5 metres high and graded to shed water and avoid ponding. It must be maintained in a weed-free condition and protected from contamination or trespass by heavy machinery.
- 8.8 Topsoil shall be lightly consolidated in layers not exceeding 150mm using track laying machinery. Works shall not be undertaken in periods of wet or frosty weather.

- 8.9 All soils are required to be inspected prior to spreading. Imported soils are to have a certificate of analysis on suitability from an approved soil science laboratory, testing a 1kilo sample to every 500 m³.
- 8.10 Do not use topsoil contaminated with subsoil, rubbish or other materials that are corrosive, explosive, flammable, hazardous to human or animal life, detrimental to healthy plant growth. Give notice if any evidence or symptoms of soil contamination are discovered on the site, or in topsoil to be imported. Contamination levels to be in accordance with soil guidelines values for residential developments.
- 8.11 Depths after firming and settlement (minimum):300 mm for hedge planting, refer to the tree planting section for tree pits. Wildflowers shall be sown in 150 mm depth of ground that is not highly fertile and does not have a problem with perennial weeds.

Cultivation

- 8.12 All working operation within tree root protection area must be carried out manually with the use of handheld tools only and no roots greater than 25 mm in diameter or large clumps of fibrous roots are permitted to be removed during these works.
- 8.13 All areas to be planted shall be cleared of all surface rubbish and checked for underground services prior to excavation works occurring.
- 8.14 All debris and weeds will be cleared from the planting areas prior to the soil preparation.
- 8.15 All cultivation works should be carried out in suitably dry conditions a few days before planting operations are required to be undertaken.
- 8.16 Planting areas will be prepared to a depth of 300-400 mm ensuring the topsoil is not compacted.
- 8.17 Any weeds, perennial weed roots, stones with a diameter greater than 50 mm and other extraneous material are required to be removed from the topsoil and disposed of offsite.
- 8.18 With the use of suitable machinery or hand tools, a fine tilth (soil particles between 2-8 mm) will be created, and PAS 100 Compost soil amelioration added and mixed within the top 75-100 mm of the soil.

- 8.19 The topsoil shall be graded to remove minor hollows and ridges and bring it to a uniform and even grade at the correct finish level. The soil should be of a crumb structure, not compacted.
- 8.20 To locations of proposed tree and hedgerow planting, if the existing soil has been compacted due to construction activities, this may need be loosening by cultivation, and the required soil ameliorations incorporated prior to planting being carried out.

Preparation of undisturbed topsoil

- Standard - In accordance with British Standard 4428:1989 Code of Practice for general landscape operations.
- Hard surfaces - Break up thoroughly to a minimum depth of 400 mm for planting areas.
- Areas covered with wildflower grassland seeding – To prepare a seed bed first remove weeds using repeated cultivation. Cultivation close to established trees and shrubs can be damaging to their root systems so take care not to dig too deep, keeping disturbance to the minimum required to expose fresh soil.
- Weed control (General) – Treat areas when and if required with a suitable translocated non-residual herbicide.

Herbicides

- 8.21 All herbicide handling and application should be carried out by a trained contractor in accordance with the manufacturer's specification and COSHH Regulations.

Fertiliser

- 8.22 Incorporate the following soil ameliorations during cultivation within the within the top 75-100mm of all planting beds.
- PAS 100 Compost.

Finished levels

- 8.23 Final grading of the top 150 mm is to be carried out to ensure a true specified level and slope to avoid any dishing or other depression where water may collect.

- 8.24 For shrub beds adjacent to hard surfaces, the soil should finish 75 mm below all finished surfaces, allowing 25 mm for shrinkage and settlement and leaving a clear depth of 75mm from finished surface level to take specified mulch.
- 8.25 Soil levels should be 150 mm below damp proof courses after settlement.
- 8.26 The contractor should liaise with the Landscape Architect while carrying out the works in order to ensure that the correct profiles are achieved. Cultivation of the top 150 mm of topsoil should be carried out in accordance with British Standard 4428:1989 *Code of Practice for general landscape operations*.

9 PLANTING SPECIFICATION

Planting Schedule

- 9.1 The planting schedule, which includes species, sizes, root stock, densities and quantities, is detailed on the Landscape Proposals Plans.

Plant Specification

- 9.2 All plant stock, plant handling and planting to be undertaken in accordance with the following British Standard Specifications and Code of Practice:
- BS 3936: 1992 Part 1 Nursery Stock. Specification for Trees and Shrubs;
 - BS 4428: 1989 Recommendations for general landscaping operations;
 - BS 8545:2014 Trees: from nursery to independence in the landscape;
 - Horticultural Trades Association - The Code of Practice for Plant Handling 1985.
- 9.3 Plants not covered by BS 3936 shall be healthy specimens of good shape and balanced branch structure with abundant fibrous roots. Plants are to show vigour of growth within the growing season prior to lifting.

Plant Stock

- 9.4 Plant stock to be supplied in accordance with the size and description specified on the plant schedule. Plants shall have been grown and handled according to good horticultural practice and according to all current UK Government regulations. The supplying nursery shall be expected to carry out thorough and rigorous production methods to ensure that the stock is of highest standards.
- 9.5 The conditions of all plants shall be materially undamaged, sturdy, healthy and vigorous and be of good shape, without elongated shoots. They shall be grown in a suitable environment and sufficiently hardened off prior to delivery to site. They shall be free from pests, diseases, discolouration, perennial weeds and physiological disorders. Budded or grafted plants must be bottom worked. Plants should be lifted at a time in accordance with good nursery practice.
- 9.6 The root system and condition must be uniform and well developed with fibrous root hairs typical of a healthy tree of the species, age and number of transplantations.

Rootballed trees

- 9.7 Rootball trees should conform with BS 4428:1989 *Recommendations for general landscaping operations* and BS 8545:2014 *Trees: from nursery to independence in the landscape*.
- 9.8 Trees shall have a good well-formed rootball with dimensions according to the size of the tree. The minimum diameter of the rootball is required to comply with Table D.5 of BS 8545:2014 *Trees: from nursery to independence in the landscape*.

Table D.5 Relationship between tree size, size of rootball and number of times transplanted/undercut on the nursery		
Girth of tree measured at 1 m	Minimum diameter of rootball	Minimum number of times transplanted/undercut on the nursery
cm	mm	
8 to 10	300	—
10 to 12	300	—
12 to 14	400	3
14 to 16	450	3
16 to 18	500	3
18 to 20	550	3
20 to 25	600	4
25 to 30	700	4
30 to 35	800	4
35 to 40	900	5
40 to 45	1 000	5
45 to 50	1 200	5
50 to 60	1 300	6

Figure 1: Table D.5 of BS 8545:2014.

