4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme

4.3.1 Beehive Greenway and Masterplan Character Areas

The site is organised around a single central space that stretches 350m from Coldham's Lane to Plots I and J. This space is known as Beehive Greenway and will change in character along its length to create four character areas:

1. Abbey Grove
2. Creative Exchange
3. Garden Square North
4. Garden Square South

Each of these spaces has a distinct character that blends gently into the next as the viewer moves through the masterplan. Some spaces focus on maximising green space while others focus on linking activity within the buildings to the landscape.

Beehive Greenway is supported by two additional character areas which connect the southern site entrances to the heart of the masterplan:

5. Hive Lane
6. Vera's Garden

These supporting character areas perform important functions such as creating a new local high street or a dedicated area for community gardening.

The following pages will illustrate the character areas in terms of their urban form, character and the activities that will take place in their buildings and landscape.

350m
Length of Beehive Greenway

17
Local Centre Units with frontage onto Beehive Greenway

9
Lobbies with active frontage onto Beehive Greenway

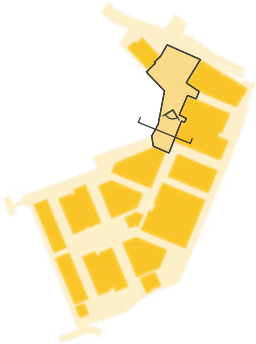
8
Local Centre Units with frontage onto Hive Lane


Beehive Greenway
Supporting Character Area
1
2
3
4
5
6

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme

4.3.2 Masterplan Character Area: Abbey Grove



Abbey Grove is an important arrival space for all visitors arriving via Coldham's Lane and, as such, it has been designed to meet the needs of everyone who will be using it.

The space performs a number of roles and will comprise of the sole vehicle entry road, a high quality cycle path, significant new tree planting and three new workplace buildings.

For some, this is a space to be moved through efficiently on their way towards the destination of their journeys made on foot, by bike, by bus and by car. For others it will be a destinational space to come and enjoy the new mixed-units within the ground floors, to come tor work, or simply to enjoy the lush green new space which will be designed to encourage informal meet-ups and moments to reflect.

It is expected that there will be over 55 new trees within this space alone. The trees will play an important role in filtering out the bustle of Coldham's Lane in order to create calm spaces at the earliest possible point along the journey into the site, creating an environment worthy of pausing in to enjoy.

6,500m²
Total area

3
Local centre units

3
Lobby entrances

150m
Local centre frontage

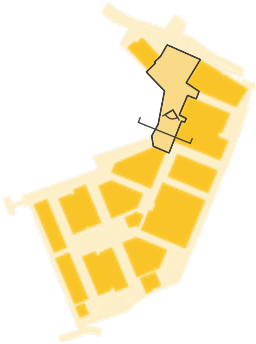
Woodland-style planting with open glades

Intimate spaces & meandering paths


Abbey Grove
30m
150m

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme



4.1.5 Masterplan Character Area: Abbey Grove

Abbey Grove has the most open aspect of any of the spaces along the length of the Beehive Greenway with low or open edges to the north and west. This means that it will have good access to daylight and sunlight and therefore creates an opportunity for a great space for people and nature.

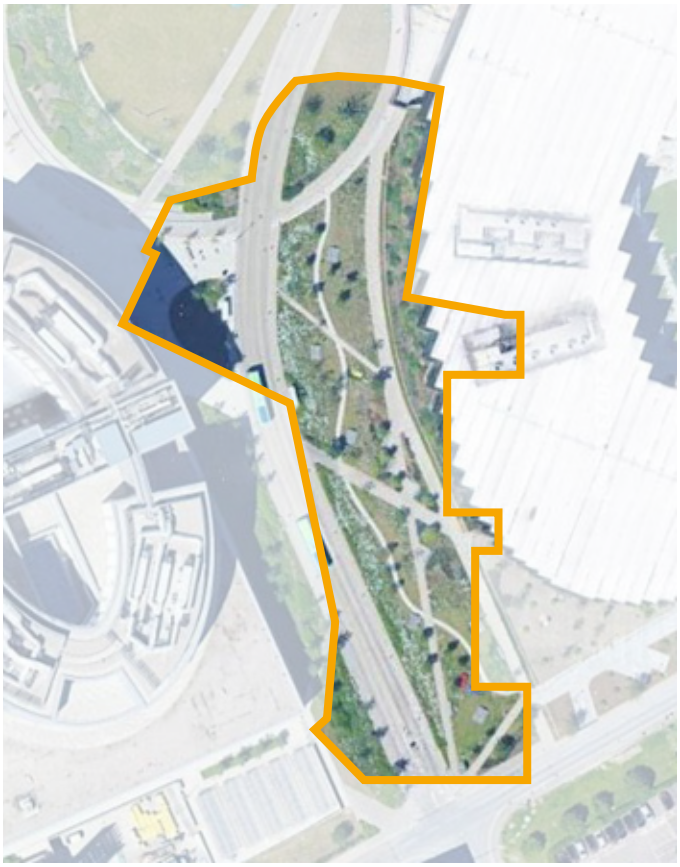
The space is comparable in scale to the Greens and the Gardens at Cambridge Biomedical Campus which provides a comparable amount of green space and similar strategy for winding routes through greenery. The height of the Astrazeneca building (right hand side of plan) is quite similar to that of Plot D, which at three storeys plus rooftop plant defines the eastern edge of the narrowest section of Abbey Grove

54m
Width of space between buildings

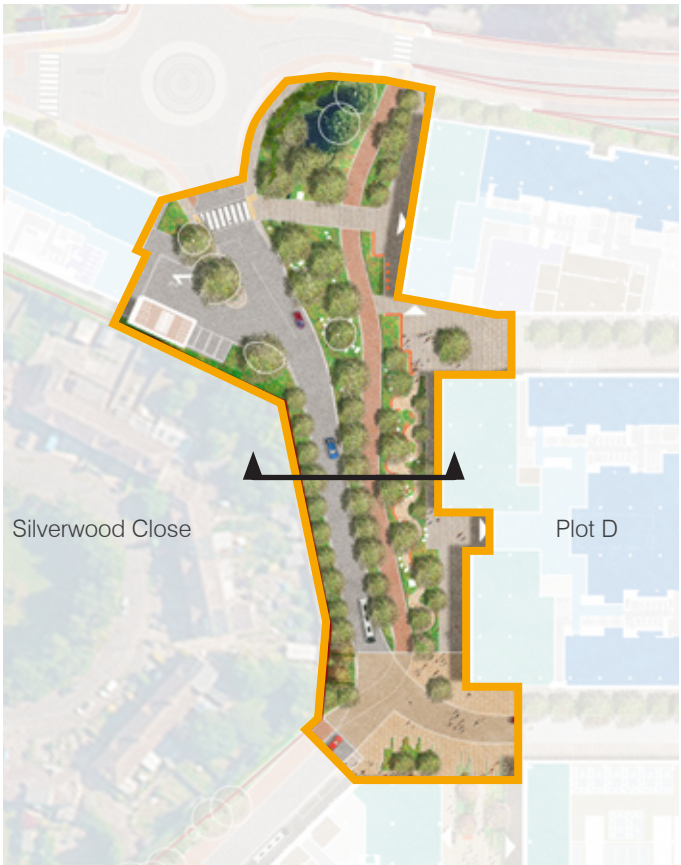
19m
Height of primary elevation

1:2.8
Height to width ratio

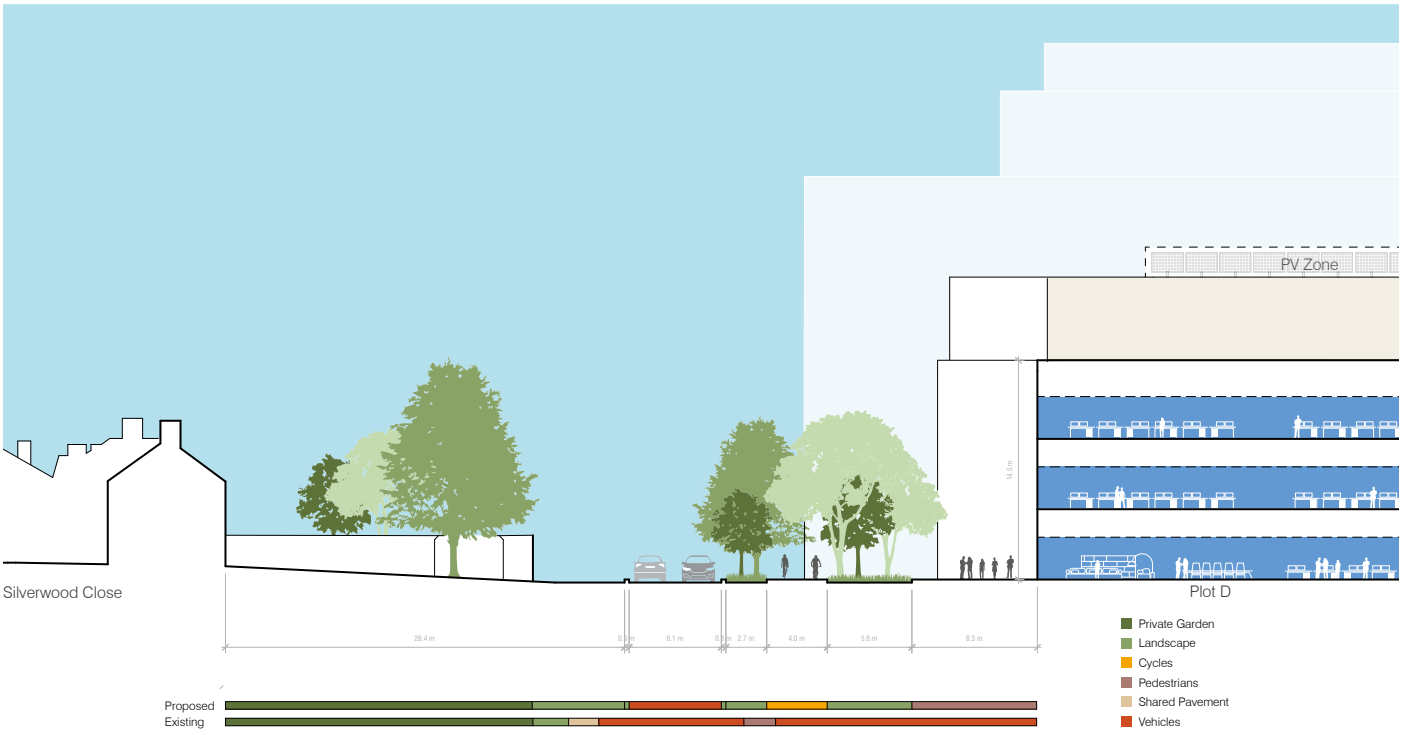
Based on illustrative section through Plot D



The Greens and the Gardens: Cambridge Biomedical Campus



Abbey Grove


PV Zone
Silverwood Close
Plot D
Private Garden
Landscape
Cycles
Pedestrians
Shared Pavement
Vehicles
Proposed
Existing

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme

4.3.3 Masterplan Character Area: The Creative Exchange

The Creative Exchange is the urban heart of the proposal, where five routes across the site converge upon a public square surrounded by mixed-use units and entrances to workplaces. It is a vibrant and dynamic space that has been designed to be the beating heart of the new development.

It is expected that this space will be bounded to the south by the Community Pavilion with opportunity to create a distinctive address for this building. The connection between the building and the adjoining square will allow the outdoor areas to act as reception spaces for events within the building. The square itself will act as a welcoming and inclusive public space that's accessible to everyone, whether you're a resident, visitor, or worker in the area.

A river of green planting will run through the streets that lead into the Creative Exchange. This creates an interesting and varied landscape, perfect for stopping, resting, and socializing. The green areas also play a role in the sustainable urban drainage system, with rain gardens and rills managing rainwater runoff and the sustainable irrigation of the planting.

1,900m²
Total area

7
Local centre units

2
Lobby entrances

1
Car park entrance

1
Pavilion entrance

170m
Local centre frontage

Dynamic space in to the evening

Active frontages on all sides


Abbey Grove
102m
13.5m
Hive Lane
Creative Exchange
21m
Garden Square (North)

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme

4.1.6 Masterplan Character Area: The Creative Exchange

The Creative Exchange has been planned to have a more urban quality that the rest of the site with narrower spaces defined by taller buildings. It is expected to be a vibrant, busy and bustling space with the soft landscape proposed within the planned rain-gardens and tree planting helping to soften the environment, attenuate noise and provide cool shade in the summer.

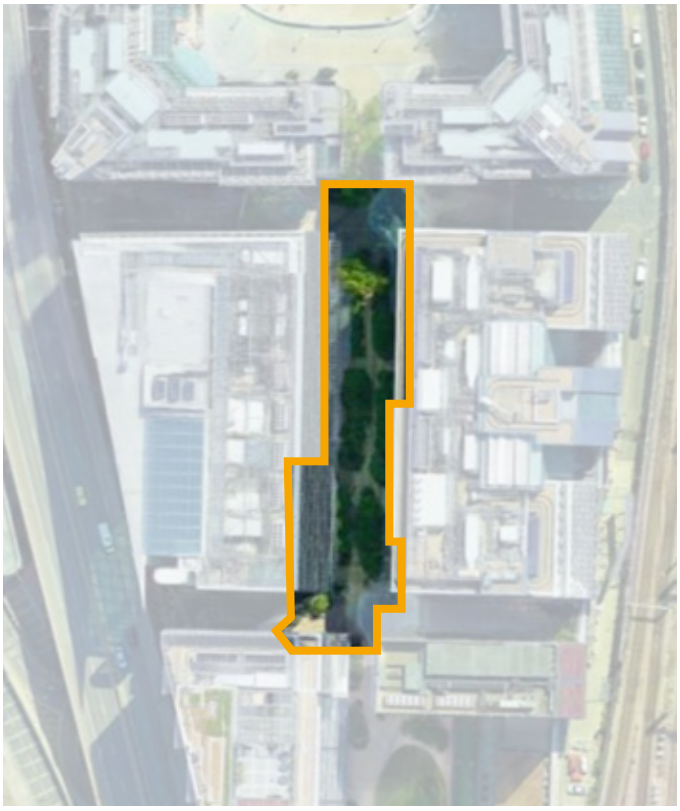
The Creative Exchange is approximately equal in length and width to Kingdom Street at Paddington Central in London. Kingdom Street uses a central linear garden to great effect, softening an otherwise hard space. It should be noted that the buildings of Kingdom street are taller than those along the Creative Exchange.

