

## 8.0 Open space and landscape Ecology, and sustainability

### 8.19 Urban Greening Factor

In line with the current London Plan (LP Policy 5.10) and draft GLA policy (DNLP policy G5), **Urban Greening** has been used as a tool to contribute to the installation of high quality landscape and green infrastructure within the site and in the London context.

A formula to appraise the current site and assess the proposals to ensure the appropriate amount of greening has been proposed to meet Mayoral targets.

#### Baseline

The existing site is predominantly hard landscaped, with poor quality lawn areas in leftover spaces between buildings.

A calculation of the baseline UGF shows a score of 0.318 which is well below the DNLP target of 0.40 for a large residential area.

#### Proposals

The proposals ensure ample planting occurs across the site, with a range of measures across the spectrum.

Measuring the same area as the baseline study, the proposals achieve a compliant score of 0.40. The masterplan provides an abundance of green space that works to maximise viable tree retention, and provide suitable enhanced ecology and green amenity space.

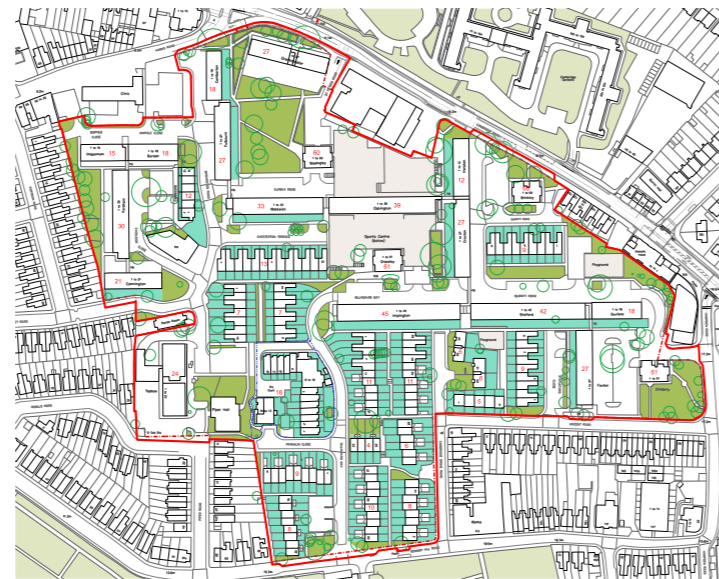


Figure 70: Analysis of existing Urban Greening Factor.

Greening type	UGF	Ratio area
Existing trees 13,115 sqm	x 1	= 13,115 sqm
Planting 15,032 sqm	x 0.6	= 9,019 sqm
Mown amenity lawns 11,531 sqm	x 0.4	= 4,612 sqm
<b>Total ratio area</b>		<b>= 26,746 sqm</b>
<b>Total site area</b>		<b>= 88,557 sqm</b>
<b>Urban greening score</b>		<b>= 0.302</b>

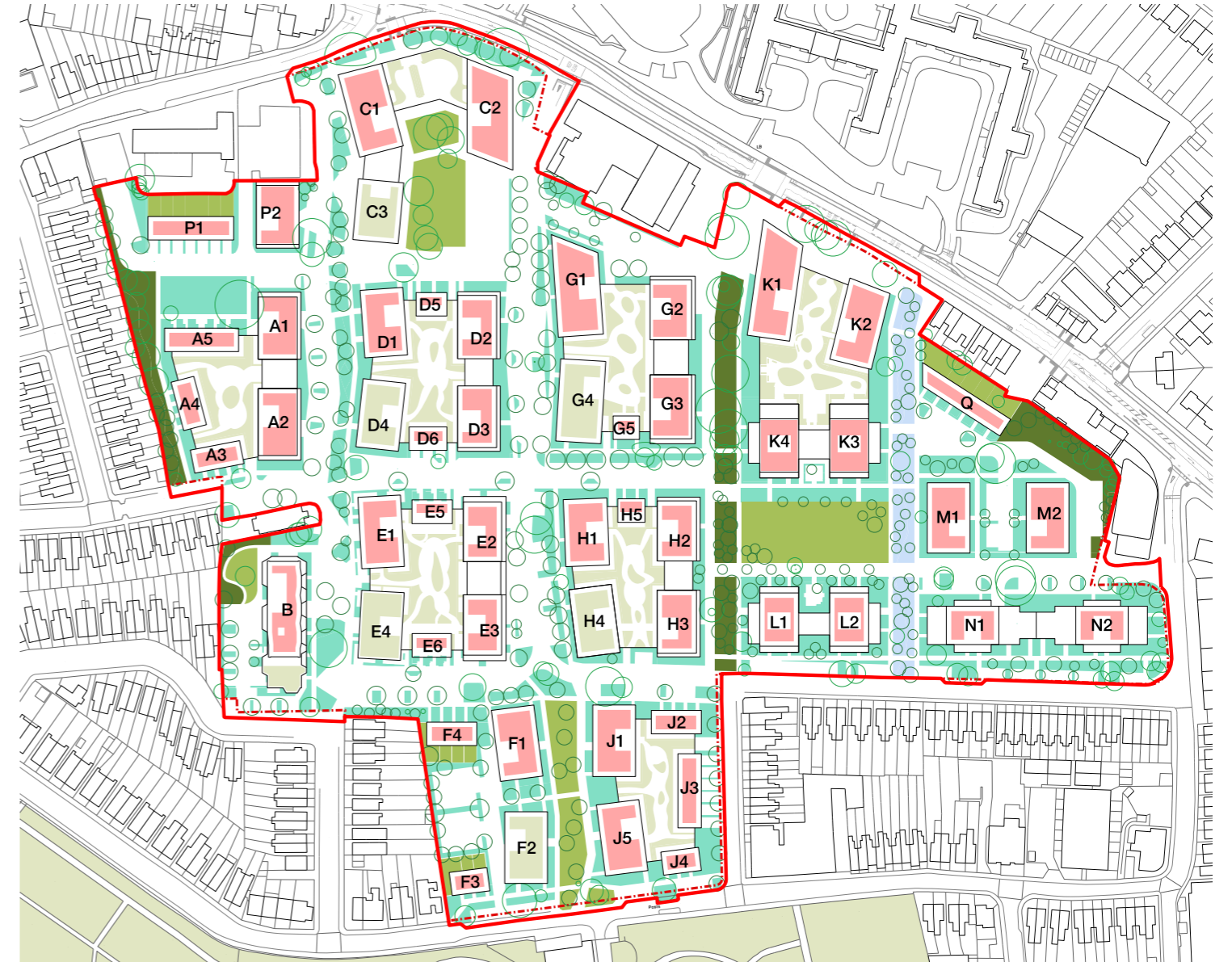


Figure 71: Analysis of proposed Urban Greening Factor.

Greening type	UGF	Ratio area	
Existing trees retained 9,956 sqm	x 1	= 9,956 sqm	<b>Total ratio area</b> = 36,693 sqm
Semi-natural vegetation 3,030 sqm	x 1	= 3,030 sqm	
Intensive green roof 5,948 sqm	x 0.8	= 4,758 sqm	<b>Total site area</b> = 88,557 sqm
Rain gardens 1,255 sqm	x 0.7	= 878 sqm	
Planting 14,542 sqm	x 0.6	= 8,725 sqm	<b>Urban greening score</b> <b>0.414</b>
Trees in pits 7,713 sqm	x 0.6	= 4,642 sqm	
Mown amenity lawns 4,728 sqm	x 0.4	= 1,891 sqm	
Biodiverse roofs 9,378 sqm	x 0.3	= 2,813 sqm	



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### 8.20 Ecology strategy

The Landscape masterplan has been designed to reinforce the strength of the park while creating linkages throughout the Site. By utilizing green/brown roofs, bird/bat boxes and the proposed green network, habitats have been indicatively designed with a 'landscape vision' of promoting biodiversity, encouraging the contribution of London Biodiversity Action Plans for the benefits of both people and wildlife.



