

Persimmon Homes Ltd

Wykham Park Farm, Banbury

LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN

September 2022

FPCR Environment and Design Ltd

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1.0 INTRODUCTION

1.1 The following Landscape and Ecological Management Plan (LEMP) has been prepared by FPCR Environment and Design Ltd. on behalf of Persimmon Homes Ltd in response to Condition 18 of planning consent for development at Wykham Park Farm, Banbury (Cherwell District Council Application Number 14/01932/OUT) which states:

A Landscape and Ecological Management Plan (LEMP) for areas identified on plan ref JJG043/057 C shall be submitted to and approved by LPA prior to the commencement of new soft landscaping works or development (with the exception of works undertaken in accordance with Condition 50) within those identified areas. The LEMP shall include:

- Description and evaluation of the features to be managed;
- Ecological characteristics and constraints of the site that may influence management;
- Aims and objectives of management;
- Appropriate management options for achieving aims and objectives;
- Mechanism for management review, monitoring and, if necessary, remedial measures;
- Personnel responsible for implementation of the plan.

Thereafter, the LEMP shall be implemented and carried out as approved or in accordance with such modification/variation as may be agreed in writing by the LPA.

1.2 This LEMP sets out the creation and on-going management approaches for the landscape and ecology proposals associated with the site.

Site Location and Context

- 1.3 The site largely comprised improved grassland with areas of mixed semi-natural woodland, bare ground and hardstanding also present with the field boundaries largely bordered by hedgerows. There were no internationally designated sites within 5km of the site and no nationally designated sites within 2km of the site boundary. There were no locally designated sites present within the site boundary, however Salt Way potential Local Wildlife Site (pLWS) was located approximately 20m north of the site.
- 1.4 A suite of ecological surveys for protected species was undertaken on-site and within the wider site area between 2012-2014 and 2018 with an update walkover survey carried out within the phases 1 & 3 area in 2022. No evidence of bat roosts or great crested newts (GCN) was observed whilst bat activity surveys recorded relatively low numbers of common and widespread species using the site for foraging/commuting during the transects. Three outlier badger setts were recorded on-site in both 2013 and 2014, however no evidence of these setts was found during subsequent update surveys in 2018 and 2022. Although no dedicated reptile surveys were undertaken, an incidental sighting of a single grass snake was recorded during a walkover survey in 2012 within the wider site area. Full details of the surveys undertaken can be found in the ES Chapter (Gallagher Estates, 2014¹) and Ecological Appraisal (FPCR, 2022²).

¹ Gallagher Estates, 2014. Land at Wykham Park Farm, Banbury. Environmental Statement

² FPCR, 2022, Oakley Grove Phase 3, Royal Leamington Spa, Warwickshire – Ecological Appraisal



2.0 LEGISLATION AND POLICY

2.1 All relevant EU and UK nature conservation law will be adhered to in relation to the protection of ecological features and ecological enhancement. This will primarily include the protection afforded to nesting birds under the Wildlife and Countryside Act 1981 (as amended) and also with reference to the protection of water vole and bats and their roosts under the Conservation of Habitats and Species Regulations 2017 (as amended). Regard has also been given to the Protection of Badgers Act 1992, Local Biodiversity Action Plan (LBAP) and 'Habitats of Principal Importance' (HPI) as listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

3.0 FUNDING MECHANISMS

3.1 Long-term landscape and biodiversity management will be secured by way of a site wide management company that will be established prior to completion of the development that will be funded by the development. This will initiate and maintain the specific biodiversity objectives and habitats of principal ecological importance for the long-term in a sustainable manner. This will be part of a comprehensive management scheme undertaken by the management company to ensure the future management and maintenance of the site as a whole.

4.0 OBJECTIVES

Objective 1: Retain and Enhance Existing Habitats

- 4.1 Retained habitat areas include boundary hedgerows and mature and semi-mature trees. The aims for these areas are to:
 - Protect valuable habitats in situ during development and remediation works;JD
 - Enhance the existing ecological interest and provide additional habitat for species of interest known to be present within retained and disturbed habitats through appropriate management or intervention.

Objective 2: Develop Diversity and Sustainability in New Habitats

4.2 The proposals include the creation of new habitats to mitigate for loss of, and impacts to, existing habitats, enhance the biodiversity of the local area and maximise its value through appropriate management ensuring significant green links between habitats are maintained and created.

Objective 3: Management and Enhancement for Wildlife

4.3 Opportunities to ensure that protected/notable species are able to utilise retained areas and extend suitable areas for use by such species through the creation of a variety of habitats. Habitat creation measures will endeavour to provide a wide range of environmental conditions and habitats that are known to be of value to specific groups and to more generally occurring species.



Objective 4: Monitor Habitats and Allow Flexibility to the Management Approach

4.4 To monitor and manage retained and newly created habitats throughout the management period to ensure their ecological diversity is enhanced and maintained in the long-term in tandem with ensuring their safe and appropriate use. Feedback from site monitoring will be applied to appropriate refinement and/or revision of the plan, as long as the modifications that are agreed remain in accordance with the vision and objectives set out above.

5.0 HABITATS TO BE RETAINED AND PROTECTED, TO BE CREATED AND TO BE MANAGED FOR WILDLIFE

Objective 1: Retain and Enhance Existing Habitats

5.1 Retained habitats will be protected and enhanced in order to increase their biodiversity in the long-term. Those habitats to be retained within the footprint of the proposed development include:

Existing Hedgerows and Trees

- 5.2 The existing boundary hedgerows and trees are largely to be retained within the proposed scheme (refer to the Tree Protection Plan, Wardell Armstrong, 2014³). Retained mature trees will be left unmanaged unless otherwise dictated for reasons of public safety or to benefit woodland/tree structure or associated habitats or species. Recently planted individual trees will be managed in accordance with the management regime outlined in Section 6 below.
- 5.3 Retained trees and hedgerows in the vicinity of the construction works will be protected by high visibility fencing erected approximately 2m from the outside edge of the hedgerow. Trees will be protected by fencing erected according to their calculated root protection area (RPA) (refer to the Tree Protection Plan, (Wardell Armstrong, 2014). No removal of woody vegetation will take place during the bird nesting season (March to August, inclusive) unless a thorough survey by an appropriately experienced ecologist first confirms that no active nests are present. Any work will accord with the Wildlife and Countryside Act 1981 (as amended).
- 5.4 Trees will be inspected for signs of stress, disease or damage and appropriate remedial action taken. Arisings from any tree management activity will, where appropriate, be retained on site to create deadwood habitat to maximise invertebrate and bryophyte biodiversity. Where possible standing deadwood will be left *in-situ* to provide additional habitats.
- 5.5 Existing hedgerows will be gapped up with complementary native hedgerow species where required.
- 5.6 Hedgerows will be managed in rotation, cutting only half of the hedgerow stock within the site annually to ensure that there is a continuous supply of fruit during the winter months for birds and small mammal species. Hedgerows will be managed to a minimum height of 2m and a minimum width of 1.5m and cutting will take place outside of the breeding bird season in late January or February, avoiding any periods of heavy frost. A herbaceous strip measuring 2m either side of

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³ Wardell Armstrong, 2014. Wykham Park Farm – Tree Protection Plan



each hedgerow will be maintained through an appropriate mowing regime, to enhance the value of the hedgerow as a wildlife corridor.

Objective 2: Develop Diversity and Sustainability in New Habitats

- 5.7 As part of the proposals for the residential development (Detailed Soft Landscape Proposals, drawing numbers: P21-2662_100 P21-2662_106, Pegasus Group) new naturalistic areas will be created, to provide a matrix of new grassland areas and attenuation features together with existing habitats, creating corridors along the boundaries of the site to encourage the establishment and movement of wildlife.
- 5.8 The following section outlines the specification and implementation methods, with Section 6 outlining the works programme and management regime.

General

- 5.9 Shrub, tree and hedgerow planting as required are to be delivered and planted in accordance with Horticultural Trades Association (HTA) Standard 'Handling and establishing landscape plants' (obtainable from the HTA) Part III, paragraphs 6.2 to 6.6. and should also accord with the soft works drawings.
- 5.10 Planting is to remain materially undamaged, sturdy, healthy and vigorous, planted upright or well balanced with best side to front. Trees and shrubs are to be of good shape and without elongated shoots, grown in a suitable environment and hardened off before being delivered to the site.
- 5.11 All planting is to be true to name and free from pests, diseases, discoloration, weeds, fungus and physiological disorders.
- 5.12 All works are to be undertaken with due diligence being sure to leave the works area in a clean and tidy condition at completion and after any maintenance operations. Protect areas affected by planting operations using boards/tarpaulins and do not place excavated or imported material directly on adjacent grassed areas.
- 5.13 All plants should be stored only when necessary in accordance with the HTA's 'Handling and establishing landscape plants' Part I, Part II and Part III, paragraphs 1.3.3 to 1.3.6, 3.0, and 4.0.
- 5.14 If plants/trees are unobtainable, alternatives are to be agreed with the Landscape Architect in writing prior to ordering.
- 5.15 After planting, water plants to ensure that the full depth of topsoil is wetted. Apply water evenly and without damaging or displacing plants or soil. Continue to water as necessary to ensure the successful establishment and continued thriving of planting.
- 5.16 If water supplies are restricted or likely to become restricted by emergency legislation, do not carry out planting until instructed. If planting has been carried out, obtain instructions on watering.
- 5.17 Bare root deciduous planting shall be carried out from late October to late March, only during suitable ground and weather conditions; conifers and evergreens either September/October or April/May, herbaceous plants (including aquatic and marginal) September/October or March/April. Container grown plants at any time of year if ground and weather conditions are favourable. Planting shall not be carried out in waterlogged or frozen ground.

Ornamental Shrub Planting

- 5.18 Formal ornamental shrub and hedgerow planting will be located in more formal areas of the site.
- 5.19 Plants are to be maintained by suitable means, to prevent competition by weeds and grasses until planting has established.
- 5.20 Plant protection to be regularly inspected and any damaged protection replaced.
- 5.21 Plants found to be dead or dying within the first two years post planting to be replaced on a like-for-like basis as soon as possible within the next available planting season.
- 5.22 Until establishment, formative pruning will be undertaken once annually to keep shrubs tidy.
- 5.23 Ornamental hedgerows will be allowed to establish to a height of 1-2metres after which they will be cut once annually to a height of approximately 1 metre, with sides, ends and tops of the hedgerow pruned to an 'A' profile, where practicable and dependent on access, to achieve an appropriate shape and structure in relation to the height of the hedge.
- 5.24 Plants will be cut during the winter months, following fruiting, during frost free periods. Cutting should not be carried out during the bird nesting season (March-August) unless supervised by a suitably qualified person.
- 5.25 Following pruning operations, all arisings should be removed from the site.
- 5.26 Plant protection and any protective fencing will be removed once the hedgerows are established.