- 9.9 Rootballed trees shall be adequately supported by wire mesh and hessian, or other suitable material to prevent collapse of the rootball. The rootball shall be of sufficient size to contain the fibrous roots. Trees, which have a collapsed rootball or expose major parts of the root system will be rejected.

Clear stem trees

- 9.10 All clear stem trees shall have a full and well developed crown with a uniform leaf coverage appropriate to their age and species. All shall bear a single upright straight central leader. Unless otherwise stated, they shall have a 1.8m clear stem height.

Bareroot trees

- 9.11 All bare rooted subjects shall have a strong fibrous root structure. The root systems shall be well developed but compact with root spread proportional to the size of the tree with a reasonable proportion of fine fibrous rootlets. The roots shall not be torn or lacerated.

Plant Sourcing and Substitutes

- 9.12 Plants are to be obtained from an approved source. The source of plants is to have soil and climatic conditions similar to those prevailing at the site.
- 9.13 Plants, which are unobtainable, are to be clearly identified and alternatives are to be submitted for approval, stating species, size, form and price and how they differ from the specifications. These substitutes must be the equivalent or better quality than the species specified. Such substitutes may not be acceptable, and submission of further alternatives may be required. Obtain approval before making any substitution.
- 9.14 Single species from more than one source must be of the same clonal type and cultivator, and be similar in form, root structure and size.

Labelling and Information

- 9.15 Plants shall be identified until planting with a label to each plant or group of the same species. Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:
- Full botanical name;
 - Total number of plants/trees;
 - Number of bundles;
 - Part bundles;
 - Supplier's name and address;
 - Plant passport number; and
 - Employer's name and project reference or order number.
- 9.16 Plant specification in accordance with scheduled National Plant Specification categories.

Unloading on Delivery

- 9.17 All plant species will be inspected upon delivery to the site. Where significant diseases, defects or disorders that have the potential to impact the future establishment of the plant are observed, these will be replaced with a clean healthy plant by the nursery.

Plant Handling

- 9.18 All plant materials shall be lifted, bundled, labelled, packaged, transported, temporarily stored and planted in accordance with the procedures and methods illustrated in the publication, 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association).
- 9.19 All plants and trees shall be handled with care and protected from frost and mechanical damage, do not subject to shock, e.g. by dropping from a vehicle. Plants, which are not to be planted on the day of delivery to the site, are to be stored as follows or by other approved methods:
- Bare root trees that are to be stored for subsequent planting shall be stored on site by laying them horizontally, resting the branches on straw bales and covering roots with soil, firming in well to prevent air pockets. Watering regularly until planting.
 - Rootballed plants that are not to be planted within 24 hours of delivery are to be grouped together and their rootballs covered with moist non-peat organic matter suitable for protecting from frost and from drying out.
- 9.20 All plants will be appropriately maintained until used and be kept away from possible sources of contamination or damage. The drying out of all plants will be avoided by watering of the roots when required.
- 9.21 The contractor shall allow for all costs associated with undertaking correct storage of plant material. The contractor shall operate a method of "just in time" plant deliveries to minimise plant storage on site.
- 9.22 Exposure to adverse weather conditions will be avoided. Plants will not be allowed to dry out and will be stored away from strong winds.

10 PLANTING

Select Standard and Feathered trees

- 10.1 The locations, specifications, species, numbers and sizes of trees to be planted are detailed on the Landscape Proposals Plans.
- 10.2 Only well branched trees with symmetrical crowns and straight stems and leaders will meet the approval of the Landscape Architect. Trees of the same species shall be uniform in size, shape and in good condition. For further details refer to the Plant Stock section above.
- 10.3 It will be the responsibility of the Contractor to ensure that all trees are protected from injury during planting works. If any tree is damaged due to lack of protection, the tree shall be replaced at the Contractors own expense.
- 10.4 Formative pruning, which includes the removal of any dead, damaged, diseased or crossing branches must be carried out on all standard tree species prior to planting. These works must be undertaken in accordance with BS8545:2014 *Trees: from nursery to independence in the landscape – Recommendations*.
- 10.5 Any dead, damaged, diseased or girdling roots must also be removed prior to planting operations.
- 10.6 All pruning works must be carried out with the use of a sharp clean secateurs and must not to change the natural habit or shape of the trees concerned. All tree work shall comply with the recommendations set down in BS3998: 2010 Recommendations for Tree Work.
- 10.7 All arisings are to be removed from site by the Contractor and disposed of accordingly.
- 10.8 Tree pits will be square and excavated at least two times the width of the rootball diameter for select standard trees and root plate for feathered. The planting pit should be no deeper than the existing rootball or root plate depth.
- 10.9 The tree should be planted at the correct depth taking into account the position of the root flare and the finished level. Allowance should be made for settling of the soil after planting. The root–stem transition should be level with the existing host soil or surface.

- 10.10 Tree pit sides should not have compacted, glazed, or smeared from digging. Sides of a planting pit that have been smeared during excavation should be scarified to allow root penetration.
- 10.11 During excavation of the tree pit, soil removed should be placed to one side, separating topsoil and subsoil as far as is practical. There must be no standing water within the tree pit.
- 10.12 Following pit excavation, the tree will be carefully placed into the hole and held upright in the middle of the pit.
- 10.13 Saturate the root ball or root plate of the tree before planting.
- 10.14 Prior to backfilling, select standard trees will be double staked and feathered trees will be single staked as detailed.
- 10.15 To backfill, soil should be added gradually, in layers of 150 mm to 230 mm depth, ensuring the tree is held upright. At each stage, the fill should be firmed in to eliminate all air pockets under and around the root system, but with care being taken not to excessively compact the soil.
- 10.16 The final layer of backfilling should not be consolidated but should be of a sufficient depth to allow for settlement and mulching.
- 10.17 After planting, the tree pit should be watered to field capacity before applying a 75-100 mm layer of organic mulch which extends beyond the trees root spread. The layer of mulch should not bury the root flare of the tree.

Staking

- 10.18 Trees within soft landscaped areas will be double staked for Select Standard trees and single staked for Feathered trees, using round pressure treated softwood stakes, 75-100 mm diameter pointed at one end and of a straight form.
- 10.19 Prior to planting, stakes are to be vertically driven into the bottom of the excavated pit by at least 300 mm, ensuring no damage is caused to the roots.
- 10.20 Once the pit has been backfilled, the tree shall be secured to the stakes using a plastic buckle type adjustable tie and rubber spacer or hessian ties.
- 10.21 Stakes must not chafe against any part of the tree and must be approximately 1000 mm above ground level for Select Standard and 600 mm for Feathered.

