

NATIVE TREE PLANTING Strategic and Public Open Space Areas

Species	Form	Grth cm	Height cm	Root condition	Quantity
Acer campestre	EHS	14-16	425-600	65/65 L	24
Alnus glutinosa	EHS	14-16	425-600	65/65 L	15
Betula pendula	EHS	14-16	425-600	65/65 L	17
Betula pubescens	EHS	14-16	425-600	65/65 L	16
Carpinus betulus	EHS	14-16	425-600	65/65 L	18
Fagus sylvatica	EHS	14-16	425-600	65/65 L	15
Malus domestica	EHS	14-16	425-600	65/65 L	6
Prunus domestica	EHS	14-16	425-600	65/65 L	4
Populus tremula	EHS	14-16	425-600	65/65 L	16
Tilia cordata	EHS	14-16	425-600	65/65 L	10
Quercus robur	EHS	14-16	425-600	65/65 L	15
Sorbus aucuparia	EHS	14-16	425-600	65/65 L	11

ORNAMENTAL TREE PLANTING Side Roads, On Plot and Car Parking Areas

Species	Form	Grth cm	Height cm	Root condition	Quantity
Carpinus betulus 'Frans Fontaine'	EHS	14-16	425-600	65/65 L	15
Tilia cordata 'Greenspire'	EHS	14-16	425-600	65/65 L	24
Sorbus commata 'Embley'	EHS	14-16	425-600	65/65 L	20

NATIVE HEDGING

Species	Height/ spread cm	Post size (LxW)	Habit	Min no. of bushes	No. / m2
Carpinus betulus	60-80	2L	Feathered	4	5lin m
Fagus sylvatica	60-80	2L	Feathered	4	5lin m
Ligustrum vulgare	60-80	2L	Feathered	4	4lin m

NATIVE STRUCTURE MIX @ 1M CTRS

Species	Root Condition	Age + Size Transpl	Height cm	Quantity Area 5	Quantity Area 6	Total Quantity
Acer campestre (15%)	Bagged	2x	150-175	42	42	84
Crataegus monogyna (20%)	Bagged	1+1	40-60	56	56	112
Corylus avellana (20%)	Bagged	1+1	40-60	42	42	84
Cornus sanguineum (15%)	Bagged	1+2	100-125	28	28	56
Malus sylvestris (10%)	Bagged	1+1	40-60	28	28	56
Prunus spinosa (10%)	Bagged	1+1	40-60	28	28	56

NATIVE HEDGE TRANSPLANTS at 7 per linear metre, triple staggered row

Species	Root Condition	Age + Size Transpl	Height cm	Quantity Area 1	Quantity Area 2	Quantity Area 3	Quantity Area 4	Total Quantity
Acer campestre (20%)	Bagged	1+1	40-60	686	242	244	123	1275
Crataegus monogyna (30%)	Bagged	1+1	40-60	969	363	367	184	1913
Corylus avellana (10%)	Bagged	1+1	40-60	333	121	122	61	637
Cornus sanguineum (10%)	Bagged	1+1	40-60	333	121	122	61	637
Eunymus europaeus (10%)	Bagged	1+1	40-60	333	121	122	61	637
Ilex aquifolium (10%)	3L	-	40-60	333	121	122	61	637
Prunus spinosa (10%)	Bagged	1+1	40-60	333	121	122	61	637

