

## SPECIFICATION

### 1. General Landscaping

- Existing levels shall be preserved around retained trees and vegetation.
- Existing trees and vegetation shall be protected in accordance with BS5837: 2012 during all construction operations
- All landscape works shall be undertaken by competent persons, with appropriate training and equipment
- All arising shall be removed from site at Contractor's expense unless otherwise noted

### 2. Services

The Contractor must ascertain the exact location of underground services before commencing work.

### GROUND PREPARATION

#### 3. Formation Level

The site shall be brought to formation level using a suitable fine-graded material where possible to avoid large weeds but retain free drainage, and de-compacted to a depth of at least 300mm.

#### 4. Subsoil

Where there is insufficient depth excavate and dispose of material, loosen the formation and make up with additional subsoil or second quality topsoil. Grade to smooth flowing contours to achieve specified finished levels of topsoil.

Imported subsoil/second quality topsoil shall be supplied in accordance with BS 8601: 2013. It shall be free of pests, diseases, visible fragments and roots of aggressive weeds, sticks, straw, turf and significant quantities of foreign matter such as building materials, vegetation, lumps of clay, and the like. Do not use any materials contaminated with rubbish or other materials that are:

- corrosive, explosive, or flammable
- hazardous to human or animal life
- detrimental to healthy plant growth

Prior to the placement of topsoil, and when ground conditions are reasonably dry, the subsoil shall be thoroughly loosened to full depth. Remove any stones larger than 75mm and other items including bricks, kerbs, lumps of concrete, plaster, timber, plastic, glass, metal and any other building debris brought to the surface.

#### 5. Topsoil

Where there is insufficient depth topsoil shall be imported in accordance with BS 3882: 2015 as follows:

- For tree pits, shrubs, hedgerows and amenity grass: multi-purpose for general landscaping operations
- For wildflower meadows: low-fertility topsoil to reduce risk of competition from weeds

Imported topsoil shall be spread in layers not exceeding 150mm to achieve the depths as specified below. Finished levels shall be smooth flowing, free of minor hollows and high spots and many plants with paving, kerbs, edgings, manhole covers and existing levels.

Soil handling operations shall be carried out when the soil is reasonably dry and not plastic (friable) in consistency (at least 5% below the Lower Plastic Limit). Topsoil shall not be unnecessarily compacted by trampling or trafficking of site machinery. Topsoil handling shall be stopped during and after heavy rainfall, and not continued until the soil is again non-plastic in consistency.

Any areas of topsoil that are contaminated with subsoil shall be replaced. Any rubbish, bricks, concrete, tarmac and other deleterious material shall be removed. Topsoiled areas shall be in an un-compacted and uncontaminated state prior to final cultivation.

#### 6. Soil Depths & Clearances

- Provide a minimum depth of subsoil and topsoil as follows:
  - Amenity Grass: 100mm topsoil over 100mm cultivated subsoil with clearance to 450mm below ground level
  - Wildflower Lawn: 50mm low-fertility topsoil over 100mm cultivated subsoil with clearance to 450mm below ground level
  - Ornamental Shrubs & Hedges: 400mm topsoil over 100mm cultivated subsoil with clearance to 600mm below ground level
  - Native Shrubs & Hedges: 300mm topsoil over 100mm cultivated subsoil with clearance to 600mm below ground level
  - Tree pits: see specific requirements below, with clearance to 1000mm below ground level

#### 7. New Tree Planting Adjacent Services & Structures

- All trees and shrubs, whether existing, felled, or proposed, on or adjacent to the site shall be taken into consideration by the applicant's structural engineer when calculating foundation types and depths.
- No tree shall be planted within 6m of centreline of an adoptable sewer unless appropriate protection is provided (subject to water authority approval)
- All trees planted within 3m of a building or heavily loaded structure shall have their roots deflected away by means of a high density deep application root barrier to avoid direct damage from future tree growth.
- All trees within 2m of a masonry boundary wall, or within 3m of any hard paved surface or underground service, shall have their roots deflected away by the installation of a tree root barrier system to avoid direct damage from future tree growth.