Hedgerow – Native mix and *Carpinus betulus*

- 10.22 All plants to be true to the type and to be bare root to the size specified on the planting schedule. No substitutions shall be excepted unless previously agreed with the Landscape Architect.
- 10.23 For all bare root material, the roots shall be kept covered at all times to stop desiccation.
- 10.24 Pits for plants shall be of a sufficient size to take rootlets without breaking, bending or cramping. Planting pits shall be excavated 100 mm wider than the root spread. Bottom of planting pits to be forked over to a forks depth to alleviate and compaction.
- 10.25 The surface of the bed is to be left cultivated and free from weeds, debris and stones.
- 10.26 Apply a layer of bark mulch of 50 mm or 75 mm depth. See Mulch section of this specification for more details.
- 10.27 Plants to be supported with a cane and brown recycled rabbit guard. Available from Greentech or similar.
- 10.28 Guards and canes should be removed when plants are established (usually after 3-5 growing seasons). If protection from larger mammal id required, stock fencing and/or netting are optimal, with stock fencing erected in order to allow the hedgerow to grow at least 1.5 m wide.
- 10.29 Plant a double staggered row hedge, as Landscape Proposals Plan.
- 10.30 Randomly plant the less numerous species first and fill in the gaps with the main species. Apply mulch immediately after planting. All plants to be supplied bare root.

Wildflower seeding

- 10.31 To be installed as manufacturers guidance:
 - Woodland mix flowers, suitable for semi-shade.
 - Emorsgate EH1 or equivalent approved.
 - Wildflower Meadow flowers in Summer
 - Emorsgate EM3 or equivalent approved.
 - Flowering Lawn

Emorsgate EL1 or equivalent approved.

- Indicative sowing rates (please adjust to manufacturer's recommendations)
 - 4g/m²
 - Ground preparation Break up ground where accessible using power harrow. Soil will be aerated, ready to receive seed mix.
 - Sowing
 - Woodland mix Seed is best sown in the Spring or Autumn.
 - Wildflower Meadow Seed is sown in Spring or Autumn
- 10.32 The seed must be surface sown and can be applied by machine or broadcast by hand. To get an even distribution and avoid running out, divide the seed into two or more parts and sow in overlapping sections. Do not incorporate or cover the seed but firm in with a roll, or by treading, to give good soil/seed contact.
- 10.33 Construction activities have the potential to disturb the seed bed and so it may be necessary to repeat the pre-construction ground preparation to establish a suitable seed bed. Similarly, if the seedbed lies dormant following construction but before autumn sowing, then further ground preparation may be required.

Turf

- 10.34 Turf should be a healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease. In appearance, a closely knit, continuous ground cover of even density, height and colour.
- 10.35 All turfing operations to conform with 'British Standard 3969:1998 Recommendations for Turf for General Purposes'.
- 10.36 Prepare ground to a fine tilth breaking up and clods of earth and rake to contours. Stone pick the area removing any material 50 mm and over.
- 10.37 Lightly roll or firm the soil to avoid any soft areas, and repeat until the ground is evenly firm and level (but not compacted).
- 10.38 The area to be turfed will be watered prior to laying turfs.

- 10.39 Turf to be laid on day of delivery. Turf to be supplied in rolls, not dried out or yellowed, to be undamaged without holes or torn or ripped edges. Turf grown on any nylon matting will not be accepted. Turf will be weed free and of a uniform size and thickness.
- 10.40 Turf must be laid butt jointed with no gaps or overlapping, laid from suitably sized running boards so not to damage turf. Walking over or standing on the turves will not be allowed until fully established.
- 10.41 The finished surface level of grassed areas is set above the height of adjacent hard surfacing to a minimum 10 mm compacted level above adjacent hard surface levels or sufficient to enable effective mowing of the grass without the potential for damaging mower blades against kerbs.
- 10.42 Turf areas should be watered immediately after laying as necessary to ensure the establishment and continued thriving of turfing areas. Thereafter for the first week turf should be water once a day. In hot weather conditions, for best results, watering should take place twice a day. Wet to full depth of topsoil.
- 10.43 Fencing erected on completion of turfing to communal areas. Chestnut pale fencing to BS 1722-4, 1.2 m high. Removal after grass is well established. The fencing will remain the property of the contractor.

11 MAINTENANCE & MANAGEMENT

- 11.1 The landscape plan will be implemented, maintained and managed by a client-approved landscape contractor in accordance with the drawings and specification supplied by the Project Landscape Architect.

Year 1 (Defects liability period)

- 11.2 The soft landscape will for the initial year after practical completion, be maintained by the Landscape Contractor responsible for implementation of the works in accordance with the maintenance schedule in Appendix 2. The contractor will include defects liability clause to ensure replacement planting is carried out and successful establishment achieved.

Year 2 to year 5

- 11.3 Thereafter a maintenance contractor will be organised. The maintenance schedule in Appendix 2 provides information on the general techniques and methods to be adopted for the ongoing maintenance operations.
- 11.4 Any necessary amendments to the implemented landscape proposals will be discussed with the landscape architect and written approval obtained from the Local Planning Authority.
- 11.5 The regime should be altered in order to respond promptly to changing circumstances such as natural or man-made changes in the environment which effect the landscape types (e.g. tree disease). Prescriptions provided should not be set in stone and can be altered if required.
- 11.6 The landscape contractor will be responsible for the management and maintenance of the following landscape components:

Trees

- 11.7 Newly planted trees will be maintained for the first 5 years after planting. This will include inspecting, adjusting and removing tree ties and stakes, formatively pruning for crown structure as required, mulching and irrigation.
- 11.8 Fallen branches and debris will be cleared and trees inspected after high winds.
- 11.9 All tree pruning works will be carried out by a reputable tree surgeon and in accordance with BS 3998:2010 Tree Works - Recommendations.

- 11.10 A 75 mm layer of mulch will be applied to the rooting areas of all trees as part of the initial landscape works post development. Mulch will be reapplied on an annual basis to ensure a 75 mm layer is maintained.
- 11.11 Where trees die or require removing for health and safety purposes, new trees will be planted within the first available planting season to maintain the tree canopy cover throughout the site.
- 11.12 The selection of new trees for planting must take into consideration the current risks posed by pests and disease, climate change and site-specific conditions and constraints. The overall aim must be to create and maintain a diverse tree cover throughout the site.

Hedgerows

- 11.13 Hedgerows will be pruned annually to maintain their formal shape.
- 11.14 Where individual species within the hedgerow die, or become diseased, these will be removed, and replacement planting carried out within the first available planting season. Similarly, where gaps within the hedgerow arise, new planting will be carried out to maintain the continuity of the hedgerow.
- 11.15 The pruning of hedgerows should be undertaken outside the bird nesting season, this runs from 1st March to the 31st of August. Where this is not possible the hedgerow must be inspected for nesting birds prior to works commencing.
- Native hedge to be maintained at 1.8m
 - Formal Hedge to be maintained at 1.1m

Wildlife and habitat considerations

- 11.16 All tree and hedgerow works will be carried out in accordance with the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017 and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019." These regulations make it an offence to;
- Intentionally or deliberately kill, injure or capture protected species.
 - Deliberately disturb protected species.
 - Damage, destroy or obstruct access to a structure used for shelter or protection by a protected species.

