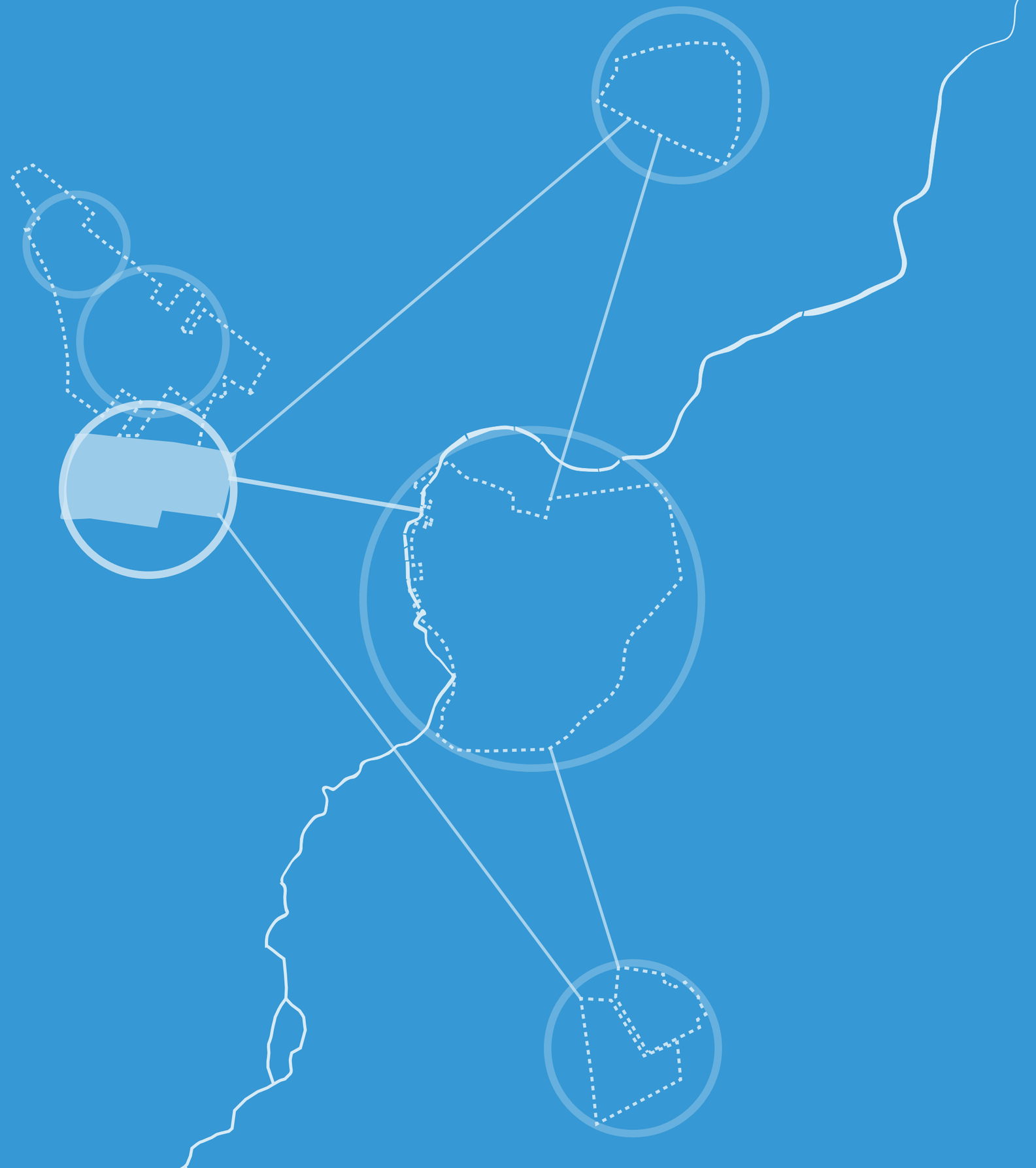
ILLUSTRATIVE MATERIAL

VOLUME B



ILLUSTRATIVE DESIGN PRINCIPLES

B1

B1 Illustrative design principles

Connectivity

Character

Community and open space

Climate

Key issues:

Distribution of Land uses

Amount of Development

Layout and Scale

Landscape

Appearance, and Access

B2 Illustrative masterplan

B3 Transformation of key spaces

6. ILLUSTRATIVE DESIGN PRINCIPLES

6.1. Urban and landscape structure

Layout and structure

6.1.1 Key to the new masterplan is the need to transform the existing character and identity of West Cambridge and to introduce a new legibility throughout the site. A new urban and landscape structure has been overlaid on the site incorporating existing spatial elements and forming a series of new spaces.

6.1.2 The landscape structure for the masterplan forms a 'weave' of north-south and east-west running landscape and open space elements, that serve to strongly connect and knit together the West Cambridge site,

Transformation of existing elements

6.1.3 The masterplan retains existing roads and green infrastructure and reinforces elements from the consented masterplan such as the East and West Forum spaces. These two spaces remain the primary public spaces within the site, but they are now reinforced and connected with a better defined Charles Babbage Road (Forum Link).

6.1.4 The existing primary streets: Charles Babbage Road, JJ Thomson Avenue and High Cross, plus the Western Access/Ada Lovelace Road are retained and their characters transformed.

6.1.5 Along the Coton Footpath and the Southern Ecological Corridor, water and wetland habitats are retained and enhanced and the East Pond is incorporated into this new space.

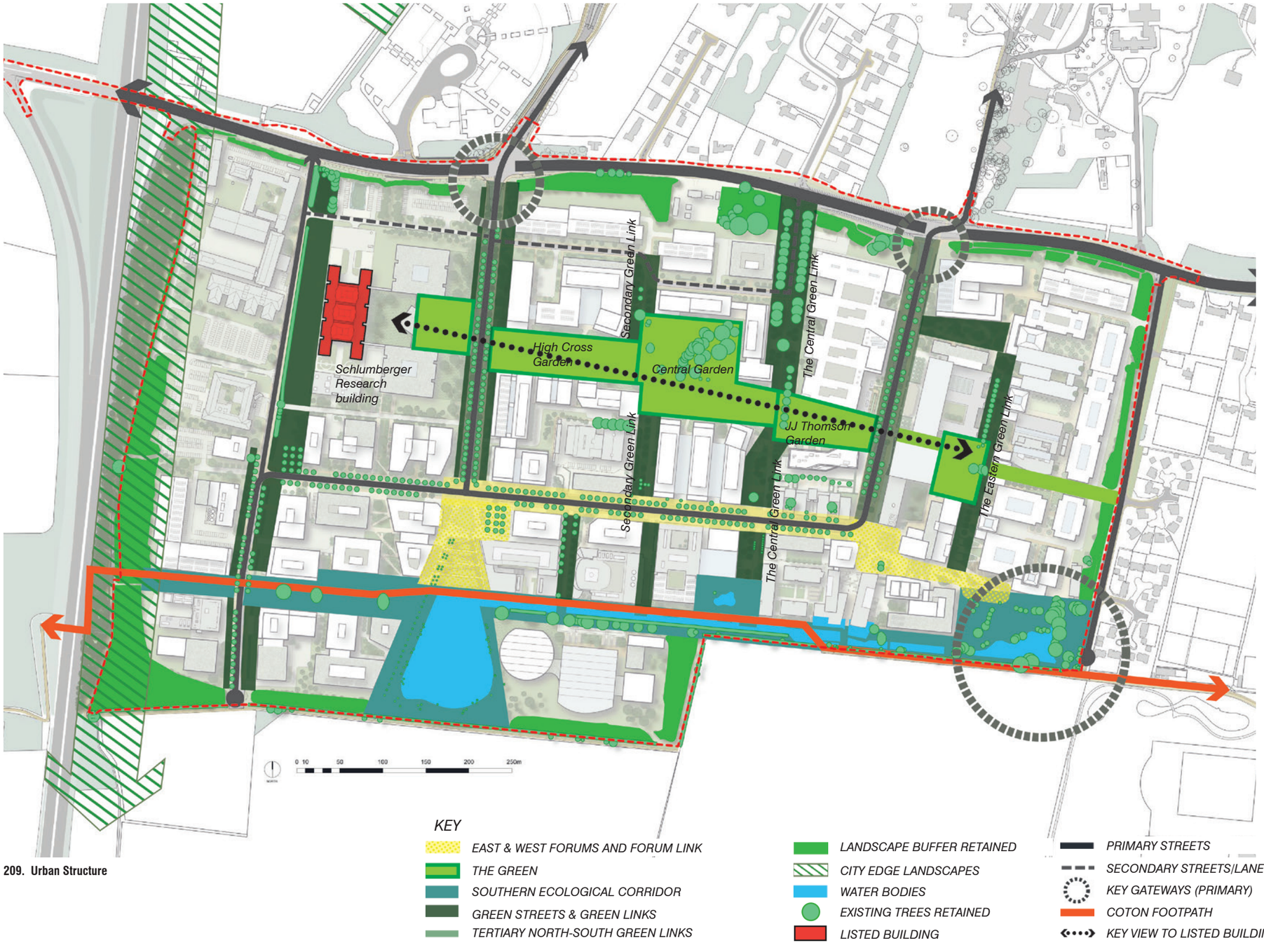
6.1.6 The existing woodland buffers which frame the site along the majority of its edges will be protected and enhanced. From Madingley Road, the buffer will be reinforced to ensure that views into the site will be limited to the key access points.

6.1.7 New development is located around existing spaces and streets to form enclosure and overlooking to all key open spaces, providing a more coherent urban realm.

Introduction of new elements

6.1.8 The major new public open space will be The Green - a chain of gardens running east/west that serve as a new public open space. This space is orientated to ensure that a key view is opened up across the site from JJ Thomson Avenue to the Listed Schlumberger Research building roof structure.

6.1.9 Pedestrian orientated Green Links are introduced throughout the site that create pedestrian & cycle routes linking the site north to south.



209. Urban Structure

Walkable character areas

6.1.10 The arrangement of primary streets and the open space structure help to form a series of identifiable, pedestrian friendly building zones each with their own urban character. The site has seven of these character areas, defined by existing and new streets and spaces, each incorporating a public, pedestrian space. Each of these spaces is connected to and forms part of the wider network of open space and movement corridors that weave through the site. The seven character areas or clusters are:

1. **Eastern**: Its central space is the Eastern Green Link running from north-south from the East Forum to a new Arrival Square in the north. This Eastern Green Link is at present an access road, and will be transformed to become a pedestrian orientated space which will connect and bring together the new and existing buildings within this area;

2. **JJ Thomson Avenue**: This smaller area contains a new building for the Department of Physics – the Cavendish III Laboratory – and a shared facilities building to the south. The area is formed around the JJ Thomson Garden, part of The Green open space, which will run east-west across the site between High Cross and JJ Thomson Avenue once complete;

3. **Southern**: This area contains a high proportion of existing buildings, including academic and residential buildings and the Sports Centre. These will be supplemented by new shared facilities buildings and the Entrepreneurship Hub and will form new frontage and provide new enclosure to Charles Babbage Road;

4. **Central**: This area will contain a mixture of academic and commercial uses. The key space for this area is The Green open space that will visually and physically connect the site;

5. **Western**: This area provides the main commercial focus of the development and contains the majority of proposed new commercial space. The Character Area forms the frontage to the West Forum;

6. **High Cross**: This area incorporates the Schlumberger building and allows for any future intensification or extension. This area is very prominent with a frontage to High Cross and is visible from The Green and from the approach from the North West Cambridge Development;

7. **Woodland**: This is a lower density character area in the west incorporating existing buildings and the woodland edge landscape.

210. Walkable Character Areas

East/west structure: Key places

6.1.11 The transformation of place relies on the creation of new landscapes and spaces and the retention of existing primary spaces.

6.1.12 The existing spaces of the East and West Forums and the Southern Ecological Corridor are retained and reinforced by new active development and planting. The East and West Forums are connected by an invigorated Charles Babbage Road - the Forum Link.

6.1.13 These spaces together with the new east-west chain of Gardens - The Green - are the four key open spaces within the new landscape structure for the site. These key spaces run across the site and serve to visually and physically connect the eastern and western parts of the Site. The Green specifically allows views to be opened up to the Listed Schlumberger Research Building.

6.1.14 These four spaces are the key elements of the open space structure and, with their diverse characters, will contribute to a variety of environments and experiences throughout the site.

6.1.15 West and East Forums will be the social focal points of the site and will each form a series of connected urban spaces, terraces and squares. The Green and the Southern Ecological Corridor are more landscaped and provide usable green open spaces as well as important east-west pedestrian and cycle connections.

6.1.16 More detail about these key spaces is provided in section B3 of this Volume.

6.1.17 The woodland buffer to the south and to the north along Madingley Road will be retained and reinforced where necessary. Both will form a visual and spatial containment for the site.

6.1.18 With the retention of the northern woodland buffer the character of Madingley Road, a key approach road to the city of Cambridge will retain its existing agrarian character.

211. Key Places - primary open space structure running east to west

North/south structure: Streets and Green Links

6.1.19 Diagram 206 shows primary north-south streets and Green Links. These serve to weave together the east-west key places and spatial elements described on the previous page.

6.1.20 Some of these spaces also provide the key access points into the site and connect to existing and new developments in the north, including the North West Cambridge Development.

6.1.21 These links also provide a direct visual connection between the site and the southern countryside, especially from the high points located along Charles Babbage Road.

6.1.22 Existing streets are retained and transformed to ensure a green character, including: JJ Thomson Avenue; High Cross; and the Western Access/Ada Lovelace Road.

6.1.23 New Green Links are formed through the transformation of existing tertiary streets and access roads (Central and Eastern Green Link) and an additional Green Link can be formed within the central area of the site.

6.1.24 A few of the existing streets and access lanes are already landscaped: along Western Access Road there is existing mature hedges; High Cross and JJ Thomson Avenue are tree-lined avenues and the original Vet School approach (Central Green Link) has mature lime trees.

6.1.25 In contrast, the southern part of the Central Green Link is a narrow service lane and the Eastern Green Link is formed from a car dominated road serving car parking and building drop-offs.

6.1.26 The new landscape framework connects and transforms these types of spaces to form coherent, cycle and pedestrian orientated Green Streets and Links.

6.1.27 Again, the eastern and western woodland buffers are retained and reinforced to ensure visual containment for the site and to retain an agrarian character.

6.1.28 More detail about Streets and Green Links is provided in the third section of this Volume.

212. North South running Green Links and transformed existing streets

6.2. Connectivity

Walking and cycling

6.2.1 The masterplan aims to encourage walking and cycling to, from and within the West Cambridge site. The masterplan strengthens the existing network by extending the NWCD strategic pedestrian and cycle network into the site and connecting it to the Coton Footpath, which provides strong cycle links to the city centre and other academic sites in the west of the city. Within the site there will be a network of cycle routes that bring cyclists through the site. The proposed strategy consists of:

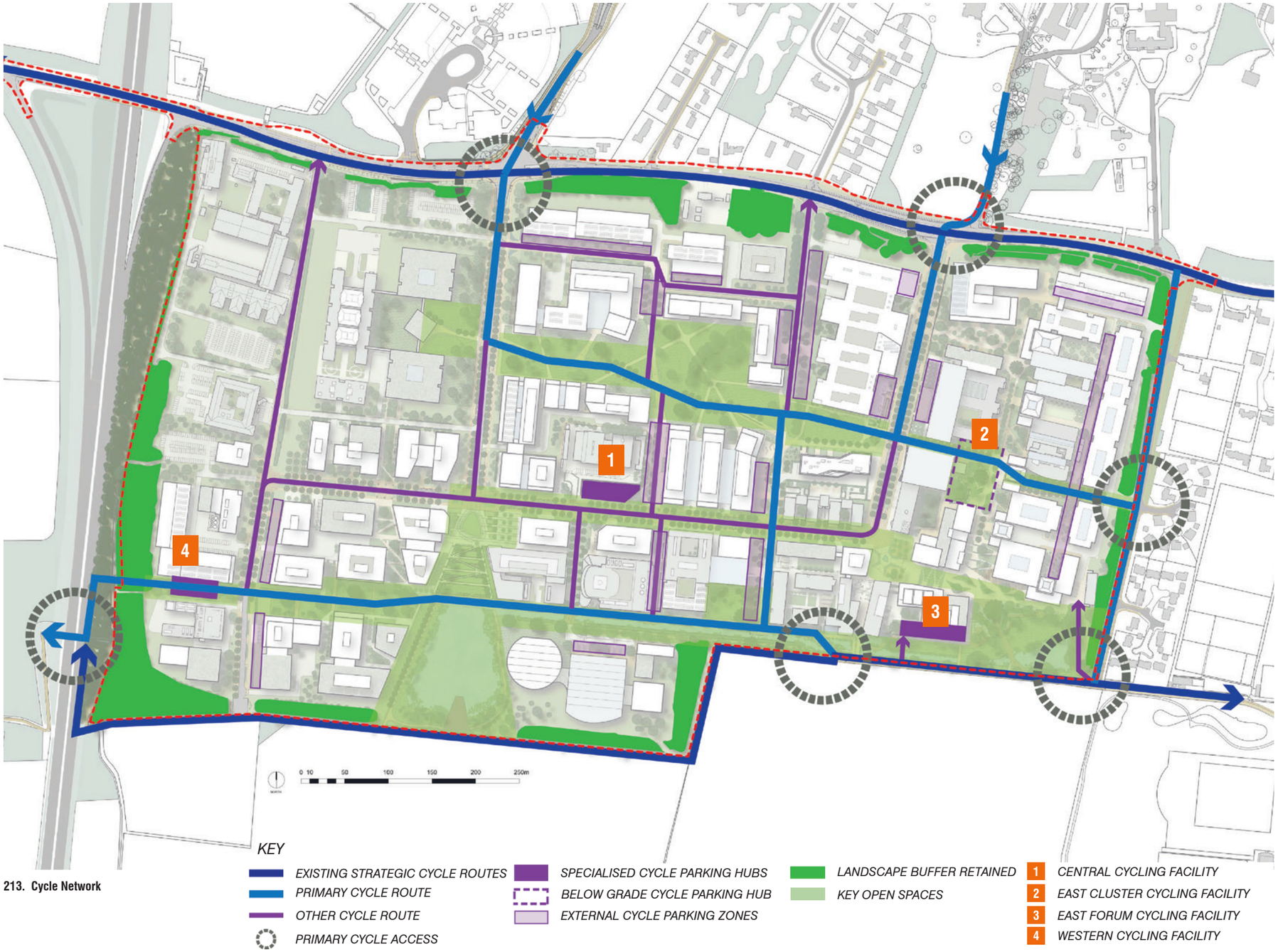
- Primary routes: these connect to the existing strategic cycle network (Coton Footpath and NWCD network) and are expected to be primary routes for arrival to the site, but also used for transit through the site;
- Other routes: these provide a finer grain of connections through the site and allow cycle access adjacent to most buildings.

6.2.2 The cycle parking strategy consists of three types of parking facilities. Within the site, there are four Cycle Hubs which provide fully enclosed, secure parking, as well as facilities such as showers, changing rooms, storage lockers and potentially cycle repair, coffee points and delivery services. These would contain 500-1000 spaces each and have been located along primary cycle routes. A free standing facility on Charles Babbage Road is potentially deliverable from the outset, with potential for other large facilities to follow as part of Department of Engineering cluster in the east and part of shared facilities provision at East Forum in second phase. The Western Facility is envisaged to serve the commercial research areas in the west.

6.2.3 For short-stay cyclists, covered cycle parking areas have been distributed within the public realm close to points of arrival and key buildings. Each containing 50 -200 spaces, these have been located just off primary cycle routes.

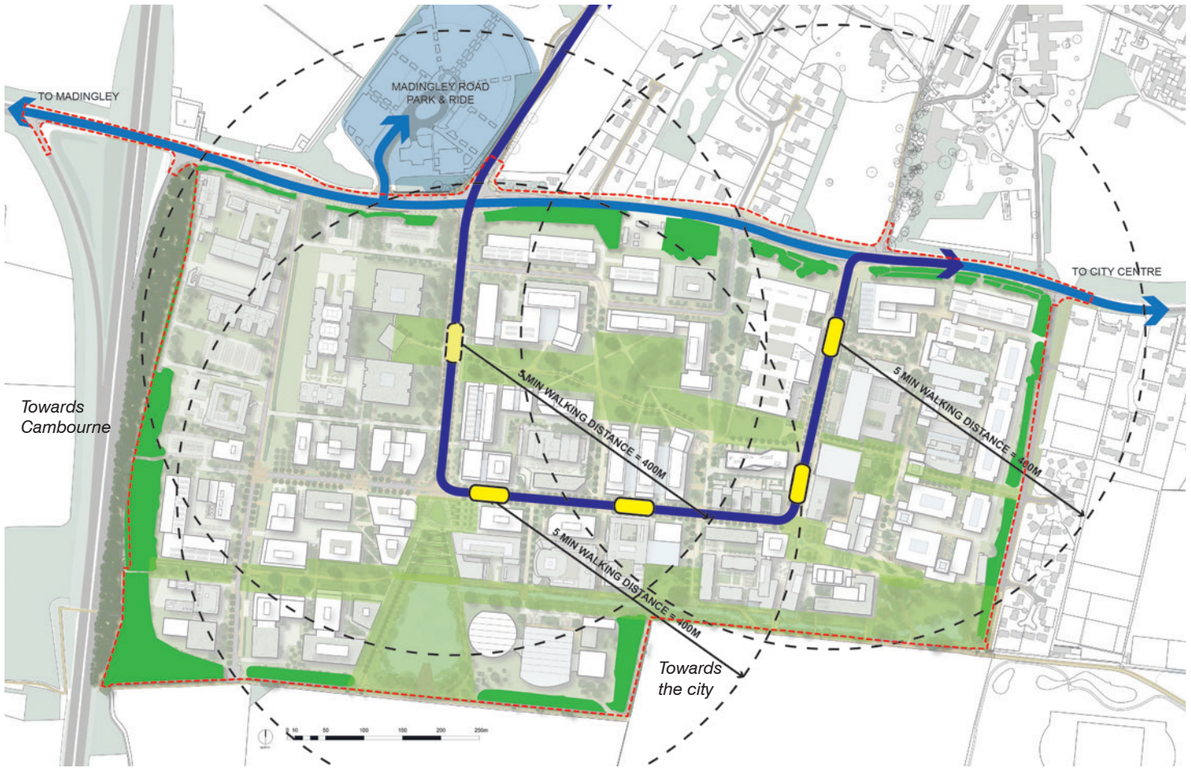
6.2.4 Enclosed, secure cycle parking will also be provided on plots, as part of individual developments.

6.2.5 The estimated amount of cycle parking within the illustrative masterplan has been based on a generic ratio of 1 cycle parking space per 30sqm of commercial research and 0.7 parking spaces per student (of total student population) and 0.5 parking space per University staff member. The assumptions used match standards for the NWCD and exceed local Cambridge City guidelines.



213. Cycle Network

Public transport



214. Public Transport

6.2.6 The main public transport improvements proposed include:

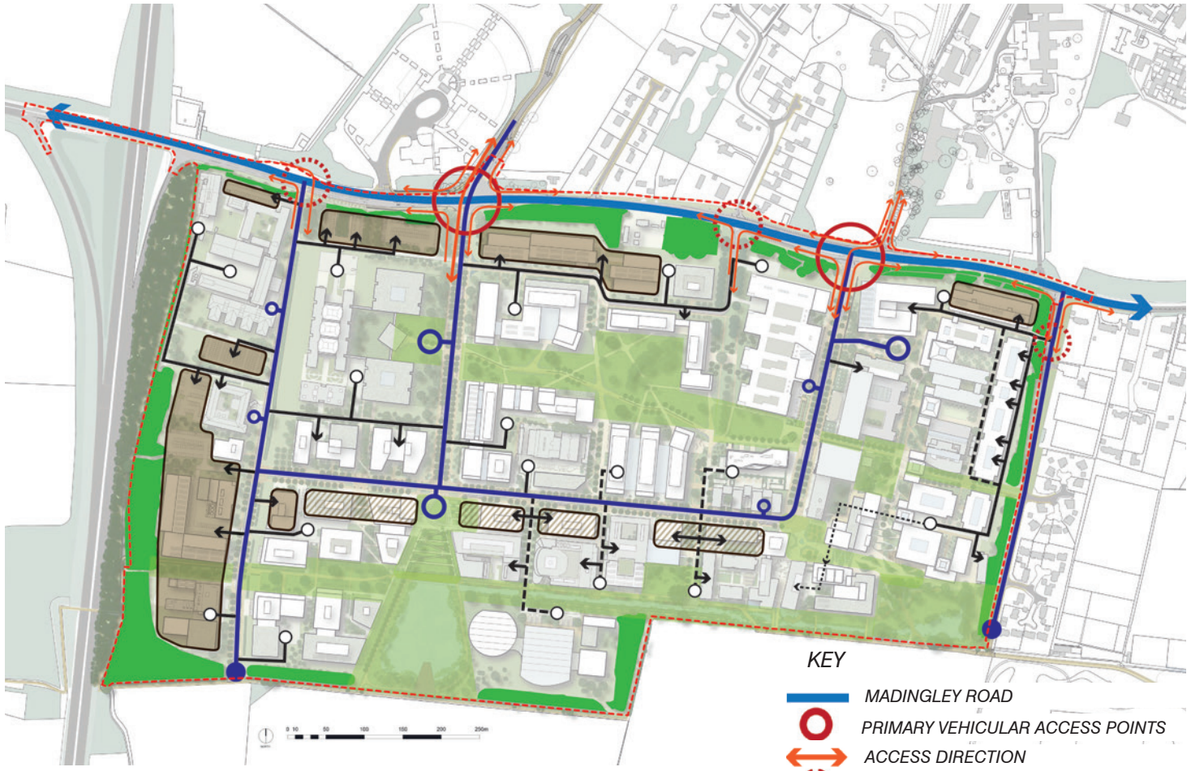
- Increased frequency of the Universal bus service to every 10 minutes weekdays between North West Cambridge and Cambridge Rail Station. The weekend service would be every 20 minutes;
- The proposed Arc service, introduced during Phase 2 this would operate on an up-to 20-minute frequency from Milton Park & Ride via Cambridge Science Park, North West Cambridge and West Cambridge to Trumpington Meadows, the Cambridge Biomedical Campus and Addenbrooke's;
- There is potential for an additional Guided Bus service operating as a variation to the existing Guided Busway Service B. Services would commence during Phase 2, with a frequency of up to every 15 minutes weekdays;

KEY

- MADINGLEY ROAD BUS ROUTE
- EXISTING PARK & RIDE
- BUS ROUTE
- BUS STOPS (EXISTING)
- POSSIBLE FUTURE BUS STOPS
- LANDSCAPE BUFFER RETAINED
- KEY OPEN SPACES

- The existing 20-minute frequency Citi 4 service would be diverted via West Cambridge.

Motor vehicular movement and car parking



215. Vehicular Movement

6.2.7 High Cross, JJ Thomson Avenue and Charles Babbage Road are retained as the primary motor vehicle circulation and access points into the site. From this network, drop-off areas, parking structures and service/ tertiary streets are accessed. A secondary access point is located on Clerk Maxwell Road allowing access for servicing and car parking.