Figure 72: Biodiversity planting



Figure 73: Tree planting.

- Amenity lawn
- Native buffer planting  
4,507 sqm
- Ground cover and ornamental planting
- Tall perennials
- Grassland and/or wildflower meadow
- Dry SUDS channel
- Community growing space
- Courtyard ground cover and ornamental
- Buffer planting for privacy frontage



Native wildflowers.



Discrete bat boxes.



Biodiverse roofs.



House sparrow bird box.



Black redstarts habitat.



Hedgehog access.



SUDS planting.



Stag beetle log piles.



## 8.0 Open space and landscape

### 8.21 Hard landscape

The proposed paving materials have been selected for their appearance and durability. The predominant paving types are concrete slabs and pavers utilising permeable paving where possible. A combination of these materials could be used for pavements, roads and pedestrian priority areas.

The remainder of carriageways can be tarmac lined with concrete conservation kerbs. All of the paving will work to complement the architectural typologies while building upon the Character Areas.

#### Specification

The **2019 Kingston Go** Materials palette has been referenced in the proposed selection as a guideline for character and style for specification of hard landscaping to the public realm, particularly at the interface with adjoining streets.

Materials will be reviewed with the Local Authority highways for suitable specification for adoption of the public highways and pavements.

Images provided opposite provide typical references for the desired design quality throughout the illustrative masterplan. Further information of hardscape design and materiality can be found within the **Masterplan Design Guidelines**.

- Primary streets - concrete pavers
- Neighbourhood streets - concrete pavers
- Parking Spaces - tarmac
- Pavements - concrete pavers
- Private amenity - concrete pavers
- Play areas - play surfacing and hoggin
- Amenity - concrete pavers
- Courtyard amenity - concrete/bound paving
- Tarmac roads
- Coloured tarmac roads
- Vertical elements  
(walls, bin store, seating steps, kerbs)

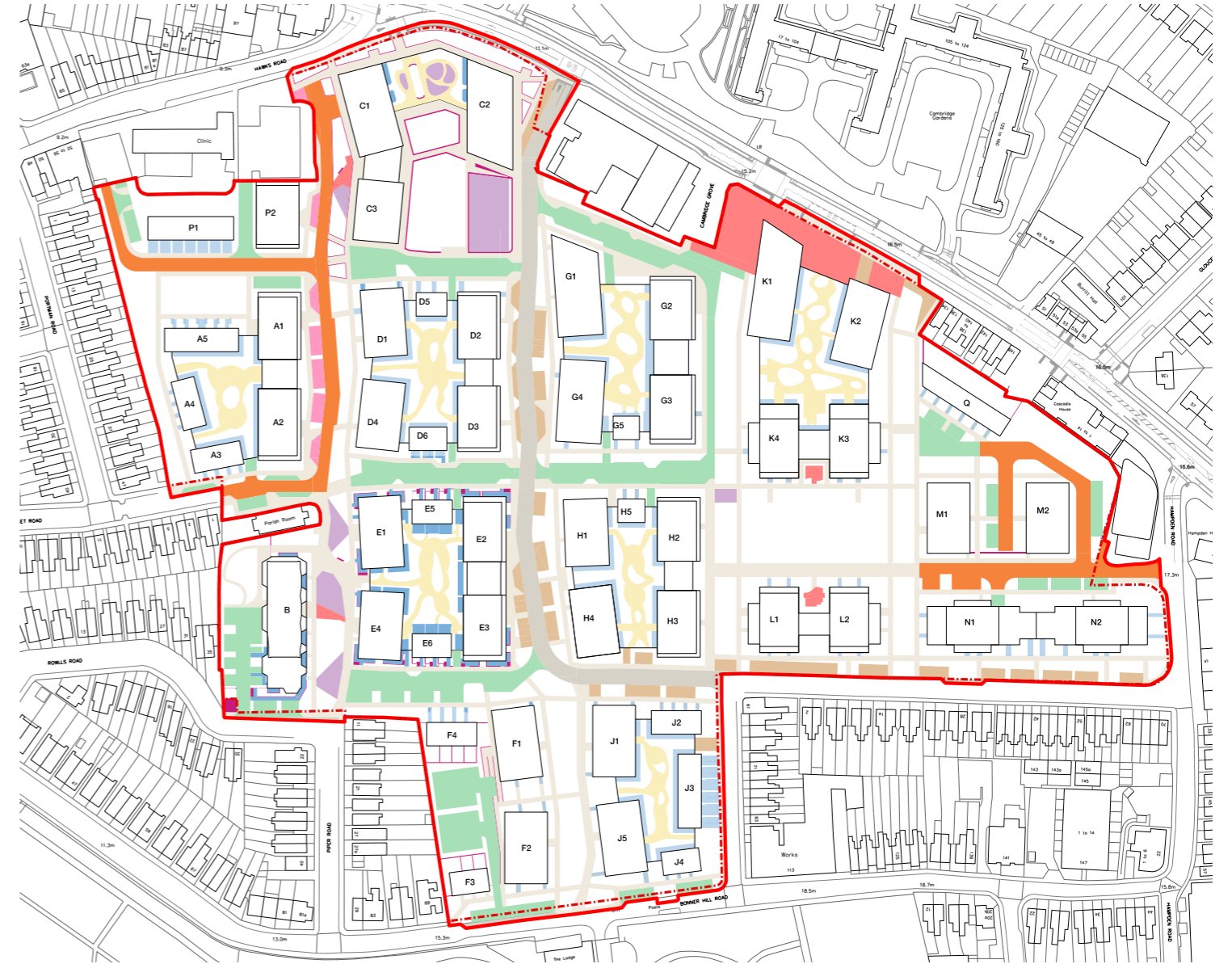


Figure 74: Hardscape strategy plan.

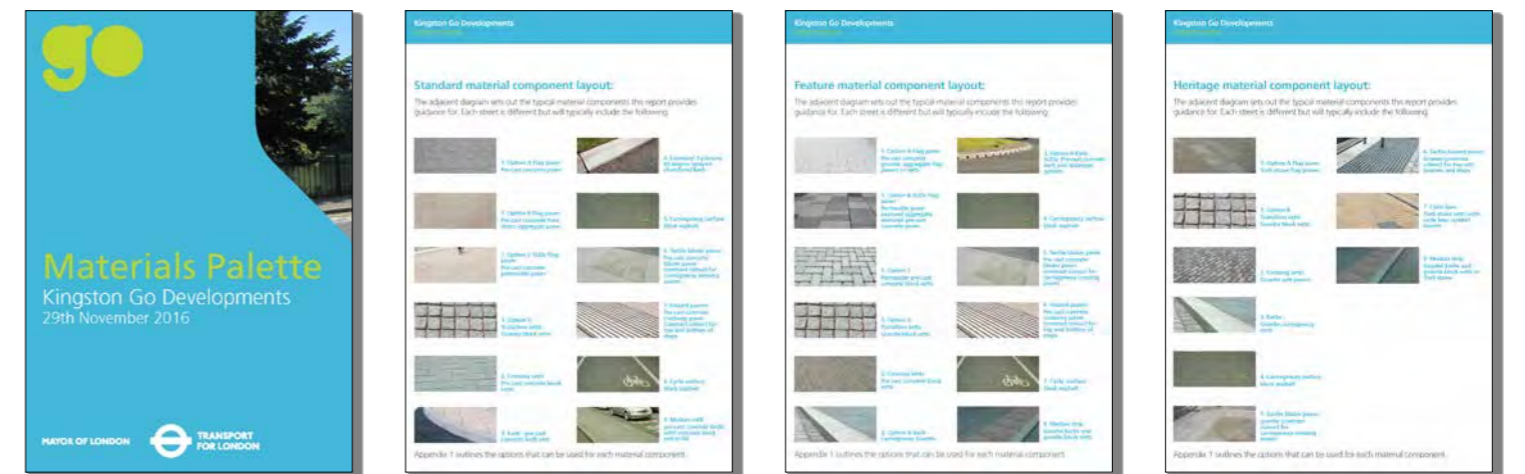


Figure 75: Kingston Go material palette (2019).



