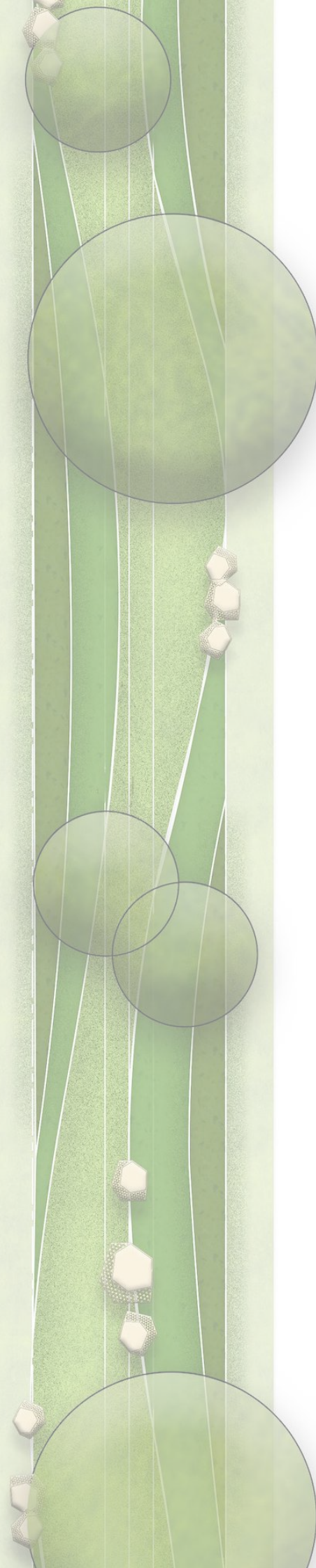




Bridge Farm, Twyford

RESERVED MATTERS

Landscape Design Statement

CH038-001G

10 September 2024

ilex

Landscape Architects

for

croudacegroup





Contents

Introduction	3
Landscape design concept	4
Proposed open space types	5
Landscape master plan	6
Open Space	
• The Water Meadows	7
• The Orchard	8
• Loddon Green & riverine swales	9
• Play	10
• The northern buffer with Bath Road	12
• Site gateway	13
Structural planting within character areas	14
• Typical plot planting layout	15
• Typical ornamental shrub planting	17
Swales & attenuation basins	
• Bioretention strip with tree planting	18
• Swale with riverine grasses	19
• Attenuation basin	20
Connective planting and scrapes for wading birds	21
Trees in areas with constrained ground conditions	22
S106 Open space provision	23
Biodiversity Net Gain and Landscape & Ecological Management	24
Refer to	
• CH038-002 Landscape Master plan	
• CH038-003 S106 Open Space Typologies	
Print single sided @ A3	

Introduction

Planning history

An **outline application** (212720) (with all matters reserved except access to the site) for the development of up to 200 dwellings, including 40% affordable housing and associated infrastructure, open space, biodiversity enhancements, landscaping and green infrastructure, following demolition of existing agricultural buildings was submitted to Wokingham Borough Council. It was approved and **permission granted on 5 July 2023**.

The approved details are;
5563.003 Rev I Proposed Access Arrangements
PRB-TWY-013E Illustrative Land Use Plan
PRB-TWY-012F Illustrative Storey Heights Plan

Condition 15 of the approval states;

‘The reserved matters application shall be accompanied by a **Landscape Design Statement** and plan to give details of the landscape proposals and structural planting including street tree planting in accordance with the landscape measures detailed in the submitted Landscape Report, in advance of the landscape details required to be provided to comply with the detailed landscape condition 16.

Reason: In order to ensure that provision is made to allow satisfactory maintenance of the landscaping hereby approved. Relevant policy: Core Strategy policy CP3 and Managing Development Delivery Local Plan policies CC03 and TB21’

Landscape design principles established in outline

The **Report on Landscape and Visual Matters** and Landscape Strategy Plan (David Williams Landscape Consultancy) set out various principles, aims and objectives. In summary, these are to;

- Retain existing vegetation as far as possible.
- Provide a landscape buffer along the A4 Bath Rd comprising retained trees, new trees & shrubs and grasslands.
- Introduce informal squares and ‘greens’ particularly along the main north-south street extending from Muddlers Lane.
- Integrate swales as landscape features (along streets) that connect to attenuation basins.
- Retain the western and southern parts of the site that lie in flood risk areas as public open space and;
 - manage the waterside vegetation
 - provide new planting to create a mosaic of habitats
 - include informal footpaths as a riverside walk
 - provide play facilities
- Provide open space in the south eastern corner of the site including an orchard and a tree & shrub planting buffer between it and existing residential uses to the south.
- Implement a comprehensive landscape scheme to front gardens to create pleasant and attractive amenity.

In addition, the **Ecological Appraisal** (Aspect Ecology) sets out recommendations for biodiversity enhancement including;

- the enhancement of the existing flood plain grasslands with supplementary planting including new riverine trees and the pollarding of existing Crack Willow Trees along the riverbank.
- the creation of new wetland habitats including SuDS features and a series of shallow, linear wader scrapes in the flood plain that would provide damp foraging habitats for birds such as Snipe.
- The provision of bird and bat boxes through the development.

Purpose of this Landscape Design Statement

This Landscape Design Statement demonstrates how the landscape and ecological principles established at the outline stage will be embedded in the landscape design. It also provides details of the proposals including structural planting.



Extract from Outline ‘Landscape Strategy Plan’ (David Williams Landscape Consultancy).

Landscape Design Concept

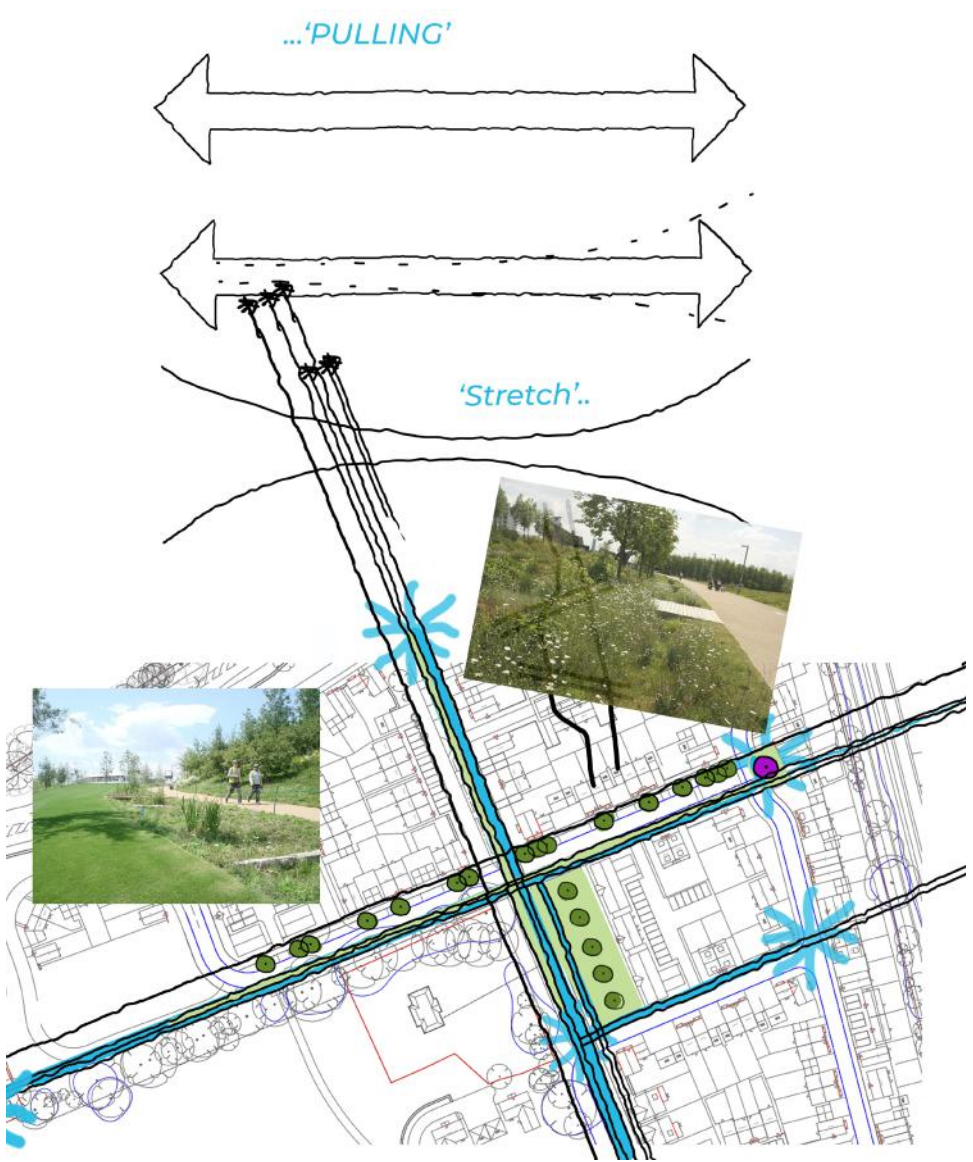
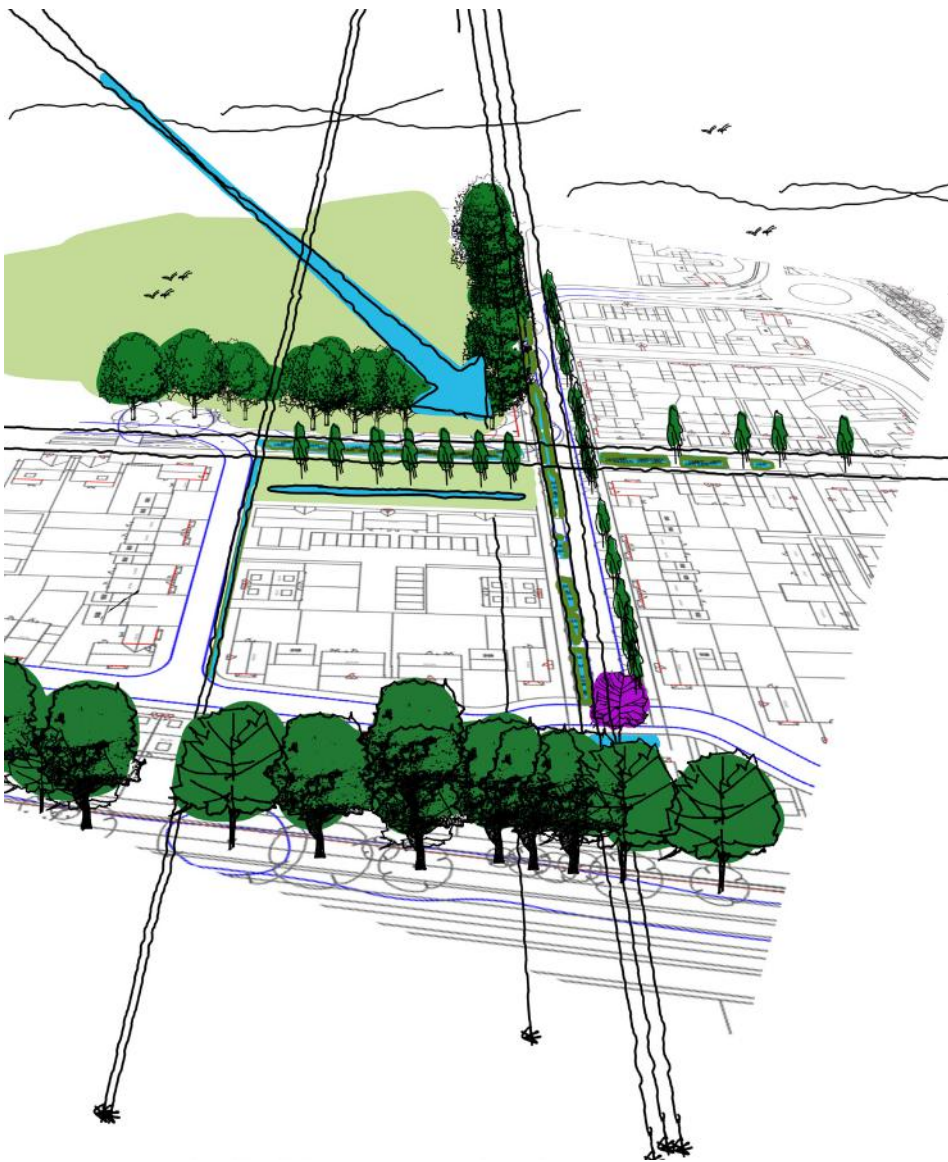
‘A Fluid Connection’