Amenity Grassland

- 5.1 New short sward amenity grassland areas will be established using a suitable seed mix such as 'British Seed House A22' as below, or similar approved, sown as per the manufacturer's instructions.
- 5.2 Species within this mix include:

Scientific Name	Common Name	%
Agrostis castellana	Highland Browntop Bentgrass	5
Festuca rubra	Borluna Slender Creeping Red Fescue	35
Lolium perenne	Calico Perennial Ryegrass	40
Lolium perenne	Cabrio Perennial Ryegrass	20

- 5.3 Areas to be sown will be first rotovated and raked or harrowed to produce a medium fine, firm tilth.

 Seed will be sown in the autumn or spring, selecting a time when the soil is moist and can be worked.
- 5.4 The above seed mix includes perennial species that can be slow to germinate and grow. Ground cover will therefore likely take longer to develop than conventional lawn sowings and may take 12-18 months to knit together as turf. Newly seeded areas will therefore be protected to prevent seedling destruction by pedestrians.

Tree Planting

5.5 New trees should be planted between October and March, avoiding periods of inundation or prolonged ground frost. This will accord with BS 8545:2014. Trees are to be mulched using wood chippings or bark to establish a 1m diameter around the tree stem.



- 5.6 Trees to be planted in accordance with BS 4428 Code of Practice for General Landscape Operations and double staked (10-12cm 14-16cm girth trees) or triple staked (16-18cm 19-20cm girth trees) and tied in prepared pits. These stakes can be removed after 2-3 years, unless there is soil or root movement when the tree is rocked. Stakes and ties to be regularly inspected and adjusted or replaced as necessary.
- 5.7 Trees should be watered during establishment to field capacity if the tree is under stress during dry periods.
- Trees found to be dead or dying within the first two years post planting to be replaced on a like-forlike basis as soon as possible within the next available planting season. After two years and throughout the preceding management period, grasslands at the base of trees are to be kept weed free and grass maintained as per amenity grass schedule, taking care not to damage trunks.
- 5.9 Within public areas, trees will be checked annually, and after major storms, for necessary remedial works, any works should be undertaken as advised by a suitably qualified tree person.
- 5.10 Pruning of dead, diseased or damaged branches should be carried out as appropriate to promote healthy growth and natural shape, and to favour a single central leading shoot.
- 5.11 Arisings from tree works will, where practical, be used to create dead wood piles within or adjacent to hedgerows or chipped to provide mulch for use in amenity planting areas. Alternatively, they will be removed from site.

Specimen Tree Planting Species List

Acer campestre Field maple

Acer campestre 'Elsrijk' Field Maple 'Elsrijk'

Acer campestre 'Streetwise' Field maple 'Streetwise'

Alnus glutinosa Common Alder

Amelanchier larmarkii Snowy Mesipilus

Betula nigra River Blrch
Betula pendula Silver Birch

Carpinus betulus 'Frans Fontaine' Hornbeam 'Frans Fontaine'

Crataegus monogyna Common Hawthorn

Malus Tschonoskii Crab Apple

Prunus 'Spire' Flowering Cherry 'Spire'
Prunus sargentii 'Rancho' Sargent Cherry 'Rancho'

Pyrus calleryana 'Chanticleer' Chanticleer Pear

Quercus ilexHolly OakQuercus RoburCommon OakQuercus rubraNorthern Red Oak

Salix fragilis Crack Willow Sorbus aria Whitebeam

Sorbus aucuparia European Mountain Ash



Tilia cordata 'Greenspire'

Greenspire Lime

Proposed Meadow Grassland

- 5.12 The Emorsgate EM3 special general purpose meadow mixture (or an equal and approved mix) is to be sown in the western section of the site as well as small areas in the south and south-east of the site in association with the proposed attenuation features as detailed in the landscape proposals. It includes the species shown below that are suited to a range of soil types and are typical of good quality semi-improved grassland found in traditional wildflower meadows.
- 5.13 The Emorsgate EH1 hedgerow mixture (or an equal and approved mix) is to be sown alongside the existing hedgerow on the northern boundary of the site as detailed in the landscape proposals. It includes the species shown below that are suited to a range of soil types and are typical of good quality semi-improved grassland found in traditional wildflower meadows.
- 5.14 These grassland habitats will provide suitable habitat for a wide range of invertebrates, enhancing the foraging opportunities along this linear feature for bats. The combination of flower seed heads and invertebrates will also be beneficial for birds and badgers which are known to be active in the local area. The meadow grassland habitats sown in association with proposed hedgerow and woodland planting will provide suitable and varied foraging habitat for this species.

Emorsgate EM3 Special General Purpose Meadow Mixture Species List

20% Wildflowers

TBD	Agrimonia eupatoria	Agrimony
TBD	Anthyllis vulneraria	Kidney Vetch
TBD	Carex flacca	Glaucous Sedge
TBD	Centaurea scabiosa	Greater Knapweed
TBD	Chaerophyllum temulum	Rough Chervil
TBD	Daucus carota	Wild Carrot
TBD	Filipendula ulmaria	Meadowsweet
TBD	Filipendula vulgaris	Dropwort
TBD	Galium verum	Lady's Bedstraw
TBD	Knautia arvensis	Field Scabious
TBD	Leucanthemum vulgare	Oxeye Daisy
TBD	Lotus corniculatus	Common Bird's-foot Trefoil
TBD	Malva moschata	Musk Mallow
TBD	Plantago lanceolata	Ribwort Plantain
TBD	Primula veris	Cowslip
TBD	Ranunculus acris	Meadow Buttercup
TBD	Rhinanthus minor	Yellow Rattle
TBD	Rumex acetosella	Sheep's Sorrel



TBDScabiosa columbariaSmall ScabiousTBDSilene latifoliaWhite CampionTBDTrifolium pratenseWild Red Clover

80% Grasses:

8 Agrostis capillaris Common Bent
32 Cynosurus cristatus Crested Dog's-tail

24 Festuca rubra Red fescue

16 Poa pratensis Smooth-stalked Meadow-grass

Hedgerow Mixture Species List

20% Wildflowers

TBD Agrimonia eupatoria Agrimony TBD Alliaria petiolata Garlic Mustard **TBD** Arctium minus Lesser Burdock **TBD** Anthriscus sylvestris Cow Parsley TBD Carex echinata Star Sedge TBD Centaurea nigra Common Knapweed **TBD** Chaerophyllum temulum Rough Chervil TBD Cruciata laevipes Crosswort **TBD** Daucus carota Wild Carrot TBD Wild Teasel Dispsacus fullonum TBD Filipendula ulmaria Meadowsweet Hedge Bedstraw TBD Galium album Meadow Crane's-bill **TBD** Geranium pratense

TBD Leucanthemum vulgare Oxeye Daisy
TBD Origanum vulgare Wild Marjoram

TBD Primula veris Cowslip

TBD Rumex acetosa Common Sorrel

TBD Saponaria officinalis Soapwort

TBD Silene dioica Red Campion

TBD Silene vulgaris Bladder Campion

TBD Torilis japonica Upright Hedge-parsley

TBD Vivia cracca Tufted Vetch

80% Grasses:

TBD Agrostis capillaris Common Bent

TBD Anthoxanthum odoratum Sweet Vernal-grass



TBD	Brachypodium sylvaticum	False Brome
TBD	Cynosurus cristatus	Crested Dog's-tail
TBD	Deschampsia cespitosa	Tudter Hair-grass
TBD	Festuca rubra	Red fescue
TBD	Poa nemoralis	Wood Meadow-grass

Creation and Management

- 5.15 Areas to be sown will be first rotovated and raked or harrowed to produce a medium fine, firm tilth. Fertiliser will not be applied at any point as this will lead to dominance of nutrient loving species such as broad-leaved grasses, nettles and docks. The seed mix will be sown at a density as per the general manufacturer's recommendation (4g/m2) to allow space for each species to establish and to produce good ground cover.
- 5.16 Seed will be sown in the autumn or spring, selecting a time when the soil is moist and can be worked. Seeding will be sown by hand broadcasting, seed fiddle, spinner, hydra seeding or grass seed drill on the surface and will not be raked or harrowed in.
- 5.17 Newly seeded areas will be protected to prevent seedling destruction by pedestrians.
- 5.18 Cutting the sward on a rotational basis will ensure that a continuous supply of nectar and seeds for local fauna are available across the site and floristic diversity is maintained. The different sward lengths will provide habitat diversity of interest to a range of local fauna including invertebrates, butterflies and small mammals.
- 5.19 All litter, stones or other debris will be collected and removed by the Contractor immediately prior to grass cutting operations.
- 5.20 All arisings will be left in situ for 48 hours to allow appropriate time for seeds to fall and any invertebrates to move back into the sward.
- 5.21 Arisings will then be removed to prevent enrichment of the soil through decomposition. This is likely to be achieved through bailing. Arisings removed from meadow grassland will be placed in piles not adjacent to public access routes or waterways to provide microhabitat for amphibians, invertebrates and small mammals.
- 5.22 Unwanted perennial weeds may need control by occasional spot treatment with herbicide.
- 5.23 Further details of the management regime are provided in Section 6 of this report.

Native Scrub Planting

- 5.24 A small area of scrub will be located on the south-western boundary of the site. Scrub should be planted between October and March, avoiding periods of inundation or prolonged ground frost.
- 5.25 Weeds can be controlled around the bases of trees and shrubs using non-residual herbicide during establishment. The use of herbicides will be avoided thereafter.
- 5.26 Following establishment, planting will be managed through coppicing on a three-year rotation with no more than 1/3rd of the overall resource cut each rotation. Dead wood will be retained within the site, except where there is a risk of significant disease.
- 5.27 Any failures will be replaced in the next planting season.