6.2.8 Car parking is concentrated into multi-storey parking structures located at the periphery of the site, thus helping to reduce traffic movements within the site. Smaller car parking areas in semi-basements are possible along Charles Babbage Road.

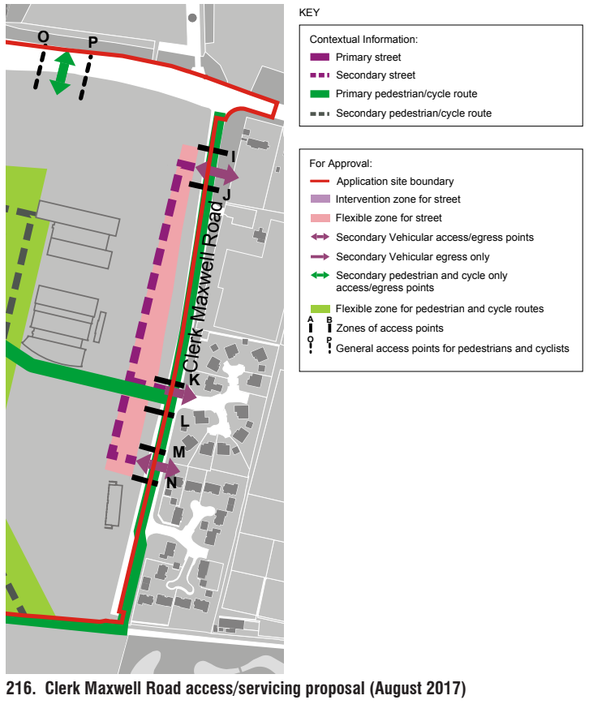
6.2.9 Key junction improvements are influenced by the GCP Madingley Road Cycle Scheme, and could be considered as part of the 'Adaptive Phased Approach' and could include:

- a potential later phase junction at the Western Access Road to intercept strategic movements, and provide direct access to the car parking in the western of the site;
- a review of High Cross junction;
- an enhancement to the existing junction at JJ Thomson Avenue; and
- creation of a new access by opening up the original Vet School entrance off Madingley Road.

Clerk Maxwell Road Proposed service access

6.2.10 The previous proposal, shown in the Access & Movement Parameter Plan (August 2017) extract below (Figure 216) envisaged access and egress into the site from CMR via access I-J and M-N. It envisaged heavy goods vehicles entering the site at I-J exiting the site via egress M-N or K-L. The University committed to only operating one of the two southern access/egress points at any given point in time.

6.2.11 The revised proposal is for all servicing access from Clerk Maxwell Road to use access/egress I-J, in the northern part of Clerk Maxwell Road. This is identified on updated Access & Movement Parameter Plan 03 (December 2019), extract shown as Figure 217 below. This change has been made possible by revised proposals which allow HGVs to turn within the site, allowing them to both access and egress via point I-J. As previously, the pedestrian and cyclists (access K-L) will be installed midway down CMR, it will not be used for egress by any servicing vehicles. It will be necessary for some servicing vehicles to cross the east-west pedestrian cycle route. The infrequent movement of HGVs across this route to service the redeveloped Cavendish II site will be managed by a banksman.



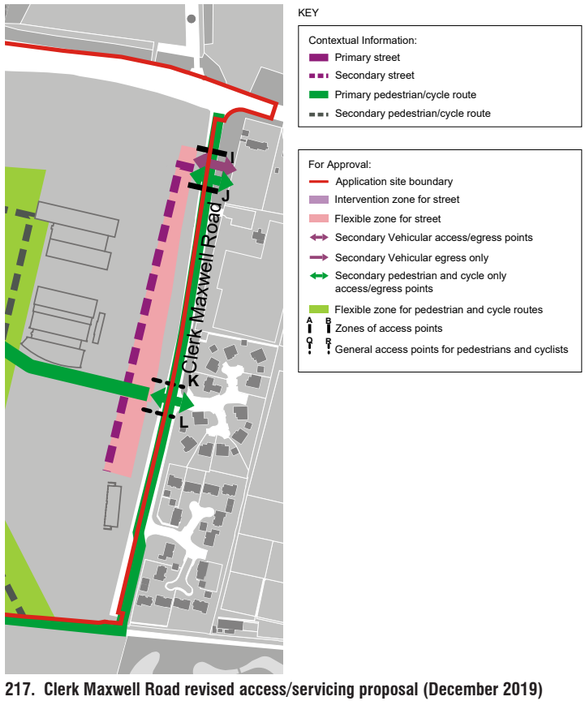
216. Clerk Maxwell Road access/servicing proposal (August 2017)

6.2.12 The revised accesses reflect the current understanding of how the eastern part of the site would be serviced. However, if during detailed design it is determined that a servicing access is required at the southern end of Clerk Maxwell Road, a full planning application will be submitted to Cambridge City Council for the construction of such an access. Any planning application would be the subject of pre- and post-application public consultation.

6.2.13 This note sets out assumptions about the extent of vehicle usage of this servicing access point, based on assumptions around the relocation and growth of the Department of Engineering into the eastern part of the West Cambridge site. In particular, this note focuses on the potential impact on neighbouring properties on two cul-de-sacs accessed off CMR, broadly in the southern part of CMR, The Lawns and Perry Court.

Baseline Position

6.2.14 In assessing any potential impact on neighbouring properties a baseline position needs to be established. Although there are no residential properties fronting onto CMR, the road provides access to two cul-de-sacs (Perry Court and The Lawns). In addition to these properties is



217. Clerk Maxwell Road revised access/servicing proposal (December 2019)

53 Madingley Road which fronts onto Madingley Road, a main arterial route into and out of the city. This dwelling is separated from CMR by well-established planting and a footpath. CMR has well established vegetation along both sides of the road and is currently characterised by (uncontrolled) on-street parking on both sides of the road.

6.2.15 CMR itself currently accommodates around 190 daily car movements on the assumption that 95 on-street parking spaces are used. Although not all cars park towards the southern end of CMR, often cars in the southern half will drive down to Perry Court to turn around before driving north (as the on-street parking restricts the possibility of turning before Perry Court), causing additional movements and disturbance for residents. Behind the landscaped bund within the West Cambridge Site are 560 parking spaces comprising:

- 270 to the rear of the CAPE building and Roger Needham Building (RNB) which are accessed from JJ Thomson Avenue; and
- 290 parking spaces that form the Park and Cycle Facility which is accessed via CMR.

6.2.16 These parking areas account for a significant number of vehicle movements behind the bund each day. The residents at The Lawns and Perry Court currently experience vehicles using CMR as well as hearing noise associated with car use and parking within the site behind the bund.

Line	*Item*	*<7.5 Tonne deliveries per week*	*>7.5 Tonne deliveries per week*
1	*Servicing from Tumpington Rd transferred across**	*147*	*3*
2	*Accounting for growth*	*74*	*2*
3	*Existing buildings where servicing is transferred to CMR*	*125*	*2*
4	*Removing deliveries expected to continue from JJ Thomson Ave*	*(25)*	*0*
Total		*321*	*7*

**figure includes Civil Engineering*

218. Table 1: Servicing Deliveries to the Eastern Part of the West Cambridge Site

6.2.17 Although not approved, a planning application (18/2062/FUL) has been submitted to Cambridge City Council for the construction of 35 dwellings at the Former Cock and Hens Tennis Club, accessed via CMR to the north of The Lawns. This proposed development has been considered as part of the ES Addendum and implications of this scheme on future junction capacity have been considered in the Revised Transport Assessment.

Current Servicing on the Trumpington Road Site

6.2.18 The eastern part of the West Cambridge site will accommodate the relocation and growth of the Department of Engineering, which is currently located on the Trumpington Road site. The Trumpington Road site currently accommodates around 27,000sqm GIA of Engineering floorspace. The on-site facilities manager has confirmed that for the current operations on the Trumpington Road site there are, on average, 30 deliveries per day (150 deliveries per week). This comprises 25 deliveries, and 5 servicing contractors. Of these deliveries larger vehicles account for only 2 or 3 deliveries per week. The remainder are 'white van' or standard vehicle deliveries (all under 7.5 tonnes).

The Move West

6.2.19 This existing floorspace will move over to West Cambridge. The servicing numbers will move across also (Line 1 in Table 1), and will be supplemented by deliveries from CAPE, Nano-Science, and the Whittle Laboratory, all currently on the West Cambridge site and serviced from JJ Thomson Avenue (Line 3). The Roger Needham Building is assumed to be part of the redevelopment and therefore its servicing is included in Line 1 of Table 1. The

Access point usage	*Access I-J*
Total Deliveries p/w	*328*
<7.5 Tonne deliveries per week	*321*
>7.5 Tonne deliveries per week	*7*
*Total Deliveries p/day*1*	*65.6*
<7.5 Tonne deliveries per day	*64.2*
>7.5 Tonne deliveries per day	*1.4*
*Total Deliveries p/hr*2*	*6.56*
<7.5 Tonne deliveries per hour	*6.42*
>7.5 Tonne deliveries per hour	*0.14*

**1 assumes Mon-Fri *2 assumes 10 hours between 8am- 6pm*

219. Breakdown of access point usage

masterplan allows for significant growth of the Department, however this will not necessarily mean a 100% increase in servicing. Some of this growth is to enable existing provision/operations to work in better, less cramped/ constrained conditions; a factor of 50% growth in servicing has therefore been applied (Line 2).

6.2.20 Some buildings such as Whittle and buildings close to the East Forum will be able to receive some of the deliveries from JJ Thomson Avenue, it is also likely that some of the buildings to the south could be serviced from a servicing layby space combined with trolley deliveries. A factor (Line 4) has been applied to remove these.

6.2.21 The Figure 220 visually illustrates the proposed servicing strategy for the eastern part of the West Cambridge site. This area of the site is broken into four zones and the following identifies the servicing strategy for each zone.

6.2.22 Buildings in the Blue Zone will be accessed from access I-J on CMR. All vehicles will enter and exit via access I-J.

6.2.23 Buildings in the Green Zone will be predominantly serviced from CMR as per the servicing strategy for the Blue Zone. However, some buildings will be able to be serviced from JJ Thomson Avenue via the Orange Zone.

6.2.24 All buildings in the Orange Zone will be serviced from JJ Thomson Avenue.

6.2.25 Buildings in the Purple Zone will be serviced from access I-J, travelling through the Blue Zone.

6.2.26 Consideration has been given to utilising JJ Thomson Avenue for servicing buildings in the Green, Purple and Blue Zones. However, this would require the construction of service roads that would significantly compromise the environmental quality of the key north-south East Green Link and flexible zone for public realm, pedestrians and cyclists which are proposed as per Parameter Plans 3 and 4. As such, this strategy was discounted due to the adverse impact it would have on the public realm within this part of the site and the increased risk of conflict between servicing vehicles and pedestrians/ cyclists.

6.2.27 One of the key visions of the Masterplans is “to create and sustain a high quality place by transforming the physical and social environment for site users and neighbours”. The above strategy will ensure that this objective of the vision is achieved

Analysis

- The majority of deliveries are white van/courier type vehicles. Vehicles over 7.5 tonnes only account for 2% of deliveries.
- The white van and courier deliveries are not materially different in terms of noise impact than that of a normal vehicle.
- All of the delivery vehicles serving the Blue, Purple and Green Zones will ingress and egress out of access I-J which will not cause a disturbance issue for residents in the cul-de-sacs which link to CMR.
- It is expected that on average 1.4 >7.5 tonne vehicle deliveries will be made each day. As a worst-case the noise assessment has assessed one >7.5 tonne vehicle delivery per hour which is significantly higher than the number of deliveries forecast. The results of the assessment set out that there will be less than an adverse noise impact during the daytime on residents at The Lawns and Perry Court in this worst-case scenario.
- Behind the central part of the bund the site currently accommodates 270 parking spaces to the rear of the Roger Needham building (assume there is potential for 540 daily movements). There are also approximately 190 movements per day associated with the uncontrolled 95 on-street car parking spaces on CMR. These will be replaced by 64.2 deliveries per day with similar vehicles and an additional 1.4 deliveries per day by a larger .7.5 tonne vehicle, significantly reducing the number of vehicle movements behind the bund within the site below proposed access I-J.
- CMR (access I-J) will also provide access to the proposed 450 space multi-storey car park. It is recognised that this will give rise to additional movements in comparison to the existing 290 space Park and Cycle facility and 95 uncontrolled on-street parking spaces along Clerk Maxwell Road. The vehicle movements related to the multi-storey car park have been assessed with regard to the properties at The Lawns and Perry Court. The assessment has confirmed that the sound levels associated with the proposed multi-storey car park are not likely to exceed the proposed Lowest Observed Adverse Effect Level (LOAEL) and are therefore considered acceptable (see Noise and Vibration Chapter of the ES Addendum).

Conclusion

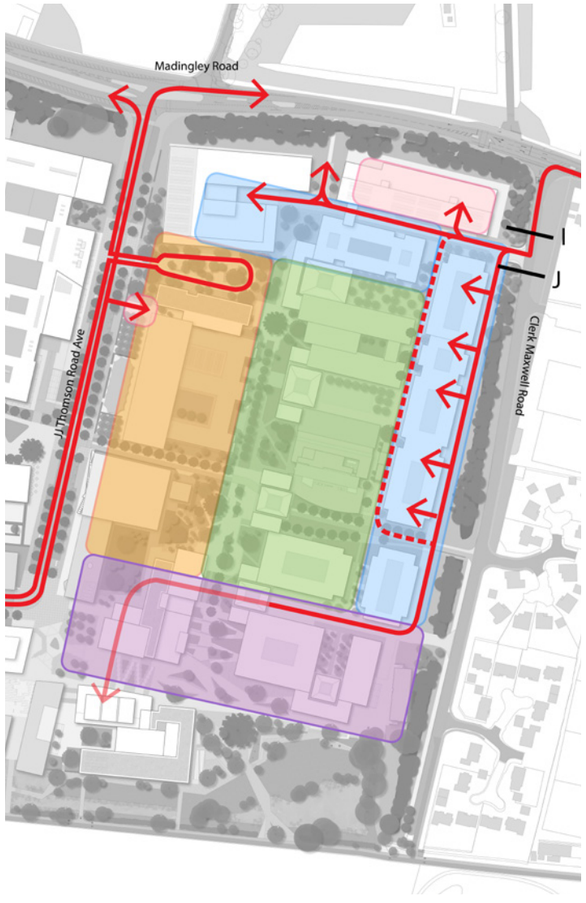
6.2.28 The West Cambridge scheme will result in a significant net reduction in the number of vehicle movements in the central and southern part of CMR as all servicing vehicles will enter and egress the site via access I-J which is located in the northern part of CMR and all uncontrolled on-street car parking along CMR will be removed.

6.2.29 Only 65.6 deliveries will enter access I-J via CMR per day, with no vehicles required to travel down CMR to enter the site or turn around. All vehicle turning will occur within the site, behind the existing bund.

6.2.30 It is acknowledged that there will be an increase in the number of vehicles using the northern part of CMR to access the proposed multi-storey car park when compared to the existing Park and Cycle facility. However, the assessment undertaken in the Noise and Vibration chapter of the ES Addendum demonstrates that the impacts will not be unacceptable.

6.2.31 It is therefore considered that the use of CMR for servicing and access to the multi-storey car park will not result in an unacceptable impact on the residential amenity of properties at The Lawns and Perry Court.

6.2.32 The planning application for the Civil Engineering Building (permitted in March 2017 reference 16/1811/ FUL) was accompanied by a ‘Servicing and Operational Management Plan (October 2016). The intention of The University of Cambridge’s Estate Management team and the Department of Engineering is that as later phases of development within the area east of JJ Thomson Avenue come forward through reserved matters applications this document will be updated as necessary. Updates will reference new buildings and any particular amenity issues that need to be managed to ensure the amenity of neighbouring properties is protected. This will enable one comprehensive document to be referenced by all interested parties to understand the proposed servicing arrangements for this area of the West Cambridge site.



220. Service access to the east of the masterplan

6.3. Character

Land use

6.3.1 The character of the site - the distribution of land uses, scale, density and appearance - is informed by the wider context and character of this part of Cambridge; as well as Cambridge's and world-wide best practice precedents and the needs of current and potential future occupiers.

6.3.2 The key objective of the masterplan is to create an urban campus, a place where landscape and built form are balanced to create an optimal physical and social environment for collaboration and interaction.

6.3.3 The masterplan contains a mixture of academic and commercial research floorspace. While these uses are blended throughout the site, an academic-led focus is created to the east (around and extending from the East Forum) and a more commercial-led focus is located to the west at West Forum. The central area in particular, is a zone for future mix and flexibility between academic and commercial research uses.

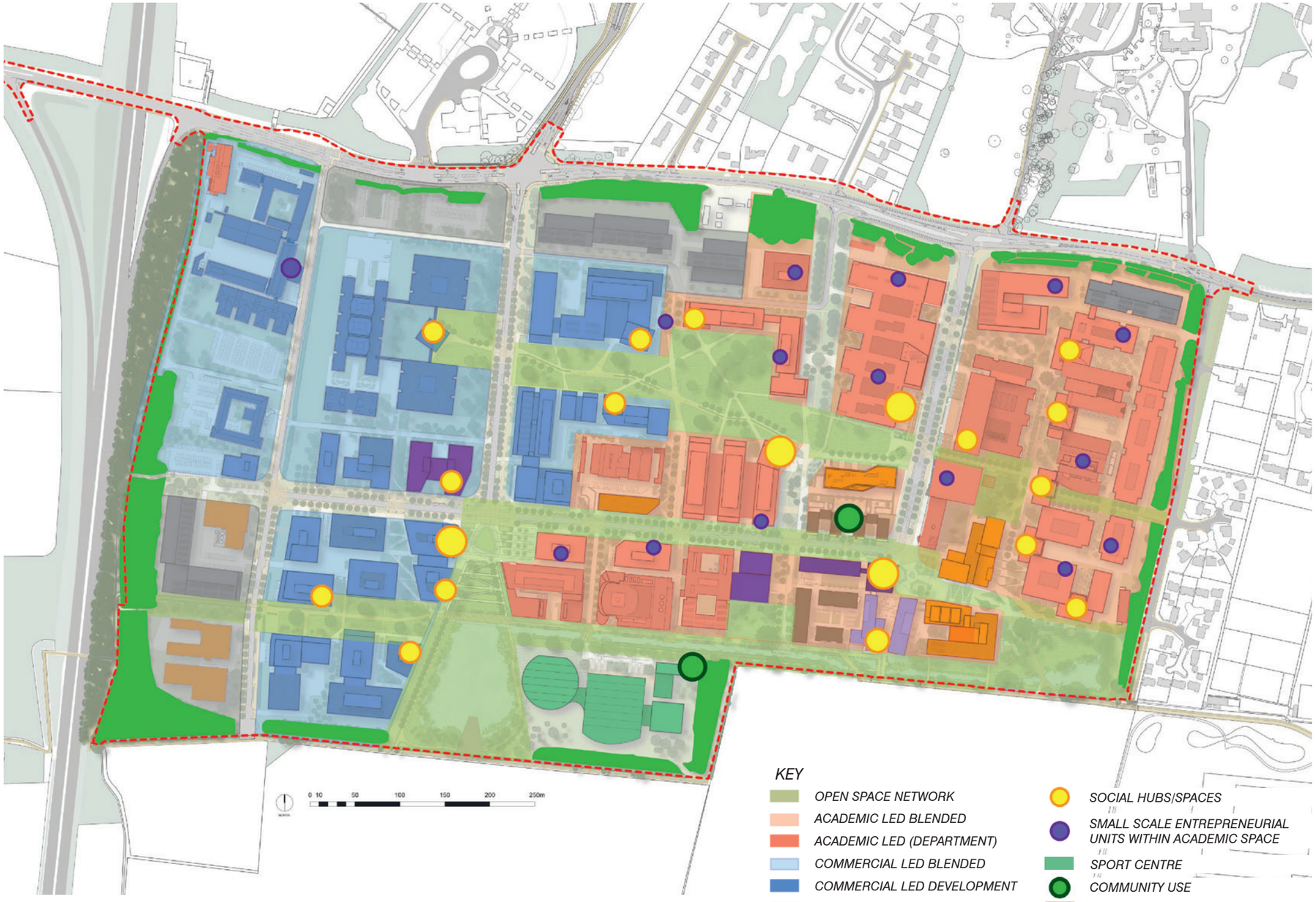
6.3.4 As seen in the precedents presented in Volume A, such distribution of uses supports interaction between occupiers while maintaining a sense of identity and potential for growth for each of the clusters.

6.3.5 In order to promote innovation and interchange, small entrepreneurship hubs could be distributed across the site with the main entrepreneurship centre located at East Forum, reinforcing and expanding the existing uses within the Hauser Forum and Broers Building.

6.3.6 To enable informal interactions and further integrations, and also to enhance the focal role of the East and West Forums, major shared/social facilities and active uses are located at the Forums ensuring that these spaces are active and vibrant. A further provision of smaller social hubs is distributed throughout the site, incorporating existing social spaces, closely associated with and addressing key public spaces.

6.3.7 To the south along the Southern Ecological Corridor is an area for sports and recreation, community facilities and outdoor amenity.

6.3.8 Diagram 221 shows one possible configuration of the distribution of uses.



221. Land-use Strategy - one possible configuration

Amount of development

6.3.9 Underpinning the masterplan is the need to increase density to create critical mass and optimise development capacity at the West Cambridge site.

6.3.10 Taking into account the land currently occupied by buildings which are to be demolished, over 380,000m2 of additional development capacity has been identified through the masterplanning process.

6.3.11 This amount follows from the premise of creating an urban campus. The optimal density for such an environment has been identified at the Sidgwick site in Cambridge: three to four storey buildings with well defined but airy and sunlit open spaces in between.

6.3.12 The scale and overall amount of commercial research development accords with best practice models: both University Park at MIT and Chiswick Park in London show that a scale of around 200,000m2 of commercial floorspace corresponds with a population which can form a community, support social facilities and bring activity to the public realm. The amount of academic development is proportionally higher to achieve an overall ratio of three to two, a balance which is seen to ensure that the overall character is set by the academic uses and not dominated by commercial research. The overall amount of commercial space is supported by market assessment and estimated to be absorbed within a 15-25 year span.

6.3.13 In addition, the amount of development on the site is also dependent on the capacity of the surrounding transport network and will increase incrementally, following gradual improvement in public transport and the introduction of a Green Travel Plan. These measures will be designed to achieve gradual decrease in car dependency.

6.3.14 Out of the overall 380,000m2, academic research, teaching and shared facilities and commercial and/or research institute will comprise 370,000m2. Within this capacity, commercial/research institute space will be limited to no more than 170,000m2. Together with more than 100,000m2 of academic and 40,000m2 of existing commercial space, the overall balance of approximately 300,000m2 of academic space and up to 210,000m2 commercial space provides a good balance between the two major uses: a balance which allows for a significant commercial address but with a predominant feel of an academic research and teaching campus.

6.3.15 The Illustrative masterplan shows the number and size of car parking structures sufficient to accommodate maximum numbers of car parking spaces used for testing of the surrounding transport network.

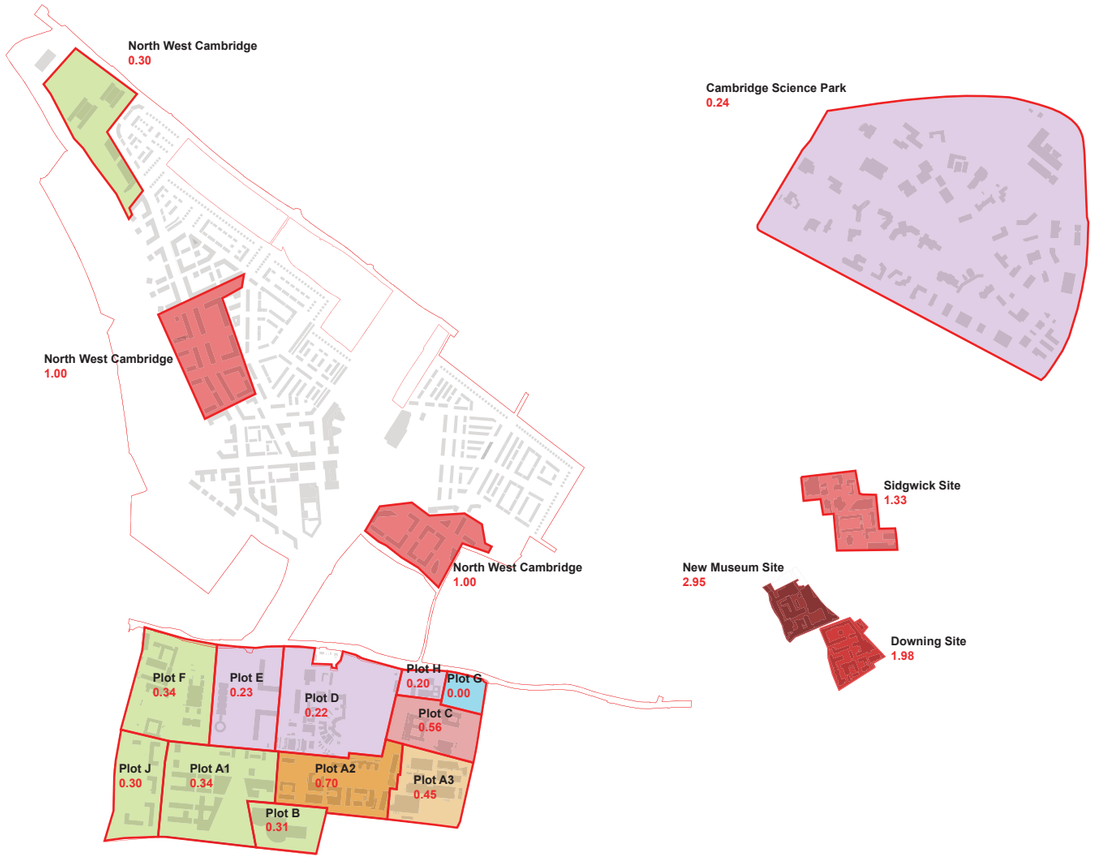
222. Land-use Strategy - an indication of how the development could be accommodated on the site.

Proposed development at West Cambridge of up to 383,300m2 comprising:

- *up to 370,000m2 of academic floorspace (Class D1), commercial / research institute floorspace (Class B1b and sui generis research uses), of which not more than 170,000m2 will be commercial floorspace;*
- *up to 2,500m2 nursery;*
- *up to 4,000m2 of A1-A5 uses;*
- *up to 4,100m2 floorspace for community facilities, and not less than 3,000m2;*
- *up to 5,700m2 of sui generis uses;*
- *demolition of existing structures; and*
- *associated infrastructure including roads (including adaptations to Madingley Road), pedestrian, cycle and vehicle routes, parking, drainage, open spaces and earthworks.*

Density and critical mass

223. Design Principles - Density distribution



224. Existing density distribution - for comparison

KEY

- *< 0.20*
- *0.20 - 0.29*
- *0.30 - 0.39*
- *0.40 - 0.49*
- *0.50 - 0.59*
- *0.60 - 0.99*
- *1.00 - 1.49*
- *1.50 - 1.99*
- *> 2.00*

Development floor area to plot area ratios

6.3.16 The density, expressed as floor area ratios, as indicated by the diagram above is based on the amount of development demonstrated within the Illustrative Masterplan. The existing density of the site is shown on the diagram on the right.