Croudace Homes produced an overarching landscape design concept for the site that is inspired by its riverside context.

The landscape design concept is to create a visual and physical connection between the development and its natural surroundings by;

- Using water (SuDS) as a unifying element through the development
- Integrating SuDS swales as attractive landscape features along streets, and SuDS basins as landscape features within the open space
- Potentially harvesting meadow seed from the existing flood plain grasslands for the production of site-specific wet meadow turf to be laid in swales
- Retaining the flood plain as a nature-rich open space with strong connections back into the development

The application of the concept has the potential to create a locally distinct and biodiverse character for the development that is anchored to and integrated with its context.



Landscape Design Concept Sketches by Croudace Homes



Precedent Images; Wet meadow grasslands, attenuation basins and swales

Proposed Open Space Types

The proposed site layout has progressed since the outline approval. It delivers a variety of open space types linked by SuDS features that run through the development area. The diagram opposite sets out their locations.

Shared surface **courtyards and plazas** appear along minor streets at the core of the development. These are predominantly hard landscaped spaces with integrated parking. Trees are set in areas of planting to provide amenity and /or to help to define gateways and thresholds.

Soft landscape buffers are comprised of retained trees, native tree planting in a woodland / scrub planting matrix as well as areas of meadow grassland.

‘The Water Meadows’ occupy the flood plain and provide nature-rich, recreational open space between the development and the River Loddon.

‘Loddon Green’ is a semi-formal open space along the historic ‘Muddlers Lane’ north-south route.

A Connective space provides a link between the water meadows and the heart of the development. Amenity lawns and mown paths are flanked with meadow and tree planting.

The **community orchard** includes local Berkshire varieties.

An area towards the edge of the watermeadows will provide a **NEAP**.

SuDS features include swales and bioretention strips along streets connecting to a large attenuation basin in the water meadows.

The following pages set out the landscape master plan and details of the layout and planting of the open space types.



- Courtyards and Plazas
- Soft Landscape Buffers and Roundabout
- The Water Meadows
- Loddon Green
- Connective space
- Community Orchard
- NEAP and Incidental Play Locations
- Bioretention swales with tree planting
- Drainage swale with riverine planting
- Attenuation basin / outflow
- Scrapes for wading birds (ecological enhancement)

Landscape Master Plan

The Landscape Master plan (CH038-002, shown opposite) embeds the principles established at the outline stage. It integrates the development into the broader landscape, provides a high quality setting for new homes and a good standard of amenity for residents whilst enhancing biodiversity.

Green streets and a range of engaging, nature-rich open spaces are suitable for active and passive recreation. It includes a space allocated for a Neighbourhood Equipped Area for Play (NEAP). SuDS elements are integrated as landscape features.

- Native meadow
- Species rich amenity grassland / mown paths through meadow
- Wet native meadow in SuDS features (basins and swales)
- Native marginal & aquatic planting
- Native Scrub planting
- Native Woodland planting
- Ornamental planting
- Connective planting
- Native tree planting
- Street tree planting
- Feature tree planting
- Orchard tree planting
- Low hedges (front plot boundaries) (0.8m)
- Tall hedges (rear plot boundaries)
- 'Incidental Play' / interpretive signage locations
- Retained trees
- Site boundary



The Water Meadows

‘The Water Meadows’ occupy the flood plain and provide nature-rich, recreational open space between the development and the River Loddon. Mown paths meander through it and around the attenuation basin. They provide a circular route and connect to a swathe of short grassland around the edge of the built area from which the amenity of the riverside can be appreciated. Native tree and shrub planting and the provision of ecological features enhances the existing habitat.

Planting Details

Trees; 12-14cm girth, Heavy Standard or Large Feathered
Along the river edge (western boundary); Crack Willow (*Salix fragilis*)
Within the space ; White Willow (*Salix alba*), Common Alder (*Alnus glutinosa*), Downy Birch (*Betula pubescens*)
Along the eastern boundary adjacent to the built up area; Small Leaved Lime (*Tilia cordata*), Bird Cherry (*Prunus padus*), Common Alder (*Alnus glutinosa*). Feature trees; Tulip Tree (*Liriodendron tulipifera*)

Scrub planted in a matrix as transplants, 60-100cm tall, with rabbit guards and stakes @ 3 per m2 including; Goat Willow (*Salix caprea*), Hazel (*Corylus avellana*), Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Dog rose (*Rosa canina*), Honeysuckle (*Lonicera periclymenum*), Dog wood (*Cornus alba*), Crab apple (*Malus sylvestris*), Viburnum opulus (Guelder rose), Elder (*Sambucus nigra*).

Grasslands

The existing grassland will be maintained short in **species rich amenity grass areas** and along mown paths. Reinstatement with Emorsgate EL1 ‘Flowering Lawn’ where necessary.

The existing grassland will be retained and managed for biodiversity in **native meadow areas** with no more than two cuts per year with cuttings raked up disposed off-site at a composting facility. Reinstatement with Emorsgate ‘EM8 Meadow Mixture for Wetlands’ for areas within the 1:100 year flood zone, or Emorsgate ‘EM2 Standard General Purpose Meadow Mixture’ for areas above the flood zone.



The Orchard

The orchard will include varieties of Apple and Cherry in line with the ecologist’s recommendations. It will also include local varieties (Berkshire) such as Cox’s Orange Pippin Apple and Charles Ross Apple. The orchard trees will be grown in the existing grassland.

Planting Details

Orchard trees will generally be planted as half standards; Species will include;

Apples on semi-vigorous roostock such as MM106

- Malus domestica ‘Charles Ross’
- Malus domestica ‘Cox’s Orange Pippin’
- Malus domestica ‘Bramley’s Seedling’

Pears on semi-vigorous rootstock such as Quince A

- Pyrus communis ‘Buere Hardy’
- Pyrus communis ‘Doyenne du Commice’

Cherries and Plums

- Prunus domestica ‘Victoria’ on St Julian Rootstock
- Prunus avium ‘Stella’ on Colt Rootsock

Other orchard trees

- Mulberry; Morus nigra
- Medlar; Mespilus germanica ‘Nottingham’

Trees along the street edge

Italian Alder (Alnus cordata), 12-14cm girth, Heavy Standard

Native Trees along the southern boundary; 12-14cm girth, Heavy Standard

Hornbeam (Carpinus betulus), Field Maple (Acer campestre), Oak (Quercus robur), Small Leaved Lime (Tilia cordata)