Primary streets - concrete pavers



Neighbourhood streets - permeable concrete pavers



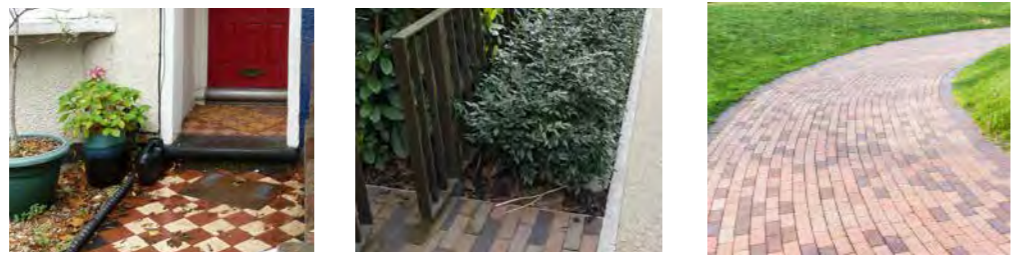
Parking Spaces - permeable concrete pavers



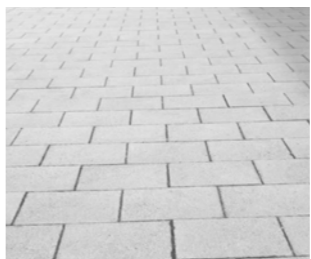
Pavements - concrete pavers



Private amenity - concrete pavers



Play areas - play surfacing and hoggin



Amenity - concrete pavers



Courtyard amenity - concrete/bound paving



Existing roads



## 8.0 Open space and landscape Ecology, and sustainability

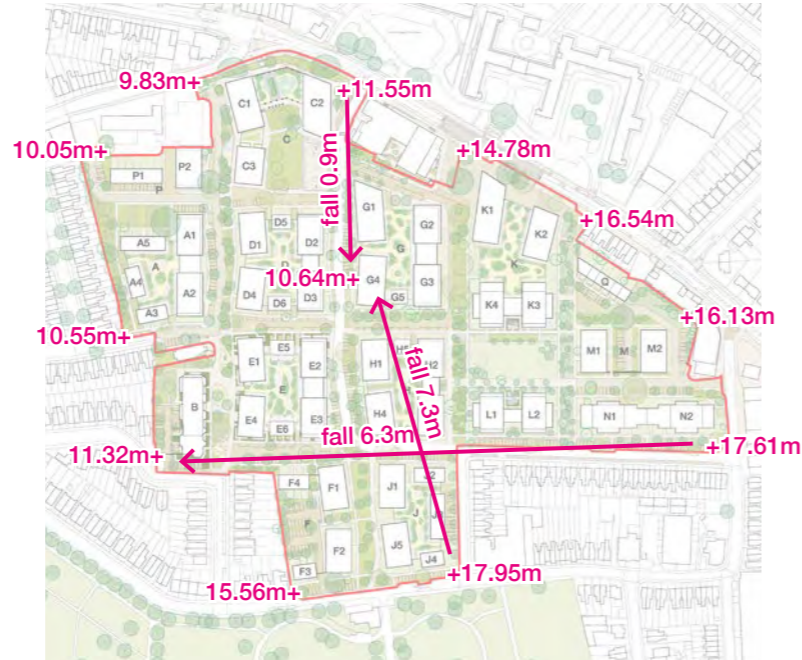
### 8.22 Surface water drainage strategy

#### Approach

Surface water drainage and the potential for flooding provide significant challenges, but also the opportunity to use water as an underlying aesthetic and ecological advantage for the Site. By evaluating the topographic levels where water may flow across the site in major flood events or typical daily flows, our team of designers and engineers has created a network that binds together with the streetscape, landscape and public realm making spaces useful and visually appealing.

#### Key design considerations

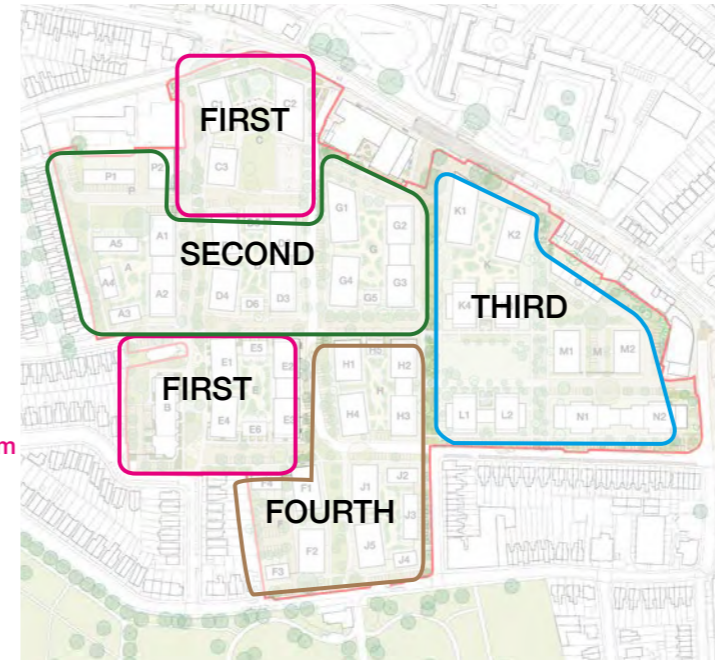
In developing a strategy for surface water drainage on the site, it was important to consider a number of key constraints and design factors.



#### Topography

The existing site falls from high point in the east of the site; along Cambridge Road and down from the Cemetery.

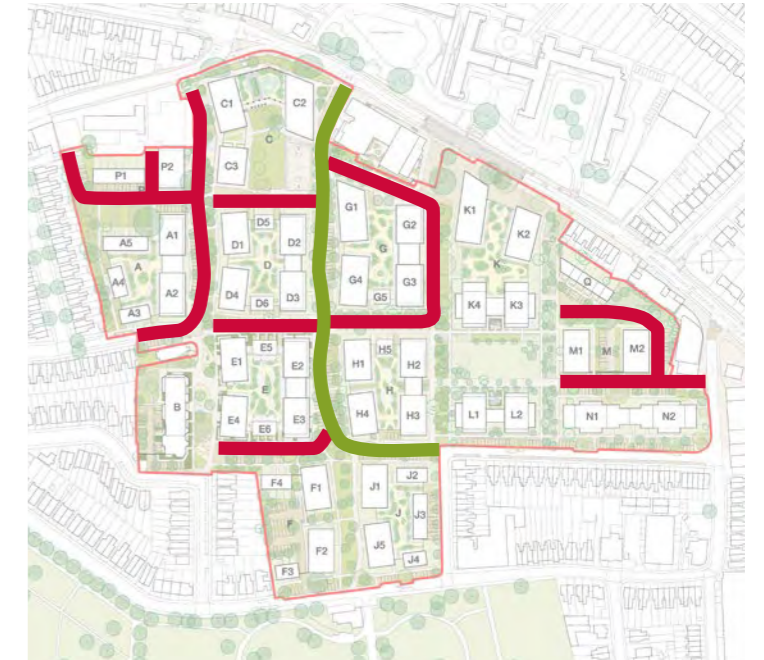
As a result, north:south links could make use of SUDs within the landscape, with east west connections feeding into the network.



#### Construction phasing

A key component of the strategy will be the phased delivery of the scheme.

Starting in Plot C, B and E, it will be important to contain investment in landscape work until adjoining plots around the park are due for construction.



#### Maximised road 'adoptability'

The design intent is for as much of the road network to be adopted by the Local Authority. Due to different design performance and servicing needs, it is still to be determined if adoptable roads are suitable for SUDs such as permeable paving. This will be discussed going forward.