6.3.17 Generally, these diagrams show the proposed general increase in density across the site and also indicate that density is to be increased in a controlled way: with higher density located around the West and East Forums and lower density around the edges of the site. The density also shows a reduction in density towards the western edge of the site - the edge of the city.

6.3.18 The floor area ratios shown, ranging from 0.40 to 1.49, compares well to the densities of sites such as the Sidgwick site, judged to be a good precedent for an urban academic campus outside of a city centre.

Scale, massing and accents

Building heights

6.3.19 General building heights across the masterplan are set predominantly at three to four storeys. This allows for a backdrop or baseline height to be established and provides a consistency through the masterplan. This baseline height then allows the potential for the taller building accents to form a new skyline for West Cambridge.

6.3.20 Lower development is located on the edges of the site where there are sensitive adjacent land uses and Conservation Areas. This will enable the existing woodland buffer at this boundary to continue to screen development.

6.3.21 Such heights allow for a good balance between the built form and landscape, with some mature trees exceeding the height of the buildings and open spaces having good daylight qualities and sense of enclosure.

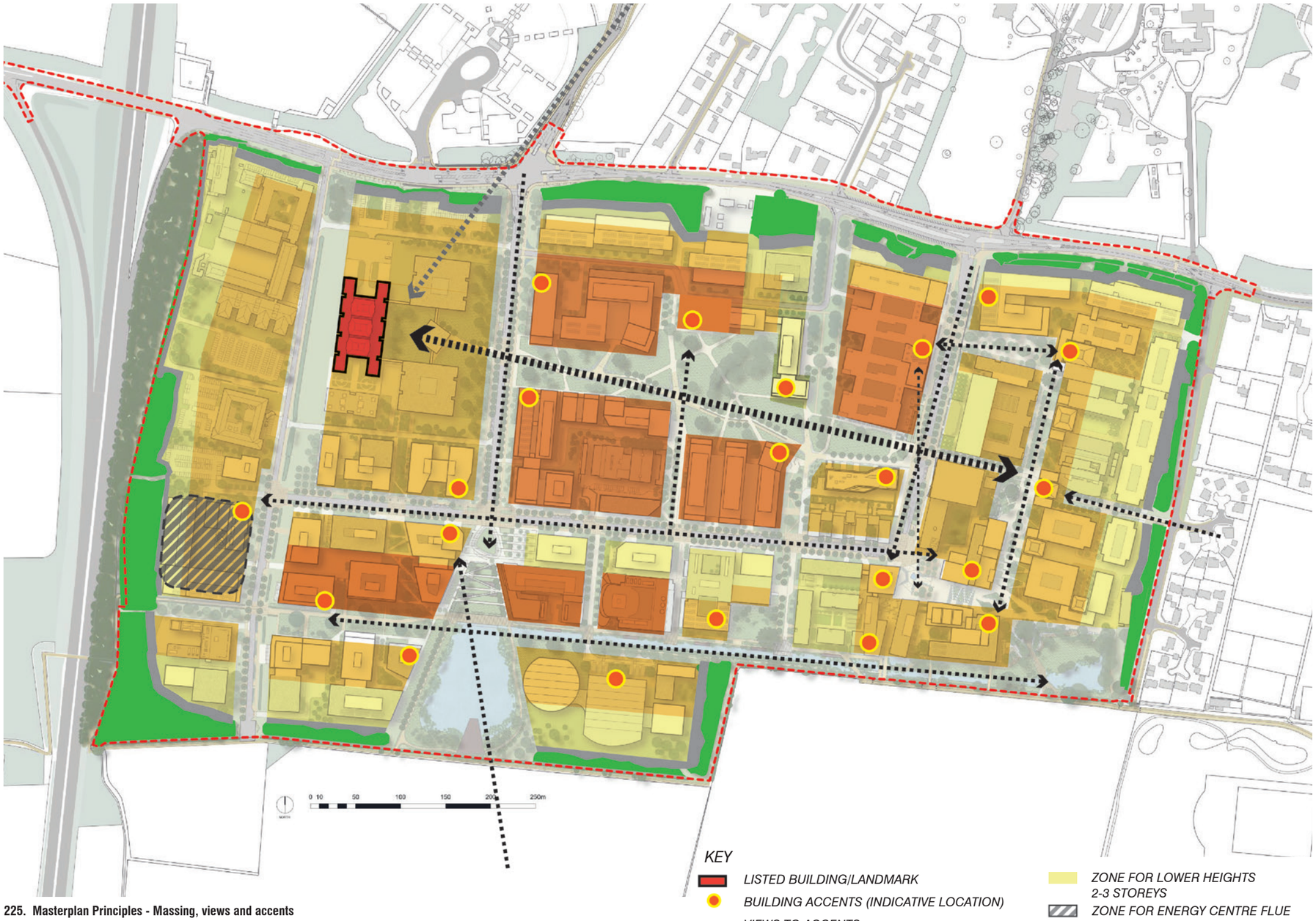
Views and accents

6.3.22 Key to the masterplan is the establishment of a new skyline for West Cambridge, which will reveal a new identity for the site. Also, variations in heights will create opportunities for additional outdoor spaces such as rooftop terraces, promoting integration of landscape and architecture. This new urban framework will also be an aid to legibility and pedestrian movement through the site.

6.3.23 To create this skyline and aid legibility, building accents are located within the centre of the site along The Green open space; around the Forum spaces, and at the JJ Thomson Avenue access. These landmarks ensure that these key spaces are identifiable within the urban structure.

6.3.24 In addition, building accents are also located to terminate views. These accents serve to lead pedestrians through these spaces and provide a visual unfolding and termination of views.

6.3.25 The primary West Cambridge landmark – the Schlumberger Research Building is given increased prominence by the opening up of views across the site, from JJ Thomson Avenue through The Green to the building's roof structure. In addition development heights in the vicinity of the building are kept below the Schlumberger line of the tent structure to ensure that this building remains visible and the tallest element in the west of the site.



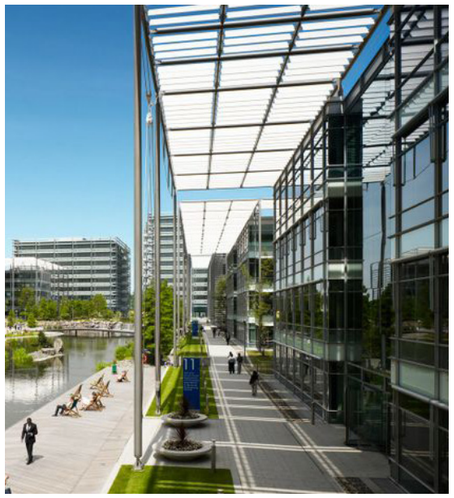
225. Masterplan Principles - Massing, views and accents

Appearance: Architectural framework

6.3.26 The transformation of the West Cambridge site provides an opportunity for a new, more cohesive architectural character. A key issue of the site is the in-coherence of the disparate and disconnected developments. An additional set of characteristic elements and themes, applied thoughtfully, and drawn from the best of what exists, can address this. To form a new coherence for the site, new overarching themes and attitudes will be explored:

- **Materials:** Use of natural materials such as: timber, brick, masonry, terracotta. Particular interest will be given to exploring these materials used in innovative ways or the use of new innovative materials, as a response to brief or a response to climate.
- **Technology:** Technology will be celebrated through visible, clear and logical structures and tectonic facade treatments. There are good precedents already on the site where the building structure itself provides key architectural interest: such as Schlumberger Research Building and the William Gates/Computer Science building.
- **Roofs and soffits:** A celebration of skyline. Roofs will be used to provide shade, define and provide shelter for exterior, active spaces and provide a response to climate.
- **An environmental response to climate:** applied to facade design and roofscape - layered facades, prefabricated components, brise soleils, shading structures, wind cowls, etc. The University will aim to achieve BREEAM Excellent as a minimum.

Pre-fabricated components, natural materials



A response to climate

A celebration of skyline and response to climate

226. West Cambridge - architectural framework

227. Woodland edge - utility/ancillary buildings

Woodland Edge - Utility buildings

6.3.27 Within the masterplan there is a special condition of mainly utility buildings or car parking structures that are set within the woodland landscape of the western and northern site boundaries. These buildings will be responsive to sensitive conditions such as adjacencies to Conservation Areas and residential uses. These buildings could be characterised by:

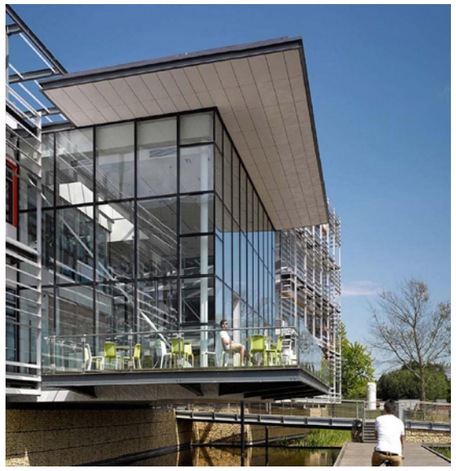
- **Use of planting**: on trellis structures, on roofs, around structures to form buildings that are part of the landscape;
- **Materials:** Use of natural materials, or materials that blend with the woodland landscape or a combination of materials to control scale and rhythm of the façades.

Southern edge

6.3.28 Some of the existing buildings along the southern frontage already provide good precedents for the use of natural materials and shading devices. These themes would be further reinforced by use of timber and particularly timber as a structural element (this could be applied around East Forum for instance, to provide warmth and natural references in areas where users will socialise), and also through use of shading devices and brise soleils as architectural themes.

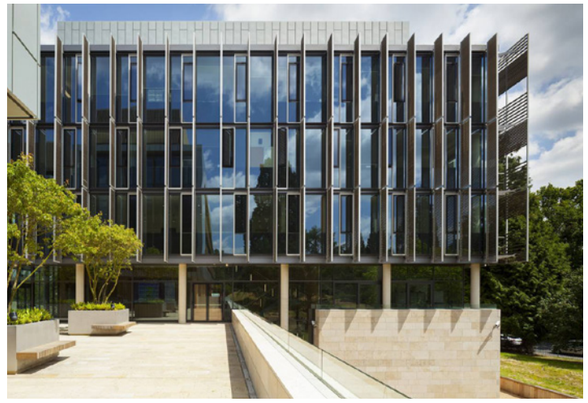
The Green

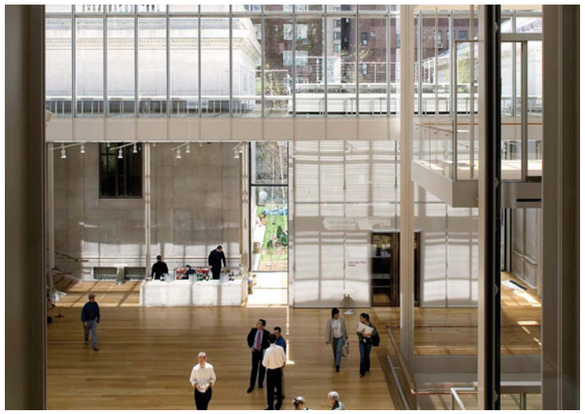
6.3.29 The buildings facing The Green will address this open space with their primary frontages, entrance lobbies and social spaces (which can also spill out into and animate the public realm). Façades will be carefully composed, exploring rhythm and horizontal differentiation between base, middle and roof elements; as well as layering and transparency. Social parts in particular will be transparent to provide a view into the interior of the building. Also, planting of hedges and trees will be explored to achieve a balance of built form and landscape elements within The Green.






228. Appearance - Southern Edge



229. Appearance - The Green

6.4. Community and open space

Landscape vision

6.4.1 The City of Cambridge has a distinctive character and landscape setting. The diversity of historic buildings and conservation areas, the colleges, the river, the commons, open spaces, natural features and habitats all contribute to the distinctiveness and uniqueness of the City's landscape.

6.4.2 The rural hinterland of Cambridgeshire is particularly close to the west of the City, and is defined by large arable field parcels with an open aspect, but with limited visual connections to the city. The remnants of the agricultural landscape can be seen throughout the City and these remnants define the network of open spaces and routes that shape the urban grain.

6.4.3 The association between public open space, private intimate space and the density and scale of the built form are particularly marked in Cambridge. The connection between these spaces is typically reinforced with mature avenues or lines of trees, formal boundaries, with a clear distinction between private and public functions.

6.4.4 The site at West Cambridge offers and contains many of the features seen though out the city and rural fringe:

- Hedgerows with mature trees;
- Legible routes with avenues of trees;
- A network of cycle and pedestrian routes;
- Mature woodland copses;
- Woodland buffers and shelter-belts;
- Areas of open water; and
- A range of naturalised shrub and grassland habitats.

The Landscape 'Weave'

6.4.5 The aim of the masterplan is to create a hierarchy of public spaces and a range of landscapes of distinct character. These will draw influence from and weave together the surrounding areas of city, the countryside reserve, the agricultural landscapes and the emerging new landscapes of the North West Cambridge Development.

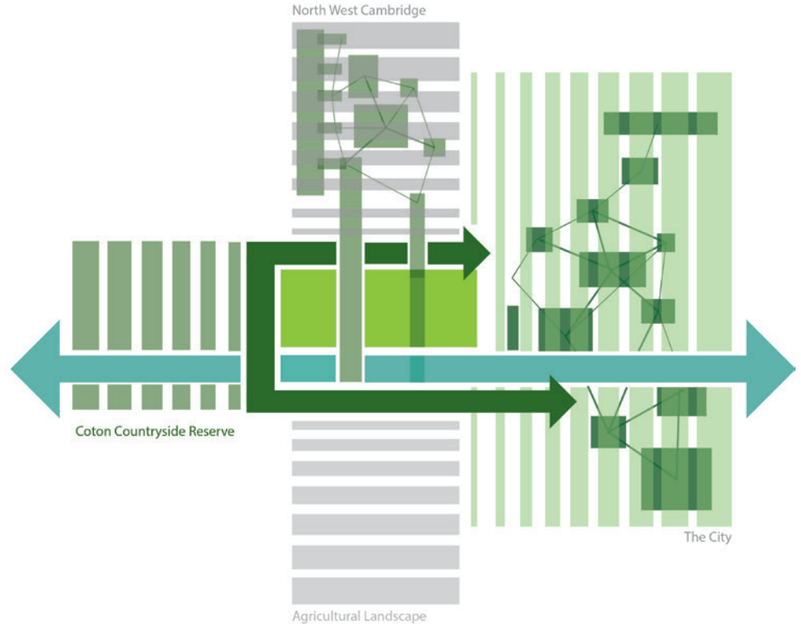
6.4.6 The primary purpose of the new public realm and landscape at West Cambridge is to:

- promote and improve pedestrian and cycle legibility, while minimising conflicts with vehicular movement;
- provide spaces that allow creativity, expression, inspiration and delight;
- integrate and retain existing landscape features and build on the character and amenity they already provide; and
- integrate with the surrounding natural network, promoting diversity and species rich habitats.

6.4.7 Creating a strong landscape framework is important in delivering a masterplan which meets high sustainability targets.

6.4.8 Strong networks of landscape are important for the creation of bio-diversity corridors to benefit species migration including insects, mammals, birds and water species. Species migration helps maintain and develop more robust, bio-diverse communities. Within the West Cambridge masterplan the Landscape 'Weave' aims to:

- provide a continuous network of green spaces and water bodies that link together to create rich habitats for wildlife, where people can walk and cycle and enjoy recreation;
- bring the field pattern character of hedgerows and open fields of the surrounding agrarian area into the site;
- ensure the City of Cambridge is reflected in the landscape structure of the site, by introducing new active urban places for people to meet and congregate;
- connect the new landscapes with the NWCD to the north of the site and draw through and echo this emerging character; and
- introduce a new, substantial central green-space in the overall network of landscape ensuring strong ecological, pedestrian and visual links through the centre of the site.



230. Landscape Concept Diagram - The West Cambridge 'Weave'

231. Landscape Concept Diagram - The West Cambridge 'Weave'

232. West Cambridge - Landscape illustrative masterplan

Landscape framework

6.4.9 Underpinning the open space design approach are five themes. These have been determined to guide design considerations, opportunities and outcomes for West Cambridge. The landscape framework for West Cambridge will:

1. Character and Legibility

- Establish a site-wide open space structure that promotes good legibility and way finding;
- Draw upon the existing, embedded site qualities to inform the future character of open space;
- Retain and enhance the existing context of mature trees and woodland buffers and maintain an aesthetically 'green' place relevant to its rural location;
- Ensure all public space has a well-defined role and character and ensure buildings contribute to the use and definition of public space; and
- Ensure that the character and design of streetscape responds in an integrated way with hierarchy, scale, built form, functional movement, water sensitive urban design, entry locations, points of intersections, views and destinations.

2. Community and culture

- Provide a mix of spaces to support a diversity of social activities;
- Design the public realm to maximise community and university/occupier engagement; and
- Provide event/meeting places and facilities for multi-functional and adaptable use.

3. Connectivity and access

- Strengthen the existing campus structure by forming strategic external links;
- Create a pedestrian and cycle network that promotes and encourages active transport through ease of mobility within the site and to external networks; and
- Ensure strong visual connections and way finding.

4. Safety and security

- Create safe public spaces, with appropriate levels of passive surveillance provided as a result of the strong relationship between space and built form;
- Ensure adequate provision of lighting to all public realm areas and in particular the major pedestrian and footpath network;
- Ensure all paths are universally accessible.

233. West Cambridge - Landscape characters

5. Environment and sustainability

- Ensure protection and enhancement of existing areas of environmental importance and strengthen links to the wider landscape to establish 'Biodiversity Corridors';
- Design open spaces and streetscapes to integrate water sensitive urban design initiatives;
- Retain existing trees and select native species to encourage bio-diverse bird, water life and insect habitats; and
- Use materials that feature low embodied energy, effective whole-of-life costs, low ongoing maintenance and are sustainably produced.

Amount of public realm open space: Key Spaces

6.4.10 The scale and amount of open space held within the masterplan has been informed by both Cambridge and world-wide precedents. The total landscape and public realm area (including streets, Green Links and Woodland buffers) adds up to 16.8 ha. The primary areas of open space highlighted in the diagram in Figure 234, add up to 10.3 ha. The majority of this area is accessible to site users and the general public, however some areas form on-plot landscape, such as the western-most Garden of The Green which is within the Schlumberger Research Building plot.

6.4.11 The largest open space is located close to the centre of the site. This is the Central Garden, part of The Green chain of gardens, which accommodates soft landscaping and open lawn areas for informal recreation and relaxation. This space has an area of 1.8Ha (in comparison a minimum set by the Design Guidelines that accompany this Design and Access Statement of 1.6Ha) and some of the recreation activities possible within this size of space include frisbee, informal ball games, yoga, etc.

6.4.12 The main area of the Green, between JJ Thomson Avenue and High Cross, has an area of 2.9Ha.

6.4.13 Other larger spaces include the East Pond and the West Lake. These spaces include water bodies and mature tree planting and are more suitable for relaxing breaks, picnics, etc., rather than large group activities.

6.4.14 The East and West Forums are the primary active, urban meeting and interaction spaces and, as such, are of relatively smaller scale and more contained by development.

6.4.15 The key spaces highlighted in Figure 234 are woven together into a network of connective spaces which ensures all the parts of the site have a good access to open space.

6.4.16 An important part of this network are the north-south Green Links, which themselves are not of insignificant width to be used for informal recreation and have not been included in the total amount of public space. Nonetheless these green links can provide pleasant small gatherings spaces, pedestrian links and ensure that the green, soft feeling is distributed throughout the site.

234. Key Spaces

Please note: these spaces and areas are based on the Illustrative Masterplan.

Incorporating existing trees

235. West Cambridge - Trees to be retained

Opportunity for new tree planting

236. West Cambridge - Proposed tree planting

Existing mature trees

6.4.17 Located within the site are individual and groups of mature trees forming either distinct lines of trees, avenues or standard specimens. The trees of note are prominent specimens given their age, size and maturity. Their vitality and structural conditions are varied, however, the majority are in good vitality. The diagram in Figure 235 is taken from the Design Guidelines that accompany this Design and Access Statement, and shows trees in dark green that must be retained and others that are recommended to be retained if possible.

Existing street trees

6.4.18 The existing street trees are predominantly young specimens that form distinct avenues or formal lines of trees. The limited age of these trees on High Cross and Charles Babbage Road reduces their arboricultural value at present. However, over time this will increase with their maturity and it is the preferred approach to keep these trees where possible, replace trees in ill health and infill where required with appropriate species.

Woodland Edges

6.4.19 The site boundaries sustain linear belts of mature trees and shrubs that provide full or partial screening of the site and it is the preferred approach to keep these trees where possible and will be managed through the implementation of 'Woodland Management Plan'.

Opportunities for new tree planting

6.4.20 In addition to the retention within the masterplan of the previously described planting and trees, it is proposed to enhance the planting generally throughout the site, and specifically to increase the number of large specimen trees within the site.

6.4.21 These new trees would be located in the larger green spaces which will have less restricted conditions and will enable these trees to reach their full potential in the future. These landscape spaces are identified within The Green, the Southern Ecological Corridor, the East Pond and West Lake areas and within Green Links.

6.4.22 Standard tree planting is proposed throughout the site to create avenues, provide interest where people gather and enhance the public realm.

Activity and social spaces in landscape

6.4.23 Places of social intensity that will be the focus for community, educational, commercial and ecological activities are formed at key intersections between roads, footpaths, cycle routes, as well as at certain building entrances.

6.4.24 These places can be seen as 'social hubs' and will provide a variety of spaces, from urban plazas, to play zones, urban orchards, outdoor labs or external meeting spaces. These spaces will be designed to accommodate people coming together.

6.4.25 Informal leisure and recreation is predominantly accommodated within the more major open spaces. The Green and the East and West Forum spaces are conducive to passive recreation that is not prescriptive or defined but instead provide flexible and active spaces in a wider landscape setting.

6.4.26 More structured sports activity is located in proximity to the Sports Centre and the West Lake and includes walking trails, cycling and possible open water swimming.

6.4.27 Recreational based cycling & pedestrian activity is part of a greater cycling and pedestrian network linking to Coton Footpath, the Coton Reserve and the North West Cambridge Development to the north.

237. West Cambridge - Activities and Social spaces

Social amenity

Three tiers of amenity spaces

6.4.28 The West Cambridge site at present offers a series of amenity facilities such as the Cavendish Canteen, the West Cafe at Hauser Forum, and smaller cafes such as that within the CAPE Building providing hot and cold drinks, sandwiches and snacks. Many of these smaller facilities are embedded within buildings and while providing a vital function for the staff that work there, do little to invigorate public space or to promote gathering, exchange and interaction beyond the building they are located in. Within the new masterplan, many of these facilities will be retained while a few will be removed as redevelopment/relocation takes place. However, the aim of the masterplan is to improve and then supplement the existing offer with a fuller range of new and modern facilities.

6.4.29 With the proposed increase in density on the site, there will be a necessity to increase the amount of the amenity facilities offered. This importantly also provides the opportunity to increase the range and variety of types of facilities throughout the site - to provide a variety of styles, experiences and prices.

6.4.30 The strategy for these spaces is to form clusters of activity that are capable of becoming attractors or destinations within the site, and then to associate these activity clusters with key public spaces so as to invigorate key locations such as the East and West Forums and through The Green.

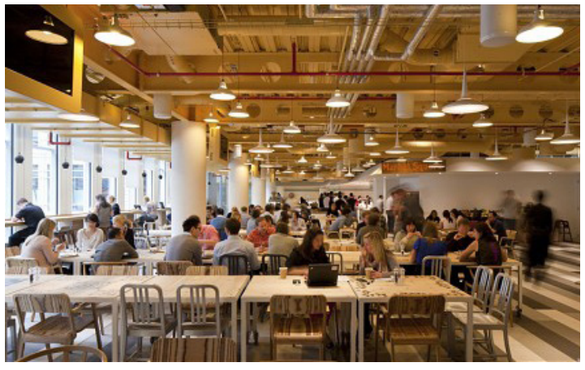
6.4.31 Proposed are three tiers of amenity spaces as illustrated by the photos on this page:

- Tier 1: Foodcourt. These are the largest types of spaces, between 800 - 1500 sqm in area (or 350 - 450 seats). The size of these spaces mean that they bring people from across the site for meeting, gathering and eating and create high levels of activity. It is predicted that the West Cambridge site, at full capacity could accommodate up to two of these and they would be located within University shared facilities buildings at or close to the East Forum;
- Tier 2: Hot Food Cafe. These are medium size spaces, with a varied offer and experience, such as a Cafe or a fine-dining room, and sized between 400 - 700 sqm (or 150 - 300 seats); and,
- Tier 3: Cafe/deli space. These are the smallest sized spaces, between 150 - 300 sqm (or 50 - 150 seats).

Tier 1: Food Court (800 - 1500 sqm)

238. EYE Film Museum, Amsterdam

239. Macquarie University, Sydney



240. Google Office in London

Tier 2: Hot Food (400 - 700 sqm)

241. Existing catering area in Hauser Forum

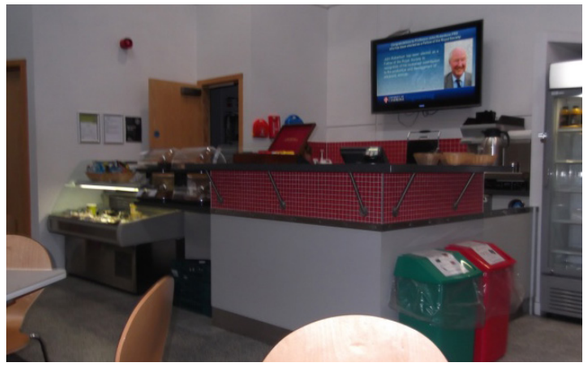
242. Google Headquarters, California

243. Queen Mary University of London

Tier 3: Cafe/Deli (200 - 300 sqm)

244. Existing cafe in William Gates Building

245. Existing cafe in Sports Centre



246. Existing cafe in CAPE

Location of catering

6.4.32 The highest concentrations of catering facilities are located around East and West Forum. Due to the concentration of academic staff and students, two large food courts could be in the East Forum area.

6.4.33 The first to be delivered is the replacement of the Cavendish Canteen, located on The Green, adjacent to JJ Thomson Avenue and opposite the new Cavendish III Laboratory. This will be in the form of a food court which can be positioned to over look JJ Thomson Garden and invigorate the new green space. While accommodating a canteen this building will also accommodate shared teaching and study spaces. This location is also highly visible forming an event along the JJ Thomson Avenue. Its gravitational pull will aid connections between the East Forum spaces to the south and The Green.

6.4.34 The East Forum cluster of shared facilities can be established following the relocation of the existing Cavendish Laboratory. New facilities will frame and extend along the East Steps, which connect the East Forum Upper Square, the Lower Square and the East Pond area. Another larger food court could be located here.

6.4.35 To the west of the site a further cluster can be established using the ground floors of new commercial research buildings overlooking the West Forum Terraces and the western extension of the Southern Ecological Corridor. These facilities are smaller but will have the potential to provide a variety of offers including: deli/cafe, hot food, fine-dining, etc. These facilities will be located so as to provide an active frontage to the West Forum spaces.

6.4.36 Along The Green, additional facilities on the ground floors of new buildings can extend activity through the space from east to west, with the potential for a facility to be visible from High Cross.

