

# WEST CAMBRIDGE

OUTLINE PLANNING APPLICATION

**DESIGN AND ACCESS STATEMENT**

for approval

**Credits:**

*Masterplanner:  
AECOM Design & Planning*

**with:**

*AECOM Sustainability  
AECOM Project Management  
Peter Brett Associates  
Gardiner and Theobald  
Creative Places  
Atkins*

*All of the drawings/diagrams in this document are provided for illustrative purposes only. This Design, Access and Landscape Statement is provided to support the planning application for the Proposed Development, and all details of access, appearance, landscaping, layout and scale are reserved within the parameters set out in the Parameter Plans & Statements and Environmental Statement*

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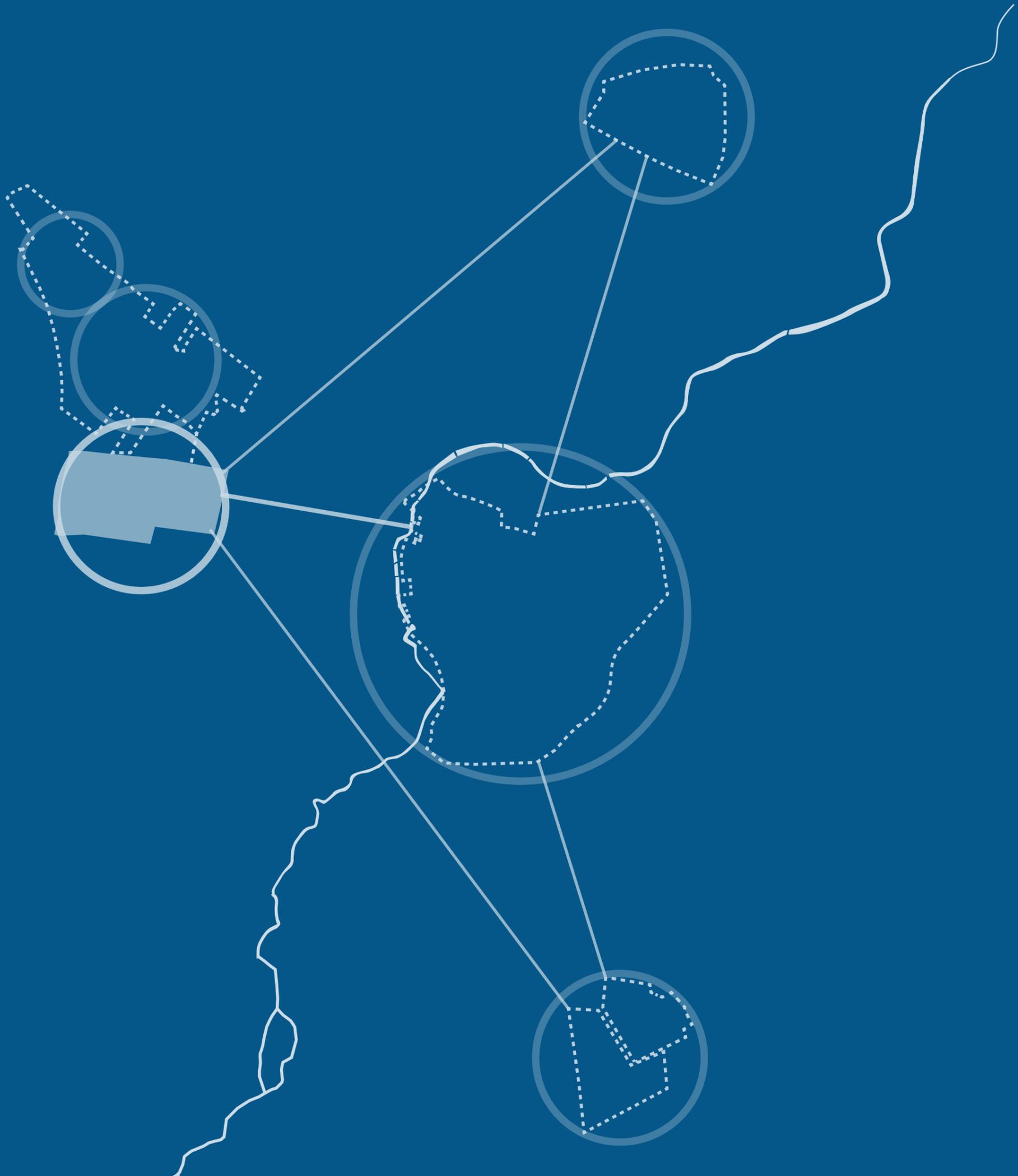
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# INTRODUCTION

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# 0. INTRODUCTION

## 0.1. Purpose and scope of this document

0.1.1 This Design and Access Statement has been prepared in support of the outline planning application submitted by the University of Cambridge for the comprehensive development of the West Cambridge site.

0.1.2 The aim of The Design and Access Statement is to explain and illustrate the essential place-making principles that will deliver a well-connected, lively, distinctive and attractive West Cambridge environment.

0.1.3 This document consists of two Volumes, the first of which explains the origins of and describes the Proposed Development (Volume A). This Volume includes: an appraisal of the existing site and its context; the University's vision, the objectives and drivers for development; the design response and evolution of the Proposed Development; which underpin the development parameters. The Illustrative Material is contained in Volume B, which describes the principles for development as well as the Illustrative Masterplan, which shows one way that development might come forward according to the principles and parameters. These illustrative principles for development support and conform to the West Cambridge Design Guidelines document, which is included as part of the application material.

0.1.4 This Design and Access Statement has been prepared in accordance with the requirements set out in the The Town and Country Planning (Development Management Procedure) (England) Order 2015. It explains:

- the design principles and concepts that have been applied to the development (sections A5 and B1);
- how issues relating to accessing the development have been dealt with (section A4);
- the policy adopted in relation to access and how policies relating to access in local development documents have been taken into account (section A4);
- the steps taken to appraise the context of the development and how the design of the development takes that context into account (section A3);
- the consultation that has been undertaken on issues relating to access and the outcome of this consultation (section A4); and
- how specific issues which affect access have been addressed (section A5 and B1).

## 0.2. The proposed development and masterplanning process

0.2.1 The Application Site is located to the west of Cambridge City within the administrative area of Cambridge City Council.

0.2.2 Outline planning permission is being sought for up to 383,300m<sup>2</sup> of additional floorspace at West Cambridge (the Proposed Development), comprising:

- up to 370,000m<sup>2</sup> of academic floorspace (Class D1), commercial / research institute floorspace (Class B1b and sui generis research uses), of which not more than 170,000m<sup>2</sup> will be commercial floorspace;
- up to 2,500m<sup>2</sup> nursery;
- up to 1,000m<sup>2</sup> of A1-A5 uses;
- up to 4,100m<sup>2</sup> floorspace for community facilities, and not less than 3,000m<sup>2</sup>;
- up to 5,700m<sup>2</sup> 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.

0.2.3 A new illustrative masterplan for the West Cambridge site has been developed and used as a basis for establishing development parameters which will define key aspects of development. This masterplan has been developed based on knowledge of the projected needs of existing and known future occupiers. Best practice experience and precedents have informed the elements of the masterplan where specific future occupiers are unknown.

0.2.4 Development parameters and masterplan principles set a robust framework for the development and form part of this Design and Access Statement. A finer grain of definition is provided through the Design Guidelines document.



01. The West Cambridge site shown in relation to North West Cambridge Development and Cambridge city centre

Section A5 clearly sets out what the application is applying for, including the description of development parameter plans and design guidelines. All other information contained within the DAS is illustrative.



02. West Cambridge Illustrative Masterplan - view of the East Forum

## 0.3. The Planning Application

0.3.1 This Application seeks planning permission, with details of appearance, landscaping, layout and scale reserved, within the parameters set out in the accompanying Parameter Plans, Design Guidelines and the Environmental Statement and the following supporting information:

- 01 Planning Statement
- 02 Statement of Community Involvement
- 03 Transport Assessment
- 04 Travel Plan
- 05 Sustainability Statement
- 06 Energy Statement
- 07 Flood Risk Assessment and Drainage Strategy
- 08 Waste Management Plan
- 09 Utilities Statement
- 10 Construction and Environmental Management Plan
- 11 Environmental Statement
- 12 Arboricultural Impact Assessment
- 13 Woodland Management Plan
- 14 Heritage Assessment

### The West Cambridge Outline Planning Application

Description of Development Including Parameter Plans	Design and Access Statement Including Design Principles and Illustrative Material	Design Guidelines	Other Planning documents
<p><b>Parameter Plans:</b></p> <ul style="list-style-type: none"> <li>01 Development Building Zones</li> <li>02 Land Use</li> <li>03 Access and Movement</li> <li>04 Landscape and Public Realm</li> <li>05 Maximum Building Heights</li> </ul> <p>In addition: Application Boundary Demolition Plan</p>	<p><b>Volume A:</b></p> <ul style="list-style-type: none"> <li>01 University need</li> <li>02 University vision</li> <li>03 Development context</li> <li>04 Masterplan development process</li> <li>05 Proposed development</li> </ul> <p><b>Volume B:</b></p> <ul style="list-style-type: none"> <li>01 Design principles</li> <li>02 Illustrative masterplan</li> <li>03 Transformation of key places</li> </ul>	<ul style="list-style-type: none"> <li>00 Introduction</li> <li>01 Site-wide Design Guidelines</li> <li>02 Key places</li> <li>03 Streets and Green Links</li> <li>04 Site edges</li> </ul>	<ul style="list-style-type: none"> <li>01 Transport Assessment</li> <li>02 Environmental Statement</li> <li>03 Planning Statement</li> <li>04 Sustainability Statement</li> <li>05 Energy Statement</li> <li>06 Statement of Community Involvement</li> <li>07 Waste Management Plan</li> <li>08 Utilities Statement</li> <li>09 Construction Environmental Management Plan</li> <li>10 Arboricultural Impact Assessment</li> <li>11 Woodland Management Plan</li> <li>12 Heritage Assessment</li> </ul>

03. The West Cambridge Planning Application - key documents

## 0.4. Structure of the Design and Access Statement

0.4.1 This document is structured as two volumes: Volume A comprises the Design and Access Statement and the supporting Illustrative Material forms Volume B of this document.

0.4.2 Volume A is structured as follows:

### A1 - University need

0.4.3 Sets out the University's forecast need for development across the proposed land uses.

### A2 - University vision

0.4.4 Establishes the University's overall vision and objectives for the Proposed Development at West Cambridge.

### A3 - Development context

0.4.5 Describes the strategic, wider and local context of the site as well as providing a description of the site as it exists today. In addition, this section sets out key benchmarking studies which set precedents (or benchmarks) for the quality and character of the place, possible building types and role of open space and public realm within the Proposed Development. This section also provides a description of the existing consented masterplan, as well as transport context and planning policy.

### A4 - Masterplan development process

0.4.6 Sets out the key responses to the site constraints and development context and details the evolution of the masterplan through the design and consultation process.

### A5 - Proposed development

0.4.7 The final section presents the application proposals for the Application Site in the form of Parameter Plans.

0.4.8 The illustrative material, Volume B of this document, is structured as follows:

### B1 - Design principles

0.4.9 Sets out the site-wide Design Principles for the illustrative masterplan developed within the framework of the Cambridgeshire Horizons Quality Charter four 'C's': Connectivity, Character, Community and Climate. Within this framework, the Design Principles describe the proposed distribution of uses, the amount of development, layout, scale, landscape, appearance and access.

### B2 - Illustrative masterplan

0.4.10 Provides a description of the illustrative masterplan, including landscape and public realm, character areas and phasing. The illustrative masterplan demonstrates one way in which the Application Proposals could be delivered on the Application site.

### B3 - Transformation of key spaces

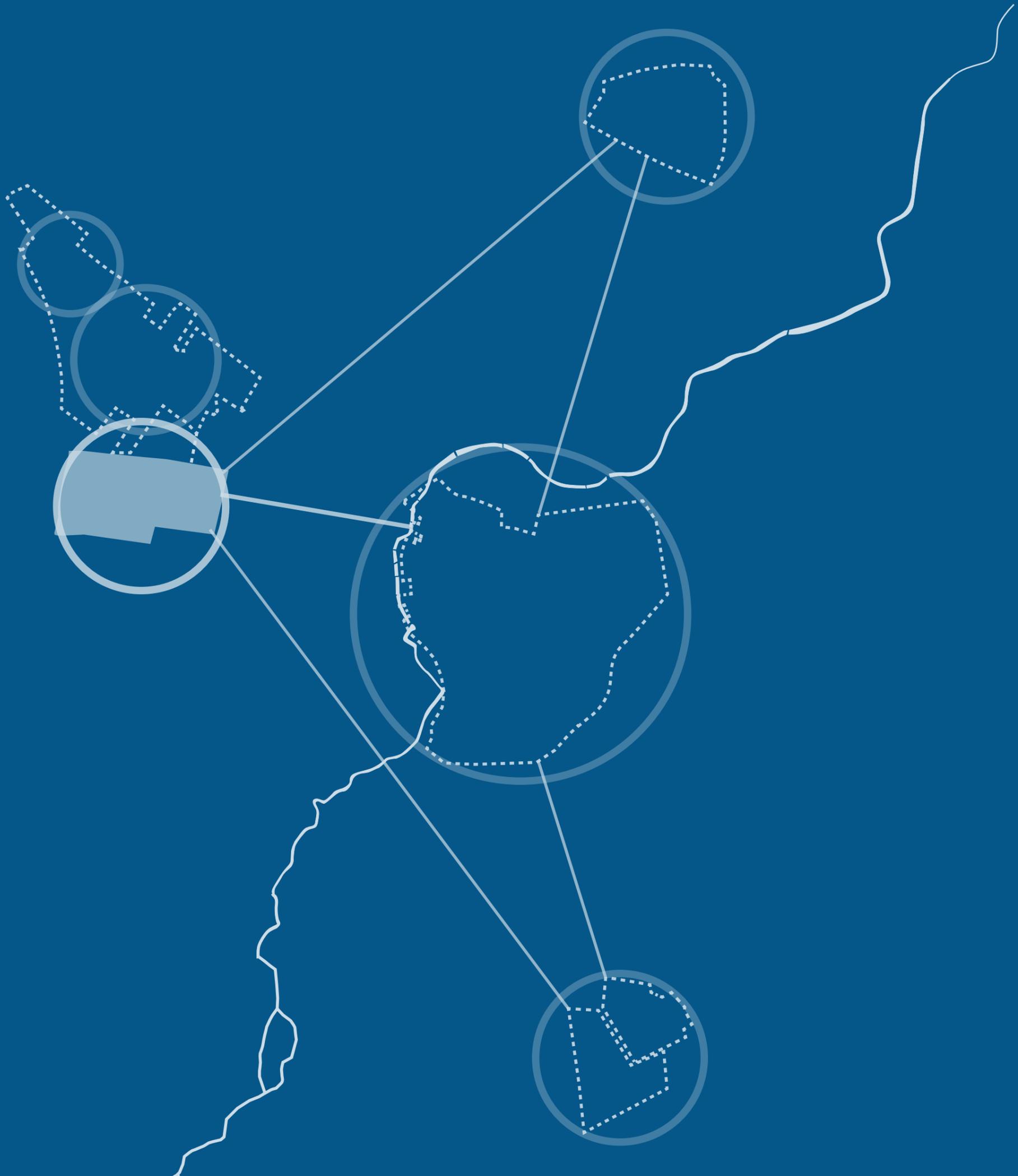
0.4.11 Sets out a description of the key places within the masterplan and their transformation.

## A - DESIGN AND ACCESS STATEMENT



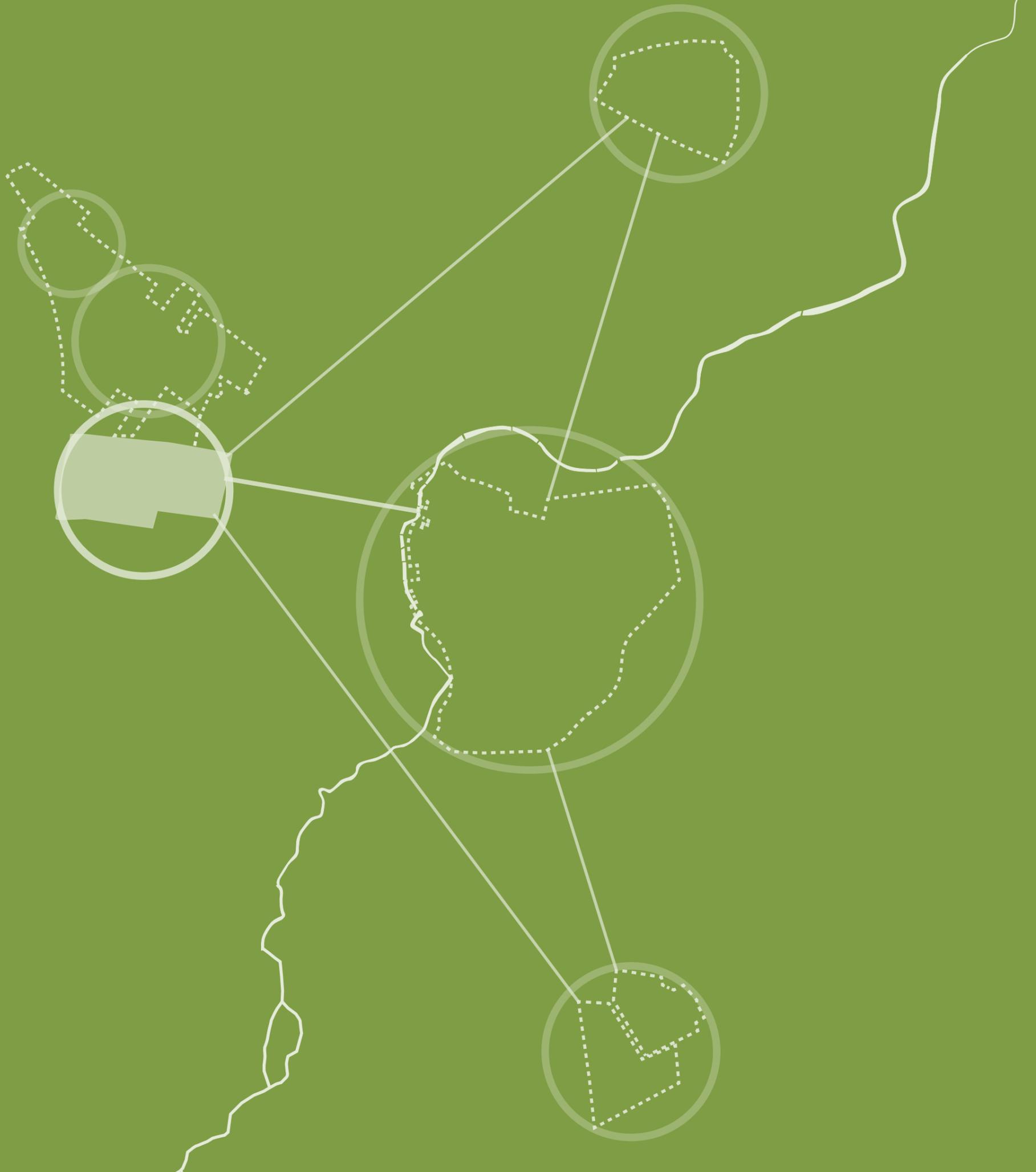
## B - ILLUSTRATIVE MATERIAL





**DESIGN AND ACCESS  
STATEMENT**

**VOLUME A**



# UNIVERSITY NEED

# A1

## A1 University need

### West Cambridge 1995 - 2015

Key issues:  
Delivery of the 1999 Masterplan  
Delivery of commercial uses  
On-site amenity and shared facilities  
Making best use of the site

## A2 University vision

## A3 Development context

International, Strategic and Local

## A4 Masterplan development process

## A5 Proposed development

# 1. UNIVERSITY NEED

## 1.1. Drivers for development

1.1.1 Cambridge is an acknowledged world leader in higher education, research and knowledge based industries. Through the 'Cambridge Phenomenon' it has a prosperous and dynamic economic base in high technology, research and development and related service sector industries.

1.1.2 The need for a new illustrative masterplan and outline planning application at West Cambridge has emerged in response to this strategic need of the City and the University as well as the need to transform and improve the site and to provide a high quality research and innovation environment, for both current and possible future occupiers.

### Strategic need of the University and the City

1.1.3 In order to maintain global competitiveness, the University needs to secure additional high quality research space and, in parallel, strengthen its reputation in innovation and collaboration within the industry.

1.1.4 The projections made in 2011 based on annual increases to the size of the estate for the previous five years estimated that there was a 25 year supply of space for academic development. However, the annual estate increase in the referenced period has not reflected the demand and anticipated research growth which is now 5% per annum, followed by related growth in staff numbers. Together with past under investment in central sites, the success in research growth is creating additional demand at an accelerated rate (from University's Estate Strategy, 2012).

1.1.5 Similarly, the demand for commercial property to meet the needs of research and development (R&D) businesses in and around Cambridge is far outstripping the supply of space, particularly within the City boundary, where much of the demand is located.

1.1.6 Most of the University's sites are already intensively developed. The partially developed 66ha West Cambridge site is one of the two main exceptions to this, together with 150ha at the North West Cambridge site for future development.

1.1.7 For many years The University's strategy for West Cambridge has been to develop the site for research in the Physical Sciences and Technology. That strategy was supported at the time the original outline planning application was considered in 1997-99.

1.1.8 The locational strategy for other academic development is to develop the life sciences at and close to Cambridge Biomedical Campus and the Biocentrum (in central Cambridge), and the arts and humanities at the Sidgwick Site and the New Museums Site. The University's land at those locations is already densely developed.

1.1.9 The focus of academic research in the physical sciences at West Cambridge also provides these academic researchers with far greater opportunity to co-locate with commercial operators undertaking research and development activity. This is a key benefit in helping to keep the University's research world-leading, providing access to appropriately diversified sources of funding and promoting the site as a campus for innovation and exchange of ideas.