SHRUB PLANTING - Including species for the RHS Plants for Pollinators Lists

Species	Height/ spread cm	Post size (LxW)	Habit	Min no. of bushes	No. / m2
Berberis 'Amstelveen'	20-30	2L	Bushy	3	3
Bergenia cordifolia	15-20	3L	-	-	5
'Purpurea'					
Buxus sempervirens 'Faulkner'	30-40	3L	Bushy	5	5
Berberis thunbergii atropurpurea 'Nana'	20-30	2L	Bushy	3	3
Cistus corbatiensis	30-40	3L	Bushy	4	3
Cornus alba 'Elegantissima'	40-60	3L	Branched	3	1.5
Cornus alba 'Kesselringii'	40-60	3L	Branched	4	1.5
Cornus alba 'Elegantissima'	40-60	3L	Branched	3	1.5
Carex obovata 'Evergold'	20-30	2L	-	-	5
Cotoneaster 'Skoopholm'	30-40	3L	Spreading	3	3
Cistus 'Silver Pink'	30-40	3L	Bushy	4	3
Cornus sanguinea 'Midwinter Fire'	40-60	3L	Branched	3	4
Choisya ternata	30-40	3L	Bushy	7	1.5
Elaeagnus x oblongifolia	30-40	3L	Bushy	3	1.5
Eunymus 'Emerald 'n' Gold'	20-30	3L	Bushy	7	5
Eunymus 'Emerald Gaiety'	20-30	3L	Bushy	7	5
Geranium 'Johnsons Blue'	20-30	2L	-	-	5
Hebe albertiana 'Red Edge'	20-30	3L	Bushy	5	3
Hebe rakaiensis	20-30	3L	Bushy	5	3
Hypericum 'Hidcote'	30-40	3L	Bushy	5	2
Hebe 'Mrs Winder'	20-30	3L	Bushy	7	3
Heuchera 'Sugar Frosting'	20-30	2L	-	-	5
Lavandula 'Hidcote'	20-30	3L	Bushy	5	5
Lonicera 'Maygreen'	30-40	2L	Bushy	3	3
Mahonia 'Appalo'	30-40	3L	Bushy	3	2.5
Olearia haseltii	30-40	3L	Bushy	2	3
Osmanthus burkwoodii	30-40	3L	Bushy	5	1.5
Potentilla 'Abbotswood'	30-40	3L	Bushy	4	2.5
Potentilla 'Elizabeth'	30-40	4L	Bushy	6	2.5
Potentilla 'Red Ace'	30-40	3L	Bushy	4	2.5
Prunus 'Otto Luyken'	30-40	3L	Bushy	3	2
Photinia x Fraseri 'Red Robin'	40-60	3L	Branched	6	1.5
Rosa 'Kent'	30-40	3L	Bushy	4	3
Rosa 'Hertfordshire'	30-40	3L	Bushy	3	3
Rubus 'Betty Ashburner'	30-40	3L	Branched	5	3
Spiraea 'Anthony Waterer'	30-40	3L	Branched	5	3
Spiraea 'Goldflame'	20-30	2L	Bushy	5	3
Symphoricarpos 'Hancock'	40-60	3L	Branched	2	2
Sarcococca hookeriana	30-40	3L	Bushy	3	3
Skimmia 'Kew White'	30-40	3L	Bushy	3	3
Skimmia japonica 'Rubella'	30-40	3L	Bushy	3	3
Senecio 'Sunshine'	30-40	3L	Bushy	4	2
Viburnum davidii	30-40	3L	Bushy	3	3
Viburnum tinus 'Eve Price'	30-40	3L	Bushy	7	1.5

POND EDGE (planted randomly - up to 0.5m above settled water level)

Species	Root condition	Nc. / m2	Area A	Area B	Area C	Area D	Area E	Area F	Area G	Total
Callitha palustris	P9/0.5lt	3	5	6	4	8	8	8	4	43
Carex acutiformis	P9/0.5lt	3	5	6	4	8	8	8	4	43
Filipendula ulmaria	P9/0.5lt	3	5	6	4	8	8	8	4	43
Myosotis scorpioides	P9/0.5lt	3	5	6	4	8	8	8	4	43

AQUATIC MARGINALS (planted randomly - to 0.3m below settled water level)

Species	Root condition	No. / m2	Area A	Area B	Area C	Area D	Area E	Area F	Area G	Total
Allitriche stagnalis	P9/0.5lt	2	4	5	3	7	7	7	3	36
Hydrocharis morsus ranae	P9/0.5lt	2	4	5	3	7	7	7	3	36
Ranunculus aquatilis	P9/0.5lt	2	4	5	3	7	7	7	3	36
Stratiotes aloides	P9/0.5lt	2	4	5	3	7	7	7	3	36