247. West Cambridge Catering Spaces

6.5. Climate

Introduction

6.5.1 The public realm and open space network which is an important part of the new spatial structure and the identity of the site, also has a key role in the sustainability strategy for the site. It aims to:

- Improve ecology, by increasing connectivity and the variety of habitats;
- Utilise the existing features and elements on the site, in order to minimise waste;
- Facilitate sustainable drainage; and
- Promote walking, leisure and enjoyment of nature, through improvement of quality of open spaces and addition of amenity.

6.5.2 Key principles include:

- Protection and enhancement of existing areas of environmental importance and strengthen physical links to establish 'Biodiversity Corridors' that connect into a wider landscape;
- Respond to topographic and pre-development drainage patterns on the site;
- Open space and streetscape to integrate water sensitive urban design initiatives, where possible;
- Adopt a sensitive and strategic response to constructed micro-climates through both location of facilities and plant species;
- Select native species where possible to encourage bio-diverse bird and insect habitats;
- Use materials that feature low embodied energy, effective whole-of-life costs, low ongoing maintenance and are sustainably produced; and
- Retain existing trees where ever possible.

Ecology

6.5.3 The site has existing habitats that attract wildlife, such as the Southern Ecological Corridor. These areas will be retained and enhanced where possible to support the existing and attract new diverse wildlife.

6.5.4 The West Lake, the East (Payne's) Pond and the Southern Ecological Corridor's canals and other water bodies could potentially support a diverse range of species. Although historic records exist of water voles, the habitats on site are no longer suitable. They could be made suitable through the proposed landscape design.

6.5.5 The Coton Footpath hedgerow, the woodland edges and existing trees are likely to attract small birds which utilise them for nesting and feeding.

6.5.6 The habitats to the south west of the site are dominated by arable fields with small woodland blocks and hedgerows. These play an important role in connectivity to the wider habitats.

Infrastructure

6.5.7 The site has an existing network of roads, drainage and utilities infrastructure that is proposed to remain in place. Waste will be reduced by reusing these networks where possible.

6.5.8 There is already an extensive surface water drainage network that utilises a range of SUDs storage structures discharging to Washpit Brook to the north and to Coton Brook to the south. The proposed modifications of the on-site southern water bodies will provide additional capacity.

Sustainable drainage

6.5.9 More than two thirds of the site is drained into the existing water bodies on the site: the West Lake, the East (Payne's) Pond and the Canal.

6.5.10 The opportunities to build sustainable drainage methods in to this network, such as roadside swales and retention ponds, have been explored.

Energy Strategy

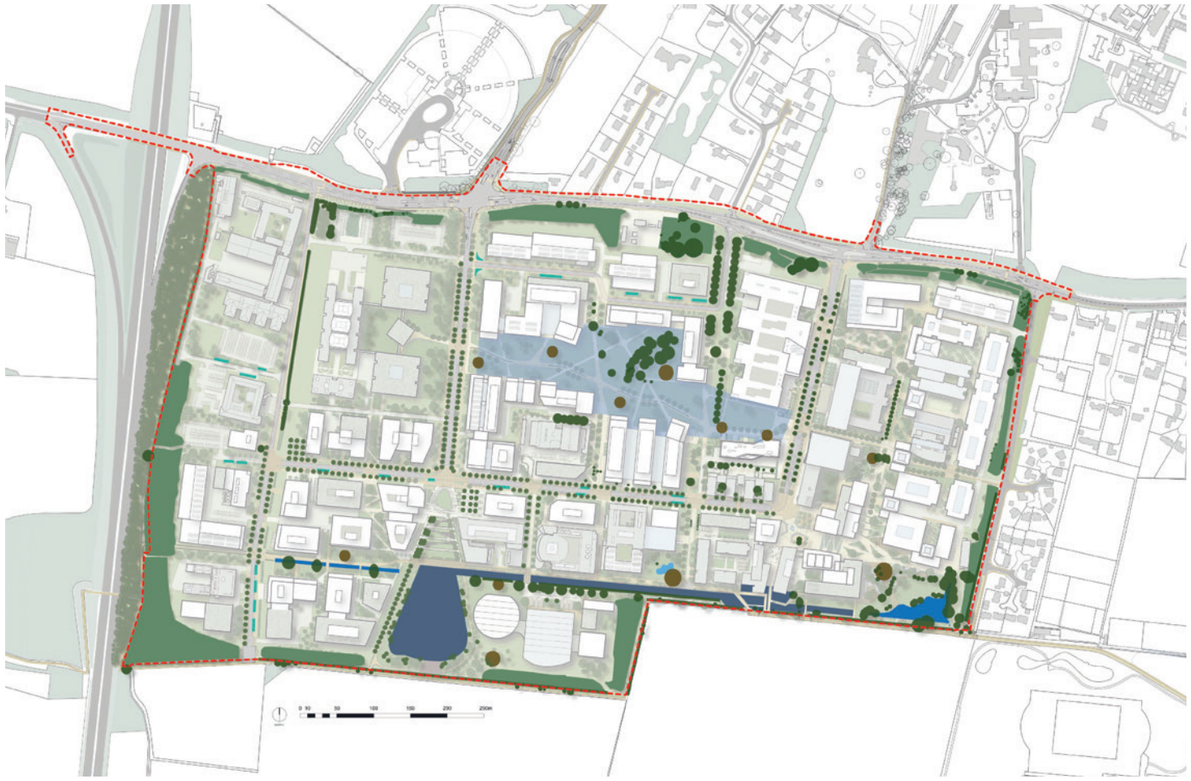
6.5.11 A preferred Energy Strategy has been produced for the site and this includes a site wide heat network and energy centre.

6.5.12 However, there are ongoing concerns about the opportunity to export electricity from the site and how this will affect the viability of proposals for an energy centre based on CHP, and provision of PV panels, as well as the recognition that fossil gas CHP may not be a low carbon solution in the medium term.

6.5.13 It has been agreed that the Energy Strategy should include the principle of hierarchy of approach so now explores options including:

- A fully site wide approach exploring different energy solutions within the site;
- An approach based on clusters or precincts linking several buildings;
- A building by building approach.

Ecology and bio-diversity

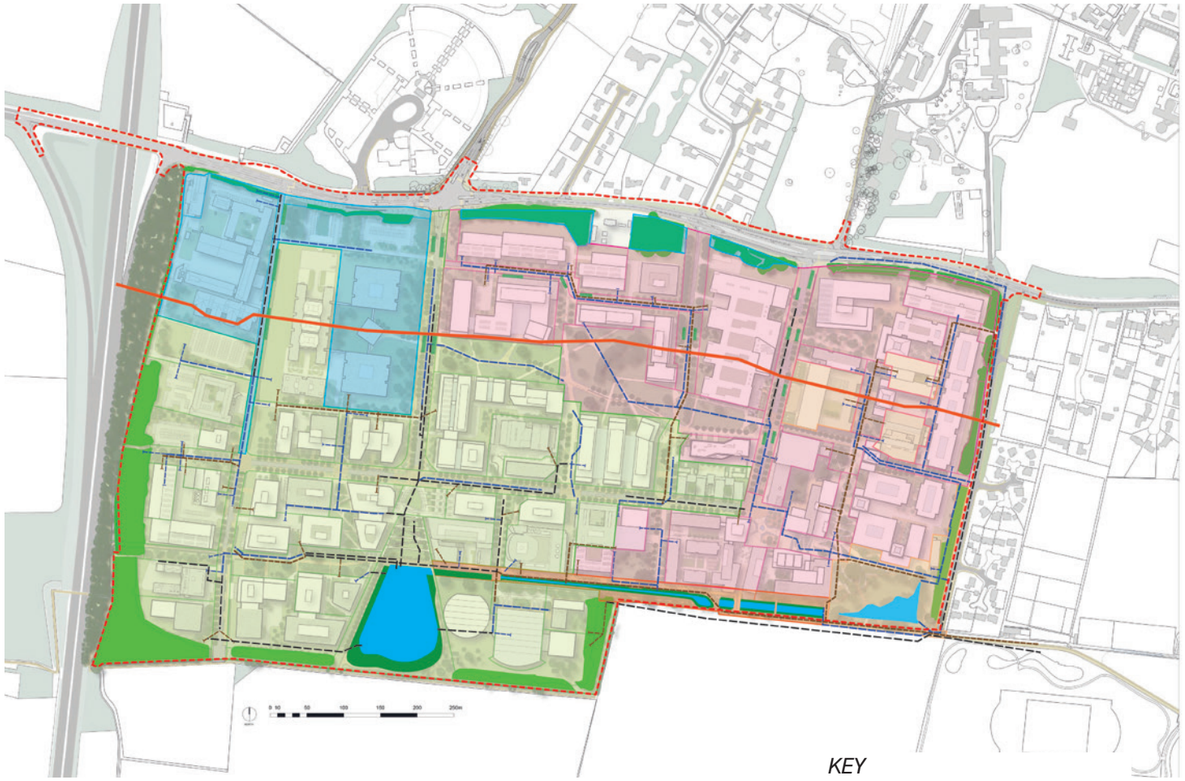


248. Ecology and biodiversity network

6.5.14 Key existing elements of the site will be retained and reinforced to improve habitats such as the Southern Ecological Corridor and the woodland edges:

- The new profile of the Canal and West Lake, which will be modified to increase drainage capacity, will maximise ecological value by providing a variety of physical habitats and maintain a permanent water level. Hard engineering structures along the banks of these surface water bodies will be minimised with preference given to softer natural banks planted with species to maximise ecological value;
- Existing woodland buffers will be improved in accordance with the 'West Cambridge Masterplan Woodland Management Plan' to ensure that existing wildlife corridors are maintained and improved;
- Existing mature trees will be retained within the site and new planting will be designed to reinforce the ecology of the site, including the introduction of additional trees that can grow to maturity.

Drainage strategy

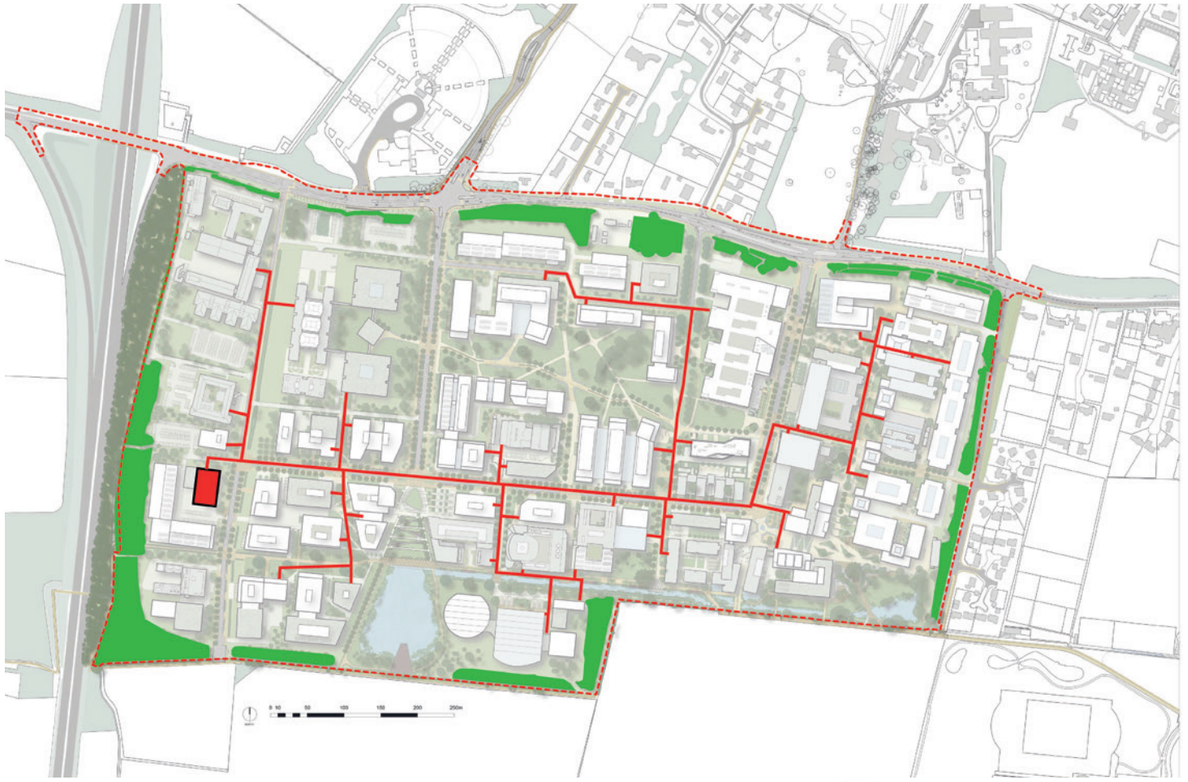


249. Sustainable Drainage Strategy

6.5.15 The topography of the site falls from the existing watershed line that runs east/west through the centre of the site. Surface water to the north of the watershed line is directed to Washpit Brook to the north of Madingley Road and south of the line it is directed via the Southern Ecological Corridor to the Coton Brook. Key drainage principles include:

- Opportunity for road-side rain gardens to High Cross, JJ Thomson Avenue and Western Access Road;
- Opportunity for SUDs conveyance systems along the north-south Green Links;
- Modifications to the existing lake, pond & canal to provide additional capacity, by lowering flow controls;
- Tanked permeable paving to be used for surface water collection;
- Opportunity for water features within The Green to create landscape features.

Energy Strategy



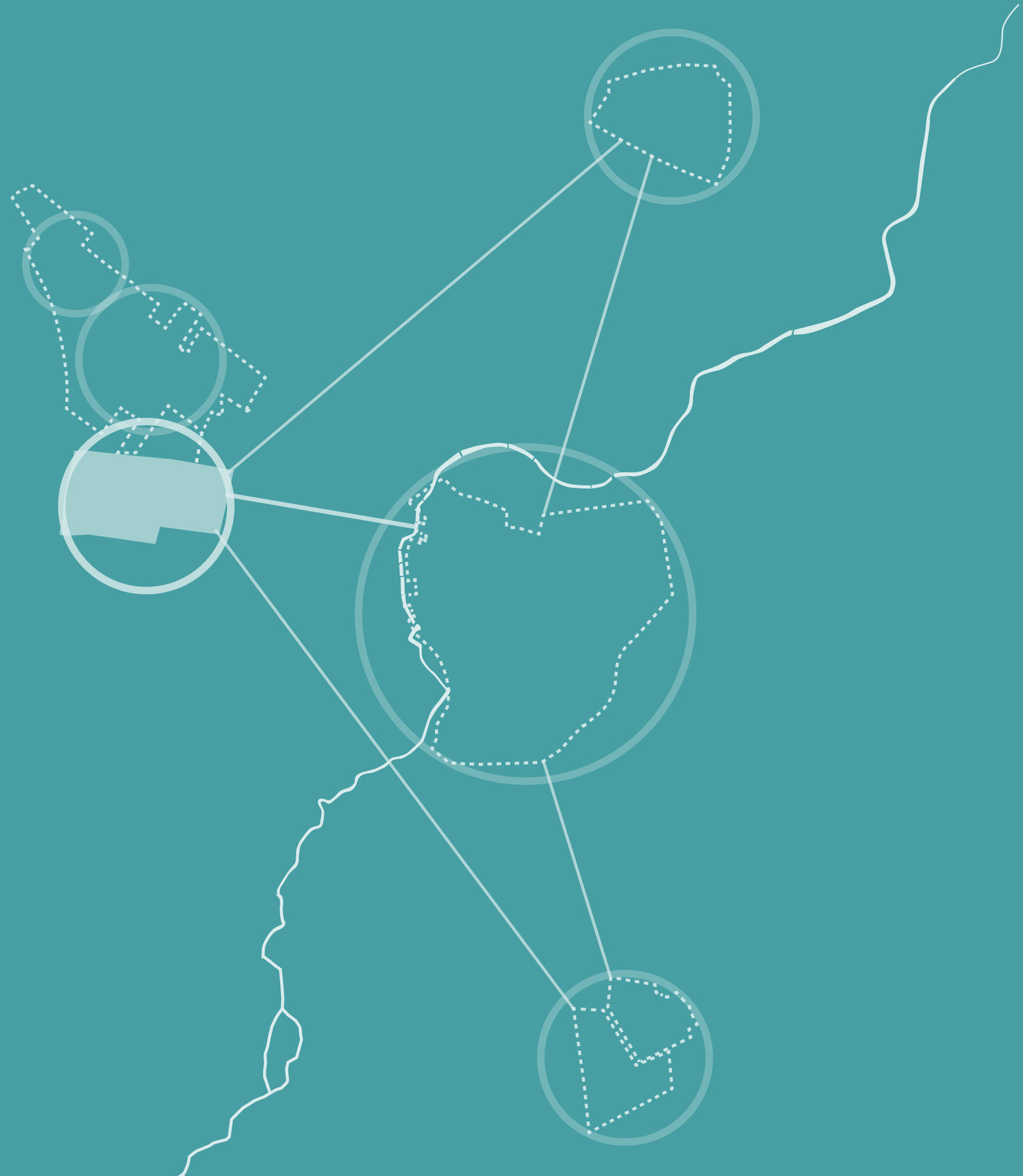
250. Preferred Energy Strategy - Site-wide District Heating Network

6.5.16 The preferred energy solution proposes a site wide CHP network and an energy centre delivering most of the required heat. Whilst the site wide CHP network remains the preferred solution, it is important to prepare for the possibility that it may not be deliverable. Other solutions that have been explored are:

- **The cluster or precinct solution**: which recognises the benefit of linking a number of buildings together. There could be options to serve these clusters either with gas CHP, air source or ground source heat pumps;
- **Building by building solutions**: this approach may make sense for some particular buildings which are further away from others and have very low energy demands. Again there could be options to serve these buildings with CHP, air source or ground source heat pumps.

6.5.17 In the event that a cluster based solution is adopted, the analysis suggests that this would mean a shift to heat pumps and could retain a mix of air and ground source systems to provide maximum flexibility.

6.5.18 The eventual solution could be a mixture of these, as appropriate to the different clusters.



ILLUSTRATIVE MASTERPLAN

B2

B1 Illustrative design principles

B2 Illustrative masterplan

Illustrative masterplan
Illustrative phasing
Masterplan setting

B3 Transformation of key spaces

7. ILLUSTRATIVE MASTERPLAN

7.1. Illustrative masterplan

The potential of West Cambridge

7.1.1 The Illustrative Masterplan shown in Figure 252 provides a clear indication of the potential at West Cambridge. This indication of a different future for West Cambridge describes a gradually evolving new place which builds on the ethos and intention of the existing consented masterplan; incorporates existing elements and buildings; and forms a coherent urban structure connected and integrated into its existing and emerging context. The previously described approach to land use distribution, density, movement, public space, landscape and distribution of amenities has been developed to form a new site character which will change current perceptions, enable increased activity, encourage interaction between users, developing routes to knowledge transfer and eventually to commercialisation of knowledge.

Responsive to University need

7.1.2 A high quality environment of buildings, landscapes and public spaces, as indicated in the Illustrative Masterplan, will support the requirements of West Cambridge community well into the future. The more intensive use of the site will improve the viability of amenity spaces and sustainable transport provision, so making the site more attractive to potential users and occupiers, but also increase interaction between site users.

7.1.3 The increased interaction between commercial research and academic users is key to the University's development strategy, and the West Cambridge site provides an almost unique opportunity to bring benefits by securing the existing research institutes at West Cambridge; providing for the University's spin-out businesses and those businesses that it wishes to work with and support; and increasing mobility and interaction across the University and the city.

7.1.4 The development at North West Cambridge provides a new context for West Cambridge and offers synergies between the two sites. Strong physical and visual connections have been formed between the two developments with the intention that together, these two sites will form a greater University orientated urban quarter for the city, which not only provides homes for staff and students, but provides wider and more diverse local working, learning and employment opportunities.

Responsive to context

7.1.5 The Illustrative Masterplan demonstrates how the new character and density of the site can be integrated sensitively with its surrounding context. Massing has been carefully moderated at all the edges of the site and strategies have been employed to promote variation and interest in the skyline, within the central, taller areas. The architecture framework sets out a character for the site which both builds on existing development and indicates a softer architectural character. Landscape planting has been employed to soften development, such as the retention and reinforcement of the woodland buffer; the introduction of major new green spaces; and the creation of open spaces that will allow trees to grow to maturity. There is a strong emphasis on greener, informal spaces within the masterplan, and both new and existing spaces have been developed to incorporate existing mature trees and other landscape elements allowing greater biodiversity and visual interest.

Gradual transformation

7.1.6 Although low in density and with dispersed amenities, the existing site already has a significant amount of development. The key open spaces and infrastructure are already in place, establishing the urban structure as defined in the 1999 masterplan. Many of the buildings are of exceptional quality, loved by their users and are well functioning spaces for learning and research. However, the lack of overall critical mass and footfall, low and uneven density and consequent lack of shared amenities have resulted in a poor perception of the site.

7.1.7 The intention of this Illustrative Masterplan is to show how these issues could be addressed from the outset and to propose an illustrative scenario for gradual improvement of conditions on the site.

7.1.8 The Illustrative Masterplan provides one scenario for gradual growth and intensification of academic and commercial uses, population and amenities. The aim of this sequence is to show the opportunities for site improvements that are deliverable in early stages, and to follow with further interventions which are dependent on larger relocations, such as the Cavendish Laboratory or the Veterinary School.

7.1.9 The early stage developments demonstrate that the masterplan can accommodate the University's most immediately needed developments (Priority Projects), while also illustrating through the later stages of development, the ultimate potential of the site.

251. West Cambridge Masterplan - View of the West Forum (West Lake)

KEY

- *NEW DEVELOPMENT*
- *EXISTING BUILDINGS RETAINED*
- A *EAST FORUM SPACES*
- B *EAST POND*
- C *WEST FORUM SPACES*
- D *WEST LAKE*
- E *THE GREEN*
- F *SOUTHERN ECOLOGICAL CORRIDOR*
- G *SHARED FACILITIES BUILDINGS*
- H *ENGINEERING DEPARTMENT*
- I *CAVENDISH III LABORATORY*
- J *ACADEMIC DEPARTMENT*
- K *COMMERCIAL LED DEVELOPMENT*
- L *SCHLUMBERGER BUILDING*
- M *BRITISH ANTARCTIC SURVEY*
- N *SPORTS CENTRE*
- O *DATA CENTRE*
- P *PARKING STRUCTURES*
- Q *ENERGY CENTRE*
- R *CIVIL ENGINEERING BUILDING*

252. West Cambridge - Illustrative Masterplan 2019

7.2. Illustrative phasing

Incremental development of West Cambridge

253. Aerial view of Existing Site Condition

254. Aerial view of Phase 1: Priority Projects

Existing Site

7.2.1 The site already has a number of high quality buildings in place, as well as roads and key open spaces, such as the East **(A)** and West Forum **(B).**

7.2.2 Higher density academic developments are located along southern edge **(C)**. The low density Veterinary School **(D)** occupies the central part of the site, and the existing Cavendish Laboratory complex occupies the south eastern corner **(E)**.

Priority Projects

7.2.3 The University aims to deliver noticeable improvements from the earliest stage of development. The key capital project at this stage is the new Cavendish III Laboratory, the development of which will be joined by delivery of shared teaching and catering facilities to the south and will be used as a catalyst for improvement of existing and formation of new open spaces.

7.2.4 This stage of development is envisaged to include:

- Over 85,000m2 of departmental academic space, including Cavendish III Laboratory **(A)** and the Department of Engineering's initial phases **(B);**
- First phase of shared facilities **(C);**
- Reinforcement of existing facilities to form an Entrepreneurship Hub at the East Forum, with innovation and scale-up centres **(D);**
- Approximately 50,000m2 of commercial research development at the Western Cluster **(E);**
- Potentially, a multi-storey car parking structure **(F).**

255. Aerial view of Interim Condition

Interim Condition

7.2.5 This interim condition follows after completion of priority projects and clearance of the current Cavendish site. It shows developments not dependant on relocation of Veterinary School.

- Completion of the East Forum, with additional shared facilities and new public realm **(A);**
- 18,000m2 of departmental academic space, with expansion for Department of Engineering **(B)**, as well as possible expansion for Material Science and Metallurgy **(C)** and Chemical Engineering and Biotechnology **(D);**
- Further 38,000m2 of commercial research development and near-completion of the Western Cluster, with possible Innovation Centre to the north of West Forum **(E);**
- Nursery **(F);**
- An additional multi storey car parking structure **(G).**

256. Aerial view of at Full Capacity

Full Capacity

7.2.6 The relocation of Veterinary School would allow for:

- Over 60,000m2 of departmental academic space, with more academic space **(H)** and possible expansion space for Cavendish III Laboratory **(I)**;
- The Green completed in entirety and including the central cycling and pedestrian route linking site East-West **(J);**
- An additional multi storey car parking structure **(K).**

7.2.7 The final stage could include:

- Over 80,000m2 of academic and commercial development in the former paddocks area **(A)** and in the Western commercial cluster **(B);**
- Completion of sports centre **(C);**
- This would be supported by an additional car parking structure **(D)**

257. Existing Site Condition

258. Phase 1: Priority Projects

259. Interim Condition

260. Full Capacity

7.3. Interim activities

Interim activities & programme testing

7.3.1 As West Cambridge develops there is opportunity within the site to begin to meet the needs of present users and those newly arrived. There is a pressing need to bring activity and interest and to start building a new place within the city. The role of interim activities and meanwhile uses on vacant plots and spaces is vital to begin to redefine the perception of the site.

7.3.2 The transitional plots (for example, the areas vacated by the Veterinary School once relocated) could be used for interim activities and also as means to determine what kind of programmes are successful and should be permanently provided in some of the public open spaces which are due to be delivered in subsequent phases. In addition, there are spaces around the Sports Centre that could be occupied in an interim condition until the later phases of the building are implemented.

7.3.3 The interim activities will introduce vibrancy and serve as vehicles for socialisation from the early stages of the project.

7.3.4 The activities listed below are based on ideas from benchmark studies, but the interim uses could also be informed by community participation and/or local idea contests. Activities of wider appeal could be considered, that would bring people from outside the site and help integrate the site better into the city.

7.3.5 Interim activities could include:

- Recreation: informal kick-about areas, table tennis or petanque (boules), giant chess, workout stations;
- Services: bike servicing or Dr Bike;
- Food and beverage: food vans, pop up stalls and coffee points;
- Family programme: science fairs and workshops for adults and children.

7.3.6 Interim activities could serve as a testing ground for public realm uses which could continue into future on a temporary or periodical basis, such as street fairs, festivals and markets. Together with innovation spaces (such as ideaSpace) and prototype workshops, these informal, but knowledge and science oriented activities could help develop an identity that is complementary to the historic centre, and experimental and informal.