20m
Width of space between buildings

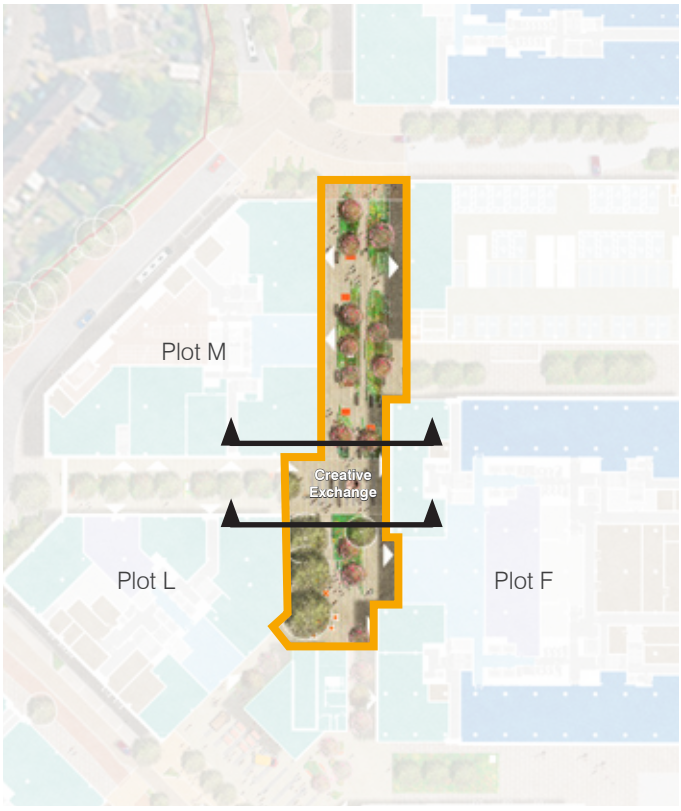
38m
Height of primary elevation

1.9:1
Height to width ratio

Based on illustrative section through Plots L and F

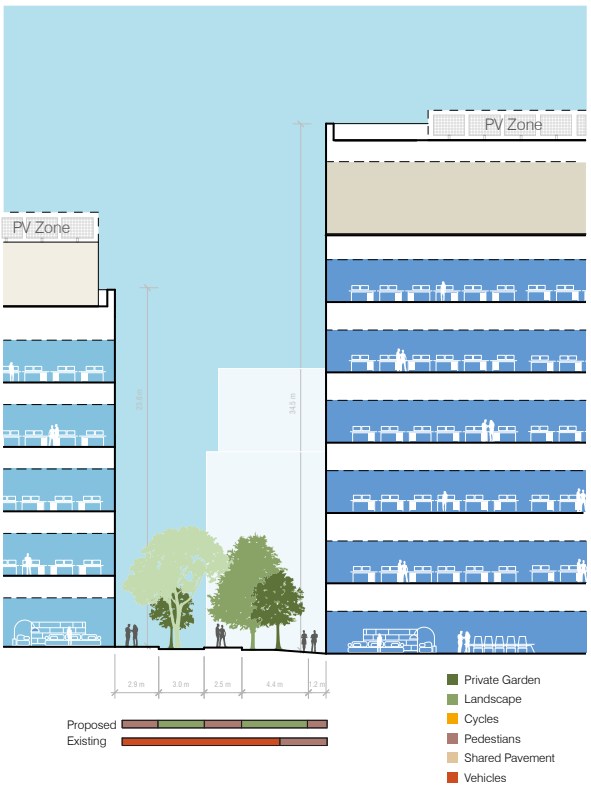


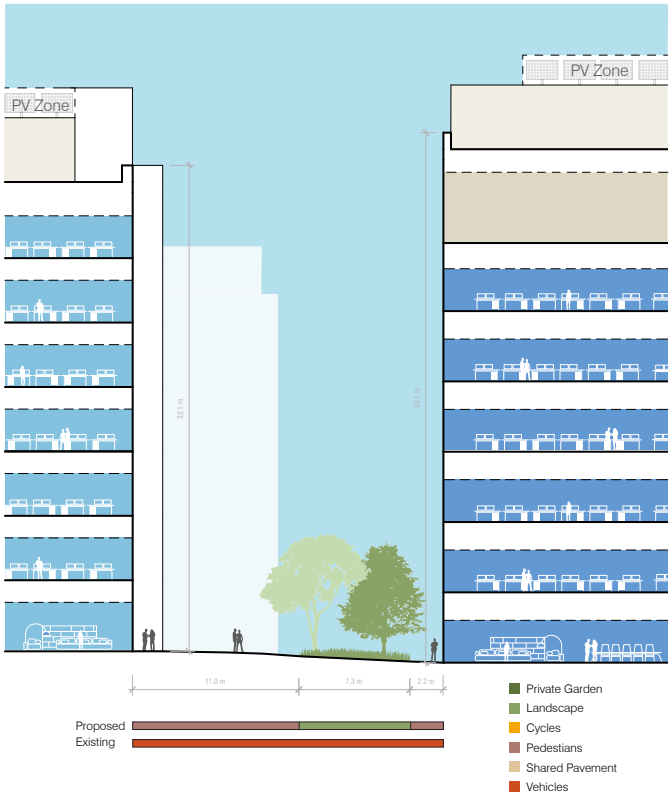
Landscaped street
Kingdom Street, London



The Creative Exchange


GARDEN WALK
Rustica
Bio Tech


PV Zone
PV Zone
Proposed
Existing
Private Garden
Landscape
Cycles
Pedestians
Shared Pavement
Vehicles


PV Zone
PV Zone
Proposed
Existing
Private Garden
Landscape
Cycles
Pedestians
Shared Pavement
Vehicles

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme

4.3.4 Masterplan Character Area: Garden Square North

The northern portion of Garden Square sits to the south of the Community Pavilion and will be a key focal point for a range of programmed events. The open square offers a flexible space that is characterised by a higher proportion of hard landscaping, making it an ideal location for a range of activities and events.

This area of Garden Square will host a wide variety of events that will appeal to all ages and interests, such as markets, food festivals, outdoor cinema nights, and other community-based events. Its location at the heart of the site will help to mitigate any noise impacts outside of the site.

The square will also host the relocated bus stop, making it the perfect reception space for anyone arriving on-site by bus. Upon arrival, bus passengers will be greeted by a diverse selection of mixed-use ground floor units that form a core element of this new local centre.

Our vision is that these units will provide useful and convenient shops and services for the local community, visitors to the site and those working within the workplace buildings.

1,100m²
Total area

3
Local centre units

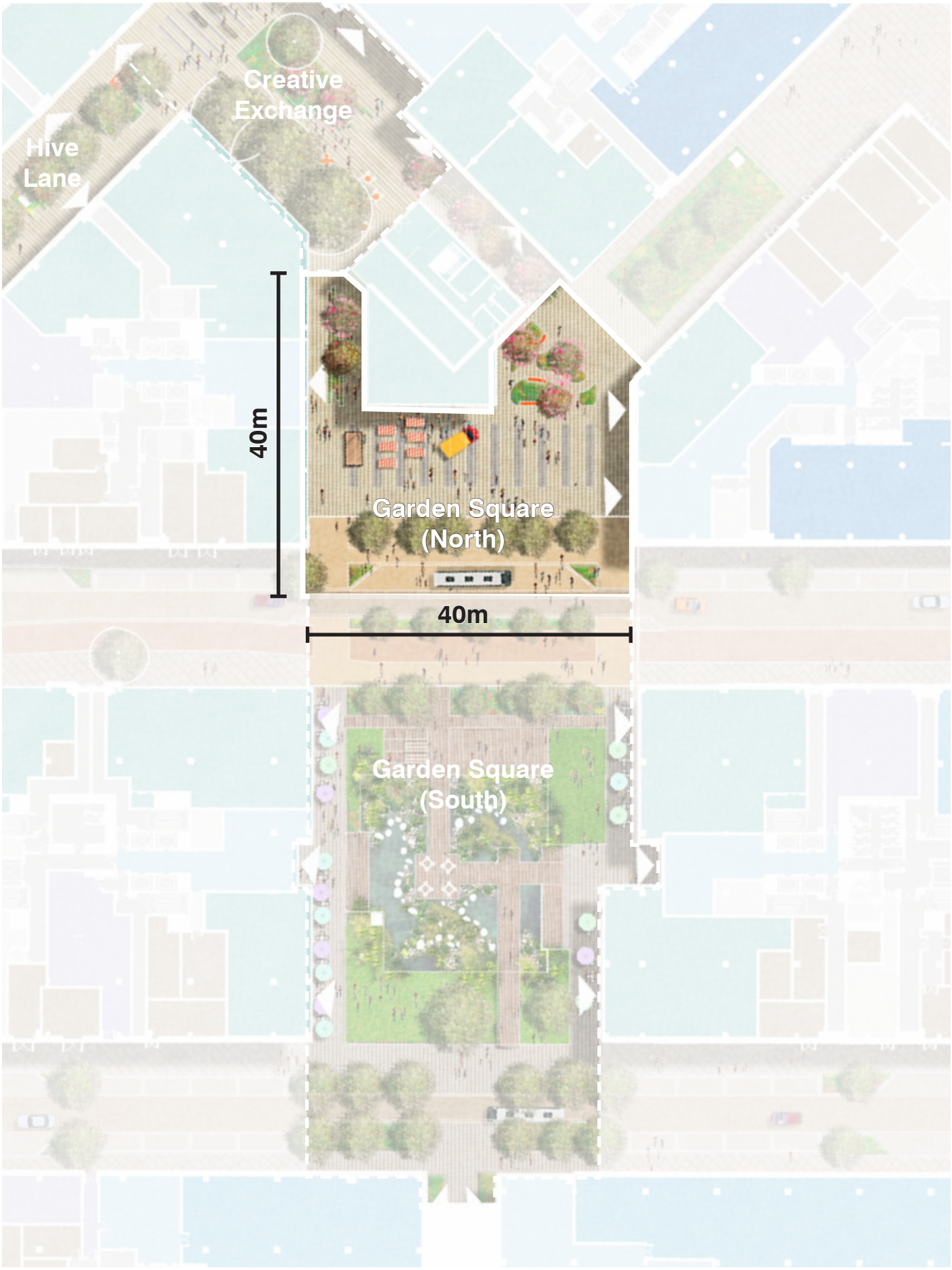
2
Lobby entrances

1
Pavilion entrance

105m
Local centre frontage

Day-to-day: fixed and moveable furniture

Weekly activation: farmers market, street food stalls


Creative Exchange
Hive Lane
40m
Garden Square (North)
40m
Garden Square (South)

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme

4.1.7 Masterplan Character Area: Garden Square North

Garden Square North will have a greater proportion of hard landscape than other spaces in order to allow space for a year-round programme of events that may include markets, food events, exhibitions and outdoor performances. The square has an open aspect to the south west meaning that it is an ideal place for evening leisure activities.

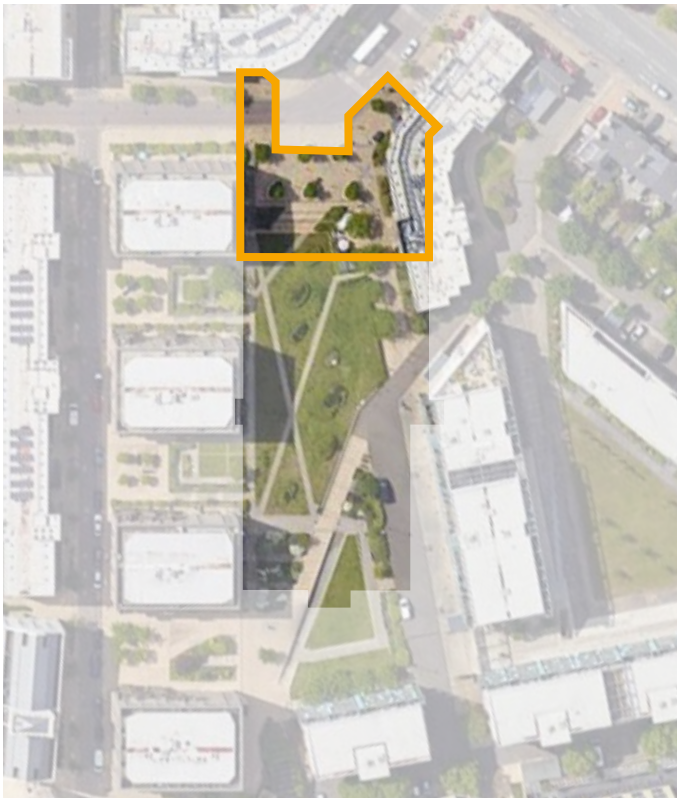
Separated from Garden Square South by the one-way road loop and cycle path, the Square is similar in scale to upper square at Mill Park and has a similar relationship to that the hard landscaped square at the south of the space to the greener space to the north.

41m
Width of space between buildings

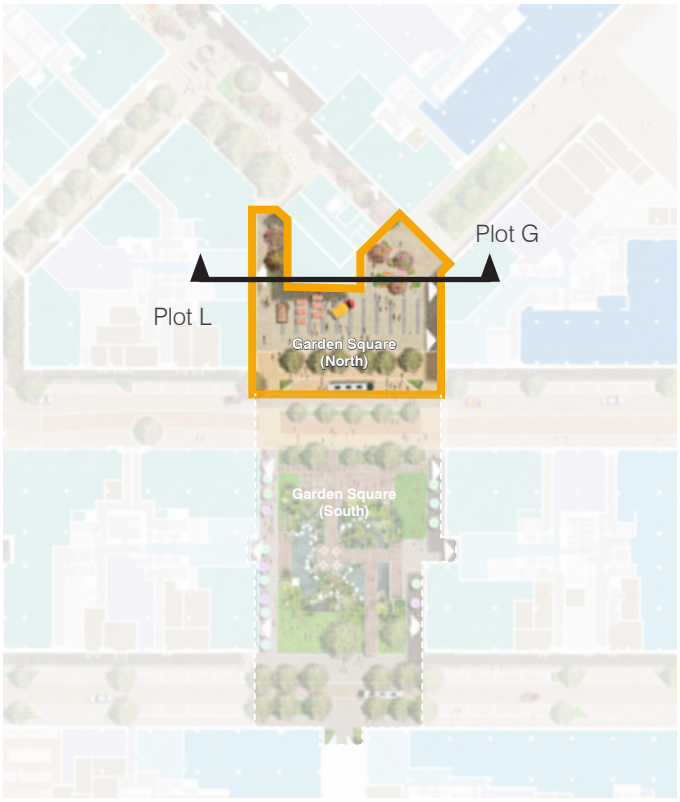
32m
Height of primary elevation

1:1.3
Height to width ratio

Based on illustrative section through Plots L and G

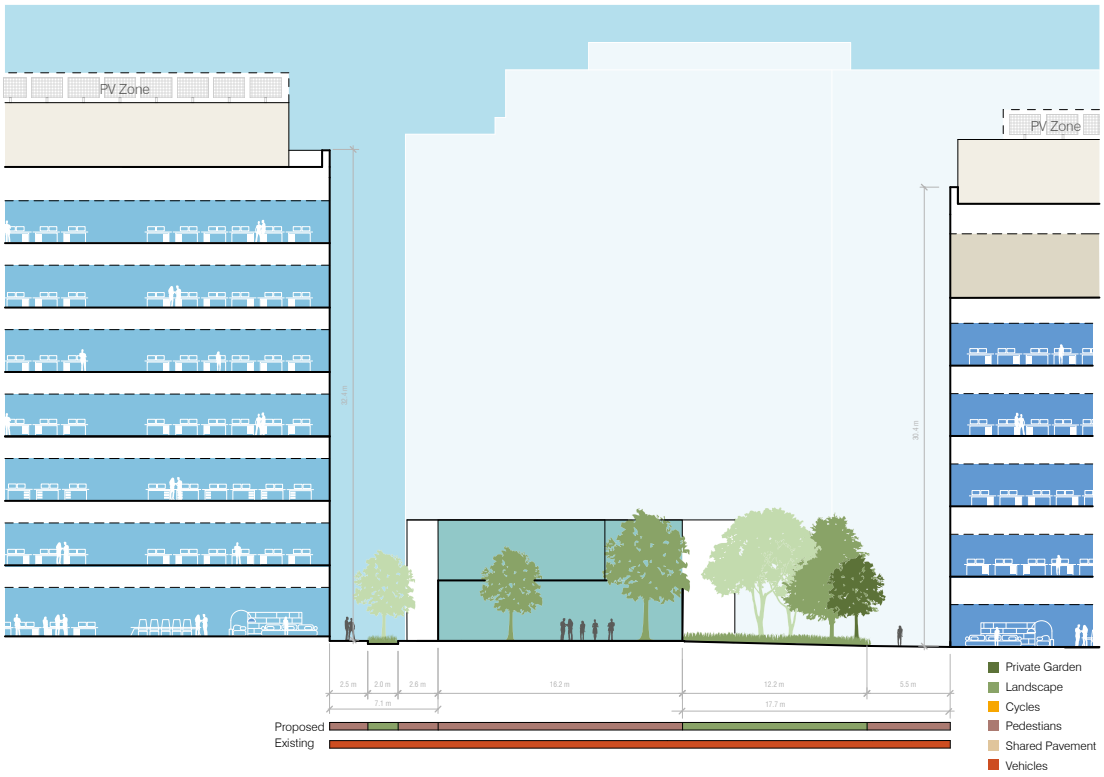


Open square and park -
Mill Park refurbishment scheme, Cambridge



Garden Square North

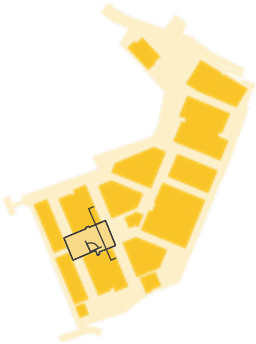

AVILION
AVILION


PV Zone
PV Zone
Private Garden
Landscape
Cycles
Pedestians
Shared Pavement
Vehicles
Proposed
Existing

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme

4.3.5 Masterplan Character Area: Garden Square South



The southern portion of Garden Square will see the creation of a cornerstone piece of the strategy to deliver a significant uplift to the biodiversity of the site. Our plan for the area includes the creation of a new wetland space that will introduce several new habitat types to the site. This exciting development provides a unique experience in this part of Cambridge which is otherwise characterised by tight urban streets with few green spaces or open water.