5.28 Scrub species will comprise the following:

Native Scrub Planting Speci	ies List	% of Mixture
Alnus glutinosa	Common Alder	5
Cornus sanguinea	Common Dogwood	25
Corylus avellana	Hazel	20
Prunus spinosa	Blackthorn	20
Salix caprea	Goat Willow	15
Salix cinerea	Grey Willow	15

Attenuation Features

- 5.29 Six new attenuation facilities will be created within the GI, one of which will be located on the western boundary of the site, three are located centrally within the site and the remaining two on the eastern boundary of the site. Design will be undertaken which will contribute towards biodiversity objectives. The attenuation features will be designed to hold some water throughout the year, with more extensive areas becoming seasonally wet during periods of increased rainfall.
- 5.30 The botanical diversity will provide foraging opportunities for a range of invertebrate species which will in turn provide opportunities for bird, bat and amphibian species with the attenuation features proposed to be seeded with a wetland wildflower meadow grassland (Emorsgate EM8 Meadow Mix for Wetlands (or similar approved)). These attenuation features will be bordered by grassland areas which will serve to increase the structural diversity of habitats whilst foraging opportunities for the local badger populations.

Marginal Vegetation Planti	ng Species List	% of Mixture
Cardamine pratensis	Cuckoo Flower	20
Carex pseudocyperus	Cyperus Sedge	10
Carex riparia	Greater Pond Sedge	10
Iris pseudacorus	Yellow iris	20
Lychnis flos-cuculi	Ragged Robin	15
Lythrum salicaria	Purple loosestrife	10
Persicaria amphibia	Amphibius Bistort	15

Creation and Management

- 5.31 To ensure successful colonisation of the different seed mixes used, marginal vegetation should not be seeded if the water levels are too high. Factors to consider when seeding these mixes include:
 - Sow in still wind conditions and bulk the seed with sand to make sowing easier
 - Ensure soil is saturated but not flooded.
 - Avoid sowing in low points or depressions.
 - Sow during April or May when daytime temperatures are in the range 10-25°C and nights are frost free.



- For bankside vegetation and large marginal species sow 20-125 viable seeds per square metre.
- Do not apply any fertiliser or topsoil dressing.
- 5.32 Marginal and emergent plants may be best introduced as young plants or cuttings if water levels are too high for effective seeding. Where introducing plants in this way the following factors will be taken into consideration:
 - Pot grown plants or plugs will be planted out in April or May when frosts have passed.
 - Plants can be obtained from a reputable supplier or can be grown in advance from seeds or cuttings. All material will be locally sourced.
 - Many wetland plants (e.g. reeds) spread via rhizomes and can be planted by transplanting the rhizomes.
 - Rhizomes will be dug out and transplanted in November to February. Care must be taken to avoid drying out.
 - Avoid incidental introduction of invasive non-native species with imported material.
 - Do not apply any fertiliser or introduce topsoil.
- 5.33 In addition, the following recommendations should be applied to the creation of all habitats within the proposed attenuation features:
 - Clearance operations will be carried out between September-November avoiding the egglaying/breeding season of amphibian and reptile season
 - Arisings will be left on pond margins for two weeks to allow invertebrates to move out of the vegetation, prior to removal
 - Cut tree/scrub branches to be retained as brash piles in suitable locations as faunal habitat

Objective 3: Management and Enhancement for Wildlife

- 5.34 The scheme will incorporate areas of visually attractive meadow grassland, short sward/amenity grassland, trees, scrub and ground flora.
- 5.35 Litter and dog waste bins will be provided at appropriate locations throughout the site and litter will be regularly collected and removed to avoid harm to wildlife or encouragement of pests.

Bird Boxes and Bat Boxes

- 5.36 A range of bat boxes will be used to provide various roosting opportunities across a range of environmental conditions for use throughout the year including during the hibernation period.
- 5.37 Bat boxes will be attached to retained trees throughout the site. The trees used will be determined by an ecologist on-site to ensure that the positioning of the bat boxes minimises potential disturbance to the new roosting habitat in relation to surrounding land use and maximises their potential for use by bats.
- 5.38 The bat boxes for installation on trees within the woodland in the north-west of the site will comprise four Schwegler 2F boxes (or similar), which are suitable for smaller British bats such as pipistrelle



Pipistrellus sp, and four Schwegler 2FN (or similar), suitable for larger British bats such as noctule *Nyctalus noctule* with three bat boxes installed per tree.

- 5.39 Bat boxes will be placed on a tree at a height of between 3m and 5m on southern, south-eastern and south-western aspects. A clear flight path will be provided to the entrance of each bat box.
- 5.40 Bird boxes would be installed at least 4m from the ground, on the north and east aspect of trees, thus avoiding strong sunlight and wet winds and with a clear flight path to the box.
- 5.41 The boxes should ideally be installed between October and March, when there are the least number of leaves on the trees and suitable locations are easier to identify. Any necessary remedial works to these trees should be completed prior to installation. It is proposed that three Schwegler 1B Nest boxes (32mm hole) (or similar) are installed on a retained tree to provide nesting opportunities for species such as blue tit *Cyanistes caeruleus* and great tit *Parus major*. These boxes generally have a high uptake rate.
- 5.42 The boxes should ideally be installed between October and March, when there are the least number of leaves on the trees and suitable locations are easier to identify. Any necessary remedial works to these trees should be completed prior to installation. The following boxes and quantities are suggested for within the woodland in the north-west of the site:
 - 3 x 1B Schwegler Nest Box (of similar (26mm Hole)
 - 3 x 1B Schwegler Nest Box (of similar (32mm Hole)
 - 3 x Woodstone Barcelona Open Nest Box
- 5.43 The installation of bat and bird boxes will be overseen by an appropriately experienced ecologist to ensure that the most suitable locations are chosen.

Artificial Lighting

- 5.44 Illumination either of external lighting or light spill from the development may impact on bats commuting and foraging along retained hedgerows, mature trees and associated periphery habitats. The lighting and layout of the proposed development will be designed to minimise light-spill onto habitats both within and adjacent to it that are used by the local bat population. This will be achieved by ensuring that the design of lighting is based upon guidelines presented in the Bat Conservation Trust & Institute of Lighting Engineers 'Bats and Lighting in the UK Bats and Built Environment Series', the Bat Conservation Trust 'Artificial Lighting and Wildlife Interim Guidance' and the Bat Conservation Trust 'Statement on the impact and design of artificial light on bats'. Therefore, the lighting scheme will include the following:
 - The strategic use of landscaping and planting to avoid light spill on sensitive habitats;
 - The avoidance of direct lighting of existing trees and hedgerows or proposed areas of habitat creation/landscape planting;
 - Unnecessary light spill will be controlled through a combination of directional lighting, low lighting columns, hooded/shielded luminaires or strategic planting;
 - All new column mounted car park luminaires shall be fitted with flat glass where appropriate to aid 0% upward light discharge;
 - Where appropriate, luminaires on the site boundary will be fitted with light baffles to prevent light spill.



Deadwood Refugia

5.45 Artificial hibernacula suitable for reptiles, small mammals, hedgehogs, invertebrates and amphibians will be created within areas of longer grassland adjacent to the SuDS features. These will comprise piles of wooden logs of varied size and structure which will be constructed to be 2-3m high, 2-3m in width and 1-2m deep and should be sited away from public footpaths and other high use areas or areas that are lit by street lighting.

6.0 LANDSCAPE AND ECOLOGICAL MANAGEMENT

6.1 The following section outlines the works programme and management regime.

Table 1: Proposed Rolling Ten Year Work Programme

Prescriptions	Years with Priority									
	1	2	3	4	5	6	7	8	9	10
Species-rich Grassland										
The Contractor will protect newly seeded areas where appropriate to prevent seedling destruction by pedestrians. Fertiliser will not be applied at any point.	✓									
Following establishment grassland will be mown on a rotational basis with areas being either mown twice annually in early spring (March) and late summer (late August-September) OR once during either early spring or late summer. Arisings will be left for 48 hours to allow dispersal of seeds and invertebrates prior to removal, to encourage grassland establishment and prevent soil enrichment and thatching.		√	√	√	√	~	√	✓	√	✓
Grassland adjacent to hedgerows and woodland/plantation habitat will be cut once on alternate years with some ruderal species being allowed to colonise for further species and habitat diversity. Arisings will be left for 48 hours to allow dispersal of seeds and invertebrates prior to removal, to encourage grassland establishment and prevent soil enrichment and thatching.	~	✓	✓	✓	✓	✓	V	√	~	✓
All litter, stones or other debris will be collected and removed by the Contractor immediately prior to grass cutting operations. Care shall be exercised when mowing or strimming around trees and hedges or other structures.	√	√	√	√	√	√	✓	√	√	✓
Spot treat persistent pernicious weeds using herbicide following the first season's growth and/or manual hand strimming of target areas either in late summer when adjacent grassland is mown or in early spring. Care will be taken when using herbicide adjacent to riparian and aquatic habitats to prevent pollution of such habitats.	As ro	equire	d	,						
Scrub										
Selective thinning of poor-quality specimens as necessary	✓				✓					✓



Prescriptions	Years with Priority									
	1	2	3	4	5	6	7	8	9	10
Invasive tree species management		✓				√				
Bramble/ivy control as necessary.	✓		✓		√		√		√	
Introduce coppicing where appropriate with rotational management					√					√
Monitor tree condition and undertake remedial works as necessary	√	√	√	✓	√	√	V	√	~	√
Create and maintain dead wood habitat	✓	~	√	~	✓	√	✓	✓	✓	√

fpcr

Prescriptions	Year	rs with	n Prio	rity						
Amenity Creedland	1	2	3	4	5	6	7	8	9	10
Amenity Grassland										
Areas of amenity grassland will be established using a suitable seed mix such as Germinal Mix A22 as per manufacturer's specifications.	√									
The Contractor will protect newly seeded areas where appropriate to prevent seedling destruction by pedestrians. Fertiliser will not be applied at any point.	√									
During initial establishment of new grassland, it will be mown to a height of 50mm 6-8 weeks after germination and subsequently to a height of 35-40mm as required, but not more regularly than once every 4 weeks until such a time as a knitted turf is established. Once established, amenity grassland will be cut 16 times per year between March and October.		✓	✓	~	~	√	V	√	✓	✓
All litter, stones or other debris will be collected and removed by the Contractor immediately prior to grass cutting operations.	✓	~	✓	~	V	√	✓	√	✓	V
Mowing will be reduced during prolonged dry periods and the mowing height increased to 50mm at such times. Similarly in very wet conditions all grass cutting operations will cease until conditions allow for grass cutting to take place.	As re	equire	d							
Spot treat persistent pernicious weeds using herbicide following the first season's growth and/or manual hand strimming of target areas either in late summer when adjacent grassland is mown or in early spring. Care will be taken when using herbicide adjacent to riparian and aquatic habitats to prevent pollution of such habitats.	As re	equire	d							
Native Tree Planting										
New trees planted between October and March, avoiding periods of inundation or prolonged ground frost. Trees to be mulched using wood chippings or bark to establish a 1m diameter around the tree stem. Planting blocks to be contained by rabbit proof fencing or rabbit guards.	✓									
Replace failed specimens on a like-for-like basis. Top up mulch where necessary.	√	✓	√							
Spraying or strimming of weeds to reduce competition and aid establishment. Spray and hand weed around tree boles.	√	√	√							
Examine all tree stakes and ties, replace or adjust as appropriate. If the tree has yet to establish, replace or adjust ties, spacers and tree tubes as appropriate. If the tree has established well, then remove all stakes, ties, spacers, tubes etc. and make good surfaces disturbed – filling any holes with suitable topsoil.	~	~	~							