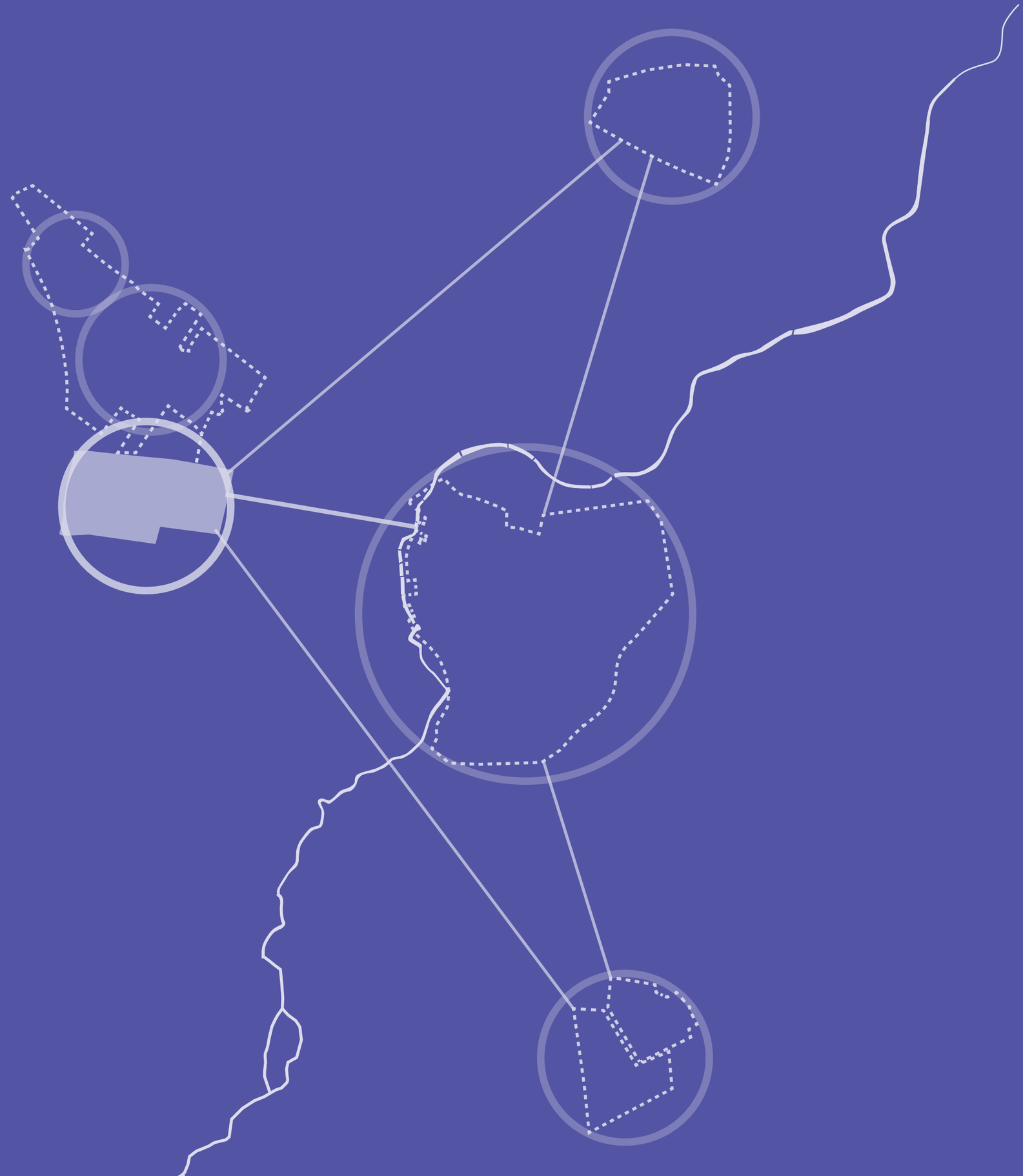






261. Interim Activities

262. The West Cambridge Masterplan - view of The Green open space



TRANSFORMATION OF KEY SPACES

B3

B1 Illustrative Design Principles

B2 Illustrative Masterplan

B3 Transformation of Key Spaces

Key places
Streets and Green Links

8. TRANSFORMATION OF KEY SPACES

8.1. Key places

Key plan

West Forum spaces

8.1.1 The West Forum is one of two primary urban public spaces and forms a focus for activity for the west of the site. This space is a key element retained and brought through from the previous masterplan.

Role in the Masterplan

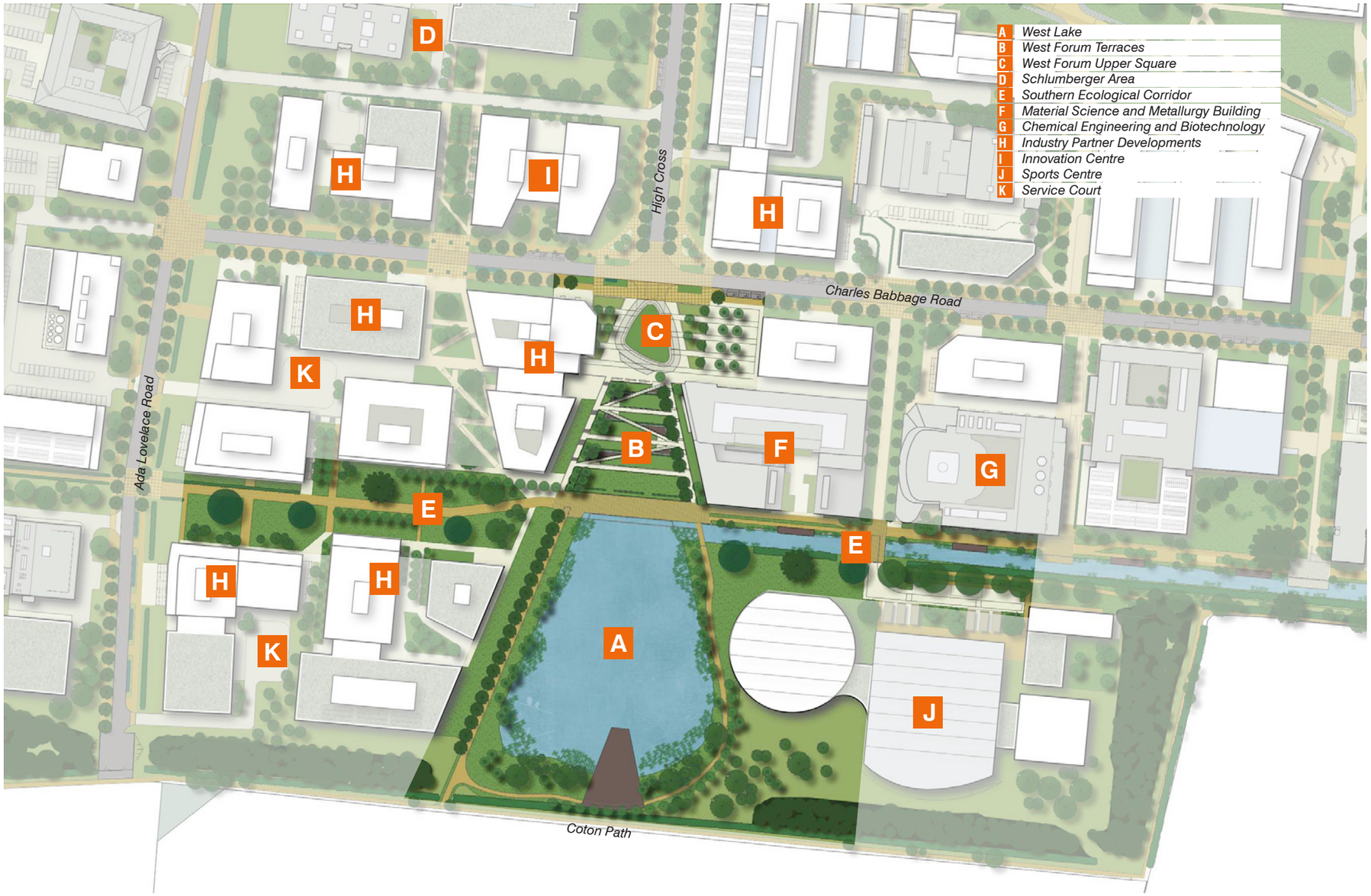
- The space will be transformed to become the focus of the Commercial Research cluster to the west of the West Cambridge site;
- An arrival space for the west side of West Cambridge - forms the termination of High Cross and so links directly to the North West Cambridge Development, and specifically its Local Centre.

Surrounding uses

- The focus for commercial research, community and social spaces - located directly on or adjacent to the squares are the sports centre, active uses such as cafés, entrances to commercial buildings and a proposed Innovation Centre;
- Existing academic buildings form the eastern frontage to the space;
- It forms the key gateway to the commercial research use cluster located west and north of the Forum;
- Consisting almost entirely of new build floorspace, the commercial research buildings will form a new western frontage of the West Forum spaces.

Movement

- The West Forum consists of a series of linked pedestrian only spaces: Upper Square, West Forum Terraces and West Lake;
- Bus routes and stops are located adjacent to the Upper Square, and there is potential for the future Arc route bus stop to be located close-by;
- Car drop-off for visitors is accommodated in the Upper Square;
- A key existing strategic east-west cycle route runs through the space along the Southern Ecological Corridor - between the West Lake and West Terraces.



263. The West Forum spaces

Key plan for section

Scale of spaces

8.1.2 The scale of the West Forum spaces are influenced by the existing spaces and buildings, including the West Lake and the terraced landscape. The terraced landscape will maintain its dimensions (about 50x50m) and the lake area will be slightly enlarged, to about 170x155m.

8.1.3 Proposed development to the west will provide new frontage and enclosure as well as bring a new activity to the spaces. The Upper Square will form an arrival point and new development will restrict the space to approximately 40x90m in size. Care is taken to maintain views to the southern countryside while providing shelter from wind and noise.

Description of West Forum spaces

- The West Forum is a sequence of spaces, negotiating the topography of this part of the site, with the three spaces located on different levels and stepping down towards the Southern Ecological Corridor and the lake;
- New development introduces enclosure and active frontages to the western side of the space;
- Distant views over the southern countryside are provided from the Upper Square and the West Forum Terraces;
- The existing woodland is retained and reinforced to create a sense of enclosure to West Forum and provide a backdrop for West Lake.

8.1.4 The **West Forum Terraces** is a landscaped space that provides views over the lake and a stepped and ramp connection to the two main public spaces - the Upper Square and West Lake.

8.1.5 The **Upper Square** develop a foreground for the lakeside in the form of informal meeting areas and a vehicular drop off square.

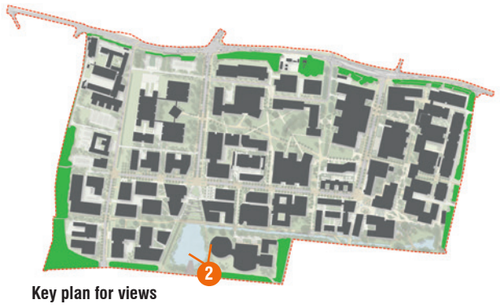
8.1.6 The third space, **West Lake**, is a revitalised green space around the existing lake - pedestrian access is allowed to the edges of the lake and active uses front onto the lake on the new western frontage creating a space for connecting with nature.

265. Queen Elizabeth London Olympic Park

Steps and terraces work as informal gathering spaces in London Olympic Park to negotiate the level difference as the land slopes towards the canal

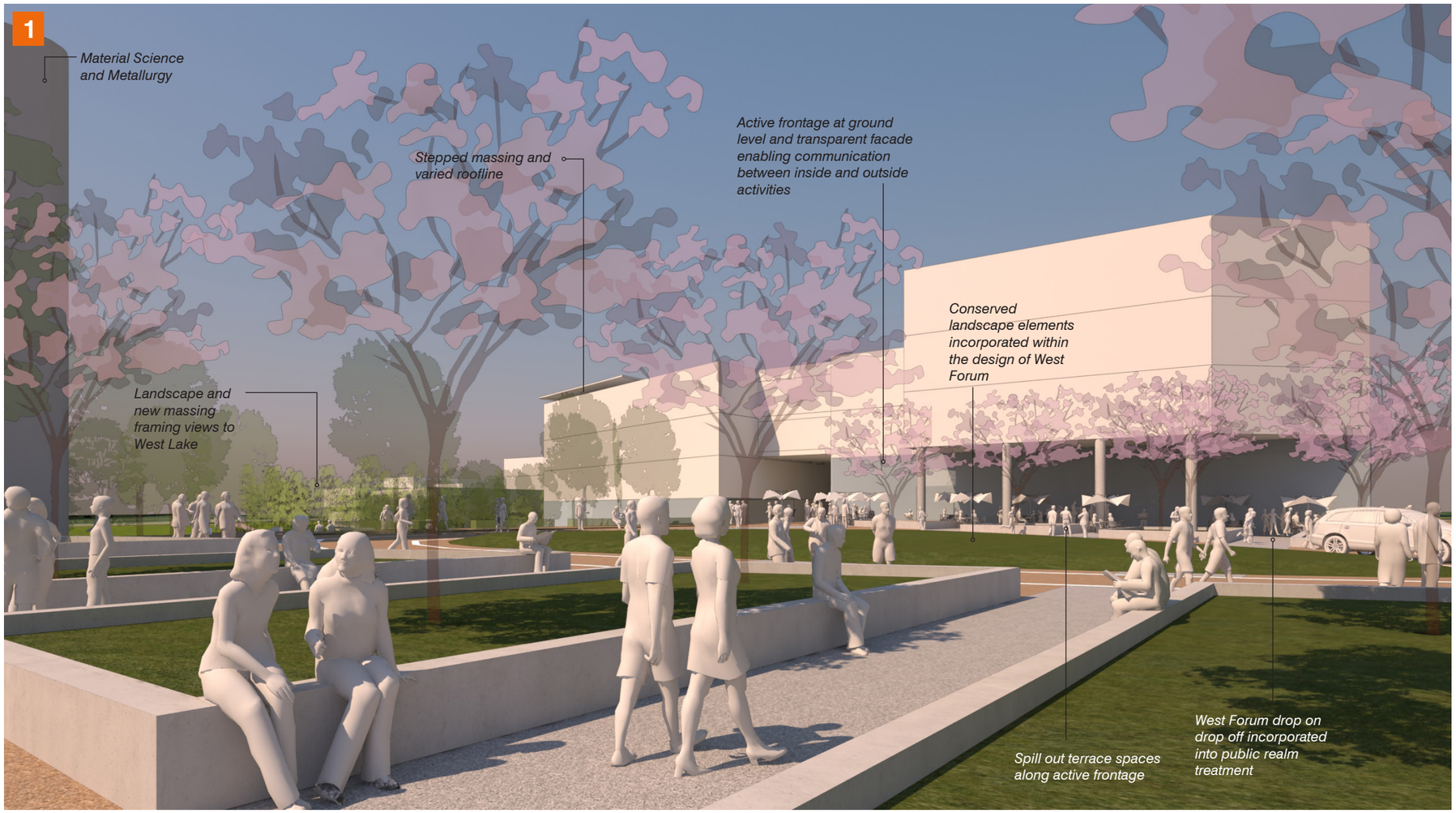
266. Queen Elizabeth London Olympic Park

264. The West Forum - section



Key plan for views

268. Precedents for the West Forum spaces

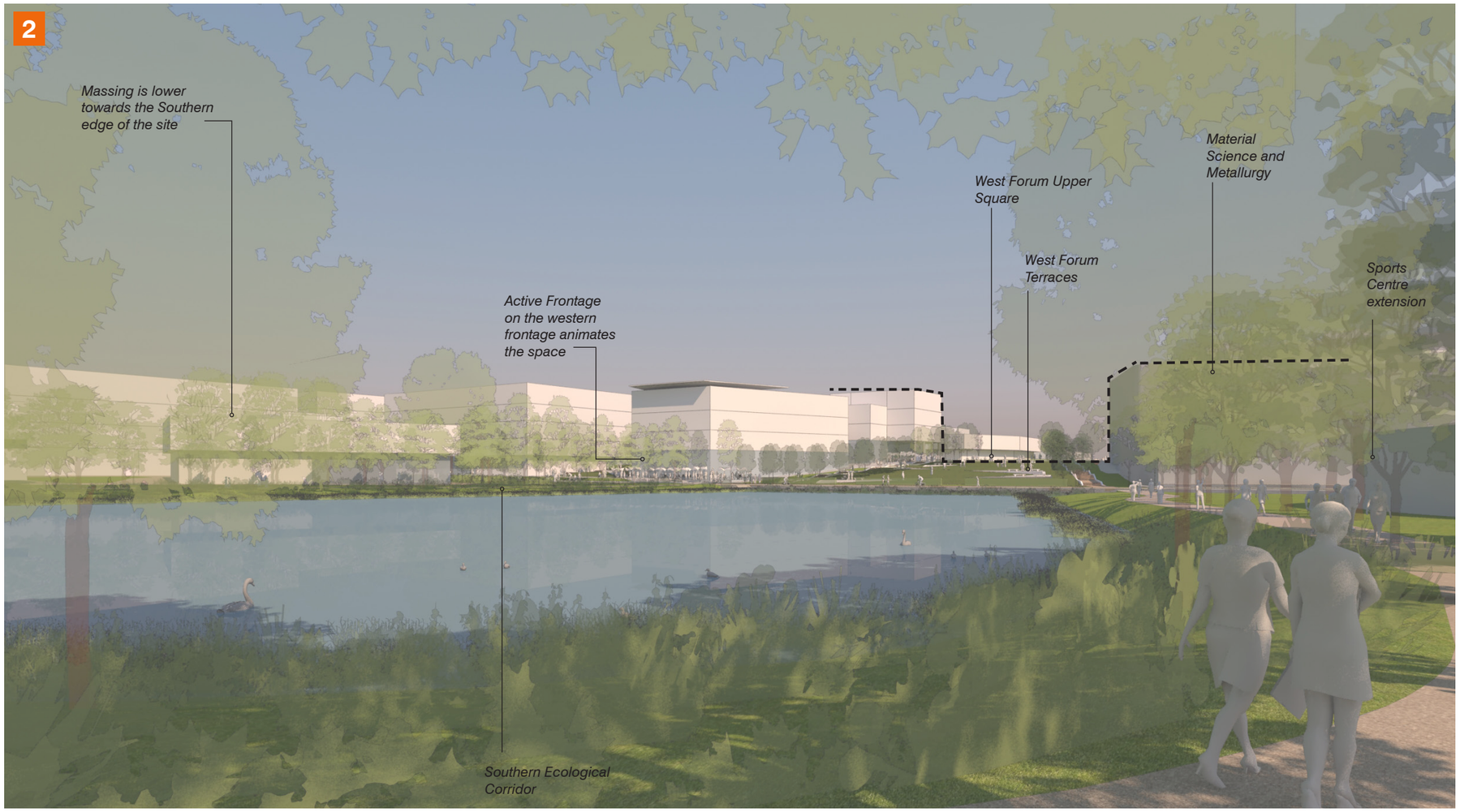


267. The West Forum spaces: West Forum Upper Square as viewed from Charles Babbage Road

Active uses and social spaces on the ground floors of commercial buildings facing the West Forum, ensure necessary active frontage and vibrancy to the open space. The Upper Square forms an important arrival point experience.

Key plan for views

270. Precedents for West Forum spaces



269. The West Forum spaces: view from south of the West Lake to other Forum spaces

The southern-most part of West Forum will be developed as a dense woodland area accessible via a jogging / walking path that provides a vantage point to enjoy the natural setting and view the active area of the West Terraces and new development frontage from across the lake.

East Forum spaces

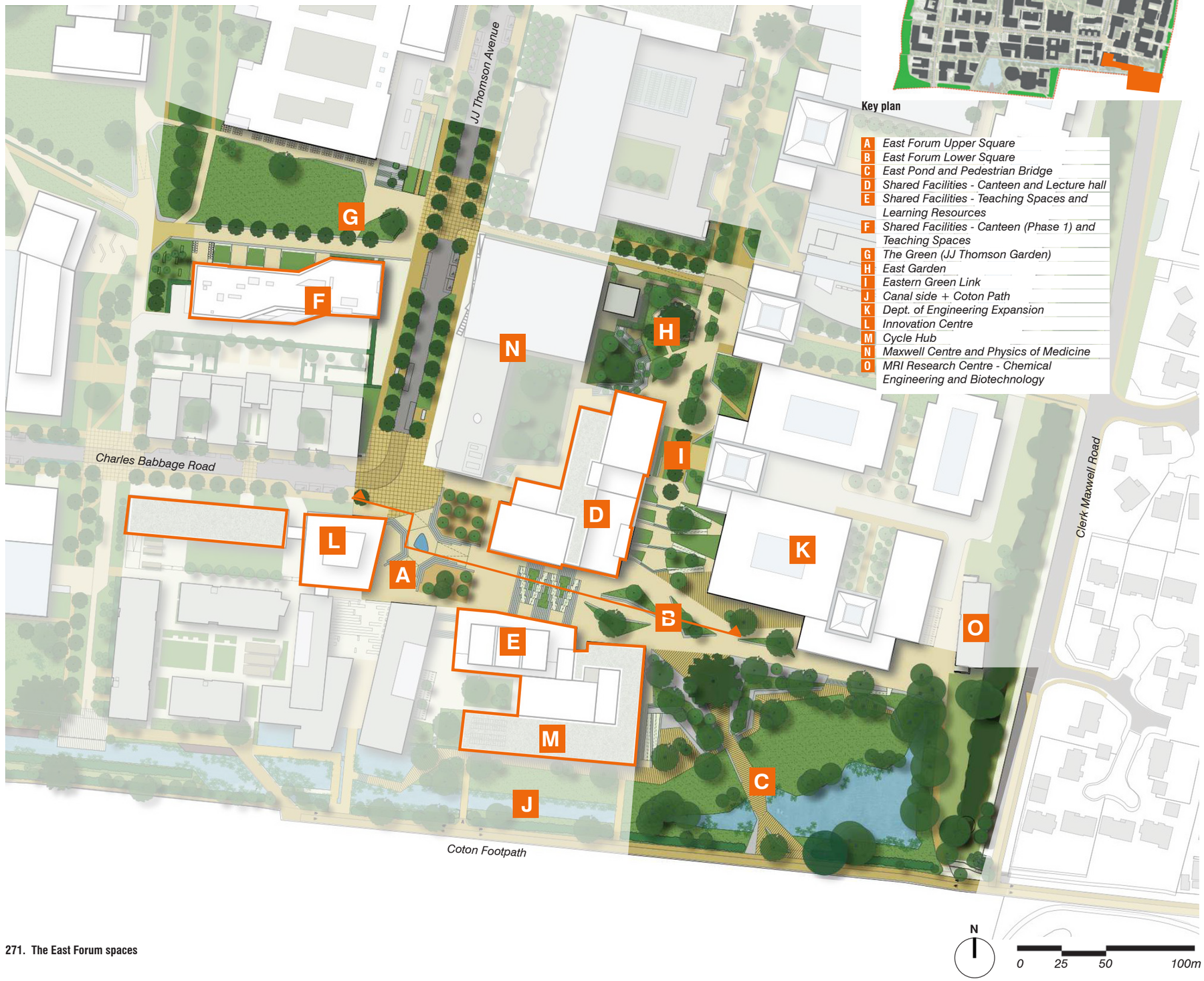
8.1.7 The East Forum is the second of two primary urban public spaces and forms a focus for activity for the east of the site. The East Forum forms part of the primary open space network and is one of key elements retained from previous consented masterplan.

Role in the Masterplan

- The space is transformed to become the focus of the Academic cluster to the east of the West Cambridge site.
- It is a new pedestrian route from the south-eastern corner of the site and connects the East Forum spaces to the Coton Footpath and Cambridge City Centre.
- As an arrival space from JJ Thomson Avenue it provides a key north-south link between academic clusters of West and North West Cambridge.
- Three distinct spaces are created: Upper Square (vehicular arrival drop off), Lower Square (student circulation) and East Pond (pedestrian arrival point from the city centre).

Surrounding land uses

- East Forum is a focus for shared facilities - located directly on the spaces are potentially, a canteen, a shared lecture theatre (potentially up to 500 seats - subject to further studies), other smaller lecture theatres, a library, as well as the potential for cafés and shops.
- These key shared facilities are located within two new buildings the Northern and Southern Forum Buildings.
- An Innovation Centre is located on the Upper Square.
- The spaces are a key gateway to the academic areas that lie to the north and west.
- An important visual link is established from the Upper Square towards The Green open space (JJ Thomson Garden) and the new Cavendish III Laboratory and Shared Facilities.
- Expansion spaces for the Department of Engineering provide new frontage and activity to The East Pond allowing this existing space to be an integral part of the new public realm.



271. The East Forum spaces

Movement

- The East Forum spaces are pedestrian priority spaces, envisioned as a series of connected spaces that link the Coton Footpath, East Pond, JJ Thomson Avenue and Charles Babbage Road.
- Cyclists are restricted and vehicular traffic not permitted: a key cycle hub is located to the south of space accessed from the Coton Footpath - one of the places within the masterplan where cyclists can dismount, safely store their bicycles and continue into the site as pedestrians.

Key plan for section

273. Bailey Plaza of Cornell University by Michael Van Valkenburgh Associates

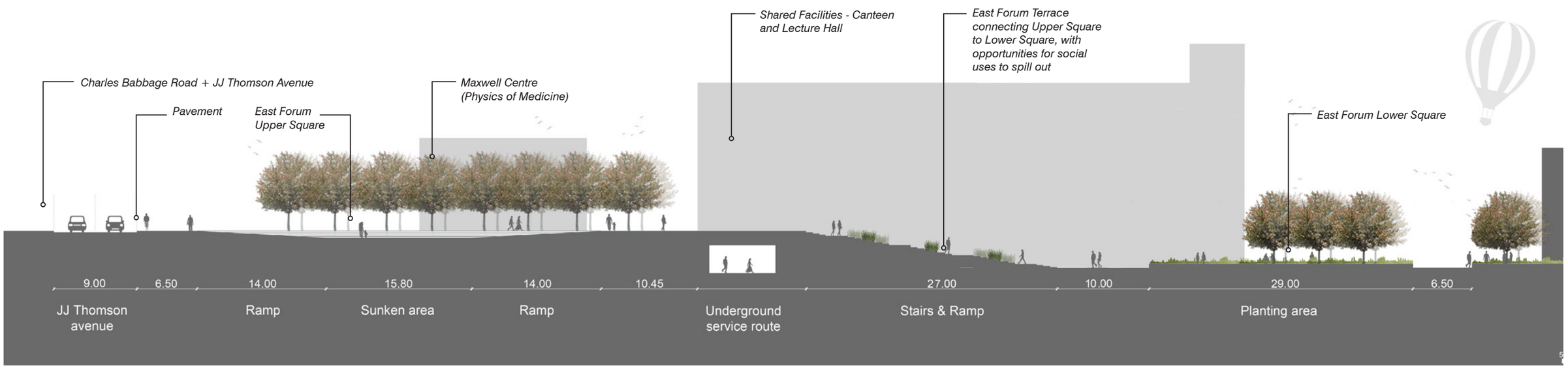
Open space being scaled by landscaped green islands, slopes and steps. The direction of paving material accentuates and highlights the plaza acting as a key open space of academic interaction.

274. Steps and Terraces of Kyusgu Shango University by Fukuoka-based landscaping company Design Network

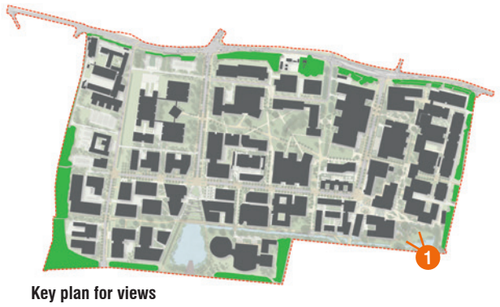
Stepped terraces and steps forming an amphitheatre and outdoor gathering space for students.