The wetland will be fed only by rainwater collected on site and will provide an attractive feature that encourages users to interact with the water via a series of accessible walkways and vantage points. Visitors will have plenty of opportunities to connect with nature in this beautiful and tranquil environment.

The cafés and restaurants that line Garden Square will provide the perfect place to sit and enjoy this active space that benefits both local people and local wildlife. We believe this area will become a thriving hub of biodiversity, adding to the richness of the site and the wider community.

2,800m²
Total area

4
Local centre units

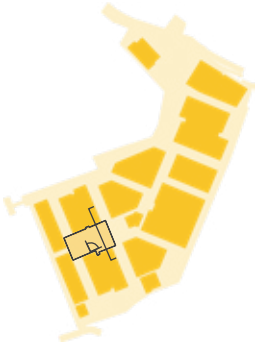
2
Lobby entrances

90m
Local centre frontage


Creative Exchange
Hive Lane
Garden Square (North)
40m
Garden Square (South)
62m

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme



4.1.8 Masterplan Character Area: Garden Square South

Garden Square South hosts the wetland which is central to the vision to create a green and biodiverse place. The wetland performs a dual function of attenuating water runoff and providing a new habitat type on site. The space is crossed by paths which link both sides of the square.

Garden Square south is comparable to Cambridge Market Square in terms of its footprint but it is open to Garden Square North at it's northern end which lengthens the pace.

36m
Width of space between buildings

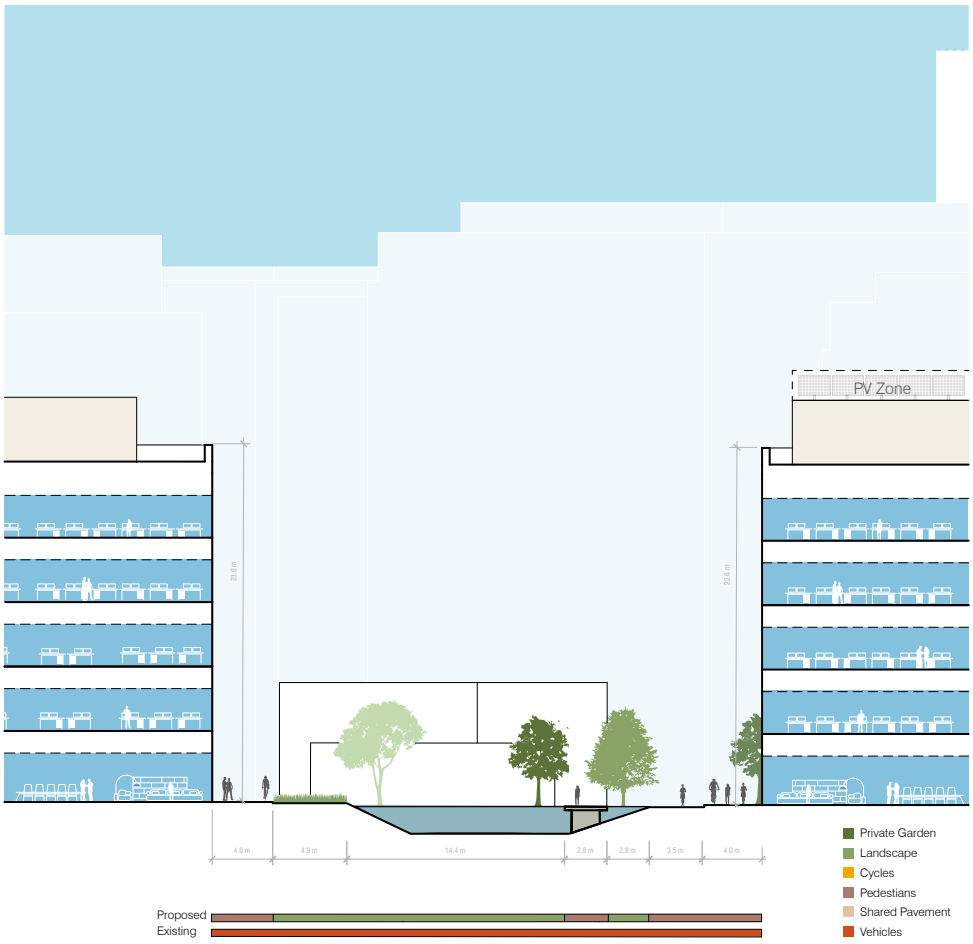
24m
Height of primary elevation

1:1.5
Height to width ratio

Based on illustrative section through Plots H and K

Open square for markets - Cambridge Market Square

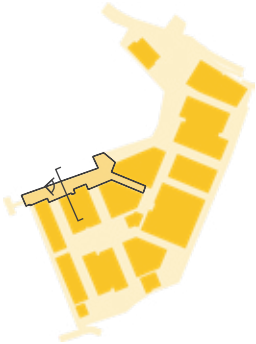
Garden Square South


PV Zone
Private Garden
Landscape
Cycles
Pedestians
Shared Pavement
Vehicles
Proposed
Existing

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme

4.3.6 Masterplan Character Area: Hive Lane



Hive Lane is a new local high street that connects York Street to the heart of the masterplan with a continuous run of active frontages connecting the mixed-use ground floor to the streetscape. Hive Lane will be a vibrant new piece of the city.

At its southern end, where Hive Lane connects to York Street, new buildings create a comfortably proportioned new street in conjunction with the existing buildings of St Matthew's Gardens. This space incorporates a low-traffic one way vehicle route, pedestrian routes and a high quality new cycle path that not only enables easy access to The Beehive Redevelopment but also allows onward connections for residents to Cambridge Retail Park and the north of the city.

As the street moves towards the centre of the site, active frontages form both sides of the street and will house a mix of units in both type and scale to create a varied and exciting offer for residents and workers alike.

4,000m²
Total area

8
Local centre units

2
Cyclist entrances

100m
Local centre frontage

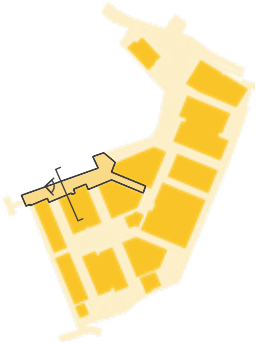
Parallel wide open pedestrian and cycle path

Enhanced native woody planting to boundary


Creative Exchange
Garden Square (North)
Hive Lane
Garden Square (South)

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme



4.1.19 Masterplan Character Area: Hive Lane

Hive Lane is key for site connectivity and connects the heart of the site with York Street. It has been designed to have a comfortable streetscape at the western end of the space as it leads in from York Street. This is achieved by the 3 storey facade which faces the buildings of St Matthew's Gardens and is of a similar scale to the existing residential building. The space then becomes narrower and more urban in character as it connects into the Creative Exchange.

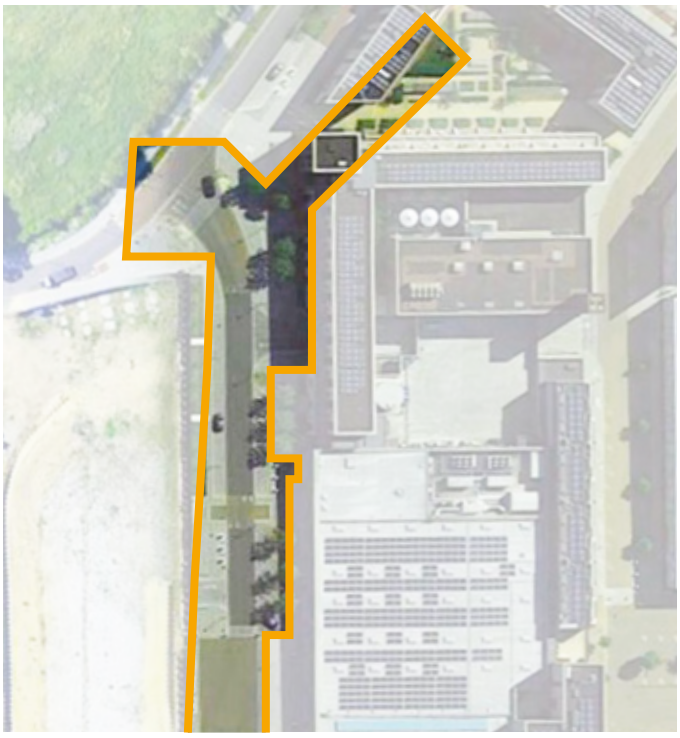
27m
Width of space between buildings

14m
Height of primary elevation

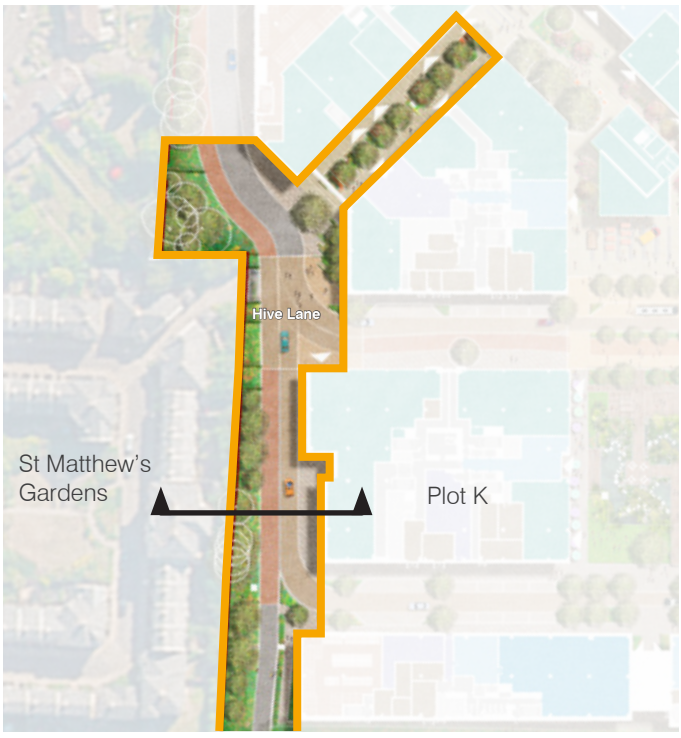
1:1.9
Height to width ratio

Based on illustrative section through St Matthews Garden's and Plot K

To Be Replaced With More Appropriate Comparitor

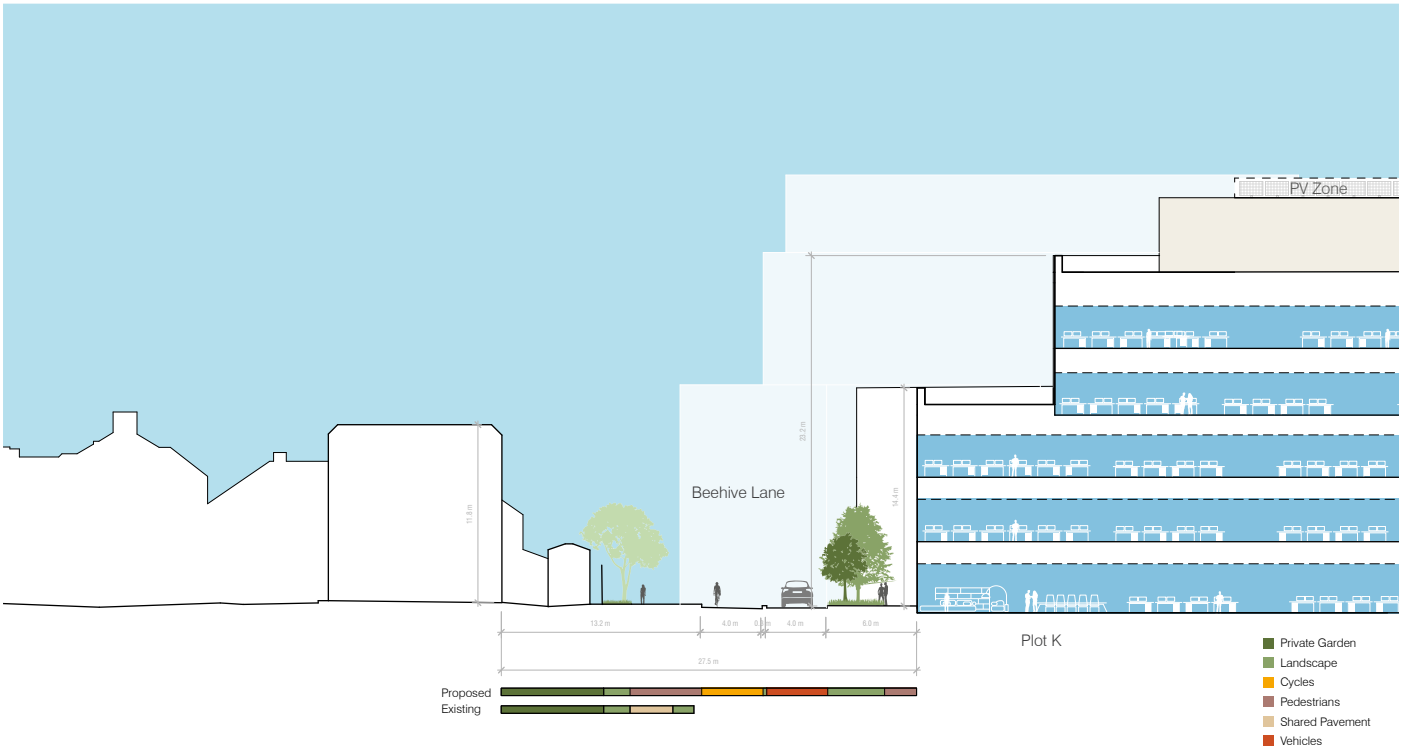


High Street
Eddington Cambridge



Hive Lane

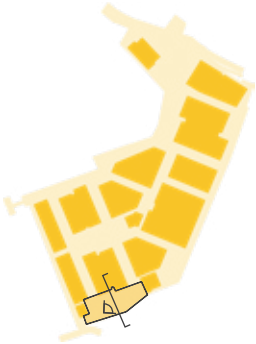

HIVE LANE
GROCERY
Barbers


PV Zone
Beehive Lane
Plot K
Proposed
Existing
Private Garden
Landscape
Cycles
Pedestrians
Shared Pavement
Vehicles

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme

4.3.7 Masterplan Character Area: Vera's Garden



Vera's Garden will be the entry space for visitors arriving from Sleaford Street and will perform an important function in determining the character of the masterplan as visitors move into the site from the Mill Road Conservation Area.