- Take, damage, disturb or destroy the nest of any wild bird while it is in use or being built.
 - Take or destroy the egg of any wild bird.
 - Damage, destroy or obstruct access to bat roosts whether or not bats are using roosts at the time.
- 11.17 It is the responsibility of the contractor to ensure that no protected species are harmed whilst carrying out site clearance or tree surgery works.

Planting areas

- 11.18 Planting areas are to be regularly maintained as required throughout the year. The maintenance activities will depend on time of year and weather conditions.
- 11.19 Annual maintenance activities will include the pruning/coppicing of shrubs and herbaceous plants, irrigation requirements during periods of drought and to enable establishment of newly planted species, hand weeding and reapplying mulch to planting beds.
- 11.20 Mature shrubs that outgrow their location and suppress surrounding vegetation will be removed, and replacement planting carried out as part of a long-term landscape strategy.
- 11.21 Gaps arising from plant death, disease or poor growth and establishment will be removed and replacement planting carried out with more suitable species.
- 11.22 The selection of plant species must take into consideration site specific constraints and soil types as well as ensuring that seasonal interest is maintained.

Leaf fall

- 11.23 Leaf litter from trees will be managed between the end of autumn and winter when leaf fall is at its highest. 3 to 4 visits will be carried out up until December to ensure the majority of leaf litter is removed from public areas.

Arisings

- 11.24 All arisings from tree, hedgerow and shrub pruning will be composted on site.

Mulch

- 11.25 Well composted organic mulch will be reapplied on an annual basis to ensure a depth of 75mm around the rooting areas of all trees and within all planting areas is maintained to benefit plant growth, health and vitality.

Litter

- 11.26 Litter and rubbish will be picked up and removed from within all areas throughout the year. All rubbish collected will be removed from site.

Irrigation

- 11.27 All areas of new planting will require irrigation throughout the growing season.
- 11.28 Water requirement will be dependent on species, soil types and weather conditions, however, as a guide, newly planted standard trees up to 18-20cm in girth will require approximately 30litres per day from April to September.
- 11.29 Watering will be carried out using a hose pipe fitted with a fine rose (subject to local restrictions).
- 11.30 Irrigation will be carried out for the first three growing seasons to ensure good root establishment.
- 11.31 Irrigation will be carried out first thing in the morning or late in the afternoon to avoid excessive evaporation or leaf scorch.
- 11.32 Refer to best practice guidance BS 4428: 1989 and with BS8545:2014 Trees: from nursery to independence in the landscape.

Wildflower/ Grass

General Operations Carried out in the first year:

- 11.33 Most of the sown meadow species are perennial and will be slow to germinate and grow and will not usually flower in the first growing season. There will often be a flush of annual weeds from the soil in the first growing season. This weed growth is easily controlled by topping or mowing. In the first year the wildflower area should be maintained at a 100 mm height.

- 11.34 Avoid cutting in the spring and early summer if the mixture is autumn sown. The sown annuals should be allowed to flower, then in mid-summer cut and remove the vegetation. It is important to cut back the annuals before they die back, set seed and collapse: this cut will reveal the developing meadow mixture and give it the space it needs to develop.

Management once established Year 2 onwards

- 11.35 For best results are usually obtained by traditional meadow management based around a main summer hay cut in combination with autumn and possibly spring mowing or grazing.
- 11.36 Meadow grassland is not cut or grazed from spring through to late July/August to give the sown species an opportunity to flower. After flowering in July or August take a 'hay cut': cut back with a scythe, petrol trimmer or tractor mower to c 50 mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.
- 11.37 Mow or graze the re-growth through to late autumn/winter to c 50 mm and again in spring if needed.
- 11.38 Do not cut meadows in May or early June as you might disturb nesting birds.

Management once established Year 2 onwards - Flowering Lawn

- 11.39 Mow newly sown flowering lawns regularly (every 7 -10 days during growing season) throughout the first year of establishment. Cut to a height of 40-60 mm, removing cuttings if dense. This will gradually develop a good sward structure, help maintain balance between faster growing grasses and slower developing wild flowers, and control annual weeds. Dig out any residual perennial weeds such as docks.

Turf

- 11.40 For turfed areas, the turf needs to be watered every day for the first week, and three times a week thereafter through to the end of October (weather conditions dependant).
- 11.41 Existing grass areas shall also be included in the maintenance regime as detailed below.
- 11.42 Regular grass cutting helps create a healthy dense sward. Mowing is most needed frequently in the warm, moist conditions of early and late summer; this is the time

frame that the grass will grow most quickly. In conditions such as this a regime of one cut once a week/fortnight should be implemented.

- 11.43 Grass should be kept between 35 mm and 65 mm between the months of April and October. Cuts should not remove more than one third of the leaf growth at any one time.
- 11.44 During drought conditions it is best to either not to mow or to set the mower to a higher cut of around 65 mm. As a general rule, cuts should not remove more than one third of the leaf growth at any one time.
- 11.45 During the winter months cuts should be occasional, removing only the growing tips 'Topping'.
- 11.46 In high utility areas it is best to allow growth to reach and be maintained at around 35 mm high. This allows for conservation of energy from the plant through the leaves as well as protecting surface underneath from wear and tear.
- 11.47 Avoid cutting grass in frosty or wet conditions. If the grass is cut sporadically and drastically, it will struggle to recover after each mowing and there will be a noticeable decline in the lawn's equality.
- 11.48 Lawn edges to be cut with lawn edgers to create a crisp profile every time the grass is cut. Do not allow grass areas to encroach onto footpaths.

Wildlife boxes

- 11.49 The majority of the ecological features such as bat boxes and wildlife shelters detailed within this report do not require any maintenance.
- 11.50 If accessible, the bird boxes will be cleared of debris and old nests every year. This will be undertaken between November and January to avoid disturbance of active nests.