275. Erie Street Plaza in Wisconsin, USA by StossLU architects illustrating interspersed soft landscape and tree planting zones within paved circulation

Soft landscape can be interspersed with hard paving so as to scale down or articulate a space but at the same time ensuring necessary pedestrian circulation and movement.



272. The East Forum - section



Key plan for views

Description of East Forum spaces

8.1.8 Like the West Forum, East Forum is a sequence of spaces, which negotiate the topography at this part of the site, with each of the spaces on different levels stepping down from the Upper Square to the Coton Footpath.

- The **Upper Square** is an active urban and social space with informal meeting areas and potentially a vehicular drop off.
- The **East Forum Steps** are a series of landscaped steps and ramps that connect the Upper and Lower Squares.
- The **Lower Square** is the revitalised green space that incorporates the existing East Pond and connects the Forum spaces directly to the Coton Footpath.

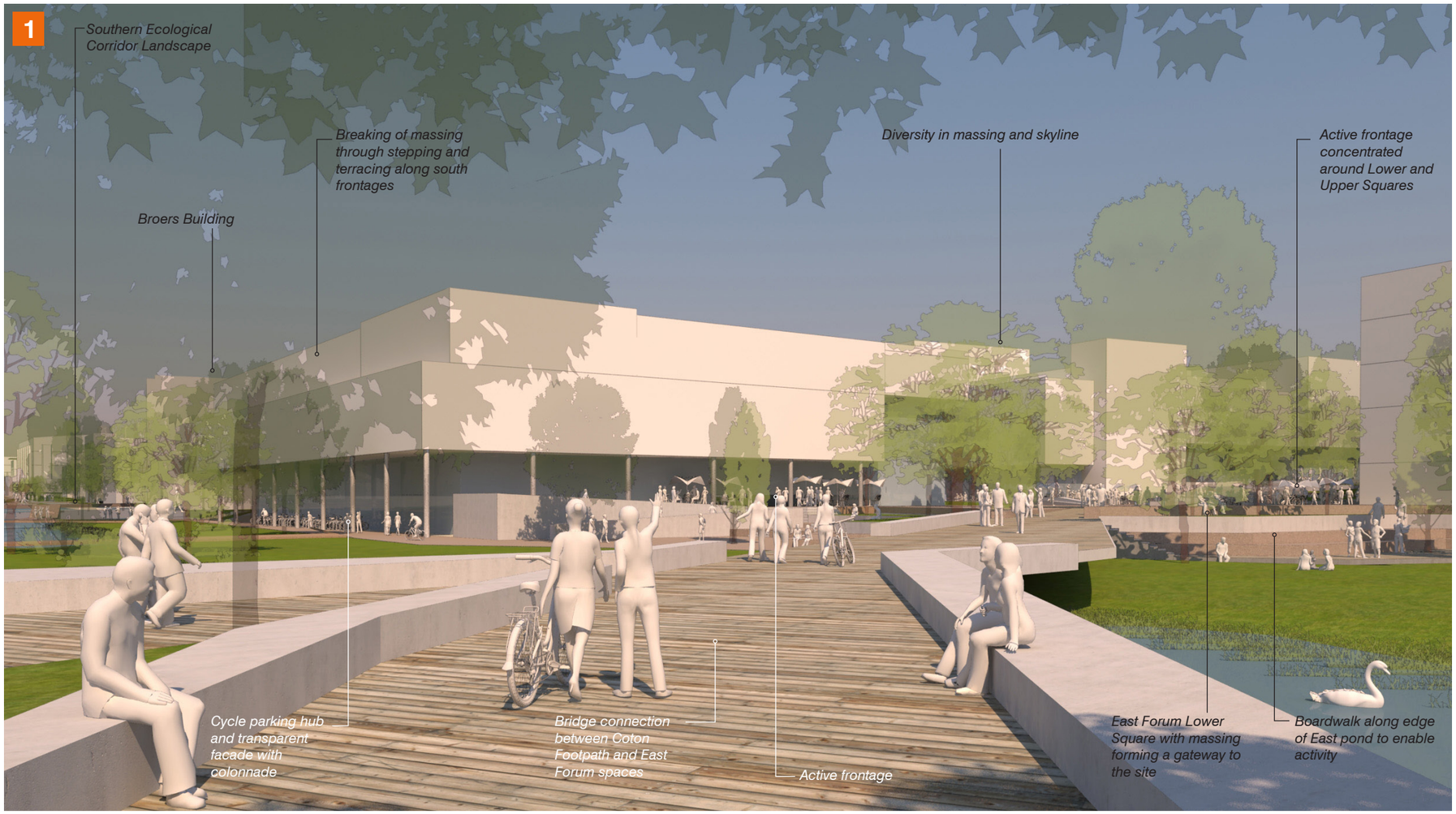
Scale of Spaces

8.1.9 Each of the spaces in the sequence forming the East Forum has been scaled in accordance with the envisioned character and purpose, and tested against relevant precedents.

8.1.10 The East Pond area is approximately 130x80m, providing space for the existing pond plus a green area for relaxation. This space is open towards the south so it borrows open views from the agricultural lands.

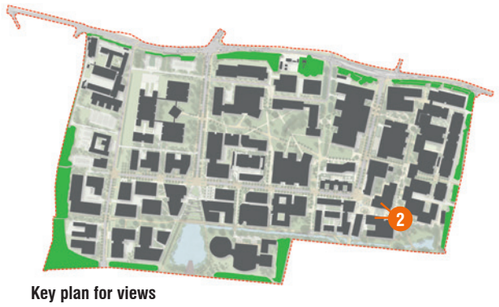
8.1.11 The length of the East Steps and Upper Square combined is around 120m, with Upper Square being around 60x60m. Such a size provides a more protected, defined space which is suitable for interaction and gatherings.

8.1.12 The Sidgwick site provides an example of academic buildings clustering around a series of walkable spaces.

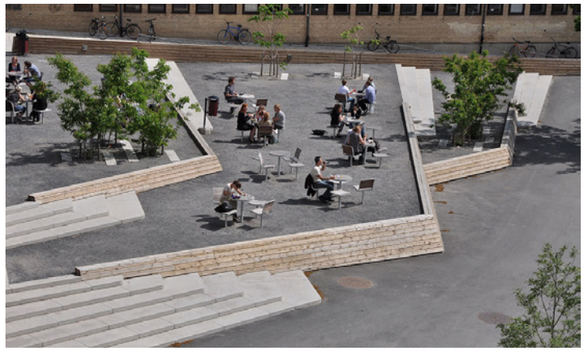


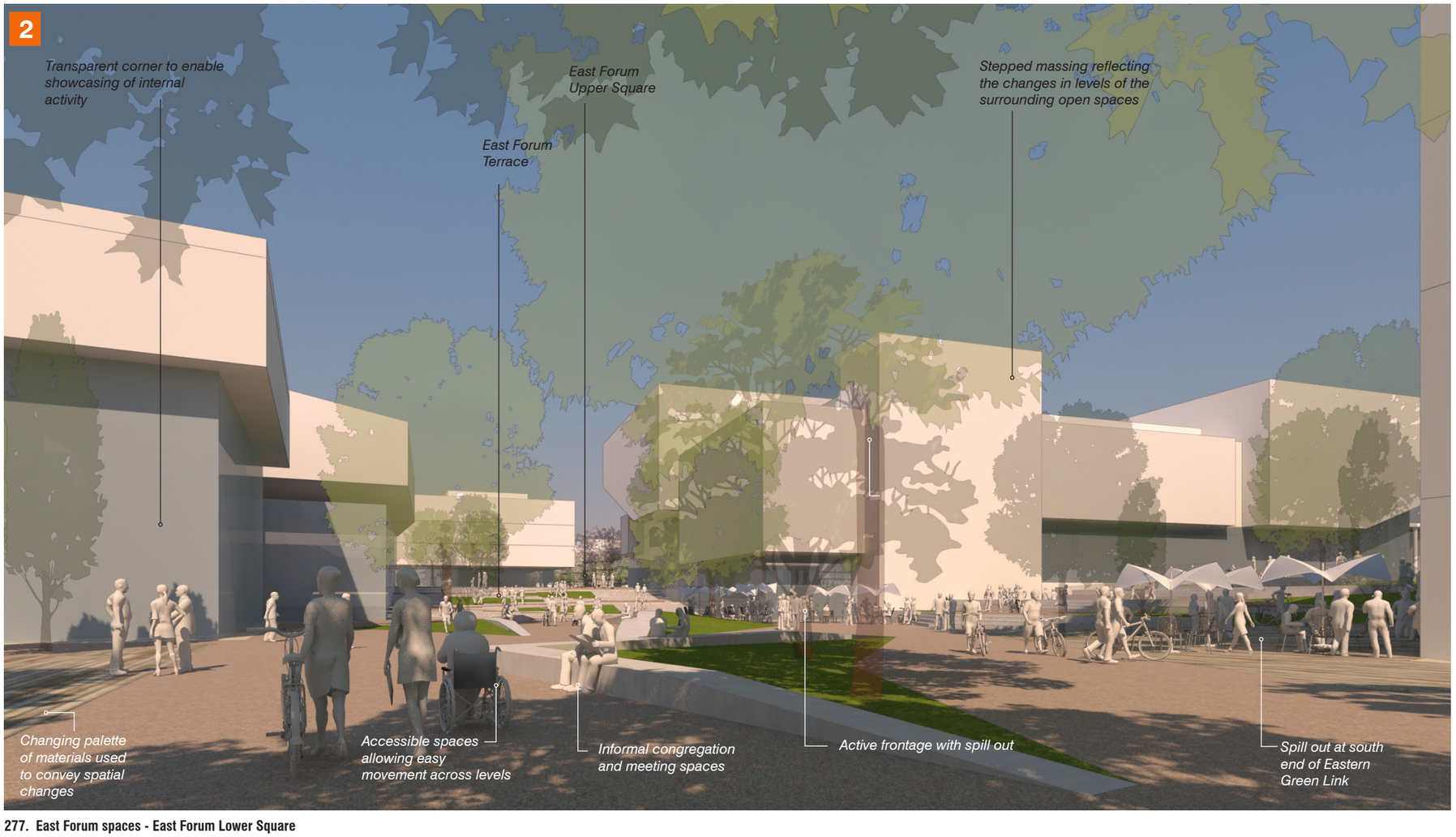
276. East Forum spaces: East Pond and southern gateway - view towards the East Forum from the Coton Footpath

The natural setting forms a serene arrival space for cyclists and pedestrians from the city centre. The views across the East Pond to academic life are framed by built form and landscape. This view shows how landscape elements could frame pedestrian circulation and guide it towards the East Forum.



Key plan for views



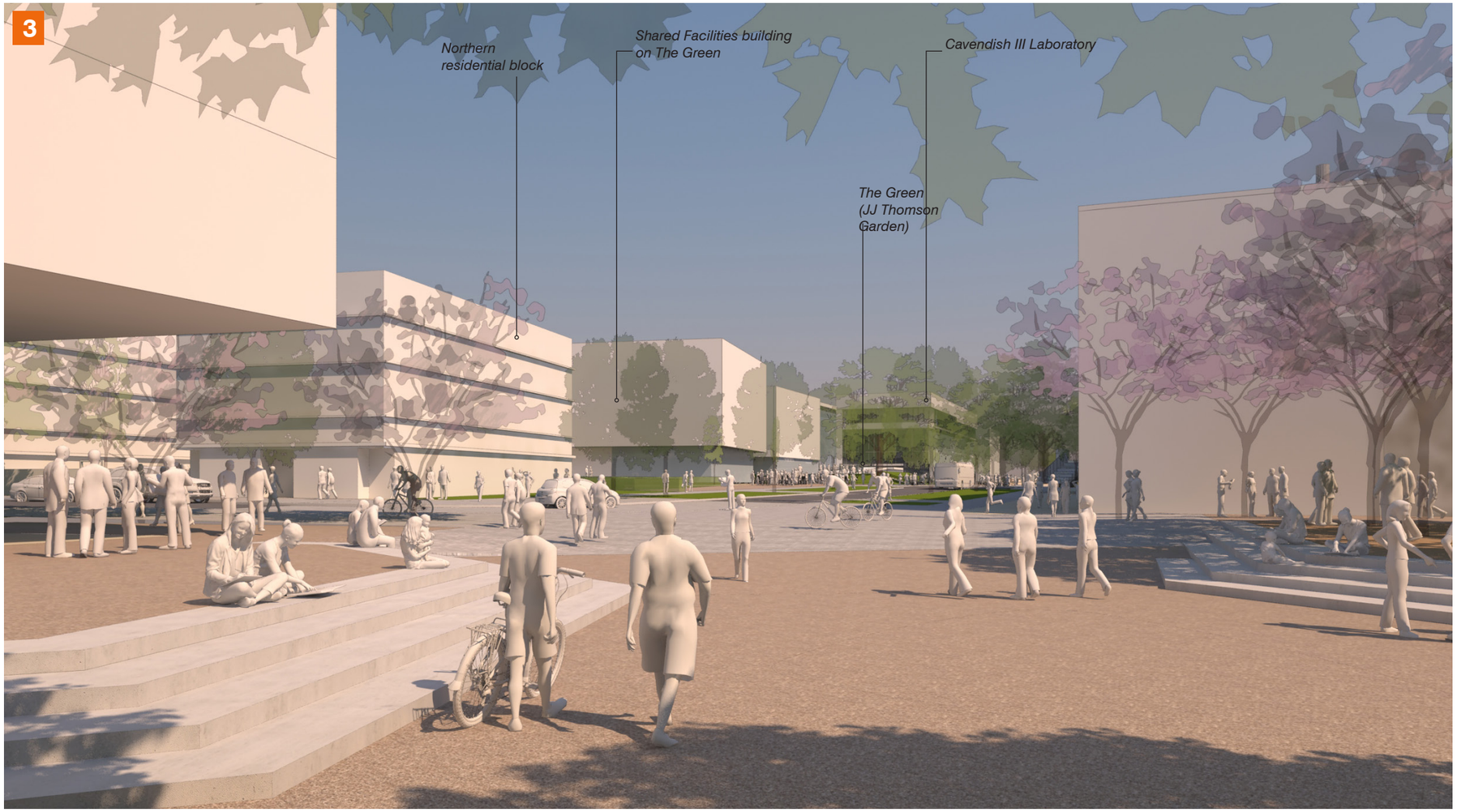


277. East Forum spaces - East Forum Lower Square

Key plan for views

Spatial sequence

- The existing East Pond is opened up and views allowed from Coton Footpath into a revitalised green space and the rest of the East Forum spaces.
- Key buildings form new active frontage that face south over the green space and East Pond. This provides active frontage and footfall through the space.
- A new pedestrian bridge over the East Pond provides a key link between the Coton Footpath and the East Forum spaces.
- The East Forum Steps connect the two main East Forum spaces, using the existing level change to provide interest and identity in this space.
- East Forum Lower Square will have highly active frontages and entrances to key uses such as the canteen and shared facilities.



278. East Forum spaces: Upper Square, view towards The Green and the new Cavendish III Laboratory

This view shows that the open space of The Green (JJ Thomson Garden) and a prominent corner of the Cavendish III Laboratory are visible from The East Forum Upper Square enabling these spaces to be visually connected and strongly link the site together.

The Green

8.1.13 The Green will provide much of the open space for informal recreation and contains one of the primary cycle and pedestrian linkages across the site. The Green is formed of a chain of Gardens, which together form a visual corridor that links east to west across the site and captures the views towards City Centre as well as the Listed Schlumberger Research Building, providing a new prominence for its characteristic roof line.

Character

8.1.14 The Green forms a strong east/west aligned open space formed by the proposed development. The positive visual and physical relationship between the built edges and the Green open space enables higher levels of natural surveillance. The east-west pedestrian and cycle link is aligned to strong desire lines and itself will generate activity and animation within the space.

8.1.15 A series of 'social hubs' can be created at the intersections with the north-south routes.

Materials

8.1.16 As The Green occupies an area of existing open meadow, the intent is to maintain a similar visual experience but to add variation and visual variance to the ground plane with native planting suitable to create enclosure and controlling the micro climate. Existing trees will be retained and new tree planting will be added to reinforce movement corridors, vistas and focal points.

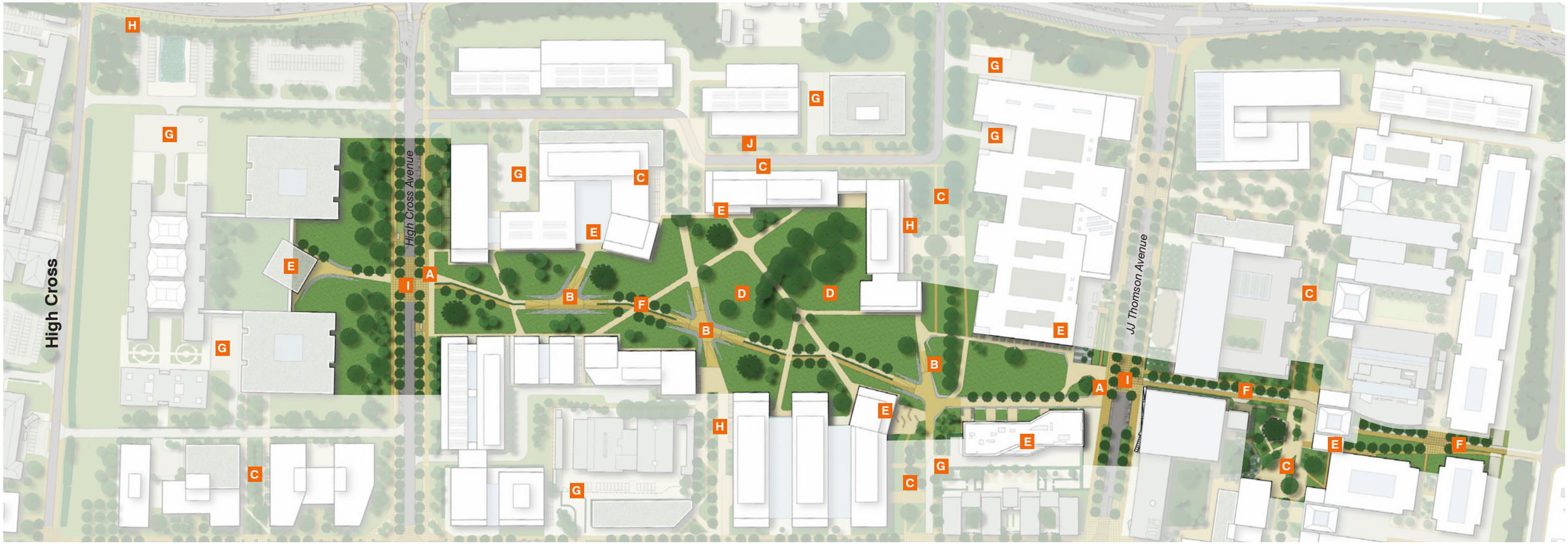
8.1.17 The Green will be predominately soft. Permeable paving will be used to minimise run off and where run off does occur it will be collected within bio-retention areas where possible for distribution to the wider surface water network.

8.1.18 The Green intersects and overlays with the existing streets JJ Thomson Avenue and High Cross. These points of intersection inspire a change in character and the streets move to a more pedestrian orientated environment, also serving to slow traffic and prioritise pedestrians.

279. The Green - section

Key plan for section

280. The Green - aerial view looking west



281. The Green - plan

- A Gateway
- B Social Hub
- C Green Links
- D Open Lawn
- E Shared Facilities/Social Spaces
- F Pedestrian/Cycle Route
- G Service courtyards
- H Covered Cycle Parking
- I Shared Surface to Crossings

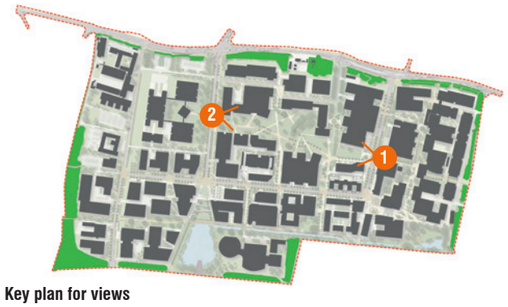
N

0 25 50 100m

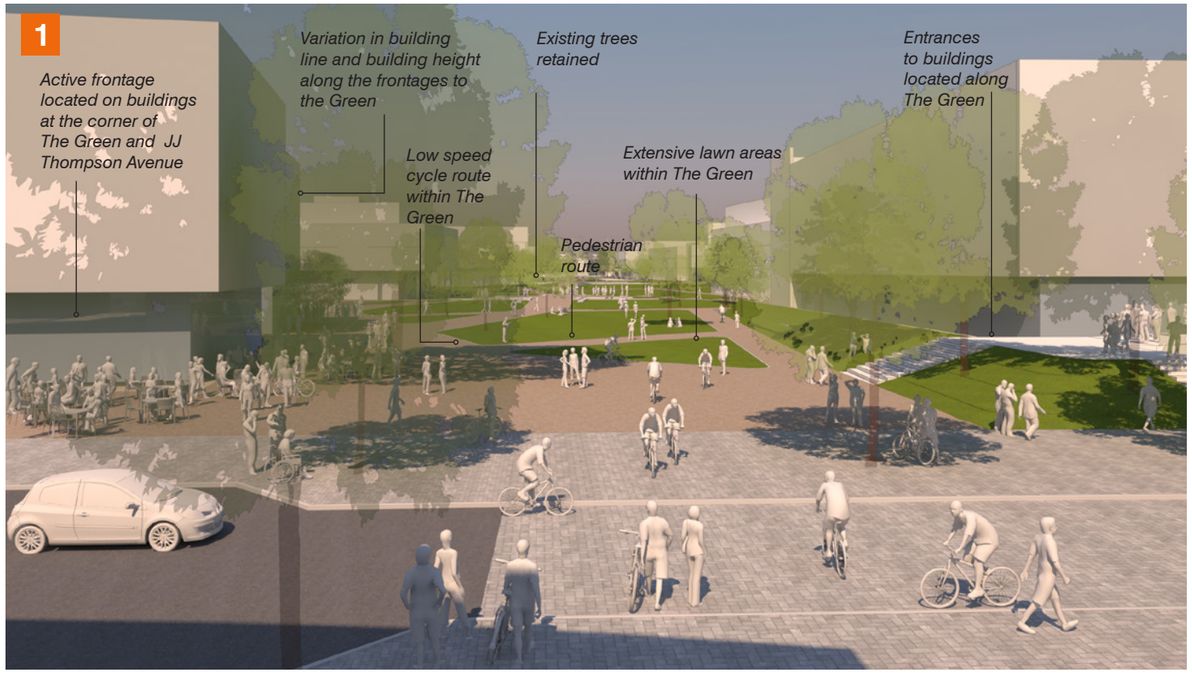
282. Landscape Reference - the Agrarian Landscape

283. Social Hub aerial View

Key plan

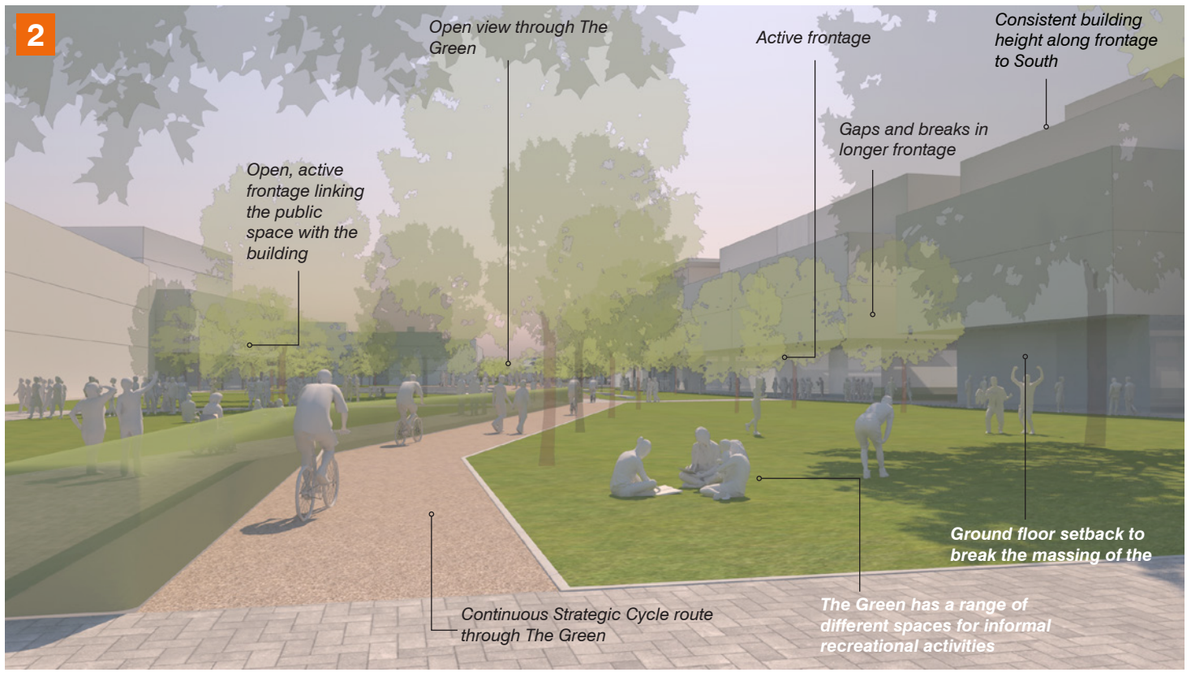


Key plan for views



284. The Green: View from JJ Thomson Avenue, looking towards the Schlumberger Research building, through The Green public open space.

The Green forms a series of connected Gardens that are shared by the campus. This green space forms a key east-west pedestrian and cycle link and the presence of this plus other social spaces ensure that it will be a vibrant space. This space will be shared by various academic departments and commercial occupiers alike.



285. The Green: The Green viewed from High Cross, looking east.

The Green forms a central open space providing a space for relaxation, reflection, informal interaction, spill-out and event space

Key elements

- The Green is made up of a series of four Gardens, with key space being the Central Garden. This space provides a major landscaped, open, green space in the heart of the masterplan and retains and incorporates the mature, existing trees located within this part of the masterplan;
- The other Gardens are High Cross Garden, JJ Thomson Garden and East Space.

Surrounding uses

- Development surrounding The Green forms frontage and provides overlooking to The Green. Smaller social spaces and building entrances are located along this space at ground floor, to ensure animation;
- A mixture of academic and commercial floorspace: this is one of the key areas of interchange and collaboration between the two use types;
- A new, early phase major Shared Facilities Hub provides activity onto JJ Thomson Garden;
- Additional academic uses to the east of the space reinforce the eastern academic cluster, and provides a new home for the Physics Department - the Cavendish III Laboratory;
- The Cavendish III Laboratory is a key new building that forms frontage along The Green. This building is also visible from the East Forum, visually connecting and drawing activity and footfall between these two spaces;
- The Schlumberger Research Building is located to the west of The Green. This building may eventually be supplemented by future expansion which will form new frontage and potentially, visually expand The Green west-wards. In the illustrative masterplan, proposed development is arranged to frame a new forecourt with a new address and drop off for Schlumberger at High Cross;
- Car parking and servicing is located away from The Green, to the north. In addition, cycle parking is located outside of The Green but close by within the adjacent Green Links.