The route through the space, Vera's Way, is named after a local resident who used the route to shop for her elderly neighbours. This route into the site will be improved and supplemented by a new public garden with opportunity for community involvement.

The new green space which is c. 90m long will feature edible planting, fruit trees and vegetable beds accessed by a collection of winding routes that connect together areas of seating for local residents and site visitors to enjoy.

3,100m²
Total area

1
Workplace

2
Cycle parking hubs

75m
Active frontage

Community orchard with mix of edible fruit

Incidental play for all age groups

Sunny area for vegetable growing

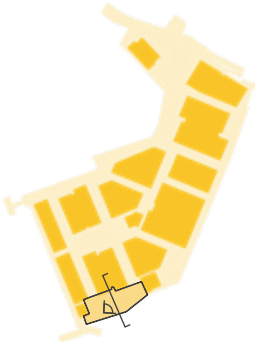
Play-on-the-way for local families


91m
Vera's
Garden
36m

4.0 The Beehive Redevelopment

4.3 The Illustrative Scheme

4.3.8 Masterplan Character Area: Vera's Garden



Vera's Garden has an open aspect to the south and so will have good access to daylight, making it an ideal location for a community space centred around gardening. Plot H tiers down towards the residential boundary to create a well-scaled space.

The community garden at Marmalade Lane is a good example of what Vera's Garden is aiming to deliver with a mix of spaces for food production, tree planting and spaces to socialise.

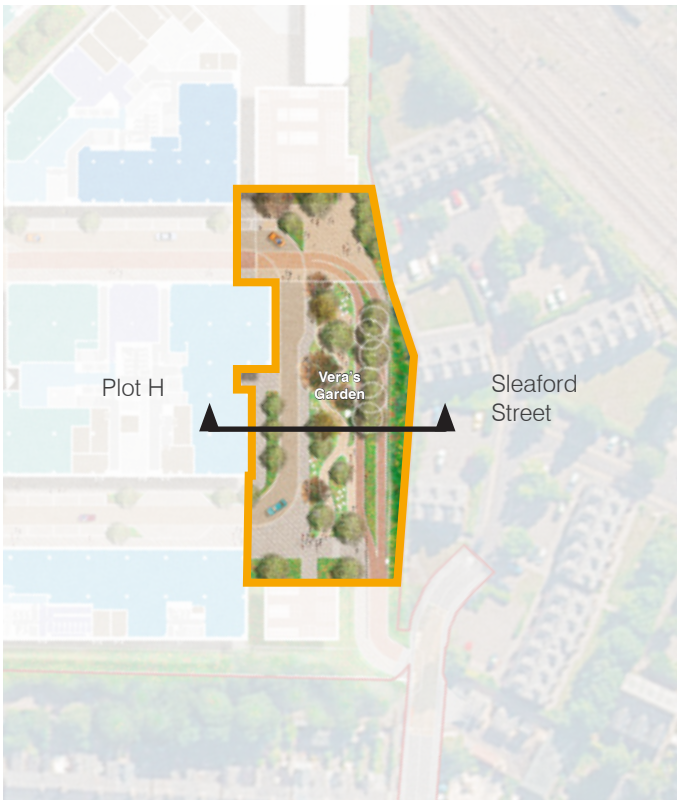
31m
Width of space between buildings & boundary

15m
Height of primary elevation

1:2
Height to width ratio

Based on illustrative section through Plot H and Sleaford Street

Community garden and play area - Marmalade Lane Cambridge



Vera's Garden


Vera's Garden


PV Zone
Proposed
Existing

4.0 The Beehive Redevelopment

4.4 Sustainability

This section summarises the sustainability strategy for the proposed development which has been informed by both national and local policy requirements, the Client's vision and sustainable design and development guidance and frameworks including, but not limited to:

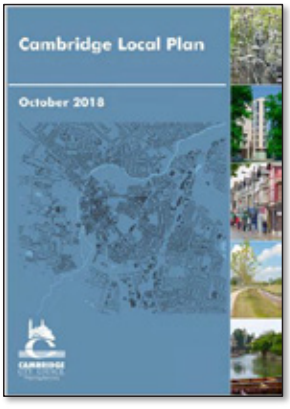
- United Nations Sustainable Development Goals (UN SDGs);
- Cambridge Local Plan (October 2018)
- Supplementary Planning Documents and Guidance (SPD)
- Cambridgeshire flood and water SPD.
- Greater Cambridge Sustainable Design and Construction Supplementary Planning Document (Adopted January 2020).
- Emerging Joint Local Plan for the Greater Cambridge Area
- BREEAM New Construction Version 6.0.
- RIBA 2030 Climate Challenge guidelines
- Client vision.
- The five capitals approach to sustainability.

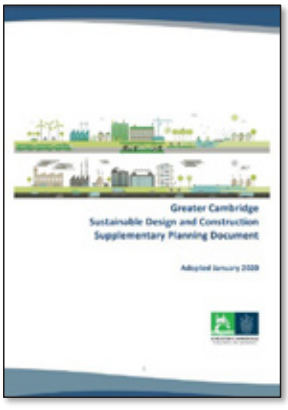
Please refer to the Sustainability and Energy Statements for further detail.

The design of the Proposed Development is based on high sustainability aspirations and is compliant with industry best practice. In addition, it also attempts to push the boundaries of conventional construction by deploying innovative methods and approaches during design and construction.

It embraces the Five Capitals framework, responding to the challenges of climate, biodiversity and health and wellbeing, UN sustainable development goals and Applicant vision, aiming to create long term value and generate a flow of environmental, social and economic benefits. Each Capital has been contextualised to the specific needs, challenges and opportunities arising from the Proposed Development, resulting in five themes as follows:

- **Physical capital:** Addressing climate change
- **Social capital:** Creating local connections
- **Economic capital:** Economic enrichment
- **Human capital:** Healthy people
- **Natural capital:** Positive impact





Reviewed policy documents

4.0 The Beehive Redevelopment

4.4 Sustainability

4.4.1 Energy Strategy

The energy strategy proposes recommendations to reducing carbon dioxide (CO_2) emissions and optimising energy efficiency within the proposed development. It has been developed using a 'fabric first' approach through the 'be lean', 'be clean', 'be green', 'be seen', energy hierarchy:

Be Lean
The energy strategy aims to reduce the energy demand initially through passive design energy efficiency measures by optimising the envelope and building services within the development.

The layout, fabric, and form of the buildings have been refined to reduce the energy demand for heating, cooling, lighting, and ventilation as much as possible. The buildings will be constructed with high levels of fabric performance to provide comfortable and efficient places to work.

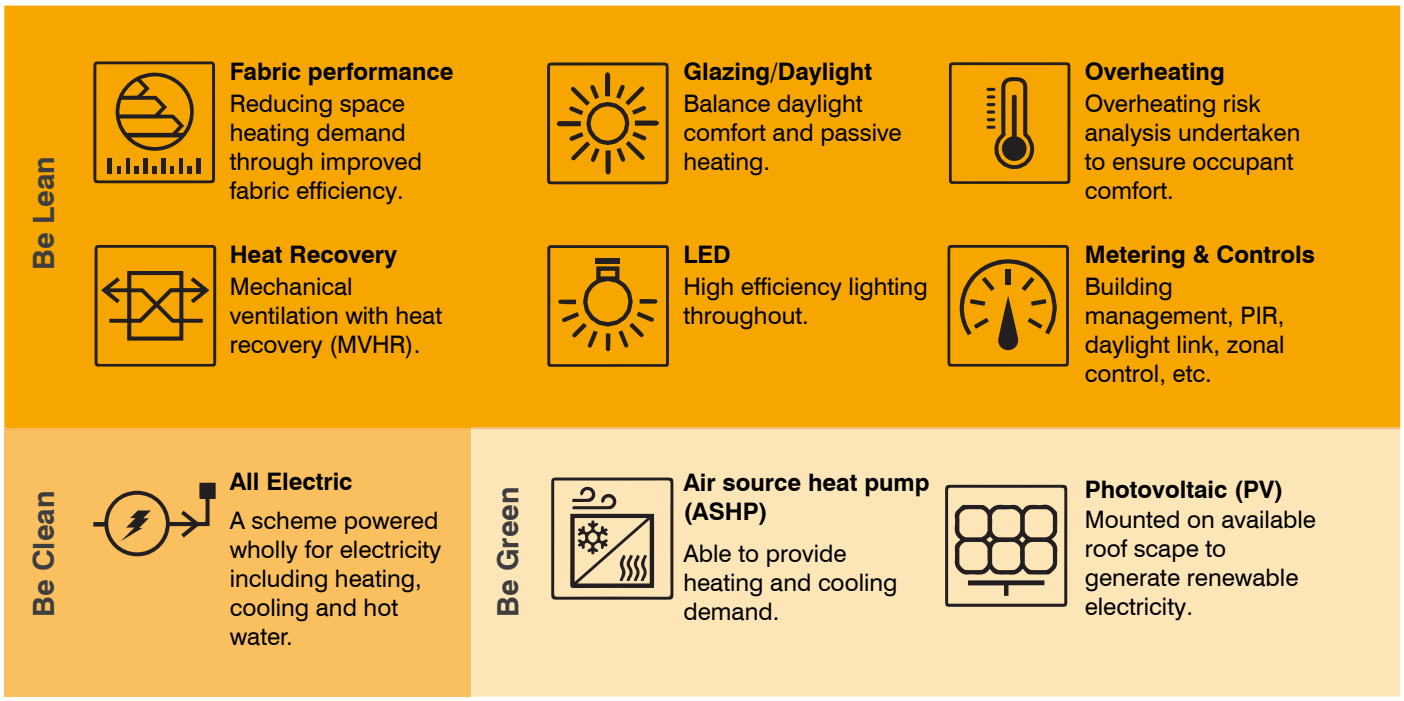
Building element	Target Performance	Limiting Values (Building Regulations Part L2 2021)
Air permeability (m3/h.m2 at (50Pa))	3.00	8.00
External wall u-value (W/m². K)	0.15	0.26
Spandrel Panels/ Louvres	1.00	1.60
Windows u-value (W/m². K)	1.30	1.60
Roof u-value (W/m²K)	0.10	0.16
Exposed floor u-value (W/m²K)	0.10	0.18
Basement walls u-value (W/m²K)	0.15	0.18
Basement floor u-value (W/m²K)	0.10	0.18
Rooflight u-value (W/m². K)	1.50	2.20
Glazing performance		
Vision Glazing g-value (Light Transmittance)	0.40	-
Rooflight g-value (Light Transmittance)	0.50	-

Be Clean
Due to the de-carbonisation of the electricity grid and air quality concerns, Combined Heat and Power (CHP) is not proposed as a viable option, nor is connecting to on-site or an off-site network. There are currently no existing or planned district energy networks within feasible vicinity of the site.

Be Green
Low and Zero Carbon (LZC) technologies have been looked at to enable the production of renewable energy on-site to further reduce carbon emissions. Several LZC technologies have been considered; Air Source Heat Pumps (ASHP) and Photovoltaic (PV) panels are the most suitable and commercially viable for the site.

Be Seen
Railway Pension Nominees Ltd are committed to reporting sustainability performance, methodology and data every year in a transparent way, following the GRI guidelines.

The development will include the necessary metering, energy monitoring and data processes to facilitate the annual reporting requirements.



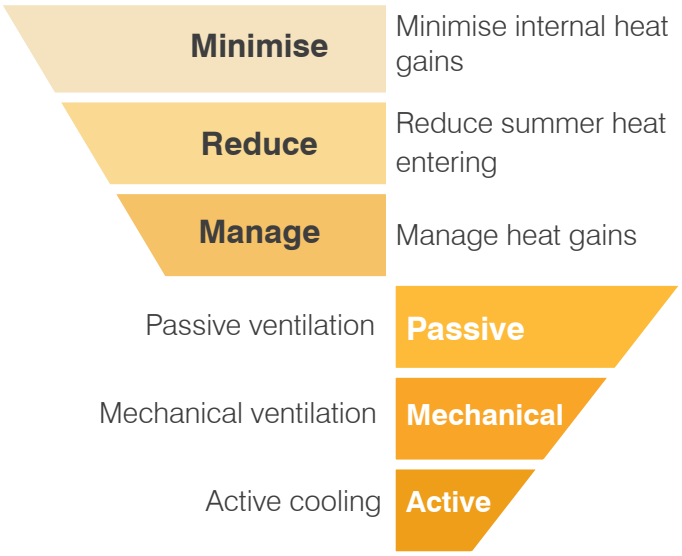
4.0 The Beehive Redevelopment

4.4 Sustainability

Cooling & Overheating
The cooling hierarchy (right) has been adopted within the strategy for the site, which aims to minimise the cooling demand and in turn mitigate the risk of overheating.

The following mitigation methods to minimise the internal heat gain generation, and reduce the amount of heat entering the building in summer will be implemented:

- Energy efficient lighting (i.e. LED) with low heat output.
- Insulation to heating and hot water pipework and minimisation of dead-legs to avoid standing heat loss.
- Energy efficient equipment with low heat output to reduce unnecessary heat gain.
- Facades have been developed with suitable glazing-to-solid ratios, with particular focus on south facing orientations.
- Suitable g-values will be specified to further control solar heat gains as required.
- Buildings will have the capability for internal blinds to be installed to improve occupant comfort.



Mechanical ventilation
Mechanical ventilation maintains good indoor air quality throughout the day by providing fresh air and extracting vitiated air. Providing fresh air minimises the risk of stale and stagnant air and limits the risk of condensation and mould growth as well as benefiting the occupants' physical and mental wellbeing. Heat recovery mechanisms will be provided to save heating energy.

Mechanical ventilation plant will be located away from pollution sources at roof level. It is anticipated the design flow rates specified will aid the regulation of internal temperatures in summer months.

Active cooling is specified, in order to keep internal temperatures within acceptable limits. The façade and building services have the ability to enable a fan coil unit cooling solution.