#### 8. Root Barrier System

- For protection of building foundations: ReRoot 2000 high density deep application root barrier as supplied by GreenBlueUrban Ltd., or similar
- For protection of pavements only (surround applications): Root Director preformed root protection system as supplied by GreenBlueUrban Ltd., or similar; size dependent on predicted girth (circumference) of mature trunk (to be advised by manufacturer)
- For protection of pavements & underground services/utilities/linear applications: ReRoot ribbed root barrier as supplied by GreenBlueUrban Ltd., or similar; size dependent on predicted girth (circumference) of mature trunk (to be advised by manufacturer)

Installation shall be in full accordance with manufacturer's instructions.

The Landscape Contractor shall be responsible for acquiring 'As-Built' drain and service plans before commencing work on site.

## CULTIVATION & PLANTING

### 9. General Planting Notes

All plants supplied shall comply with the National Plant Specification. Supplying nurseries shall be registered under the Horticultural Trade Association (HTA) Nursery Certification Scheme. Plants shall be first class examples of their species or variety, free from pests and diseases, with good fibrous root systems and materially undamaged. Native species shall be British provenance, where available, and certified to confirm origin.

All planting operations shall be in general compliance with BS 4428: 'Code of Practice for general landscape operations'.

All soft landscape works including preparatory operations shall be carried out when all building works are complete and before the end of the first planting season. Only carry out planting while soil and weather conditions are suitable; do not plant when the ground is frost bound, covered by snow, excessively wet or waterlogged, or in excessively dry or windy conditions. Plant only during the following periods:

- Bare-root and rootballed deciduous trees and shrubs: from late October to late March. All bare root stock, where used, shall be root dipped in mycorrhizal inoculant such as Algimure or similar, applied in accordance with the manufacturer's recommendations
- Container grown plants: at any time if ground and weather conditions are favourable. Ensure that adequate watering is provided

All landscaping work shall adopt good horticultural practices. Compost, mulch and soil conditioners shall be peat-free. The use of pesticides (herbicides, insecticides, fungicides, slug pellets etc) shall be discouraged. Any pesticides used shall be non-residual. i.e. glyphosate, and used only where absolutely necessary to control weed infestations.

#### 10. Plant Handling & Establishment

Plant handling shall be in accordance with 'Handling and establishing landscape plants', published by the CPSE. The Contractor shall comply with Part 3: Recommendations for plant handling from delivery to site to ensure successful establishment.

#### 11. Cultivation

Areas for seeding and planting shall be treated with a non-residual translocated herbicide to clear existing weeds and other herbaceous vegetation and thoroughly cultivated by hand or suitable machinery to the depths specified below. Hand cultivation shall be carried out to achieve the required finish in areas where machine cultivation is not possible (i.e. adjacent to kerbs, manholes and footpath junctions, around retained trees etc). Surplus plant matter, rubbish and surface stones with a dimension greater than 50mm shall be collected and removed from the site.

#### 12. Planting Specimen Trees in Open Ground

Tree planting shall be carried out in accordance with BS 8545: 2014 'Trees: from nursery to independence in the landscape - Recommendations'. All specified materials shall be installed in accordance with the manufacturer's recommendations and/or instructions.

The landscape contractor shall ensure that the natural root flare of the tree is clearly visible at the finished surface level to prevent premature tree death. To ensure the correct planting length is achieved, the contractor shall take care to remove:

- Soil placed above the natural root flare during nursery packaging and production
- Adventitious roots above the root flare
- Wire encircling the main stem
- Wire cage and burlap where possible. Otherwise, peel back and remove once the tree is in the planting pit

Trees shall be planted into prepared pits - refer to table for dimensions.

Form	Girth (cm)	Rootball				Tree Pit Dimensions		
		Diameter	Depth	Length	Width	Depth		
Half Standard	4-6cm	400mm	300mm	700mm	700mm	300mm		
Heavy Standard	12-14cm	500mm	400mm	800mm	800mm	400mm		

based on: BS 4428: 1989 and nursery suppliers stated rootball dimensions.