fpcr

Prescriptions	Yea	rs wit	h Pric	ritv						
	1	2	3	4	5	6	7	8	9	10
Where periods of extreme drought occur, trees that have not yet established (not healthy, not in full leaf, suppressed growth) need to be watered where their tolerance to drought is deemed to be insufficient.	✓	*	√							
Management through pruning or trimming. Delay pruning and trimming works around the bird nesting season and after flowering if possible, otherwise a thorough survey by an appropriately experienced ecologist first confirms that no active bird nests are present. Any trees that are considered to possess bat roosting potential should first be inspected by a licenced bat worker prior to works to determine whether a roost is present.		√	√	√	✓	·	✓	V	√	✓
Ornamental Shrub Planting					1	'		ı		
Following planting, water shrubs in periods of extreme drought (2 or more weeks without substantial rainfall).	✓	✓	✓	√	✓					
Replace failed specimens on a like-for-like basis	✓	~	✓	✓	✓					
Remove weed growth by hand and top up mulch levels as necessary. Dead-head after flowering.			√	✓	V	*	✓	✓	√	~
Prune back shrubs (no more than one third of woody growth) during October to March. Trim shrubs back from paths etc. Trim topiary shrubs to the desired shape. Delay pruning and trimming works around the bird nesting season and after flowering if possible, otherwise a thorough survey by an appropriately experienced ecologist first confirms that no active bird nests are present		*			V			*		
General	•	•	•	,	•	•				
Fencing and gates shall have a twice annual inspection in spring and autumn.	√	V	✓	\	✓	V	✓	√	√	✓
Ensure access paths are free from weeds, trip hazards or other obstructions. This includes a once annual spray of weeds and any depressions / pits to be filled.	√	✓	√	✓	~	√	✓	✓	√	✓
Maintain all seating in good condition. Should any part of a seat be damaged prohibit use, obtain guidance and/ or repair or replace as required. Once annual spray and weed around footings. Repaint as required.	√	√	✓	~	✓	V	~	~	√	√
Bird boxes will have a non-invasive inspection in autumn or winter to check for damage. Replace lost or damaged boxes.	√	1	√	√	V	√	√	√	√	✓
Bat boxes will have a non-invasive visual inspection in autumn or winter to check for damage, unless a separate agreement has been agreed with Natural England. Replace lost or damaged boxes. Any work required to the bat boxes will be carried out by a licenced bat worker.	~	√	√	✓	✓	V	√	·	√	✓

fpcr

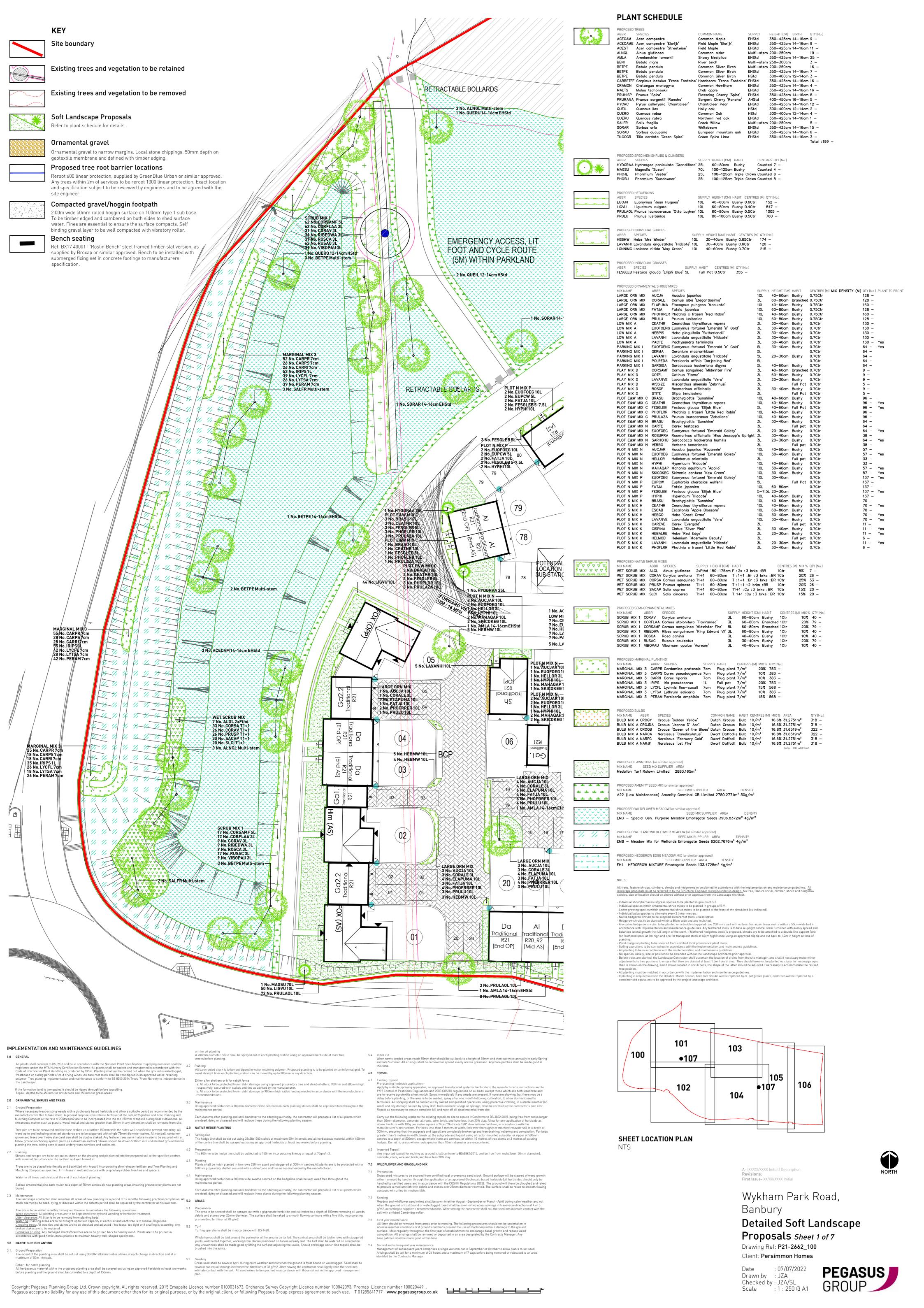
Prescriptions	Years with Priority									
	1	2	3	4	5	6	7	8	9	10
Log/brash piles to be created by habitat management arisings	√	V	✓	√	√	√	V	√	✓	✓
Litter will be removed from the site as part of the general management and maintenance visits.	√	√	√	√	√	√	√	√	√	✓
Litter bins and dog bins will be emptied at regular intervals to be determined based upon the level of use.	√	V	V	V	√	√	✓	√	√	√
Arboricultural visual inspection, as part of the tree safety risk assessment for the development.	√	√	√	√	√	√	√	√	√	✓
Monitor Landscaping and habitats annually and use results to inform future management for coming years. Results of this monitoring should be used to inform annual changes to the management plan, and at the end of the ten-year rolling work programme.	√	√	√	√	√	✓	✓	✓	√	✓
Attenuation Features										
Scrub and invasive weed encroachment management	√		✓				√			
Pond clearance	✓	✓	✓	✓	✓	√	√	✓	✓	√