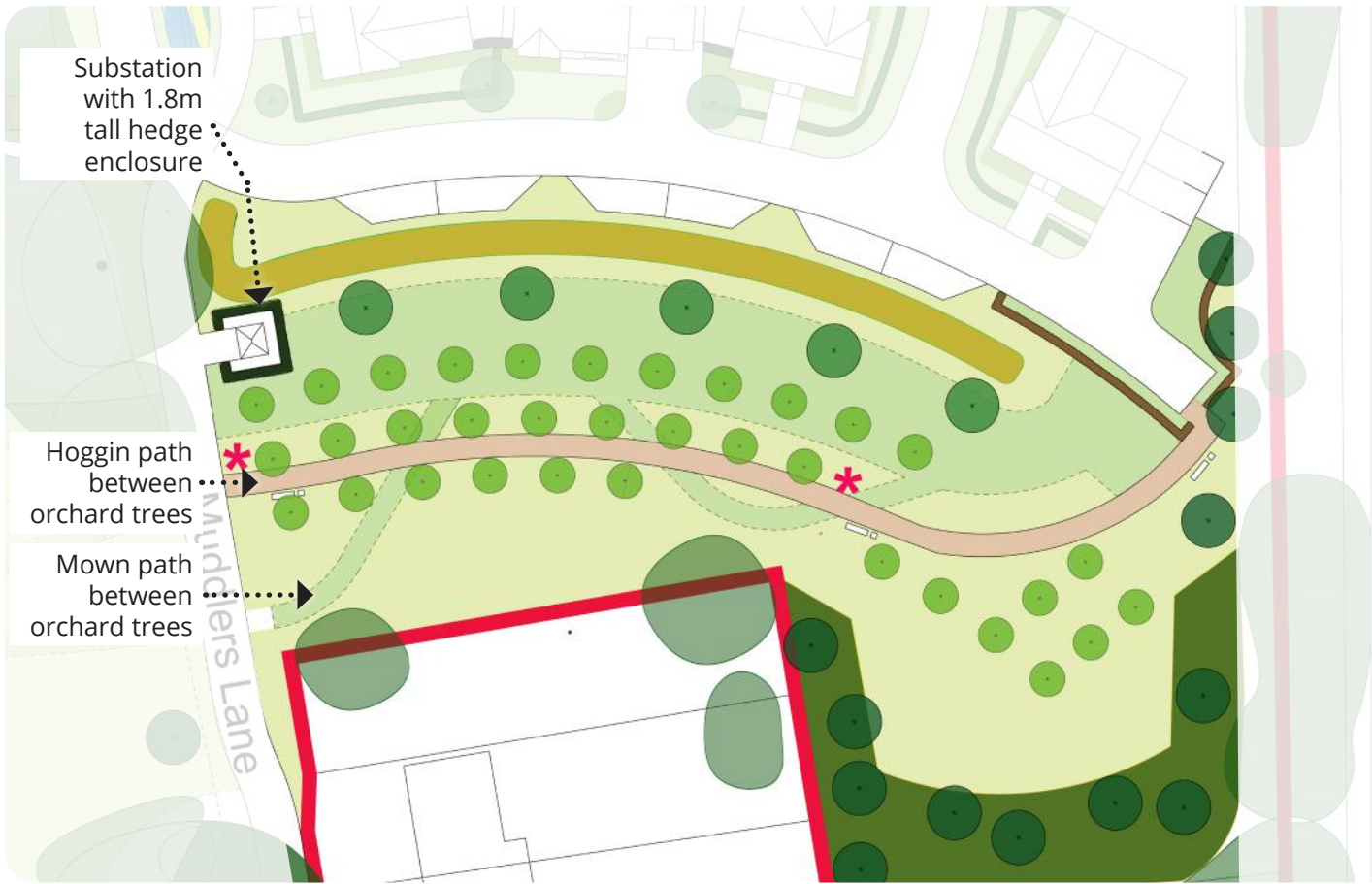
Scrub will be planted in a matrix as transplants, 60-100cm tall, with rabbit guards and stakes @ 3 per m2 including;

Goat Willow (Salix caprea), Hazel (Corylus avellana), Hawthorn (Crataegus monogyna), Blackthorn (Prunus spinosa), Dog rose (Rosa canina), Honeysuckle (Lonicera periclymenum), Dog wood (Cornus alba), Crab apple (Malus sylvestris), Guelder Rose(Viburnum opulus), Elder (Sambucus nigra) and Holly (Ilex aquifolium)

Grasslands

The existing grassland will be maintained short in **amenity grass areas** and along mown paths. Reinstatement with Emorsgate EL1 ‘Flowering Lawn’ where necessary.

The existing grassland will be retained and managed for biodiversity in **native meadow areas** with no more than two cuts per year with cuttings raked up disposed off-site at a composting facility. Reinstatement with Emorsgate ‘EM2 Standard General Purpose Meadow Mixture’.



- Native meadow
- Species rich amenity grass
- Connective planting
- Native Woodland / Scrub planting (southern landscape buffer)
- Street trees
- Native trees
- Orchard trees
- 'Incidental play' / interpretive signage
- Bins & Benches



Precedent images; Orchard

Loddon Green

‘Loddon Green’ is a semi-formal open space along the historic ‘Muddlers Lane’ north-south route. It provides setting to adjacent apartment blocks and opposite the existing ‘Orchard Cottage’ as well as usable amenity space.

A hedged area to the rear of the apartments provides amenity space for residents of the apartment blocks.

Planting Details

Trees; 12-14cm girth, heavy standard
 Hornbeam ‘Franz Fontaine’ (Carpinus betulus ‘Franz Fontaine’), Crab apple ‘Golden Hornet’ (Malus ‘Golden Hornet’
 Feature Trees; Sweet Gum (Liquidambar styraciflua ‘Worplesdon’)

Hedging; pre-formed, ‘instant’ hedge
 Low, 60-80cm tall; Portuguese laurel (Prunus lusitanica)
 Tall, 180cm tall; Portuguese laurel (Prunus lusitanica)

Ornamental shrub planting;
 A mix of shrubs and herbaceous plants with an emphasis on ‘plants for pollinators’; planted in 5ltr pots @ 4 per m2.

Grassland;
 Species Rich Amenity Grass seed; Emorsgate EL1 ‘Flowering Lawn’, or Wildflower Turf ‘Species rich lawn turf’
 Native meadow; Emorsgate EM2 Standard general purpose meadow mixture or Wildflower Turf ‘Landscape 34 Wildflower Turf’.



Precedent image;
Meadow grassland border and ornamental planting



Precedent image;
Incidental play feature



- Native meadow border
- Species rich amenity grass
- Street trees
- Feature trees
- Ornamental planting
- Clipped evergreen hedge 1m tall
- Clipped evergreen hedge 1.8m tall
- Interpretation signage / incidental play
- Bins & Benches

Play

An area towards the edge of the water meadows will provide a **NEAP**. It will be set within shrub and hedge planting and provide a variety of thematic play experiences for a range of age ranges, divided into a number of connected zones.

The NEAP will connect to a path leading through the open space that will be designed as a 'nature trail'.

The potential design of the NEAP is explored in more detail overleaf. The detail of the NEAP and its equipment will be progressed through planning conditions.

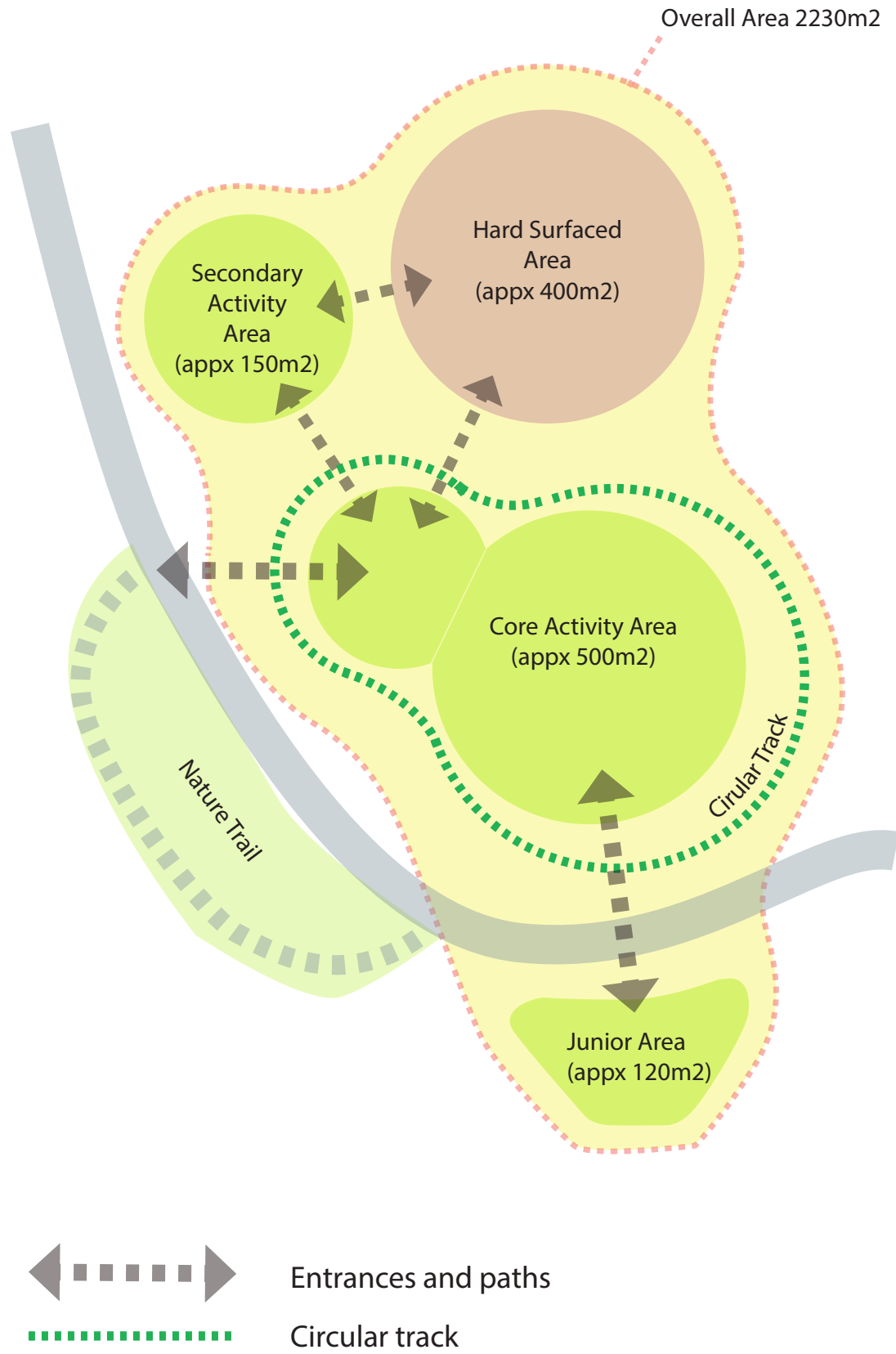
Planting Details

Trees; 12-14cm girth, heavy standard
Native Trees; Sorbus aria (Whitebeam), Gean (Prunus avium),
Feature Trees; Prunus avium 'Plena' (Double Gean) / Black birch (Betula nigra)

Hedge; Low pre-formed hedge 60-80cm tall; Hornbeam (Carpinus betulus)

Ornamental shrub planting; A mix of robust shrubs and herbaceous plants with an emphasis on 'plants for pollinators', planted in 5ltr pots @ 4 per m2.