Amenity Grass Areas

Emorsgate EL1 Flowering Lawn Mix sown at 4gms/m2

Wild Flowers

%	Latin name	Common name
4	Galium verum	Lady's Bedstraw
0.5	Leontodon hispidus	Rough Hawkbit
1	Leucanthemum vulgare	Oxeye Daisy
3.7	Lotus corniculatus	Birdfoot Trefoil
3	Primula veris	Cowslip
4	Prunella vulgaris	Selfheal
3.5	Ranunculus acris	Meadow Buttercup
0.3	Trifolium pratense	Wild Red Clover

Grasses

%	Latin name	Common name
8	Agrostis capillaris	Common Bent
40	Cynosurus cristatus	Crested Dogtail
28	Festuca rubra	Slender-creeping Red-fescue
4	Phleum bertolonii	Smaller Cats-tail

Grassland Mixture - Adjacent Native Hedgerow Planting Areas Emorsgate EH1 Hedgerow Mixture sown at 4gms/m2

Wild Flowers

%	Latin name	Common name
0.5	Achillea millefolium	Yarrow
1	Agrimonia eupatoria	Agrimony
1.5	Alliaria petiolata	Garlic Mustard
0.5	Centaurea nigra	Common Knapweed
2	Galium album - (Galium mollugo)	Hedge Bedstraw
2.2	Geum urbanum	Wood Aven
0.3	Hypericum perforatum	Perforate St John's Wort
1.5	Leucanthemum vulgare	Oxeye Daisy
0.5	Plantago lanceolata	Ribwort Plantain
0.5	Primula veris	Cowslip
2	Prunella vulgaris	Selfheal
2	Silene dioica	Red Campion
2	Silene vulgaris	Bladder Campion
0.5	Stachys sylvatica	Hedge Woundwort
1	Torilis japonica	Upright Hedge-parasley
0.5	Tragopogon pratensis	Goat's-beard
1.5	Vicia cracca	Tufted Vetch

Grasses

%	Latin name	Common name
10	Agrostis capillaris	Common Bent
1	Anthoxanthum odoratum	Sweet Vernal-grass (w)
6	Brachypodium sylvaticum	False Brome (w)
35	Cynosurus cristatus	Crested Dogtail
2	Deschampsia cespitosa	Tufted Hair-grass (w)
26	Festuca rubra	Slender-creeping Red-fescue

Grassland Mixture - Adjacent Suds Basins and Swales Emorsgate EP1 Pond Edge Mix sown at 1.5gms/m2

%	Latin name	English name
0.5	Achillea ptarmica	Sneezewort
1.6	Alisma plantago-aquatica	Water plantain
2.5	Angelica sylvestris	Wild angelica
0.5	Eupatorium cannabinum	Hemp agrimony
3.0	Filipendula ulmaria	Meadowweet
1.2	Geum rivale	Water avens
0.5	Hypericum tetragetrum	Square-stalked St Johns wort
3.0	Iris pseudacorus	Yellow iris
1.2	Lotus pedunculatus	Greater birdsfoot trefoil
1.2	Lychnis flos-cuculi	Ragged robin
1.0	Lycopus europaeus	Gipsywort
0.5	Lythrum salicaria	Purple loosestrife
0.3	Pulicaria dysenterica	Fliebane
0.5	Scutellaria galericulata	Skullcap
1.0	Thalictrum flavum	Common meadow rue
1.5	Vicia cracca	Tufted vetch

Grassland Mixture - Strategic Open Space Area to East (Floodplain) Emorsgate EMS Special General-Purpose Meadow Mixture sown at 4gms/m2