### University's sustainability targets

1.1.10 The University is committed to improve the sustainability performance of its estate. The University's estate-wide targets include:

- optimise sustainable use of resources and resilience to climate change;
- improve transport and local connectivity;
- substantially improve users' health, social and economic wellbeing through improvement of the social realm across the site;
- have a positive impact on ecology, quality of the city and the reputation of the University.

1.1.11 Redevelopment of the West Cambridge site will provide the University with an opportunity to achieve significant improvements in a coordinated way. A comprehensive, planned redevelopment which addresses the issues of density and enables sustainable transport will provide long term benefits which exceed plot by plot improvements.

### Need to transform and improve the site

1.1.18 Considering the amount of the remaining permitted development and large areas excluded from the original Masterplan, it is becoming clear that the current framework will not make the best use of this site, and will result in a development of uneven and lower densities. This will deprive the University and the City of much needed space for employment growth and will also reduce the efficiency and sustainability of the wider estate and undermine delivery of social spaces and sustainable transport.

1.1.19 Development already existing on the site either pre-dates the mid 1990s (such as the Veterinary School, Cavendish Laboratory or Schlumberger Research) or is based on the West Cambridge Masterplan, prepared in 1997. An outline planning application based on the West Cambridge Masterplan was granted in 1999 (application ref. C/97/0961/OP) and a subsequent review was approved in 2004.

1.1.20 Together with the pre-existing development on the site, the 1999 Masterplan envisaged just under 250,000m<sup>2</sup> of development on the 66 ha site, approximately 47% of which would be academic, 15% research institute and 22% commercial research. The remaining 16% would consist of shared facilities, sports and residential uses. Importantly, the 1999 Masterplan was not required to address pre-existing areas (the very low density Department of Veterinary Medicine precinct and the architecturally undistinguished Cavendish Laboratory).

1.1.21 The University continues to deliver successful academic and other University related buildings within the framework of the 1999 Masterplan, and has already delivered more than 60% of the permitted academic development. However, less than 12% of the permitted commercial development has been achieved and these uses were originally envisaged to be developed in parallel. On site amenity has generally lagged development and has been delivered within plots. Large surface parking areas in front of buildings have further contributed to lack of interaction and activity in the public realm.

1.1.22 As part of the Masterplan revision, important measures will have to be undertaken to create and maintain a successful commercial research address, fostering interaction but avoiding possible conflicts with the independence of academic research and teaching activity.

### User requirements: types of spaces, adjacencies and synergies

1.1.12 Given the limited supply of land available at West Cambridge and other operational sites, the University faces a major challenge in meeting the needs of development in the short, medium and long term.

1.1.13 New development at the West Cambridge site will enable the Physical Sciences and Technology to move from cramped and outdated accommodation to buildings that are fit-for-purpose for 21st century science, and which enable the research base to diversify and grow.

1.1.14 In the University's Capital Plan, major new proposals for development at the site include Cavendish Laboratory redevelopment (at a new location on the site); relocation of the remaining four Divisions of the Department of Engineering, currently located at Trumpington Street, to collocate with the two Divisions already established at the West Cambridge Site; relocation of the Vet School from West Cambridge; and the provision of a Shared Facility Hub.

1.1.15 In addition, the site would also support future moves of other University departments/institutes in the Physical Sciences and technology, as well as growth in the established research base at the site. Future opportunities for relocation would be identified through the University's annual cycle of academic planning, then explored through development of an academic business case (including the potential fundraising opportunities), and if agreed by the University, developed through detailed design proposals and the town planning process.

1.1.16 Based on feedback from key current and potential future occupiers, as well as world class benchmarks, the emerging academic and research trends demand flexible and efficient space, which can accommodate changing requirements and also promote collaboration between disciplines and academic and industry entities. The current masterplan, constrained by excluded areas, relatively small plots and large areas of surface car parking, does not support the realisation of such an environment. There is little interaction between existing buildings and delivery of types and scale of spaces required by the new Cavendish Laboratory is not possible on the currently available plots.

1.1.17 The new masterplan is needed to establish principles for gradual growth which respond to requirements for high quality research space, maintain flexibility for future and ensure pedestrian friendly public realm with active indoor and outdoor spaces for socialising.



05. West Cambridge Illustrative Masterplan within wider local context (including the North West Cambridge Development) - view from south



# UNIVERSITY VISION

# A2

## A1 University need



## A2 University vision

**West Cambridge - a new trajectory**  
**5 University Objectives**

**Key issues:**

- Optimise and enhance the site
- Support commercialisation of knowledge
- Create and sustain a high quality place
- Flexibility and efficiency
- Deliver sustainable development

## A3 Development context

International, Strategic and Local



## A4 Masterplan development process



## A5 Proposed development



## 2. UNIVERSITY VISION

### 2.1. West Cambridge: a new trajectory

#### University objectives

2.1.1 The University of Cambridge has identified West Cambridge as one of its key sites for growth, best placed for clustering of physical sciences and technology and collaboration with industry research.

2.1.2 The new masterplan proposals aim to establish a new trajectory for development and gradual transformation of the West Cambridge site into a lively research campus, accessible and integrated with the City, and which can equally well accommodate users' interaction and demanding scientific processes. By facilitating research excellence and innovation, West Cambridge will help to retain and attract staff and enable future research growth, thus strengthening the University's international reputation.

2.1.3 Research and teaching will continue to be the primary uses, but these must be strongly supported by social amenities and commercial research workspaces to promote a new social life and knowledge exchange. In response to this, the masterplan has been shaped by the building and operating requirements of teaching, academic and commercial research as much as by requirements for social interaction. By favouring a moderate density of built form a greater population can support a new level and range of activity on the site.

2.1.4 The current piecemeal development on plots will be abandoned in favour of a character based approach where the site will be transformed by the introduction of a new, clear landscape and open space framework, incorporating existing spaces, landscape planting and streets.

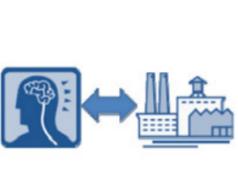
2.1.5 At-grade car parks will be removed and parking relocated into multi storey structures located at the periphery of the site, enabling an increase in density but also an emphasis on cycle movement and pedestrian activity and comfort throughout the site.

2.1.6 The University has established five key objectives to deliver the vision and guide the Proposed Development:

- **Optimise the amount of development** on the site, supporting the City and Region as a world leader in learning, teaching, research and development;
- **Support the commercialisation of knowledge** through entrepreneurship and collaboration with industry;
- Create and **sustain a high quality place** by transforming the physical and social environment for site users and neighbours across the City;
- Deliver **adaptable and efficient space** to support viability and long term value creation;



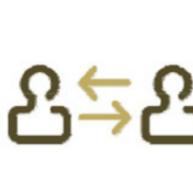
**1: To optimise the amount of development on the site, to help enhance the position of the City and Region as a world leader in Research and Development**



**2: To support the commercialisation of knowledge through entrepreneurship and collaborations with industry**



**3: To create and sustain a high quality place by transforming the physical and social environment for site users and neighbours**



**4: To create flexible and efficient space to support viability and long-term value creation**



**5: To deliver sustainable development by proactively investing in the quality of the estate and its integration within the City**

#### 06. University objectives

- Deliver **sustainable development**, pro-actively investing in the quality of place and integration within the City.

2.1.7 The new masterplan seeks to transform the site by recognising and building on a number of site-related opportunities, which will contribute wider benefits to the University and the City:

- Promote **sustainability** and improve the University's performance on a site unhindered by historic structures and dense urban form found in the city centre;
- **Sustainable transport strategy**, as the key tool for the transformation of the site, aiming to reduce the reliance on cars and domination of at grade car parks by improving **public transport**, concentrating car parks along the edges and thus freeing public space for **pedestrians and cyclists**;
- Provide a necessary space for a City-wide step change in **entrepreneurship and employment growth**;
- Cluster the University's Physical Sciences and Technology disciplines, with their industry partners, which will establish West Cambridge as a place which lives and breathes **science and technology**, generating exciting technological achievements and innovation;

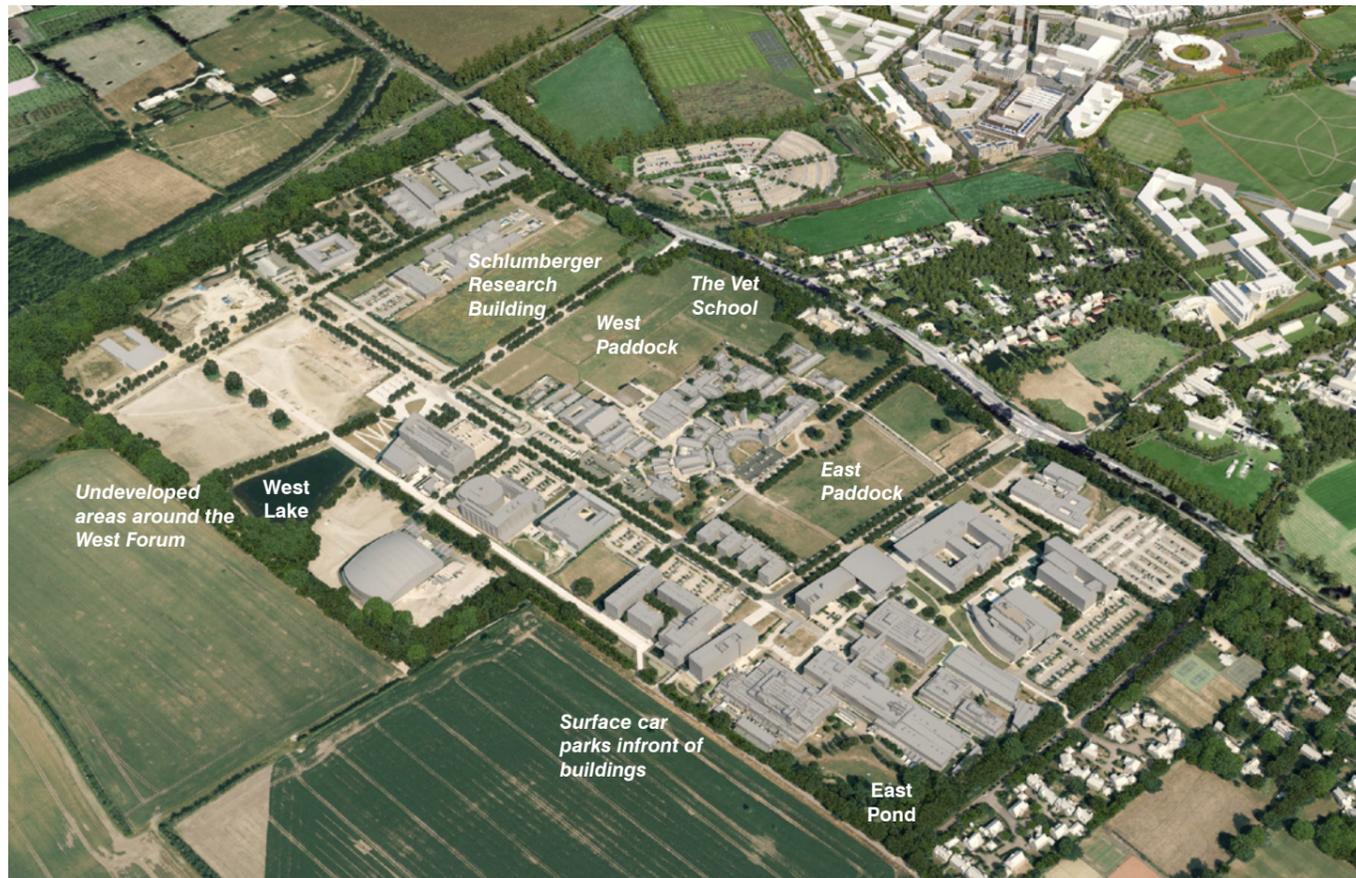
- Opportunities for academic events as well as **popularisation and promotion of science**, through evening lectures, festivals and community projects;

- **Public realm with adjacent shared facilities and amenities**, linking into a wider network of open spaces and pedestrian and cycle routes; and

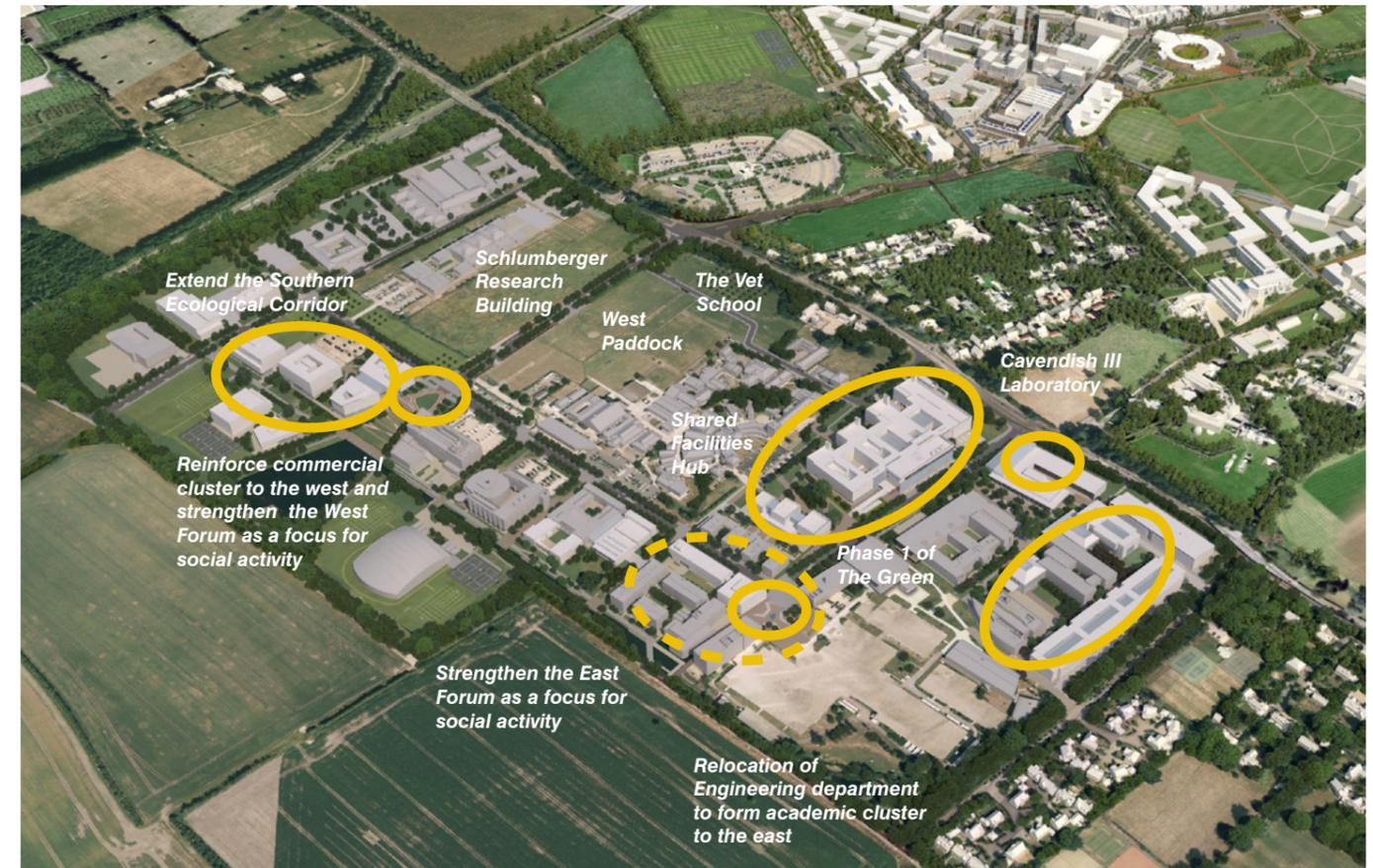
- **Community uses**, further capacity in addition to existing sport and nursery provision, helping to promote healthy and balanced lifestyle of site users and the wider community.

2.1.8 Development at West Cambridge will be incremental, with the initial stage 'Priority Projects' concentrating new academic development in the east, forming this new density and a renewed activity from the outset.

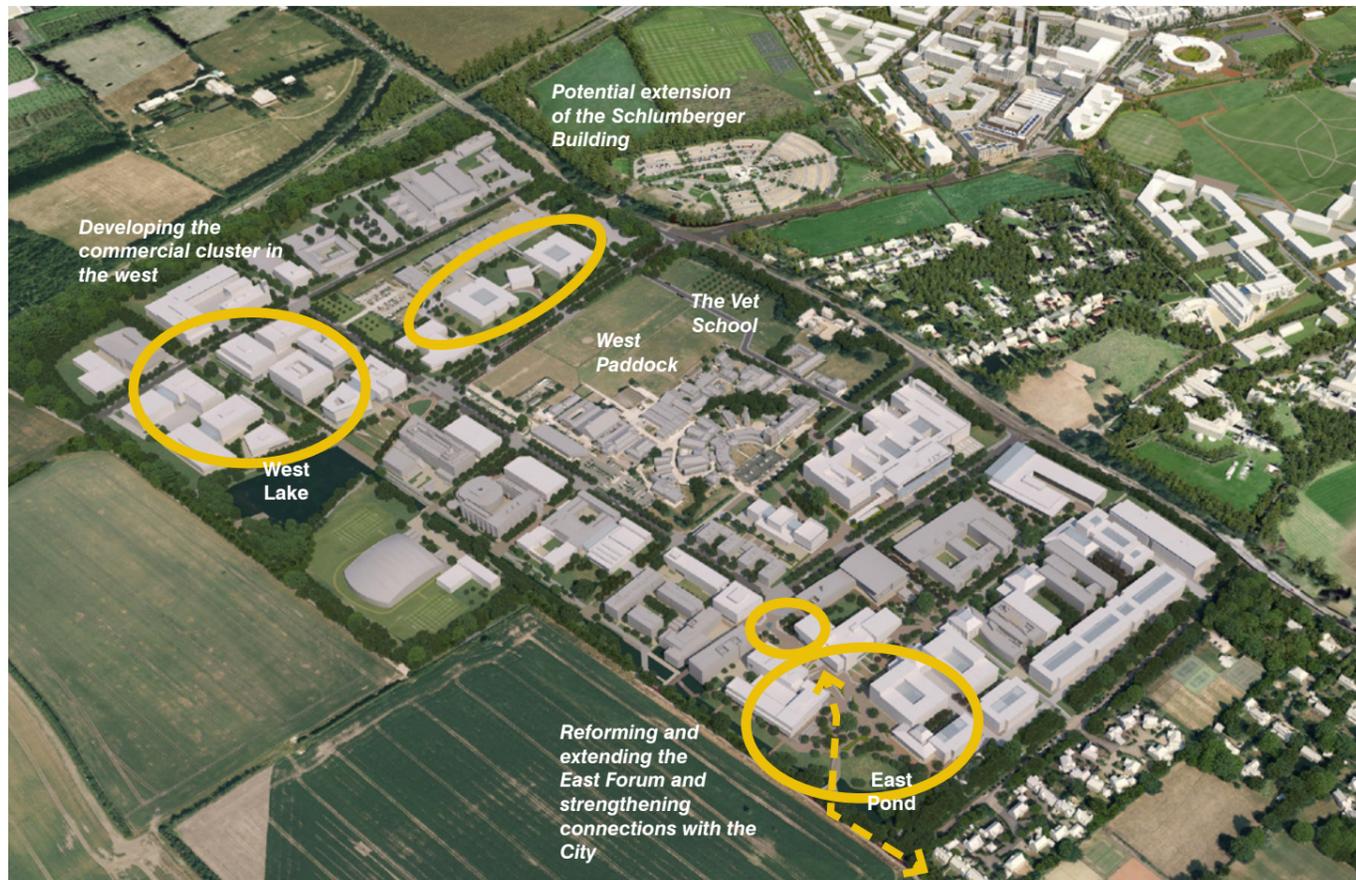
**“THE CHANGING CONTEXT AROUND WEST CAMBRIDGE WILL CREATE CONDITIONS FOR A NEW TRAJECTORY FOR THE FUTURE OF THE SITE. FROM THE OUTSET THERE IS POTENTIAL FOR THE SITE TO BE TRANSFORMED AND TO GROW INTO A RENOWNED RESEARCH AND TEACHING ENVIRONMENT”**