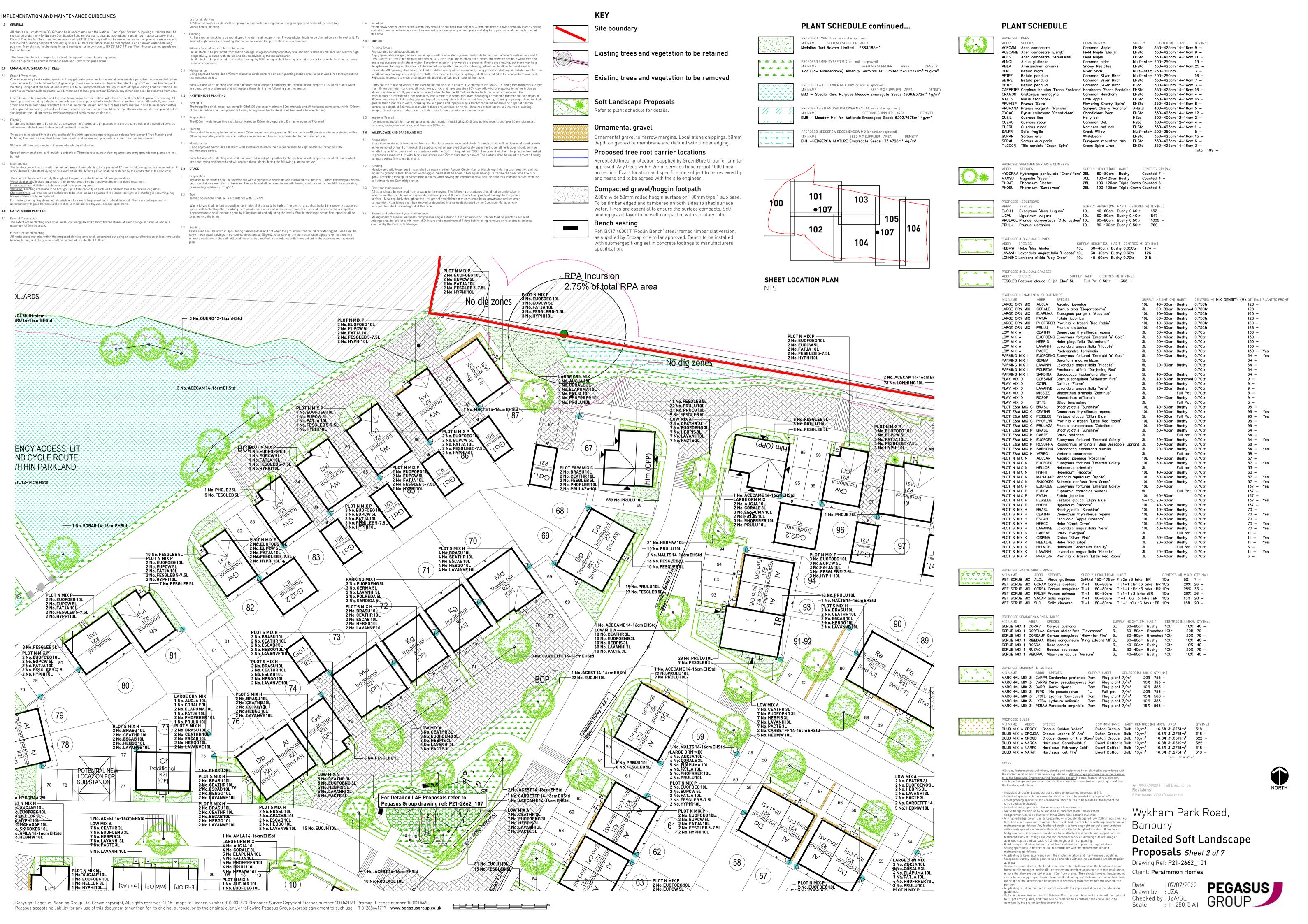
7.0 MONITOR AND MANAGE THE SITE FOR BIODIVERSITY IN THE LONG-TERM

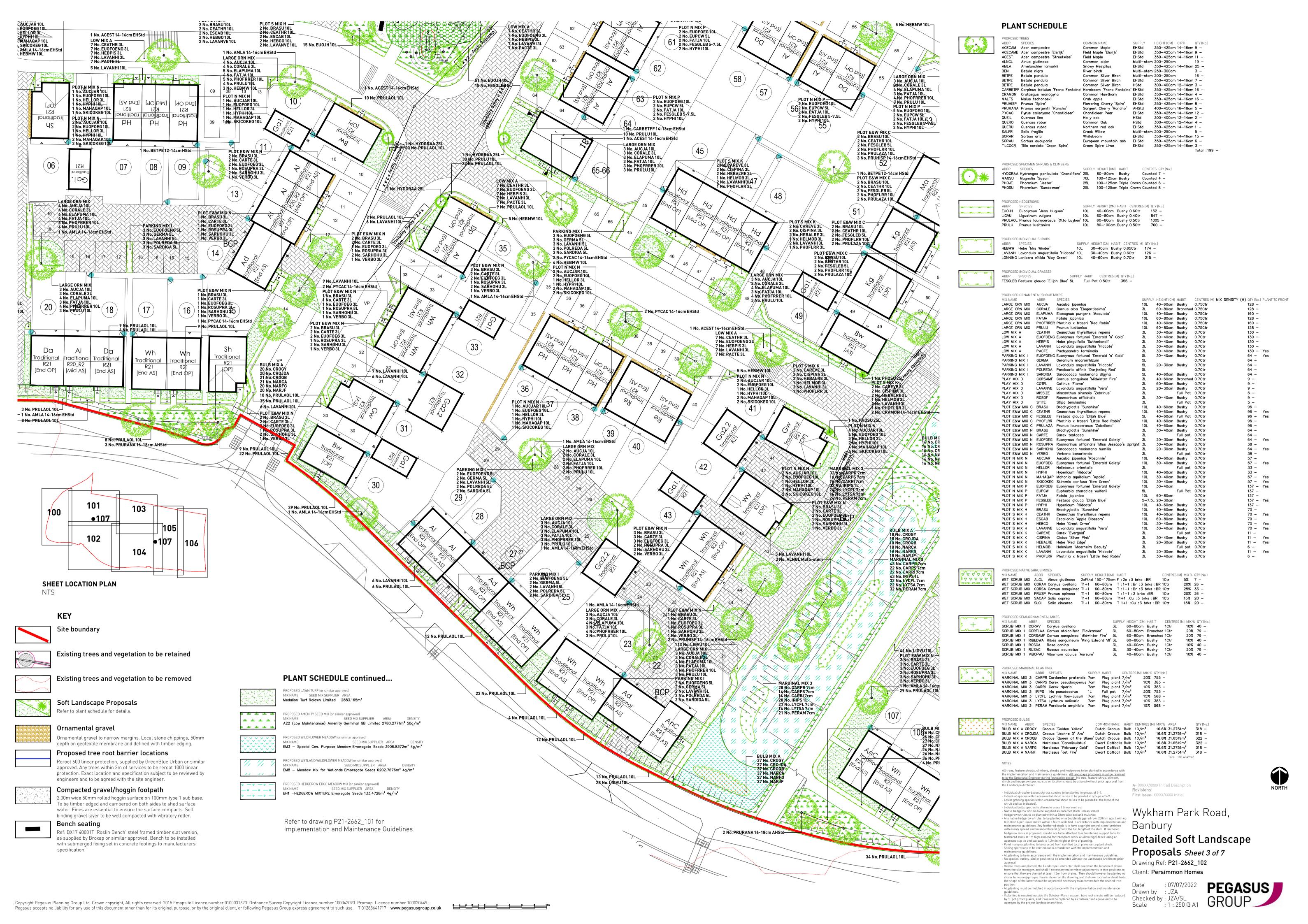
Objective 4: Monitor Developments and Allow Flexibility to the Management Approach

- 7.1 In order to ensure that the habitats created within the site reach and maintain their maximum value to nature conservation, all habitats will be monitored every year.
- 7.2 Results of this monitoring will be used to inform changes to the management plan and ten-year work programme. The prescriptions provided here will not be set in stone and will be altered if required in agreement with the LPA. The management plan will be reviewed on a ten-year rolling basis, with the work programme fully reviewed at the end of the initial five-year period by those members of staff involved in site management.

Appendix A – Detailed Landscape Proposals







IMPLEMENTATION AND MAINTENANCE GUIDELINES

All plants shall conform to BS 3936 and be in accordance with the National Plant Specification. Supplying nurseries shall be registered under the HTA Nursery Certification Scheme. All plants shall be packed and transported in accordance with the Code of Practice for Plant Handling as produced by CPSE. Planting shall not be carried out when the ground is waterlogged, frostbound or during periods of cold drying winds. All bare root stock shall be root dipped in an approved water-retaining polymer. Tree planting implementation and maintenance to conform to BS 8545:2014 Trees 'From Nursery to Independen

KEY

Site boundary

Existing trees and vegetation to be retained

Existing trees and vegetation to be removed

geotextile membrane and defined with timber edging.

Ornamental gravel to narrow margins. Local stone chippings, 50mm depth on

Soft Landscape Proposals

Refer to plant schedule for details.

Ornamental gravel

If the formation level is compacted it should be ripped through before topsoiling Topsoil depths to be $450 \mathrm{mm}$ for shrub beds and $150 \mathrm{mm}$ for grass areas.

ORNAMENTAL SHRUBS AND TREES

Where necessary treat existing weeds with a glyphosate based herbicide and allow a suitable period as recommended by the manufacturer for this to take effect. A general purpose slow release fertiliser at the rate of 75gm/m2 and Tree Planting and Mulching Compost at the rate of 20litres/m2 are to be incorporated into the top 150mm of topsoil during final cultivations. Al extraneous matter such as plastic, wood, metal and stones greater than 50mm in any dimension shall be removed from site trees up to and including selected standards are to be supported with single 75mm diameter stakes. All rootball, container grown and trees over heavy standard size shall be double staked. Any feature trees semi mature in size to be secured with a system (such as a deadman anchor). Stakes should be driven 500mm into undisturbed ground before planting the tree, taking care to avoid underground services and cables etc.

Shrubs and hedges are to be set out as shown on the drawing and pit planted into the prepared soil at the specified centres with minimal disturbance to the rootball and well firmed in.

Trees are to be placed into the pits and backfilled with topsoil incorporating slow release fertilizer and Tree Planting and Mulching Compost as specified. Firm trees in well and secure with proprietary rubber tree ties and spacers.

Spread ornamental pine bark mulch to a depth of 75mm across all new planting areas, ensuring groundcover plants are not

The landscape contractor shall maintain all areas of new planting for a period of 12 months following practical completion. All stock deemed to be dead, dying or diseased within the defects period shall be replaced by the contractor at his own cost.

Litter clearance: All litter is to be removed from planting beds.

Watering: Planting areas are to be brought up to field capacity at each visit and each tree is to receive 20 gallons.

Chacking the removal tree and the second second

Formative pruning: Any damaged shoots/branches are to be pruned back to healthy wood. Plants are to be pruned in accordance with good horticultural practice to maintain healthy well-shaped specimens..

NATIVE SHRUB PLANTING

The extent of the planting area shall be set out using 38x38x1200mm timber stakes at each change in direction and at a

All herbaceous material within the proposed planting area shall be sprayed out using an approved herbicide at least two weeks before planting and the ground shall be cultivated to a depth of 150mm. or : for pit planting

A 900mm diameter circle shall be sprayed out at each planting station using an approved herbicide at least two

All bare rooted stock is to be root dipped in water retaining polymer. Proposed planting is to be planted on an informal grid. To avoid straight lines each planting station can be moved by up to 300mm in any direction. a. All stock to be protected from rabbit damage using approved proprietory tree and shrub shelters, 900mm and 600mm high

 a. All stock to be protected from rabbit damage using approved proprietory tree and shrub snetters, youmm and boumm high respectively, secured with stakes and ties as advised by the manufacturer.
 b. All stock to be protected from rabbit damage by 900mm high rabbit fencing erected in accordance with the manufacturers Using approved herbicides a 900mm diameter circle centered on each planting station shall be kept weed free throughout the

Each Autumn after planting and until handover to the adopting authority, the contractor will prepare a list of all plants which are dead, dying or diseased and will replace these during the following planting season.

lge line shall be set out using 38x38x1200 stakes at maximum 50m intervals and all herbaceous material within 400mm of the centre line shall be sprayed out using an approved herbicide at least two weeks before planting.

The 800mm wide hedge line shall be cultivated to 150mm incorporating Enmag or equal at 75gm/m2.