Stated tree pit dimensions are a minimum; rootball dimensions can vary naturally between species, tree stock, suppliers, and season. In the event that the rootball exceeds the stated dimensions, the landscape contractor shall excavate the hole (in open ground) to the advice given in BS 8545: 2014 with the exception of tree pit diameter, which shall be varied to achieve a minimum radius of 150mm greater than the rootball. Tree pit depth shall generally be no greater than the existing rootball or container depth. Where necessary tree pit depth shall be increased from the stated dimensions to accommodate the depth of the rootball and obtain the correct planting level.

Care shall be taken to prevent smearing of tree pit sides, fork thoroughly to aid root penetration and drainage. Break up base of pit to a depth of 150mm to assist drainage, air movement, and root penetration, and leave slightly domed to prevent ponding.

Tree pits shall be backfilled with 'as dug' material (where suitable for tree growth) to replicate a natural soil profile comprising no more than 300-400mm depth of topsoil over a free-draining, sandy subsoil. All deleterious material shall be removed (weeds, broken brick and large stones etc). Where 'as dug' material is not suitable for tree growth imported topsoil to BS 3882:2015 (multi-purpose for general landscaping operations), and subsoil to BS 8601:2013, shall be used. During backfilling, the tree shall be gently shaken at regular intervals to settle the soil closely around the roots. The backfill shall be firmed in layers not exceeding 150mm to obtain the correct planting level. See typical tree pit detail.

Unless otherwise specified, all trees shall be supported with double stakes driven vertically at least 300mm into the bottom of the tree pit before planting, close to the tree position on the windward side. Tree shall be fixed firmly but not rigidly to stake with Toms rubber tree ties. The above ground height of the stake should be a minimum of a third of the stem height. All stakes shall be 60mm diameter softwood, peeled chestnut, larch or oak, free from projections and large or edge knots, with a pointed lower end. All stakes shall be 60mm diameter softwood, peeled chestnut, larch or oak, free from projections and large or edge knots, with a pointed lower end.

A perforated flexible plastic irrigation pipe, 60mm diameter, with a fixed grid inlet to prevent debris and rodent ingress, shall be installed around the rootball during planting, e.g. Green Blue Urban RootRain Urban RRURB1A, or similar. The pipe shall be installed at a depth of approximately 150mm below the ground surface and be of sufficient length to coil completely around the rootball. Ensure the inlet is slightly above finished mulch surface.

The finished compacted pit shall be topped with organic mulch spread evenly to a depth of 75mm after settlement within a 1m diameter circle around each tree. Mulch shall comprise composted wood chips or bark, free of pests, disease, fungus, and weeds. Prior to application clear all grass and weed growth and water soil thoroughly.

### 13. Ornamental Groundcover & Hedges in Cultivated Beds

Areas for planting shall be cultivated to a minimum depth of 300mm taking care to protect roots of existing trees retained.

Container grown plants and bare-root hedging transplants at the sizes stated in the plant schedule shall be pit-planted into cultivated beds in accordance with the planting arrangement. Hedges shall be planted in a double staggered row, with rows planted 40cm apart, and plants positioned 45 cm apart within each row.

At each planting position sufficient soil shall be excavated from the bed to allow 75mm clearance between either the rootball, or the root ends when fully spread, and the sides and bottom of the planting hole. Each plant shall be set in the centre of the pit, showing its best side to the front. Finely broken back-fill material excavated from the pit shall be packed around the roots. The plants shall be gently shaken to allow fine soil to surround the roots. As soil is returned it shall be lightly consolidated and firmly heeled around the root collar.

All bare-root stock shall be root-dipped in mycorrhizal inoculant such as Rootgrow Professional, or similar, applied in accordance with manufacturer's recommended rates. Mycorrhizal inoculant shall be of UK origin and contain fungi and bio-additives proven to enhance mycorrhizal colonisation. Product shall not contain fertilisers.

All planting areas shall receive a 75mm deep 8-35mm organic bark mulch layer to prevent weed growth and retain soil moisture. Mulch shall comprise composted wood chips or bark, free of pests, disease, fungus, and weeds. Prior to application clear all grass and weed growth and water soil thoroughly.

