

- 7.1 Design Principles
- 7.2 Masterplan Strategies
- 7.3 Illustrative Plan
- 7.4 Character Areas

The plans in this section are based upon the illustrative scheme and the annotated uses and layout within the ground floors are shown to illustrate one way of delivering ground floor with a use class range to support a varied, flexible and topical collection of uses.

7.1 Design Principles

Landscape Principles

Key Changes

- Cycle lane through the centre of scheme as part of The Beehive Greenway
- Substantial new open Park area and sunny lawn to the south
- Reconfiguration of main Events space
- Introduction of nonaccessible ecological Wildlife area to entrance at St. Matthew's Gardens
- Removal of Wetland





3. Ecology and Biodiversity

as well as habitat and food for wildlife.

The scheme will exceed Biodiversity Net Gain policy targets and allow people to come in to contact with nature for health and well-being benefits.

6 landscape principles guide the public realm

From the entrances and circulation routes, through the varied open spaces, facilities, and diverse range

of activities provided for across the course of a day

Trees will contribute to the character and amenity of the site by providing shade, shelter, form and interest

and week, the proposal is pedestrian- and cycle-



4. Water

design:

2. Trees

1. Landscape

friendly at its heart.

A positive relationship with water throughout the site, at all levels (roofs, above and below ground) is a crucial layer of blue infrastructure.



5. Play and Leisure

Dedicated play equipment, incidental play areas, formal and informal activities, open space and access to nature will be integrated across the site.



6. Lighting and Wayfinding

Will maximise usage and engagement within the public realm through the creation and operation of a safe, welcoming and enjoyable place.



7.2 Masterplan Strategies

Levels

Key Changes

- Consolidation of buildings to the south facilitates removal of any steps in the public realm in favour of graded entry from Sleaford Street
- Flush or shallow graded route retained to The Beehive Greenway central spine
- Building 4 reduced from +11.30 to +11.20
- Building 10 (MSCP) reduced from +12.30 in public realm to +11.75 (and to +12.00 for vehicle entrance to car park)
- Building 7 reduced from +12.20 to +11.90 to better tie in with existing boundary

The entire masterplan is now step free for maximum accessibility, movement, circulation and flexibility of use.

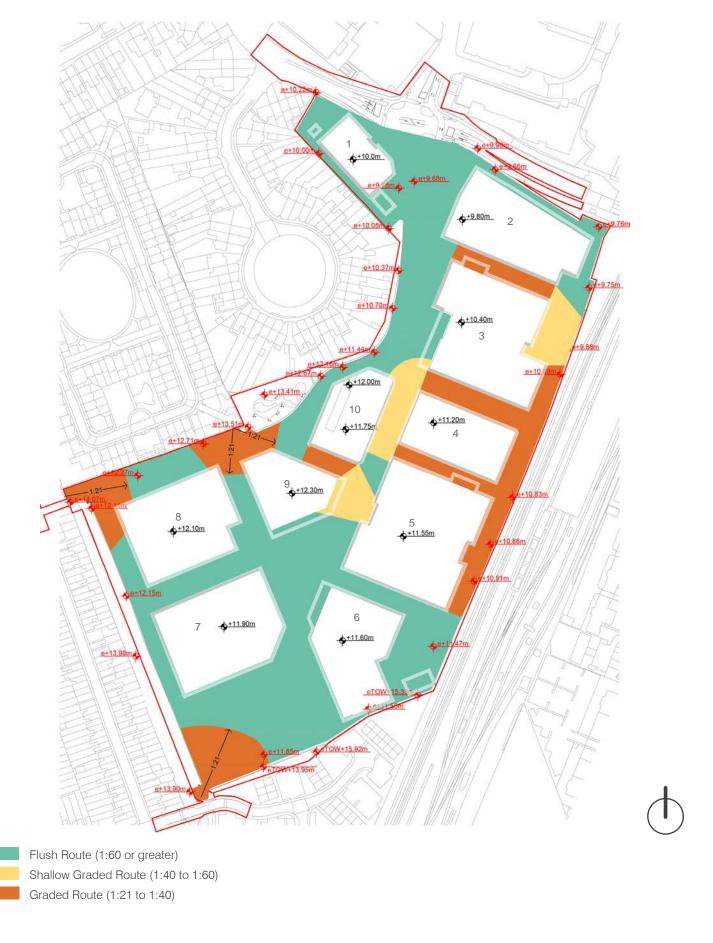
Steps had previously been required to the south of the site to access a proposed two storey standalone cycle barn. This has been removed and the proposed buildings consolidated which allows greater lengths within the public realm to deliver a graded route in to the site from Sleaford Street.

The design intent continues to be to tie into existing levels around the site boundary and work with the gentle slope of the existing site, which falls down towards the north-east entrance.

Compliant graded access is provided as the primary route. *The Beehive Greenway* through the centre will maintain a flush surface with gradients of 1:60 or greater in the majority of instances. Rain gardens are provided along this area to support surface water drainage and can also assist with delivery of suitably level pedestrian routes.

Graded routes to the east and west are typically between 1:40 to 1:60 to assist drainage whilst creating an accessible and usable public realm.

Compliant graded routes (a minimum of 1:21) are provided to southern entrances (York Street, Sleaford Street, St. Matthew's Gardens), where the greatest changes occur between existing levels and proposed +FFLs.



7.2 Masterplan Strategies

Drainage

Key Changes

- Attenuation volume provided to meet greenfield (pre-developed) discharge rates
- Removal of wetland
- Shallow natural pond near St. Matthew's Gardens entrance introduced
- Additional rain gardens along The Beehive Greenway and cycle paths
- Swales/ bioretention to southern Park area

Provision continues to be made for the integration of a variety of sustainable urban drainage features (SuDS).

Runoff will be captured by blue and green roofs on selected buildings, public realm areas will utilise permeable paving and rain gardens to store and treat rainwater and then discharge into the strategic drainage network to outfall into the existing public sewer connections (at a considerably lower rate).

The SuDS strategy provides the required attenuation volume for the development to meet greenfield (predeveloped) runoff rates. It also ensures surface water runoff is treated via a sufficient treatment train using source control features and end treatment.