12 REFERENCES

Ecology

- British Standards Institution (2013). BS42020 – Biodiversity – Code of practice for planning and development.
- Institution of Lighting Professionals (2018). Bats and artificial lighting in the UK. Guidance Note 08/18.
- Royal Horticultural Society (no date). Plants for Pollinators – Garden Plants. rhs.org.uk/plantsforpollinators
- Royal Horticultural Society (no date). Plants for Pollinators – Wildflowers. rhs.org.uk/plantsforpollinators

General

- British Standard 4428:1989 Code of Practice for general landscape operations;

Nursery Stock

- British Standard 3936:1992 British Standard 8545:2014 Trees: from nursery to independence in the landscape – Recommendations;
- British Standard 4043:1989 Recommendations for Transplanting root balled trees;
- Horticultural Trades Association - National Plant Specification;

Tree works

- British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations;
- British Standard 3998: 2010 Recommendations for Tree Work;

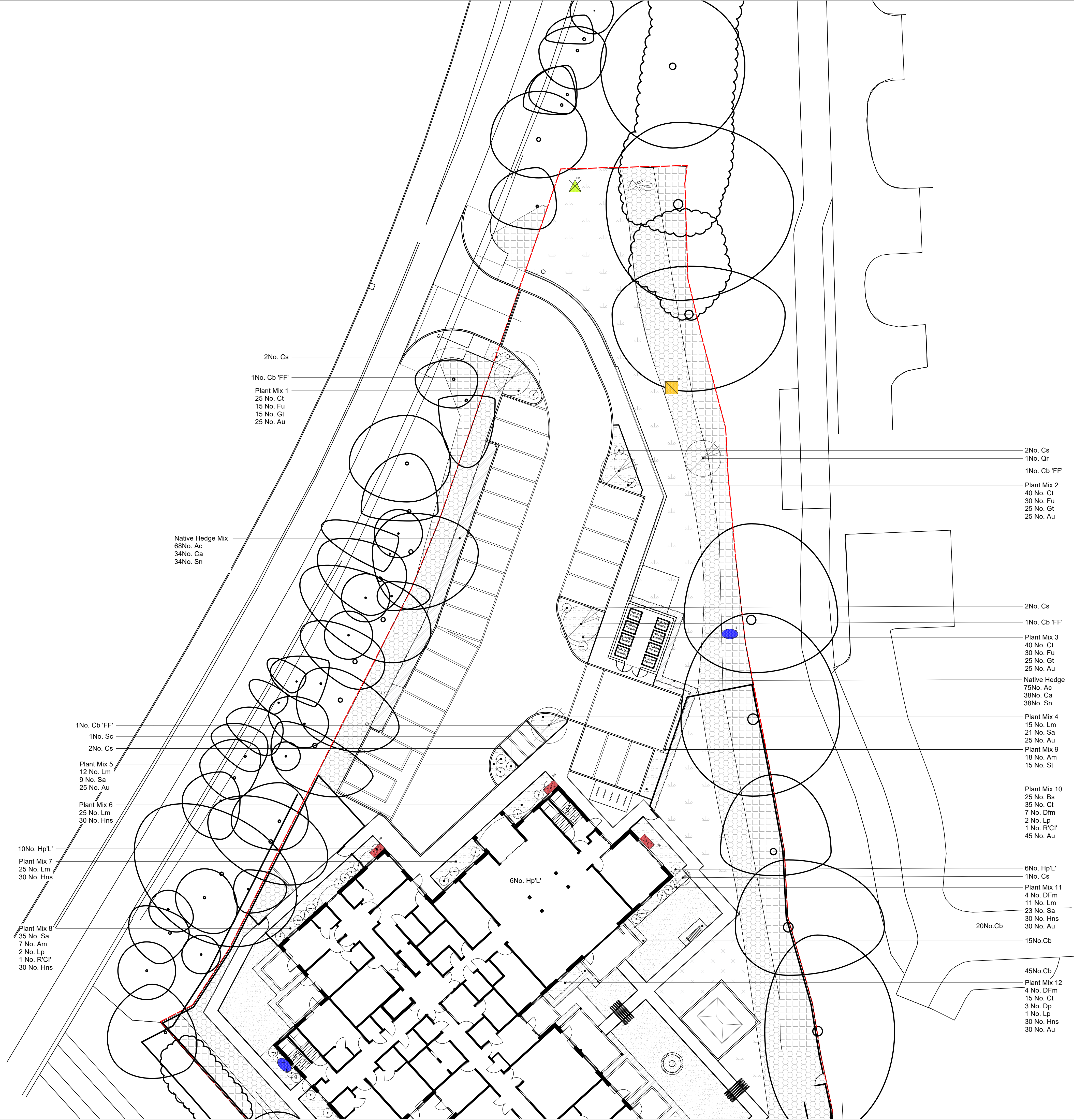
Soil

- British Standard 3882:2007 Specification for Topsoil and Requirements for Use;
- British Standard 8601:2013 Specification for subsoil and requirements for use;

Maintenance

- British Standard 7370:1993 Recommendations for Maintenance of Soft landscape;
- Pesticides and Herbicides
- The Control of Pesticides Regulation 1986 and all subsequent amendment;
- The Control of Substances Hazardous to Health Regulations 1988 and subsequent amendments (2002);
- The Water Supply Regulations 1989 and subsequent amendments (2000); and
- The Control of Pollution Act 1974 and subsequent amendments (1989).

APPENDIX 1 – LANDSCAPE PLAN



Key:

Redline Boundary

NORTH

Soft Landscape

Existing Tree to be Retained

Proposed Tree

Proposed Shrub

Existing Tree Groups to be Retained

Existing Vegetation to Remain

Proposed Hedge Planting

Perennial Planting Mix

Proposed EH1 Hedgerow Mixture
Available From Emorsgate or Equivalent Approved

Proposed EM3 Special General Purpose Meadow Mixture
Available From Emorsgate or Equivalent Approved

Proposed EL1 Flowering Lawn Mixture
Available From Emorsgate or Equivalent Approved