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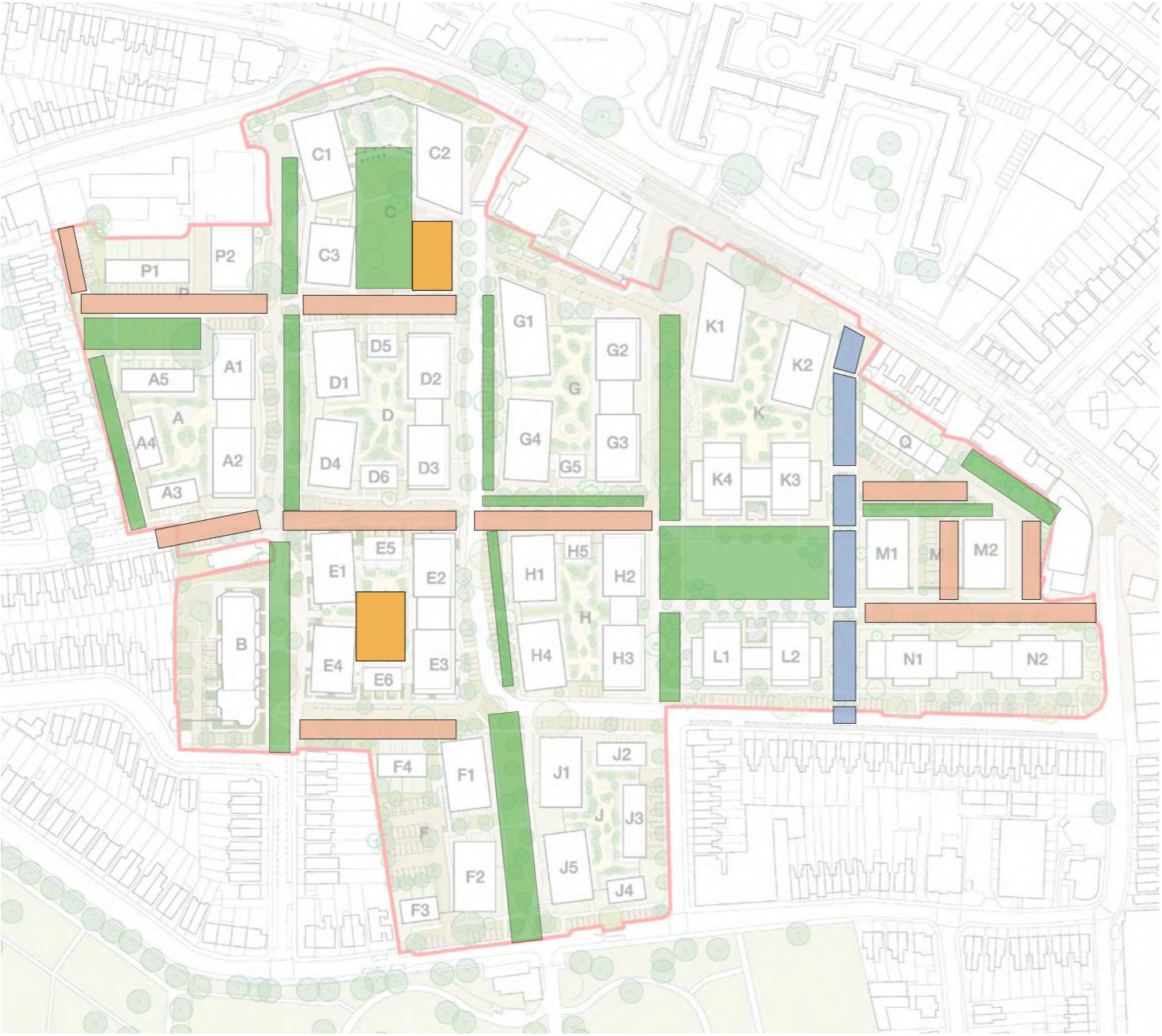


Figure 76: Sustainable urban drainage systems keyplan.

- Rain garden
- Swales / planted areas
- Porous paving/planting
- Attenuation tanks

## London Plan 2016 Policy 5.13 - Sustainable drainage

### SUDS hierarchy

1. Store rainwater for later use
2. Use infiltration techniques, such as porous surfaces in non-clay areas
3. Attenuate rainwater in ponds or open water features for gradual release
4. Attenuate rainwater by storing in tanks or sealed water features for gradual release
5. Discharge rainwater direct to a watercourse
6. Discharge rainwater to a surface water sewer/drain
7. Discharge rainwater to the combined sewer.

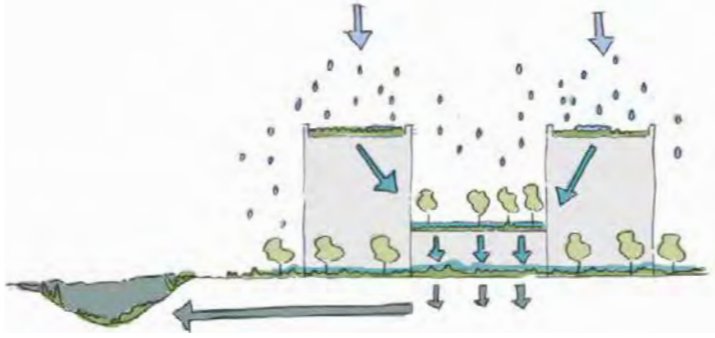


Figure 77: Typical sustainable urban drainage systems .

### Site conditions and policy context

As the site is located over Langley Silt and London Clay subsoil, rainwater falling on surfaces within the site will not infiltrate deep into below ground water courses, but will instead perch above these layers.

Where rainwater falls on hard surfaces, including buildings, it risks overloading the drainage network and must be reused or attenuated (temporarily held on site) for gradual release to its final destination.

GLA current and draft policy (LP Policy 5.13 / DNLP Policy S113) requires that a balanced solution is provided, with over-reliance on one method (e.g. crated storage) being unacceptable.

### Proposed multifunctional strategy

The impact of surface water will be addressed by a combination of the following methods:

- **SUDS Hierarchy 1**  
Rainwater harvested from buildings will be stored in water butts for use in irrigation of podium landscaping on a plot-by-plot basis;
- **SUDS Hierarchy 2**  
Where rainwater falls on soft landscaping, it will for the most part be used by the planting for self-irrigation. This applies to green and brown roofs as well as planted areas at ground floor and podium level. Rainwater will also be diverted below the root-balls of street tree pits to be used by the trees;
- **SUDS Hierarchy 3**  
Using permeable pavements and channels, a combination of swales and rain gardens, rainwater will be attenuated in open water features to be held before evaporation or release into sewers at greenfield rates;
- **SUDs Hierarchy 4**  
Where open water features are not appropriate or desirable in the landscaping strategy, for example where larger hard paved areas allow greater on-street activity, crated storage will be buried below ground to be held before release into sewers at greenfield rates; and
- **SUDs Hierarchy 6**  
Where surface water falls on an adopted street, it must be discharged directly into the surface water drainage network.



## 8.0 Open space and landscape

### 8.23 Street furniture and lighting

#### Palette

A well designed furniture and lighting scheme will enhance the resident and visitor experience while providing function and purpose. The Character Areas are enhanced by a palette of suitable types of furniture and lighting bringing together the landscape, public realm and architecture.

#### Specification

The **2019 Kingston Go** Materials palette has been referenced in the proposed selection as a guideline for character and style for specification of street furniture.

Proposed equipment will be robust and easily maintainable to work with adoption standards and maintenance requirements.

#### Wayfinding strategy

Embedding a clear logic into the masterplan through the use of key marker buildings and the cultural arts strategy provides an alternative solution to typical Estate signage. Clear linear avenues provide strong permeable wayfinding connections while blending the Estate into the surrounding community. This passive approach works to reinforce Healthy Streets principles. Clearly marked street names with numbered homes and building entrances lining the streets provide traditional wayfinding logic.