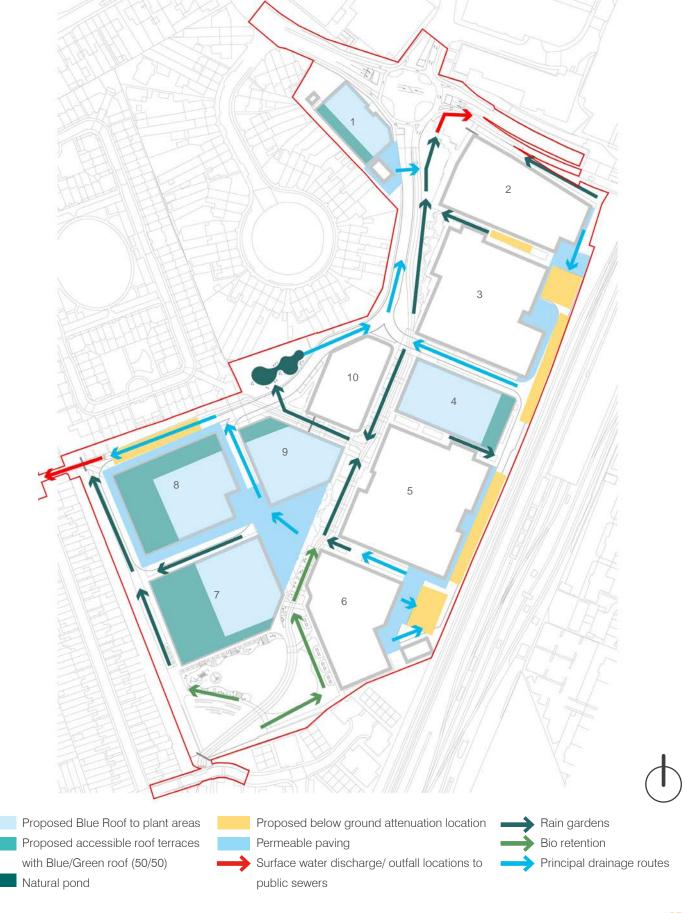
Green infrastructure has been utilised and coordinated with the landscaping masterplan, however where necessary, several below ground attenuation crated tanks are proposed beneath external hard standing areas and service yards.

These work in tandem with the other SuDS features, such as the permeable paving and adjacent rain gardens. The tanks have been placed in locations with easier maintenance access and minimal disturbance to any soft landscaping features.

An additional detention basin has been added on the western boundary of the development, alongside extensive planting and trees proposed in the landscaping strategy on the western frontage to provide amenity and habitat benefits.

Rainwater harvesting can be utilised using rainwater from the blue roof tanks and reused for soft landscaping irrigation and other development maintenance opportunities.

For further information please refer to Water (Flood, Drainage & Water Resources) ES Chapter, Flood Risk Assessment, and Drainage Strategy prepared by Waterman.



7.2 Masterplan Strategies

Ecology

Key Changes

- Removal of the wetland
- Introduction of a dedicated Wildlife Area protected from public-access pressures, located close to entrance by St. Matthew's Gardens
- Creation of nature-focused pond with sloping banks and diverse marginal vegetation to provide new opportunities for aquatic species
- Native grasses and wildflowers to be incorporated into lawn mix

As per the original Ecology Strategy, it is proposed to retain and enhance existing features of value. In particular, the boundary features such as hedgerows and treelines which currently provide the greatest ecological value are to be retained and enhanced.

As before, where losses are unavoidable these will be offset through the provision of new areas of species-rich grassland, tree and scrub planting, and significant areas of blue roof space.

Non-native amenity species will be kept to a minimum, and native berry or nut bearing species – particularly those of local provenance – will be favoured wherever possible. This will create new and improved opportunities for faunal species and significantly improve the ecological value of the site compared to the existing situation.

Whilst the masterplan no longer features a wetland habitat, a new dedicated Wildlife Area with a natural pond is proposed close to the entrance by St. Matthew's Gardens. Consultation has suggested that this space should be purposely designed to discourage community/visitor access so that its future value as a wildlife/ecological space is maintained.

Access will be managed/restricted to wildlife/ ecology professionals. Interpretation boards can be provided in neighbouring public locations to explain the purpose of this space and its value to wildlife, thereby encouraging engagement with these naturefocused areas.

In the Wildlife Area as well as other suitable locations, native hedgerows are proposed which will deliver linear habitat units and contribute to an overall net gain for biodiversity.

For further information please refer to Phase 1 Ecology Surveys and Report, and BNG Assessment prepared by Ecology Solutions.



7.2 Masterplan Strategies

Urban Greening Factor

The plan opposite outlines the proposed areas of soft landscape, planting and ecological enhancement, using the Urban Greening Factor calculator and methodology, which have been developed and coordinated with the wider design team.

The purpose of an Urban Greening Factor (UGF) assessment is to establish the UGF of a Proposed Development and to monitor compliance against the London Plan (2021). The UGF is a measure used to assess the required amount of urban greening for new developments, specifically relating to gains in surface permeability and biodiversity. Targets are set within the London Plan for all new residential and commercial developments. An interim target score of 0.3 for commercial and 0.4 for residential developments has been set.

UGF is not currently a policy requirement for Cambridge or the Beehive Redevelopment however the team have chosen to adopt it, and a target score of 0.3 for commercial schemes, to assist with future-proofing the site and demonstrating sustainability.

Methodology

Using the methodology set out in the London Plan, each habitat type present within the development proposals has been aligned to the closest possible surface cover type. The area of each surface cover type was multiplied by the given 'factor', a value between 1 and 0 representing the greening value of each surface cover type, totaled, and divided by the development footprint area.

Results

The current proposals will achieve a Green Space Factor score of 0.32. This is based on an Application boundary area of 7.58ha.

Approximately 0.6ha of this boundary area is Highways to Coldham's Lane, Sleaford Street and York Street, whereby the team have more restricted control of design and material selection. If this 0.6ha of sealed surface is excluded from the calculations then the resulting score is 0.35.

Discussion

As previously set out, the Green Space Factor target for predominantly commercial developments is 0.3. As such, the development proposals are currently at least 0.02 above the target.

The typologies included within soft landscaping features are generally high scoring, including over 4,000m2 of semi-natural vegetation in the form of enhanced boundary planting, over 1,000m2 of proposed swale to the park edges, over 1,600m2 of ecologically-rich planting to the railway edge, a 965m2 dedicated Wildlife Area, and over 1,000m2 of species-rich grassland to the entrance slope from Sleaford Street.

Other important typologies include a natural pond area of approximately 110m2 within the dedicated Wildlife Area, over 2,500m2 of proposed rain gardens, and nearly 2,000m2 of proposed flower-rich perennial planting through the centre of the public realm. Tree planting also contributes to the UGF score, with the planting of all proposed new trees to be in suitably connected tree pits with optimum available soil volume i.e. atleast two thirds of the of the projected canopy area of the mature tree.