Grass; Species Rich Amenity Grass; Emorsgate EL1 'Flowering Lawn' seed, or Wildflower Turf 'Species rich lawn turf'



Incidental Play Examples;



Grass mounds



Boulders as play elements

The landscape master plan also indicates potential locations for '**Incidental Play and Interactive interpretive signage**'; a mix of informal, creative play elements (e.g. grass mounds and boulder clusters) and interactive signage that helps to interpret the landscape and ecological value and interest of the open space areas. These are dispersed around the open spaces to encourage their exploration.

Play

Croudace have explored some initial ideas with Timberplay Ltd for design development through planning conditions.

There is potential to integrate;

- Amphitheatre, or raked seating around some of the core play areas
- Sensory Play
- Adventure Play
- Water Play
- Nature Trail

The hard surfaced area could be enlivened with art painting of its surface, and the marking out of areas for informal games.



Potential amphitheatre or raked seating

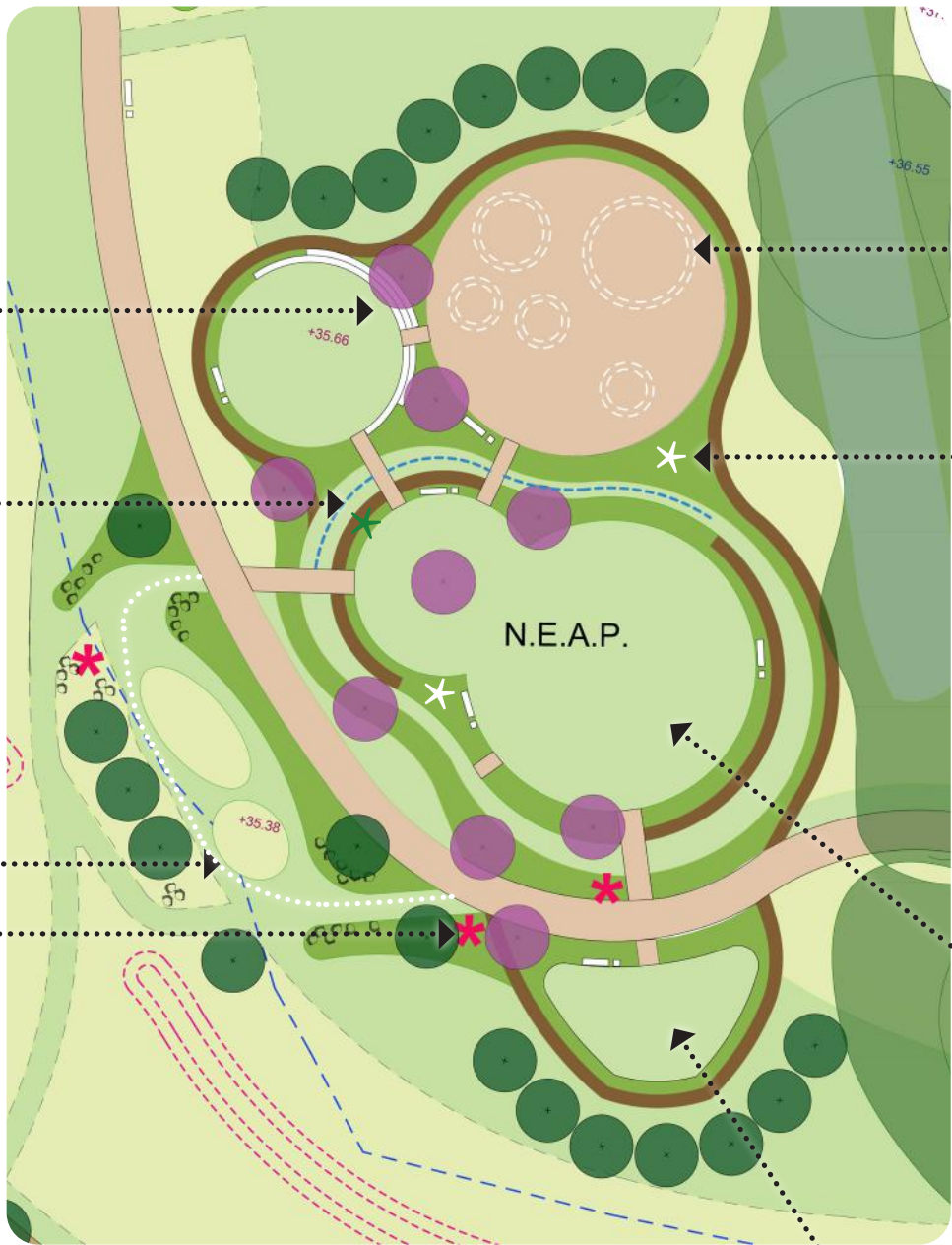


Potential water play element

Nature trail



Potential interpretive / interactive signage



- Native meadow grass
- Species rich amenity grass
- Ornamental shrub
- Native trees
- Feature trees
- Clipped native hedge
- Interpretation / interactive signage
- Sensory play
- Bins and benches



Hard surfaced area with art / games line painting



Informal / creative / sensory play elements integrated with soft landscape setting



Core activity area in landscape setting (Artist's impression by Timberplay Ltd)

Junior area

The northern buffer with Bath Road



The **landscape buffers** comprise retained trees, native tree planting in a native woodland / scrub planting matrix as well as areas of meadow grassland. They are designed to provide a degree of separation between the development and Bath Road (and to adjacent residential uses to the south).

Planting Details

Trees; 12-14cm girth, Heavy Standard
Native Trees; Hornbeam (*Carpinus betulus*), Field Maple (*Acer campestre*), Oak (*Quercus robur*), Silver Birch (*Betula pendula*), Sorbus aria (*Whitebeam*), Sorbus torminalis (*Wild Service Tree*), Scots Pine (*Pinus sylvestris*), Gean (*Prunus avium*), Small Leaved Lime (*Tilia Cordata*)
Feature Trees; Ginko (*Ginko biloba*)

Woodland Planting Matrix; transplants, 60-100cm tall, with rabbit guards and stakes @ 3 per m2 including;
Goat Willow (*Salix caprea*), Hazel (*Corylus avellana*), Hawthorn (*Crataegus monogyna*), Hornbeam (*Carpinus betulus*), Field Maple (*Acer campestre*), Silver Birch (*Betula Pendula*), Crab Apple (*Malus sylvestris*), Holly (*Ilex aquifolium*), Yew (*Taxus bacata*)

Grassland
The existing grassland will be retained and managed for biodiversity in **native meadow areas** with no more than two cuts per year with cuttings raked up disposed off-site at a composting facility. Reinstatement with Emorsgate 'EM2 Standard General Purpose Meadow Mixture'. A short verge will be **species rich amenity grass**.

Native Hedge
The native hedge will be pre-formed 'instant hedging' supplied at 60-80cm tall and to be maintained at 1m height and width. it will comprise no less than five species including Hawthorn (*Crataegus Monogyna*), Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*), Blackthorn (*Prunus spinosa*), Guelder rose (*Viburnum opulus*).



Woodland Planting Matrix



Meadow grassland

Site gateway

The landscape design helps to define a strong site gateway.

The new roundabout to be delivered as part of the S278 works will be planted with coniferous trees.