Proposed Amenity Lawn
Fine Lawn by Local Supplier

Lavendula hedge

Ecological features

Proposed Reptile Hibernacula

Proposed Log Piles

Proposed Bat Boxes

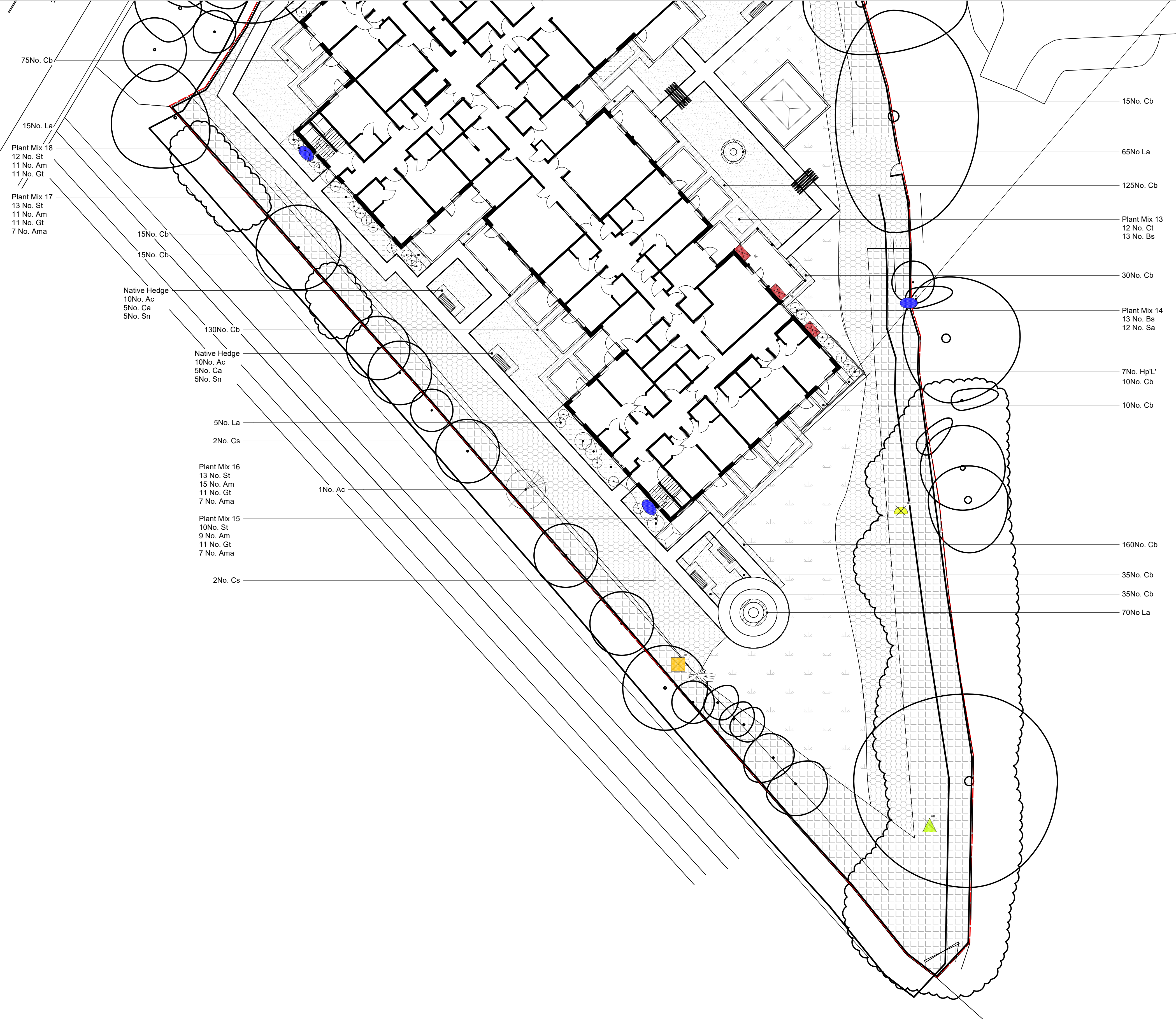
Proposed Sparrow Terraces

Proposed Hedgehog Domes

Proposed Invertebrate Boxes

Proposed General Bird Boxes

P08	27/01/2025	Revision number updated	MR
P07	14/01/2025	Minor Updates	LJ
P06	16/12/2024	Updated Layout	LJ
P05	07/02/2024	Comment from tree officer	HR
P04	31/01/2024	Updates from comments	HR
REV	Date	Description	Drawn by
Base drawing:			
Title:		Stage:	
Soft Landscape Plan		Construction	
Client:			
Whitberry Ltd			
Project:			
Kings Way, Burgess Hill			
Date:	Drawn by:	Authorised:	
10/01/2024	LJ	SD	
Drawing Number:		REV: P08	
201224-TMA-XX-DR-L-4200		Scale: 1:200 @A1	



Key:
 Redline Boundary

NORTH

Soft Landscape

Existing Tree to be Retained

Proposed Tree

Proposed Shrub

Existing Tree Groups to be Retained

Existing Vegetation to Remain

Proposed Hedge Planting

Perennial Planting Mix

Proposed EH1 Hedgerow Mixture
Available From Emorsgate or Equivalent Approved

Proposed EM3 Special General Purpose Meadow Mixture
Available From Emorsgate or Equivalent Approved

Proposed EL1 Flowering Lawn Mixture
Available From Emorsgate or Equivalent Approved

Proposed Amenity Lawn
Fine Lawn by Local Supplier

Lavendula hedge

Ecological features

 Proposed Reptile Hibernacula Proposed Log Piles Proposed Bat Boxes Proposed Sparrow Terraces Proposed Hedgehog Domes Proposed Invertebrate Boxes Proposed General Bird Boxes

P08	27/01/2025	Revision number updated	MR
P07	14/01/2025	Minor Updates	LJ
P06	16/12/2024	Updated Layout	LJ
P05	07/02/2024	Comment from tree officer	HR
P04	31/01/2024	Updated from comments	HR
REV	Date	Description	Drawn by
Base drawing:			
Title:		Stage:	
Soft Landscape Plan		Construction	
Client:			
Whitberry Ltd			
Project:			
Kings Way, Burgess Hill			
Date:			
10/01/2024		Drawn by:	Authorised:
		LJ	SD
Drawing Number:		REV: P08	
201224-TMA-XX-DR-L-4201		Scale: 1:200 @A1	