In addition, to the upper levels there is up to 2,720m2 of proposed extensive green roofs, and up to 6,690m2 of blue roof under permeable but unvegetated roof deck.

Conclusion

The scores of 0.32 and 0.35 respectively are considered to be positive, and measures to maximise these scores can continue to be explored throughout the design development by the wider team.

The proposals for the proposed development exceed the Green Space Factor target for predominately commercial developments, through the efforts made through design development to maximise the value of the site through providing extensive habitat creation and high scoring Urban Green Infrastructure types.



7.2 Masterplan Strategies

Tree Retention and Removal

Key Changes

- 8 more trees proposed to be retained
- 1 more TPO tree proposed to be removed (2no. in total of 10no. found on site)
- Option to transplant small trees previously proposed for removal to south of site

Existing trees

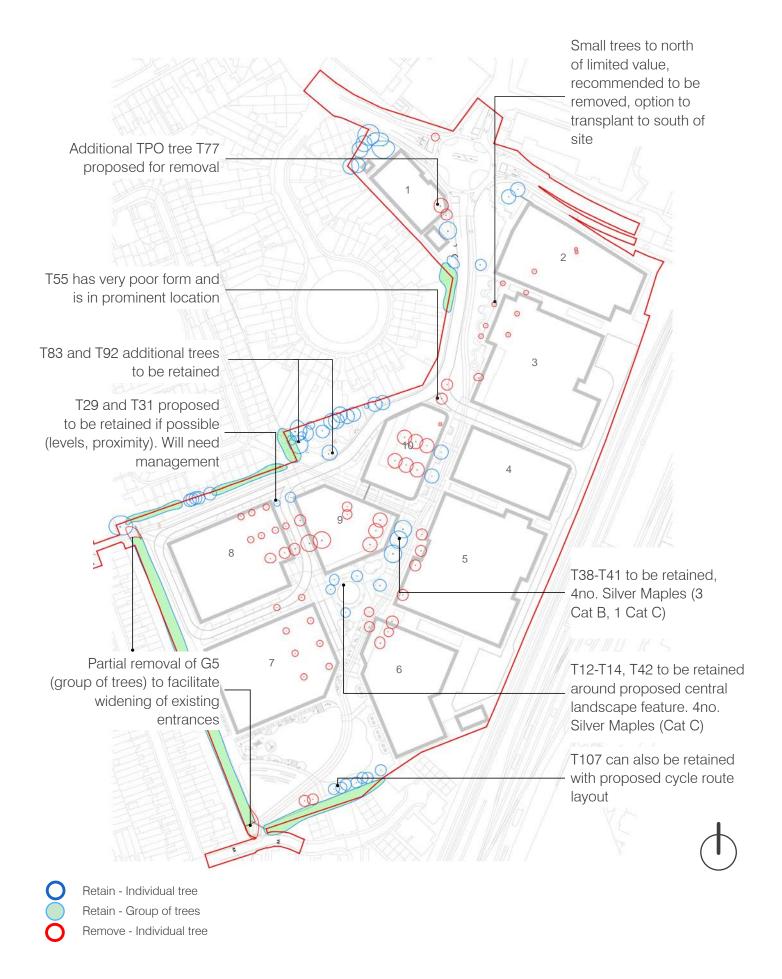
The originally submitted scheme proposed the retention of 45no. trees and the removal of 68no. trees (of a total 113no. surveyed trees). 9no. trees (of a total of 10) with a TPO were proposed to be retained.

The new scheme and masterplan proposes the retention of 53no. (+8no.) individual trees and the removal of 60no. individual trees. 8no. (-1no.) trees with a TPO are proposed to be retained, subject to further review with Tree Officer.

In line with the original masterplan, individual trees to the boundaries are to be retained and enhanced where appropriate. Likewise, all 6 groups of trees to boundaries are to be retained and enhanced where appropriate.

1no. of these groups (G5) to the southern boundary will require some partial removal to facilitate the widening of both the York Street and Sleaford Street entrances.

For further information please refer to Tree Survey and Arboricultural Impact Assessment prepared by Waterman.



7.2 Masterplan Strategies

Tree Planting

Key Changes

- Park to the south creates an additional location for planting of large trees in small groups and as individuals
- Denser planting of a variety of more naturally upright non-fastigiate species to The Beehive Greenway
- Greater total quantity of proposed trees

All tree species are shown for indicative purposes only and would be subject to a detailed soft landscape planning condition.





Definition: large tree, 18-20+m in height,8-12m wide at maturity, fast growing, distinctive characteristics

Location: prominent positioning in Hive Park, Abbey Grove

Example species: Platanus x hispanica, Cedrus deodora, Liriodendron tulipifera

Proposed trees

The originally submitted scheme proposed the planting of approximately 212 new trees. The new scheme and masterplan propose the planting of approximately 290 new trees.

Across the site, consideration for structural diversity and desired landscape impact over time i.e. day 1 planting of shrubs/ fast growing species that will reach maturity more quickly, versus impact in 5 years, 10 years, etc. will be given as detailed planting plans are developed.

The need to plant resilient trees and include a variety of species has been discussed with Officers as more important than only favouring native species, which are typically preferable for biodiversity.



Definition: 16-18+m in height,8-12m wide at maturity, mix of deciduous and evergreen





Example species: Acer platanoides, Acer saccharinum, Quercus robur, Quercus palustris, Ginkgo biloba, Liquidambar styraciflua, Carpinus betulus







Definition: 10-15m in height, 8-10m wide at maturity, mix of deciduous and evergreen

Location: Abbey Grove, Maple Square, The Lanes, Linear Walks

Example species: Acer campestre, Betula pendula, Betula nigra, Prunus avium, Sorbus intermedia





The Beehive Greenway

Definition: upright in form, up to 10-13m in height, 4m wide at maturity, non-fastigate varieties, shade tolerant, resilient

Location: Garden Walk

Example species: Betula 'Edinburgh', Acer platanoides 'Crimson Sentry', Carpinus betulus 'Lucas', Prunus 'Sunset Boulevard'





Small-sized trees

Definition: 8-9m in height, 6-7m wide at maturity, single and multi-stem, mix of deciduous and evergreen

Location: Abbey Grove, Garden Walk, The Lanes, Linear Walks

Example species: Acer griseum, Acer campestre 'Red Shine', Quercus x turneri, Amelanchier lamarckki, Malus sylvestris, Prunus serrula, Malus toringo





Smaller trees and shrubs

Definition: less than 7m at maturity, single stem and multi-stem, mix of deciduous and evergreen