Plants shall be notch planted in two rows 250mm apart and staggered at 300mm centres.All plants are to be protected with a 600mm proprietary shelter secured with a stake/cane and ties as recommended by the manufacture Using approved herbicides a 800mm wide swathe centred on the hedgeline shall be kept weed free throughout the

The area to be seeded shall be sprayed out with a glyphosate herbicide and cultivated to a depth of 100mm removing all weeds, debris and stones over 25mm diameter. The surface shall be raked to smooth flowing contours with a fine tilth, incorporating

Turfing operations shall be in accordance with BS 4428.

Whole turves shall be laid around the perimeter of the area to be turfed. The central area shall be laid in rows with staggered joints, well butted together, working from planks positioned on turves already laid. The turf shall be watered on completion. Any unevenness shall be made good by lifting the turf and adjusting the levels. Should shrinkage occur, fine topsoil shall be

Grass seed shall be sown in April during calm weather and not when the ground is frost bound or waterlogged. Seed shall be sown in two equal sowings in transverse directions at 35 g/m2. After sowing the contractor shall lightly rake the seed into intimate contact with the soil. All seed mixes to be specified in accordance with those set out in the approved management

When newly seeded areas reach 50mm they should be cut back to a height of 30mm and then cut twice annually in early Spring and late Summer. All arisings shall be removed or spread evenly across grassland. Any bare patches shall be made good at

Pre-planting herbicide application:Apply by suitable spraying apparatus, an approved translocated systemic herbicide to the manufacturer's instructions and to 1997 Control of Pesticides Regulations and 2002 COSHH regulations on all beds, except those which are both weed free and are to receive agrotextile sheet mulch. Spray immediately if any weeds are present, If none are showing, but there may be a delay before planting, or the area is to be seeded, spray after one month following cultivation, to allow dormant seed to terminate. All spraying shall be carried out by skilled and qualified operatives, using protective clothing, in suitable weather (no wind) and any damage caused by spray drift, from incorrect usage or spillage, shall be rectified at the contractor's own cost. at as necessary to ensure complete kill and rake off all dead material from sit

than 50mm diameter, concrete, all roots, wire, brick, and have less than 20% clay. Allow for pre-application of herbicide as above. Fertilize with 100g per metre square of Vitax "Nutricote 180" slow release fertilizer, in accordance with the manufacturer's instructions. For beds less than 5 metres in width, fork over thoroughly or machine rotavate soil to a depth of 300mm, ensuring that the subgrade and topsoil are completely broken up and free draining, relieving any compaction. For beds greater than 5 metres in width, break up the subgrade and topsoil using a tractor mounted subsoiler or ripper at 500mm centres to a depth of 500mm, except where there are services, or within 10 metres of tree stems or 3 metres of existing hedges. Do not rip areas where roots greater than 10mm diameter are encountered.

Any imported topsoil for making up ground, shall conform to BS:3882:2015, and be free from rocks (over 50mm diameter). concrete, roots, wire and brick, and have less 20% clay.

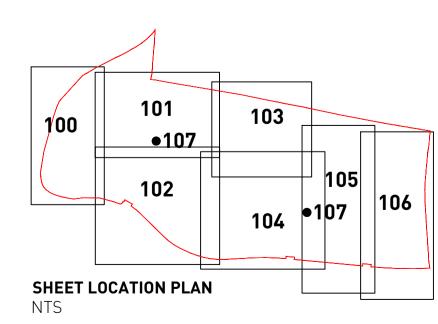
Grass seed mixtures to be sourced from certified local provenance seed stock. Ground surface will be cleared of weed growth either removed by hand or through the application of an approved Glyphosate based herbicide (all herbicides should only be handled by certified users and in accordance with the COSHH Regulations 2002). The ground will them be ploughed and raked to produce a medium tilth with debris and stones over 25mm diameter reomved. The surface shall be raked to smooth flowing

Meadow and wildflower seed mixes shall be sown in either August -September or March -April during calm weather and not when the ground is frost bound or waterlogged. Seed shall be sown in two equal sowings in transverse directions at 4 or 5 g/m2, according to supplier's recommendations. After sowing the contractor shall roll the seed into intimate contact with the soil with a ribbed Cambridge roller.

All litter should be removed from areas prior to mowing. The following procedures should not be undertaken in adverse weather conditions or if ground conditions prevent the use of machinery without damage to the ground surface. Mow regularly throughout the first year of establishment to encourage basal growth and reduce weed

Management of subsequent years comprises a single Autumn cut in September or October to allow plants to set seed. Arisings shall be left for a minimum of 24 hours and a maximum of 7 days before being removed or relocated to an area

competition. All arisings shall be removed or deposited in an area designated by the Contracts Manager. Any



Proposed tree root barrier locations Reroot 600 linear protection, supplied by GreenBlue Urban or similar approved. Any trees within 2m of services to be reroot 1000 linear protection. Exact location and specification subject to be reviewed by engineers and to be agreed with the

Compacted gravel/hoggin footpath

2.00m wide 50mm rolled hoggin surface on 100mm type 1 sub base. To be timber edged and cambered on both sides to shed surface water. Fines are essential to ensure the surface compacts. Self binding gravel layer to be well compacted with vibratory roller.

Bench seating

Ref: BX17 40001T 'Roslin Bench' steel framed timber slat version, as supplied by Broxap or similar approved. Bench to be installed with submerged fixing set in concrete footings to manufacturers

PLANT SCHEDULE continued...

MIX NAME SEED MIX SUPPLIER AREA Medalion Turf Rolawn Limited 2883.165m²

PROPOSED AMENITY SEED MIX (or similar approved) SEED MIX SUPPLIER AREA A22 (Low Maintenance) Amenity Germinal GB Limited 2780.2771m² 50g/m² PROPOSED WILDFLOWER MEADOW (or similar approved)

SEED MIX SUPPLIER AREA EM3 - Special Gen. Purpose Meadow Emorsgate Seeds 3906.8372m² 4g/m² PROPOSED WETLAND WILDFLOWER MEADOW (or similar approved)

EM8 - Meadow Mix for Wetlands Emorsgate Seeds 6202.7676m² 4g/m²

PROPOSED HEDGEROW EDGE MEADOW MIX (or similar approved) SEED MIX SUPPLIER AREA EH1 -HEDGEROW MIXTURE Emorsgate Seeds 133.4728m² 4g/m²

SEED MIX SUPPLIER AREA



SUPPLY HEIGHT (CM) HABIT HYDGRAA Hydrangea paniculata 'Grandiflora' 25L 60-80cm Bushy MAGSU Magnolia 'Susan' 100-125cm Bushy Counted 4 -PHOJE Phormium 'Jester' 100-125cm Triple Crown Counted 8 -25L 100-125cm Triple Crown Counted 8 -PHOSU Phormium 'Sundowner'

CARBETFF Carpinus betulus 'Frans Fontaine' Hornbeam 'Frans Fontaine' EHStd

COMMON NAME

Field Maple

River birch

Crab apple

Holly oak

Common alder

Snowy Mesipilus

Common Silver Birch

Common Silver Birch

Common Silver Birch

Common Hawthorn

Chanticleer Pear

Northern red oak

Green Spire Lime

Common Oak

Crack Willow

Whitebeam

Flowering Cherry 'Spire' EHStd

European mountain ash EHStd

Sargent Cherry 'Rancho' AHStd

Common Maple

Field Maple 'Elsrijk'

PLANT SCHEDULE

ACECAME Acer campestre 'Elsrijk'

AMLA Amelanchier lamarkii

Betula pendula

PRURANA Prunus sargentii 'Rancho'

PYCAC Pyrus calleryana 'Chanticleer'

TILCOGR Tilia cordata 'Green Spire'

PROPOSED SPECIMEN SHRUBS & CLIMBERS

CRAMON Crataegus monogyna

MALTS Malus tschonoskii

PRUHISP Prunus 'Spire'

QUEIL Quercus ilex

QUERO Quercus robur

QUERU Quercus rubra

SALFR Salix fragilis

SORAR Sorbus aria

SORAU Sorbus aucuparia

ACEST Acer campestre 'Streetwise

ABBR SPECIES

ACECAM Acer campestre

ALNGL Alnus glutinosa

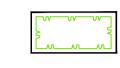
BENI Betula nigra

BETPE Betula pendula

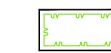
BETPE Betula pendula



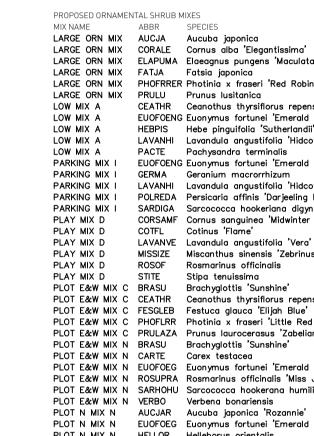
PROPOSED HEDGEROWS SUPPLY HEIGHT (CM) HABIT CENTRES (M) QTY (No.) ABBR SPECIES 10L 40-60cm Bushy 0.6Ctr 152 -EUOJH Euonymus 'Jean Hugues' 10L 60-80cm Bushy 0.4Ctr 847 -LIGVU Ligustrum vulgare PRULAOL Prunus laurocerasus 'Otto Luyken' 10L 60-80cm Bushy 0.5Ctr 1005 -10L 80-100cm Bushy 0.5Ctr PRULU Prunus Iusitanica



PROPOSED INDIVIDUAL SHRUBS SUPPLY HEIGHT (CM) HABIT CENTRES (M) QTY (No.) ABBR SPECIES 10L 30-40cm Bushy 0.65Ctr 174 -HEBMW Hebe 'Mrs Winder' LAVANHI Lavandula angustifolia 'Hidcote' 10L 30-40cm Bushy 0.6Ctr 126 -LONNIMG Lonicera nitida 'May Green' 10L 40—60cm Bushy 0.7Ctr 215 —



PROPOSED INDIVIDUAL GRASSES ABBR SPECIES FESGLEB Festuca glauca 'Elijah Blue' 5L Full Pot 0.5Ctr 355 -