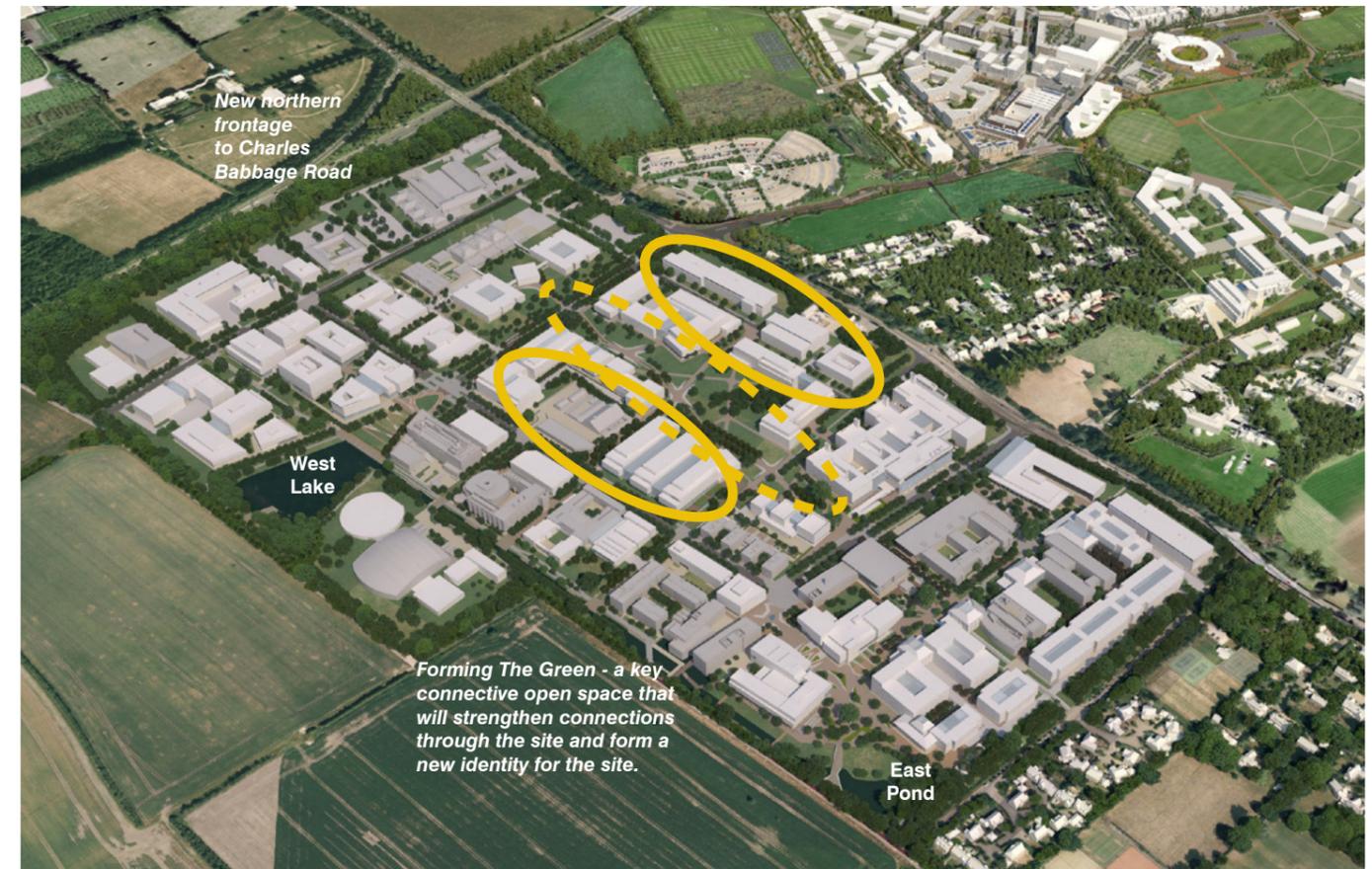
07. West Cambridge site - existing condition



08. West Cambridge site - Phase 1 Priority Projects



09. West Cambridge site - interim condition



10. West Cambridge site - full development

## 2.2. Vision for West Cambridge: Gradual transformation of place

2.2.1 Key to forming a new University Science and Technology cluster at West Cambridge is the physical transformation of the site. The transformation will:

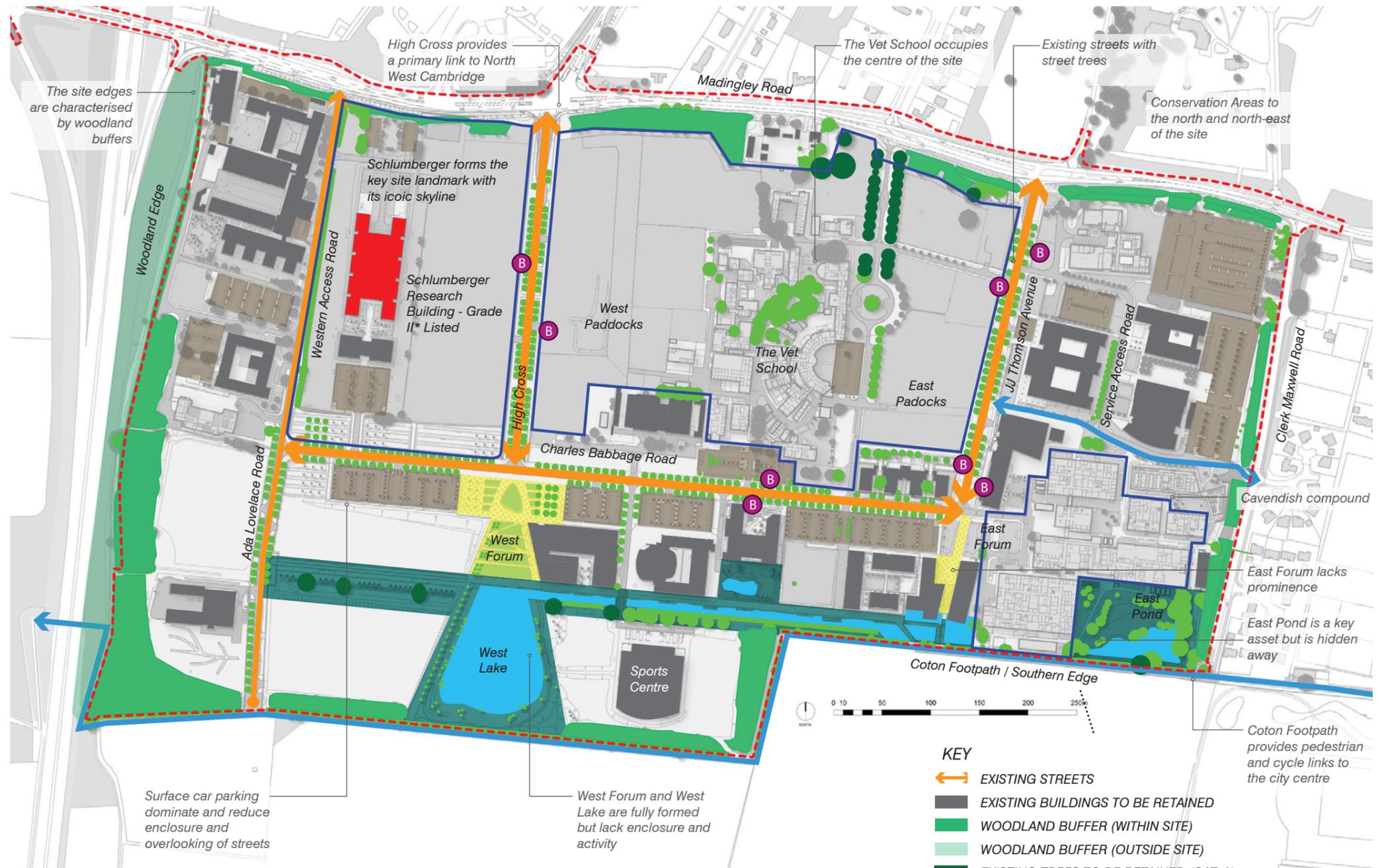
- provide a new and improved identity for the site that serves to enhance the University's national and international reputation;
- firmly establish West Cambridge (with the neighbouring North West Cambridge Development) as a new place within the city of Cambridge;
- create a new working environment that is attractive for University staff and students and is able to attract and retain commercial occupiers;
- increase the density of the site to ensure a new, greater population of users. This population will be supported by additional social amenities, recreational space, public realm as well as supporting uses and working space;
- transform the character of existing places and streets already within the site.

2.2.2 The intention is for a gradual transformation over time as new academic and commercial occupiers move in. Streets and spaces will be upgraded in-line with new development coming forward, for example JJ Thomson Garden, parts of the Central Green Link and the upgrade of JJ Thomson Avenue will take place in parallel with the development of the new Cavendish III Laboratories.

2.2.3 However it is important that the site does not continue to grow in a piecemeal way, but to cluster growth (initially around the Forums) to ensure that concentrations of development and activity can be formed.

2.2.4 There are high quality existing elements within the site that lend West Cambridge a certain character and identity. The proposed development aims to ensure that these are retained and reinforced or supplemented. These elements are:

- The Grade II\* Listed Schlumberger Research Building which is an iconic building within the site. The proposed development aims to reinforce the prominence of this building and ensure that it remains the primary landmark building for the site;
- The Canalside, West Lake and East Pond already form a series of key spaces within the site as well as space for the strategic pedestrian and cycle network. The proposed development aims to retain these spaces, reinforce their ecological role and ensure that the existing water bodies form part of the social amenity of the site while retaining their drainage role;



11. The West Cambridge site - Existing condition and key elements for transformation

- Woodland buffers at the boundary provide character to the site but also to the surrounding streets. The buffers perform the crucial role of screening the site from views from the south, west and east as well as in the north protecting the setting and character of Madingley Road and the two Conservation Areas to the north and east of the site;
- There are existing specimen trees in various locations throughout the site and much of the existing streets are furnished with street trees. The intention of the proposed development is to retain these trees and allow them to grow to maturity in the long term. In addition new tree planting throughout the site will ensure that the green character of the site can be retained and reinforced.

2.2.5 However, certain elements require improvement. Key elements considered for transformation are:

- The East and West Forums have already been established and the proposed development aims to safeguard their prominence as key places, integrate them into a wider pedestrian network and ensure greater definition and enclosure from new development;
- The existing streets are at present monotonous, car dominated and lacking in enclosure. In the same way as the Forums, these streets shall be integrated into a greater landscape and movement framework, and the aim of the proposed development is to ensure that these routes are transformed into walkable streets which incorporate new levels of pedestrian activity and cycle movement.

2.2.6 In addition, the proposed development seeks to promote legibility by creating a new landscape framework of different but connected routes and spaces - from urban streets, to boulevards, to Green Links and pedestrian lanes.

2.2.7 With this aim of the promotion of a new site-wide landscape framework, a new open space element will be formed - The Green. This new east-west space will address the present lack of connection and legibility across the site and will link the site from east to west. Most importantly this new space will provide new visual connections by establishing a new view corridor from the east of the site to the iconic roof-line of the Schlumberger Research building.

2.2.8 The proposed development establishes a new wider network that builds on the existing streets within the site, connects to the city via the Coton Footpath and forms links to the adjacent strategic network now being developed at the North West Cambridge Development, ensuring that the West Cambridge development becomes a strongly integrated part of the City.



Places for Meeting



A Pedestrian Place - Introducing Activity



Places for Relaxing



Social Places



New Social Facilities



Encouraging Different Ways of Working



Places for Collaboration



Promoting Interaction



New Working Environments



Collaboration and chance encounters

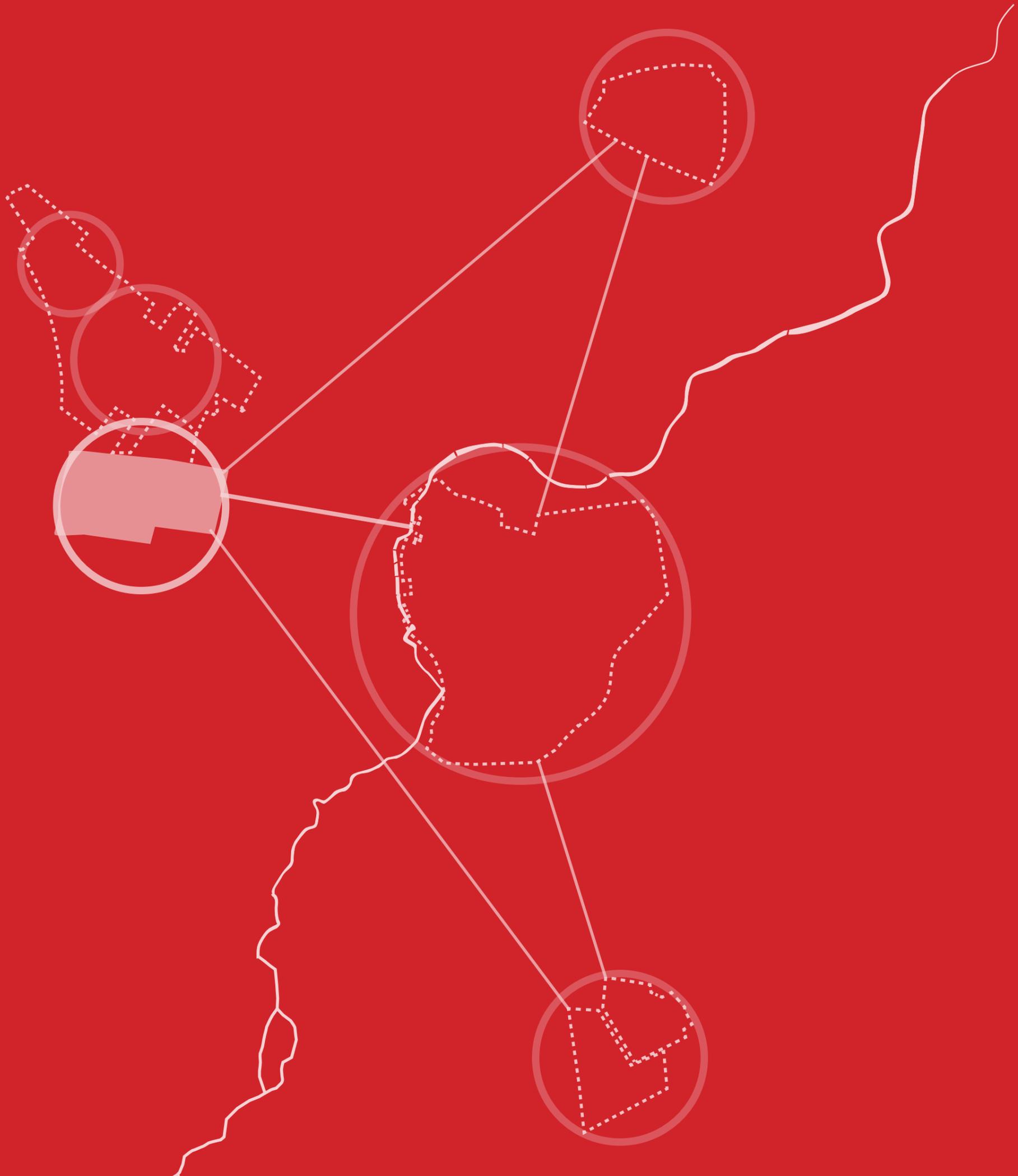


Student and Staff Experience



Events and Extra-curricular

12. The West Cambridge site - Existing condition and key elements for transformation



# DEVELOPMENT CONTEXT

# A3

<b>A1</b> University need	<b>A2</b> University vision	<b>A3</b> Development context <small>International, Strategic and Local</small>	<b>A4</b> Masterplan development process	<b>A5</b> Proposed development
		<p><b>Strategic context</b> <b>Town Planning context</b> <b>Transport context</b> <b>Local context</b> <b>Site description</b> <b>Existing consented masterplan</b> <b>Benchmarking analysis</b></p> <p><small>Key issues: Setting this development proposal within its local and wider context</small></p>		

# 3. DEVELOPMENT CONTEXT

## 3.1. Strategic context

### Site location

3.1.1 Cambridge City has seen a significant economic and population growth over the last decades, which is expected to continue.

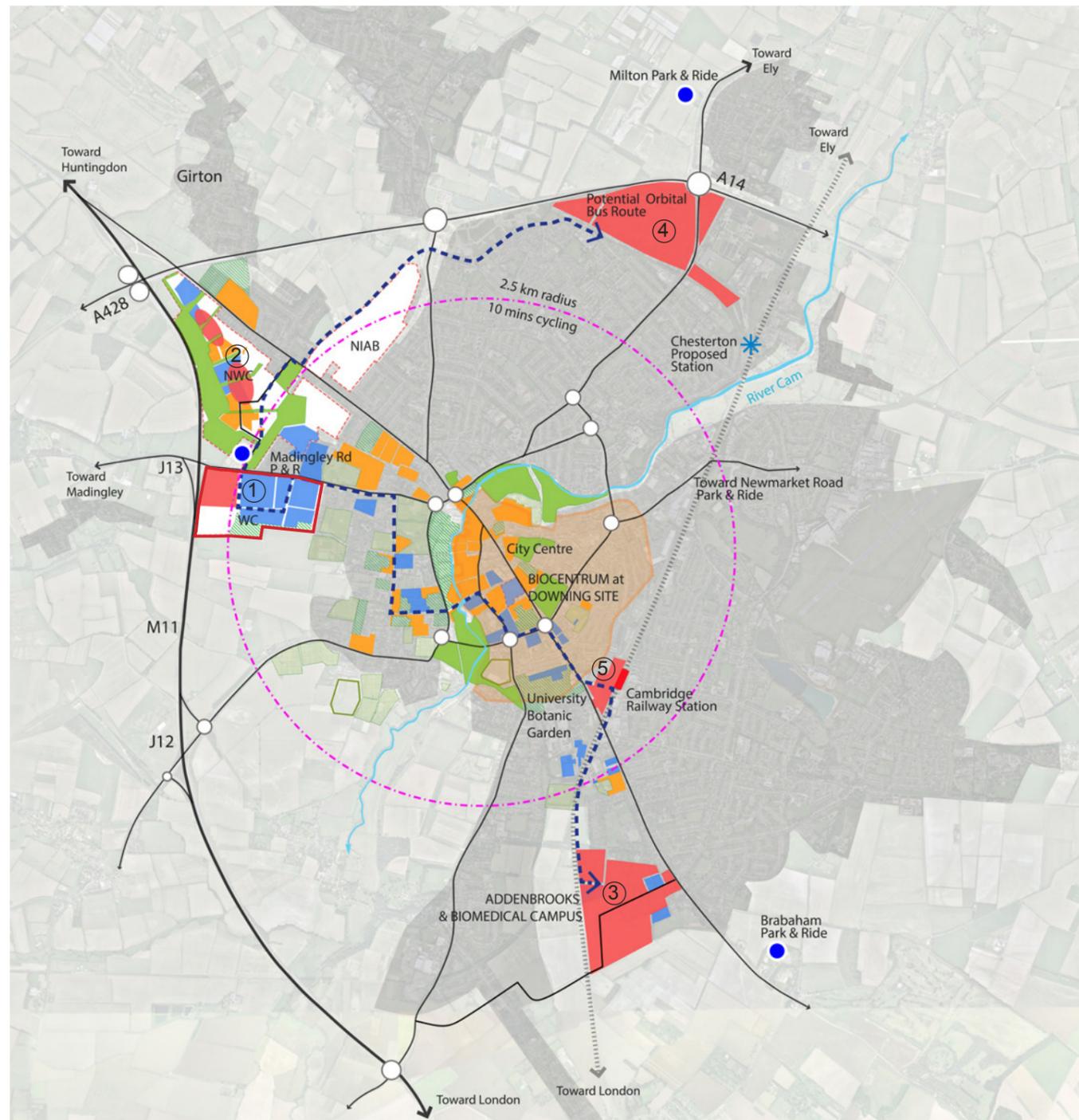
3.1.2 There are several major areas of change located outside the city centre, which include both residential and employment growth areas. South Cambridge, (where several residential developments and a biomedical campus are now developing) and CB1 (a high density mixed used development adjacent to the Railway Station) are key strategic developments for the city. In addition, the north-west part of the city, where the West Cambridge Site is located, is undergoing a significant level of transformation. Alongside the West Cambridge site, this north western development cluster incorporates Darwin Green and the University's other major development - the North West Cambridge Development.

3.1.3 The proposed employment cluster comprising both West Cambridge and parts of the mixed use North West Cambridge Development, has the potential to become a significant focus for employment and economic activity, joining the established employment clusters at Addenbrookes and Cambridge Science Park.

3.1.4 Already established as an academic site, West Cambridge is part of the natural expansion of the academic and college sites that occupy the western city centre area.

3.1.5 The location of the site within the City has the following benefits:

- it is a 10 minute cycle distance to the city centre along the Coton Footpath;
- it is within a 20 minute cycle to the station;
- the site is closer to the city centre than both Addenbrookes and Cambridge Science Park;
- the site is adjacent to the M11 and also has good access to the A428; and
- a Park and Ride site is located immediately to the north of the West Cambridge site;
- the site is adjacent to the developing North West Cambridge Development and together have to capacity to form a major academic and research cluster for the city.



**KEY**

①	West Cambridge
②	The North West Cambridge Development
③	Addenbrookes
④	Cambridge Science Park
⑤	Cambridge CB1
—	Existing roads
—	Railway line
■	Railway station
*	Chesterton - proposed station
—	Orbital bus route
—	Cycling distance - 10 min. radius
●	Park & Ride
■	Cambridge city centre
■	Employment clusters
■	Academic & Research clusters
■	Colleges
—	Under construction
■	University & Colleges' green spaces
■	University & Colleges' Sports grounds
■	Public green space
■	Cambridge sports facilities

13. Strategic context

## Transformation: west of the city

3.1.6 The West Cambridge site is part of an emerging development cluster to the west of the city which includes the University's mixed use North West Cambridge Development (NWCD) site, and residential development at Darwin Green, both located to the north of the site.

3.1.7 Both developments will fundamentally transform this part of the City. NWCD will accommodate a new local centre with community facilities, shops and a hotel, with over 3,000 residential units, 2,000 student rooms and academic and employment areas to follow by 2030. As former green belt land and an area of some ecological importance, the NWCD development includes significant areas of landscaped open spaces, such as the large new landscapes of the Western Edge parklands and the new community's heart - Storey's Field - part of the Girton Gap landscapes that extend from north to south through the site. In addition there is an extensive network of green corridors and landscaped pedestrian and cycle paths weaving through the development areas.

3.1.8 From the outset, it was part of University's vision to provide these amenities for the wider community beyond the limits of the development site. By means of increased density of both population and amenities, the development aimed to provide a focus for the west of the City, transforming the character and role of the area from suburban to urban.

3.1.9 From the completion of the first phase, NWCD will introduce transport improvements, including an additional public transport service between the local centre and the city centre and station (via West Cambridge), and a new vehicular link between Huntington and Maddingley Roads. This link will provide conditions for a future orbital bus route to reach West Cambridge linking through NWCD and the Darwin Green site to the Science Park and then east to the proposed station at Chesterton.

3.1.10 The road and cycle network of NWCD will link to the existing High Cross and JJ Thomson Avenue junctions on Maddingley Road and thus enable easy access between the two University developments, for vehicles, cycles and pedestrians.