Location: The Lanes, Linear Walks

Example species: Sorbus incana, Corylus avellana, Prunus spinosa, Prunus x subhirtella 'Autumnalis'

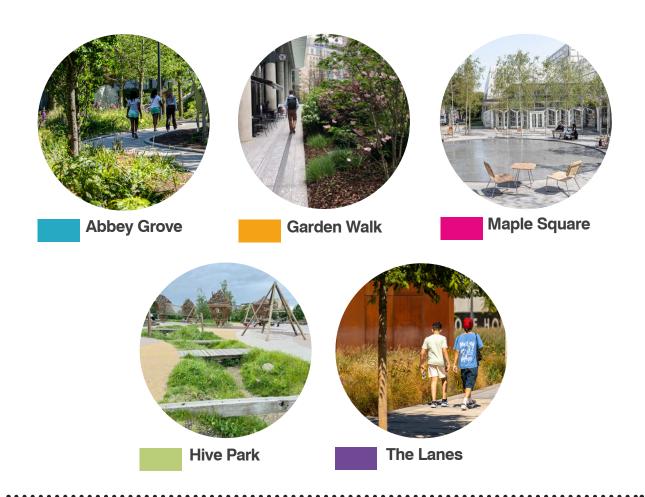
7.3 Illustrative Colour Masterplan



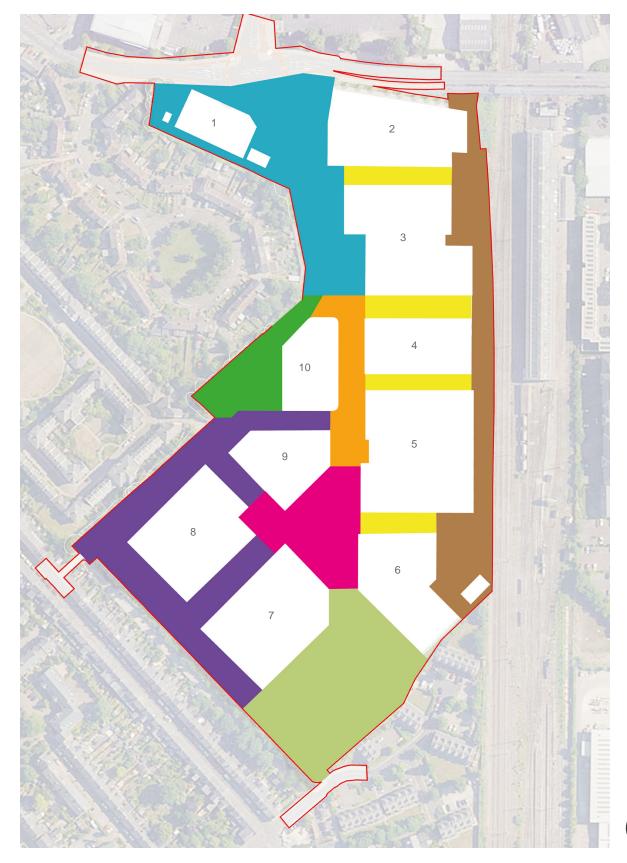


7.4 Character Areas

Character Areas Plan



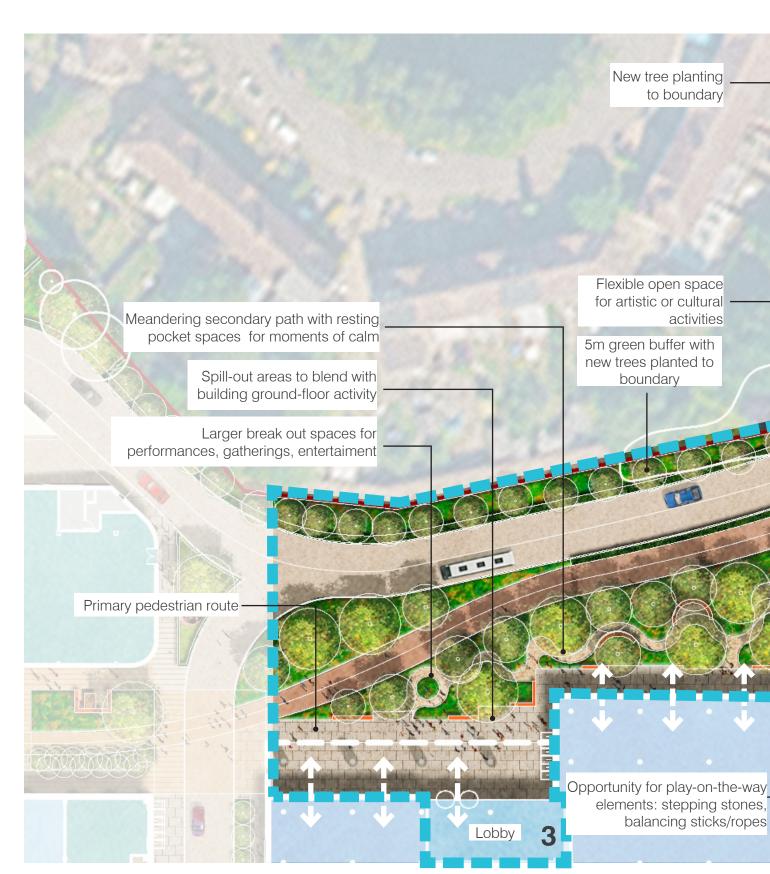




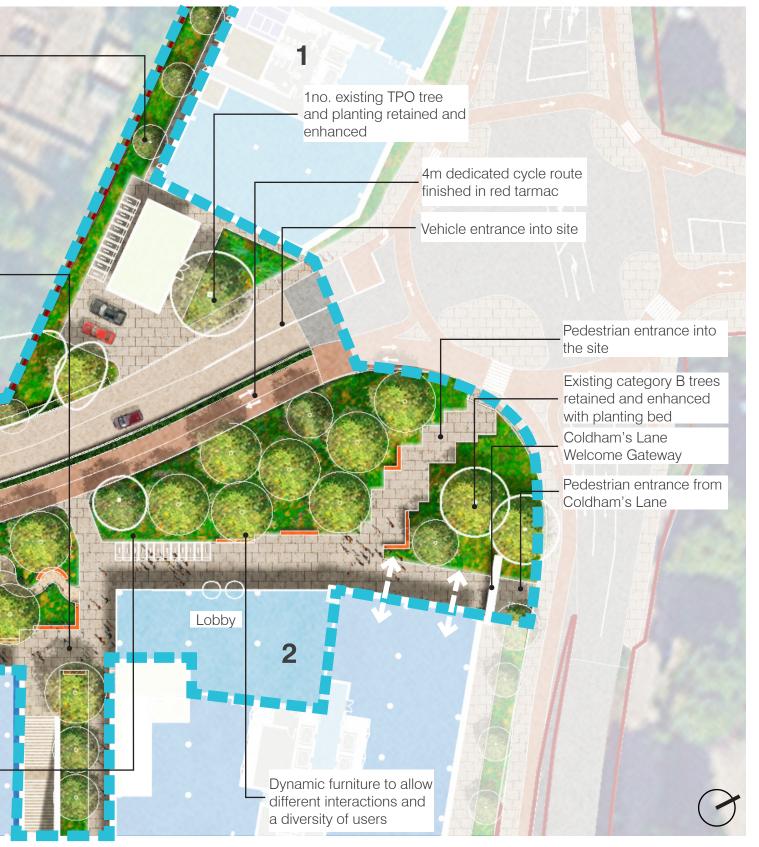


7.4 Character Areas - Abbey Grove

Character Area and Groundplane Plan







7.4 Character Areas - Abbey Grove

Scale Comparison and Precedent Images

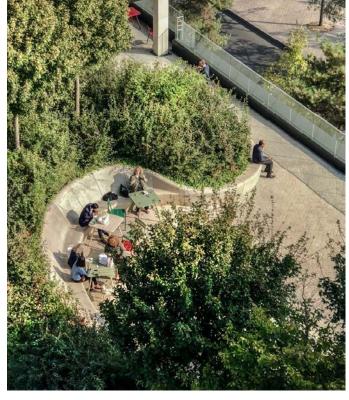
All visitors coming from the direction of Cambridge Retail Park and Coldham's Lane will first experience the Beehive Redevelopment through the woodlandesque setting of Abbey Grove.

Large retained existing London Plane trees can be found to the very north, and will be supplemented with substantial new resilient tree planting of a range of species, sizes, and form. All trees will be planted in soft landscape and used to create spaces of different sizes for group gatherings or quieter moments.