#### 14. Compost & Ameliorants - All Planting Areas

A peat-free compost (e.g. PAS100: 2011/Landscape Institute/WRAP grade 100mm screened) green compost) shall be applied to a minimum depth of 50mm and worked into the soil. For native shrubs compost shall be mixed into the planting pit only. Following this a suitable slow-release fertiliser shall be applied and spread at 50g/m<sup>2</sup> to all planted areas.

#### 15. Grassed Areas

All areas to be turfed/seeded - remove all surface vegetation (where present) and cultivate to a depth of 100mm taking care to protect roots of existing trees retained. All weeds, debris, and stones over 25mm in diameter shall be removed off site and the surface raked to smooth flowing contours with a fine tilth.

#### Turf:

- Amenity Lawn - Incorporate Growmore Fertiliser, or equivalent, in accordance with manufacturer's instructions, to be worked into top 50mm of soil. Do not apply fertiliser to wildflower areas
- All areas - Roll out turf, pressing it down to ensure good root to soil contact. Each turf shall be butted up to the next without overlapping or leaving gaps to prevent weeds growth from below. After laying, dress turf with finely sifted topsoil/sand, or other approved Finisher, and brush well in to completely fill all joints. Trim around each newly planted tree to provide a clear radius of 500mm. Thoroughly water the turf immediately after laying making sure the soil underneath is damp. Continue to water for the first two weeks to prevent turf drying out, after which apply the occasional soak in long periods of dry weather.
- Turf shall be laid on soil that is moist but not frozen or waterlogged. No turf shall be laid during periods of drought or onto soil that is excessively dry, or during heavy rainfall.

#### Seeding:

- Seeding shall be carried out during appropriate seasons and when soil and weather conditions are suitable for the relevant operations. Only machinery and tools suitable for the site conditions and the work to be carried out shall be used. Hand tools shall be used around trees, plants and in confined spaces where it is impracticable to use machinery. Seed shall be sown in accordance with BS 4428:1989 'Code of practice for general landscape operations' on prepared, levelled soil at the manufacturer's recommended rate. Sow in autumn or spring during calm weather and not when the ground is frost bound or waterlogged.

## LANDSCAPE MAINTENANCE

All new planting and hard landscape areas shall be maintained throughout the year as follows:

#### Hard Landscape Areas

- Sweep up leaf fall from formal and hard landscape areas; leaf litter shall be retained where it falls under the canopy of existing and newly planted trees, where it can break down naturally and contribute to soil quality
- Sweep all hard landscape areas to remove dust and debris

#### Ornamental Groundcover & Hedges

- Weed Control - All planting beds shall be kept weed free by hand weeding or herbicide treatment. Top up mulch twice annually in spring and autumn to maintain original specified depth
- Firming & Pruning - firm and prune all newly planted shrubs and hedges in accordance with good horticultural practice to promote healthy, bushy growth and to ensure individual plants establish dense cover as rapidly as possible. Any damaged shoots or branches shall be pruned back to healthy wood
- Trim back growth overhanging adjacent footpaths and parking areas
- Hedges - Once established, trim twice a year to maintain a more managed appearance and the design heights specified; once during late winter/early spring, and again at the end of June, taking care not to disturb nesting birds
- Apply an annual application of slow-release fertiliser to planting beds between March/April in accordance with manufacturer's instructions
- Monitor health and control pests and diseases
- Watering - water as required to ensure establishment and survival (see below)

#### Specimen Trees

Individual trees planted as specimens shall be inspected annually during the growing season and maintained as follows:

- Firm and straighten to an upright position as required
- Maintain irrigation systems/pipes in good working order. Irrigation pipes shall be checked and repaired as necessary
- All tree stakes and ties are to be checked and adjusted if too loose, too tight, or if chaffing is occurring. Any broken stakes are to be replaced
- Formative pruning to include: removal of epicormic shoots, deadwood, competing secondary leader shoots, and closely spaced, duplicated branches with potentially weak or tight forks. All tree works to be carried out in accordance with BS 3998:2010.
- Apply an annual application of slow release fertiliser during March and April at a rate of 50g per tree
- Watering - Water as required to ensure establishment and survival (see below)

#### Watering

During the first two years after planting a monitored watering regime shall be implemented, commencing from the end of March/early April to the end of October - depending on weather conditions. Apply water when there has been no appreciable rain for 7 days or when there has been drying winds or very high temperatures.