Wild Flowers

%	Latin name	Common name
0.5	Achillea millefolium	Yarrow
0.5	Centaurea nigra	Common Knapweed
1.8	Centaurea scabiosa	Greater Knapweed
0.6	Daucus carota	Wild Carrot
0.5	Filipendula ulmaria	Hedge Bedstraw
1	Galium album - (Galium mollugo)	Galium verum
1	Knautia anensis	Field Scabious
0.2	Leontodon hispidus	Rough Hawkbit
1	Leucanthemum vulgare	Oxeye Daisy
0.2	Lotus corniculatus	Birdfoot Trefoil
0.5	Potium sanguisorba - (Sanguisorba minor)	Salad Burnet
0.6	Primula veris	Cowslip
1.5	Prunella vulgaris	Hoary Plantain
0.5	Potium sanguisorba - (Sanguisorba minor)	Salad Burnet
2.5	Ranunculus acris	Meadow Buttercup
1	Ranunculus bulbosus	Buttercup
1	Rhinanthus minor	Yellow Rattle
0.4	Rumex acetosa	Common Sorrel
1.5	Silene dioica	Red Campion
1	Silene vulgaris	Bladder Campion
20	Vicia cracca	Tufted Vetch

Grasses

%	Latin name	Common name
8	Agrostis capillaris	Common Bent
28	Cynosurus cristatus	Crested Dogtail
28	Festuca rubra	Slender-creeping Red-fescue
4	Phleum bertolonii	Smaller Cats-tail

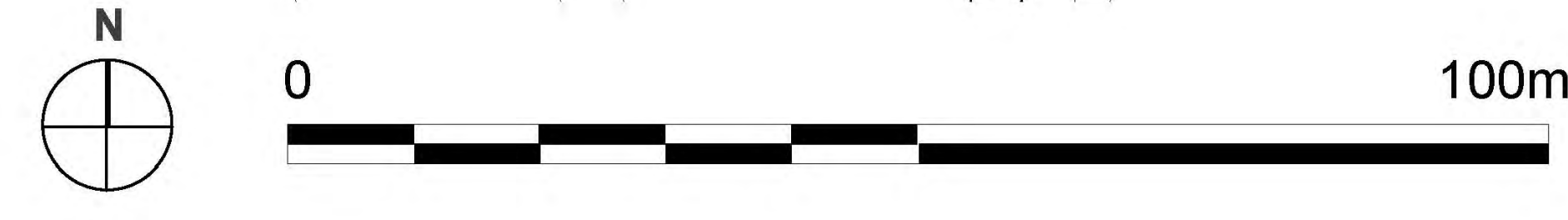
KEY

Soft Landscaping

- Existing Trees/Vegetation Retained
- Proposed Tree Planting
- Proposed Native Structure Mix Planting
- Proposed Mixed Native Hedge Transplants
- Proposed Single Species Native Hedge
- Proposed Shrub Planting - On plot hardy, mixed shrub planting, including species from RHS Plants for Pollinators
- Proposed Amenity and Rear Garden Grass - Hardy flowering lawn mixture for amenity areas and turf for rear gardens
- Proposed Grassland - Native wildflower mixes and grassland mixes, for adjacent Suds features and aligning new buffer planting and open space area to east
- Proposed Grassland - Damp Tolerant Native wildflower mixes and grassland mixes for Suds features
- Proposed Lawn Mixture - Flowering Lawn Mixture
- Proposed Marginal Planting - Aquatic marginals planted 0.5m above and below anticipated water line

Hard Landscaping

- Proposed Highway Access and Paths - Tarmac path with conservation kerb edging
- Proposed Shared Surface, Driveways and Parking - 'Burnt Ochre' Tegula Priora Block Paving' stretcher bond
- Proposed Shared Surface, Driveways and Parking - 'Harvest' Tegula Priora Block Paving' stretcher bond
- Proposed Transitions Paving - 'Pennant Grey' Tegula Priora Block Paving' stretcher bond
- Proposed Paving - Front garden paths, Textured 'Buff' 450x450mm
- Proposed 2m wide Path - Brendon gravel with timber edging
- Proposed 3m wide leisure cycle/footway- Brendon gravel with timber edging
- Proposed Bench
- Proposed Play Area - Grass Safety Surfacing
- Proposed 0.5m High Cleft Natural Style Treated Timber Knee Rail
- BS: 5837: 2012 Root Protection Area
- Existing Water Main with 3m buffer either side
- Existing Foul Sewer with 3m buffer either side