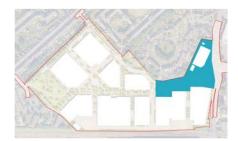
The area will feel calm and tranquil, whilst welcoming and somewhat magical amongst the dappled tree canopies. Abbey Grove can facilitate public art trails or installations and feature lighting to add to the sense of serenity and wonder. The Beehive Greenway, woodland setting, cultural events, theatre, art installations, exhibitions, lighting, flexible dynamic seating, reading, calm spaces

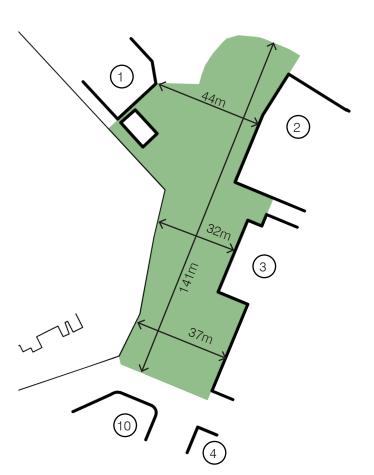
Key characteristics:

- 141m long x 37m wide
- 7,714m² total area
- 3,125m² is soft planting
- 40% of space is soft landscape
- 12 existing trees
- 47 proposed new trees



Woodland-style planting south facing open glades







Space comparison with Biomedical Campus, Cambridge



An arrival space with an important role in enabling local Biomedical Campus, Cambridge - Bidwells connectivity



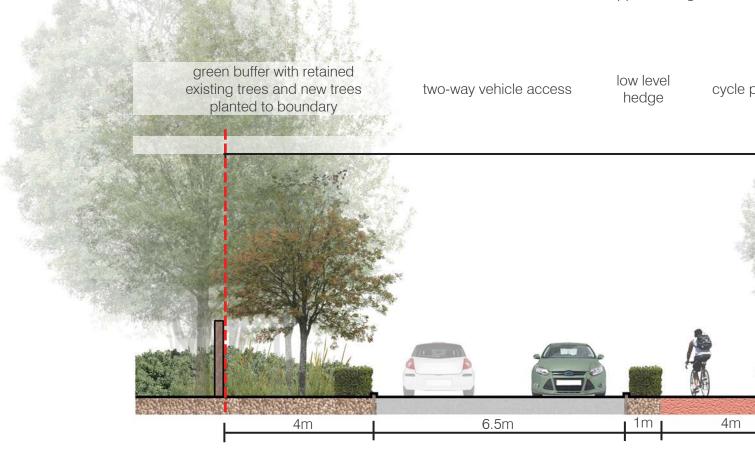
Interpretative sketch of Abbey Grove woodland-style planting and pockets of incidental play