As an active approach, at key locations minimal signage is proposed based upon Legible London principles helping to identify proximity distances to key aspects such as Norbiton station and Kingston town centre. Potential locations for maps are proposed at the Cambridge Road crossing, Community Centre and Kingston Cemetery.

Another light touch approach then uses details found on the buildings such as brick colours and paving choices also promote a hierarchy of Character Areas by adding distinct look making each recognisable and part of a mental map. Variation in the tree strategy also guides users and adds scale variation with large and small trees which all enhance journeys.

The journey to your home from transport hubs such as Norbiton station provide a key part to the remembered journey where amenity is key. Finer touches such as the colour of the railings and door knobs, airy corridors and lobbies also makes wayfinding and enjoyable experience where final arrival at home relaxation is surpassed with calm views to green streets and spaces.

#### Flexibility and variety

Providing flexibility in the furniture specification, size and arrangement will allow for different uses and sizes of groups to find multiple ways to enjoy the outdoor spaces. Appropriate seating is provided at key locations for restful interaction with the park and garden environments.

The proposed lighting types will make a safe and pleasant night time environment. It will also reinforce the way finding and circulation strategies, giving emphasis to the primary circulation routes and highlighting special features.

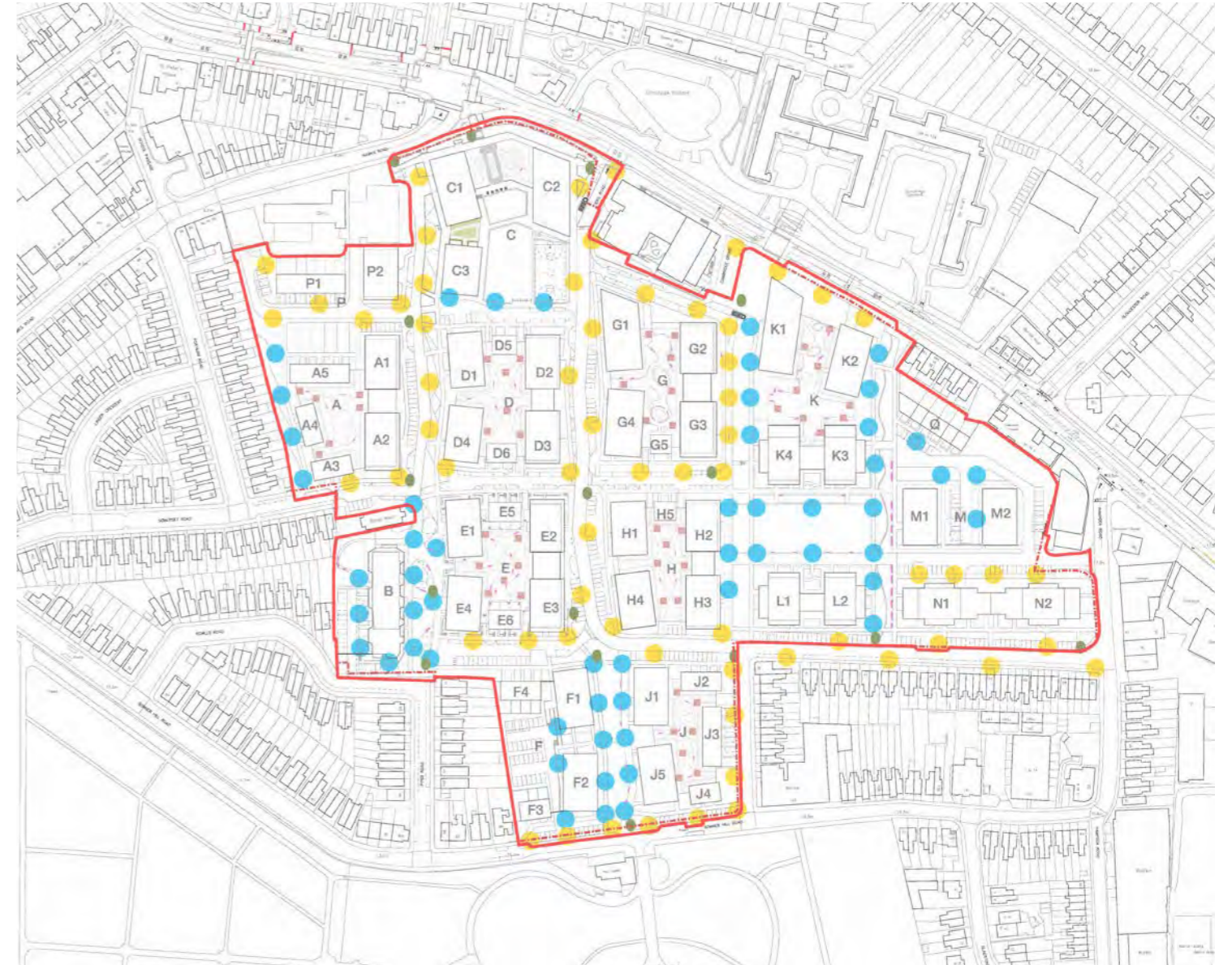


Figure 78: Furniture and lighting strategy plan.

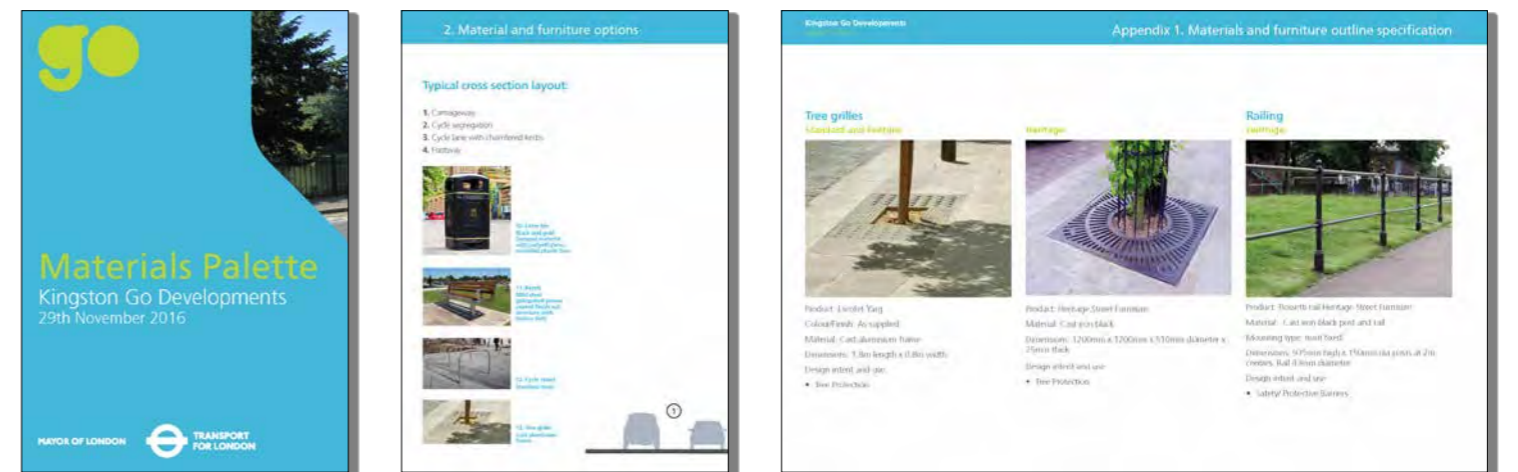


Figure 79: Kingston Go material palette (2019).



Adoptable public lighting



Seating



Play



Litter bins, tree grilles and cycle stands



Garden railings and bin stores





## 8.0 Open space and landscape

### Culture and public art

#### 8.24 Cultural strategy

With a network of streets, gardens and the Park, the development has extensive publicly accessible open space which could play host to sculptural and artistic installations across the site.