Planting Schedule							
Trees							
Abb	Species	Common Name	Root Stock	Height	Girth	Specification	Quantity
Ac	Acer campestre	Field Maple	Containerised	400-450 cm	14-16 cm	Extra Heavy Stand	1
Bp	Carpinus betulus 'Frans Fontaine'	Hornbeam	Containerised	350-425 cm	12-14 cm	Heavy Standard	4
Qr	Quercus robur	English Oak	Containerised	450-500 cm	18-20 cm	Extra Heavy Stand	1
Shrubs							
Abb	Species	Common Name	Root Stock	Height	Quantity		
Cs	Cornus sanguinea	Common dogwood	10 litre	0.3m height	13		
Hp'L'	Hydrangea paniculata 'Limelight'	Limelight hydrangea	10 litre	0.5m height	29		
La	Lavandula angustifolia	English lavender	10 litre	0.3m height	20		
Single Species Hedges							
Abb	Species	Common Name	Root Stock	Density	Quantity		
Cb	Carpinus betulus	Common hornbeam	Bare Root	5 / lm	735		
La	Lavandula angustifolia	English lavender	Bare Root	5 / lm	135		
Native Hedges							
Abb	Species	Common Name	Root Stock	Height	Mix	Density	Quantity
Ac	Acer campestre	Field maple	Bare Root	90-120cm	50%	5 / lm	163
Ca	Corylus avellana	Common hazel	Bare Root	90-120cm	25%	5 / lm	82
Sn	Sambucus nigra	Elder	Bare Root	90-120cm	25%	5 / lm	82
Mix 1							
Abb	Species	Common Name	Root Stock	Density	Quantity		
Ct	Carex testacea	New Zealand sedge	2L	5 / m2	25		
Fu	Filipendula ulmaria	Queen of the meadow	2L	5 / m2	15		
Gt	Gillenia trifoliata		2L	5 / m2	15		
Au	Allium ursinum	Wild garlic	2L	5 / m2	25		
Mix 2							
Abb	Species	Common Name	Root Stock	Density	Quantity		
Ct	Carex testacea	New Zealand sedge	2L	5 / m2	40		
Fu	Filipendula ulmaria	Queen of the meadow	2L	5 / m2	30		
Gt	Gillenia trifoliata		2L	5 / m2	25		
Au	Allium ursinum	Wild garlic	2L	5 / m2	25		
Mix 3							
Abb	Species	Common Name	Root Stock	Density	Quantity		
Ct	Carex testacea	New Zealand sedge	2L	5 / m2	40		
Fu	Filipendula ulmaria	Queen of the meadow	2L	5 / m2	30		
Gt	Gillenia trifoliata		2L	5 / m2	25		
Au	Allium ursinum	Wild garlic	2L	5 / m2	25		
Mix 4							
Abb	Species	Common Name	Root Stock	Density	Quantity		
Lm	Liriope muscari	Blue lily turf	2L	5 / m2	15		
Sa	Seselearia autumnalis	Autumn moor grass	2L	5 / m2	21		
Au	Allium ursinum	Wild garlic	2L	5 / m2	25		
Mix 5							
Abb	Species	Common Name	Root Stock	Density	Quantity		
Lm	Liriope muscari	Blue lily turf	2L	5 / m2	12		
Sa	Seselearia autumnalis	Autumn moor grass	2L	5 / m2	9		
Au	Allium ursinum	Wild garlic	2L	5 / m2	25		
Mix 6							
Abb	Species	Common Name	Root Stock	Density	Quantity		
Lm	Liriope muscari	Blue lily turf	2L	5 / m2	25		
Hns	Hyacinhioides non-scripta	Bluebell	2L	5 / m2	30		
Mix 7							
Abb	Species	Common Name	Root Stock	Density	Quantity		
Lm	Liriope muscari	Blue lily turf	2L	5 / m2	25		
Hns	Hyacinhioides non-scripta	Bluebell	2L	5 / m2	30		
Mix 8							
Abb	Species	Common Name	Root Stock	Density	Quantity		
Sa	Seselearia autumnalis	Autumn moor grass	2L	5 / m2	35		
Dp	Digitalis purpurea	Common foxglove	2L	5 / m2	7		
Lp	Lonicera periclymenum	Honeysuckle	2L	5 / m2	2		
R'CI'	Rosa 'Climbing Iceberg'	'Climbing Iceberg' rose	2L	5 / m2	1		
Hns	Hyacinhioides non-scripta	Bluebell	2L	5 / m2	30		
Mix 9							
Abb	Species	Common Name	Root Stock	Density	Quantity		
Am	Achillea millefolium	Common yarrow	2L	5 / m2	18		
St	Stipa tenuissima	Mexican Feather Grass	2L	5 / m2	15		
Mix 10							
Abb	Species	Common Name	Root Stock	Density	Quantity		
Bs	Blechnum spicant	Deer fern	2L	5 / m2	5		
Ct	Carex testacea	New Zealand sedge	2L	5 / m2	7		
DFm	Dryopteris Filix mas	Male fern	2L	5 / m2	2		
Lp	Lonicera periclymenum	Honeysuckle	2L	5 / m2	1		
R'CI'	Rosa 'Climbing Iceberg'	'Climbing Iceberg' rose	2L	5 / m2	1		
Au	Allium ursinum	Wild garlic	2L	5 / m2	8		
Mix 11							
Abb	Species	Common Name	Root Stock	Density	Quantity		
DFm	Dryopteris Filix mas	Male fern	2L	5 / m2	4		
Lm	Liriope muscari	Blue lily turf	2L	5 / m2	11		
Sa	Seselearia autumnalis	Autumn moor grass	2L	5 / m2	23		
Hns	Hyacinhioides non-scripta	Bluebell	2L	5 / m2	30		
Au	Allium ursinum	Wild garlic	2L	5 / m2	30		
Mix 12							
Abb	Species	Common Name	Root Stock	Density	Quantity		
DFm	Dryopteris Filix mas	Male fern	2L	5 / m2	4		
Ct	Carex testacea	New Zealand sedge	2L	5 / m2	15		
Dp	Digitalis purpurea	Common foxglove	2L	5 / m2	3		
Lp	Lonicera periclymenum	Honeysuckle	2L	5 / m2	1		
Hns	Hyacinhioides non-scripta	Bluebell	2L	5 / m2	30		
Au	Allium ursinum	Wild garlic	2L	5 / m2	30		

Mix 13					
Abb	Species	Common Name	Root Stock	Density	Quantity
Ct	Carex testacea	New Zealand sedge	2L	5 / m2	12
Bs	Blechnum spicant	Deer fern	2L	5 / m2	13
Mix 14					
Abb	Species	Common Name	Root Stock	Density	Quantity
Bs	Blechnum spicant	Deer fern	2L	5 / m2	13
Sa	Seselearia autumnalis	Autumn moor grass	2L	5 / m2	12
Mix 15					
Abb	Species	Common Name	Root Stock	Density	Quantity
St	Stipa tenuissima	Mexican Feather Grass	2L	5 / m2	10
Am	Achillea millefolium	Common yarrow	2L	5 / m2	9
Gt	Gillenia trifoliata		2L	5 / m2	11
Ama	Astrantia major		2L	5 / m2	7
Mix 16					
Abb	Species	Common Name	Root Stock	Density	Quantity
St	Stipa tenuissima	Mexican Feather Grass	2L	5 / m2	13
Am	Achillea millefolium	Common yarrow	2L	5 / m2	15
Gt	Gillenia trifoliata		2L	5 / m2	11
Ama	Astrantia major		2L	5 / m2	7
Mix 17					
Abb	Species	Common Name	Root Stock	Density	Quantity
St	Stipa tenuissima	Mexican Feather Grass	2L	5 / m2	13
Am	Achillea millefolium	Common yarrow	2L	5 / m2	11
Gt	Gillenia trifoliata		2L	5 / m2	11
Ama	Astrantia major		2L	5 / m2	7
Mix 18					
Abb	Species	Common Name	Root Stock	Density	Quantity
St	Stipa tenuissima	Mexican Feather Grass	2L	5 / m2	12
Am	Achillea millefolium	Common yarrow	2L	5 / m2	11
Gt	Gillenia trifoliata		2L	5 / m2	11

Planting mixes to be planted in groups between 3 and 5.