LARGE ORN MIX PRULU Prunus Iusitanica 60-80cm Bushy 0.75Ctr CEATHR Ceanothus thyrsiflorus repens 30-40cm Bushy 0.7Ctr EUOFOENG Euonymus fortunei 'Emerald 'n' Gold' 30-40cm Bushy 0.7Ctr 30-40cm Bushy 0.7Ctr HEBPIS Hebe pinguifolia 'Sutherlandii' LAVANHI Lavandula angustifolia 'Hidcote' 30-40cm Bushy 0.7Ctr 130 - Yes PACTE Pachysandra terminalis 30-40cm Bushy 0.7Ctr EUOFOENG Euonymus fortunei 'Emerald 'n' Gold' 30-40cm Bushy 0.7Ctr GERMA Geranium macrorrhizum LAVANHI Lavandula angustifolia 'Hidcote' 20-30cm Bushy 0.7Ctr POLREDA Persicaria affinis 'Darjeeling Red' 40-60cm Bushy 0.7Ctr SARDIGA Sarcococca hookeriana digyna CORSAMF Cornus sanguinea 'Midwinter Fire' 40-60cm Branched 0.7Ctr COTFL Cotinus 'Flame' 60-80cm Bushy 0.7Ctr 20-30cm Bushy 0.7Ctr LAVANVE Lavandula angustifolia 'Vera' Full Pot 0.7Ctr MISSIZE Miscanthus sinensis 'Zebrinus' 30-40cm Bushy 0.7Ctr Rosmarinus officinalis STITE Stipa tenuissima Full Pot 0.7Ctr 40-60cm Bushy 0.7Ctr PLOT E&W MIX C BRASU Brachyglottis 'Sunshine' 40-60cm Bushy 0.7Ctr PLOT E&W MIX C CEATHR Ceanothus thyrsiflorus repens PLOT E&W MIX C FESGLEB Festuca alauca 'Elijah Blue' 40-60cm Full Pot 0.7Ctr PLOT E&W MIX C PHOFLRR Photinia x fraseri 'Little Red Robin' 40-60cm Bushy 0.7Ctr PLOT E&W MIX C PRULAZA Prunus laurocerasus 'Zabeliana' 40-60cm Bushy 0.7Ctr PLOT E&W MIX N BRASU Brachyglottis 'Sunshine' 30-40cm Bushy 0.7Ctr PLOT E&W MIX N CARTE Carex testacea Full pot 0.7Ctr 20-30cm Bushy 0.7Ctr PLOT E&W MIX N EUOFOEG Euonymus fortunei 'Emerald Gaiety' PLOT E&W MIX N ROSUPRA Rosmarinus officinalis 'Miss Jessopo's Upright' 3L 30-40cm Bushy 0.7Ctr PLOT E&W MIX N SARHOHU Sarcococca hookerana humilis 20-30cm Bushy 0.7Ctr PLOT E&W MIX N VERBO Verbena bonariensis Full pot 0.7Ctr 40-60cm Bushy 0.7Ctr PLOT N MIX N AUCJAR Aucuba japonica 'Rozannie' PLOT N MIX N EUOFOEG Euonymus fortunei 'Emerald Gaiety' 30-40cm Bushy 0.7Ctr PLOT N MIX N HELLOR Helleborus orientalis Full pot 0.7Ctr PLOT N MIX N HYPHI Hypericum 'Hidcote' 40-60cm Bushy 0.7Ctr PLOT N MIX N MAHAQAP Mahonia aquifolium 'Apollo' 30-40cm Bushy 0.7Ctr PLOT N MIX N SKICOKEG Skimmia confusa 'Kew Green' 30-40cm Bushy 0.7Ctr PLOT N MIX P EUOFOEG Euonymus fortunei 'Emerald Gaiety' 30-40cm Full Pot 0.7Ctr PLOT N MIX P EUPCW Euphorbia characias wulfenii PLOT N MIX P FATJA Fatsia japonica 10L 60-80cm PLOT N MIX P FESGLEB Festuca alauca 'Elijah Blue 5-7.5L 20-30cm 0.7Ctr 137 - Yes PLOT N MIX P 10L 40-60cm Bushy 0.7Ctr HYPHI Hypericum 'Hidcote' PLOT S MIX H BRASU Brachyglottis 'Sunshine' 40-60cm Bushy 0.7Ctr PLOT S MIX H CEATHR Ceanothus thyrsiflorus repens 40-60cm Bushy 0.7Ctr PLOT S MIX H ESCAB Escallonia 'Apple Blossom' 60-80cm Bushy 0.7Ctr PLOT S MIX H HEBGO Hebe 'Great Orme' 30-40cm Bushy 0.7Ctr PLOT S MIX H LAVANVE Lavandula angustifolia 'Vera 30-40cm Bushy 0.7Ctr PLOT S MIX K CAREVE Carex 'Evergold' Full pot 0.7Ctr . 30-40cm Bushy 0.7Ctr PLOT S MIX K CISPINA Cistus 'Silver Pink'

HEIGHT (CM) GIRTH QTY (No.)

350-425cm 14-16cm 9 -

350-425cm 14-16cm 9 -

350-425cm 14-16cm 11 -

350-425cm 14-16cm 7 -

300-400cm 12-14cm 3 -

350-425cm 14-16cm 16 -

350-425cm 14-16cm 4 -

350-425cm 14-16cm 16 -

400-450cm 16-18cm 5 -

350-425cm 14-16cm 8 -

350-425cm 14-16cm 12

300-400cm 12-14cm 2 -

300-400cm 12-14cm 4 -

350-425cm 14-16cm 1 -

350-425cm 14-16cm 6 -

350-425cm 14-16cm 3 -

10L 40-60cm Bushy 0.75Ctr

60-80cm Branched 0.75Ctr

40-60cm Bushy 0.75Ctr

60-80cm Bushy 0.75Ctr

40-60cm Bushy 0.75Ctr

20-30cm Bushy 0.7Ctr

30-40cm Bushy 0.7Ctr

Full pot 0.7Ctr 20-30cm Bushy 0.7Ctr

Total :199 -

SUPPLY HEIGHT (CM) HABIT CENTRES (M) MIX DENSITY (M) OTY (No.) PLANT TO FRONT

128 -

11 – Yes

6 -

EHStd 350-425cm 14-16cm 15 -

EHStd 350-425cm 14-16cm 25 -

Multi-stem 250-300cm 3 -

Multi-stem 200-250cm

Multi-stem 200-250cm

Multi-stem 200-250cm

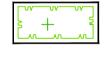
EHStd

EHStd

EHStd



PROPOSED NATIVE SHRUB MIXES MIX NAME ABBR SPECIES SUPPLY HEIGHT (CM) HABIT WET SCRUB MIX ALGL Alnus glutinosa 2xFthd 150-175cm F:2x:3 brks:BR 1Ctr WET SCRUB MIX CORAV Corylus avellana T1+1 60-80cm T:1+1:Br:3 brks:BR 1Ctr WET SCRUB MIX CORSA Cornus sanguinea T1+1 60-80cm T:1+1:Br:3 brks:BR:1Ctr 25% 33 -WET SCRUB MIX PRUSP Prunus spinosa T1+1 60-80cm T:1+1:2 brks:BR 1Ctr WET SCRUB MIX SACAP Salix caprea T1+1 60-80cm T1+1 :Cu :3 brks :BR 1Ctr WET SCRUB MIX SLCI Salix cincerea T1+1 60-80cm T 1+1 :Cu : 3 brks :BR 1Ctr 15% 20 -



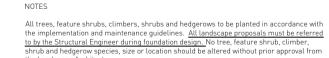
SCRUB MIX 1 CORAV Corylus avellana 60-80cm Bushy 1Ctr SCRUB MIX 1 CORFLAA Cornus stolonifera 'Flaviramea' 60-80cm Branched 1Ctr SCRUB MIX 1 CORSAMF Cornus sanguinea 'Midwinter Fire' 5L 60-80cm Branched 1Ctr 20% 79 -SCRUB MIX 1 RIBEDWA Ribes sanguineum 'King Edward VII' 3L 60-80cm Bushy 1Ctr 10% 40 -SCRUB MIX 1 ROSCA Rosa canina 40-60cm Bushy 1Ctr 10% 40 -SCRUB MIX 1 RUSAC Ruscus aculeatus 30-40cm Bushy 1Ctr SCRUB MIX 1 VIBOPAU Viburnum opulus 'Aureum' 40-60cm Bushy 1Ctr



MIX NAME MARGINAL MIX 3 CARPR Cardamine pratensis 7cm Plug plant 7/m² MARGINAL MIX 3 CARPS Carex pseudocyperus 7cm Plug plant 7/m² MARGINAL MIX 3 CARRI Carex riparia 7cm Plug plant 7/m² MARGINAL MIX 3 IRIPS Iris pseudacorus 1L Full pot 7/m² 20% 753 -MARGINAL MIX 3 LYCFL Lychnis flos—cuculi 7cm Plug plant 7/m²
MARGINAL MIX 3 LYTSA Lythrum salicaria 7cm Plug plant 7/m² 15% 568 -MARGINAL MIX 3 PERAM Persicaria amphibia 7cm Plug plant 7/m²



MIX NAME ABBR SPECIES COMMON NAME HABIT CENTRES (M) MIX % AREA Dutch Crocus Bulb 10/m² 16.6% 31.2751m² 318 -BULB MIX A CROGY Crocus 'Golden Yellow' BULB MIX A CROJDA Crocus 'Jeanne D' Arc' Dutch Crocus Bulb 10/m² BULB MIX A CROQB Crocus 'Queen of the Blues' Dutch Crocus Bulb 10/m2 BULB MIX A NARCA Narcissus 'Canaliculatus' Dwarf Daffodils Bulb 10/m² 16.8% 31.6519m² 322 — BULB MIX A NARFG Narcissus 'February Gold' Dwarf Daffodil Bulb 10/m² 16.6% 31.2751m² 318 — BULB MIX A NARJF Narcissus 'Jet Fire' Dwarf Daffodil Bulb 10/m² 16.6% 31.2751m² 318 -



PLOT S MIX K HEBALRE Hebe 'Red Edge'

PROPOSED SEMI-ORNAMENTAL MIXES

PROPOSED BULBS

PLOT S MIX K HELMOB Helenium 'Moerheim Beauty'

PLOT S MIX K LAVANHI Lavandula angustifolia 'Hidcote'

PLOT S MIX K PHOFLRR Photinia x fraseri 'Little Red Robin'

the Landscape Architect. Individual shrub/herbaceous/grass species to be planted in groups of 3-7.
 Individual species within ornamental shrub mixes to be planted in groups of 5-9. Lower growing species within ornamental shrub mixes to be planted at the front of the Native hedgerow shrubs to be supplied as bareroot stock unless stated Hedgerow shrubs to be planted within a 80cm wide bed and mulched.