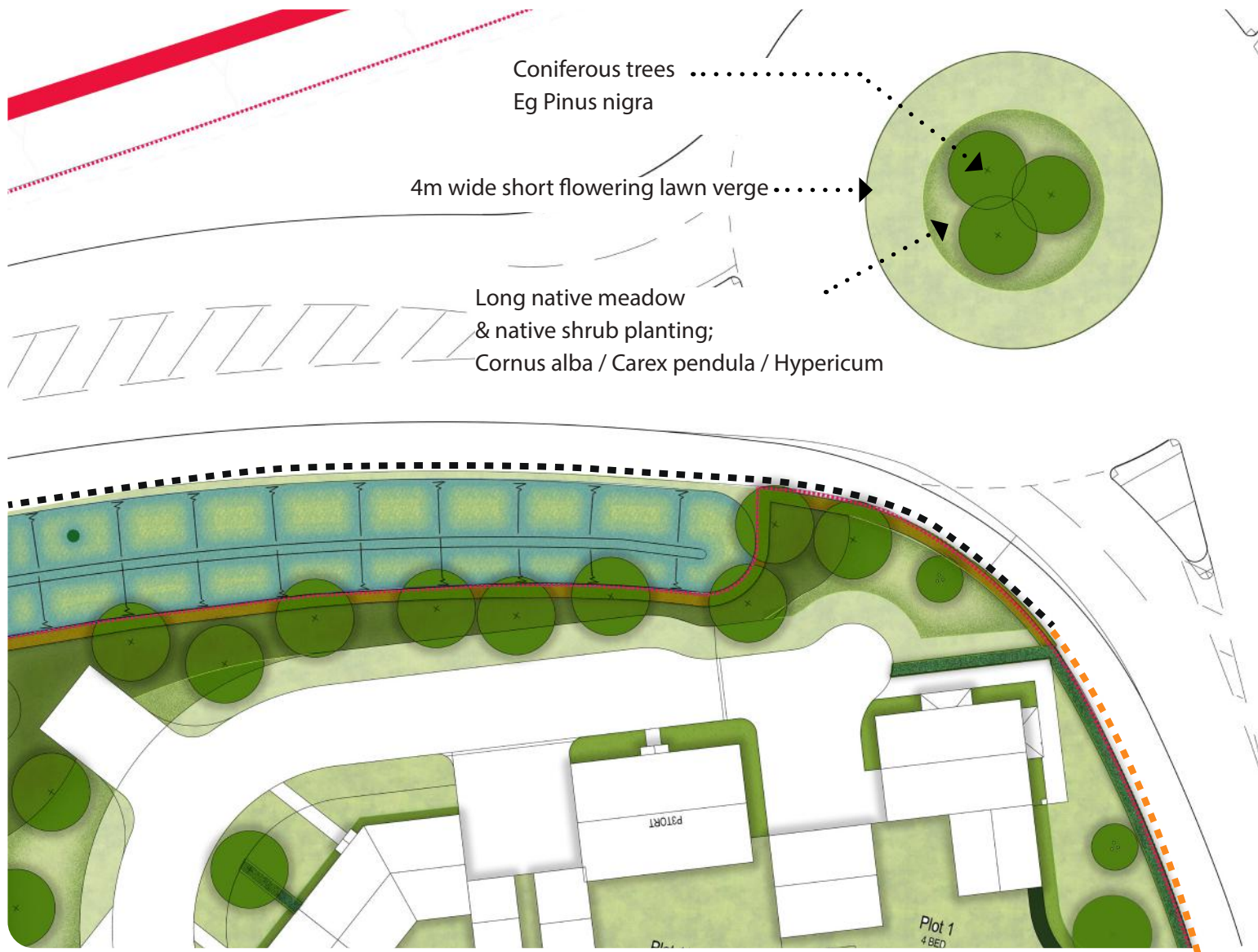
Wide swales flank the entrances and will be enclosed with estate railing on the front edge to Bath Rpad and native hedge planting on the back edge with the development.



Austrian Pine (Pinus nigra)



Native shrub understorey below pine trees; Dogwood, Pendulous Sedge, St John's Wort



- Estate railing
- Ornamental garden railing eg Zaun 'Holloway'
- Native hedge planting (instant hedging), to be maintained as clipped hedge 1m tall
- Instant hedge; evergreen (plot boundaries)
- Native tree and shrub matrix
- Long native grassland meadow
- Flowering lawn verge / Amenity turf within plot boundaries
- S278 Boundary

Structural planting within character areas

Character Areas

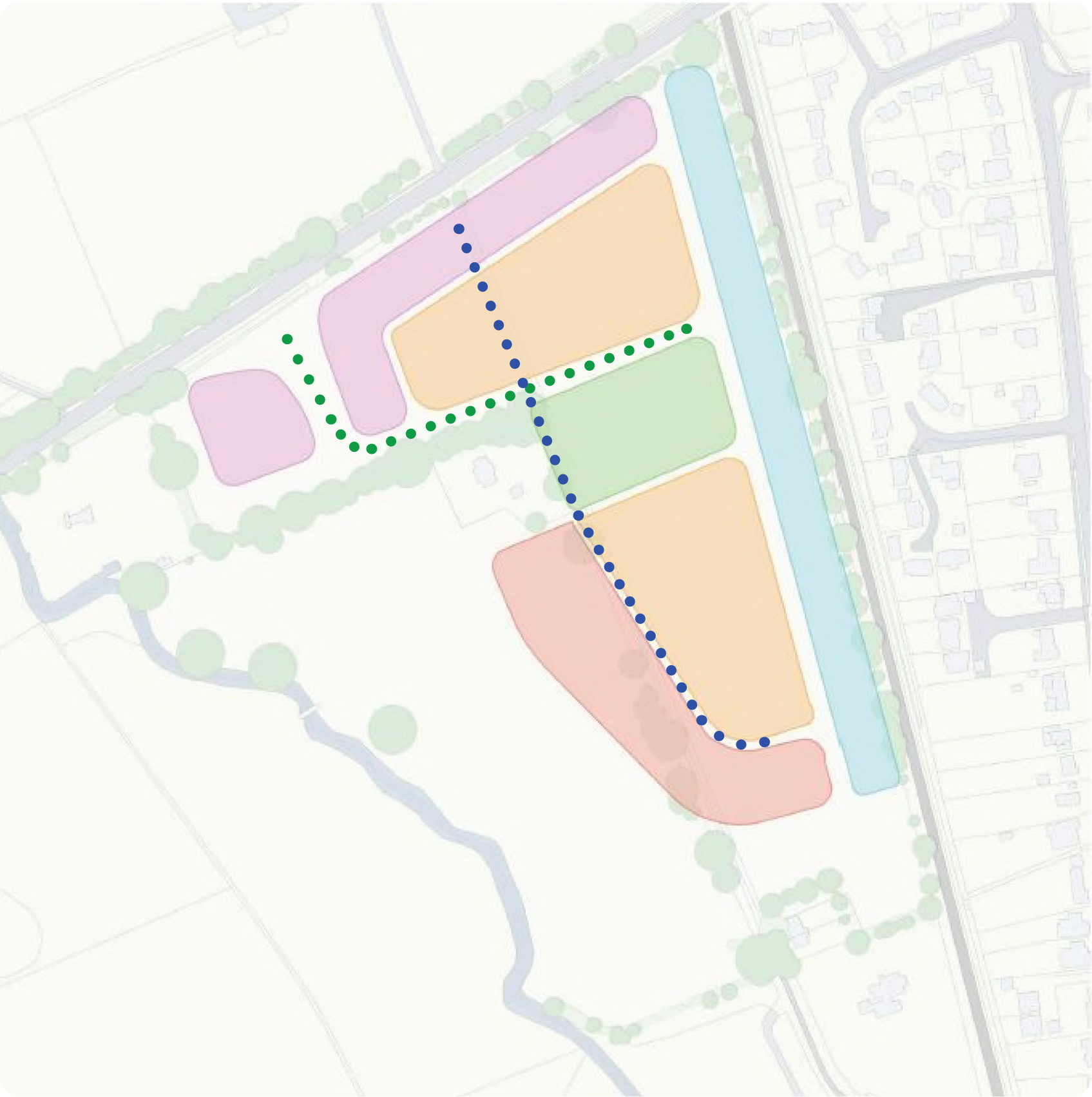
The development area has been divided into proposed character areas as shown on the plan opposite. These are described in the Design & Access Statement.

The character areas are;

-  **Bath Road Edge**
-  **Central**
-  **The Green (including Loddon Green)**
-  **Railway Edge**
-  **River Edge**
-  **Main Street**
-  **Swale Street**

The planting design has an important role to play in contributing to the definition of these character areas. It is the structural elements of planting that have the most impact; particularly the trees and hedges that sometimes form front and rear plot boundaries.

The tree and hedge species planned for each character area are shown overleaf.



Extract from Character Areas Plan by Croudace Homes

Structural planting within character areas

	Street Trees	Feature Trees	Hedging	
	12-14cm girth, heavy standards, clear stem 200cm.	12-14cm girth, heavy standards, clear stem 200cm.	Pre-formed / instant hedge. 60 - 80cm tall.	
Bath Road Edge	 Sorbus aria 'Lutescens'	 Ginkgo biloba	 Photinia 'Red Robin'	
Central	 Pyrus 'Chanticleer' / Sorbus hupehensis	 Acer buergerianum	 Ligustrum ovalifolium	
The Green	 Carpinus betulus 'Franz Fontaine' / Malus 'Golden Hornet'	 Liquidambar styraciflua 'Worplesdon'	 Prunus lusitanica	
Railway Edge	 Amelanchier 'Robin Hill' / Malus 'tschonoski'	 Prunus 'Spire'	 Giselinia littoralis	 Osmanthus burkwoodii
River Edge	 Acer campestre 'William Caldwell' / Alnus cordata	 Liriodendron tulipifera / Prunus avium 'Plena'	 Elaeagnus ebbingei	

Main Street
14-16cm girth, extra heavy standards, clear stem 200cm.
 
Tilia cordata 'Greenspire' Ulmus 'New Horizon'

Swale Street
12-14cm girth, heavy standards, clear stem 200cm.

Acer 'William Caldwell'

Typical plot planting layout

Block and plot layouts vary and so the planting design for each plot requires a unique approach. Plots with wider front gardens may include amenity grass lawns.

Where possible, hedge boundaries are generally placed at block corners where they help to define streetscape junctions. Tree planting is generally located to the side of buildings rather than to their fronts.

Ornamental planting comprises a mix of shrubs and herbaceous perennials, with typical palettes indicated overleaf.

- Amenity grass turf 
- Ornamental shrub planting (5ltr pots @ 4 per m2) 
- Pre-formed 'instant' hedge 60-80cm tall 
- Pre-formed 'instant' hedge 180cm tall 
- Tree planting 

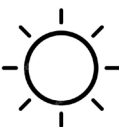
General planting specifications

- Tree planting with double timber stakes, irrigation tubes and 5cm depth bark mulch
- Native woodland / native scrub planting matrix with biodegradable guards, timber stake and 5cm depth bark mulch
- Shrub planting with 5cm depth bark mulch

All into cultivated ground with topsoil and subsoil depths to British Standards.