7.4 Character Areas - Abbey Grove

Section and Precedent Images



Trees of various species and sizes provide shade and dappled sunlight



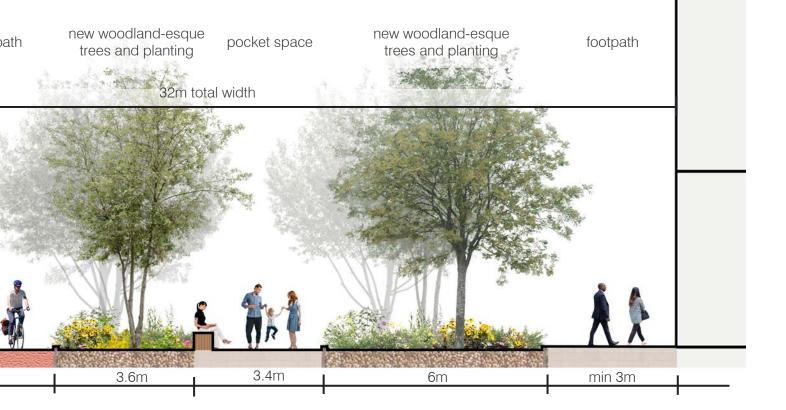


Opportunities for public art and installation trails



Intimate spaces and meandering paths with vibrant planting



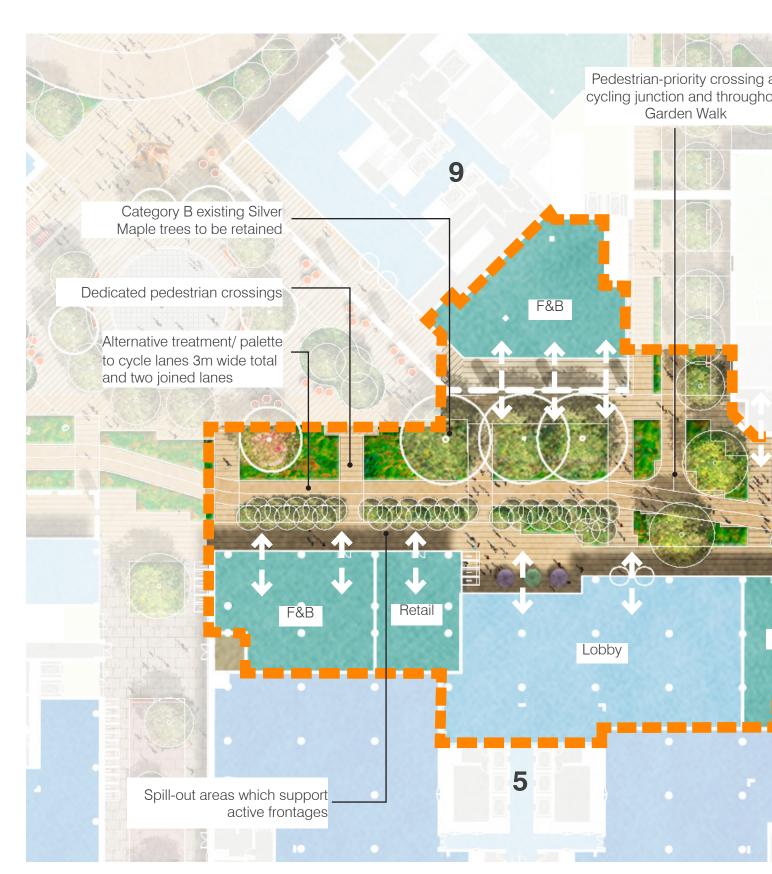






7.4 Character Areas - Garden Walk

Character Area and Groundplane Plan







7.4 Character Areas - Garden Walk

Scale Comparison and Precedent Images

Garden Walk is an important green link between the north of the site and the south of the site. It forms part of *The Beehive Greenway* emerging cycle network which connects to Cambridge Retail Park and out through Sleaford Street. Pedestrians and cyclists will share this busy space and accessibility, legibility and safety are of the utmost importance.

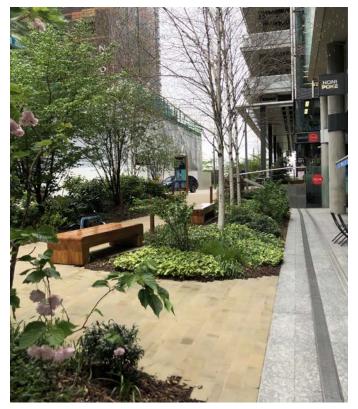
At its narrower point, Garden Walk spans 17m in width between buildings 4 and 10 (the car park). It is 20m up to 25m further south between buildings 5 and 9. In all locations, minimum 3m wide pedestrian footpaths are provided on both sides adjacent to the building facade. Footpaths are separated from the central cycle lane by rain gardens and tree planting.

In this central public realm, the dedicated joined cycle lane is proposed to be a narrower 3m. This is to indicate to cyclists to slow down and respect pedestrian movements. Subtle deviations to the potential long straight route also provide a speed reduction measure. Different surface materials and a colour change with appropriate signage are also proposed.

The Beehive Greenway, shared space for pedestrians and cyclists, cafés, intimate seating areas, linear garden, trees, rain gardens, outdoor working, calm spaces

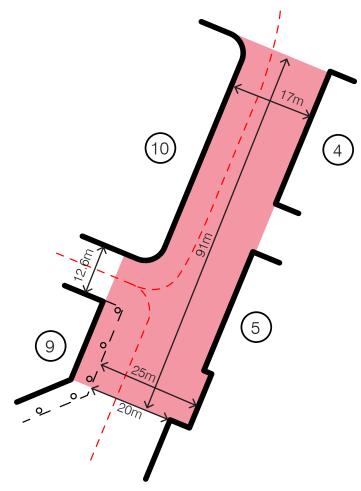
Key characteristics:

- 91m long x 24.5m wide
- 2,304m² total area
- 643m² is soft planting
- 28% of space is soft landscape
- 4 existing trees
- 52 proposed new trees

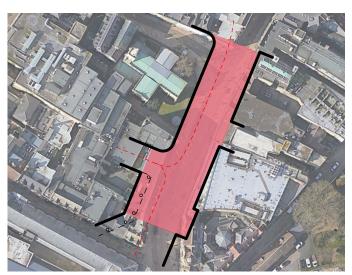


Soft edges blend vegetation with activity spaces





An active urban-scale street that connects the north and south of the Beehive Redevelopment



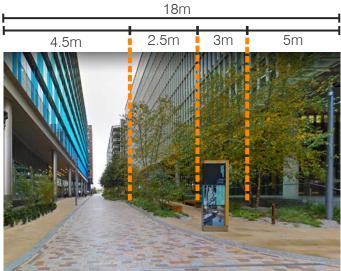
Space comparison with Sidney Street, Cambridge



Sidney Street, Cambridge



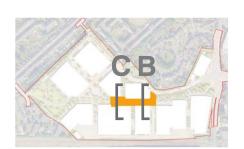
Interpretative sketch of Garden Walk parallel footpath, planting beds and dedicated cycle lane



Space comparison with Kingdom Street, Paddington London

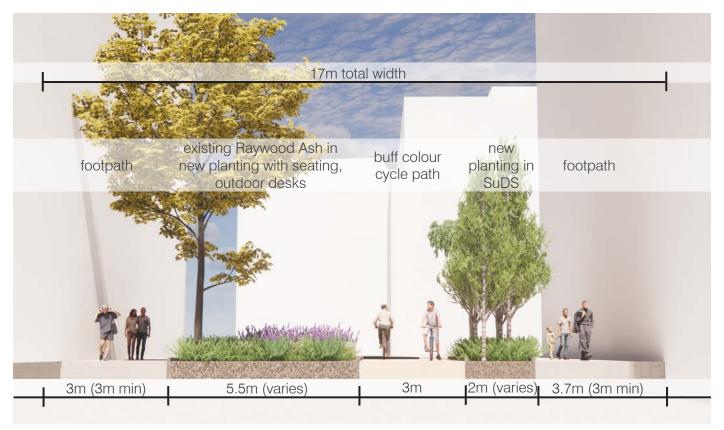
7.4 Character Areas - Garden Walk

Sections and Precedent Images





Linear rows of planting, footpaths and trees



Illustrative Section B-B (between buildings 10 and 4) - 17m wide Scale: Not to scale