##### Existing artefacts

Relocation of existing sculpture and artwork within the Estate will give continuity of community and memory into the next generation of residents.

##### Proposed themes

- Oral history**  
 Sound and voice recording projects which archive lived experience through conversation could invite residents of the Estate to preserve their stories to be told to future residents and visitors.
- Talking landscape**  
 Narrative can be explored through both text and audio through smart-phone links similar to the "Talking Statues" project across London.
- Building blocks**  
 A large volume of bricks will be generated through the demolition of the existing Estate, and sculptors may take advantage of this material to re-purpose as art.
- Resident-generated art**  
 Encouraging community by asking local artists and residents to shape their public realm with elements of sculpture, mural and mosaic.
- Live events**  
 Live music and performance within the public spaces could be curated alongside events such as the annual Summer Festival.



Figure 80: Existing local artist's mural.



Figure 81: Local history and cultural talking plaques.



Figure 82: Tree plaque.



Figure 83: Existing mosaic work.



Figure 84: Embedded art.

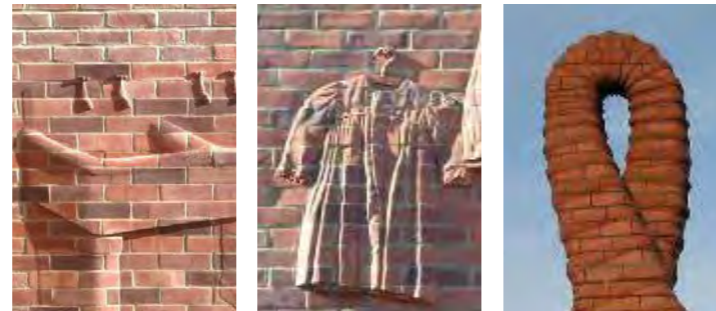


Figure 85: Precedent of brick sculptures by Artist Rodney Harris.



Figure 86: Community events.



Figure 87: Embedded text threshold.



Figure 88: Masterplan showing potential sites for cultural elements and event spaces in the landscape.

- |  |                         |  |                   |
|--|-------------------------|--|-------------------|
|  | Brick facade sculptures |  | Embedded word art |
|  | Focal sculpture/ Arts   |  | Landmark Trees    |
|  | Live events             |  | Feature Trees     |



## 8.0 Open space and landscape Implementation and management

### 8.25 Landscape implementation strategy

High quality landscape provides instant impact and good impressions to future homeowners. For this reason, a balance of good sized tree and shrub planting with proper spacing will be used to established a more mature landscape and public realm.

Future phasing will consider the use of temporary landscapes to hide construction hoarding as and when required. Public spaces within the phase will be built in progression with the completion of each building rather than all the landscape spaces left at the end of each parcel.

### 8.26 Landscape management strategy

On-going maintenance and management of the public realm is vital to both the establishment and long term success of the Proposed Development. Please refer to the Draft Estate Management Strategy for details of how RBK will support the coordination of the management of the unadopted public realm by providing a comprehensive estate management service delivered to all residents irrespective of tenure. Maintenance services will be driven by a desire to secure a very high standard of landscaping maintenance, cleaning and caretaking service.

Cambridge Road (RBK) LLP established a Community Board in June 2020, which is a membership group made up of local residents and community groups, and the three Norbiton ward councillors. They will work to maintain aspects of the buildings, landscape and unadopted streets. Typical duties include:

- Weeding of hard landscaped areas;
- Maintain and pruning of shrubs, flowers and trees;
- Litter collection and removal;
- Maintain external and communal internal lighting;
- Facade cleaning and maintenance;
- Maintaining public art / sculptures; and
- Cleaning of external glazed areas.

The 'Draft Estate Management Strategy' will ensure a seamless change from a construction environment to a successful living and working environment by monitoring the following:

- Maintenance and security of the existing Estate whilst the development proceeds; and
- Liaison on construction progress with existing occupiers and surrounding neighbours. Appropriate procedures will be in place to respond to any complaints and concerns if they arise from the actual development works being undertaken.

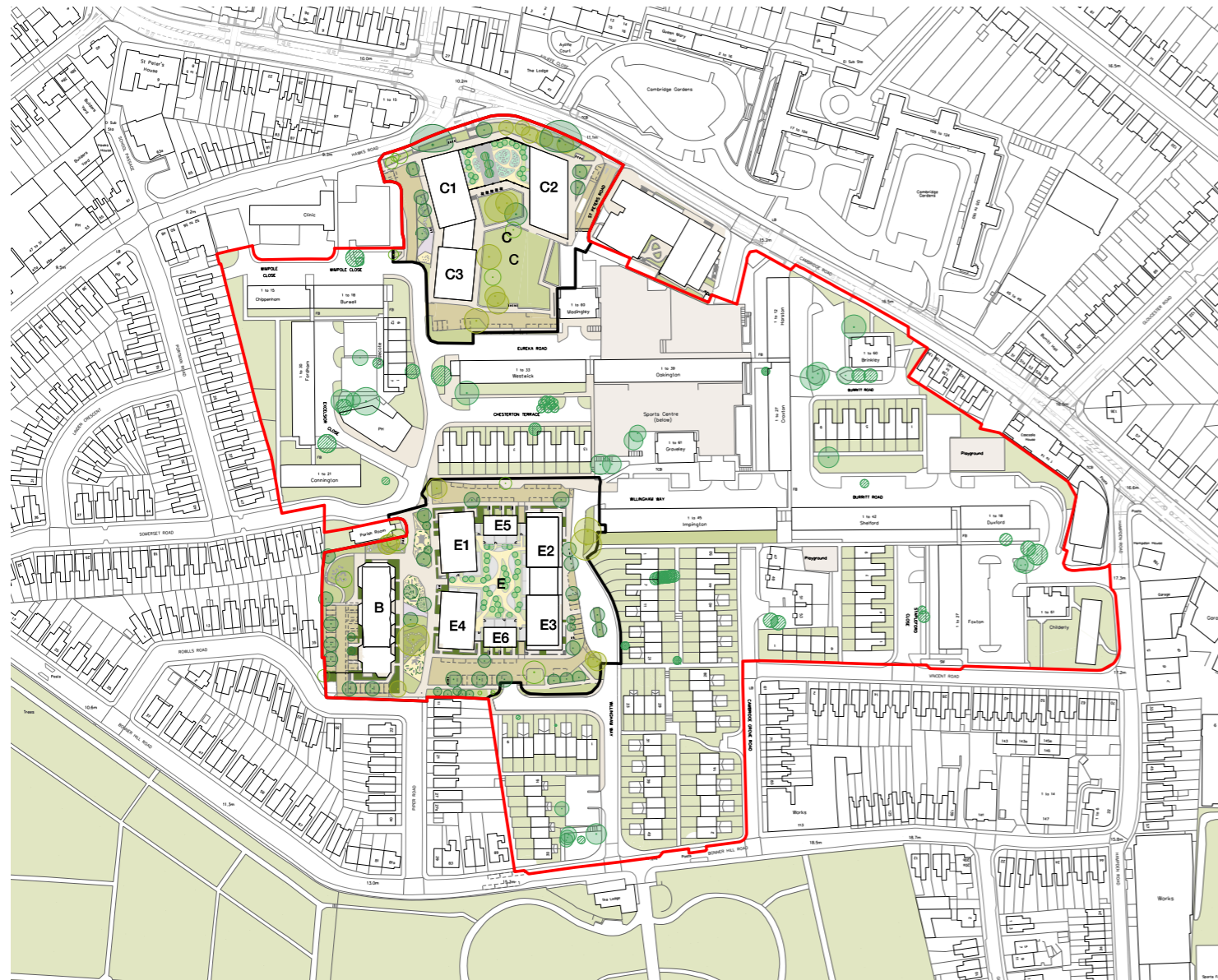


Figure 89: Phase 1 landscape plan integrating with the existing Estate.