Typical ornamental shrub planting



Heavenly Bamboo



Lavander and Stipa



Hebe 'Rakaiensis'



Choisya



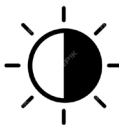
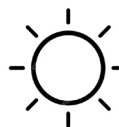
Catmint '6 Hills Giant'



Tawhiwhi 'Irene Paterson'



Culver's Root 'Cupid'



Daphne



Spindle 'Emerald Gaeity'



Japanese Sedge



Mahonia ganpinensis



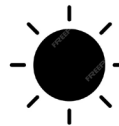
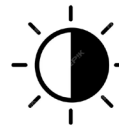
Dogwood 'Midwinter fire'



Heuchera 'Lime Marmalade'



Skimmia 'Kew Green'



Lillyturf



American Sword Fern



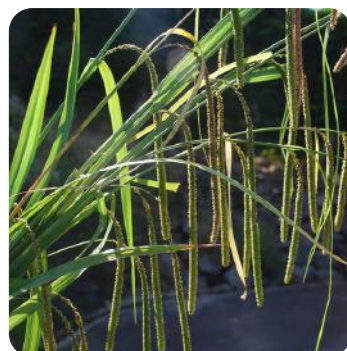
Lenten Rose



Japanese Forest Grass



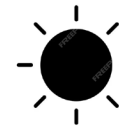
Judds Viburnum



Pendulous Sedge



Elephant's Ears 'Silberlicht'



A variety of shrub and herbaceous planting mixes will be specified for the front gardens of plots in 5ltr pots at 4 per m2. Similarly, ornamental mixes are also present in open space areas such as the NEAP.

The emphasis for plant selection is on creating a simple, contemporary feel, with seasonal interest.

Planting mixes are tailored to the planting aspect.

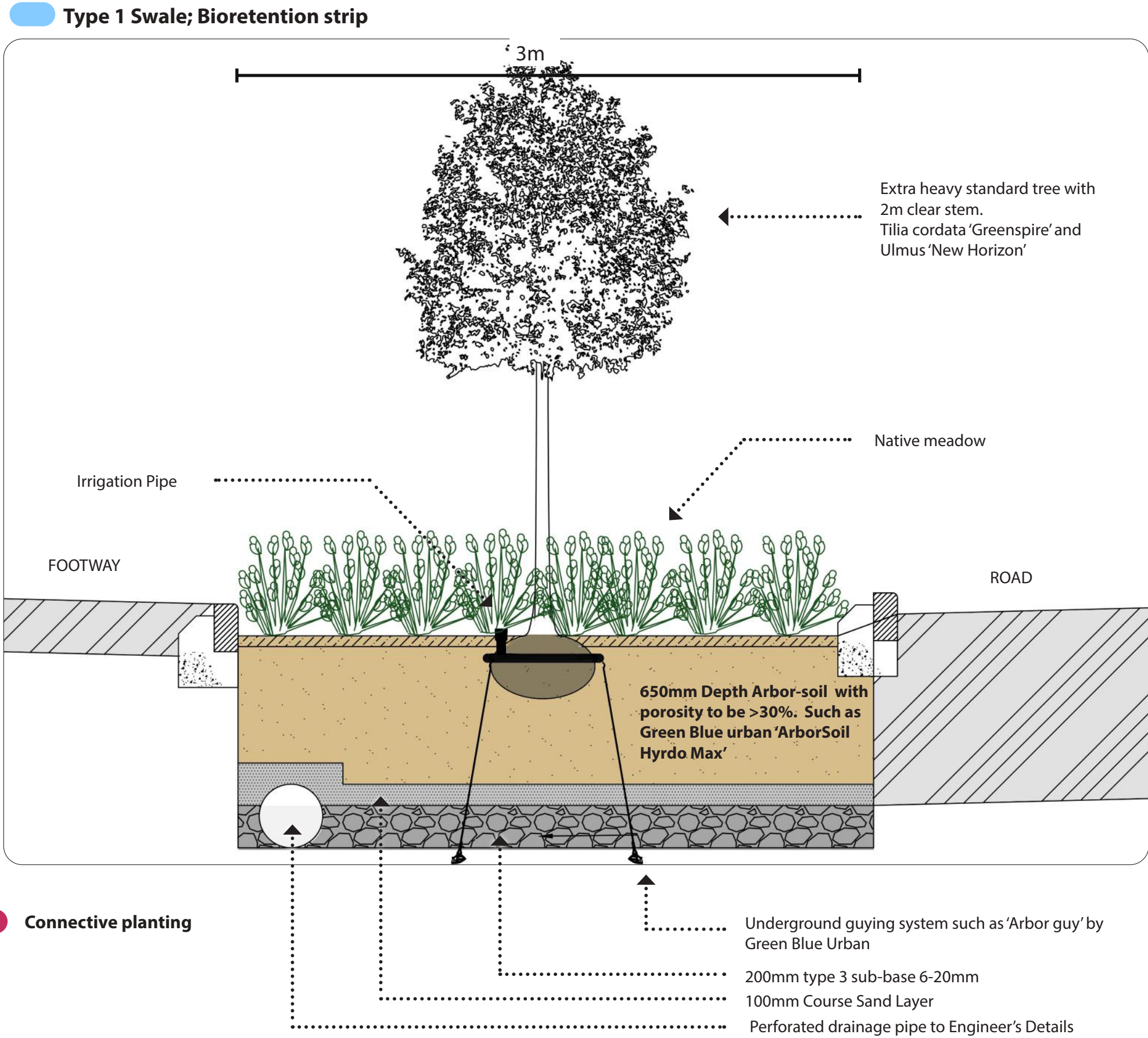
The plants specified will include a mix of hardy shrubs, herbaceous perennials and ornamental grasses, many of which are of known ecological value, for example, to pollinators.



Swales & attenuation areas

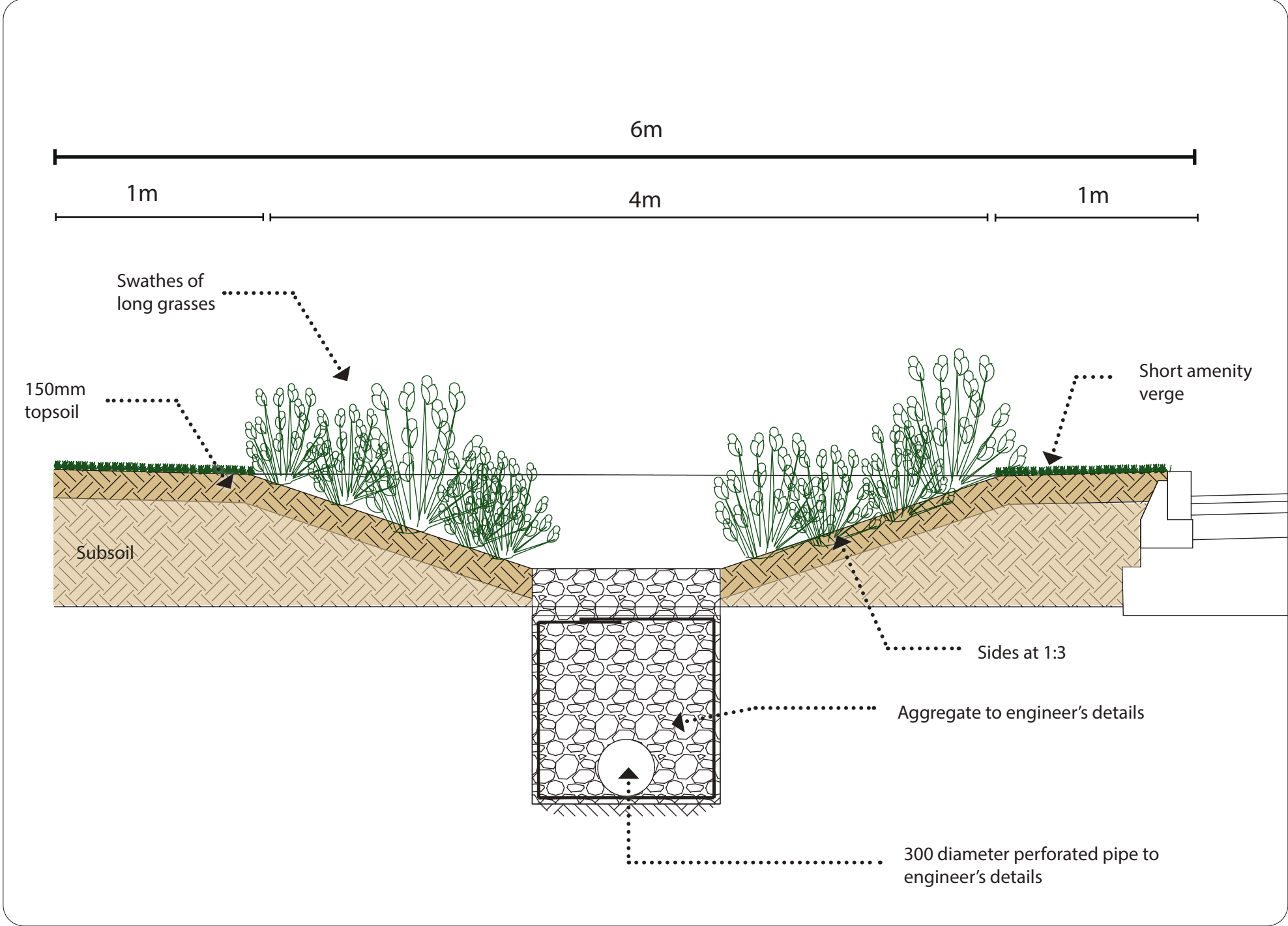
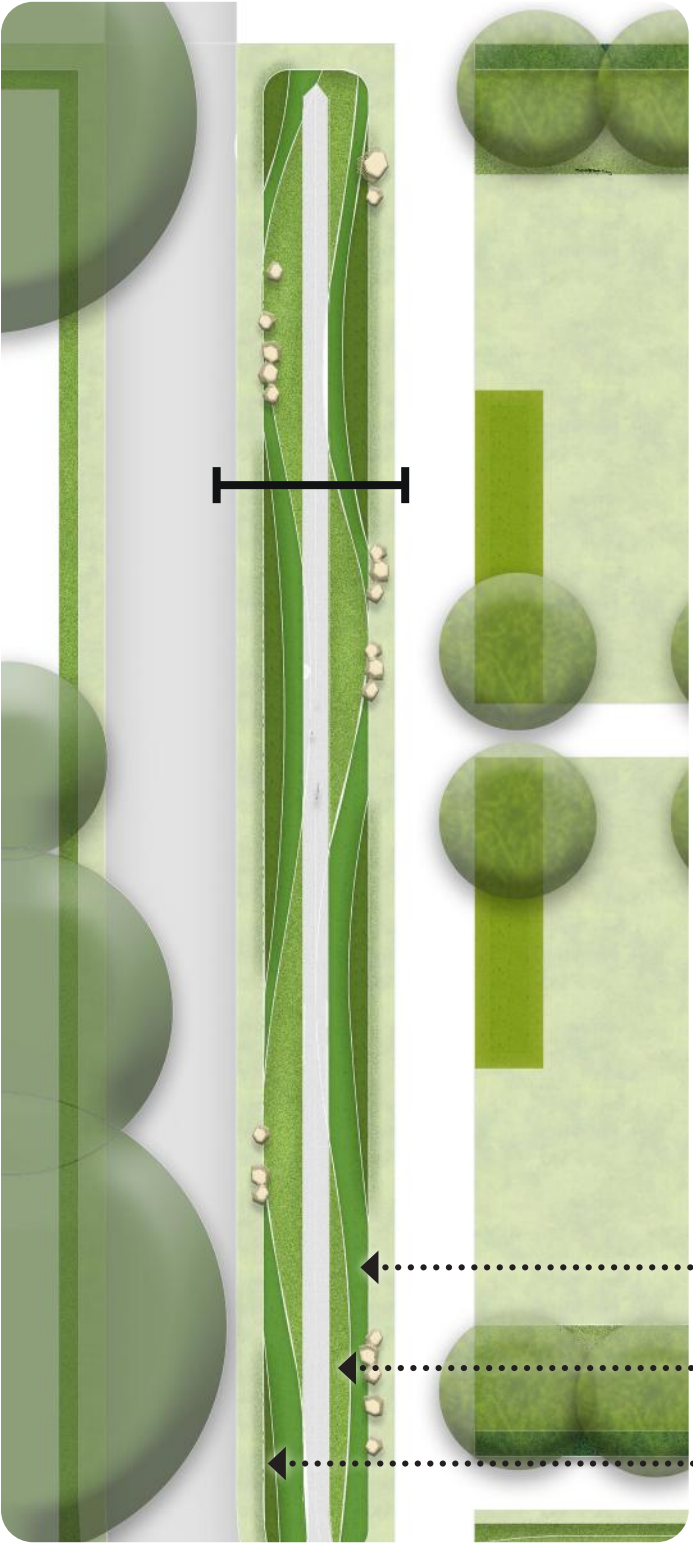