- Any native hedgerow shrubs to be planted on a double staggered row, 250mm apart with no less than 6 per linear metre within a 50cm wide bed in accordance with implementation and maintenance guidelines. Any feathered stock is to have a upright central stem furnished with evenly spread and balanced lateral growth the full length of the stem. If feathered hedgerow stock is proposed, shrubs are to be attached to a double line support (one for feathered stock at 1m high and one for transplant stock at 60cm high) fence using an approved clip tie and cut back to 1.2m in height at time of planting. Pond marginal planting to be sourced from certified local provenance plant stock. Soiling operations to be carried out in accordance with the implementation and maintenance guidelines. All planting to be in accordance with the implementation and maintenance guidelines

No species, variety, size or position to be amended without the Landscape Architects prior Before trees are planted, the Landscape Contractor shall ascertain the location of drains from the site manager, and shall if necessary make minor adjustments to tree positions to ensure that they are planted at least 1.5m from drains. They should however be planted no state of the state closer to houses/garages than is shown on the drawing, and if shown located in shrub beds the shape of the latter should be adjusted if necessary to accommodate the revised tree All planting must be mulched in accordance with the implementation and maintenance

If planting is required outside the October-March season, bare root shrubs will be replaced by 3L pot grown plants, and trees will be replaced by a containerised equivalent to be

A- (XX/XX/XXXX Initial) Description First Issue- XX/XX/XXXX Initial

Wykham Park Road,

Detailed Soft Landscape Proposals Sheet 4 of 7 Drawing Ref: **P21-2662_103**

Drawn by : JZA Checked by : JZA/SL Scale : 1 : 250 @ A1

Client: **Persimmon Homes**







PLA	NT SCHEDULE					
PROPOSEL ABBR ACECAM ACECAME ACEST ALNGL AMLA BENI BETPE	TREES SPECIES Acer campestre	COMMON NAME Common Maple Field Maple 'Elsrijk' Field Maple Common alder Snowy Mesipilus River birch Common Silver Birch	EHStd Multi-stem	HEIGHT (CM) 0 350-425cm 1 350-425cm 1 200-250cm 1 250-425cm 1 200-250cm 200-250cm	4–16cm 4–16cm 4–16cm 4–16cm	9 – 11 – 19 –
ВЕТРЕ	Betula pendula	Common Silver Birch	EHStd	350-425cm 1	4-16cm	7 –
BETPE CARBETF CRAMON	Betula pendula F Carpinus betulus 'Frans Fontaine' Crataegus monogyna	Common Silver Birch Hornbeam 'Frans Fontaine' Common Hawthorn	HStd EHStd EHStd	300-400cm 1 350-425cm 1 350-425cm 1	4-16cm	16 -
MALTS	Malus tschonoskii	Crab apple	EHStd	350-425cm 1	4-16cm	16 -
PRUHISP PRURANA		Flowering Cherry 'Spire' Sargent Cherry 'Rancho' Chanticleer Pear	EHStd AHStd	350-425cm 1 400-450cm 1 350-425cm 1	6-18cm	5 -
PYCAC QUEIL	Pyrus calleryana 'Chanticleer' Quercus ilex	Holly oak	EHStd HStd	300-400cm 1	2-14cm	2 -
QUERO QUERU	Quercus robur Quercus rubra	Common Oak Northern red oak	HStd EHStd	300-400cm 1 350-425cm 1		•
SALFR SORAR	Salix fragilis Sorbus aria	Crack Willow Whitebeam	Multi-stem EHStd	200-250cm 350-425cm 1		5 – 15 –
SORAU TILCOGR	Sorbus aucuparia Tilia cordata 'Green Spire'	European mountain ash Green Spire Lime	EHStd EHStd	350-425cm 1 350-425cm 1	4-16cm	6 -

CENTRES QTY (No.) Counted 7 -Counted 4 -100-125cm Triple Crown Counted 8 -100-125cm Triple Crown Counted 8 -

SUPPLY HEIGHT (CM) HABIT CENTRES (M) QTY (No.) 40-60cm Bushy 0.6Ctr 152 -60-80cm Bushy 0.4Ctr 60-80cm Bushy 0.5Ctr 80-100cm Bushy 0.5Ctr 760 -

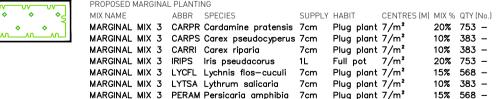
10L 30-40cm Bushy 0.65Ctr 174 -

ENTRES [M] MIX DENSITY (M) QTY (No.) PLANT TO FRON

POSED ORNAMEN	TAL SHRUB M	IXES				
NAME	ABBR	SPECIES	SUPPLY	HEIGHT (CM)	HABIT	CEN
RGE ORN MIX	AUCJA	Aucuba japonica	10L	40-60cm	Bushy	0.7
RGE ORN MIX	CORALE	Cornus alba 'Elegantissima'	3L	60-80cm	Branched	0.7
RGE ORN MIX	ELAPUMA	Elaeagnus pungens 'Maculata'	10L	40-60cm	Bushy	0.7
RGE ORN MIX	FATJA	Fatsia japonica	10L	60-80cm	Bushy	0.7
RGE ORN MIX	PHOFRRER	Photinia x fraseri 'Red Robin'	10L	40-60cm	Bushy	0.7
RGE ORN MIX	PRULU	Prunus Iusitanica	10L	60-80cm	Bushy	0.7
V MIX A	CEATHR	Ceanothus thyrsiflorus repens	3L	30-40cm	Bushy	0.7
V MIX A	EUOFOENG	Euonymus fortunei 'Emerald 'n' Gold'	3L	30-40cm	Bushy	0.7
V MIX A	HEBPIS	Hebe pinguifolia 'Sutherlandii'	3L	30-40cm	Bushy	0.7
V MIX A	LAVANHI	Lavandula angustifolia 'Hidcote'	3L	30-40cm	Bushy	0.7
V MIX A	PACTE	Pachysandra terminalis	3L	30-40cm	Bushy	0.7
RKING MIX I	EUOFOENG	Euonymus fortunei 'Emerald 'n' Gold'	5L	30-40cm	Bushy	0.7
RKING MIX I	GERMA	Geranium macrorrhizum	5L			0.7
RKING MIX I	LAVANHI	Lavandula angustifolia 'Hidcote'	5L	20-30cm	Bushy	0.7
RKING MIX I	POLREDA	Persicaria affinis 'Darjeeling Red'	5L			0.7
RKING MIX I	SARDIGA	Sarcococca hookeriana digyna	5L	40-60cm	Bushy	0.7
AY MIX D	CORSAMF	Cornus sanguinea 'Midwinter Fire'	3L	40-60cm	Branched	0.7
AY MIX D	COTFL	Cotinus 'Flame'	3L	60-80cm	Bushy	0.7
AY MIX D	LAVANVE	Lavandula angustifolia 'Vera'	3L	20-30cm	Bushy	0.7
AY MIX D	MISSIZE	Miscanthus sinensis 'Zebrinus'	3L		Full Pot	0.7
AY MIX D	ROSOF	Rosmarinus officinalis	3L	30-40cm	Bushy	0.7
AY MIX D	STITE	Stipa tenuissima	3L		Full Pot	0.7
OT E&W MIX C	BRASU	Brachyglottis 'Sunshine'	10L	40-60cm	Bushy	0.7
OT E&W MIX C	CEATHR	Ceanothus thyrsiflorus repens	10L	40-60cm	Bushy	0.7
	FESGLEB	Festuca glauca 'Elijah Blue'	5L	40-60cm	Full Pot	0.7
OT E&W MIX C	PHOFLRR	Photinia x fraseri 'Little Red Robin'	10L	40-60cm	Bushy	0.7
OT E&W MIX C	PRULAZA	Prunus laurocerasus 'Zabeliana'	10L	40-60cm	Bushy	0.7
OT E&W MIX N	BRASU	Brachyglottis 'Sunshine'	3L	30-40cm	Bushy	0.7
OT E&W MIX N	CARTE	Carex testacea	3L		Full pot	0.7
OT E&W MIX N	EUOFOEG	Euonymus fortunei 'Emerald Gaiety'	3L	20-30cm	Bushy	0.7
OT E&W MIX N	ROSUPRA	Rosmarinus officinalis 'Miss Jessopp's Upright'		30-40cm	Bushy	0.7
OT E&W MIX N	SARHOHU	Sarcococca hookerana humilis	3L	20-30cm	Bushy	0.7
OT E&W MIX N	VERBO	Verbena bonariensis	3L		Full pot	0.7
OT N MIX N	AUCJAR	Aucuba japonica 'Rozannie'	10L	40-60cm	Bushy	0.7
OT N MIX N	EUOFOEG	Euonymus fortunei 'Emerald Gaiety'	10L	30-40cm	Bushy	0.7
OT N MIX N	HELLOR	Helleborus orientalis	3L		Full pot	0.7
N XIM N TO	HYPHI	Hypericum 'Hidcote'	10L	40-60cm	Bushy	0.7
OT N MIX N		Mahonia aquifolium 'Apollo'	10L	30-40cm	Bushy	0.7
NT AL AMM AL	CIZIONIZEO		4.01	70 40	D	\sim $-$

Full pot 0.7Ctr 20-30cm Bushy 0.7Ctr 30-40cm Bushy 0.7Ctr WET SCRUB MIX ALGL Alnus glutinosa 2xFthd 150-175cm F:2x:3 brks:BR WET SCRUB MIX CORAV Corylus avellana T1+1 60-80cm T :1+1 :Br :3 brks :BR 1Ctr WET SCRUB MIX CORSA Cornus sanguinea T1+1 60-80cm T:1+1:Br:3 brks:BR:1Ctr







First Issue- XX/XX/XXXX Initial

16.6% 31.2751m² 318 -

1Ctr

30-40cm Bushy 0.7Ctr

40-60cm Bushy 0.7Ctr 40-60cm Bushy 0.7Ctr

60-80cm Bushy 0.7Ctr

30-40cm Bushy 0.7Ctr

30-40cm Bushy 0.7Ctr

30-40cm Bushy 0.7Ctr

20-30cm Bushy 0.7Ctr

Full pot 0.7Ctr

15% 20 -

10% 40 -

Full Pot 0.7Ctr

0.7Ctr

0.7Ctr

137 —

11 - Yes

30–40cm

40-60cm Bushy

5-7.5L 20-30cm

Wykham Park Road, Banbury **Detailed Soft Landscape**

Proposals Sheet 5 of 7 Drawing Ref: **P21-2662_104** Client: **Persimmon Homes**

Drawn by : JZA Checked by : JZA/SL : 1 : 250 @ A1 Scale