Revision	Description	Date
A	First issue	2017/20
B	Second issue	14/12/20
C	Third issue	3/5/21
D	Fourth issue	6/7/21
E	Fifth issue	28/21
D	Sixth issue	21/10/21

LANDARB SOLUTIONS
 Project: Land at Woodgate Centre, Westergate
 Description: Hard and Soft Landscape Proposals Plan - Sheet 1 of 2
 Status: For Planning
 Scale: 1:500 @A0
 Job Number: LAS 103
 Drawn I Checked DP
 Date: 21/10/2021
 Drawing Number: 05
 Revision: E

1. GENERAL

- 1.1 All plants will conform to BS 3936-1 (1992): and be in accordance with the National Plant Specification. Supplying nurseries will be registered under the HTA Nursery Certification Scheme. All trees shall be planted in accordance with BS: 845:2014. All plants will be packed and transported in accordance with the Code of Practice for Plant Handling as produced by CPSE.
- 1.2 Planting will not be carried out when the ground is waterlogged, frost bound or during periods of cold drying winds.
- 1.3 All bare-root planting stock will be kept covered until actually planted in order to minimise water-loss and prevent the roots from drying out.
- 1.4 All bare-root planting stock will be root dipped in an approved water-retaining polymer.
- 1.5 If the formation level is compacted it should be ripped through before topsoiling. Recommended topsoil depths are 450mm for shrubs and 150mm for grass.

2. TREE PLANTING

Ground Preparation and Tree Pit Excavation

- 2.1 If the formation level is compacted it will be ripped through before topsoiling.
- 2.2 Where necessary existing weeds will be treated with a suitable glyphosate-based herbicide and a suitable period allowed to elapse, as recommended by the manufacturer, for the herbicide to take effect.
- 2.3 Tree pits will be excavated to at least twice the diameter of the root spread and to be planted in accordance with BS 4428 (1989). The bottom and sides shall be forked to break up the subsoil. Tree pits vary in size depending on the species being planted. The tree pit size is shown on the canopy calculator table on the tree planting plan. The dashed blue line indicates the corresponding size of the tree pit where the required soil volume required is located for each particular tree. All extraneous matter such as plastic, wood, metal and stones greater than 50mm diameter in any dimension will be removed from site.

Planting

- 2.4 Trees to be planted in areas of open space or within site boundaries, in areas where existing soil will be retained, are to be placed into the pits and backfilled

with local topsoil previously stripped from the site. For trees planted within the housing layout, as the tree pit detail shows, trees will have new imported topsoil (TS1 Multipurpose Grade Topsoil, BS: 3882:2015 compliant) backfilled into the tree pit, with subsoil de-compacted. 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 backfilling. Where tree pits are more than 300mm deep, backfilled material shall be consolidated/firmed in 150mm layers.

- 2.5 Trees shall be planted as per the tree pit details shown on the tree planting plan.
- 2.6 Trees shall be well firmed-in and secured with stakes, proprietary rubber tree ties and spacers as below.
- 2.7 All newly planted trees over 1.5m high will be held so that movement at the root collar is minimised until new roots have developed to anchor the tree. Therefore, low staking (75mm dia x 1.5m length) will be used and attached to the tree at approximately 600mm above ground level. Stakes will be driven 300mm into undisturbed ground before planting the tree, taking care to avoid underground services and cables. The trees will be staked using proprietary rubber ties and must be firmly fixed with a spacing device used to prevent chafing against the tree.
- 2.8 All trees will be double-staked. Composted bark mulch will be spread to a depth of 75mm across in a 1.0m diameter circle around all individual trees, ensuring that desirable groundcover plants (where present) are not buried.
- 2.9 All trees and shrubs shall be watered in at the end of each day of planting.
- 2.10 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. Spread ornamental pine bark mulch to a depth of 75mm across all new planting areas, ensuring groundcover plants are not buried.