3.1.11 NWCD will bring a new, greater residential population in close proximity to the proposed employment and research uses on West Cambridge site and in addition provide the working population of West Cambridge with access to:

- A new local centre providing a focus for the west of the city including local shops, a food store, health centre and hotel;
- University Housing for staff and post graduate students;
- Market housing;
- A 3-form entry University Primary School;
- A Nursery and Community Hall;
- Major public open spaces (including Storey's Field and the Western Edge);
- Sports pitches and playing fields (including cricket and football) and children's playgrounds;
- Additional academic and commercial space; and
- Connecting cycle routes and significant transport improvements.

### KEY

- 1 Local Centre (Market Square)
- 2 Foodstore
- 3 Primary School
- 4 University Nursery & Community Hall
- 5 Hotel
- 6 University Housing
- 7 Ridgeway Village - mixed housing
- 8 Storey's Field public open space
- 9 Western Edge public open space
- 10 Sports Fields
- 11 Academic cluster - Maddingley Rise
- 12 Academic and commercial clusters
- 13 Storey's Field Village - mixed housing
- 14 Girton Gap landscapes



14. West Cambridge Site within the wider local context (including the emerging North West Cambridge Development)

## Existing landscape context

3.1.12 Cambridge has a distinct 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.

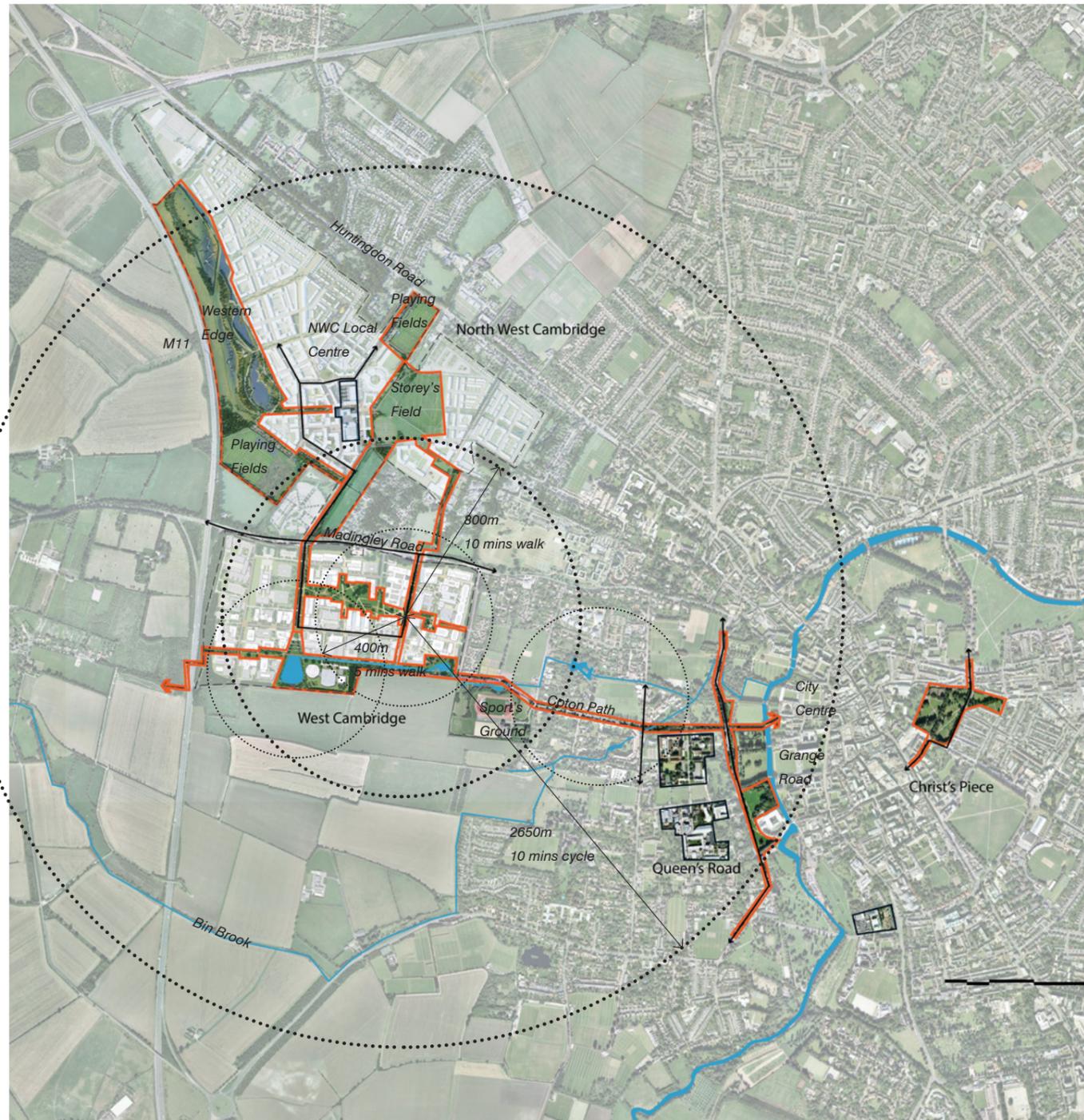
3.1.13 The rural landscape of Cambridgeshire is particularly close to the west of the city, and is defined by large arable field parcels with an open aspect. Remnants of this agricultural landscape can be seen throughout the city, found in boundaries, markers such as trees, hedges and ditches that define the network of open spaces and routes that have shaped the urban grain. However, there is limited visual connection to the city from this rural landscape.

3.1.14 The association between public open space, private space and the density/scale of the built environment are particularly marked within the city centre, and the connections that form the network between these spaces are typically reinforced with mature avenues or lines of trees, formal boundaries, with a clear distinction between private and public functions.

3.1.15 The site at West Cambridge offers and contains many of the features that are seen throughout the city and this green infrastructure includes native hedgerows, mature avenues of native trees, woodland boundaries and green buffers and areas of naturalised open water with marginal planting.

3.1.16 The new masterplan now borrows from Cambridge city centre and brings to the west a set of the city's other green elements. These new spaces, which include pedestrian lanes, ecological/wetland landscapes, landscaped gardens, public commons or greens and enclosed courts are weaved through and between the existing landscape features to form a new green framework.

3.1.17 The overall landscape concept is to create a series of elements and spaces that are cohesively joined to form an overall site strategy that responds to place, character and the masterplan reinforcing a legible hierarchy of space.



15. West Cambridge strategic context - connective landscapes

## Existing landscape types

3.1.18 Key to the transformation of West Cambridge will be the creation of a strong landscape and open space character, with visual connection to the city centre. This will include a series of well-defined new urban spaces, reinforced landscape connections and upgrading the existing internal and surrounding street network. The development strategy seeks to create a new hierarchy of spaces through the site that will aid legibility, create a strong visual identity and form the setting for new events and recreation that will become integral to the life of West Cambridge.

3.1.19 To create a unified but distinct landscape that's relevant to Cambridge, we have selected a series of attributes from three identified character zones which been reinterpreted and used within the Green Infrastructure design

### Agrarian landscapes



16. Coton Countryside

### Transitional landscapes



17. The Backs

### Structured landscapes



18. Garrett Hostel Lane

#### Agrarian

*Precedent: Coton Countryside Reserve*

*Defined by: Informal mixed species rich hedgerows; specimen trees within hedgerows; biodiverse open grasslands and species rich meadows.*

#### Transitional

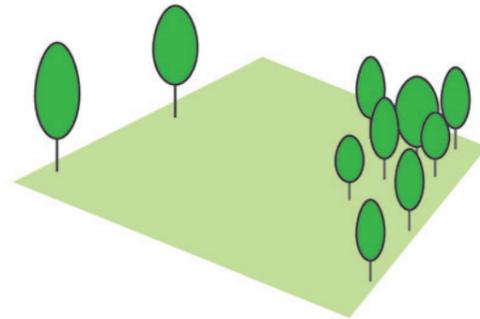
*Precedent: King's Back, Cambridge*

*Defined by: Integrated Landscape – hard and soft, meandering paths with ornamental tree and shrub planting; informal tree planting along flood plains; drainage ditches and canals.*

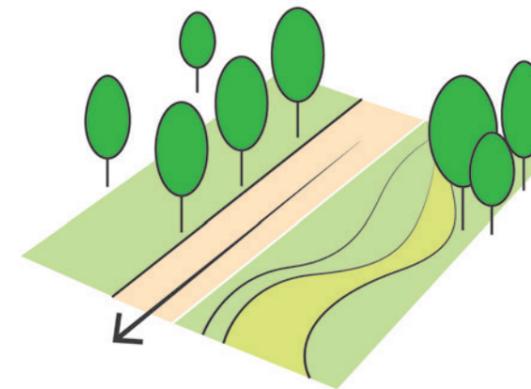
#### Structured

*Precedent: landscapes in the City*

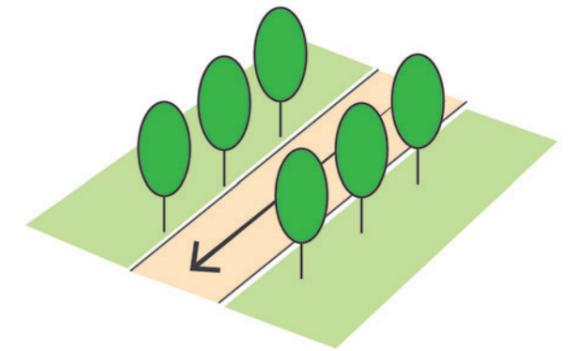
*Defined by: Geometrical planting & avenue tree planting; formal hedgerow planting; managed lawns with mature trees, clear boundary treatments.*



- Informal mixed species rich hedgerows
- Specimen trees within hedgerows
- Biodiverse open grasslands
- Species rich meadows



- Integrated landscape – hard and soft
- Meandering paths with ornamental tree and shrub planting
- Informal tree planting along flood plains
- Drainage ditches and canals



- Geometrical planting & avenue tree planting
- Formal hedgerow planting
- Managed lawns with mature trees
- Clear boundary treatments

## 3.2. Town Planning context

### Cambridge Local Plan 2006

3.2.1 West Cambridge is designated as an Area of Major Change (AOMC) and is recognised as a major allocation for University faculty development, research institutes, commercial research and development, a sports complex, residential and associated uses.

### Cambridge Local Plan 2014: Proposed submission

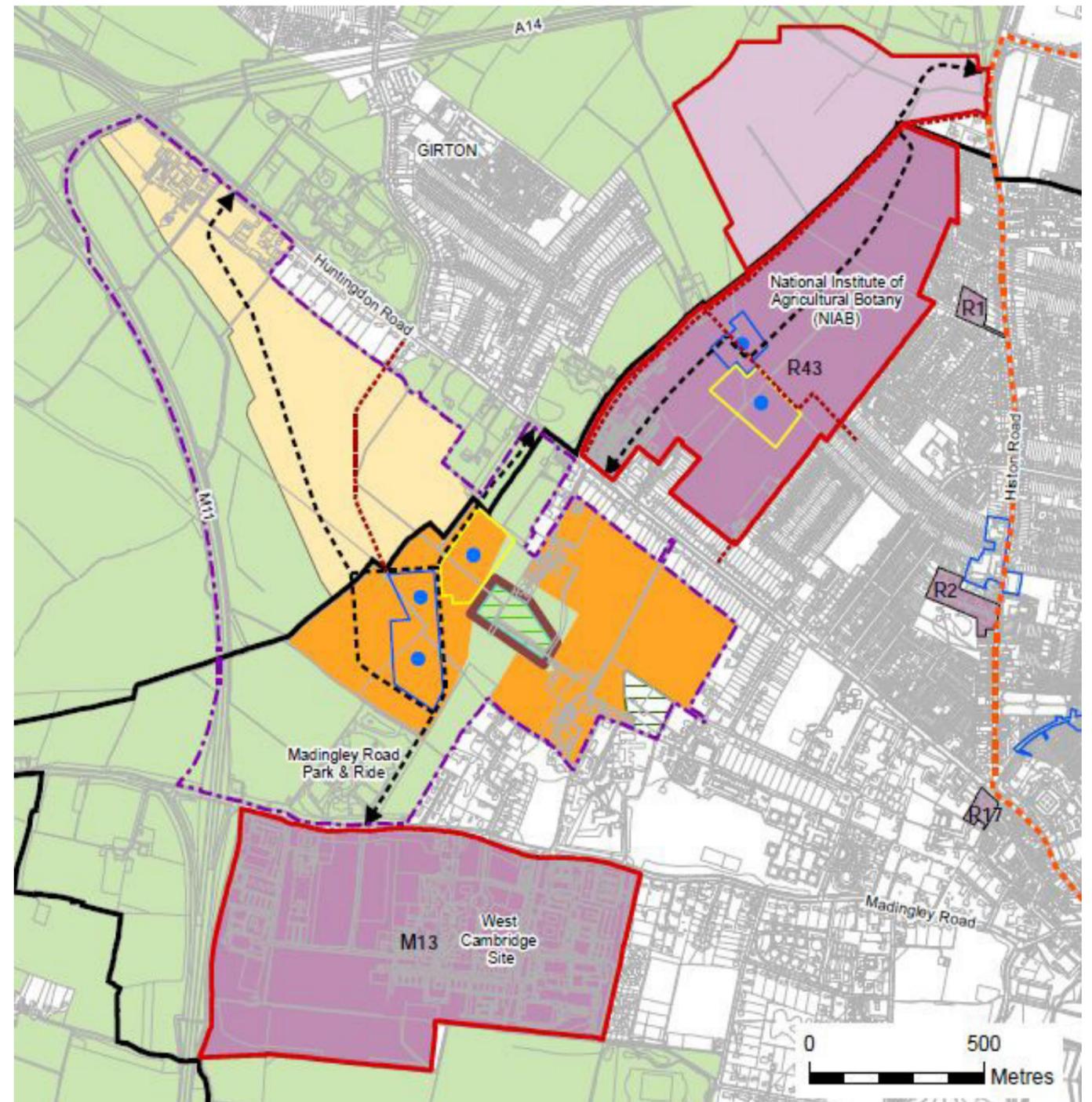
3.2.2 The West Cambridge Site continues to be designated an AOMC in the Cambridge Local Plan 2014: Proposed Submission. Policy 18: West Cambridge Area of Major Change sets out the overarching principles for further development of the site.

3.2.3 The University of Cambridge and Cambridge City Council have agreed amendments to the proposed wording of Policy 18 as part of the Examination of the Local Plan through a Statement of Common Ground (SoCG). The revised wording of Policy 18, as set out in the SoCG, is as follows:

1. Development of this area will be permitted in line with the existing planning permissions.
2. For new development, the principal land uses will be:
  - D1 educational uses, associated sui generis research establishments and academic research institutes; and
  - Commercial research and development of products or processes within use class B1(b) that will support knowledge transfer and/or open innovation in respect of D1 higher educational uses, associated sui generis research establishments, academic research institutes, and/or other Class B1(b) uses already authorised or granted permission pursuant to this policy.
3. Any densification of development on the site that results in a significant increase in floorspace, over that already approved, will be supported providing that:
  - A revised masterplan supporting an outline planning application (OPA) has been proposed that takes an integrated and comprehensive approach to the provision and distribution of the uses, and supporting facilities and amenities;

- Phasing of the development will be determined through the outline planning permission (OPP) and as the need is proven;
  - The approach to appropriate development heights will be determined through the OPP giving consideration to the sensitivity of the Green Belt to the south and west;
  - Proposals respect the important adjacent Green Belt setting to the south and west, and other neighbouring residential uses and views of the city from the west;
  - It includes a comprehensive transport strategy for the site, incorporating a sustainable transport plan to minimise reliance on private cars. This should include assessing the level, form and type of car parking on the site;
  - That walking, cycling and public transport links (including access for all) to the city centre, railway station(s), other principal educational and employment sites, and other key locations within the city are enhanced to support sustainable development; and
  - That proposals provide appropriate green infrastructure which is well integrated with the existing and new development and with the surrounding area.
4. The development will also include further phases of the sports centre.
  5. Small-scale community facilities, amenities, and A1 (local shop), A3 (café), A4 (public house), D1 (crèche) type uses and student accommodation will be acceptable, if they support existing occupants on the site and add to the social spaces and vibrancy of the area, essential to its continued success.
  6. The council will be supportive of a site-wide approach to renewable or low carbon energy generation or the future proofing of buildings to allow for connections to energy networks.
  7. The precise quantum of new floorspace will be subject to testing and demonstration through the development of a revised OPA for the site.

3.2.4 The Proposed Development will make a key contribution to delivering the objectives of Policy 18.



20. Local Plan Policy 18: West Cambridge AOMC

### 3.3. Transport context

#### Transport constraints

3.3.1 West Cambridge is well-located with respect to good existing pedestrian and cycle infrastructure to accommodate local non-motorised movement, and the existing bus services already connect to a series of popular destinations.

3.3.2 West Cambridge is being brought forward within the context of wide-ranging uncertainty, including:

- the scale of local residential development included in the Local Plan, still completing its inquiry;
- the impact of the A14 Cambridge Huntingdon Improvement Scheme;
- the deliberations of the Greater Cambridge City Deal and Long Term Transport Strategies;
- the need for enhancement measures along the M11.

3.3.3 The local highway network along the Madingley Road Corridor is characterised by heavy, tidal, peak hour movements into (AM peak) and out (PM peak) of Cambridge. On the strategic highway network, the congestion on the A14 to the north-west has resulted in the Government progressing the A14 Cambridge Huntingdon Enhancement Scheme following the cancellation of an earlier project in 2010.

3.3.4 Existing journey to work trips by Cambridge residents - including University employees involve a much lower car driver mode share than the United Kingdom average. Notwithstanding, there is currently limited constraint to journeys to West Cambridge being made by car, especially to the commercial occupier. Indeed, only recently had any occupier at West Cambridge prepared or agreed an Individual Travel Plan as travel demand management techniques had not started until well after the original development was consented.

#### Transport opportunities for improvements

3.3.5 Whilst the existing transport infrastructure appears to accommodate the existing requirement, enhancement would be sought to accommodate significant additional development in the area, with further capacity being provided for all modes of transport, especially non-car modes. This is being provided by a wide-ranging, balanced, sustainable transport strategy that includes the following measures:

- the delivery of a strong, quality, development-wide, travel demand management strategy to both the existing and future users of the Site;
- provision of quality pedestrian and cyclist infrastructure both to, and across the Site, reducing existing severance. Of particular interest is the provision of improved cycle connectivity into the City, with additional priority measures across busy roads;
- delivery of quality, regular and accessible bus services to popular destinations, including new link to the north, towards the Chesterton Rail Station and Milton Park and Ride Site;
- appropriately sized site access junctions to maintain the existing highway capacity, and provide priority for pedestrians, cyclists and buses; and
- provision of sufficient car parking places around the periphery of West Cambridge site to minimise car movement within the Development, and the implementation of a car parking provision and management strategy.

3.3.6 These measures will both manage the impact of the proposed Development on the surrounding transport network, and protect the quality and amenity of West Cambridge for all occupiers.

3.3.7 In addition to these measures proposed by the University, a range of further strategic measures are being promoted within the Greater Cambridge City Deal to mitigate existing issues, and provide capacity for further development by others across Cambridge.

3.3.8 City Deal aims to enable a new wave of innovation-led growth by investing in the infrastructure, housing and skills that will facilitate the continued growth of the Cambridge Phenomenon. Whilst these City Deal proposals will enhance connectivity to the Development, West Cambridge is not dependent upon its delivery - nor will West Cambridge prejudice the delivery of the City Deal proposals.

#### Car parking

3.3.9 Under-provision of car parking within the Site could be detrimental to the street-scene, with “fly-parking” occurring across the area. Similarly, over-provision would be equally likely to be detrimental to the sustainability credentials of the Development, with excessive numbers of car driver trips attracted by the easy car parking provision.

3.3.10 It is proposed that the maximum car parking provision decreases towards the later phases of delivery of the West Cambridge Development as the various transport mitigation measures are implemented.

3.3.11 To ensure that the Development would continually deliver an appropriate level of car parking, a Car Parking Delivery Report will be provided on a regular basis and to support each individual Reserved Matters application.

3.3.12 The on-site car parking will be managed by the University, who will control the issue of car parking permits to occupiers - and to refuse the granting of a permit should there be a suitable alternative to car travel.

## 3.4. Local context

### Surrounding context

3.4.1 The Site is located on the western edge of Cambridge, bound to the west by the M11 Motorway, to the north by the A1303 Madingley Road, to the east by Clerk Maxwell Road, and to the south by open countryside.

3.4.2 Surrounding the site, to the north is located the Park and Ride facility at Madingley Road and the emerging NWCD development. In addition there is a cluster of existing academic uses around Madingley Rise.

3.4.3 To the east is a mixture of residential and sports playing fields while to the south is open countryside, designated as Green Belt. Also to the south, the existing watercourse of Bins Brook runs east to west, forming ponds at the University Sports Ground to the south east of the site.

3.4.4 To the west of the site is the M11 motorway, which forms a strong limit to city growth. Orchards and fields used for agriculture and grazing are located to the west of the M11 and further west of these is the village of Coton. The fields and orchards between Coton and the Site are relatively small and bound by hedgerows and trees. Fields beyond Coton and to the south are larger and more open. Many are still lined by hedgerows but there are far fewer trees. This field pattern of large open fields is also present to the south, between the Site and Barton Road.

3.4.5 To the north and east of the Site there are two Conservation Areas each containing a number of listed buildings: The Conduit Head Conservation Area consists of 1930's modernist housing and the West Cambridge Conservation Area, contains an eclectic mix of neo-Georgian and modernist houses.