Figure 91: Landscape maintenance.



Figure 90: Meanwhile examples and existing features.





## 8.0 Open space and landscape

### Landscape Character Areas

#### 8.27 Landscape Character Areas

The public realm defines specific settings that support various building typologies. Spaces within the masterplan have been arranged according to a logical sequence of scale and use, related to entrance points to the Site and routes and nodes where spaces, axes and activities overlap. Building massing and typology significantly contribute to the scale and experience of the spaces.

The specific characteristics of the spaces will be articulated by the choice of materials, plant species, architectural features and street furniture. Together, these features define the Character Areas that structure the townscape.

To maintain consistency across the Site there will be common themes incorporated within all of the spaces that will underpin the place-making strategy. This could include a trail of artwork, integrated play features and ecological habitats, making reference to the current use of the Site but also its history and cultural significance.

Together with the architectural typologies, landscape Character Areas help define the different neighbourhoods, bringing strong identity and a sense of place.

#### **Parks, gardens and green spaces**

The key existing spaces of Madingley and Fordham retained along with a new square at Cambridge Grove.

#### **Cambridge Road**

The major gateway route into and out of Kingston where frontages have been re-established to solidify its importance.

#### **Washington : Piper**

One of four North South routes, each with unique character. This one consisting of a mix of amenity, access and parking interspersed into a lush green setting with angular aesthetic.

#### **Madingley : Willingham**

The second of four North South routes. This one connecting Madingley Green up the hill towards the Cemetery. A series of kinks in the road promote existing tree retention with primary access and vehicular servicing feeding the proposals.

#### **Croxton Avenue**

The third of four North South routes. This one connecting at the key crossing with Cambridge Road along a boulevard of existing and proposed arboretum of numerous tree varieties before connecting to Cambridge Grove Gardens.

#### **Stapleford Way**

The fourth of four North South routes. This one providing another permeable access point along with enhanced SUDs and ecology.

#### **Neighbourhood streets**

A series of parallel east:west roads provide access and amenity. With residential front-doors and private amenity spaces to the streets, these streets have a more domestic scale than the larger routes.

#### **Stitching settings**

Contextual links to stitch neighbourhoods together and add additional buffering planting to enhance ecology and amenity.

#### **Podium gardens**

Additional raised amenity and play gardens for those within each building. This also works to conceal further parking.



Landscape Character Areas

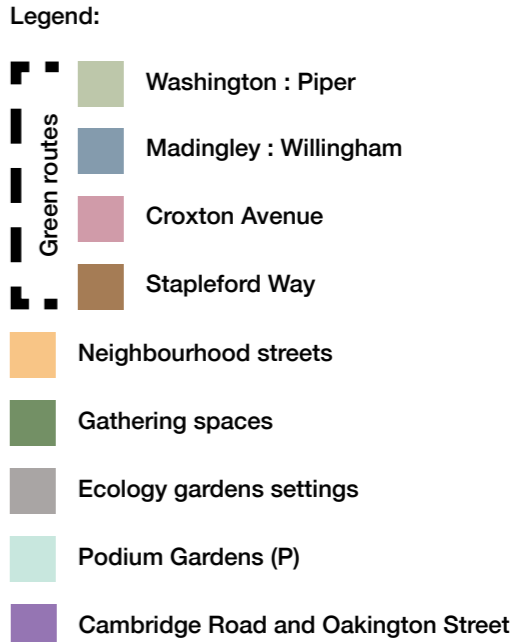
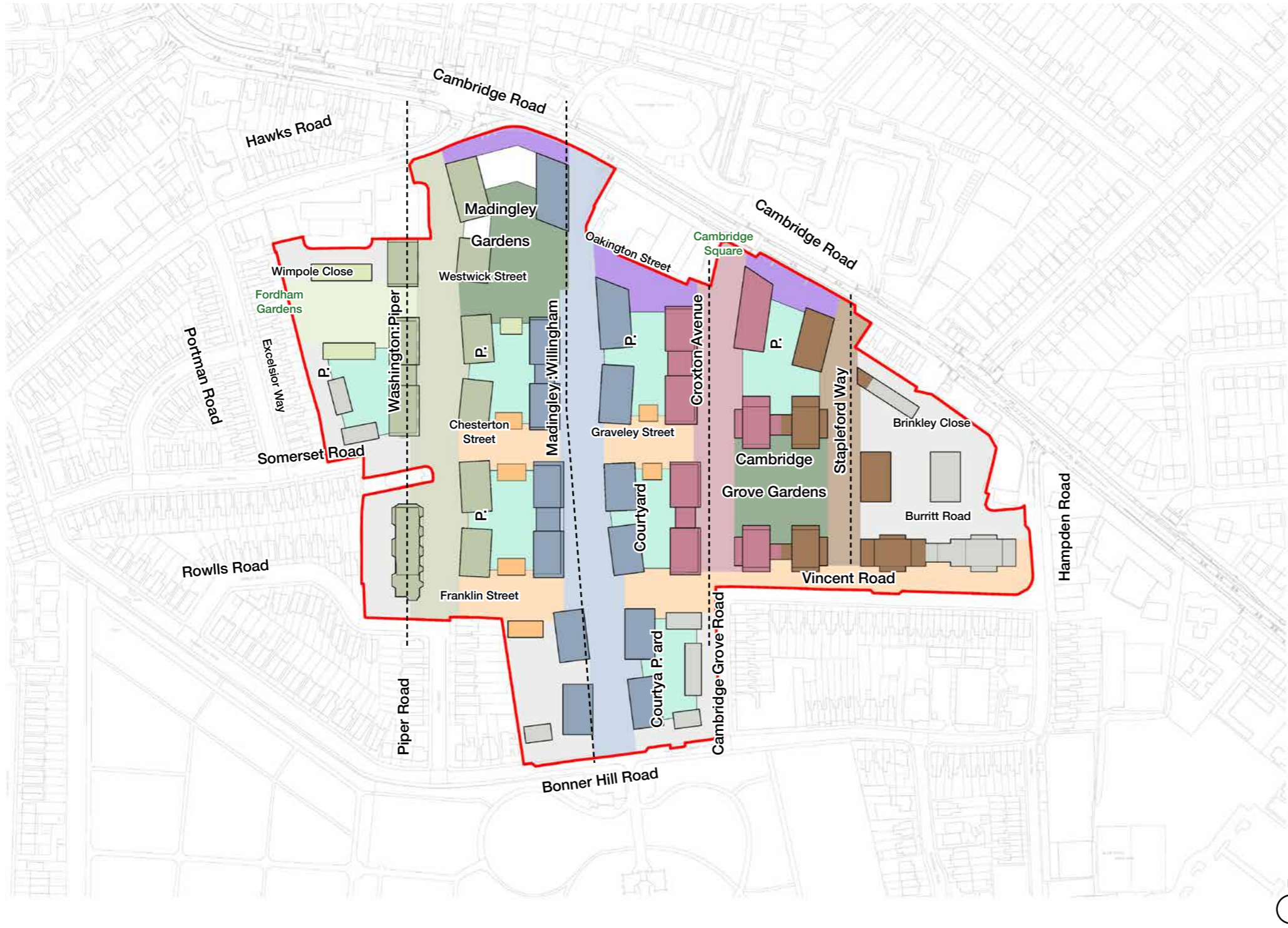
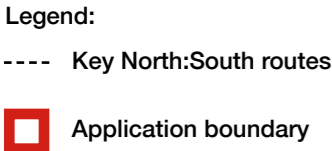


Figure 92: Landscape Character Areas





# 8.0 Open space and landscape

## 8.28 Washington : Piper

Transitioning from Piper Road at the south of the site, Piper Way is a residential Garden Street with generous widths and ample green spaces to integrate play, softscape and small gathering spaces. The new setting makes a statement of the existing weeping willow tree, amplified as a mature landscape feature providing a strong statement for the first phase.