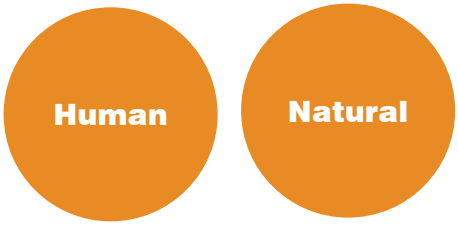
4.0 The Beehive Redevelopment

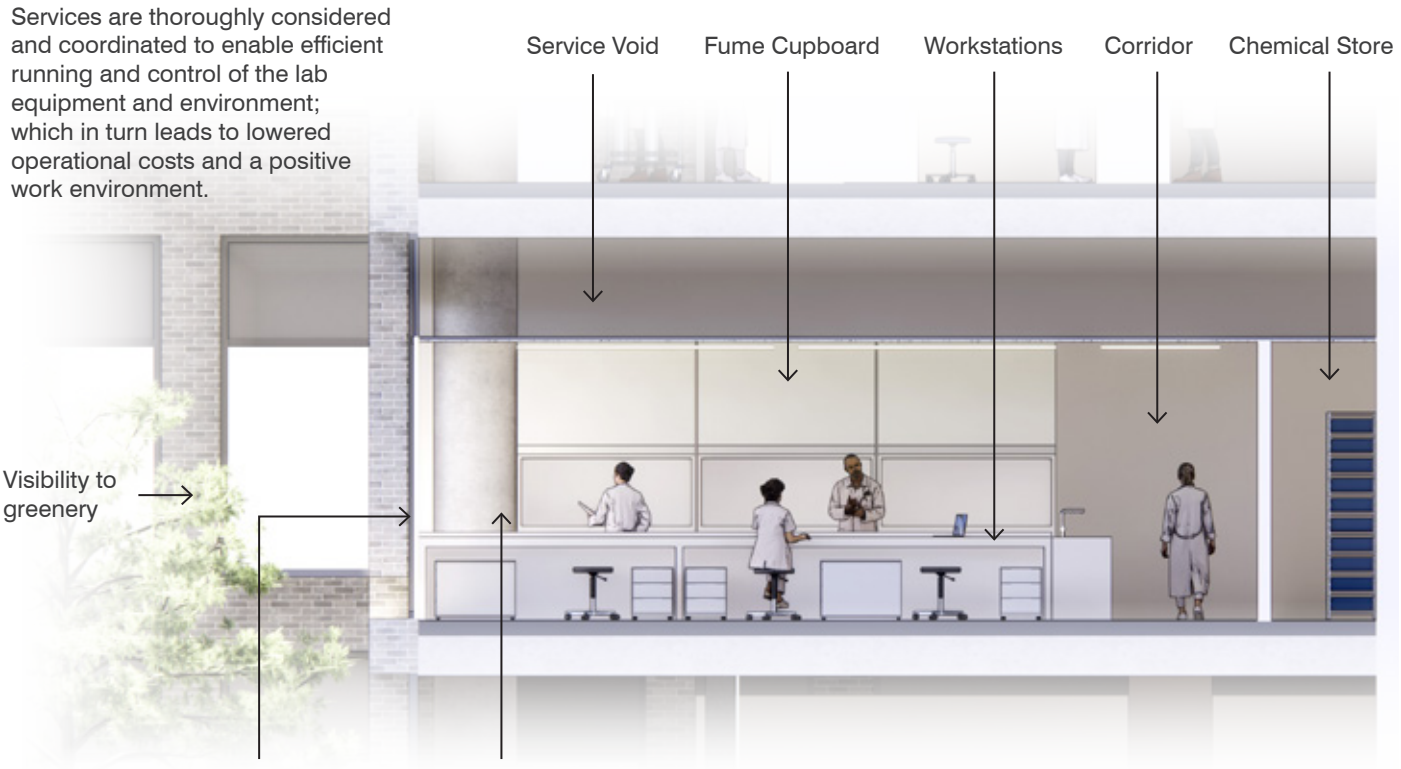
4.4 Sustainability

4.4.2 Human Factors

The building user's health and wellbeing will be at the centre of design and specification to ensure a comfortable environment is created and make The Beehive Redevelopment a place where people want to be and work – both now and in future climates.

The WELL certification framework will be considered to further guarantee that enhanced wellbeing design is embedded throughout the masterplan. Following this framework will ensure the building is designed to robust and recognised standards that go above and beyond standard industry practices.





Typical Lab Bay Illustrative Section

4.0 The Beehive Redevelopment

4.4 Sustainability

4.4.3 Circular Economy

Support SMEs
The proposals will support the local economy with opportunities for local people and businesses to become stakeholders. By ensuring that priority is given to local small and medium enterprises and local material providers, this will enable benefits to Mill Road to be realised. These economic outcomes are a way to unite stakeholders and demonstrate how design and tangible lasting outcomes are interlinked.

Education and Employment
There will be a commitment to promote education and employment through skills development and career support. Focusing on the development location and proximity to local schools and higher education institutes, the development provides an opportunity to increase younger generation interest and career paths in STEM subjects and reduce the skills gap. Additionally, the development can offer prime locations for local businesses to flourish and enhance the city's existing heritage and culture.

Designing for Change
The rented commercial areas will be designed to allow flexibility and change of use to suit the business needs. The mutli-storey car park will be designed and constructed in such a way to allow change of use should need for parking reduce during its lifetime. A clear understanding of building 'layers' replacement cycles will facilitate efficient design and effective disassembly at the end of its useful cycle.

Material, Procurement and Waste
The project team will develop and enforce specification to promote and enhance sustainable procurement related to the construction, recruitment and operation associated with the development. During construction stage, a new role will be developed to monitor material procurement and waste management on site.

Proposed spaces that promote employment

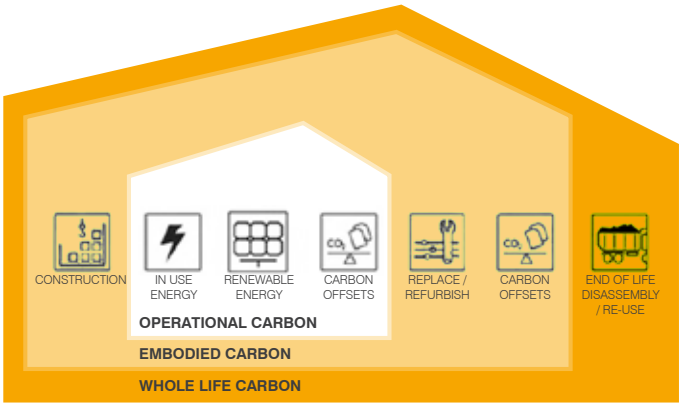
4.0 The Beehive Redevelopment

4.4 Sustainability

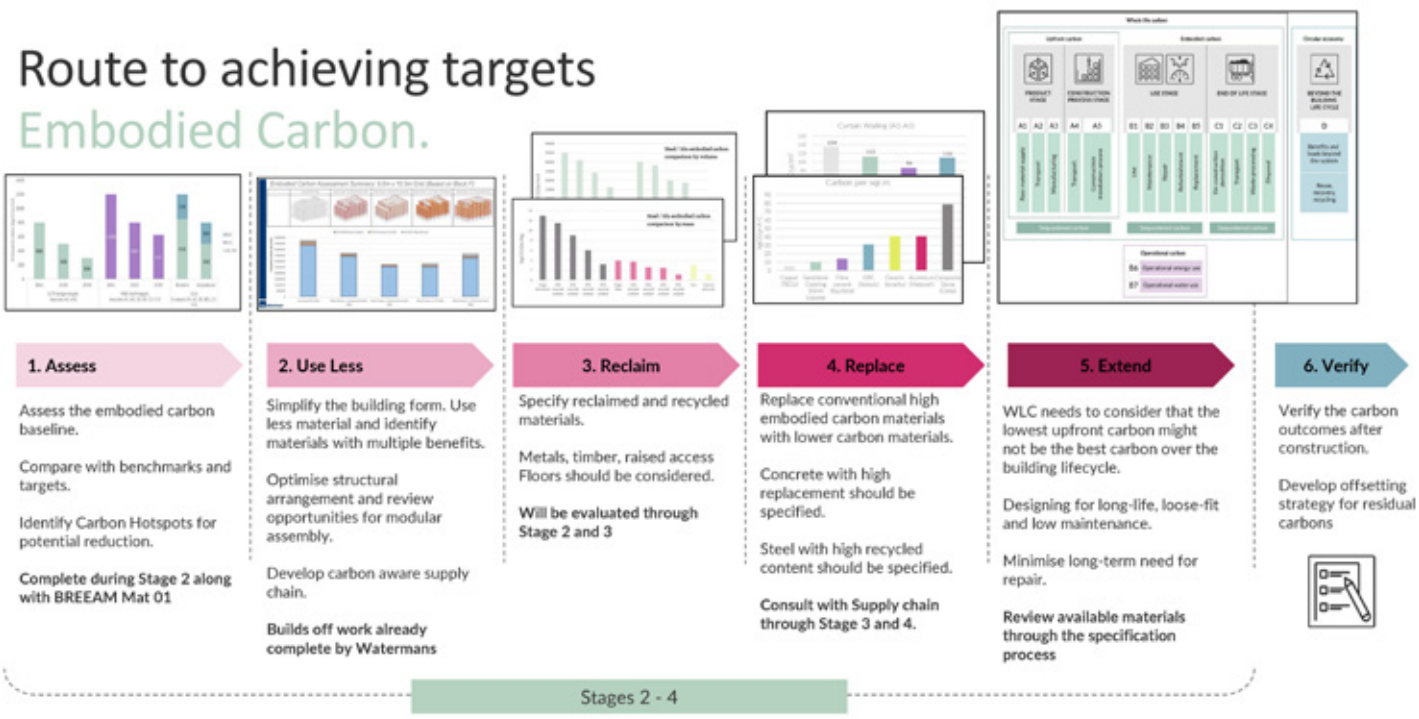
4.4.4 Embodied Carbon

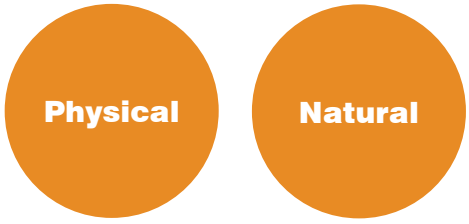
The embodied carbon of the development will be assessed throughout the design and construction. Pre-demolition audits will be undertaken during demolition of the existing buildings to identify opportunities for material reuse. This will be done in accordance with industry best practice including BREEAM Wat 01 and the UKBC framework for embodied carbon.

The scheme will be targeting a maximum embodied carbon target of less than 750kg CO2/m^2 for office buildings in line with the RIBA Climate Challenge. Based upon the above a strategy for each building will be developed at the appropriate stage of the design.



HOARE LEA





4.0 The Beehive Redevelopment

4.4 Sustainability

4.4.5 Water Strategy

Site-wide Water Management
Below ground attenuation storage is proposed beneath external hardstanding areas and service yards towards the northern portion of the proposed development to control and utilise runoff from the lower (northern) drainage catchment, working in tandem with green and blue roof attenuation and upper catchment sustainable drainage system (SuDS) features. Provision has been made for the integration of extensive areas of blue roof attenuation storage on selected buildings. Rainwater will be captured for filtration and re-used to reduce water consumption in buildings and in the landscape to irrigate planting and top up the wetland.

Building Water Management
During the design for the fit-out reductions in water consumption will be encouraged through careful specification of sanitary-ware. Flow rates for sanitary fittings will be reduced as far as possible while not causing any maintenance issues (i.e. for the WC).

Five BREEAM Wat 01 credits will be achieved fusing a combination of low-flow outlets and rainwater recycling and an additional Exemplary Performance credit will also be targeted. The credits for Wat 02 water monitoring and Wat 03 leak detection are also being targeted.

SUDs strategy

Economic

Natural

4.0 The Beehive Redevelopment

4.4 Sustainability

4.4.6 Ecology and Biodiversity

The proposed development will aim to create a distinctive space which integrates the built and natural environment, seamlessly bridging the gap between people and nature.

The project's target is to achieve an uplift in biodiversity units for both area and linear based habitats towards a more resilient, living, breathing ecosystem to nurture the vital relationship between people and nature. An ecology report is being undertaken which provides full details of the measures which are being designed for the site.

4.4.7 Transport and Connectivity

The site benefits from excellent access to pedestrian and cycle facilities. The Transport Assessment and Travel Plan identifies ways to encourage sustainable transport use on-site. Cycle storage spaces and cyclist facilities will be provided at sufficient levels for the site's occupancy and infrastructure for EV charging and e-bikes will be put in place. The landscaping strategy will also be developed to encourage sustainable modes of travel.

View of proposed landscape and cycle path

4.0 The Beehive Redevelopment

4.4 Sustainability

4.4.9 Sustainability Matrix

This section summarises the sustainability strategy for the proposed development which has been informed by both national and local policy requirements, the Client's vision and sustainable design and development guidance and frameworks.

No.	Item	Project Target	Planning/Regulatory Requirement	Standard/ Guidance
0.1	BREEAM Certification	Excellent to Outstanding	Excellent	Cambridge SPD, BREEAM
1.0	**Energy Strategy**	**Project Target**	**Planning/Regulatory Requirement**	**Standard/ Guidance**
1.1	Regulated carbon emission from LZC technology	10% reduction	Be green	Approved Document L
1.2	Energy and carbon reduction	>4 credits (Excellent) to >6 credits (Outstanding)	>4 credits (Excellent)	Cambridge SPD, BREEAM Ene01
1.3	Design for performance	Achieve certification	None	NABERS
1.4	Operational energy	<55 kWh/m^2/yr or Basebuild 6	None	RIBA 2030 CC, NABERS
1.5	Energy source	All electric scheme		
1.6	Energy use	Smart metering and monitoring installed		
1.7	Form factor	Between 1 and 2		
2.0	**Human Factors**	**Project Target**	**Planning/Regulatory Requirement**	**Standard/ Guidance**
2.1	Internal VOC levels	Total <0.3mg/m^3	None	RIBA 2030 CC
2.2	Internal CO_2 levels	<900ppm	None	RIBA 2030 CC
2.3	Internal formaldehyde levels	Total <0.1 mg/m^3	None	RIBA 2030 CC
2.4	Aftercare	Provide support and monitoring for the first 12 months post-occupancy	None	BREEAM Man05
2.5	Skills and training	Develop strategy for building user		BREEAM Man05
2.6	Indoor air quality	All electric scheme with IAQ plan in place		UN SDG Goal 3, RIBA 2030 CC, Policy GP/PP
2.7	Air filtration	In line with best practice standards		
2.8	Biophilia	Provide access and visibility to greenery for building user		
2.9	Active lifestyle	Design that benefits health and wellbeing		UN SDG
2.10	Safe access	For cyclist and pedestrain		
2.11	Inclusivity	Embed design principles		
2.12	Overheating	Followed the cooling hierarchy		BREEAM HEA04, Policy CC/DC
2.13	Internal daylight	Analysis to influence layout and massing design		BCO 2023
2.14	Acoustics	Industry best standard		
2.15	Noise pollution	Reduction		
3.0	**Circular Economy**	**Project Target**		**Standard/ Guidance**
3.1	Materials sourced locally i.e. within 100 miles of the site	>50% (by weight)		Policy CC/CE, UN SDG

4.0 The Beehive Redevelopment

4.4 Sustainability

3.2	Main contractor staff	100% paid on or above the living wage		Cambridge Local Plan, UN SDG
3.3	Apprenticeships	>10 construction and		
3.4	Responsible sourcing certificate	50% for all major construction materials		
3.5	Life cycle cost	Undertale a LCC analysis during the design stages to inform decision		Policy CC/CE, UN SDG
3.6	Procurement	Develop and enforce a robust sustainable procurement policy		
3.7	Tender	Include sustainability strategy and benchmarks within the contractor tender		
3.8	Green waste monitoring	A new role will be developed to monitor material procurement and waste		
3.9	Circular economy	Produce strategy for masterplan		
3.10	Local science and research businesses	Collaborate and engage to meet needs		Cambridge Local Plan, UN SDG
3.11	Flexible and vibrant public spaces	Provided for use		
3.12	Adaptable rented commercial areas	Designed to allow flexibility and change of use to ensure space is suitable for the business needs		
3.13	Placements	For local students during construction and operation phases		
3.14	Local workforce	Report on percentage of local workers in site teams		
3.15	Contracts	All contracts to include a modern slavery clause		
3.16	Employment	People from a range of diverse backgrounds, ethnicities and ages		
3.17	Insights	Share lessons learnt following completion of each plot of the masterplan		
4.0	**Embodied Carbon**	**Project Target**	**Planning/Regulatory Requirement**	**Standard/ Guidance**
4.1	Embodied carbon	<750 kgCO^2/m^2	None	RIBA 2030 CC
4.2	Assessments	Throughout design and construction		Cambridge CP Policy 28/29, Policy CC/NZ
4.3	Pre-demolition audits	Iidentify opportunities for material reuse		
4.4	Carbon offset	Develop strategy to achieve Net Zero Carbon by 2030		
4.5	Car park structures	Flexible design and construction to allow change of use		
5.0	**Water Strategy**	**Project Target**	**Planning/Regulatory Requirement**	**Standard/ Guidance**
5.1	Water Consumption	Maximum BREEAM credits for Wat01	Maximum BREEAM credits for Wat01	Cambridge SPD, BREEAM Wat01, Policy CC/WE
5.2	SUDs strategy	30% reduction in surface water run-off rate		
5.3	Rainwater harvesting	Maximise use		
6.0	**Ecology and Biodiversity**	**Project Target**	**Planning/Regulatory Requirement**	**Standard/ Guidance**
6.1	Biodiversity net gain	100%	20%	Cambridge Planning
7.0	**Transport and Connectivity**	**Project Target**	**Planning/Regulatory Requirement**	**Standard/ Guidance**
7.1	Cycle storage	1 space/30m^2 GIA	1 space/30m^2 GIA	Cambridge Local Plan
7.2	Cycle facilities - Showers	1 per 10 cycle spaces or 1 per 18 staff	None	BREEAM Tra2
7.3	Cycle facilities - Lockers	1 per 1 cycle space	None	BREEAM Tra2
7.4	Slow EV charge point	1 space/2 parking spaces	1 space/2 parking spaces	Cambridge SPD
7.5	Rapid EV charging	1 space/20 parking spaces (resource?)	1 space/1,000m^2 floor space	Cambridge SPD, IAQ Plan
7.6	E-bike charging	>10% cycle storage		
7.7	Modes of travel	Landscaping strategy to encourage sustainable modes of travel		Cambridge SPD, Cambridge Local Plan

4.0 The Beehive Redevelopment

4.5 Connectivity & Transport

Our proposal aims to transform the site into one that is focused on people and place, with reduced car dominance, improved air quality and significantly enhanced provision for pedestrians and cyclists.