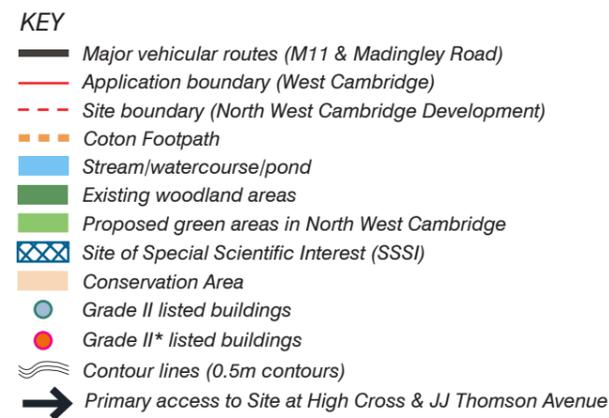
3.4.6 A long distance recreational route; the Coton Footpath, passes along a public footpath along the southern boundary of the Site. Another public footpath

branches off the Harcamlow Way further south of the Site. Further south still is another public footpath travelling from Coton to Barton Road.

3.4.7 The Site is located within the impact zone of Madingley Wood Site of Special Scientific Interest (SSSI). Madingley Wood is a small area of ash-maple ancient woodland and is located approximately 1.8km west of the Site. The Site is also located within the impact zones of two geological SSSIs; Histon Road SSSI located approximately 2.5km north east of the Site, and Traveller's Rest Pit SSSI located approximately 500m north of the Site.

3.4.8 Along the boundaries of the site there is mature woodland buffers, which to the north, lend an agrarian/ bucolic character to Madingley Road, a key approach road to the city.

3.4.9 Within the site is the Grade II\* Listed Schlumberger Research Building which forms key landmark for the site.



21. Site context

22. Green Belt farmland to the south



23. Madingley Road to the north



24. M11 to the west



25. Madingley Park and Ride to the north-west



## Surrounding land uses

3.4.10 The West Cambridge site is 66ha in area and comprises a mix of land uses including academic, commercial, sports, and residential. Large parts of the Site comprise a mixture of roads and footpaths, car parks, unmanaged plots awaiting development, formal landscaped public realm areas, and large paddocks used by the Veterinary School. There are numerous avenues and individual trees of varying ages across the Site.

3.4.11 The Site is divided up and accessed by roads which form a rough grid pattern. There are three main roads crossing the Site in a north-south direction: JJ Thomson Avenue, High Cross and Western Access Road/Ada Lovelace Road.

3.4.12 JJ Thomson Avenue and High Cross, both provide access to the Site from the A1303 Maddingley Road. A single road, Charles Babbage Road, crosses the Site in an east-west direction between JJ Thomson Avenue and Western Access Road. In addition there are numerous smaller access roads which service individual buildings and plots.

3.4.13 There are three main clusters of buildings on the Site. The largest cluster of buildings occupies the eastern area, with a mixture of older buildings constructed in the 1970's along with newer buildings in more recent years. The second cluster of buildings is located centrally on the Site and comprises the buildings and paddocks used by the Department of Veterinary Medicine. The third cluster of buildings is located in the north western corner of the Site which are occupied by commercial research tenants; the British Antarctic Survey, Schlumberger, and Aveva. The University Sports Centre is located on the southern edge of the site, well connected to the Coton Footpath.

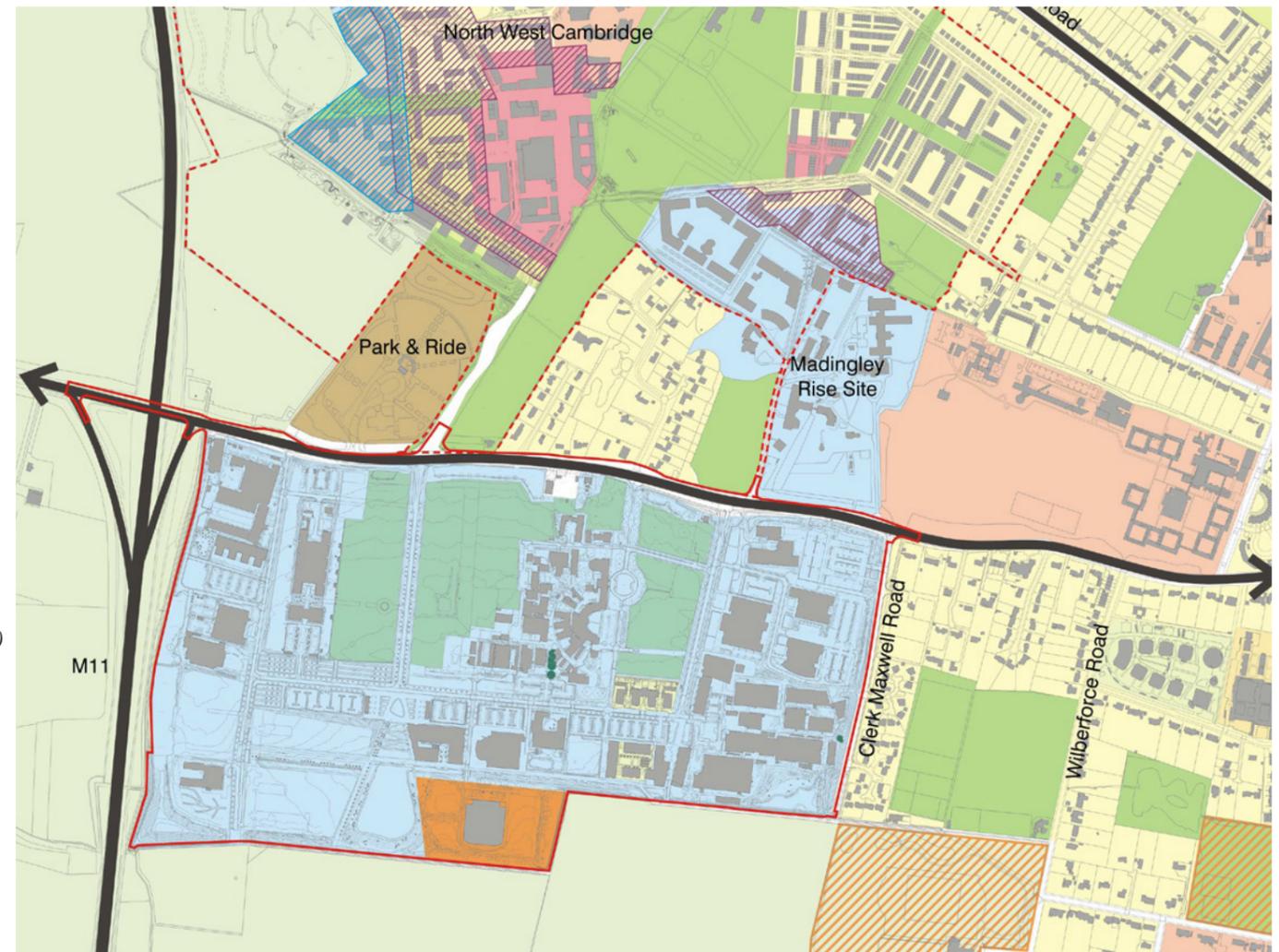
3.4.14 The Maddingley Road Park and Ride is located just north of the Site and beyond this is the location of the NWCD development, which will provide a new Local Centre, new community uses and residential uses.

3.4.15 Existing academic uses are located to the north of Maddingley Road along Maddingley Rise - this academic cluster will be reinforced by new academic uses located just to the north within the NWCD site. Churchill College is located adjacent to this.

3.4.16 Residential uses are located close by at The Lawns and Perry Court, off Clerk Maxwell Road to the east, and Conduit Head Road and Lansdowne Road off the A1303 Maddingley Road to the north.

3.4.17 To the east of the Site and beyond the residential properties at The Lawns and Perry Court, are the Emmanuel College Recreation Grounds and University Sports Grounds. Beyond these, the western suburbs of Cambridge comprise a mixture of residential properties, sports pitches and university buildings.

- KEY**
-  Major vehicular routes (M11 & Maddingley road)
  -  Application boundary (West Cambridge)
  -  Site boundary (NWCD)
  -  College/Schools
  -  Residential areas
  -  Open space
  -  Research and academic
  -  Mix uses
  -  University Sports Centre
  -  Paddocks
  -  Park and Ride
  -  Green Belt
  -  University & Colleges' Sports ground
  -  Land use flexibility zone
  -  Western Edge land use flexibility zone



26. Surrounding land uses

27. Academic uses at Maddingley Rise



28. Housing off Clerk Maxwell Road



29. Housing to the north of Maddingley Road



30. University Sports Ground to the south-east



## Site access, movement and parking

**1 3.4.18 Madingley Road** creates the northern boundary and provides two vehicular access points to the Site: one at High Cross to the west, and another at JJ Thomson Avenue. Both access points also provide access to NWCD to the north (vehicular, cycle and pedestrian).

3.4.19 With completion of the northward link as part of the NWCD works, High Cross junction will become an important access point to the Site, with expected increase in utilisation.

**2 3.4.20 Clerk Maxwell Road at the eastern boundary** provides vehicular access to the Park and Cycle facility in the north east of the site and cycle access to the site. To the east, this road also provides access to two clusters of residential development and the University's sports facilities. It is a wide road, with on-street parking and generous landscaping.

**3 3.4.21 Coton Path to the south** provides direct links to the city centre and other academic sites such as the University Library, Sedgwick and Mathematics. This path is particularly well used by cyclists as a main route to and from the city centre. It also provides access to the University Sports Ground and Sports Centre within the West Cambridge site.

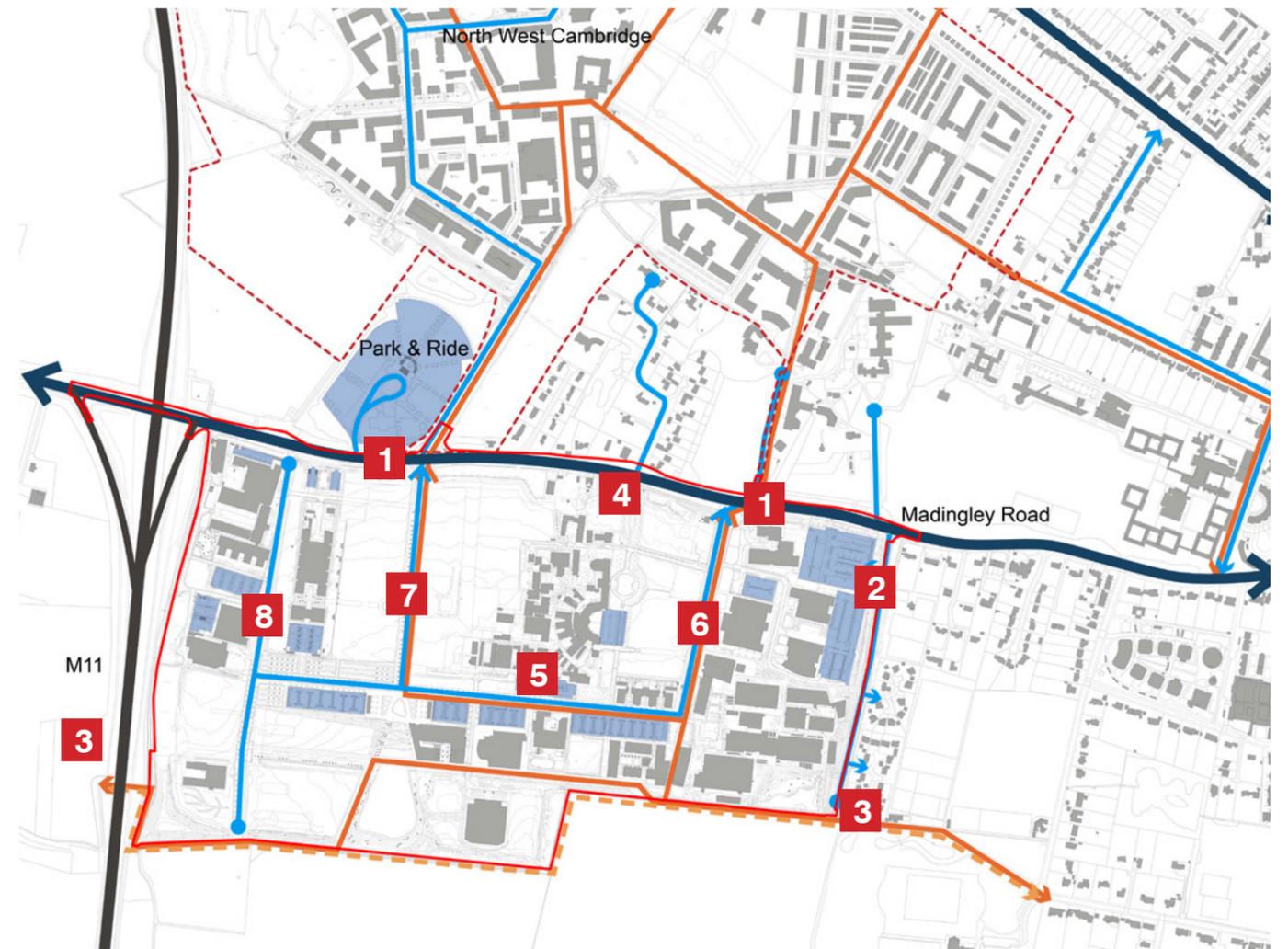
**4 3.4.22 The original entrance to the Department of Veterinary Medicine** (the 'Vet School') has been closed to vehicles, but the original road layout was retained. The grand maple tree and tree-lined street are assets that should be celebrated. There is an opportunity to reopen this entrance to create an additional access point along Madingley Road.

**3.4.23 Internal circulation:** three streets provide an internal access loop within the site, these comprise Charles Babbage Road (5), JJ Thomson Avenue (6) and High Cross (7). High Cross has recently been completed with landscaping and avenues of trees. The Western Access Road and Ada Lovelace Road (8) are located to the west of the site and provide access to Schlumberger and other buildings in the western area. At present the Western Access Road provides no vehicular access/egress to Madingley Road

3.4.24 Other service roads provide access to car parking and academic buildings/service areas of the Vet School and Cavendish.

**3.4.25 Car Parking** Large surface car parking areas occupy areas along the eastern boundary, areas to the south of Charles Babbage Road and areas along the western boundary. These areas minimise connections between buildings and have large impacts on enclosure and definition of public realm.

3.4.26 The entrance to the Schlumberger Research building is set back from the main street, therefore pedestrians and cyclists arrive through a car park.



31. Site Access and Movement

32. JJ Thomson access



33. High Cross access



34. Coton Footpath



35. Surface level car parking



## Existing public transport

3.4.27 West Cambridge is well-located, being adjacent to well-frequented existing bus routes connecting to a range of destinations through the City:

- the Universal service runs at a frequency of 15 minutes on weekdays from the Maddingley Road Park and Ride through West Cambridge, connecting the University facilities around Newnham to Cambridge Rail Station, then on to Addenbrooke's Hospital. When Phase 1 of the NWCD is occupied, the service will start from the new Local Centre instead of the Park and Ride site, collecting P+R passengers from the NWCD Site;
- Citi4 runs every 20 minutes along Maddingley Road from Cambourne, passing West Cambridge and continuing along to Chesterton Road, Victoria Road to the Emmanuel Street stop in the city centre; and
- the Maddingley Road Park and Ride site, a 10 minute walk from the Hauser Forum, is served every 10 minutes from the City Centre.

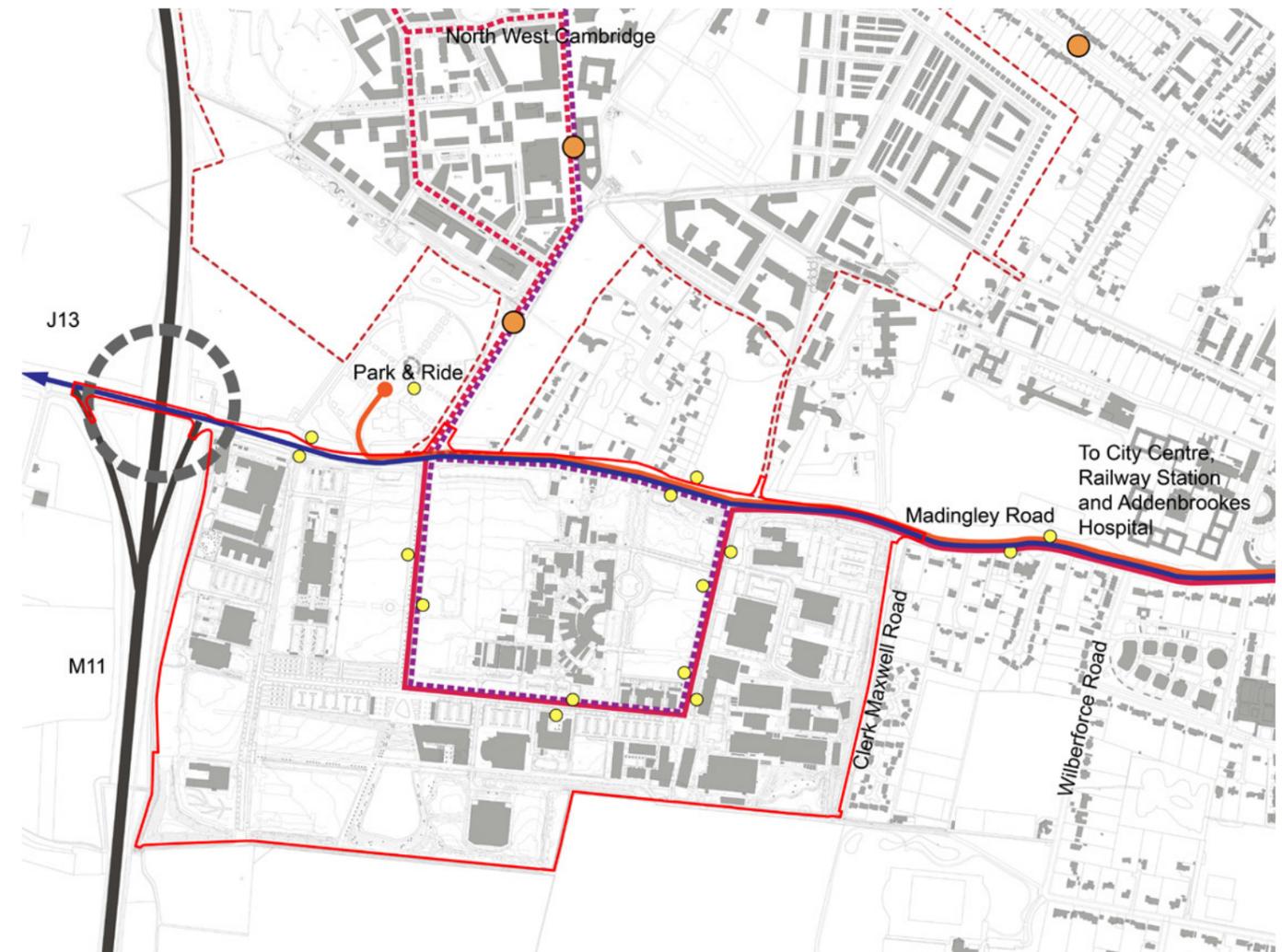
3.4.28 Whilst these services are regular there is a perception that the site is poorly serviced by public transport. This may be due to a number of factors such as:

- only Universal service bus stops are located within the site and these are not located close to the Development focus points at the West and East Forums;
- buses serving West Cambridge are frequently delayed exiting the site as no bus priority is provided on the Site Access Junctions with Maddingley Road; and
- access to other services requires passengers having to walk to, and cross, Maddingley Road.

3.4.29 NWCD will provide improved bus connectivity that will also improve access to the West Cambridge site. This includes a more frequent Universal service linking to the other University facilities, and (later in the NWCD delivery) an Arc bus service linking from West Cambridge around the periphery of Cambridge towards Chesterton Rail Station/Milton Park and Ride.

3.4.30 In addition, there are two additional bus services being considered as part of City Deal proposals which could enhance bus accessibility to West Cambridge. They include:

- a radial route extension towards Cambourne and the west; and
- an orbital route, extending and intensifying the initial NWCD orbital proposals (Arc service).



36. Existing Public Transport

37. Maddingley Road Park and Ride



38. Maddingley Road Park and cycle



39. Bus stops within the Site



40. Bus services



## Key views

### Key views to site:

3.4.31 The Grade II\* Listed Schlumberger Research building forms a highly distinctive, key landmark for the site which is visible from the M11, parts of the NWCD site and occasionally from within the site and from Madingley Road. However this iconic building is not visible from areas east of the present Vet School buildings.

3.4.32 Views into the Site along the northern and western boundaries are generally limited due to thick or dense bands of woodland buffer except where the Site access roads join the A1303 Madingley Road.

3.4.33 Views into the Site from the east along Clerk Maxwell Road are also extremely limited due to a dense band of screening vegetation. However, buildings within the site are visible from further east, from within the sports fields.

3.4.34 Views into the site from Madingley Road are also limited. Views are provided at site access points at High Cross and JJ Thomson Avenue and areas to the west. In the east an existing woodland buffer limits views to the interior of the site.

3.4.35 Buildings within the centre of the site are generally not visible from and do not address Madingley Road.

3.4.36 Approaching from the city centre along Coton Footpath, Hauser Forum is the first highly visible building with the Cavendish Laboratory being largely hidden by woodland planting with only its roofline visible.