As the route moves north into Washington Avenue at the parish hall on the corner of Somerset Road, the landscape band continues on the east side of the road, unbroken by crossings, all the way north to Hawks Road, creating a car-free connection on the west of the site.

Further information on the Phase 1 detail portion can be found in the Design and Access Statement Vol 2.

### Play trail

On this route identified as a key link for school children moving through the site, incidental playable features typify the garden band, connecting into the neighbourhood streets to the east.



Figure 94: Sketch view of the willow tree gardens in Piper Way.



Figure 95: Section across Washington Avenue.

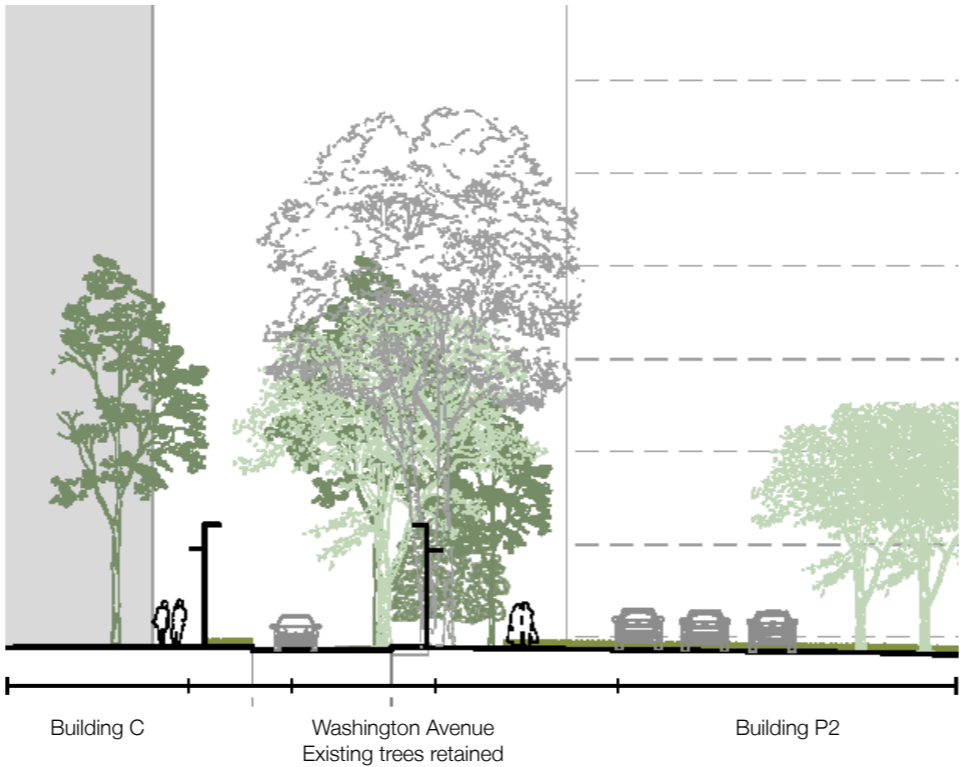


Figure 96: Section across Washington Avenue.

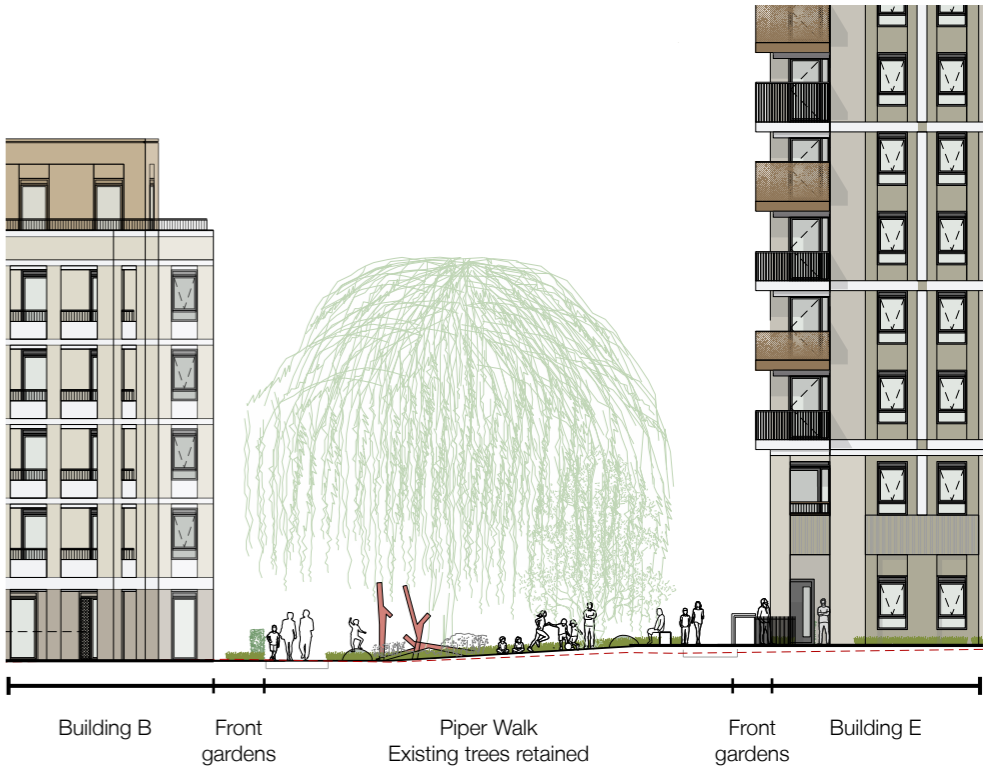


Figure 97: Section across Piper Way.



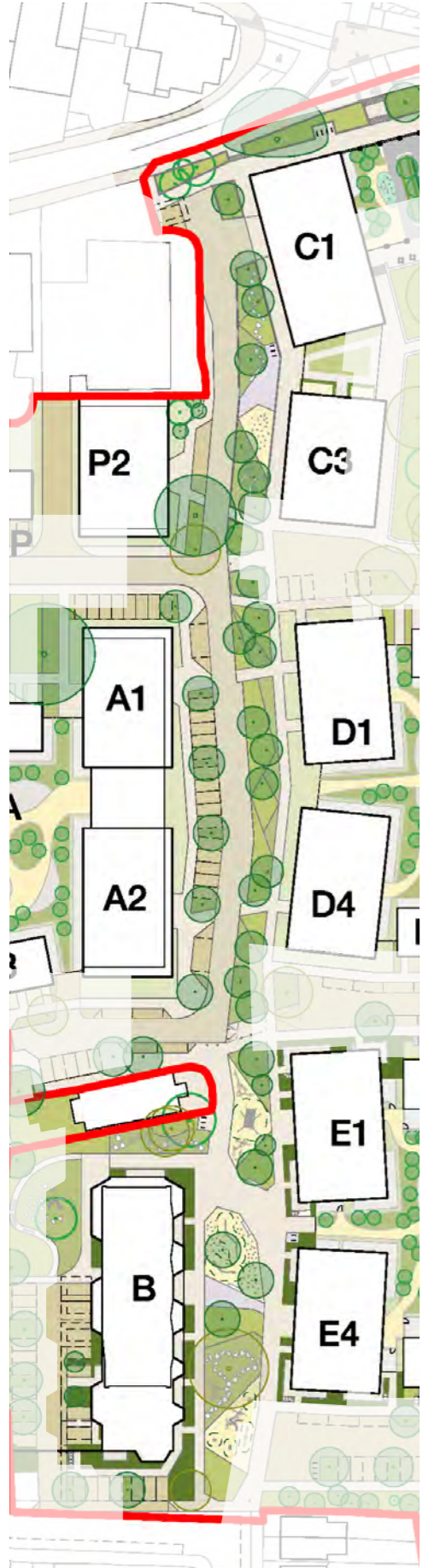


Figure 98: Landscape along Washington Avenue and Piper Way.



Figure 99: Character Area precedents.