Maintenance during first growing season

- 2.11 All dead, dying or diseased trees will be replaced with trees of similar size and species. If the failure of the tree is due to disease and the disease is considered likely to re-occur then an alternative species may be used as replacement if agreed with the LPA.

- 2.12 The site is to be visited as required throughout the year to undertake the following operations:
- 2.13 Weed clearance: All planting areas will be kept weed free by hand weeding or herbicide treatment.
- 2.14 Checking trees: All tree ties and stakes will be checked and adjusted if too loose, too tight or if chafing is occurring. Any broken stakes will be replaced.
- 2.15 Formative pruning: Any damaged shoots/branches will be pruned back to healthy wood. Plants will be pruned in accordance with good horticultural practice to maintain healthy well-shaped specimens.

Watering during first growing season

- 2.16 The requirement for watering of newly planted trees will generally be dependent on weather conditions during the first growing season following planting. In a dry season watering may be required on a fortnightly basis from immediately after planting until the end of the growing season, but in a wet season watering may not be required at all. Therefore, trees shall be monitored regularly by test digging down to root level to assess the water content of the soil, with watering undertaken as required to ensure that the soil is at field capacity 2-3 days after watering.

3. NATIVE HEDGE TRANSPLANTS

Ground Preparation

- 3.1 Where necessary existing weeds will be treated with a glyphosate-based herbicide and a suitable period allowed to elapse, as recommended by the manufacturer, for the herbicide to take effect.
- 3.2 All extraneous matter such as plastic, wood, metal and stones greater than 50mm diameter will be removed from site to a registered waste disposal facility.

Planting

- 3.3 Bare-root hedge plants shall be notch planted in a triple staggered row at the rate of 7 plants per linear metre (using L-, T-, H-shaped or straight notches) using spades of a design suitable for this purpose. Rows shall be 500mm apart. The notches must be vertical and deep enough for the roots to hang freely, with the transplant being planted so that the root collar is exactly level with the ground surface. The notch must then be closed and the soil will be well firmed round the roots in line with the guidelines as set out in BS 4428 (1989).
- 3.4 Container-grown hedge plants will be planted into a pit dug 1.5x the diameter of the root mass, with the bottom and sides of the planting pit broken up to aid root expansion. The plants will be planted so that the root collar is exactly level with the ground surface.
- 3.5 All bare-root hedge planting stock will be protected from rabbit damage using approved proprietary 600mm clear plastic spiral guards, supported with 0.9m 12/14lb canes as advised by the manufacturer.
- 3.6 All container-grown shrubs will be protected from rabbit damage using approved proprietary 600mm plastic shrub shelters, supported with 0.9m x 32 mm x 32mm softwood stakes as advised by the manufacturer.

Maintenance during first growing season

- 3.7 All dead, dying or diseased hedge plants will be replaced with plants of similar size and species. If the failure of the plant is due to disease and the disease is considered likely to re-occur then an alternative species may be used as replacement if agreed with the LPA.
- 3.8 The planting area will be kept weed free throughout the maintenance period using approved herbicides in April, June and August.

4. NATIVE STRUCTURE PLANTING

Ground Preparation

- 4.1 Where necessary existing weeds will be treated with a glyphosate-based herbicide and a suitable period allowed to elapse, as recommended by the manufacturer, for the herbicide to take effect.
- 4.2 All extraneous matter such as plastic, wood, metal and stones greater than 50mm diameter will be removed from site to a registered waste disposal facility.

Planting

- 4.3 Bare-root plants shall be notch planted at 1m centres (using L-, T-, H-shaped or straight notches) using spades of a design suitable for this purpose. The notches must be vertical and deep enough for the roots to hang freely, with the transplant being planted so that the root collar is exactly level with the ground surface. The notch must then be closed and the soil will be well firmed round the roots in line with the guidelines as set out in BS 4428 (1989).
- 4.4 All bare-root planting stock will be protected from rabbit damage using approved proprietary 0.6m (for shrub species) or 1.2m (for tree species) plastic shrub/tree guards, supported with 0.9m (or 1.35m for trees) x 32mm x 32mm softwood stakes as advised by the manufacturer

Maintenance during first growing season

- 4.5 All dead, dying or diseased plants will be replaced with plants of similar size and species. If the failure of the plant is due to disease and the disease is considered likely to re-occur then an alternative species may be used as replacement if agreed with the LPA.
- 4.6 Any broken stakes on shelters will be replaced and all tree and shrub guards adjusted as required to ensure continued protection from browsing damage.
- 4.7 The planting area will be kept weed free throughout the maintenance period using approved herbicides in April, June and August.