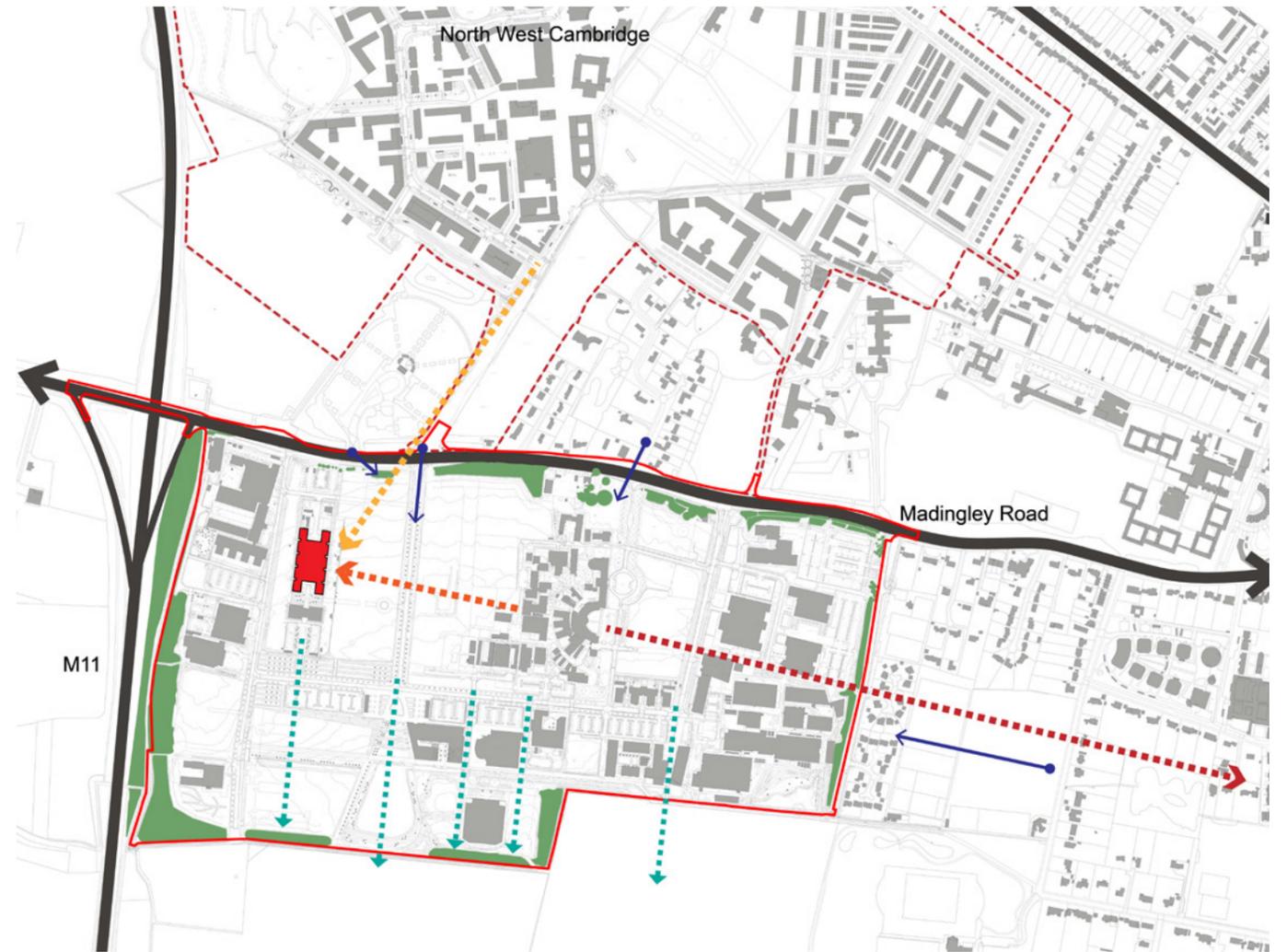
### Key Views from site:

3.4.37 Higher ground at East and West Forums, provide dramatic views towards the open, agricultural countryside to the south. Other streets between Charles Babbage Road and the south of the site also provide glimpses of this aspect.

3.4.38 Views from upper floors of the Maxwell Centre towards the city centre reveal how clearly city landmarks such as King's College Chapel, St John's College Chapel and University Library can be seen from within the site. From ground level King's College Chapel is visible from the car park in front of the Veterinary School.

#### KEY

-  Major vehicular routes (M11 and Madingley Road)
-  Application boundary
-  NWCD boundary
-  View to the King's College Chapel
-  View to the Schlumberger
-  High level view to the Schlumberger roof structure
-  Views from site
-  LVIA viewpoints
-  Existing woodland areas



41. Key views from and into the site

42. Views from Madingley Road



43. Views to Schlumberger from within the site



44. Views from East Forum to southern countryside



45. Views from West Forum to southern countryside



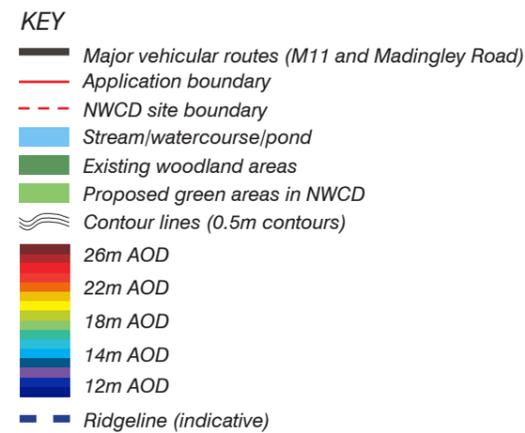
## Topography

3.4.39 Within the Site area the topography is generally flat. However there is broadly, through the middle to upper third of the site, an east to west running ridgeline that falls in elevation from west to east from about 19.70 to 14.70m. This natural water shed directs surface water to the north of the ridgeline to Madingley Road and south of the ridge line to the ponds & drainage corridor.

3.4.40 Along the southern boundary the site falls from approximately 17.50m to 12.70m west to east forming a ridge and high plain overlooking the open countryside to the south.

3.4.41 The height difference between Charles Babbage Road and Coton Footpath is approximately 3 to 4m, equivalent to one storey of commercial development.

3.4.42 Charles Babbage Road, the West Forum and the East Forum occupy this higher level which provides them with views over the open countryside to the south. At West Forum, the existing landscape design incorporates ramps and stairs to manage the level difference.



46. Topography of the site

47. The East Paddocks



48. Level difference between Charles Babbage Road and Coton Footpath



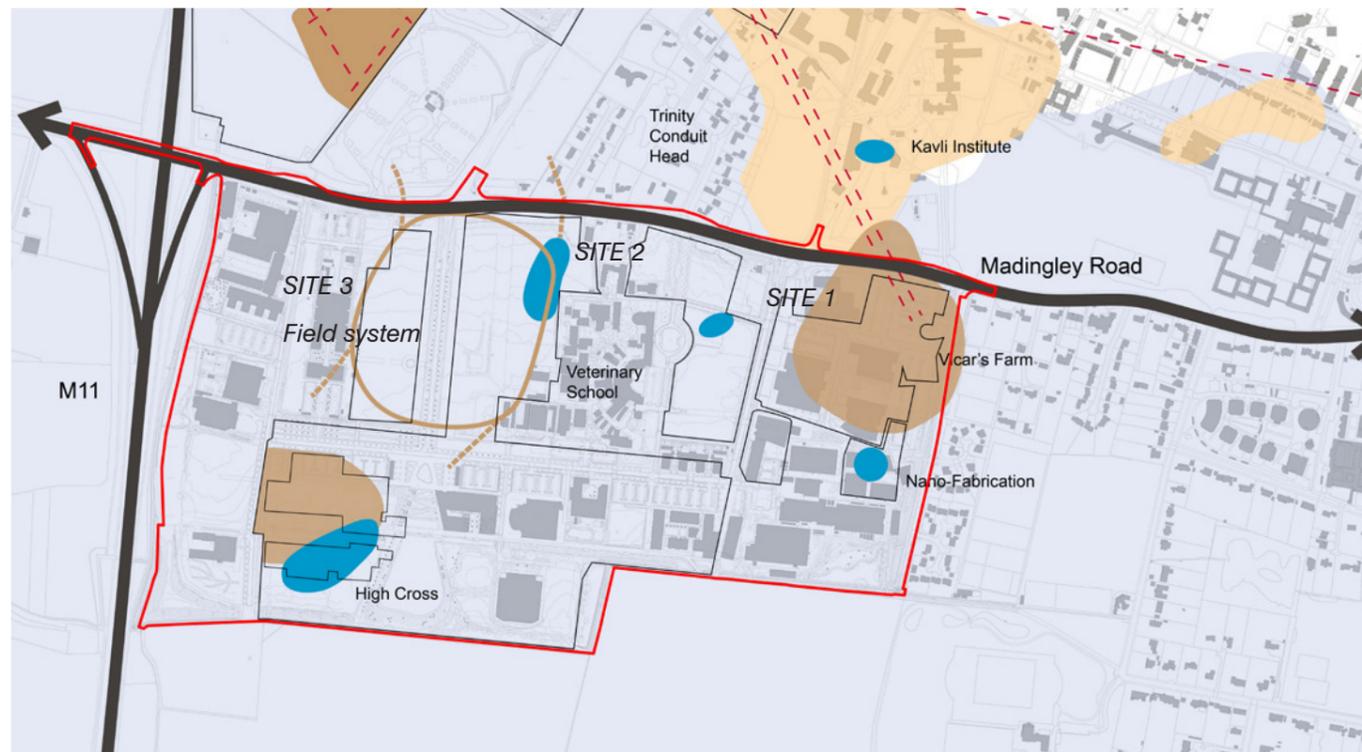
49. Terraces at the West lake



50. Level difference at the south-east corner



## Archaeology



### 51. Archaeology

3.4.43 The site's archaeological potential has been fully appraised by a desktop study. Since then - at various times approximately half of the Proposed Development area has been subject to evaluation fieldwork. While these investigations have been of varying intensity, generally it has been of a low sampling density. Of those portions that have been formally evaluated, all of the known sites therein have now been excavated and there have been two major excavations.

3.4.44 Excavations at Vicars Farm (to the north east of the site), revealed evidence of quite significant activity from the Mesolithic to Romano-British periods, with a substantial Romano-British settlement covering the entire excavation area. In addition, the latest phase of excavations on the site has revealed an Early to Middle Iron Age settlement (site 2), overlaid with an extensive Romano-British field system and possible trackway (site 3), and an additional Iron Age site of lesser significance has also been identified (site 1).

#### KEY

- Major vehicular routes (M11 and Madingley Road)
- Application boundary
- Roman road/routeway
- Solid geology and drift deposits**
- 3rd-4th terrace/head gravels
- Boulder clay
- Archaeological sites**
- Roman
- Iron Age

3.4.45 The findings suggests a relatively intense use of the site, with site 2 suggesting a more sustained usage.

3.4.46 Site 2 will require full open-area excavation should development proceed there.

## Noise & Vibration

3.4.47 The dominant noise sources across the site are the M11 motorway to the west and the A1303 Madingley Road to the north. The noise levels across the site vary considerably due to the large distances between these road traffic sources and the eastern and southern boundaries as well as the distances between developed areas of the Site.

3.4.48 In addition, plant noise from some existing buildings on Site contribute to the sound climate in developed areas of the Site.

3.4.49 Vibration sources include road traffic on the M11 motorway and A1303 Madingley Road as well as traffic on roads within the Site boundary where traffic calming measures such as speed bumps have been installed.

3.4.50 Potential off-site noise sensitive receptors include local residents to the east of Clerk Maxwell Road and to the north of Madingley Road. Potential noise sensitive receivers on site include tenants of the North and South Residences and users of academic facilities.

## Utilities



52. Existing utilities

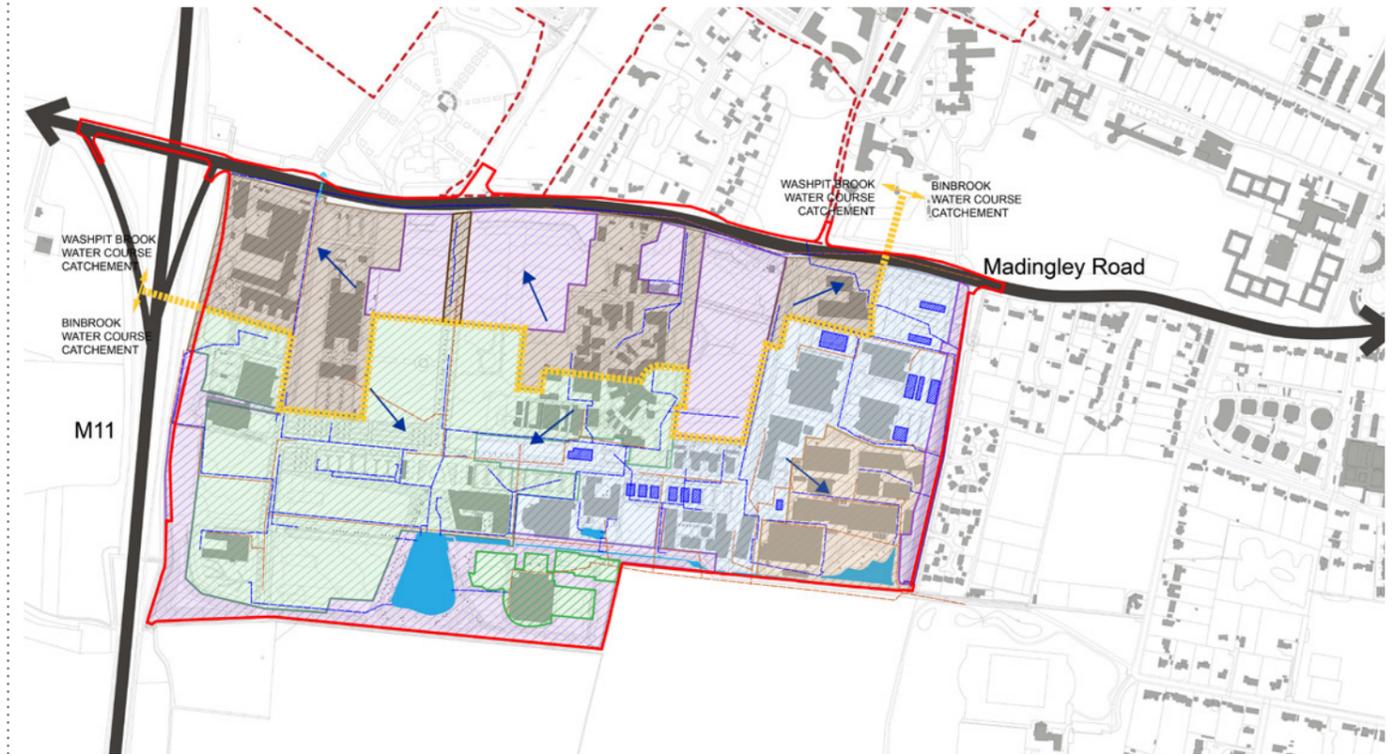
3.4.51 Water, sewer, gas, electricity and telecommunications services are all presently buried beneath the Site servicing the existing buildings.

3.4.52 The Proposed Development will make use of the existing services and any spare capacity, but will supplement supply by upgrading off-site infrastructure where necessary.

### KEY

- Major vehicular routes (M11 and Madingley Road)
- Underground Electricity cables
- Gas supply
- Fibre optic cables/BT cables/communications cable
- NWCD site boundary

## Site drainage and water



53. Existing site drainage and water

3.4.53 The existing development is well serviced with primary drainage infrastructure located within all access roads. There is a natural water shed within the Site with approximately 23% of the site draining northwards to Wash Pit Brook, and 77%, draining to Coton Brook, located to the southeast. Flow controls and attenuation features are present to restrict site discharges to Greenfield runoff rates.

3.4.54 The main surface water body within the Site is the engineered lake south of West Forum which provides attenuation of existing surface water flows from the existing built development. Flows from the lake discharge at Greenfield rates via a water course known as the Canal, into Coton Brook, located south east of the Site.

3.4.55 The pond located in the south east corner of the Site provides attenuation for the eastern area of the Site and discharges at a restricted rate into the Coton Brook.

3.4.56 Ditches located around the Site, notably adjacent to the northern boundary, perform a limited drainage function as many are heavily vegetated.

3.4.57 Underground geo-cellular surface water storage tanks are located in car parks located to the east and south of Charles Babbage Road.

### KEY

- Application boundary
- NWCD site boundary
- Major vehicular routes (M11 and Madingley Road)
- Existing storage tank
- Existing drainage outfall
- Existing SW pipes
- Existing FW pipes
- Existing flow direction
- Existing watershed line
- Catchment area draining directly to South-West lake
- Catchment area undeveloped
- Catchment area draining to public sewer on Madingley Road
- Catchment area draining to Paynes Pond
- Catchment area utilising on plot storage

## 3.5. Site description

### On site landscape and ecology

3.5.1 Cambridge has a distinct 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.

3.5.2 The rural hinterland of Cambridgeshire is particularly close to the west of the City. 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 where they help to define the network of open spaces and routes that shape the urban grain.

3.5.3 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, lines of trees or formal boundaries all forming a clear distinction between private and public functions.

3.5.4 The site at West Cambridge offers and contains many of the features seen throughout the city and rural fringe:

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

3.5.5 There is potential to improve the biodiversity of the Site through ecologically considerate landscape design and specification

3.5.6 By enhancing and augmenting the underlying natural features in the West Cambridge site a narrative can be developed that is relevant to the surrounding landscape, Cambridge City Centre and the functions of the University.

#### KEY

- Major vehicular routes (M11 and Madingley Road)
- Application boundary
- - - NWCD site boundary
- Broadleaved woodland
- Plantation mixed woodland
- Species-poor semi-improved grassland
- Pond
- Hardstanding
- Amenity
- Building
- Bare ground
- Wet ditch
- - - Dry ditch
- Scattered trees



54. Landscape and Ecology

55. West Lake amenity space



56. Tree lined Streets (JJ Thomson Avenue)



57. Veterinary School Paddocks



58. Canals and Ponds



59. The Canal



The canal is part of the site wide drainage system and is located between the Lake and Southern Residences. It is not linked to the pond in front of Broers building or the pond in the south east corner. Currently the water flow in the canal and the pond is not optimal and there are opportunities to maximise the amount of water storage and introduce additional flow controls to improve the flows and health of the canal.

60. The West Forum and West Lake



The West Lake is envisaged as a secure and relaxing place, offering views over extensive Green Belt countryside. The West Forum, however, has the potential to feel barren and under-used unless closer and more active building frontages are encouraged and planting enhanced.

The lake has average suitability for great crested newts and the area immediately surrounding the ponds provide some good terrestrial habitat. This presents the possibility of augmenting & enhancing the ecology of the Site.

61. The East Forum



The East Forum is well defined between Hauser Forum and Broers building and West cafe is well located to add vibrancy to it. However, the space towards JJ Thomson Avenue is fronted only by at grade car parks and lacks definition. There are opportunities for additional built form and amenity in this area.

The view of the countryside captured between the two buildings is captivating and is one of the defining places of the 1997 masterplan and the site.

62. East Pond adjacent to Cavendish II Laboratory



The pond and south-facing space adjacent to the Cavendish Laboratory is of high quality, but does not address the Coton footpath. Opportunities to create views to and from the site are a missed opportunity to enable the wider site to be connected with it's context.

This pond provides attenuation for the eastern area of the Site and which also discharges at a restricted rate into the Coton Brook. This pond and the surrounding area has good suitability to enhance the ecology of the Site.

63. The Veterinary School Paddocks



The Paddocks take up a significant portion of the central part of the site, contributing to a rural feel and setting for the buildings. Ecologically they are a species poor, semi-improved grassland environment.

The restrictions of their use as grazing fields (for animals used for teaching at the Veterinary School) means that they are not, nor can they be, usable/accessible open space. Thus, they do not provide usable open space, but do provide visual amenity.

64. Specimen Trees



There are individual and groups of mature trees located within the Site forming distinct lines of trees or prominent standard specimens in formal and informal areas. The mature trees of note are the English Oaks, Silver Maples, Limes, Horse Chestnut and Willow specimens.

Existing street trees that form distinct avenues or formal lines are predominantly young specimens planted within the past 10 years, with species such as Common Ash, Lime and English Oak. The limited age of these trees reduces their arboricultural value at present, however over time, this will increase with their maturity.

65. Woodland Edge



The site is framed by a woodland edge of mature tall trees and thick shrubs in places that provide full or partial screening that restrict views to and from the site. This is a valuable feature, characteristic of many areas in Cambridge, which provides amenity and a means of spatial definition when buildings are sparse or set back.

To the east of M11, the Verge Country Wildlife Site is located along the western boundary of the Site and supports scrub with four or more woody species, plus a hedgerow more than 100m long and 2m wide at widest point with four or more woody species.

66. The Southern Edge



The landscape and ecology to the south the Site are dominated by arable fields with small woodland blocks and hedgerows. This edge is more open and allows clear views from the site, though some screening vegetation is still present along the southern boundary.

## Existing buildings and major occupiers

3.5.7 The existing buildings and occupiers within the West Cambridge site include:

- The largest occupiers on site are the Department of Veterinary Medicine (**A**) and The Cavendish Laboratory (**B**);
- Department of Engineering is present on the site in 5 separate buildings: Schofield Centre (**H**), Institute of Manufacturing (**R**), CAPE Building (**K**), Nanotechnology Centre (**L**) and the Whittle Laboratory (**G**);
- Several academic departments occupy stand alone buildings (**T**), (**S**), (**I**);
- Commercial research partners including the Schlumberger Research building (**C**), (**E**) and research institutes (**D**) are located in the Western part of the site;
- The Hauser Forum and Broers Building (**P**) form a nucleus of entrepreneurial activity, with flexible spaces and support for start-ups (Cambridge Enterprise and ideaSpace) and smaller suites occupied by commercial research tenants;
- Sports Centre (**U**) is a destination of city-wide importance;
- Roger Needham building (**J**) is currently occupied by University Information Services;
- Residential blocks (**O**), (**Q**) together have 204 units, and Northern block (**O**) also includes a nursery with 100 child spaces;
- University wide support facilities such as Data Centre (**V**) and University Stores (**F**) are located at the Western end of the site.

3.5.8 The site at present has a relatively large number of catering facilities. The diagram above the right shows their distribution across the site. Amongst them, there are facilities within departments, (both those run by departments and out sourced to others), areas run by the University centrally and areas run by commercial and institute occupiers. In addition the site is served by visiting vans.