- Swale type 1 (Bioretention Strip) 3m wide**
Type 1 swale runs west - east along streets and includes tree planting
- Swale type 2 ('Riverine Swale') 6m wide;**
5m width swale @ 1:3 with 0.5m amenity grass margins
Type 2 swale runs along the main north - south street and includes meadow grassland and swathes of grasses.
- Attenuation basins**
The attenuation basins will have sloping banks at 1:5 with wet meadow grassland.
- Shallow Scrapes** in the meadow (up to 40cm deep for wading birds to ecologist's recommendations).



Swales and attenuation areas

Type 2 Swale; With Riverine Grasses



Riverine Swales are 6m wide and will be planted with swathes of native grasses and native wet meadow to create a visual feature along the main north-south connection through the development connecting with Muddler's Lane.

Wildflower Turf 'SuDS Turf' or potentially turf to be cultivated from seed collected from the existing riverside grasslands.
Planting swathes (5ltr pots @ 4 per m2);
Pendulous Sedge (*Carex pendula*), Soft Rush (*Juncus effusus*),
Yellow flag iris (*Iris pseudacorus*).

Swales and attenuation areas

Attenuation Basin

The attenuation basin is designed as an integrated landscape feature. It has shallow 1:4 banks that negate the need for fencing or railings.

Mown paths provide circular routes around it with informal boulder seating set at its edge. Scrub is planted in pockets around its banks.

The basins will be turfed or seeded with native wet meadow (with the potential to use seed harvested from the water meadows). The base of the basin will also be planted with native marginal plants.

Marginal Plants;

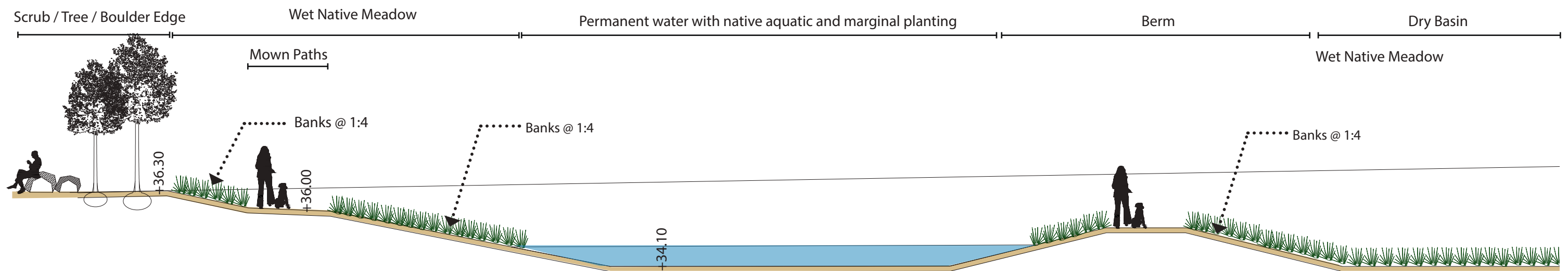
2Ltr pots @ 4 per m2. Yellow Flag Iris (*Iris pseudacorus*), Marsh
Marrigold (*Caltha palustris*), Pendulous sedge (*Carex pendula*), Sharp
Flowered Rush, (*Juncus acutiflorus*).

Aquatic Plants;

Native Water Lilly (*Nymphaea alba*), Native Water Hornwort (*Ceratophyllum demersum*), Native Water Mint (*Mentha aquatica*), Native Bog Bean (*Menyanthes trifoliata*).

-  Native meadow
-  Native scrub planting
-  Native tree planting
-  Species rich amenity grass
-  Native wet meadow in swale
-  Aquatic / Marginal planting

Outfall to river



Connective planting and ecological scrapes

Connective Planting

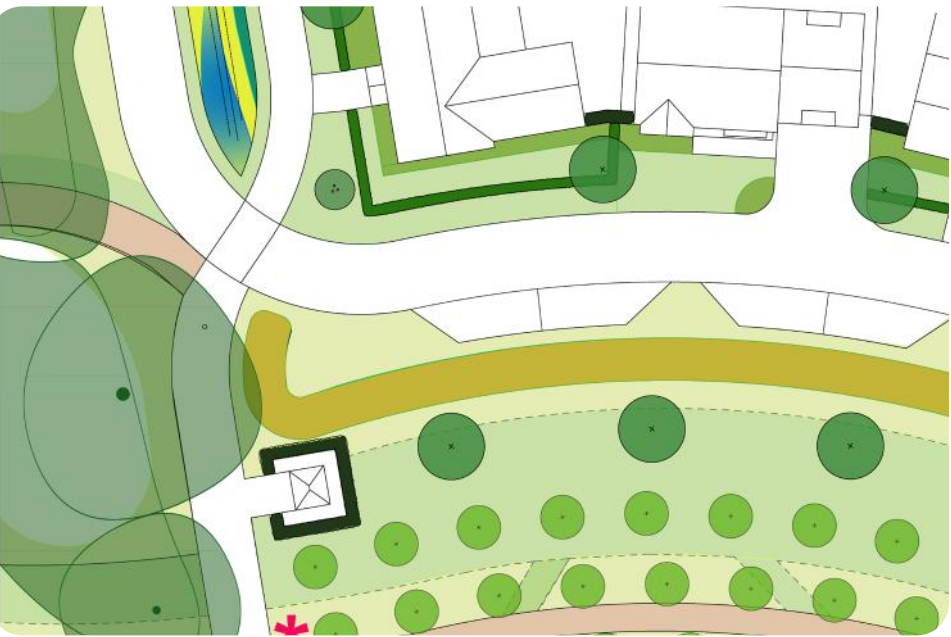
The master plan identifies two areas of ‘connective planting’.

Connective planting is in shallow linear depressions that are not part of the engineered drainage. The depressions are 30cm deep and with sides no steeper than 1:3. The shallow depressions will have relatively damp soil conditions and will be planted with suitable mix of native and ornamental plants including;

- Pendulous Sedge (*Carex pendula*)
- North American Wild Hydrangea (*Hydrangea arborescens*)
- Chinese astilbe (*Astilbe chinensis*)
- Lady fern (*Matteuccia struthiopteris*)
- Common rush (*Juncus effusus*)

in 5ltr pots @ 4 per m2.

Connective planting is intended to create a visual link between the swales within the development area and the water meadows.



Connective planting

Shallow scrapes for Wading Birds

Several narrow, shallow scrapes will be made in the water meadow grasslands within the flood area. These become temporarily inundated during flood and provide valuable habitat for wading birds. They will be seeded with native wet meadow.

Further details can be found in the ecologist’s report.