5. GRASS

Preparation

- 5.1 The area to be turfed or seeded will be sprayed out with a glyphosate herbicide and cultivated to a depth of 100mm removing all weeds, debris and stones over 50mm diameter. The surface will be raked to smooth flowing contours with a fine tilth, incorporating pre-seeding fertiliser at 70 g/m².
- 5.2 Herbicide will not be used to clear any weeds or remove existing grass from beneath and in close proximity to any existing trees. Weeds and any existing areas of grass will be removed by hand.

Delivery and Storage

- 5.3 Turf will be supplied in accordance with BS: 3936. Turf will be Medallion as supplied by Rowlawn. It will be close textured and green in colour and be sufficiently fibrous to withstand handling. Turves will be regular in shape, 300mm wide and of uniform thickness (minimum 25mm). The grass will be closely mown and will not exceed 25mm in height. Turf will be stacked in piles of up to 1 metre. It will not be laid in frosty or waterlogged conditions and will not be stacked in rolls for more than three days.

Turf

- 5.4 Turfing operations will be in accordance with BS:4428:1989. Whole turves will be laid around the perimeter of the area to be turfed. The central area will be laid in rows with staggered joints, well butted together, working from planks positioned on turves already laid. The turf will be watered on completion. Any unevenness will be made good by lifting the turf and adjusting the levels. Should shrinkage occur, fine topsoil will be brushed into the joints.

Seeding

- 5.5 Grass seed will be sown in accordance with BS 4428 (1989), and will be sown from April to May or from September to October, during calm weather and not when the ground is frost bound or waterlogged. Seed will be sown in two equal sowings in transverse directions at 4g/m² for both EH1 and EM3 mixes, and at 1.5g/m² for EP1 mix. After sowing the seed will be lightly raked to create intimate contact with the soil.

Grass/Wildflower Mix Cutting

- 5.6 Grassland areas will be managed by low mechanical cutting.
- 5.7 *For wildflower mixes:* If mechanical cutting is used, the sward shall be cut to a height of 150mm once per year, this cut being undertaken late in the season once flowering plants have seeded (typically August–September). However, additional cuts may be required to prevent the height of the sward from obscuring the solar panels. All arisings will be removed from site in order to maximise the establishment of wild flower species.

EL1 Flowering Lawn Mixture

First year management

- 5.8 The wild flower and grass species in this mix are perennial and will be slow to germinate and grow and will not usually flower in their first growing season. There will often be a flush of annual weeds from the soil in the first growing season. This annual weed growth is easily controlled by repeated mowing.
- 5.9 Mow newly sown flowering lawns regularly (every 7 -10 days during growing season) throughout the first year of establishment. Cut to a height of 40-60mm, 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.
- 5.10 Carefully dig out or spot treat any residual perennial weeds such as docks.

Management once established

- 5.11 Mow regularly as a lawn but not too short (25-40mm).
- 5.12 To permit flowering, mowing can be relaxed from late June. Cut again when the sward gets untidy (after 4-8 weeks). Mowing may be suspended earlier in the year to allow cowslips to flower. Heavy quantities of cuttings should be collected and removed from site.