67. West Cambridge - existing buildings on site

- A** Veterinary School
- B** Cavendish Laboratory
- C** Schlumberger Research
- D** British Antarctic Survey
- E** Aveva
- F** University Stores
- G** Whittle Laboratory
- H** Schofield Centre
- I** Computer Science (William Gates)
- J** Roger Needham (ex Microsoft)
- K** Electrical Engineering
- L** Nanotechnology Centre
- M** MRI
- N** Physics of Medicine & Maxwell Centre
- O** North Residences
- P** Hauser Forum & Broers Building
- Q** South Residences
- R** Institute for Manufacturing
- S** Chemical Engineering and Biotechnology
- T** Material Science and Metallurgy
- U** Sports Centre Phase 1
- V** Data Centre



68. Shared facilities: catering

● Shared facilities within buildings

3.5.9 Currently, the Cavendish canteen and the West Cafe at the Hauser Forum provide hot food on site and are open to all on the campus. While the West Cafe is relatively visible and animates the East Forum, the Cavendish canteen and other catering facilities on site are relatively hidden and inward looking, and thus fail to fully realise opportunities to contribute activity to the public realm.

69. Schlumberger Research Building



The Schlumberger Research Building, designed by Hopkins Architects in 1992, forms a key landmark building for the West Cambridge Site. This building is Grade II\* Listed.

Schlumberger intend to remain on site and continue their strong association with West Cambridge. They have ambitions to extend in the future and are considering a stronger interaction with the surrounding site.

70. School of Veterinary Medicine



The Veterinary School was built in the 1950s with many subsequent additions and thus has disparate buildings and lacks coherence. It occupies the centre of the site and is surrounded by paddocks for animal grazing which are part of the teaching component of the department.

In accordance with the need to cluster physical science and technology disciplines on the West Cambridge site, it is anticipated that the Veterinary School will vacate its present buildings within the next 10-15 years.

71. Cavendish II Laboratory



The Cavendish II Laboratory was built in the 1970's and forms a complex of buildings that is strongly associated with West Cambridge.

The Cavendish Laboratory will remain within the West Cambridge site and intends to re-locate and update their facilities on another part of the site. Their vacated site to the south east of the site provides a key opportunity to provide a new gateway to the site from the city and the Coton Footpath.

72. British Antarctic Survey (BAS) and Aveva



Located to the north-west of the site along the Western Access Road there are a series of low density buildings accommodating key commercial and research institute partners.

BAS occupies one and two storey buildings and have recently completed a new entrance and a social/meeting space annex.

Aveva (pictured above) is in a two storey building with a courtyard.

73. Hauser Forum and Broers Building



The Hauser Forum and Broers Buildings are two newer buildings forming a gateway and public space to east area of the site and providing views and outlook to the southern open countryside. The Hauser Forum accommodates the West Cafe, a key social space.

The current occupiers include Cambridge Enterprise and ideaSpace (two University affiliated organisations promoting entrepreneurship and supporting small businesses) and commercial research occupiers.

74. University Sports Centre (Phase 1)



The University Sports Centre is located to the southern edge of the Site, adjacent to the West Lake. It is a key destination for the site and wider city. It draws visitors during the evening and at weekends.

At present only Phase 1 of the building is complete and provides a sports hall and gym facilities. Later phases of development, not yet been scheduled for construction, will provide further indoor sports facilities.

75. Northern Residences - Housing



Two residential blocks in the south eastern area of the Site provide just over 200 units of University affiliated rental accommodation and bring limited activity to the site.

The north block located along Charles Babbage Road forms good frontage and enclosure to the street which makes it feel more intimate and urban. This is a good precedent in terms of form, height and appearance of development that adds to a sense of character. The ground floor accommodates a nursery.

76. Southern Residences - Housing



The Southern residential block encloses a courtyard with Hauser Forum. The frontage to the Coton footpath includes commercial units at ground floor, one of which currently accommodates community space. The remaining units are empty.

Residential units in this block are predominantly one bedroom units.

## Existing buildings: massing and setting

77. Building heights



Newer development has a predominant consistent building height of 3- 4 storeys.

The development that pre-dates the 1997 masterplan is of relatively lower height and density, which results in an inconsistent and detached feel on the site.

78. Set backs



The current setback of the Whittle Laboratory (pictured) from JJ Thomson Avenue detracts from the arrival to West Cambridge. As a result, the buildings are more distant and the environment disparate and incoherent.

Also, the building's servicing area faces JJ Thomson Avenue. There is an opportunity to add high quality building frontage to enliven the streetscape.

79. Surface car parking



In some instances, buildings are set back behind car parking. This reduces connections and interactions between occupiers, takes activity away from the public realm and leaves key spaces without a sense of definition and enclosure.

The entrance to the Schlumberger Research Building is set back from the main street, therefore pedestrians and cyclists arrive through a car park.

80. Plant height



While most of the buildings have relatively small rooftop plants set back from edge of the building, some building shave plant requirements occupying significant portions of roofs. The Materials Science building has a 4m high plant set back from the edge and screened; Chemical Engineering building (pictured) has a 5m high plant as an extra storey over one portion of the building, also screened. This kind of solution adds to building mass and should be carefully considered.

81. Consistent building line



IfM building is set back from Coton Footpath at present - however there is potential to extend this building to address the space. IfM is significantly lower than its new neighbour, the Chemical Engineering building (CEB), which results in an unusual contrast and an inconsistent building line.

CEB has strong massing and re-establishes the building line and height set by Hauser Forum on the East side. Its southern frontage is not active apart from cycle access and parking on the south west corner, which will provide a lively point.

82. Active frontage



Materials Science building faces the Southern frontage with controlled research spaces which don't interact with the surroundings. Similarly to CEB, it has a cycle access and parking located on this side, and also a secondary entrance forecourt which provides a more intimate open space but is currently not well utilised.

The building has a strong composition which succeeds to spatially define the East edge of the West Forum but is contrasted with its relative isolation and volumetric treatment of materials.

83. Arrival



The back-of-house space of Cavendish Laboratory and Broers building (pictured) are visible from the East Forum approach to Cavendish Laboratory. This creates a confused and not well presented arrival experience for Cavendish Laboratory.

84. Ecology



There is opportunity for improving the ecological potential of the Site through considerate landscape design and specification.

By enhancing and augmenting the underlying natural features in the West Cambridge site a narrative can be developed that is relevant to the ecology of the Site and the surrounding landscape.

## Existing buildings: architectural character

3.5.10 The buildings on site have a range of architectural characters and some of them are excellent examples of academic and research buildings.

3.5.11 The most distinguished building on site is the Grade II\* Listed Schlumberger Research Building. Its ground-breaking roof structure and distinctive roofline which refers back to the intricacies of the skyline of the city, has become a key landmark for the West Cambridge site.

3.5.12 The building is visible from outside the site with views from the M11, from parts of Madingley Road and from long distance views from North West Cambridge Development and from the south.

### An eclectic set

3.5.13 There are a number of existing buildings on the site at present and, although together they form a relatively eclectic picture, there are a few common threads (many of which have been previously established by Schlumberger Research Building):

- An efficiency of means, examples of clear spatial arrangement with successful connective social spaces: Institute for Manufacturing Building and Computer Laboratory;
- Emphasised roof structures (an exploration of and celebration of structure and skyline): Physics in Medicine, Computer Laboratory, Roger Needham Building and Schlumberger Research Building;
- Tectonics: exposed structures;
- Volumetric: Materials Science and Metallurgy, Institute for Manufacturing Building, North Residences;
- Innovative and/or natural materials: Materials Science and Metallurgy, Institute for Manufacturing Building, North Residences, Maxwell Centre;
- Environmental response to climate - Hauser Forum and Broers Building, Computer Laboratory and Maxwell Centre.



85. West Cambridge Landmark - the Schlumberger Building



Hauser Forum and Broers Building



Computer Laboratory



Roger Needham Building



Institute for Manufacturing



Chemical Engineering and Biotechnology



North Residences

## 86. Existing buildings: architectural character

## 3.6. Existing consented masterplan

### Description of existing consent

3.6.1 The West Cambridge Masterplan was prepared for the University in 1997 by MacCormac Jamieson Pritchard. The masterplan was submitted with an outline planning application for the site, and was approved in 1999 (application ref. C/97/0961/OP). A review of the masterplan was carried out and subsequently approved in 2004.

3.6.2 Three major pre-existing developments were to be retained on the site and the masterplan had to be developed around them. These included the Veterinary School, Cavendish Laboratories and developments in the north west part of the site. In the description of the 1999 Masterplan, it was noted that the existing developments had a significant effect on the visual coherence and overall density of the site.

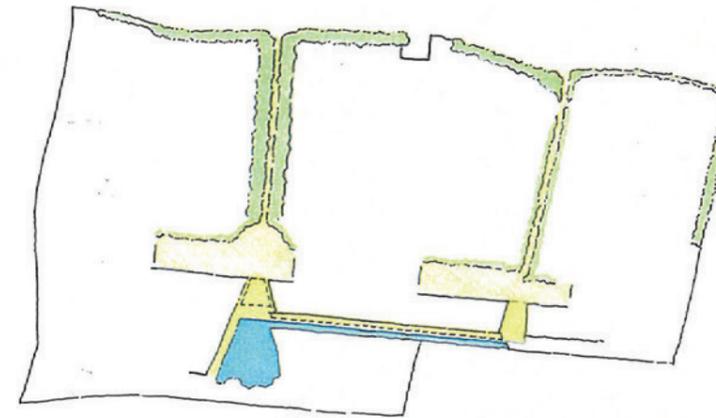
3.6.3 The masterplan responded to this lack of visual coherence and low density by concentrating new 3, 4 and in parts, 5 storey development in the 'academic core area' along the southern edge of the Site; and establishing a new site structure based on public realm elements, with squares, routes and landscape. The intention was for the public realm to knit the plot developments together and form a social focus for the West Cambridge research community.

3.6.4 The Coton Footpath was recognised as the main arrival route from the City Centre. Key spaces were the West and East Forums and the Colonnade to the southern edge of the site. These elements emphasised the southern approach from Coton Footpath and views from and across the open agricultural land.

3.6.5 The Masterplan and Planning Application contained a set of design guidelines, which sought to promote a particular visual and social character for the site as a whole. The guidelines included matters relating to land use, plot ratios, ground and water levels, building heights, massing, enclosure, permeability, focal points and key sites, but not detailed design codes for buildings. This approach was chosen deliberately to enable individual departments and design teams the necessary freedom and flexibility to design buildings to meet specific Department needs and identity, within an overall Masterplan framework.

3.6.6 The original masterplan set out a number of overarching guidelines:

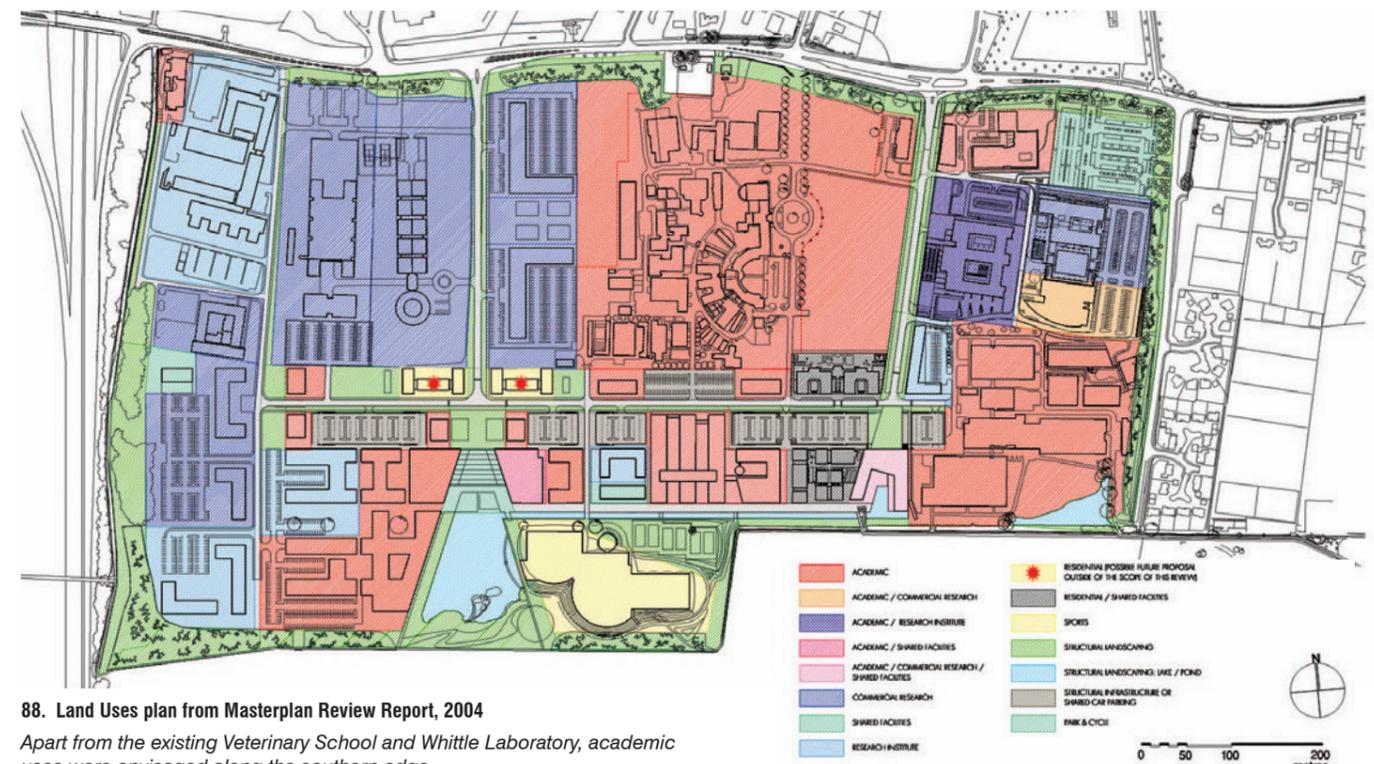
- Create an academic and research core to the south of the site and concentrate these uses to encourage formal and informal interaction. New public spaces and shared facilities encourage this interaction in the form of two Forums to the southeast and southwest of the site;
- The academic uses were to be located to the south of the site, relating strongly to the Coton Footpath which links the development back to the city centre and other academic clusters. The Coton Footpath was to form a key entrance to the site in the south;
- Social spaces and shared facilities were to be located around the East and West Forums as well as the southern Colonnade to ensure that these spaces were enlivened and active;
- Commercial research development was to be located close to transport infrastructure in the north of the site to reduce vehicle movement through and across the site;
- Mixed land uses through the site to encourage interaction between different site users;
- Design hard and soft landscaping to address the green belt boundary, with a transition formed by a south facing Colonnade and new Canalside public realm;
- Locate entrances to buildings on the southern Colonnade and Forums;
- Locate access to the site via two vehicular junctions on Madingley Road, the primary entrance at High Cross, and the secondary at JJ Thomson Avenue;
- Wherever possible, segregate pedestrians and cyclists from car traffic, and service vehicles from general vehicular access;
- Promote formation of routes linking the East and West Forums and routes running north/south through the academic core area; and
- Locate car parking in at-grade and landscaped car parks along Charles Babbage Road.



- Avenues of trees
- Lake and canal
- connecting colonnade

87. Key masterplan elements, original drawing, 1997

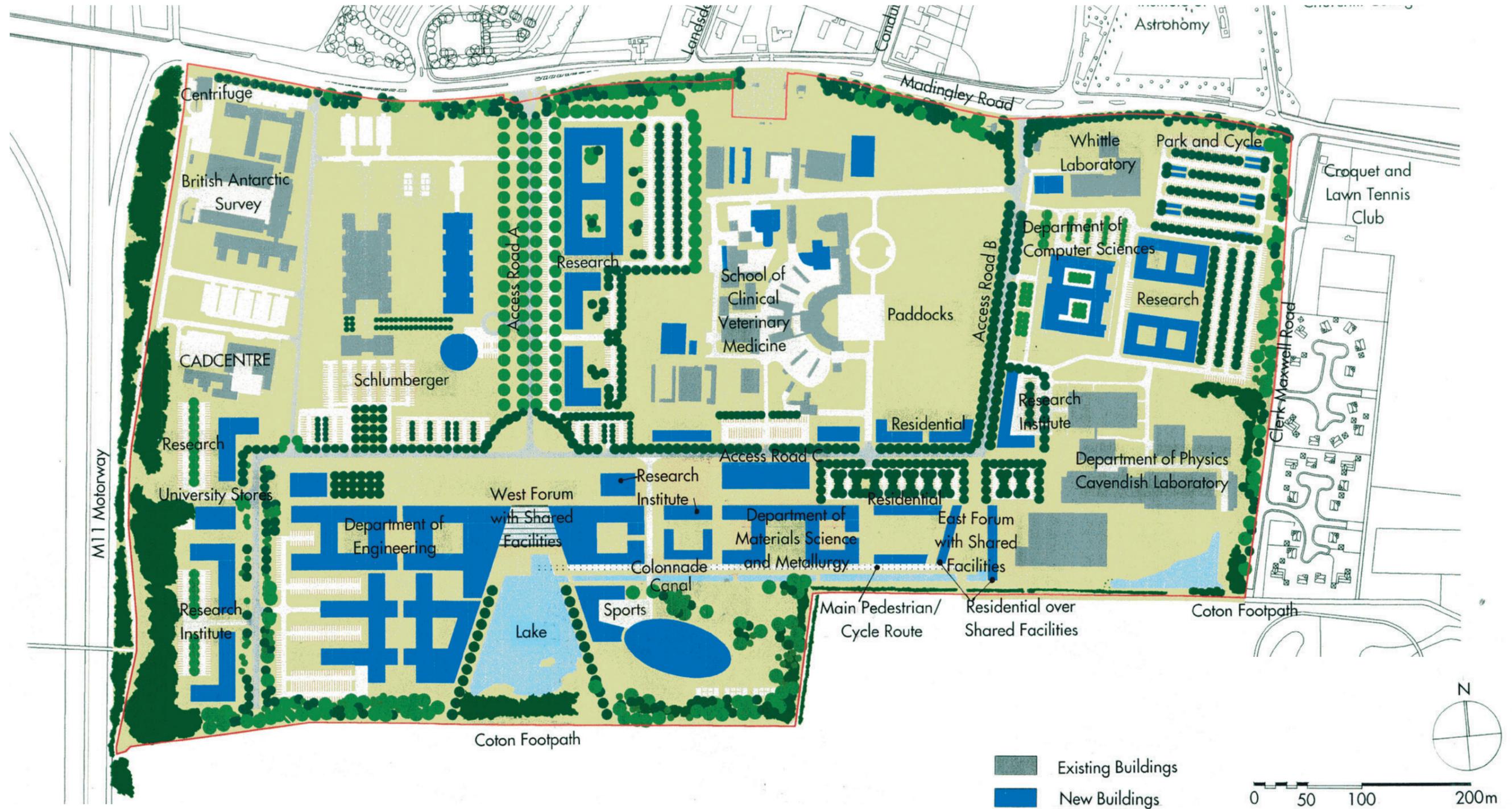
Key masterplan elements provide a spatial structure around the existing large occupiers: two Forums as focal points; two tree lined avenues which provide the main access to the site; a lake and canal along the southern edge to the existing Coton Footpath.



88. Land Uses plan from Masterplan Review Report, 2004

Apart from the existing Veterinary School and Whittle Laboratory, academic uses were envisaged along the southern edge

The 1997 masterplan

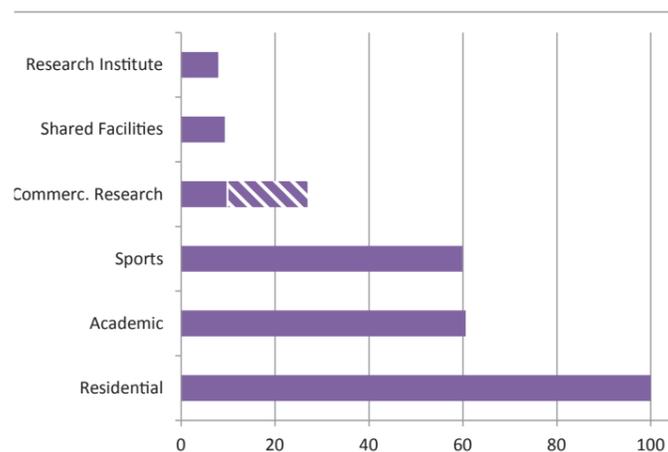


89. Masterplan drawing from Masterplan and Environmental Statement, 1997

## Delivery of the 1997/2004 masterplan

3.6.7 The University continues to deliver successful academic and other University related buildings on the site within the framework of the 1999 Masterplan. Recently, the Hauser Forum and Broers building have, with the exceptional progress of Cambridge Enterprise, established the commercialisation of research and innovation related to the University as a key differentiator for the site.

3.6.8 While the delivery of the southern academic core area has been consistent and nearly 60% of the permitted academic development has been delivered, implementation overall has been slow, with infrastructure provision only realised in parallel with plot by plot development. Of the permitted commercial development, less than 12% has been achieved which is a significant lag compared to more than 60% of academic development (these uses were originally envisaged to be developed in parallel at West Cambridge).



90. Chart showing completed development at West Cambridge as a percentage of development permitted within the 1999 masterplan.

The chart shows the delivered areas, by use, as a portion of the overall capacity permitted within the 1999 masterplan. While the academic development reaches the set target, and the residential is entirely completed, there is a significant lag in the delivery of commercial research and shared facilities.

## Existing developments on site

3.6.9 On site amenity has generally lagged other development and the planned relocation of the Department of Engineering as a major western anchor has not yet materialised. However, two of their five divisions are already established in the Eastern part of the site.