Replacement of Failed or Defective Plants  
Following the initial 12 months defects period any trees or plants which within a period of 5 years from the completion of the development are missing, found dead, or are seriously damaged or diseased shall be replaced in the next planting season.

## GRASSLAND ESTABLISHMENT & MANAGEMENT

Establishment (first year after sowing/turfing):

- Areas which fail to germinate or establish shall be re-turfed or re-seeded as required
- Amenity Lawn - shall receive 2 establishment cuts, first cut carried out once height of initial growth reaches 50mm, with grass cut to a finished height not exceeding 30mm. Second cut shall be carried out when the grass once again reaches 50mm. Thereafter, cut as below, to the end of the growing season (October) to maintain a neat tidy appearance. Remove all arising. Reform edges as required
- Wildflower Meadow - Mow all newly seeded areas regularly throughout the first year of establishment to control annual weeds and help maintain a balance between faster growing grasses and slower developing wildflowers. Cut to a height c. 40-60mm and remove cuttings if dense.
- All areas - Carefully dig out, pull or spot treat any residual perennial weeds

Once established:

- Amenity Lawn - cut to a height of 20-30mm throughout the growing season (March to October inclusive) to maintain a neat tidy appearance. Remove all arising. Reform edges as required
- Flower-Rich Grass Verges - cut as amenity lawn but to a height of 30-40mm. To permit flowering, mowing shall be relaxed from June onwards. Resume cutting when the sward gets untidy (after 4-8 weeks)
- Meadow Grass - shall be managed to maximise floristic diversity; cut annually after flowering of desirable species in July or August to a height c.50mm. Cuttings shall be left to dry and shed seed for 1-7 days before removal from site.
- All areas - Continue to dig out, pull or spot treat any residual perennial weeds

## PLANT SCHEDULE

### INDIVIDUAL SPECIMEN TREES

Ref	Species	Girth (cm)	Form	Height	Root Condition	Qty
<b>Small Urban Trees</b>						
AaRH	Amelanchier arborea 'Robin Hill'	12-14cm	Heavy Standard	350-425cm	Rootball	3
Ac	Acer campestre	12-14cm	Heavy Standard	350-425cm	Rootball	3
Bp	Betula pendula	12-14cm	Heavy Standard	350-425cm	Rootball	4
Cb	Carpinus betulus	12-14cm	Heavy Standard	350-425cm	Rootball	3
ME	Malus 'James Grieve'	12-14cm	Heavy Standard	350-425cm	Rootball	1
MR	Malus 'Rudolph'	12-14cm	Heavy Standard	350-425cm	Rootball	1
PcAB	Pyrus calleryana 'Autumn Blaze'	12-14cm	Heavy Standard	350-425cm	Rootball	3
PpA	Prunus padus 'Albertii'	12-14cm	Heavy Standard	350-425cm	Rootball	2
SaM	Sorbus aria 'Magical'	12-14cm	Heavy Standard	350-425cm	Rootball	3
SaCR	Sorbus aucuparia 'Cardinal Royal'	12-14cm	Heavy Standard	350-425cm	Rootball	3
Tc	Tilia cordata	12-14cm	Heavy Standard	350-425cm	Rootball	4