Planting Palette

Trees



Acer campestre



Carpinus betulus 'Frans Fontaine'



Quercus robur

Shrubs



Cornus sanguinea



Hydrangea paniculata "Limelight"

Hedges



Lavandula angustifolia



Acer campestre



Carpinus betulus

Perennials



Achillea millefolium



Blechnum spicant



Carex testacea



Astrantia major



Dryopteris Filix mas



Filipendula ulmaria



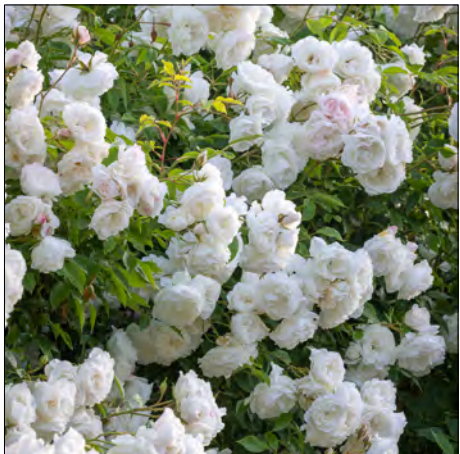
Liriope muscari



Lonicera periclymenum



Gillenia trifoliata



Rosa "Climbing Iceberg"



Seselearia autumnalis



Stipa tenuissima



Allium ursinum



Hyacinhioides non-scripta



NORTH

P06	27/01/2025	Revision number updated.	MR
P07	14/01/2025	Minor Updates	LJ
P06	16/12/2024	Updated Layout	LJ
P05	07/02/2024	Comment from tree officer	HR
P04	31/01/2024	Updates from comments	HR
REV	Date	Description	Drawn by

Base drawing:		Title:	Stage:
Soft Landscape Details			Construction

Client:
Whitberry Ltd

Project:
Kings Way, Burgess Hill

Date:	Drawn by:	Authorised:
10/01/2024	LJ	SD

Drawing Number:	REV:
201224-TMA-XX-DR-L-4300	P08
	Scale: NTS @A1



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APPENDIX 2 – LANDSCAPE MANAGEMENT SCHEDULE

ITEM	ACTION	SEASON / TIME OF YEAR	FREQUENCY
Trees'	Check plant survival and replace if necessary.	All Year	As required
	Check mulching depth and reapply to a depth of 75 mm.	Spring	Annually
	Formatively pruning young trees and recommended management of mature tree if necessary.	Winter / mid-Summer	As required
	Check tree stake and tie.	Summer	Annually
	*Irrigation.	Spring to Autumn	As required
	Weeding.	Spring to Autumn	As required
	Visual tree inspection	All Year	As required
Hedgerows	Check plant survival and replace if necessary.	All Year	As required
	Formatively prune hedgerows, check for nesting birds if undertaken inside nesting seasons.	September to February	Annually
Planting areas	Check plant survival and replace if necessary.	All Year	As required
	Check mulching depth and reapply to a depth of 75 mm.	Spring	Annually
	Pruning/coppice shrubs and plants.	Winter / mid-Summer	As required
	*Irrigation.	Spring to Autumn	As required

	Weeding.	Spring to Autumn	As required
Leaf Fall	Collect leaf litter	Autumn & Winter	3 to 4 visits
Lawn	Cutting/ Mowing	Spring to Autumn	Week / fortnight as required
	Topping (removing only the growing tips)	Autumn to Spring	As required
	Irrigation	Spring to Autumn	As required
	Fertiliser. Apply propriety spring feed to manufacturers guidance	Spring	Annually
	Leaf removal	Spring and Autumn	Twice a year
Meadow grassland	Cutting/ mowing to 50 mm Leaving the hay to dry and shed for 1-7 days the remove from site	Summer once established	Annually
	Cut/ mow to 50 mm	Summer to Autumn	As required
Arisings	Remove all arising and compost on site	All Year	As required
Litter	Remove litter and rubbish from public open areas.	All Year	As required
Wildlife boxes	Sparrow terraces and swallow boxes will be cleared of debris and old nests.	November to January	Annually

* Water requirement will be dependent on species, soil types and weather conditions, however newly planted standard trees up to 18-20 cm in girth will require approximately 30litres per day from April to September. This can be reduced in prolonged wet spells. Irrigation will be carried out for the first three growing seasons to ensure good root establishment.

APPENDIX 3 – GREAT CRESTED NEWT TOOLBOX TALK

APPENDIX 4 – ECOLOGICAL MITIGATION AND ENHANCEMENT MEASURES SUMMARY

HABITAT/SPECIES	SUMMARY OF MEASURES	TIMING
Trees	All trees proposed for retention will be suitably protected from harm during construction works	Pre-construction
Off-site area of ancient woodland	Exclusion zone of at least 15 m should apply here for any activities likely to lead to damage of this habitat. See Arboricultural Impact Assessment (AIA) for details.	Pre-construction
Reptiles	Reptile translocation to be undertaken within the site. See Reptile Mitigation Strategy for full details. As part of the mitigation, log piles and hibernacula will be installed.	Pre-Construction
Invasive plant species	Responsible removal of Buddleia from the site.	Site clearance
Dead wood management	Existing log piles, dead wood and brash located within the site will be retained in situ where possible or relocated elsewhere within the site.	Site Clearance
Badgers	A final inspection of the site should be undertaken during the vegetation clearance by a suitably qualified ecologist to confirm the continued absence of badger setts within the site and immediate surrounding area.	Site Clearance
Great Crested Newts	Toolbox talk to be given to staff to ensure those involved are aware of the risks of great crested newts being present, and what to do if they are found.	Site Clearance and throughout
Hedgehogs	Care to be taken during vegetation clearance to ensure no hedgehogs are harmed during works.	Site Clearance
Nesting Birds	To avoid destruction of active bird nests, it is recommended that vegetation removal is only undertaken outside the bird nesting season (March – August) Vegetation removal may only be undertaken during the nesting season if a careful check by a suitably experienced ecologist can confirm that no active bird nests are present.	Site Clearance

Wildlife Box Installation	Bat, Bird, Hedgehog and Invertebrate boxes to be installed on the site.	During construction
Management of Reptile Receptor Area	The reptile fence will be maintained and monitored throughout the construction process to ensure it remains intact and fit for purpose.	Throughout construction
Management/Monitoring of Reptile Receptor Area	The receptor area will be managed to maintain its suitability for reptiles. See Reptile Mitigation Strategy for details. Monitoring will include site visits every 2-4 weeks throughout the construction to ensure the reptile fence is maintained. Monitoring surveys will include reptile surveys in years 2 and 4 after development to ascertain the status of the reptile population on site. During the visit in the second year, the wildlife habitat will also be monitored to confirm its suitability for reptiles and advise on any required changes in habitats.	Post -construction
Monitoring of ecological enhancements	Checked annually by an ecologist for 5 years post construction. Repairs as required.	Post -construction
Bats	A wildlife sensitive lighting strategy has been designed to minimise light spill and maintain suitable commuting corridors. This will be adhered to.	Post -construction
Wildlife friendly landscaping	Landscaping to include wildlife friendly planting, including meadow habitat areas and shrubbery which will support local pollinators.	Post -construction