Southern Ecological Corridor

8.1.19 The Southern Ecological Corridor will be retained and reinforced to form a strategic green connection and cycle link between the City and the countryside. It will incorporate the existing Coton Footpath, the existing canal, water bodies and existing landscape features to maintain and enrich the biodiversity which has already been established.

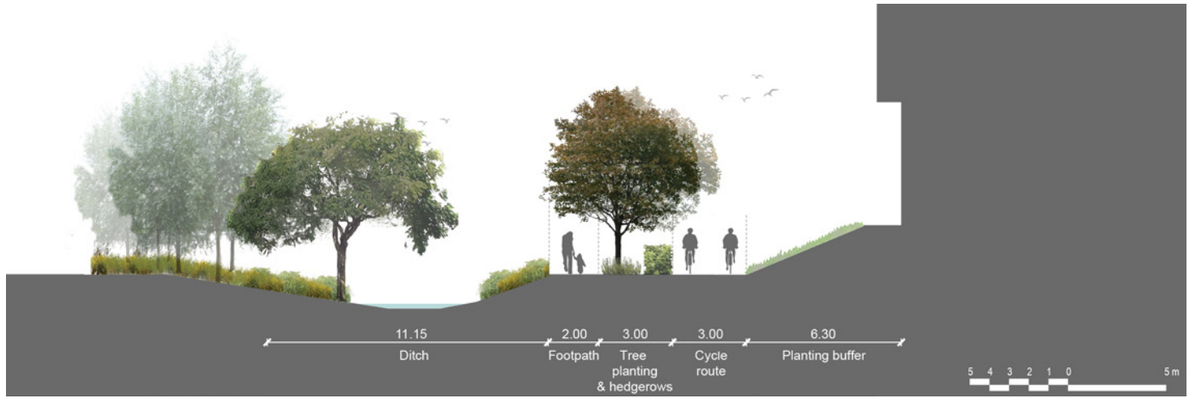
8.1.20 Along this Southern edge of the site the Canal will be enhanced and will be a key element in the site-wide sustainable drainage system. To the west of West Lake, the Corridor will incorporate the existing mature Oak trees and swale.

Character

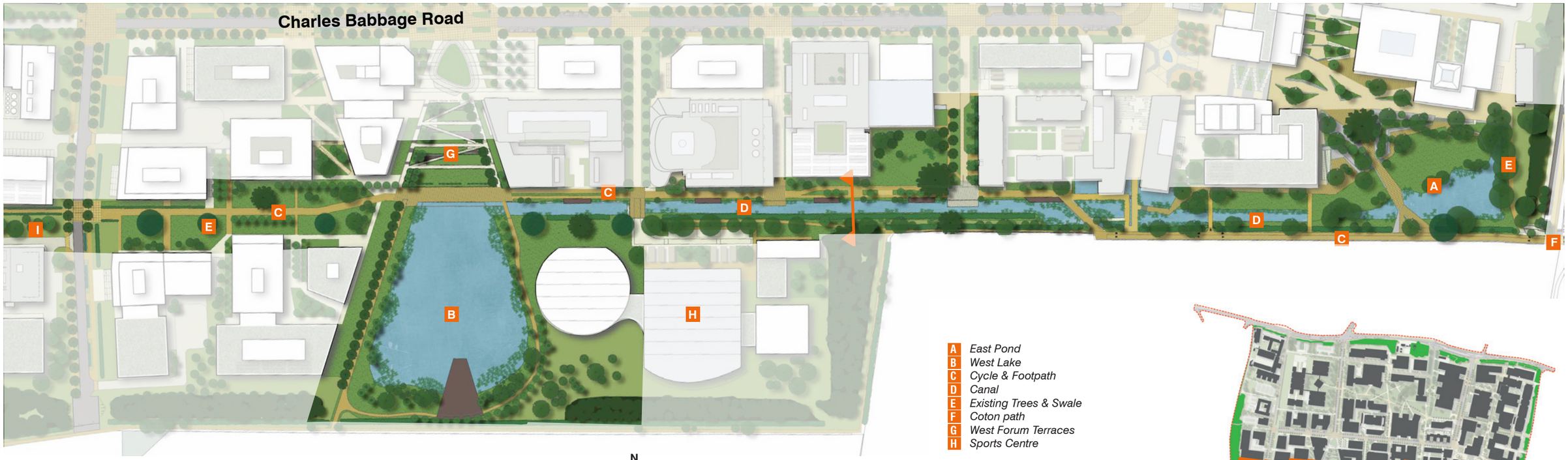
8.1.21 Additional planting is proposed within the Southern Ecological Corridor to establish a protected micro-climate and mitigate the visual impact of the proposed development. The existing water bodies will need some modification to accommodate additional surface water run-off from the wider network proposed within the masterplan.

Materials

8.1.22 Existing mature trees a will be maintained and augmented where possible. A coordinated street furniture palette will be developed that is visually relevant to the wider public realm setting whilst also takes design cues from the naturalistic setting of the waterside character.



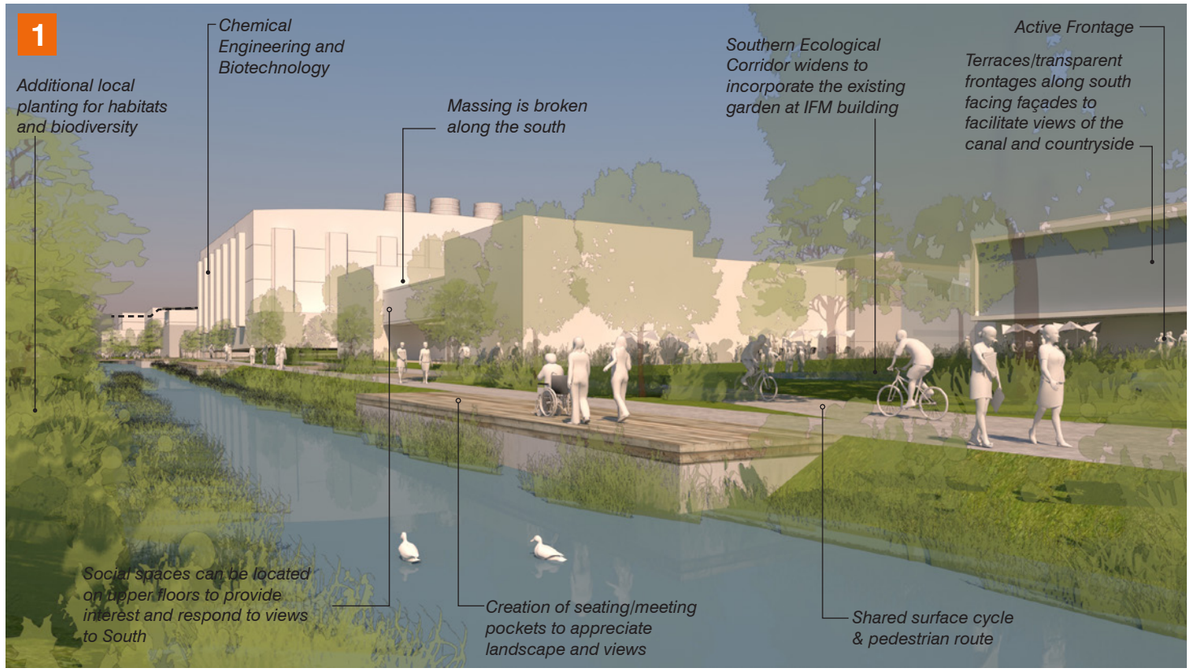
287. Southern Ecological Corridor - section



286. Southern Ecological Corridor - plan

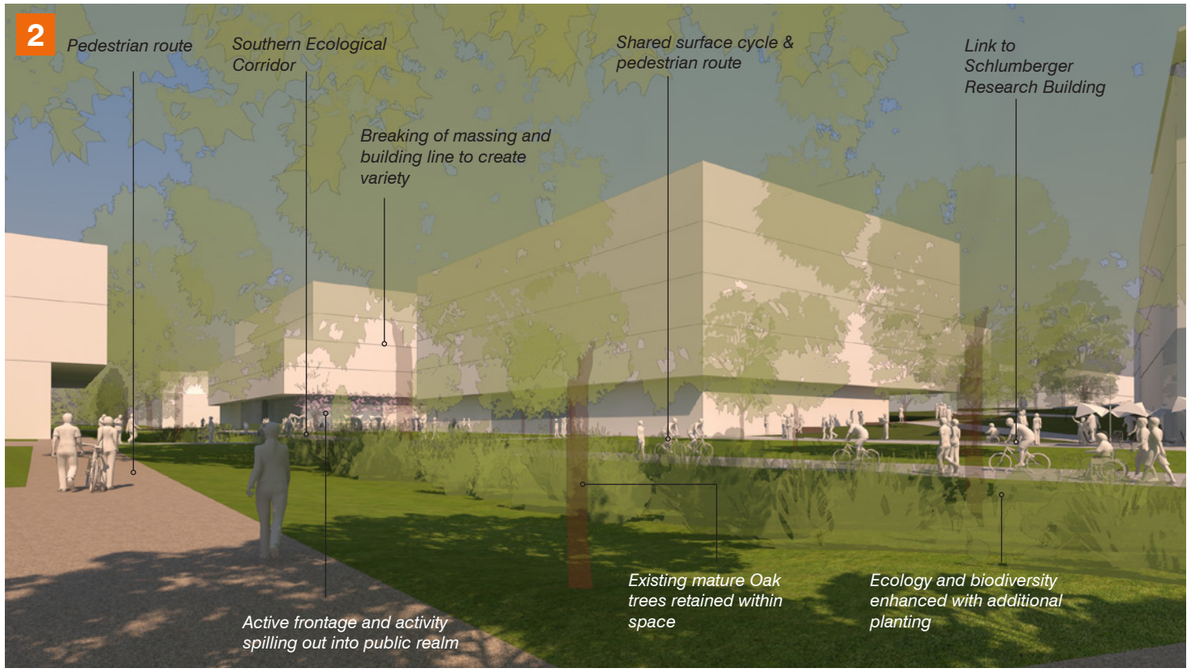
Key plan

Key plan for views



288. The Southern Ecological Corridor: Frontage to the Southern Ecological Corridor looking towards the West Forum

The canal-side Southern Ecological Corridor is a key cycle and pedestrian path which extends the Coton Footpath through the site. The Southern Ecological Corridor is also designed to be quiet and reflective in nature.



289. Southern Ecological Corridor: within the Western Commercial Cluster

The Southern Ecological Corridor at the western end forms a focus for activity within the Western Cluster. A predominantly green space, this incorporates existing mature trees with additional planting. Buildings form and informal frontage to the space and ensure activity and overlooking.

Surrounding Uses

- Existing buildings and new infill (academic and commercial) developments will form frontage to the Southern Ecological Corridor.
- A large cluster of commercial research space at the western end of the Southern Ecological Corridor, will provide a frontage with entrances and points of activity.
- The existing Sports Centre and its future expansion, which is a key destination within the masterplan, will draw visitors through the space, both during the week and in the evenings.
- New frontage with additional activity along the Southern Ecological Corridor ensures overlooking.
- New development frontage also provides a new urban character for Charles Babbage Road which will incorporate new primary frontage with building entrances along its length.
- New development contributes to the formation of a new Southern gateway to the site along the Coton Footpath at the East Pond.

8.2. Streets and Green Links

High Cross

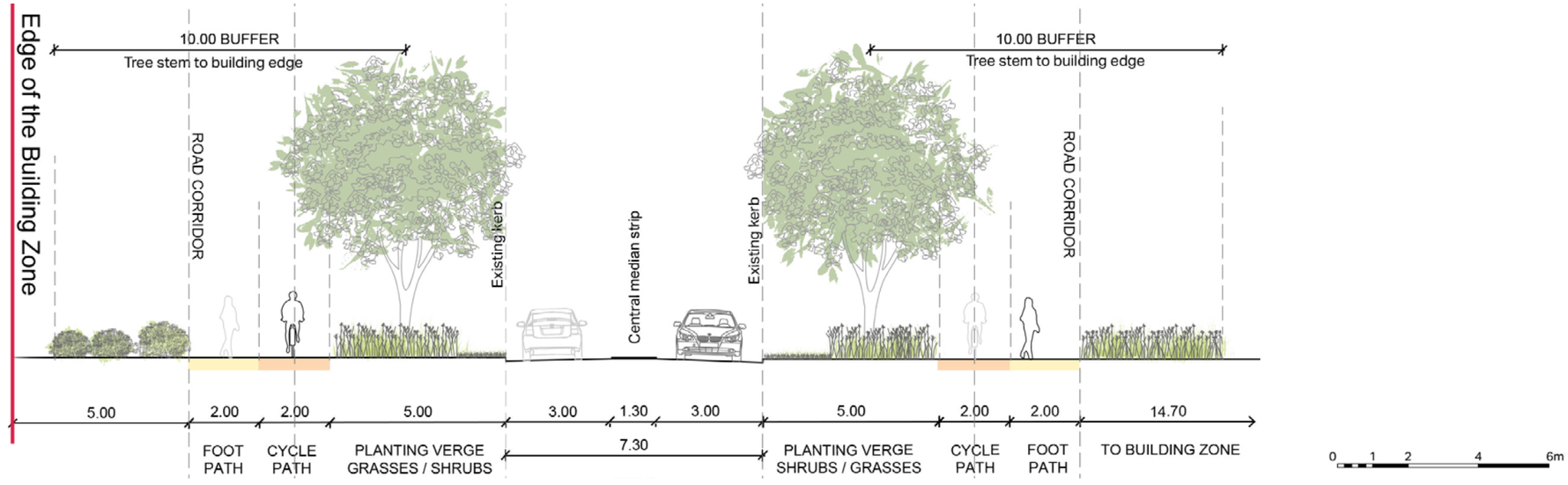
8.2.1 High Cross is the main entry road to the site and is the main link from Madingley Road to West Forum and Charles Babbage Road. The intent is to create a main gateway and tree lined boulevard that welcomes visitors into the site.

Character

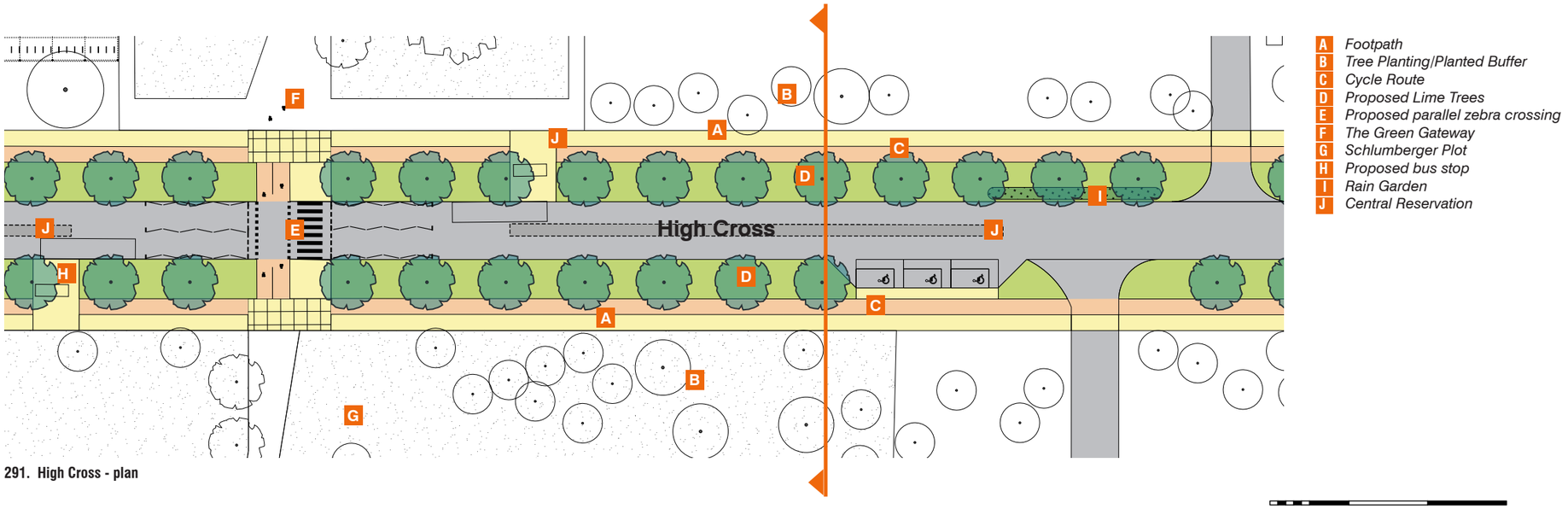
8.2.2 The road will have one character all along its length, of a highly green, tree-lined boulevard. However this character will change in two instances, where High Cross intersects with the Green and the West Forum. The street will adapt to the character of these open spaces by introducing a new pedestrian and cycle crossing point in the case of the Green, and a shared surface crossing for the West Forum at the second intersection. The road will be characterised by the new rows of lime trees replacing existing and a new under storey of planting. Additional trees will be introduced to break up the rigid tree planting and bring the continuation of the landscapes in the North West Cambridge Development through to the West Cambridge site.

Materials

8.2.3 A foundation palette of street furniture, lighting and paving elements is defined to deliver unity along the street and where possible, existing lighting and street furniture will be retained or reused in new locations.



290. High Cross - Section



291. High Cross - plan

Key plan

JJ Thomson Avenue

8.2.4 JJ Thomson Avenue is the second entry road to the site. It is the main link between Madingley Rise and Madingley Road and the East Forum spaces. The intent is to create a tree lined boulevard and gateway into the site.

Character

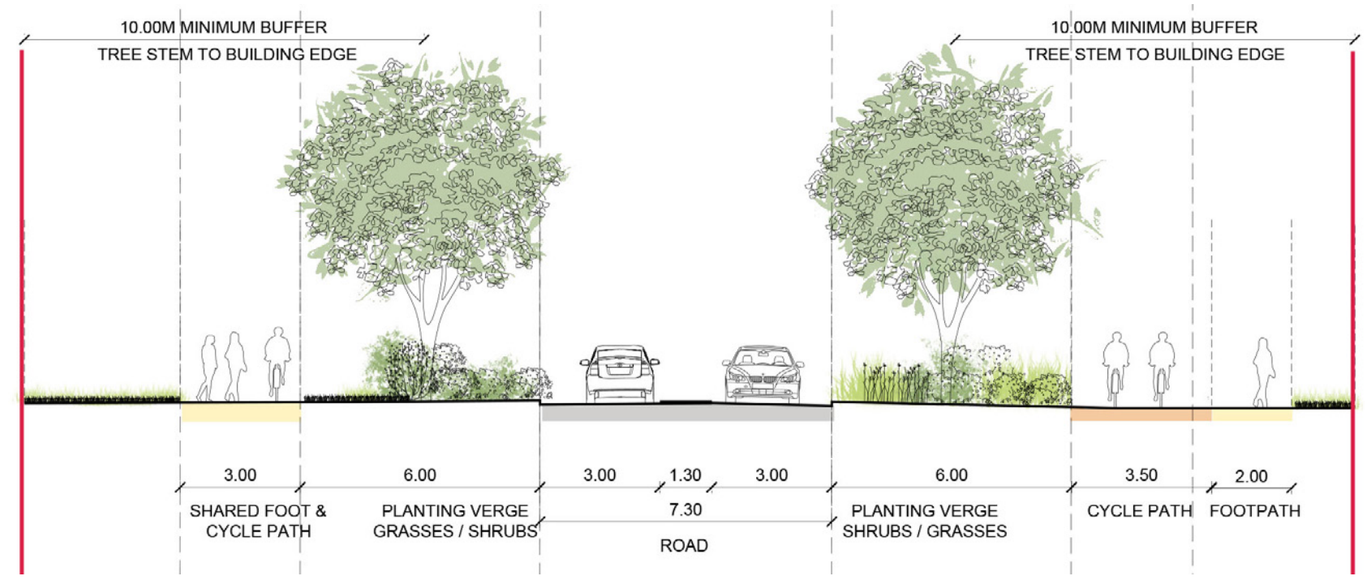
8.2.5 JJ Thomson Avenue will be characterised by the existing rows of trees and new under storey planting.

8.2.6 The Avenue will have one character all along its length however this character will change in two areas when the Avenue intersects with the Green, and when it intersects with the East Forum. In these two instances the street character will adapt to the character of these open spaces by introducing a pedestrian and cycle crossing point in the case of the Green, and a shared surface link at the East Forum at the second intersection.

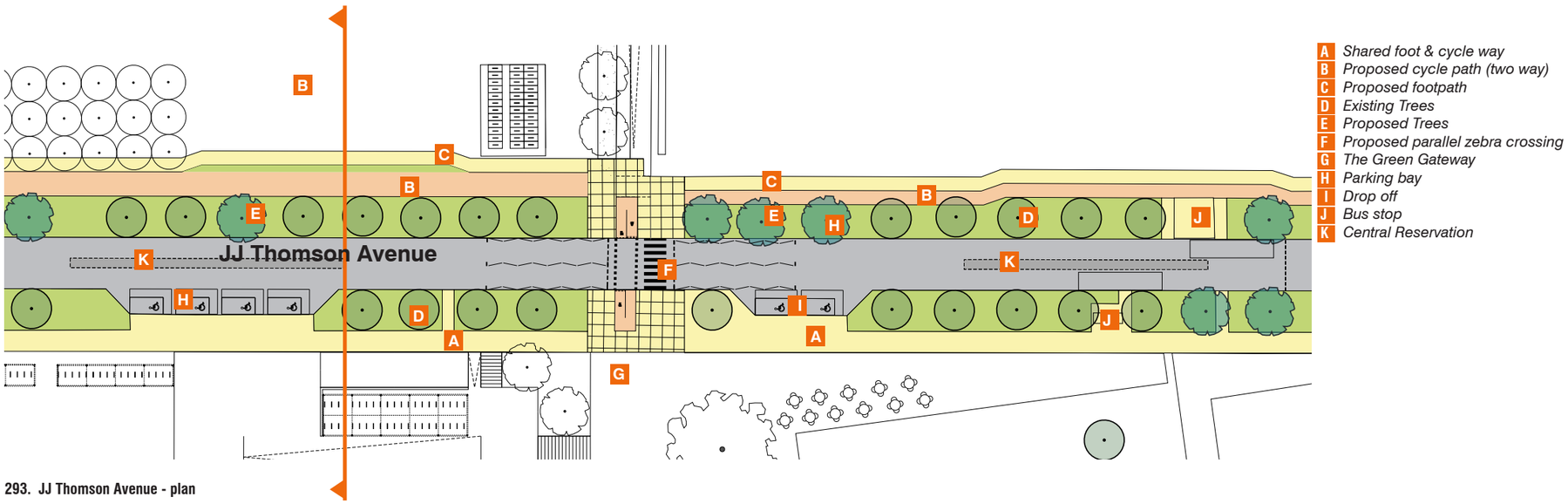
8.2.7 The width of the Avenue will remain generally the same. The existing bus stops will be retained on-street to pick up and drop off passengers and the street profile will be changed in places to allow for on street parking spaces.

Materials

8.2.8 A foundation palette of street furniture, lighting and paving elements is defined to deliver unity along the Avenue and where possible, existing lighting and street furniture will be retained or reused in new locations. Existing trees will be retained where ever possible.



292. JJ Thomson Avenue - Section



293. JJ Thomson Avenue - plan

Key plan

Western Access / Ada Lovelace Road

8.2.9 The Western Access Road will provide cycle and pedestrian access to the western side of the site from Madingley Road to the western commercial cluster. A new access point will be provided in later phases of development.

Character

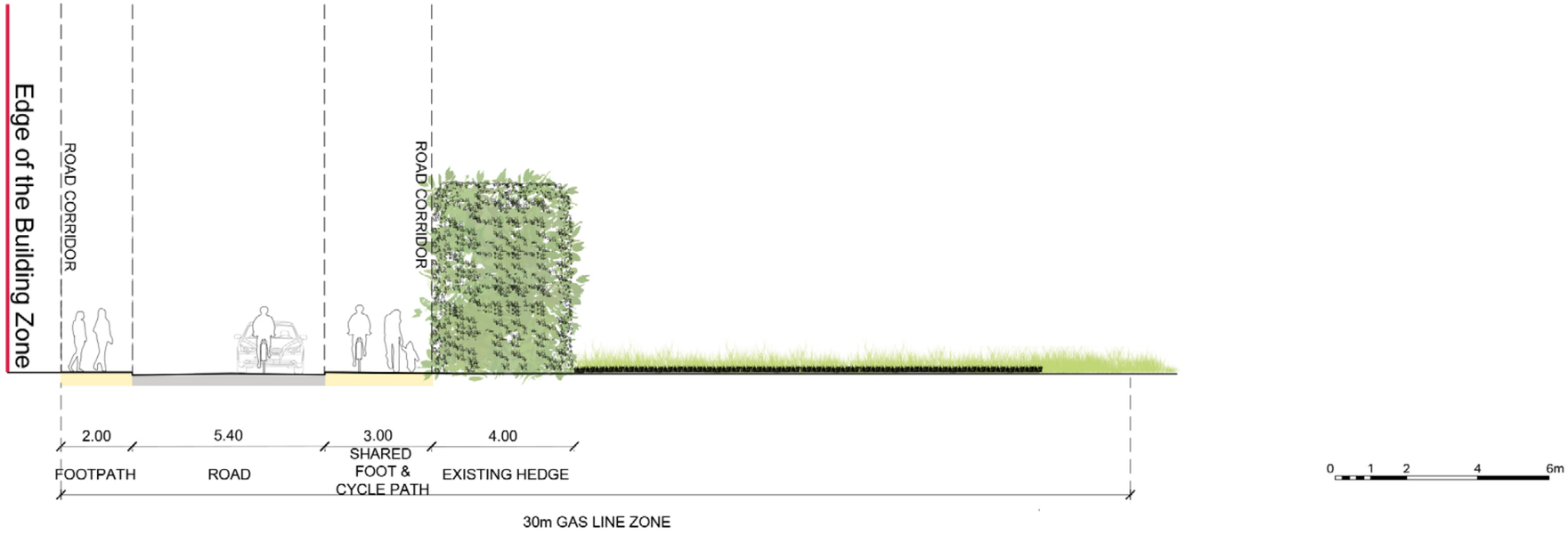
8.2.10 The width of the road will remain the same (5.4m to Western Access Road in the north and 6.5m to Ada Lovelace Road in the south).

8.2.11 The Western Access Road will be characterised by the retention of the existing hedgerow on the eastern side of the street, at the boundary to the Schlumberger site. There will be the addition of low shrub planting along Ada Lovelace Road, (types of planting are limited by the existing underground gas main line and easement). However, the existing row of trees in this street will be maintained where possible.