### Garden Fruit Trees

MD	Malus 'Discovery'	4-6cm	Half Standard	175-250cm	Rootball	1
MJG	Malus 'James Grieve'	4-6cm	Half Standard	175-250cm	Rootball	1
MG	Malus 'Greensleeves'	4-6cm	Half Standard	175-250cm	Rootball	1
MRF	Malus 'Red Falstaff'	4-6cm	Half Standard	175-250cm	Rootball	1

grown on M106 rootstock

### NATIVE MIXED HEDGEROW

Hedge				A	B	C	D
				22	13	27	21
Species	%	Height	Stock Size	Centres	No	No	No
Acer campestre	10	60-80cm	1+1 bareroot transplant	40cm	11	7	13
Cornus sanguinea	15	60-80cm	1+1 bareroot transplant	40cm	17	10	21
Corylus avellana	25	60-80cm	1+1 bareroot transplant	40cm	27	16	34
Crataegus monogyna	25	60-80cm	1+1 bareroot transplant	40cm	27	16	34
Ilex aquifolium	10	60-80cm	3 litre container	40cm	11	7	13
Viburnum opulus	15	60-80cm	1+1 bareroot transplant	40cm	17	10	20
Total:					110	66	135 106

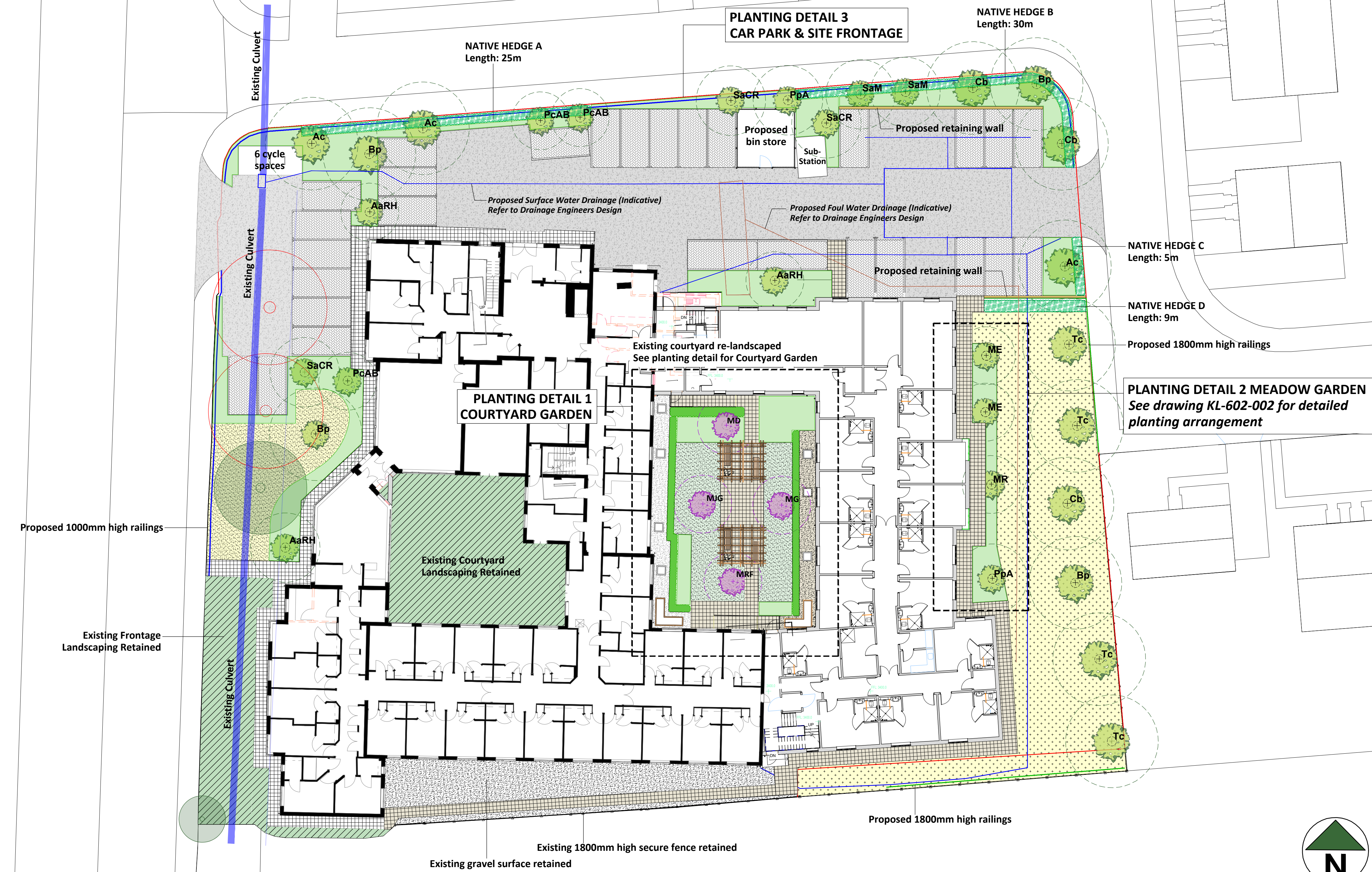
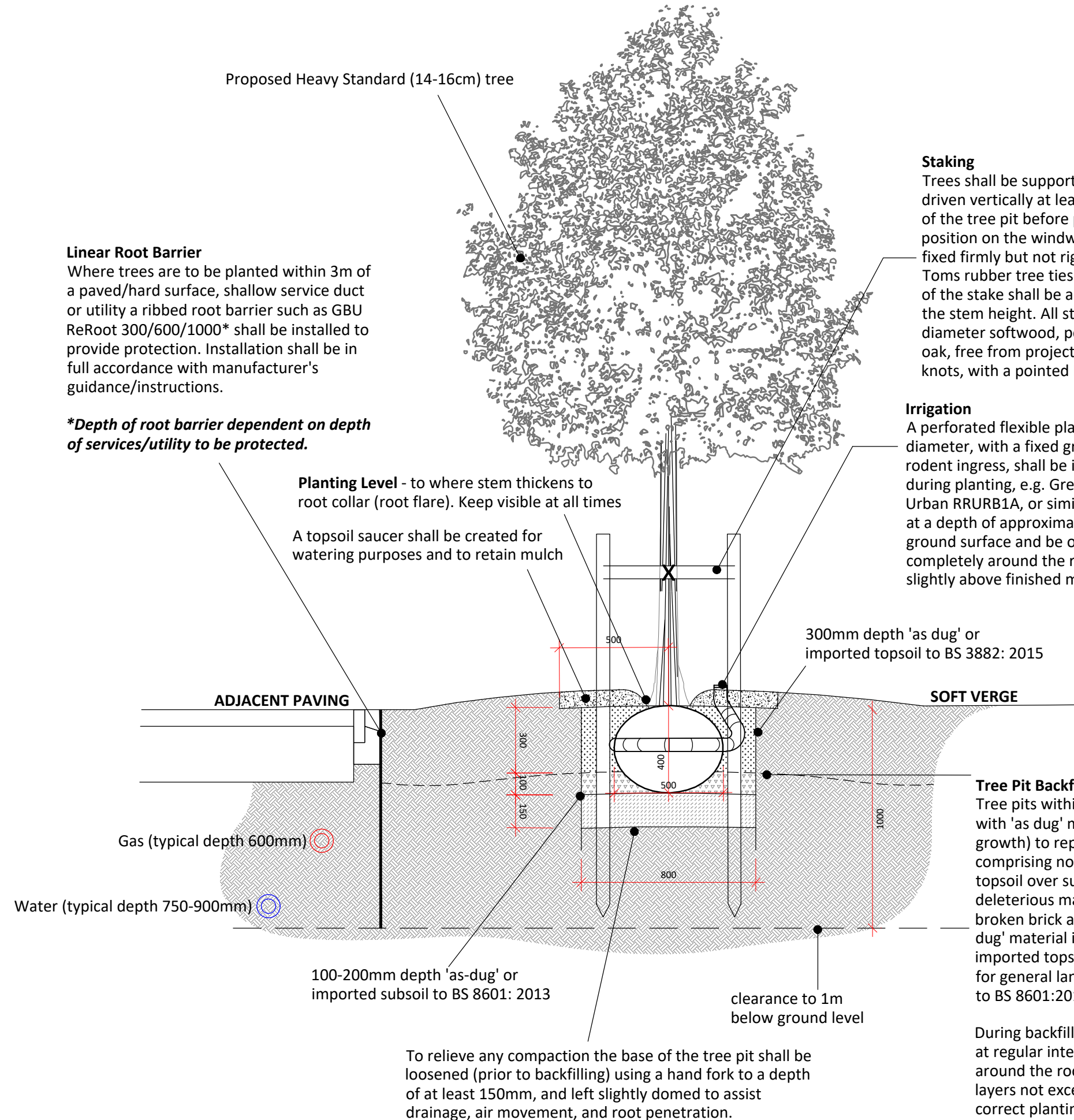
## IMPLEMENTATION PROGRAMME