Private car use will be limited to essential use only for those who need it, with higher target mode shares for bus, rail, cycle and walking. It is expected that this shift will help reduce congestion in the local area.

A new network of cycle routes across the site will improve local connectivity with safer, higher capacity routes designed to LTN 1/20 standards. These routes would be capable of supporting wider initiatives such as the Chisholm Trail.

Local cycle and pedestrian corridors would be improved to support the expected increase in use as a result of the planned modal shift. The proposed upgrades would not only improve access to the site but would also benefit those transiting through the site.

The proposals also provide the opportunity to secure investment into improving local public transport, including additional capacity on Park & Ride buses.

As investigated in the Transport Statement, in support of Policy 80 of Cambridge City Local Plan (2018) the development will be supported by the priorisation of access by walking, cycling and public transport, and is accessible for all.

The vision is in line with the Cambridge Local Plan (2018), which sets out the following transport-related objectives:

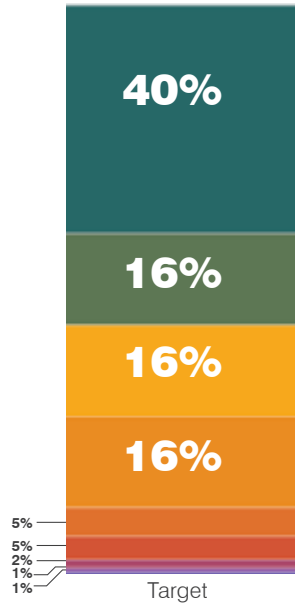
- Promote economic social growth in environmentally sustainable and accessible locations
- Minimise the distance people need to travel
- Access jobs and services by sustainable modes of transport

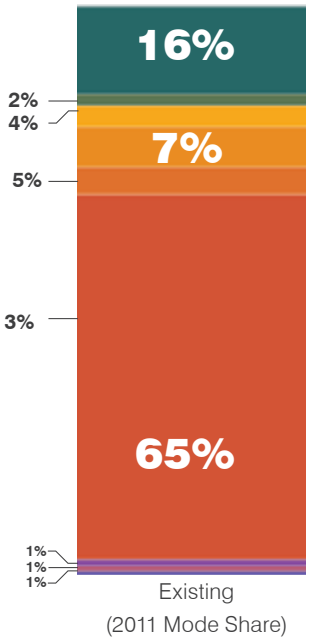
+74%
increase in sustainable modes of travel

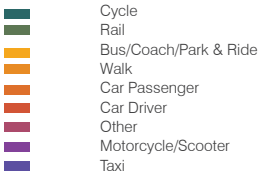
-60%
reduction in car driver mode share

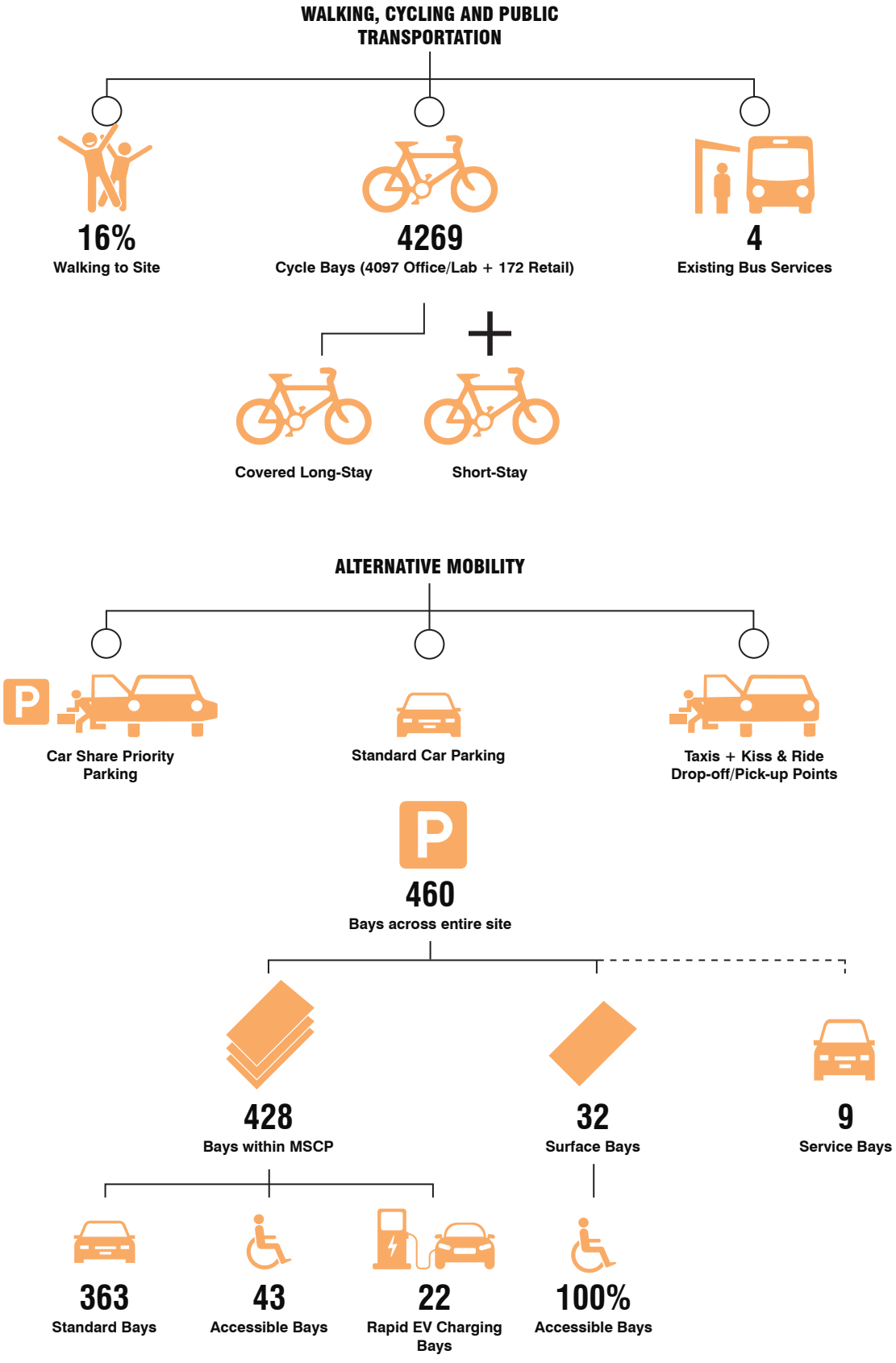
+24%
increase in cycling mode share

+9%
increase in walking mode share








WALKING, CYCLING AND PUBLIC TRANSPORTATION
16%
Walking to Site
4269
Cycle Bays (4097 Office/Lab + 172 Retail)
4
Existing Bus Services
Covered Long-Stay
Short-Stay
ALTERNATIVE MOBILITY
Car Share Priority Parking
Standard Car Parking
Taxis + Kiss & Ride Drop-off/Pick-up Points
460
Bays across entire site
428
Bays within MSCP
32
Surface Bays
9
Service Bays
363
Standard Bays
43
Accessible Bays
22
Rapid EV Charging Bays
100%
Accessible Bays

4.0 The Beehive Redevelopment

4.5 Connectivity and Transport

4.5.1 Movement Around The Site

The arrangement of routes and facilities for transport has been designed to support the planned modal shift away from private car use towards more sustainable transport modes. The following high-level strategies have informed the design and will be discussed in more detail on the following pages:

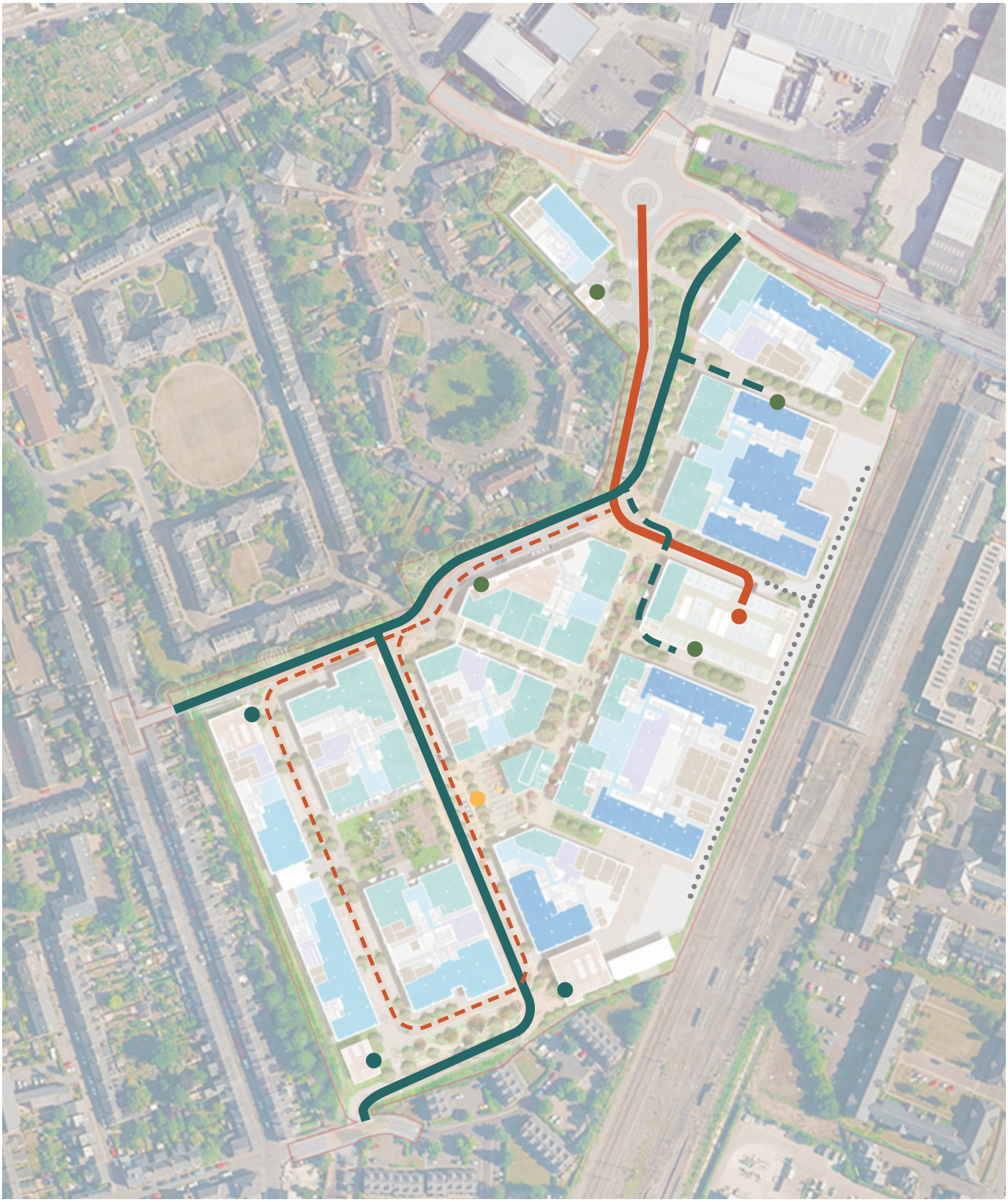
Pedestrian Access
The site will be accessible to all with step-free access around the site. Existing pedestrian connections will be enhanced with wider footways than existing, generally segregated from other transport modes. There will be no gates or barriers to entry with the site being accessible 24 hours a day and 7 days a week.

Cycle Access
Following initial consultation, people were particularly in need of stronger cycle routes through the site and across to Cambridge Retail Park and the Chisholm Trail in a safe and accessible way. The cycle infrastructure will be significantly upgraded from existing conditions with 4m wide segregated cycleways for all primary routes. A considered layout of cycle routes that strikes a balance between safe and efficient cycle movement and biodiversity and public realm at the heart of the site.

Public Transport
The bus stop will be relocated to a central location and supported by an enhanced bus service provision.

Car Access
Following consultation, promotion of sustainable modes of transport and minimising car use was welcomed with concern over parking pressure on nearby streets. The proposal will consolidate the bulk of car parking, appropriate for the number of workers, into a single parking structure with 30 spaces distributed around the site of accessible parking and pick up and drop off. The car park has been located close to the Coldham's Lane roundabout in order to reduce car movements at the south of the site.

Service Access
The lab buildings which require heavy servicing have been located along the railway line with a dedicated service road and yards. The rest of the site is served by roadside service bays for smaller vehicles.