Ecological scrapes



A lapwing wading in a shallow scrape

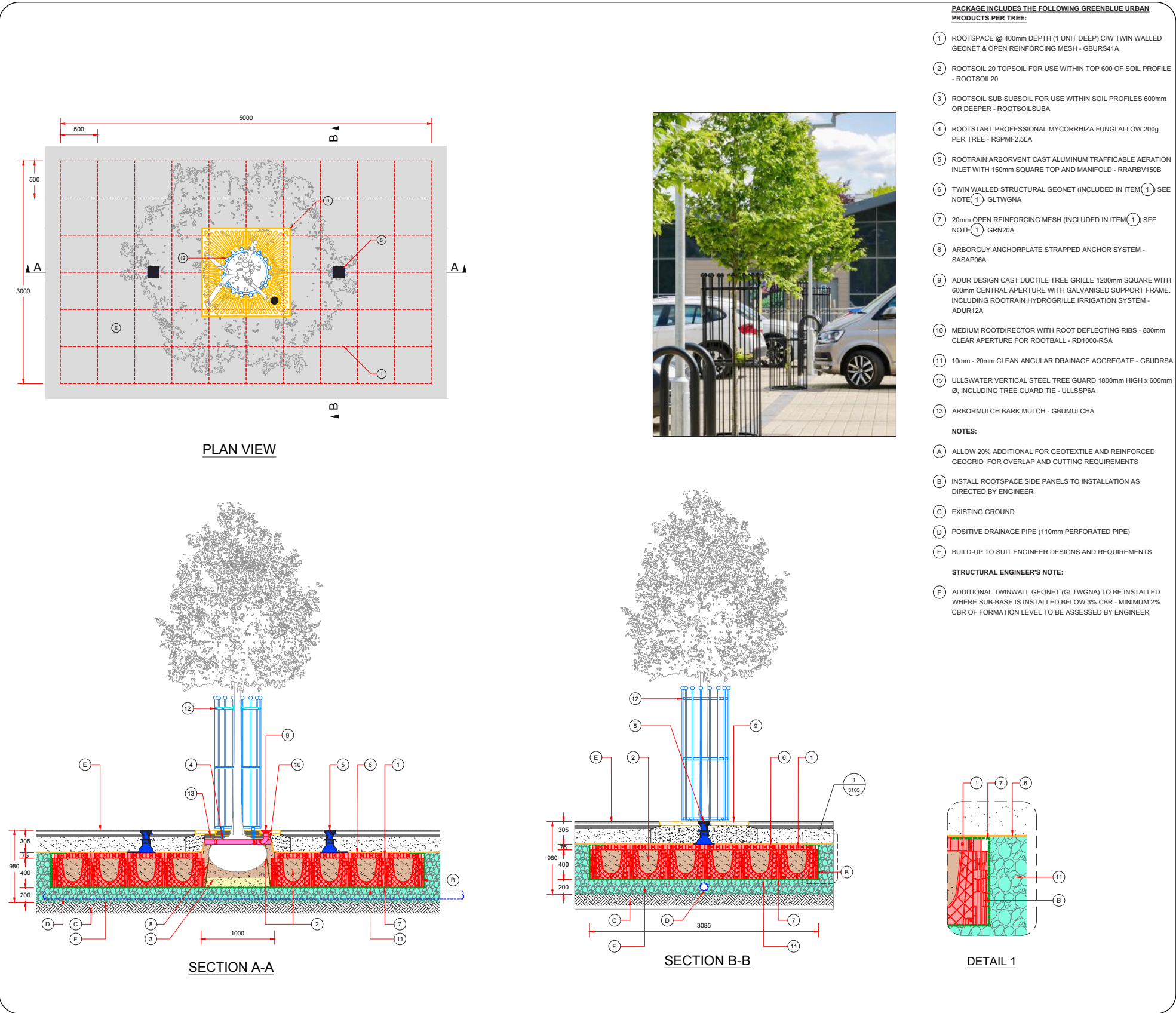
- Native meadow
- Native scrub planting
- Native Tree Planting
- Species rich amenity grass
- Native wet meadow in swale
- Marginal planting

Trees in areas with constrained ground conditions

The vast majoriy of trees are positioned in generous areas of soft landscape that provide an adequate volume of growing media for root growth.

Positioning trees in constrained areas with limited growing media is avoided.

Where necessary, root cells will be placed below hard landscape to provide the adequate amount of growing media, as illustrated in the plan opposite, by Green-Blue urban ltd.



Section 106 Open Space Provision

The Section 106 agreement requires the development to deliver a number of open space types of fixed amounts. These are;

-  Amenity Green Space 0.90 Ha
-  Natural and Semi-Natural Open Space 3.24 Ha
-  Parks and Gardens (incorporating 700m2 landscaped Civic Space) 1.02 Ha
-  Children's Play 0.13 Ha

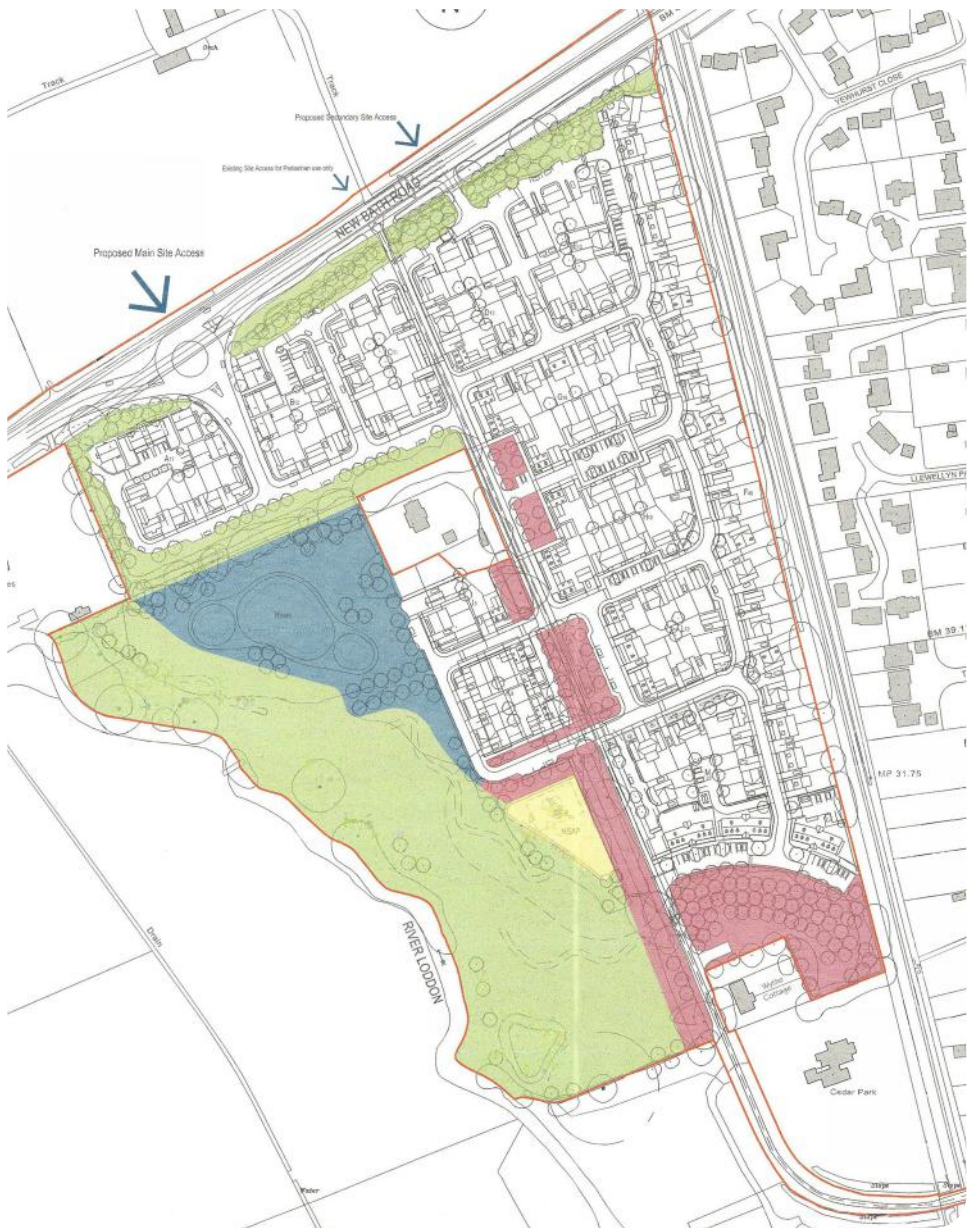
Total Open Space 5.29 Ha

Whilst the amount of open space types to be delivered is fixed, the locations shown at outline stage are nominal.

The plan opposite shows that the locations of open space have been adjusted to fit the design progression expected at the Reserved Matters stage.

The types and quantity of open space shown for reserved matters is equal to that apended to the S106 agreement.

Outline / S106



Extract from outline 'Open Space Typology Plan' (Paul Brown Architect), appended to the S106 agreement

Reserved Matters



Open Space Typology Plan adapted to the Reserved Matters Layout

Biodiversity Net Gain and Landscape and Ecological Management

Nicholsons Ecology have produced

- **Biodiversity Net Gain Assessment**
- **Biodiversity Enhancement Plans**
- **Landscape and Ecological Management Plan**
- **Ecological Permeability Report**

The biodiversity net gain assessment found that the proposed development will result in a net gain in habitat biodiversity of +19.37% (+6.61 habitat units), a net gain in hedgerow biodiversity of +133.91% (+5.75 hedgerow units), and a net gain in watercourse biodiversity of +15.60% (+1.07 watercourse units).

The BNG Assessment reflects the proposals set out in this report and on the Landscape Master Plan.

It also sets out requirements for habitat enhancement. Of particular note is the existing woodland strip that runs down the centre of the site along the north-south 'Muddler's Lane'. Enhancement of this woodland strip will be achieved by removing any invasive or undesirable species, encouraging the growth of a shrub layer, and the retention of deadwood features where safe to do so.

Biodiversity enhancements include a range of bird, bat and insect boxes as well as 'hedgehog highways'. The native meadow in open space areas provides ample habitat for hedgehogs to form commuting routes. Hedgehog fencing will be specified in the development areas; ie with 130x130mm gaps to allow access to, from and between gardens.

Full details of habitat retention, enhancement and creation can be found in Nicholsons Ecology Reports and Plans.



BNG Post Intervention Plan by Nicholsons Ecology.