All soft landscape works including preparatory operations shall be carried out when all building works are complete and before the end of the first planting season, subject to the following constraints:

- No planting or preparatory operations shall take place when the ground is frost bound, covered by snow, excessively wet or waterlogged, or in excessively dry or windy conditions
- Container grown plants may be planted at any time during favourable weather and soil conditions. Watering and weed control to be provided as necessary
- Planting of bare-root and rootballed deciduous trees and shrubs, where specified, shall be carried out from late October to late March. All bare root stock, where used, shall be root dipped in mycorrhizal inoculant such as Algimure or similar, applied in accordance with the manufacturer's recommendations
- Seed shall be sown in autumn or spring during calm weather and not when the ground is frost bound or waterlogged. Turf may be laid at any time during favourable weather and soil conditions.

### TYPICAL TREE PIT DETAIL - PROPOSED HEAVY STANDARD (12-14cm)

Typical installation into soft verge adjacent to paved surface, underground service or utility with root barrier protection  
Scale 1:20 @ A0



## Existing Landscape

### Trees Retained

The retention of existing trees will retain foraging and nesting opportunities for birds, provide habitat for invertebrates, and contribute to the species/structural diversity of the site.

### Protection

In accordance with BS 5837: 2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'.

### Trees Removed

To facilitate development. Replacement planting shall be carried out to compensate for any loss of biodiversity and canopy cover (see below).

### Paving to Existing Care Home Retained

Concrete paving

Gravel/stone

### Landscaping to Existing Care Home Retained

## Proposed Soft Landscaping

### Specimen Trees - Small

A total of 30no small-sized 'standard' native or wildlife-friendly ornamental trees shall be planted across the site to enhance the site for biodiversity and increase canopy cover in the local area to soften and integrate development. Tree species to include:

AaRH	Amelanchier arborea 'Robin Hill' (Serviceberry)
Ac	Acer campestre 'Elsrijk' (Field Maple)
ME	Malus 'Evereste' (Flowering Crab Apple)
MR	Malus 'Rudolph' (Flowering Crab Apple)
PcAB	Pyrus calleryana 'Autumn Blaze' (Colony Pear)
PpA	Prunus padus 'Albertii' (Bird Cherry)
SaM	Sorbus aria 'Magical' (Whitebeam)
Planted as Heavy Standards (12-14cm)	

### Garden Fruit Trees - Small

A total of 4no small garden fruit trees shall be planted within the courtyard to add seasonal colour and interest and to increase site biodiversity

Tree species to include the following British Apple trees:

1x MD	Malus 'Discovery'
1x MJG	Malus 'James Grieve'
1x MG	Malus 'Greensleeves'
1x MRF	Malus 'Red Falstaff'
To be planted as Half Standards (4-6cm girth) on M106 rootstock	
Dashed circle indicates estimated mature canopy	

### Mixed Species Native Hedge

Total Length: 69m

The planting of species-rich native hedgerows will assist to soften and integrate development, and provide foraging corridors for wildlife. To be maintained as wildlife at a height of 2m. See plant schedule for species mix, sizes and quantities.

### Wildlife-Friendly Ornamental Groundcover

Total Area: 352m<sup>2</sup>

Comprising a mix of ornamental flowering shrubs and perennials to provide a diverse range of habitat for wildlife. To be maintained as wildlife to provide year-round cover and visual interest as well as nectar/pollen for bees, butterflies and moths, and berries for birds.