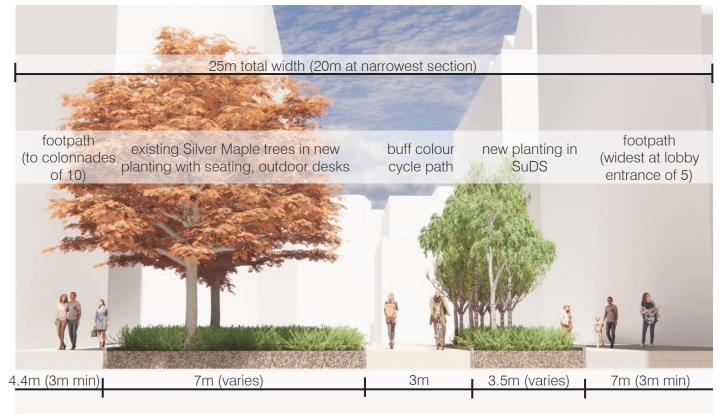
New resilient tree planting including a variety of naturally upright species



Street furniture provides for moments of rest



2.5m wide retail spill out spaces combined with pedestrian footpath at Kingdom Street, London



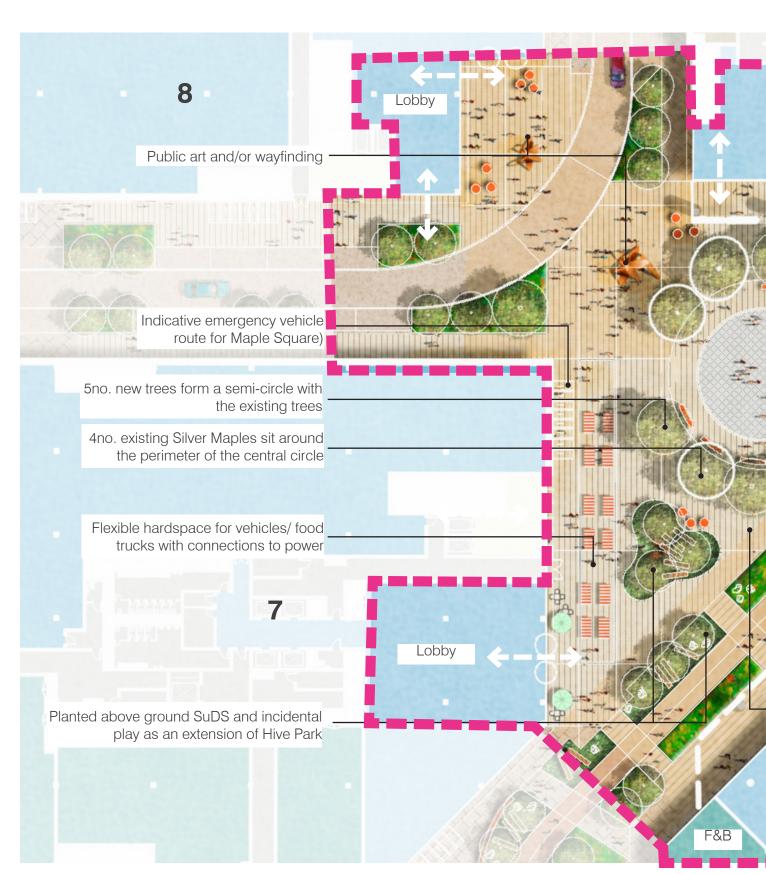
Illustrative Section C-C (between buildings 9 and 5) - 20m narrowest point Scale: Not to scale



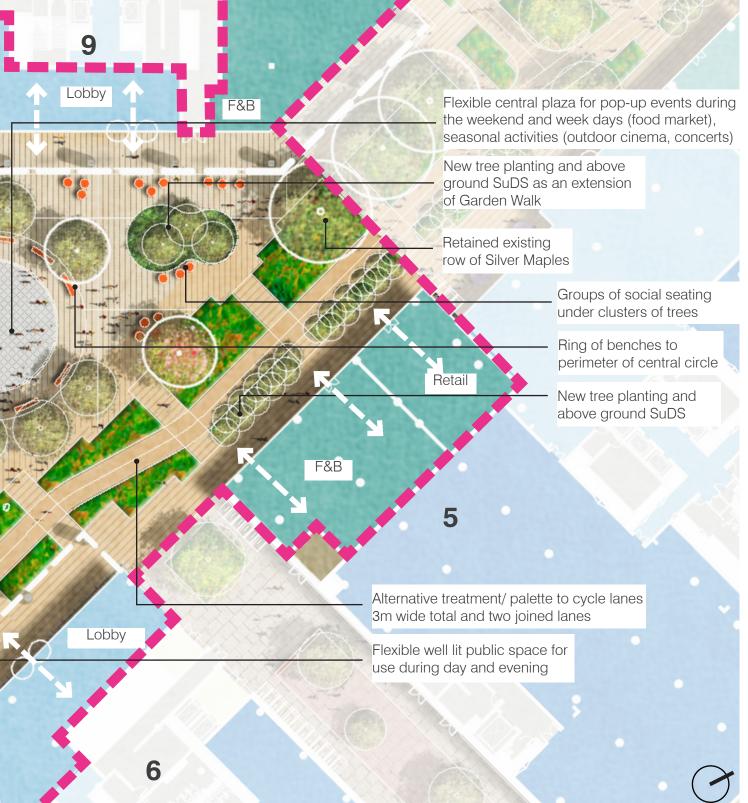


Maple Square

Character Area and Groundplane Plan







7.4 Character Areas - Maple Square

Scale Comparison and Precedent Images

At the heart of the site is Maple Square which is an open primarily hardspace surrounded by the lobbies and entrances of various facilities located in buildings 6, 7, 8 and 9. The direct proximity to each of these buildings is important in establishing a central connected open space.

Four existing Silver Maple trees inspire and inform the setting of the central circular flexible space, which has been capacity tested for various larger seasonal events, such as an ice-skating rink, outdoor cinema screen or public art exhibition and performances.

The trees will be supported with new tree planting to form a circle, with benches located beneath each canopy. Other clusters of trees in flush planters help to further soften the space, and provide shade and shelter. Groups of social seating are provided for rest or participating in events.

A designated area of hardstanding alongside the northern facade of building 7 is intended for regular events such as weekly lunchtime food trucks, or a weekend farmer's market. Power and facilities would be provided.