EH1 Hedgerow Mixture

First year management

- 5.13 Most sown meadow wild flower and grass species are perennial; they will be slow to germinate and grow and will not usually flower in their first growing season. There will often be a flush of annual weeds from the soil in the first growing season which may grow up and obscure the meadow seedlings beneath. This annual weed growth is easily controlled by topping or mowing.
- 5.14 Mow newly sown meadows regularly throughout the first year of establishment to a height of 40-60mm, removing cuttings if dense. This will control annual weeds and help maintain balance between faster growing grasses and slower developing wild flowers.
- 5.15 Avoid cutting in the spring and early summer if the mixture has been sown with a nurse cover of cornfield annuals, or is autumn sown and contains Yellow Rattle. These sown annuals should be allowed to flower, then in mid-summer cut back and the cut vegetation removed.
- 5.16 Dig out any residual perennial weeds such as docks.

Management once established

- 5.17 Hedgerows, woodland edges, rides, glades and other semi-shaded communities usually sit on the boundary between one habitat type (eg open grassland) and another (eg closed tree canopy). The management requirements of established hedgerow mixtures can be tailored to light levels and to fit in with adjacent vegetation types.
- 5.18 Zoned management of hedgerow margins frequently produces the best diversity of habitat structure: areas closest to the hedge or woodland boundary and those which are more shaded are left uncut in most years. Areas that are further from the margin and more open can be managed as grassland habitat. For example, in a 6-metre sown margin the 2-3 metres against the boundary could be left uncut, the next 3-4 metres cut once or twice a year.
- 5.19 Hedgerow vegetation that is not mown each year will become rough and "tussocky" in character. It can form useful refuge habitat on corners and margins of a site. To control scrub and bramble development these tussocky areas may need cutting every 2-3 years between October and February. For wildlife this

cutting is best done on a rotational basis so that no more than half the area is cut in any one year leaving part as an undisturbed refuge.

EM3 Special general Purpose Meadow Mixture

First year management

- 5.20 Most sown meadow wild flower and grass species are perennial; they will be slow to germinate and grow and will not usually flower in their first growing season. There will often be a flush of annual weeds from the soil in the first growing season which may grow up and obscure the meadow seedlings beneath. This annual weed growth is easily controlled by topping or mowing.
- 5.21 Mow newly sown meadows regularly throughout the first year of establishment to a height of 40-60mm, removing cuttings if dense. This will control annual weeds and help maintain balance between faster growing grasses and slower developing wild flowers.
- 5.22 Avoid cutting in the spring and early summer if the mixture has been sown with a nurse cover of cornfield annuals, or is autumn sown and contains Yellow Rattle. These sown annuals should be allowed to flower, then in mid-summer cut back and the cut vegetation removed. It is important to cut back cornfield annuals before they die back, set seed or collapse: this cut will reveal the developing meadow mixture and give it the space it needs to develop.
- 5.23 Dig out any residual perennial weeds such as docks.

Management once established

- 5.24 In the second and subsequent years EM3 sowings can be managed in a number of ways which, in association with soil fertility, will determine the character of the grassland. The 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.
- 5.25 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 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.

- 5.26 Mow or graze the re-growth through to late autumn/winter to c 50mm and again in spring if needed.

EP1 Pond Edge Mixture

First year management

- 5.27 In the first year, annual weed growth may be cut back to encourage the development of a good perennial ground cover. Establishment on sites prone to flooding may be patchy and may take several years to fully colonise.

Management once established

- 5.28 The habitat value of pond edge sowings is enhanced if there are a variety of vegetation structures from dense tussock stands to bare and recently colonised mud. Management of these wetland areas should therefore aim to create variation with minimum disturbance to animal populations.
- 5.29 Variation in structure can be achieved by cutting back and removing short sections of vegetation every 2-3 years in rotation. With ponds, remove vegetation as a wedge, like removing a slice of cake. Dense stands of single species (eg yellow iris) may benefit from selective thinning. Vegetation removal causes the least disruption to wildlife when carried out between September and November. Machines and heavy equipment should be used with care on wet sites to avoid damage to soil and vegetation.
- 5.30 Wet grassland which only occasionally or seasonally floods can be managed as meadow or grassland.
- 5.31 In marginal wetland zones the water levels in the soil are never more than 50cm below the surface, but only occasionally submerge the plants growing there. New ponds constructed with liners often have very narrow margins (less than 1 metre wide) unless wider, gently shelving edges are designed in from the outset.