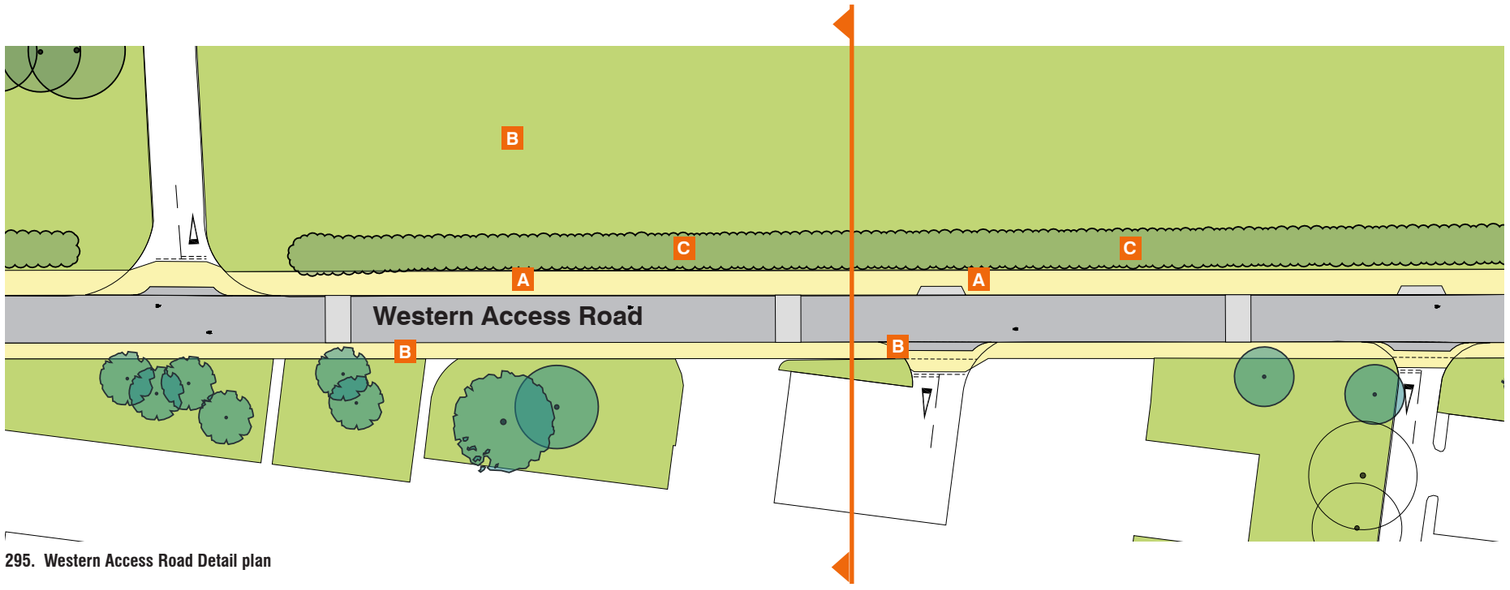
8.2.12 To Ada Lovelace Road, the public realm will also be enhanced by the introduction of bio-retention rain gardens along the roadway where possible, to collect roadway run off.

Materials

8.2.13 A foundation palette to match the other roads will be implemented, unifying the road network whilst providing individual character.



294. Western Access / Ada Lovelace Road Section



295. Western Access Road Detail plan

Key plan

Eastern Green Link

8.2.14 The Link has origin in an existing service street which provides both pedestrian and vehicular access to existing buildings and car parks. It is located between a series of existing academic buildings. Development of new academic and shared facilities buildings around the Link will transform this service street into a cohesive, more urban, pedestrian environment.

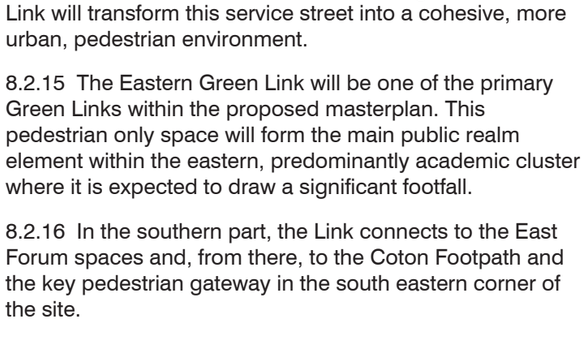
8.2.15 The Eastern Green Link will be one of the primary Green Links within the proposed masterplan. This pedestrian only space will form the main public realm element within the eastern, predominantly academic cluster where it is expected to draw a significant footfall.

8.2.16 In the southern part, the Link connects to the East Forum spaces and, from there, to the Coton Footpath and the key pedestrian gateway in the south eastern corner of the site.

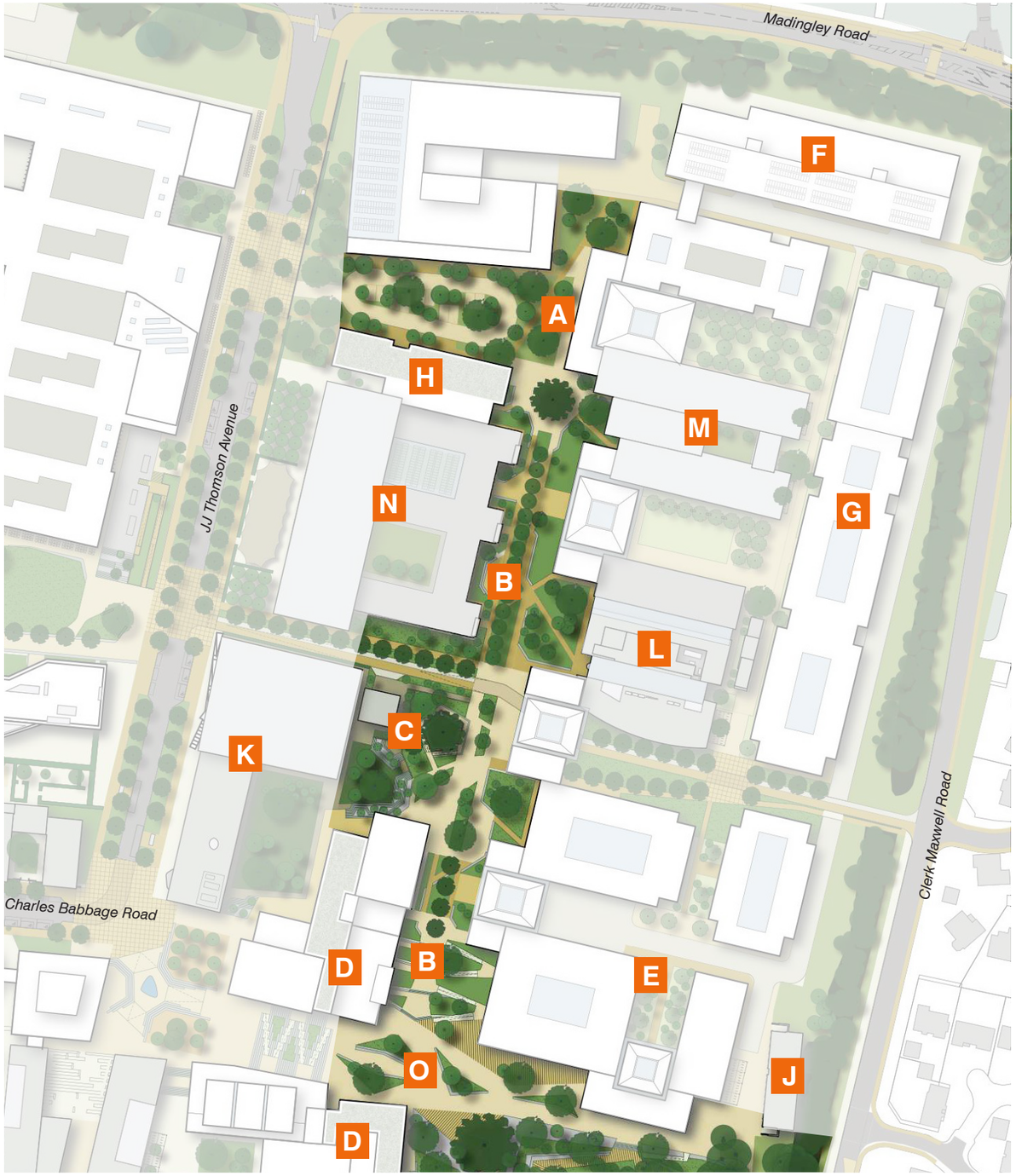
8.2.17 In the northern part, this Green Link joins with the Arrival Square, a public space which links to JJ Thomson Avenue and the vehicular gateway at Madingley Road.

Role in the masterplan

- A large part of the new academic space to be provided in West Cambridge is organised along this Link. At present this includes space for the consolidation of the Engineering Department at West Cambridge as well as retained related academic facilities such as the Computer Laboratory within the William Gates Building and the Maxwell Centre (Physics).
- This Link will be the key connective space for the Eastern cluster. Existing buildings, new academic uses and activities (such as waiting areas and informal space for interaction between students and faculties of various disciplines), can spill out into it.
- To the north of the Green Link a landmark reception building for the Department of Engineering is located. This will be visible from JJ Thomson Avenue and will form frontage to the Arrival Square which will accommodate drop on/drop off for visitors and taxi's.
- At the point where the Eastern Green Link meets The Green, East Garden, a primary focal space for the area, will be formed. From this space there will be pedestrian and cycle connection to the other spaces of the Green in the west and to Clerk Maxwell Road in the east;
- The East Garden is located centrally within the academic cluster and forms the first in a chain of gardens and spaces that form The Green open space that traverses the site from east to west;
- This framework allows for the incorporation of existing buildings, which can potentially be adapted to form frontage to this space, and potentially add entrances and/or active uses, either through reconfiguration of existing buildings or addition of elements.

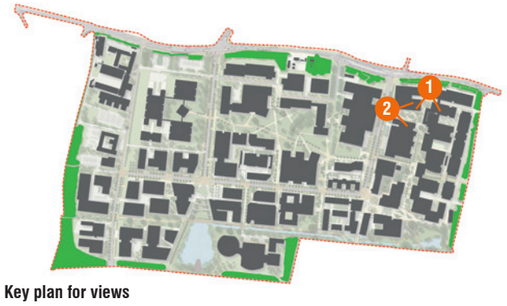


Key plan

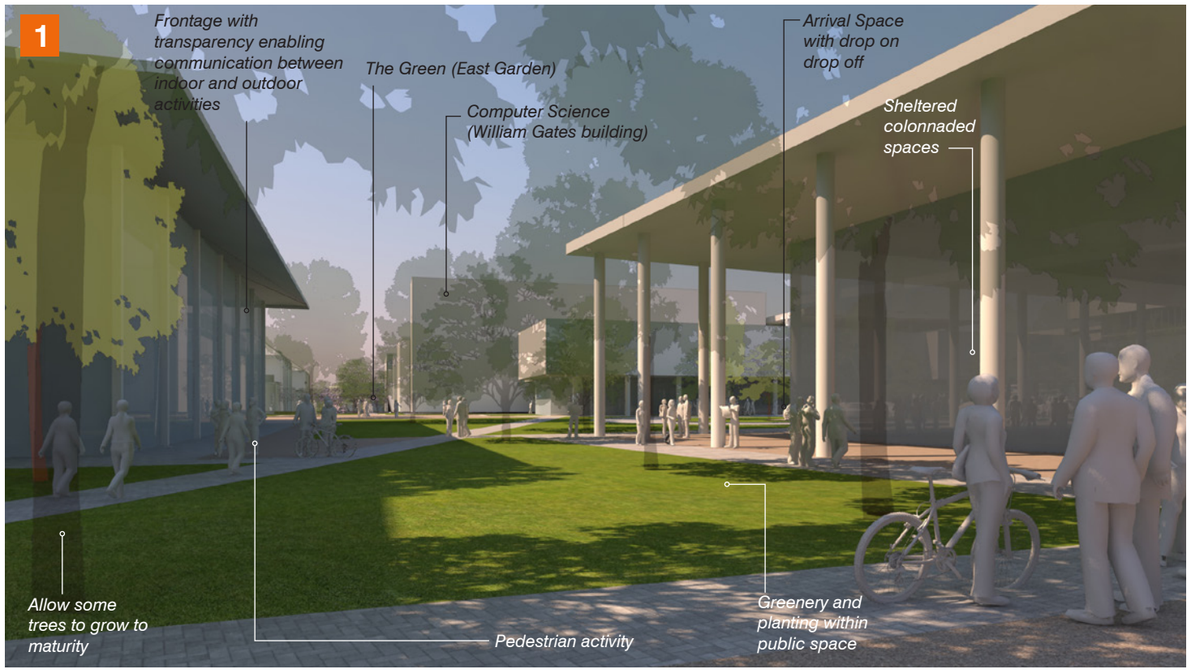


A Arrival Square and Reception Building
B Eastern Green Link
C East Garden (part of The Green)
D Shared Facilities Building
E Later phase academic development
F Multi storey car park
G New development
H Computer Science extension
I Whittle Laboratory retained and extended
J MRI Research Centre - retained
K Maxwell Centre and Physics of Medicine
L CAPE Building - retained
M Roger Needham Building - retained
N William Gates Building - retained
O East Forum - Lower Square

296. Eastern Green Link

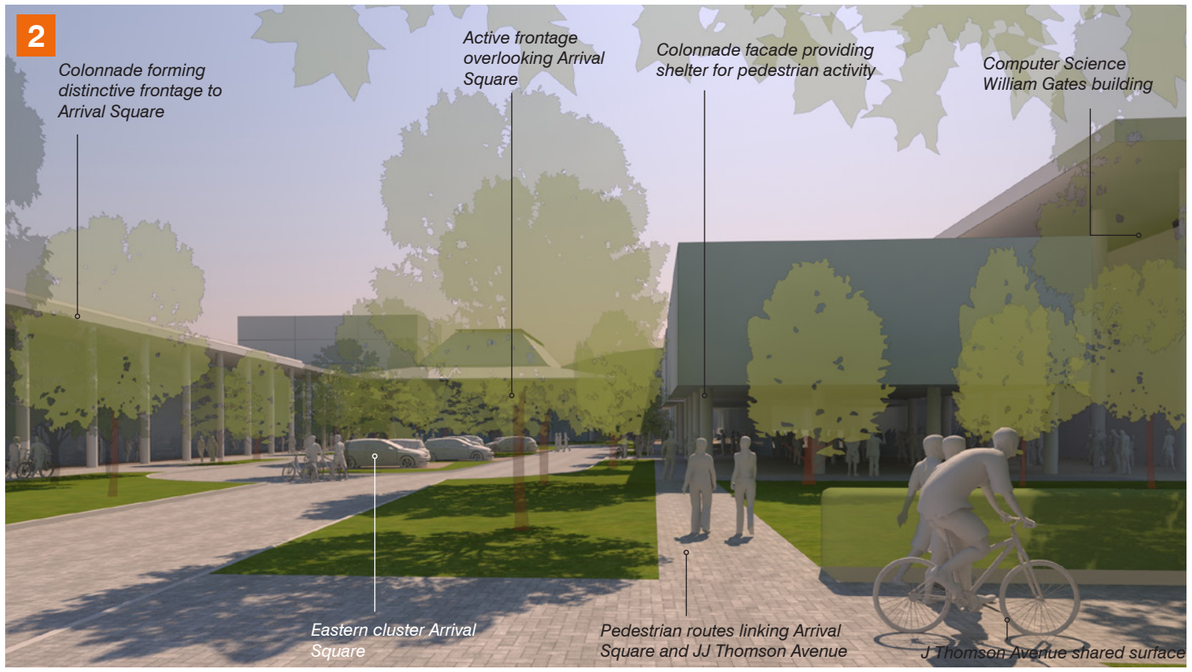


Key plan for views



297. The Eastern Green Link - looking south towards the Arrival Square and the East Forum in the distance.

The Central Green Link creates a sheltered, pedestrian environment for academic buildings spill out into, for social interaction and most importantly circulation between the Arrival Square, the Green and East Forum spaces.



298. The Arrival Square as viewed from JJ Thomson Avenue.

Arrival Square and landmark reception building, act as a key arrival experience for visitors coming to the area.

Central Green Link

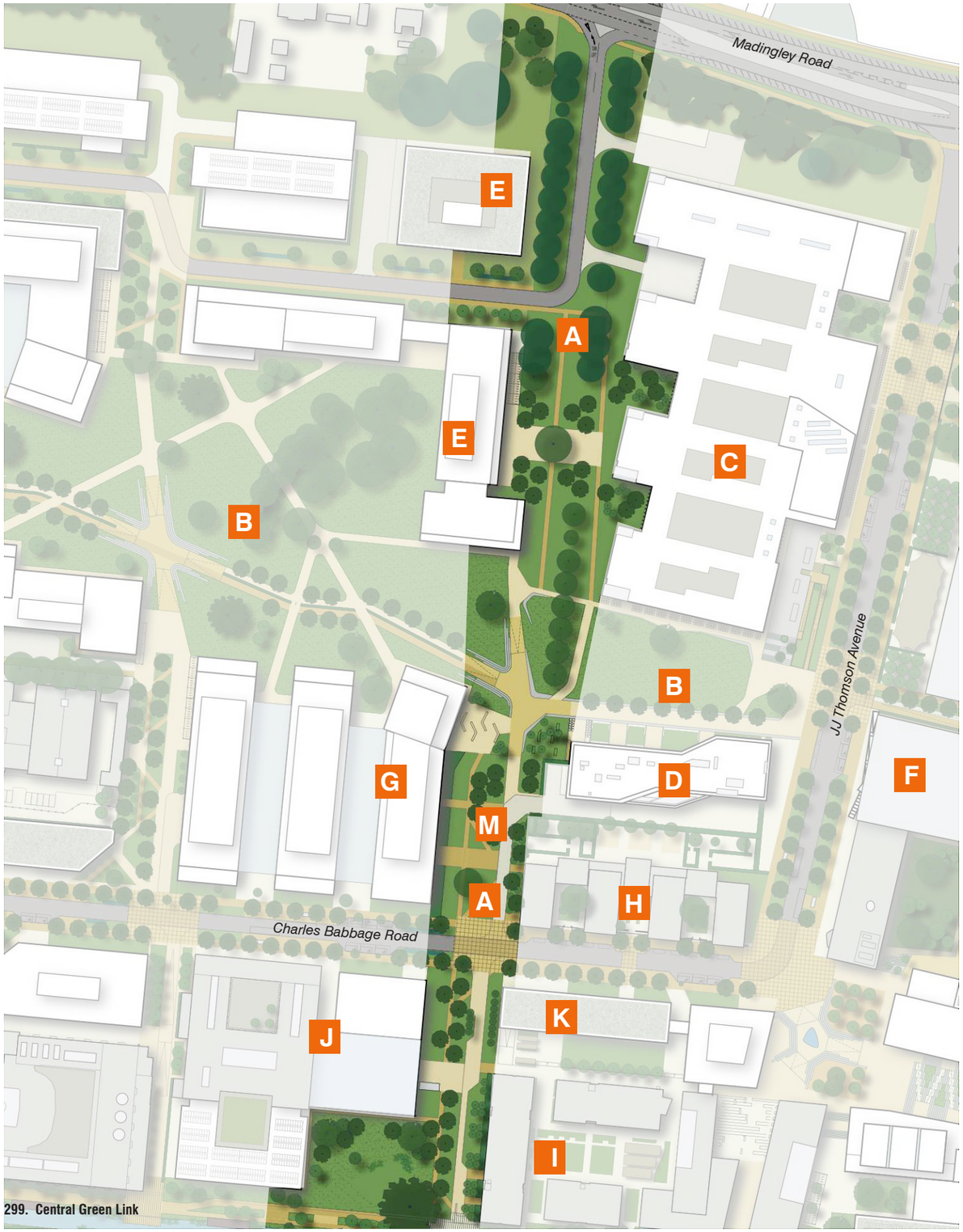
8.2.18 This Link is comprised of several existing spaces which the masterplan proposes to join and transform with new landscaping.

8.2.19 In the north, the Link is formed from the former Vet School approach, where it incorporates the existing mature lime trees. In the southern part, the Link is formed from the a current service access from Charles Babbage Road, which will be widened to allow for a landscaped corridor.

Role in the Masterplan

- This Link provides a site-wide north-south connecting space, between the Southern Ecological Corridor in the south to Madingley Road in the north, in a pedestrian friendly and landscaped environment;
- At the southern end, where the link meets the Southern Ecological Corridor, a widened area will be provided suitable for informal small gatherings and a space that will allow tree planting to grow to maturity;
- There will be no vehicular traffic crossing The Green (other than emergency vehicles where required), but in the north and the south of the Green Link vehicular access will be allowed to provide servicing to adjacent developments.

Key plan



A *Central Green Link*
B *The Green*
C *Cavendish III Laboratory*
D *Shared Facilities Building*
E *Potential Future Cavendish Expansion*
F *Maxwell Centre - Physics of Medicine*
G *New academic uses*
H *Residential North Block*
I *Residential South Block*
J *Department of Engineering buildings*
K *Innovation Centre*

N

0 25 50 100m

299. Central Green Link

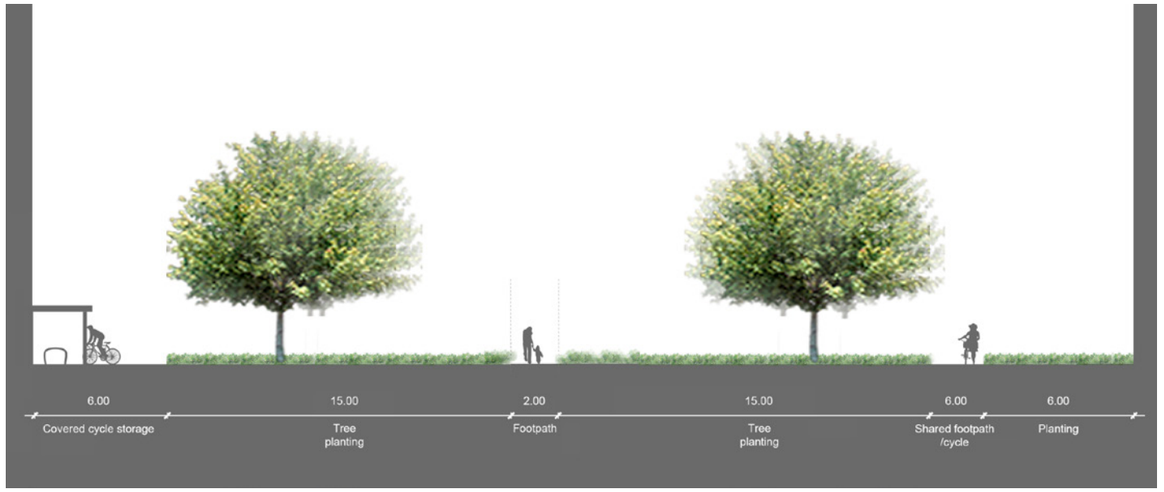
8.2.20 The intent of the Green Links is to create cycle and pedestrian friendly walkways which connect between the key open spaces (The Green, the Forums and the Southern Ecological Corridor).

Character

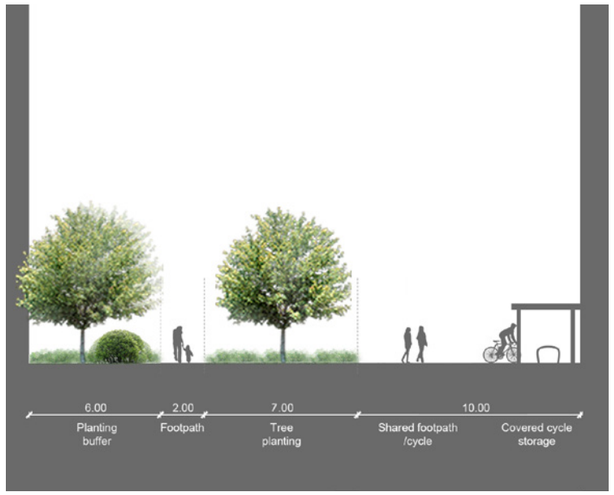
8.2.21 The Green Links will have a distinct character from other connecting routes, highlighted by parkland trees that relate to trees in some of the Central Gardens, pocket gardens and under storey planting and flower beds.

Materials

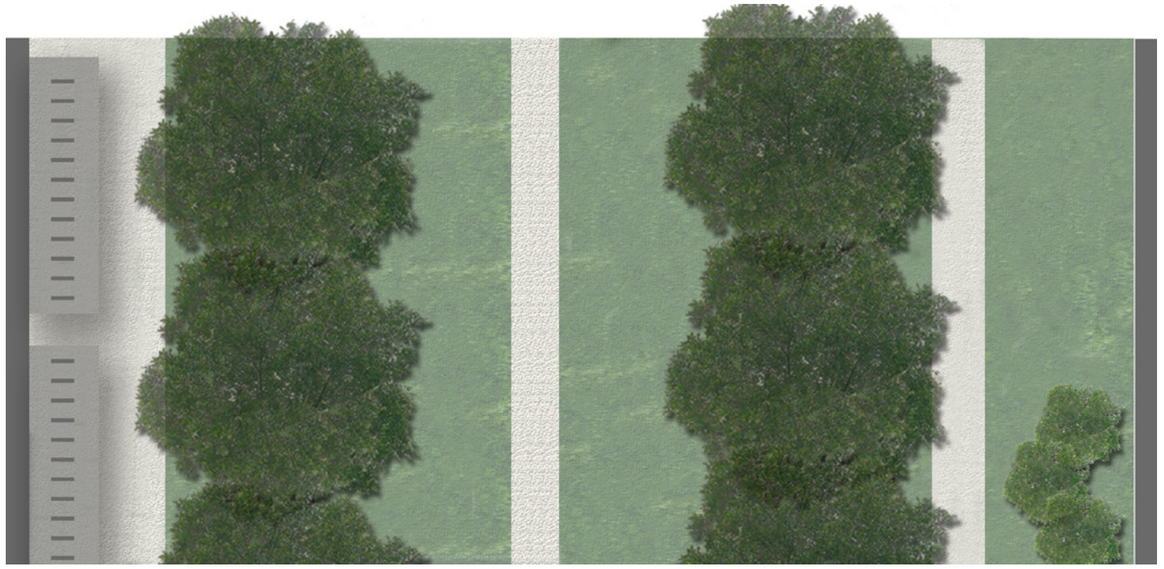
8.2.22 Existing trees in Green Links will be maintained and additional ones will planted to enhance the linearity of these links. A comprehensive palette for the street furniture, light and paving elements is defined to deliver unity along these links and respond to the site wide context.

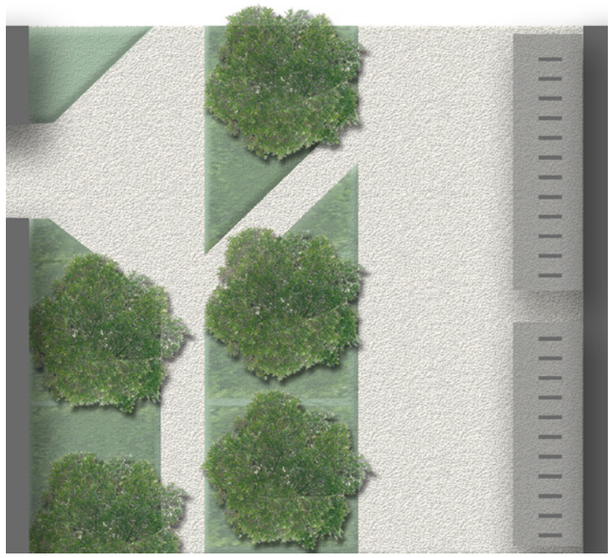


300. Central Green Link section A



301. Secondary Green Link section B





Key plan

302. View of Development from the South

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