Primary cycle route
Secondary cycle route
Cycle parking
Primary vehicle route
Secondary vehicle route and bus route
Car parking
Dedicated service route
Bus Stop

4.0 The Beehive Redevelopment

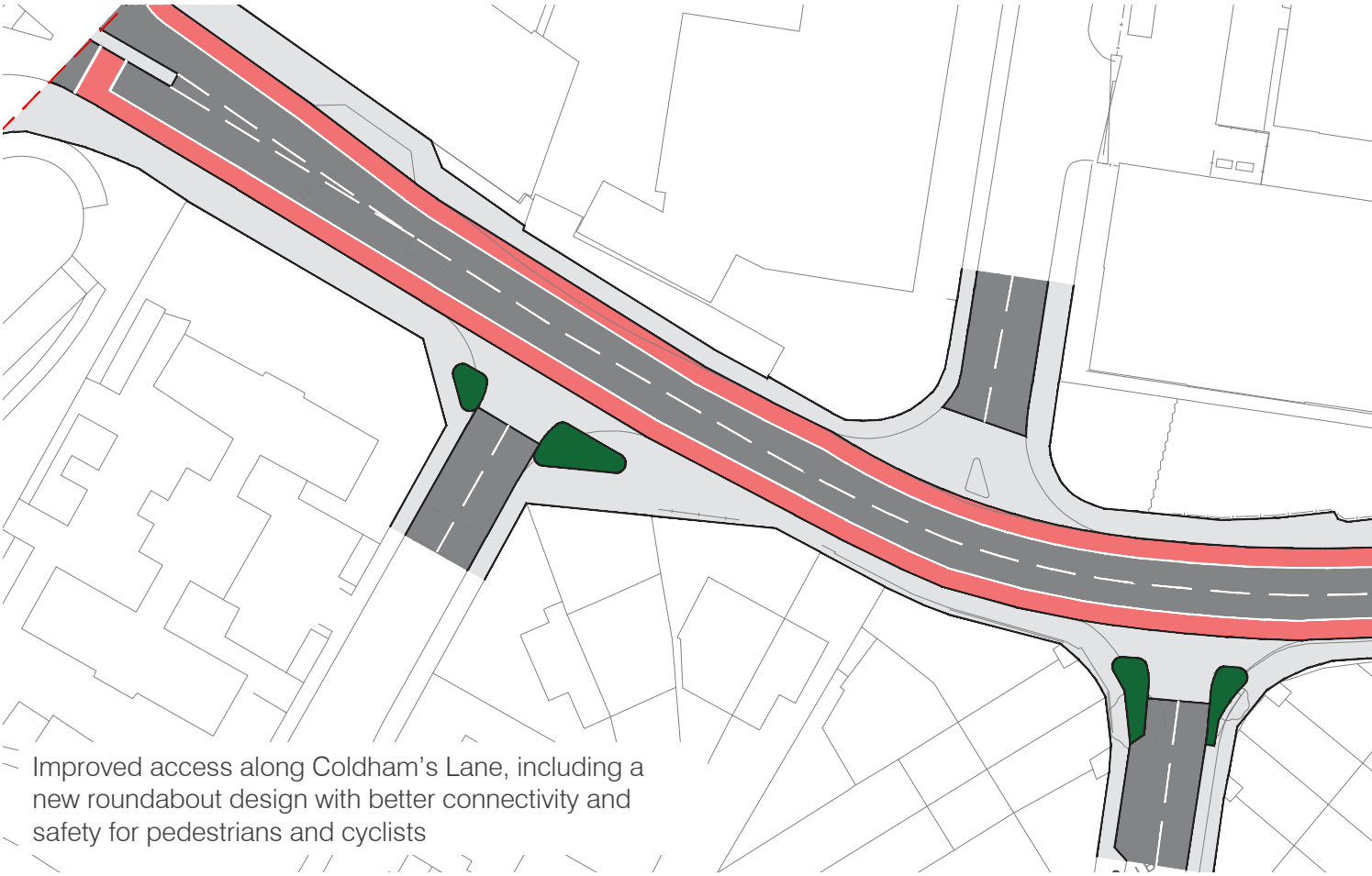
4.5 Connectivity and Transport

4.5.2 Access to the site and Local Connectivity

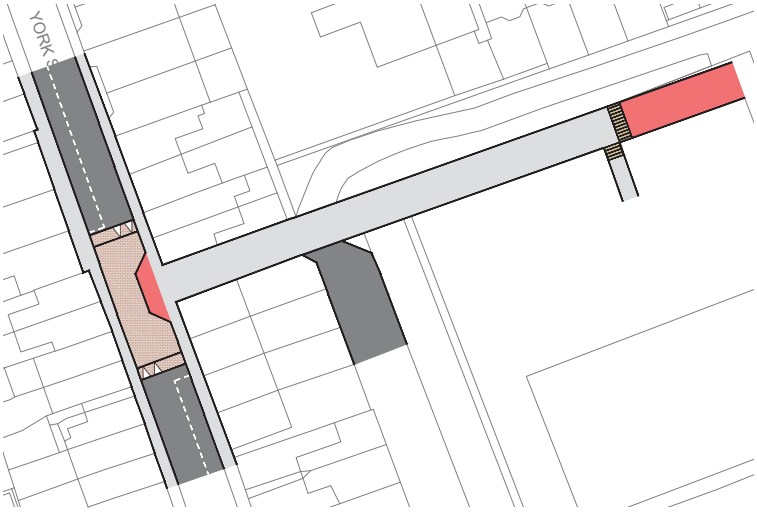
The existing primary vehicular site access from Coldham's Lane will be retained and enhanced in the proposed design. Throughout consultation, concerns over the safety and accessibility of the roundabout had been raised. The access will continue to be facilitated by a roundabout with significant improvements made to prioritise pedestrian and cycle safety.

Each arm of the roundabout will feature dedicated crossing points for pedestrians and cyclists, ensuring their priority and convenience. Additionally, the existing Toucan crossing on Coldhams Lane, located to the east of the site access, will be relocated closer to the access junction, further enhancing accessibility. While maintaining a similar geometric layout, the roundabout will be revitalised using distinct materials, creating a visually appealing and distinctive entrance that contributes to the site's unique character.

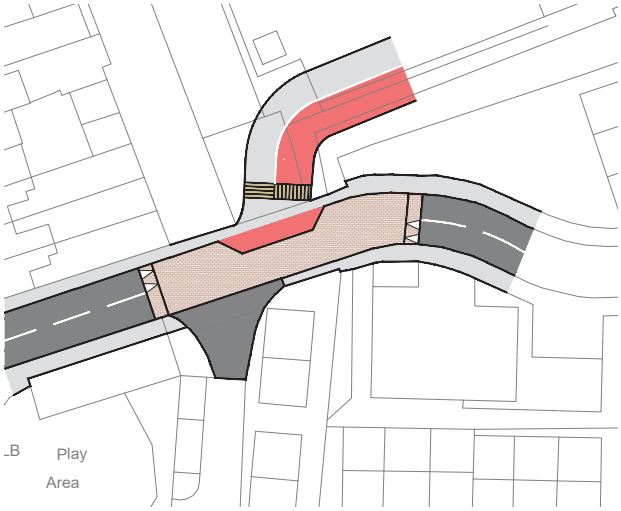
All other site entrance with be improved for cyclists and pedestrian access with wider routes being created and those routes becoming segregated at the first practical opportunity within the masterplan. The diagrams, right, illustrate how this may be achieved within Reserved Matters applications.



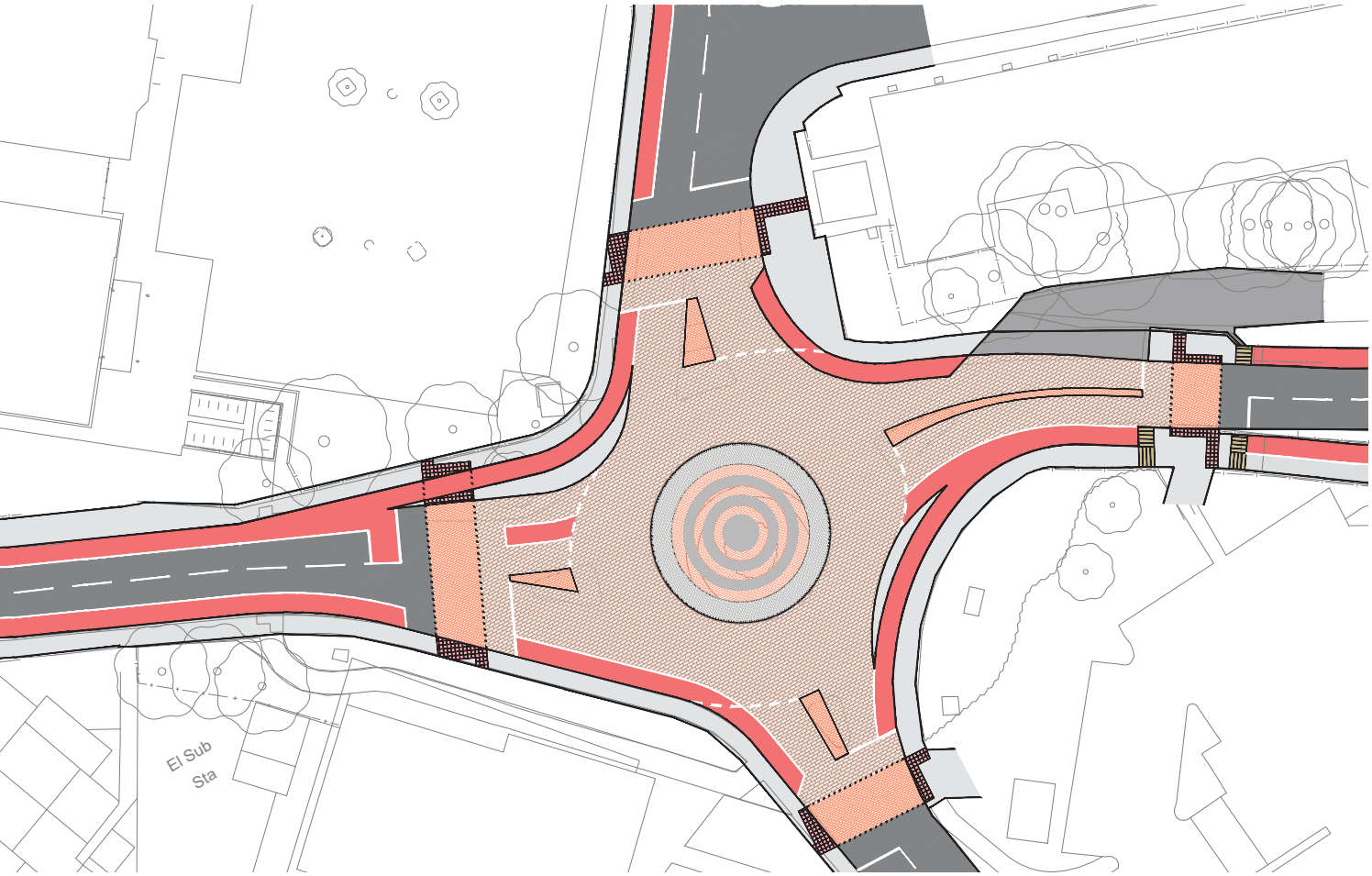
Improved access along Coldham's Lane, including a new roundabout design with better connectivity and safety for pedestrians and cyclists



Improved York Street access with table junction and wider shared path before start of segregated routes



Improved Sleaford Street Access with table junction and segregated routes



4.0 The Beehive Redevelopment

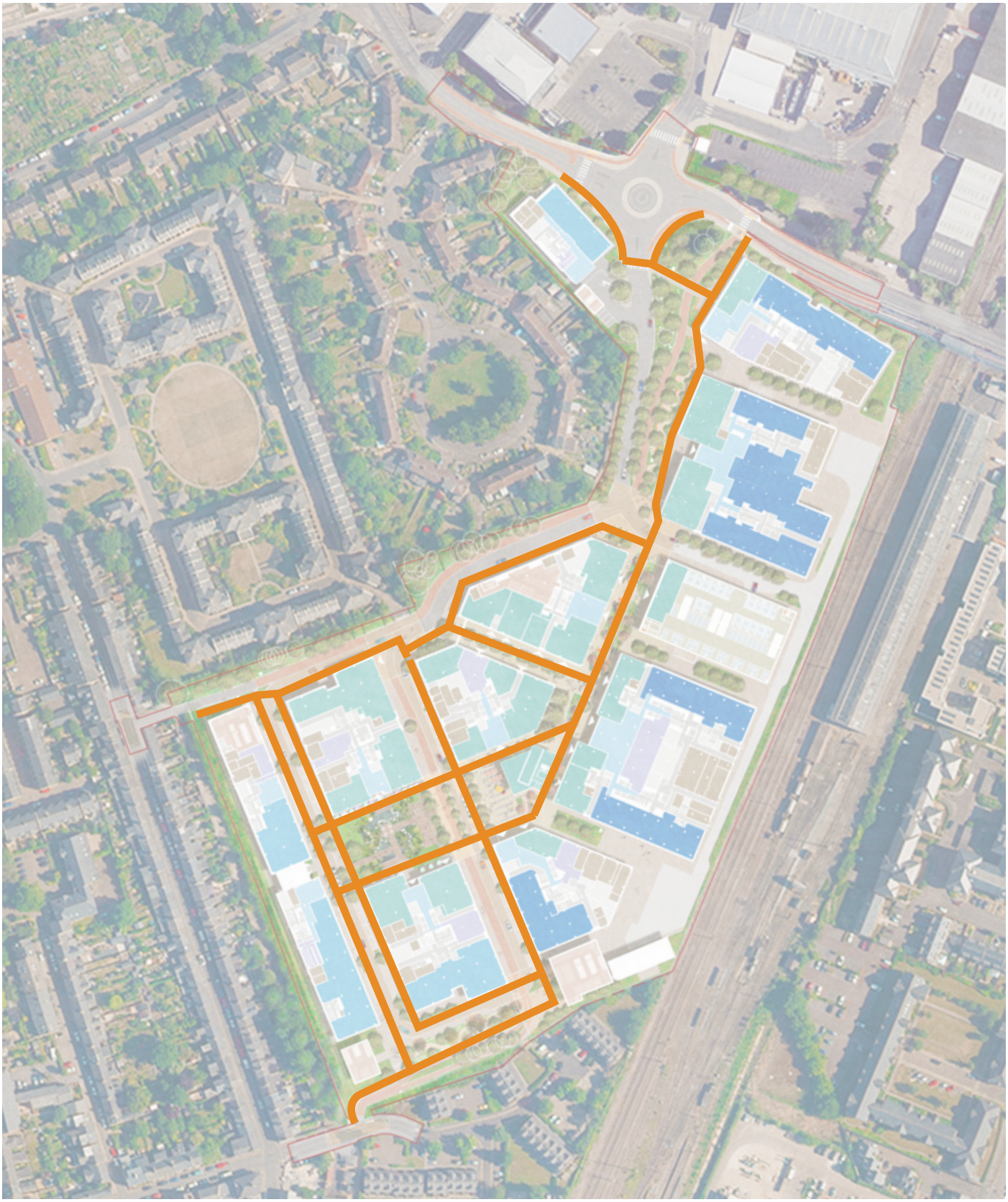
4.5 Connectivity and Transport

4.5.3 Pedestrian Strategy

Cambridge has a high-quality existing pedestrian environment and a large number of active residents who would be willing to introduce walking as their main mode of commute.

The site is accessible from a significant area of Cambridge by walking. While there are existing pedestrian accesses from the entrance points - Coldhams Lane, St Mathews Gardens, York Street and Sleaford Street - many of the accesses are narrow and unattractive and from consultation, many locals have expressed concerns over anti-social behaviour. Existing footpaths through the site are ad-hoc and there are sections within the site where there are no dedicated pedestrian facilities.

The proposed development aims to improve this and offer better routes to, from and within the site. The proposal looks to do this by wider sidewalks, well defined pedestrian crossing and pedestrian friendly streetscapes. We prioritise the creation of attractive and well-lit pedestrian routes, encouraging people to explore the site on foot while improving access to nearby amenities and public transportation hubs. Additionally, the incorporation of green spaces and public gathering areas ensures that walking becomes not only a means of transportation but also an experience to be savoured.

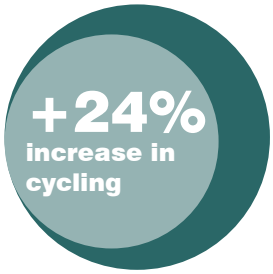


Main pedestrian route

4.0 The Beehive Redevelopment

4.5 Connectivity and Transport

4.5.4 Cycling Strategy



As a city renowned for its cycling culture, cycling has been recognised as a significant sustainable mode of transportation. The proposal looks to integrate a comprehensive cycling infrastructure that supports and encourages cycling as a viable and preferred option for commuting.

Ample cycle parking facilities will be provided on-site, surpassing the cycle parking standards set by Cambridge City Council. The provision includes secure and covered stores within the buildings and barns throughout the site for staff, equipped with bike pumps and maintenance facilities. For visitors, cycle parking will be available in publicly accessible areas across the site. Additionally, a mobility hub will be established on-site, staffed by cycle maintenance personnel on weekdays to assist with bike maintenance and provide services, as part of the Transport Obligations.