Central events space, celebration of existing Maple trees, lots of seating, table tennis, larger events, pop-up cinema, food truck area, public art, wayfinding, feature lighting

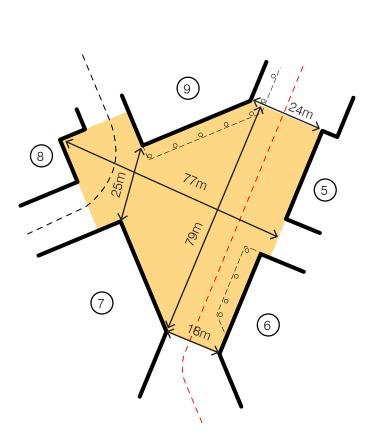
Key characteristics:

- 79m long x 77m wide
- 3,726m² total area
- 689m² is soft planting
- 18.5% of space is soft landscape
- 6 existing trees
- 41 proposed new trees



A flexible central hardspace that can accommodate a range of programmed events



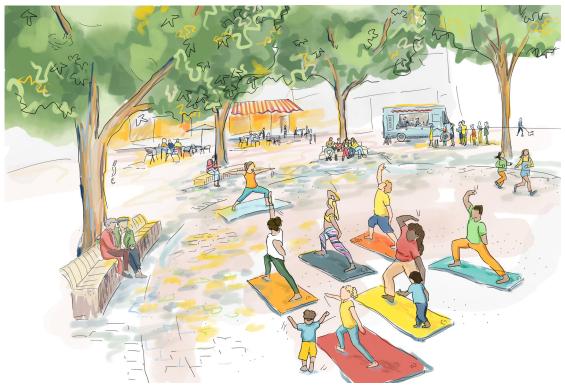




Space comparison with Pancras Square, London



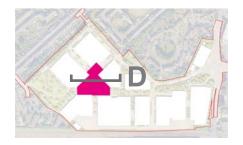
A mixed-surface functional civic space for a year round Pancras Square, London programme of events



Interpretative sketch of Maple Square with community yoga classes taking place in the central hardspace

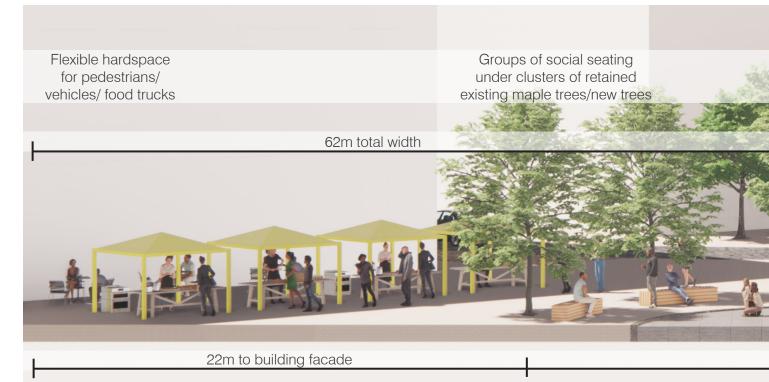
7.4 Character Areas - Maple Square

Section and Precedent Images





Flexible hardspace with vehicle access and power points for regular events such as a Farmer's market



Illustrative Section D-D (between buildings 7 and 9) Scale: Not to Scale



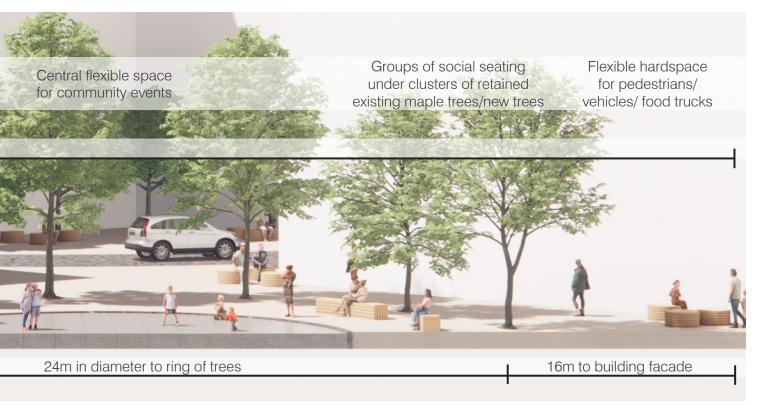
Central open hardspace with capacity for larger events such as pop up sports screens



Spaces for art installations and flexible seating that can respond to programming and usage



Opportunities for celebration and integration with public art and festivals throughout the year







7.4 Character Areas - Hive Park

Character Area and Groundplane Plan







7.4 Character Areas - Hive Park

Scale Comparison and Precedent Images

A proposed new public park is an exciting addition to the resubmission of the Beehive Redevelopment scheme. Located at the south of the site, it is directly accessible from the widened Sleaford Street entrance and will feature a gently graded route for both pedestrians and cyclists.

A large open lawn is south facing and perfect for summer picnics, reading and relaxing, and sunbathing. Tree planting of large and medium sized species, including feature 'landmark' trees, will provide character, form and shade for the hotter months.

The lawn will be framed with playable swale edges, whilst the park also features a dedicated play area. Plenty of seating will be provided for parents and carers, including long bleacher-style seating that is nestled in to the slope as it transcends from Sleaford Street.

South-facing open lawn, dedicated play area, wildflower meadow, swales with incidental play, tree planting, co-working, families, younger children, picnics, community murals, safe at night

Key characteristics:

- 105m long x 62m wide
- 6,685m2 total area
- 1,968m2 area of amenity lawn
- 4,595m2 is soft planting
- 68.7% of space is soft landscape
- 7 existing trees
- 29 proposed new trees

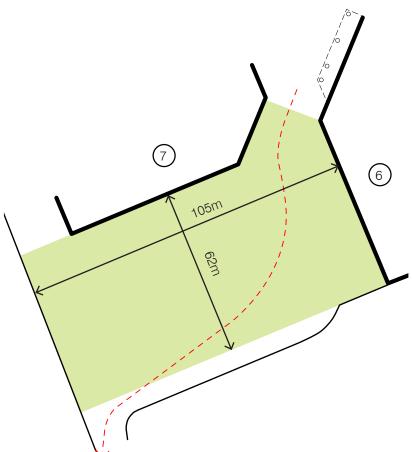


CGI illustrative image of spill out cafe spaces to sunny edges of Hive Park





Playable swales to edge of lawn and play area



Creating a significant new piece of green open space



Space comparison with St. Matthews Piece, Cambridge



St. Matthew's Piece, Cambridge



Interpretative sketch of Hive Park showing open amenity lawn with spaces for picnics, play, rest and shade