Each block within the development will feature shower, changing facilities and lockers for cyclists and other non-car commuters. The provision will adhere to a ratio of one shower/changing room per 25 cycle parking spaces and one locker per cycle parking space. The cycle parking facilities will be strategically located to provide simple and direct access to the shower/changing facilities.

Clear signage, level pathways, adequate lighting, and landscaping will be provided throughout the site, along with rest areas and sheltered features. The design of the internal pedestrian and cycle network will align with Transport for London's Healthy Streets Approach, promoting a safe and pleasant environment for all users.

Primary cycle route
Secondary cycle route
Cycle parking
Plot serving

4.0 The Beehive Redevelopment

4.5 Connectivity and Transport

4.5.5 Cycling Strategy Development

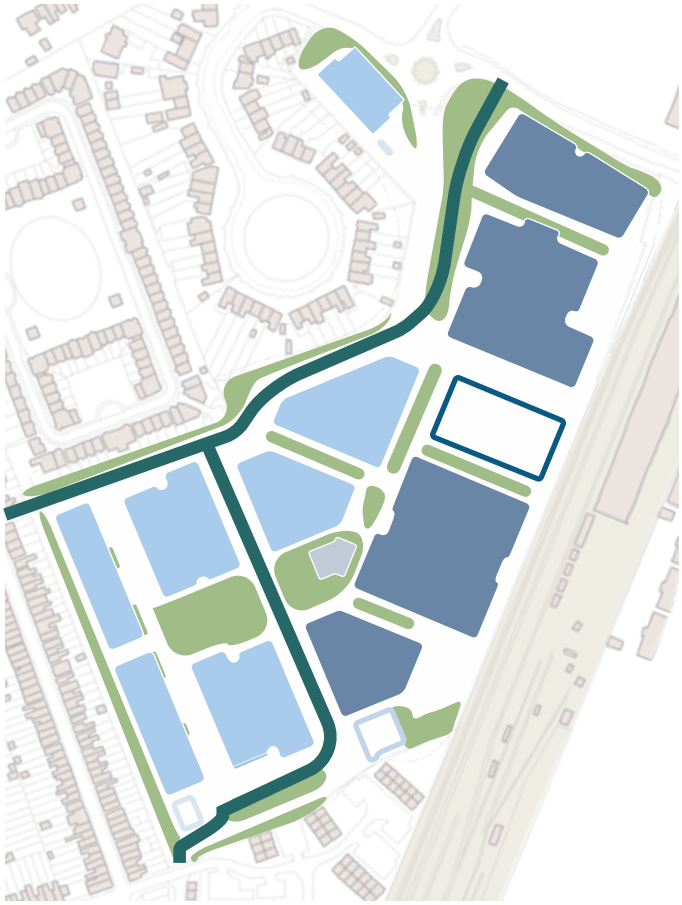
Iteration 1
Routes as existing. The primary connection runs from the entrance at York Street and crosses the site where cyclists may either rejoin the road to navigate the roundabout at Coldhams Lane, cross the site to connect to the toucan crossing over Coldhams Lane or join the cycle path that crosses the railway. The route from Sleaford Street is clearly secondary and winds through the site to join the main cycle route at the west.

Iteration 2
Equal weighting is given to York Street and Sleaford Street entrances. Cyclists converge on a single central route that minimises the need to cross vehicle roads. Cyclists exit the site adjacent to the toucan crossing.

Direct route through the site	
Continuity of pedestrian routes	
Safety of cyclists from vehicles	
Biodiversity and green space continuity	
Legibility	

Direct route through the site	
Continuity of pedestrian routes	
Safety of cyclists from vehicles	
Biodiversity and green space continuity	
Legibility	

Primary cycle route
Secondary cycle route



Iteration 3

Routes are reorganised to more evenly distribute cyclists entering from York Street or Sleaford Street. Cyclists follow a central route north to the toucan crossing.

Iteration 4

With equal weighting between York Street and Sleaford Street entrances, this option strikes a balance between directness and continuity and quality of public realm while prioritising cyclist safety by creating fully segregated routes through the site with minimal road crossing points. This addresses the concerns from consultation regarding clearer and safer cycle routes connecting to Cambridge Retail Park and the Chisholm Trail.

Direct route through the site	
Continuity of pedestrian routes	
Safety of cyclists from vehicles	
Biodiversity and green space continuity	
Legibility	

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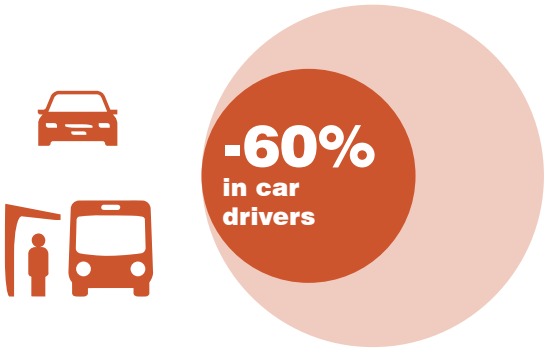
4.0 The Beehive Redevelopment

4.5 Connectivity and Transport

4.5.6 Car and Bus



Vehicular Access
The main access into the site for vehicles will remain from the existing roundabout on Coldhams Lane, which will be re-designed and improved on. The access road will lead vehicles either south-east to the multi-storey car park and service yard or further south into the site, to a one-way loop around Block H and K.

Car Parking
A total of 460 car parking spaces will be provided in the proposed development, of which 428 will be provided within a multi-storey car park (which includes accessible and general parking) and 32 accessible spaces will be provided at grade. One in 20 car parking spaces will be provided with rapid EV chargers, with all remaining spaces having passive allowance.

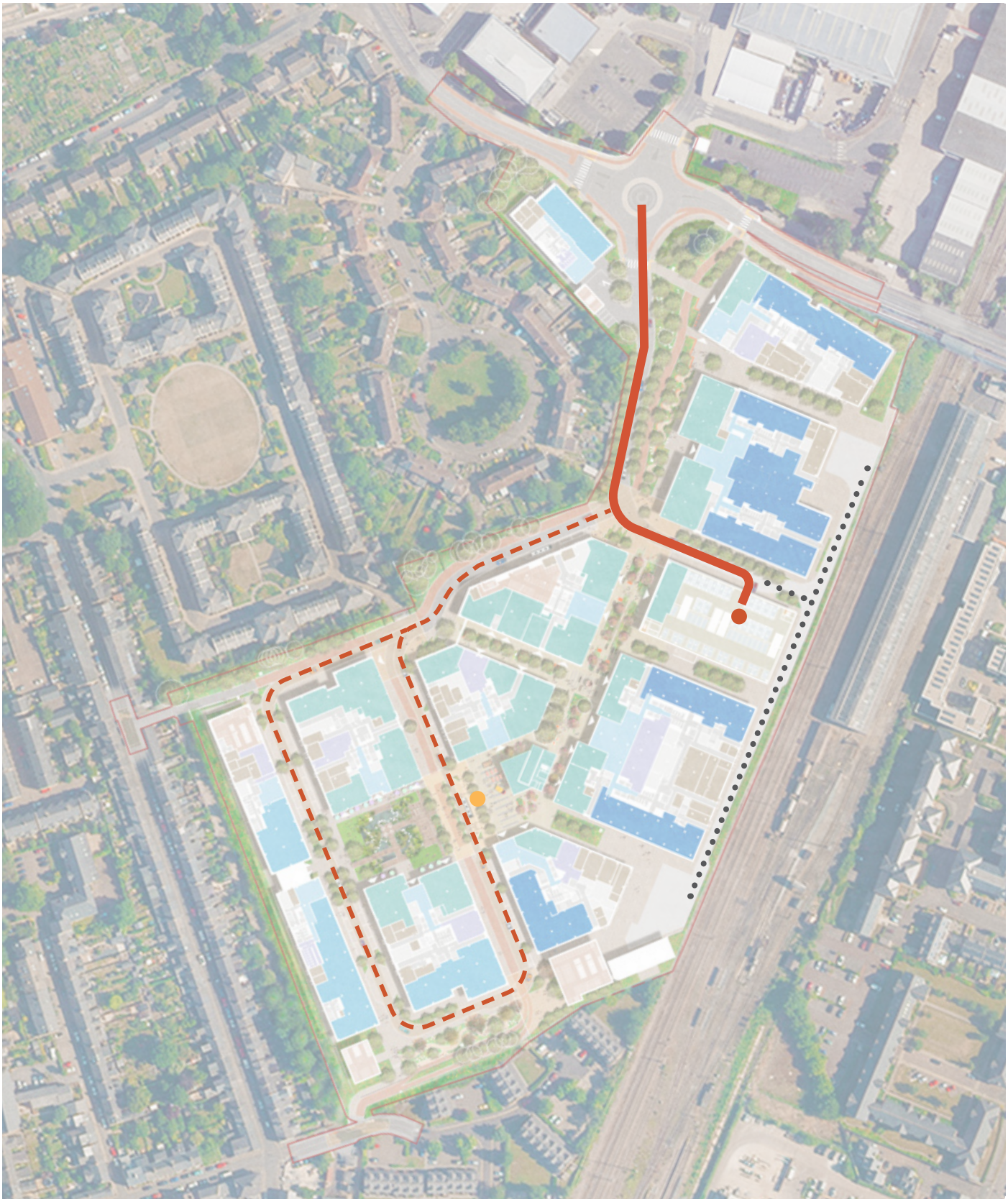
This is an overall reduction of 465 spaces compared to the existing retail park. The low parking provision reduces the volume and dominance of motor traffic, which enforces the scheme's strategy to encourage active and sustainable travel.

A car park management strategy will be in place which will ensure the car parking spaces on site are used efficiently and prioritised for those with limited mobility and require travel by car. It will also ensure a safe, secure environment is maintained and that parking requirements on the site do not negatively impact on local on-street parking from the concerns of the community consultation over parking pressures.

Bus / Park & Ride
There is an existing bus stop on site, and this will be re-provided within the proposed development along the one-way loop. The bus stop will be of high quality and will provide shelter, seating and live departure information. Additional bus services are available nearby, from bus stops along Newmarket Road.

Cambridge has an extensive existing Park and Ride (P&R) network and there are proposals to extend the Newmarket Road P&R. P&R offers an alternative to staff driving and parking on-site and is a key component to the sustainable transport strategy. It will offer reduced traffic congestion on site, improved air quality, and time and cost savings, convenience, and a more relaxed commuting experience for car users.

Additional services from local and Park & Ride services will run to the site to provide 15 buses per hour to the site in peak hours.



Primary vehicle route
Secondary vehicle route and bus route
Car parking
Dedicated service route
Bus Stop

4.0 The Beehive Redevelopment

4.5 Connectivity and Transport

4.5.7 Servicing Strategy

The existing Beehive retail centre currently handles deliveries and servicing on-site through two service yards. The first service yard is located along the eastern boundary of the site, running parallel to the rail line and extending southwards towards Sleaford Street. The second service yard borders York Street, and is utilised for servicing a small number of retail units located on the western side of the site.

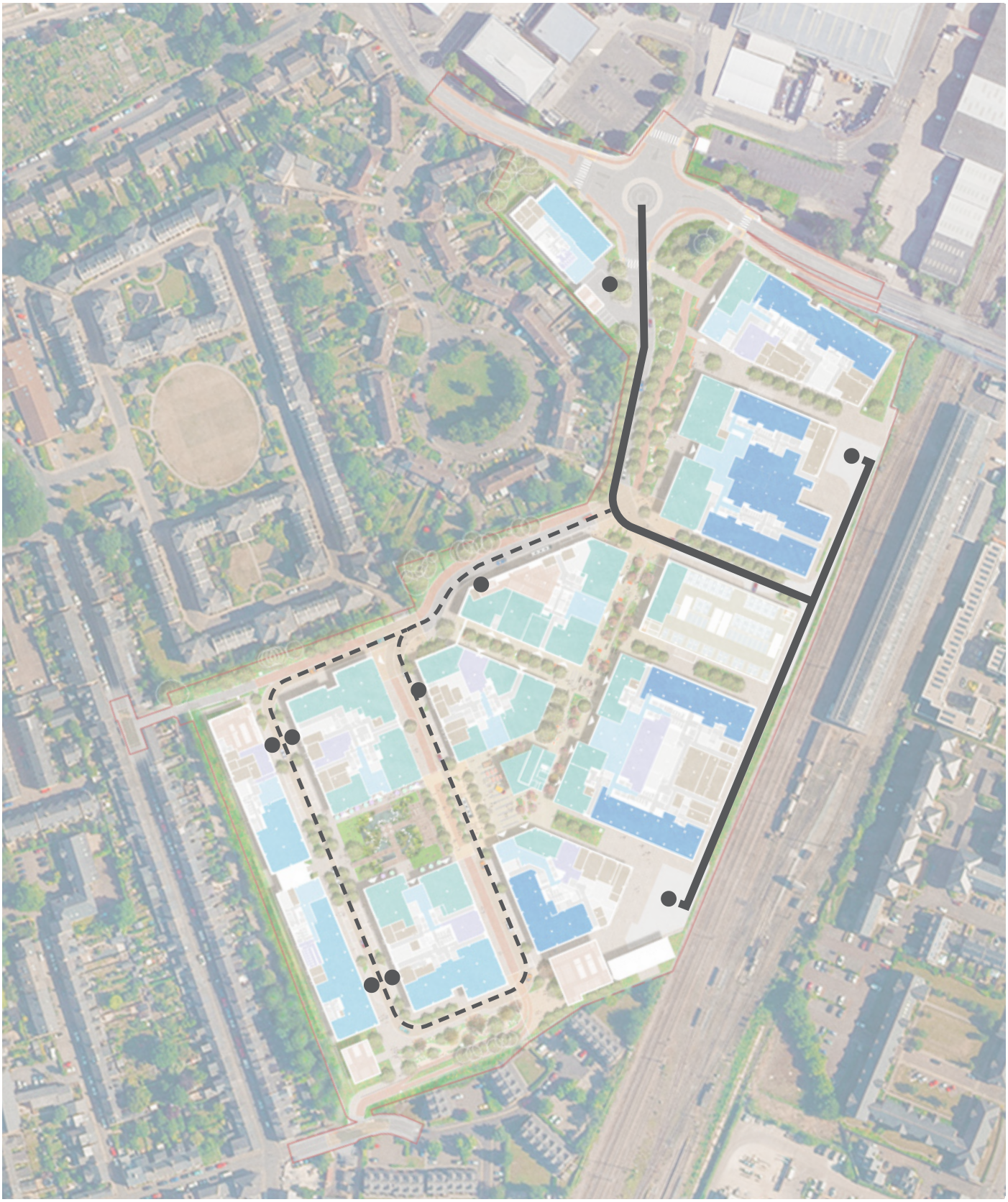
The existing pedestrian and cycle access to the site from Sleaford Street currently connects into the site's service area. It is a narrow route which makes it challenging for cyclists and can be considered unpleasant and dangerous.

The proposed development offers a significant improvement by creating a new and compliant cycle route separate from the service area.

All delivery and servicing for the development will continue to take place on-site. The existing service yard along the eastern boundary of the site will be retained but no longer extend to border Sleaford Street. The service yard will directly serve adjacent blocks, while blocks in the southwest will be serviced from loading bays along the internal road network.

Heavy vehicles will be restricted from accessing the one-way loop to ensure pedestrian and cyclist safety. Deliveries by larger vehicles will unload within the service area, and goods will be transferred to smaller on-site electric vehicles for distribution, minimising interactions between heavy vehicles and pedestrians/cyclists on public areas of the site.

Overall, the proposal de-clutters the site, from having multiple service yards, overlapping service and pedestrian routes to an efficient and considered strategy. It prioritises cyclist and pedestrian safety and minimises service yard areas to offer high quality public realm and greenery instead.



Primary service route
Secondary service route
Service bay