3.6.10 A significant part of the West Cambridge site had been developed before the 1999 Masterplan. This includes:

- Department of Veterinary Medicine, situated on a large central part of the site, comprising approximately 14ha of land. It has approximately 17,000m<sup>2</sup> gross area in an incrementally developed complex with the oldest buildings dating from 1950s. Most of the outdoor spaces are used as paddocks, occupying approximately 2ha in the east and 3.5ha in the west part of the site.
- Cavendish II Laboratory, which dominates the south-east corner of the site in a complex of inter-connected buildings and service yards dating from 1970s. The current configuration encloses a gross area of about 24,000m<sup>2</sup>.
- The Whittle Laboratory in the north east part of the site, which is part of the Engineering Department.
- Commercial tenants and research institutes located in the north west part of the site, including: Schlumberger Research, Aveva, and British Antarctic Survey.

3.6.11 The developments built between 1999 and 2015 were completed following the 1997 masterplan and outline consent granted in 1999, and its revision in 2004. The majority of this development is located in the east part of the site. The development is predominantly academic, with additions to Cavendish II Laboratory, and new buildings for the Departments of Engineering and Computer Science.

3.6.12 Other more recent developments include commercial buildings (leased to Microsoft and now occupied by The University's Information Services), residential (204 units, in the south east of the site), a park and cycle facility, two academic buildings (for Material Science and Metallurgy and Chemical Engineering and Biotechnology), the first phase of University Sports Centre, the University Data Centre and the Maxwell Centre (a new research building related to the Cavendish II Laboratory).

3.6.13 The last phase of infrastructure works (High Cross and Charles Babbage Road) and open spaces (West Forum and the Lake) were completed in 2014.

3.6.14 The empty plots for the remaining consented developments are located in the west of the site and include a large plot to the west of the Lake, plus there are also a few smaller plots along Charles Babbage Road.

3.6.15 The consented masterplan allows for additional capacity for Schlumberger Research and development on the West Paddocks. In the 1999 outline consent, these buildings were proposed to be set back from High Cross, with at grade car parking in front of the buildings on east side of the street.

Buildings pre-dating 1997 masterplan:

- A Veterinary School
- B Cavendish Laboratory
- C Schlumberger Research
- D British Antarctic Survey
- E Aveva
- F University Stores
- G Whittle Laboratory
- H Schofield Centre

Buildings built following 1997 masterplan:

- I Computer Science (William Gates)
- J Roger Needham (ex Microsoft)
- K Electrical Engineering
- L Nanotechnology Centre
- M MRI
- N Physics of Medicine & Maxwell Centre
- O North Residences
- P Hauser Forum & Broers Building
- Q South Residences
- R Institute for Manufacturing
- S Chemical Engineering and Biotechnology
- T Material Science and Metallurgy
- U Sports Centre Phase 1
- V Data Centre

### 91. Delivery of the 1997 Masterplan



Buildings pre-dating 1997 masterplan (Blue)  
 Buildings built following 1997 masterplan (Orange)  
 Footprints from 1997 masterplan, unrealized (Purple)

## Existing urban form and development density

3.6.16 The current urban form at West Cambridge varies greatly across the site. The grain along the eastern and southern edges of the site as proposed in the 1999 Masterplan is more ordered than across the rest of the site. However, even this arrangement results in relatively low density as large areas of land are occupied by surface car parks. Thus, the layout promoted by the existing masterplan does not generate significant activity in the public realm because, although continuous, the building lines are predominantly set behind parking.

3.6.17 In order to establish benchmarks for initial density testing at West Cambridge, the design team looked at several well known University and business sites in Cambridge. The densities of the sites are measured by comparing the Gross External Floor Area (GEA) with the size of the plot in question.

3.6.18 The examples vary in density and provide good guidance on the relationship between density and identity or character of environment. However, it is important to recognise that there is no correct answer in terms of the 'right density', as it is only one of the factors at play, others being its design and social facilities.

3.6.19 Somewhat inevitably for a site with dispersed and low density pre-masterplan development, the densities across West Cambridge are not consistent. They range from 0 - 0.2 to 0.7, which results in a mix of urban and rural characters.

3.6.20 By comparison, density within Cambridge Science Park is uniformly low, which contributes towards its business park character, with an average plot ratio of 0.24.

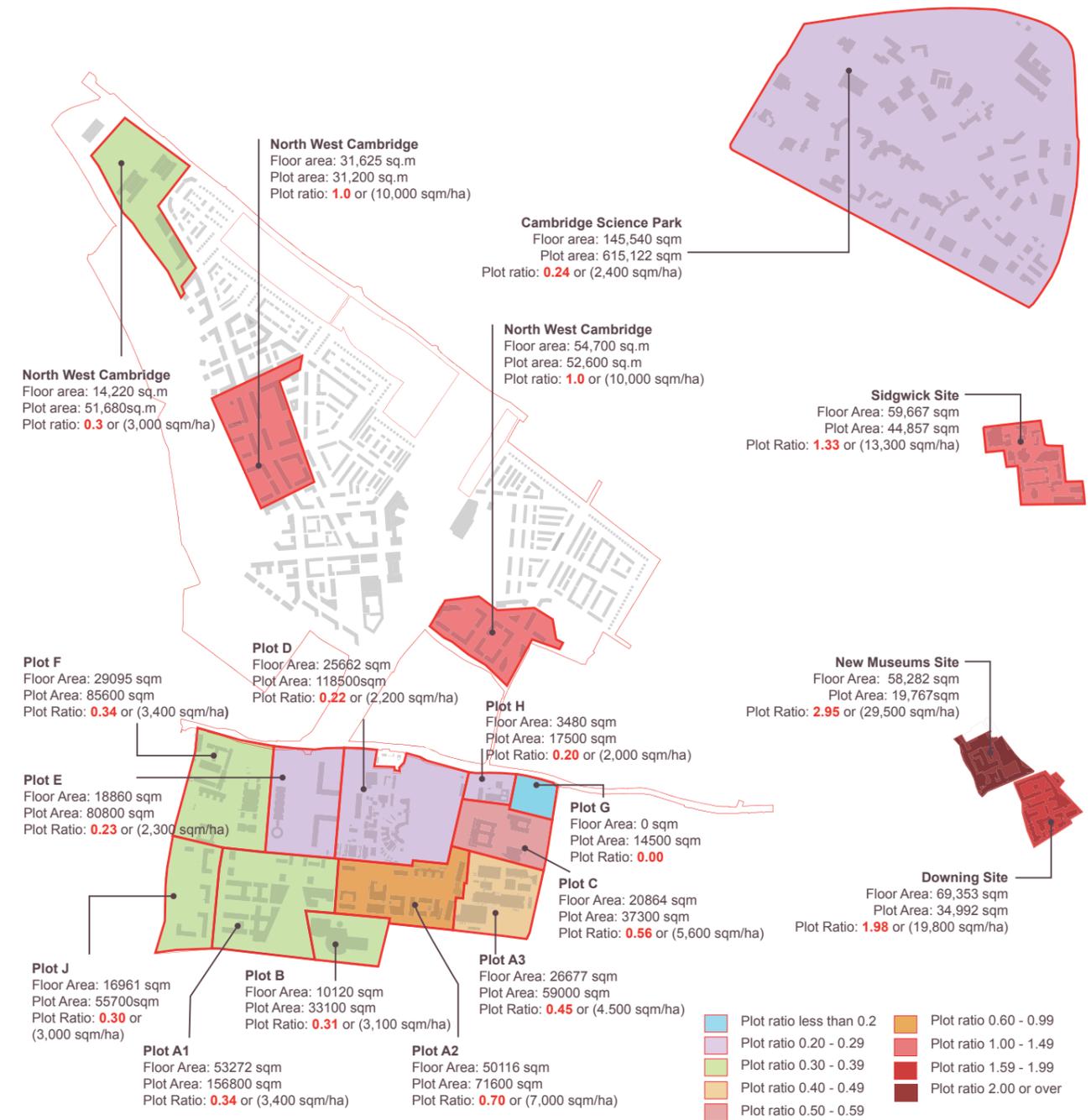
3.6.21 The urban form of Cambridge Science Park is the result of a deliberate move to create a park-like setting across a dispersed space. This allows individual businesses to operate within the relative seclusion of generous landscaping, but is substantially dependant on car access. The result is that Science Park may not feel welcoming on its approach and along perimeter roads, but a coherent business park identity has been achieved.

3.6.22 Both the New Museums and Downing sites in central Cambridge, have been developed at very high density and open space is largely dominated by parking (both car and cycle) and servicing requirements.

3.6.23 Compact development at the New Museums site has resulted in a density of 2.95. Again, in the right context and with the right design, this density would be entirely appropriate in central London. The density of the Downing site is 1.98.

3.6.24 The Sidgwick site is located in western Cambridge. It is coherent and welcoming to pedestrians with a central courtyard and clear linkages between buildings. The integration of cycle and car parking remains a perennial challenge. It has a plot ratio of 1.33.

3.6.25 NWCD is designed with a density ratio of 1.0, which is consistent with the planned urban nature of the site, and which allows buildings to neither dominate the landscape nor become lost within it.



92. Comparative Analysis of Densities

93. Cambridge Science Park - aerial view



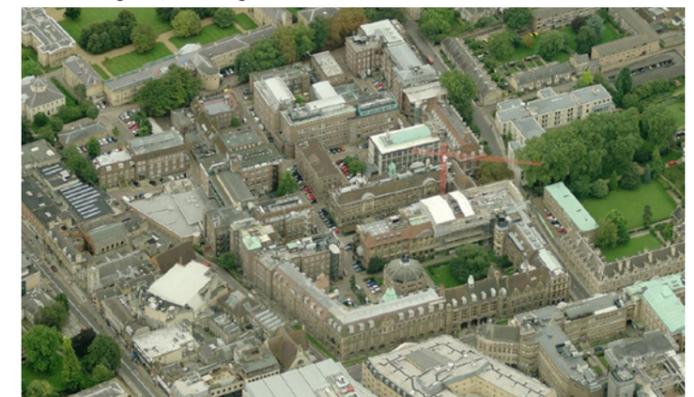
94. Sidgwick Site, Cambridge - aerial view



95. New Museums Site, Cambridge - aerial view



96. Downing Site, Cambridge - aerial view



## Development height guidelines (1999)

3.6.26 Design Guidelines which were part of 1999 masterplan provided guidance in relation to height of proposed buildings.

3.6.27 The masterplan area was split into development plots and each plot had a baseline height limitation, set as a relative height in relation to the finished ground level (rather than absolute AOD heights). The document provided height guidelines only for the 1999 masterplan development area and not for the areas with existing development - the Schlumberger Research Building, Aveva and British Antarctic Survey (plot F), the Vet School (plot D) and the Cavendish Laboratory (plot F).

3.6.28 In addition to the baseline height, the Guidelines included areas with additional height allowed - as 'landmark buildings' and 'towers'. However, there is no numerical value associated with these additional allowances.

3.6.29 Both baseline height and these additional allowances referred to usable building heights, plus any plant: only flues were allowed to exceed these heights.

3.6.30 From the diagrams below, it appears that the 1999 masterplan intended to create a development of 3 storeys in height generally, with taller areas of up to 4 storeys in key locations:

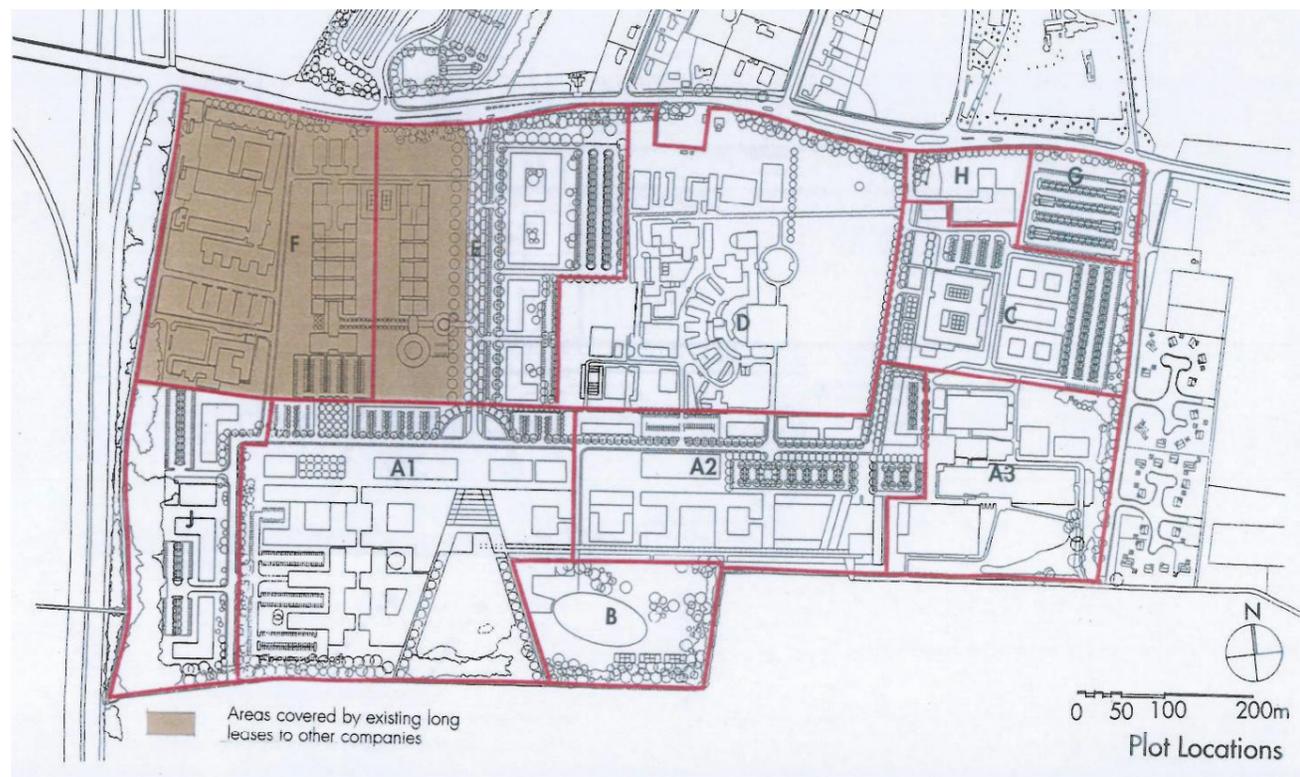
- marking the East and West Forums;
- providing frontage along the southern edge;
- terminating views along key streets; and
- forming a gateway at the junction of High Cross and Madingley Road.

3.6.31 Higher development (15.5m base height) was located to the south and the centre of the site, with lower development (12m base height) located at the eastern, northern and western boundaries.

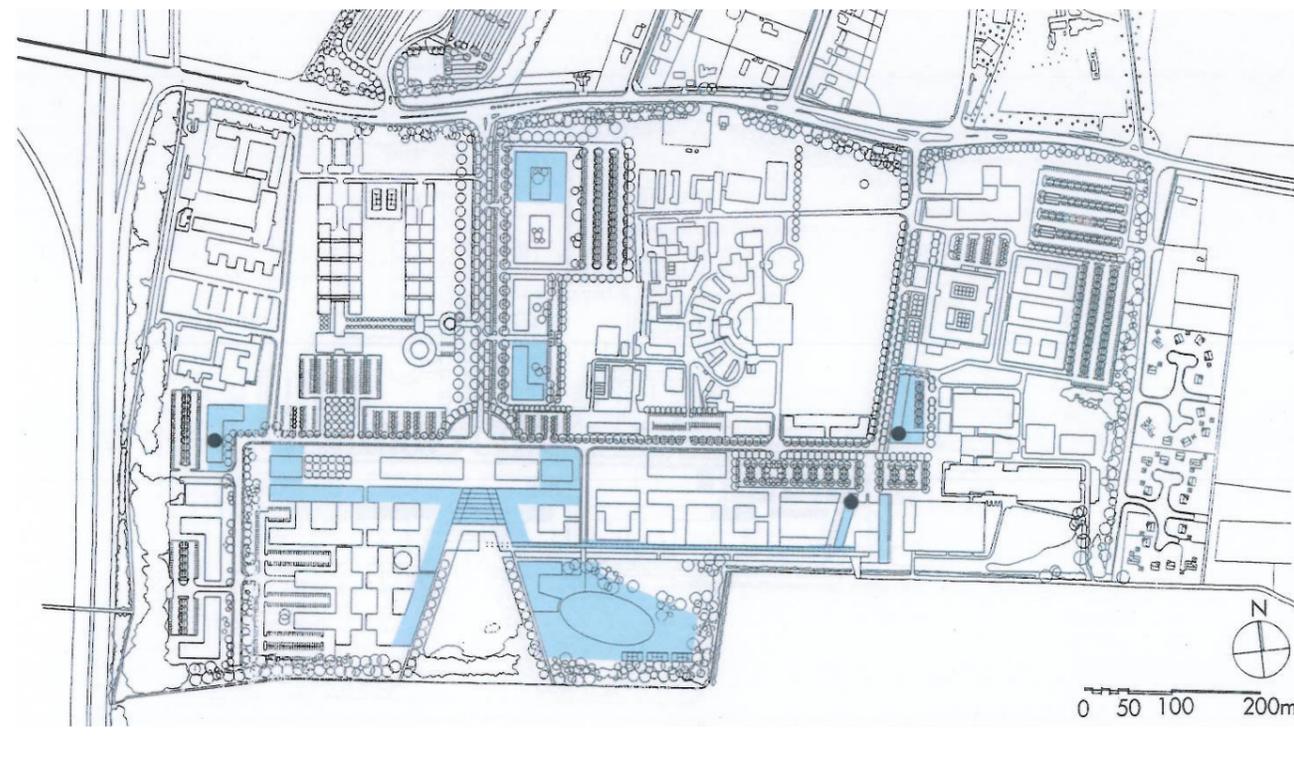
3.6.32 This height information contained within the 1999 Design Guidelines has been interpreted into a 3D model as illustrated on the following page (Figures 99-100).

3.6.33 As the heights provided did not provide values for taller areas and landmark features, an assumption had to be made to allow these to be modelled in a comparable way. An additional height of 4m was allowed above the baseline height for zones for landmark buildings and a further 4m allowance was made for tower locations.

3.6.34 The model enabled an assessment of currently allowed heights. Because the height allowances were not entirely numerical, existing buildings were also included in the model, to compare their compliance and thus validate the assumptions on non-numerical allowances. This model was subsequently used to compare the allowances from the 1999 Masterplan with the massing in the emerging proposals.

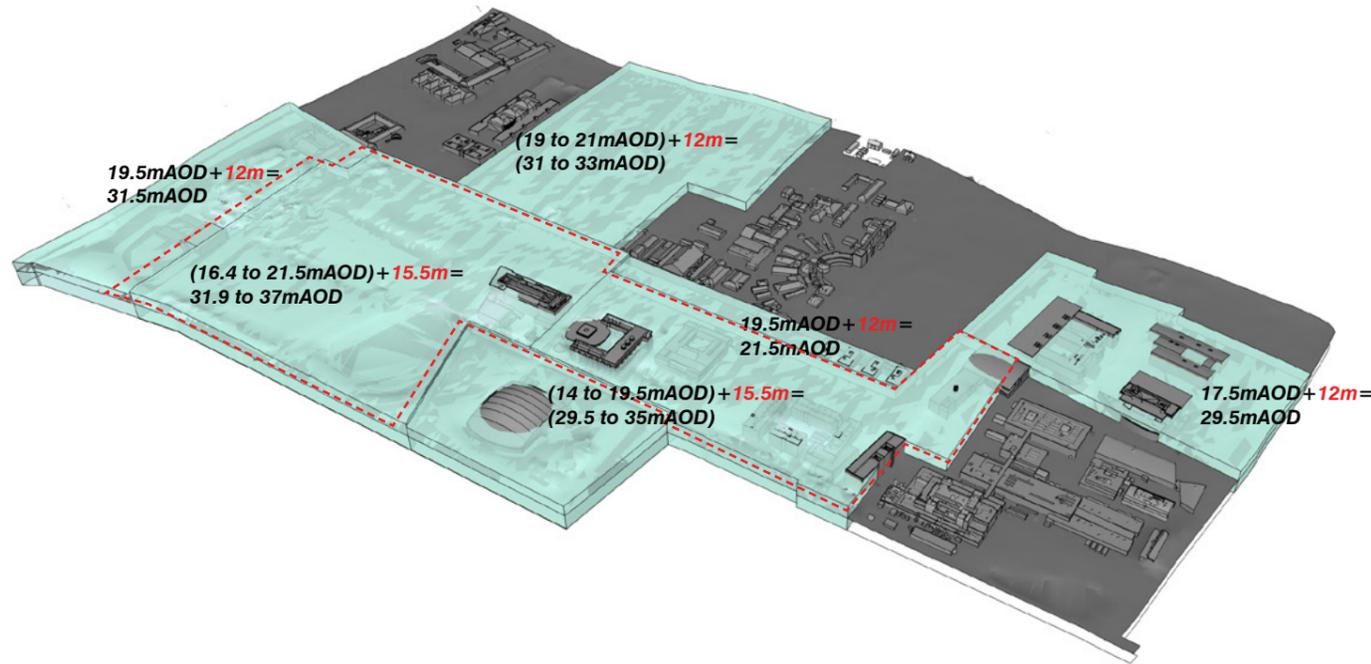


97. Original 1999 masterplan drawing - plots



98. Original 1999 masterplan drawing - Indicative location for Landmark Buildings and towers

- Suggested location for landmark Building
- Suggested location for Tower



99. Representation of the 1999 Development Guidelines for heights (based on assumed ground floor level heights)

3.6.35 In the model shown in Figure 99, the development zones of the 1999 masterplan have been extruded to either 12m or 15.5m height above the finished ground level, according to the 1999 Design Guidelines for the site. (In this model the ground plane is simply extruded to the required height). All rooftop plant would have to be accommodated within these general heights.

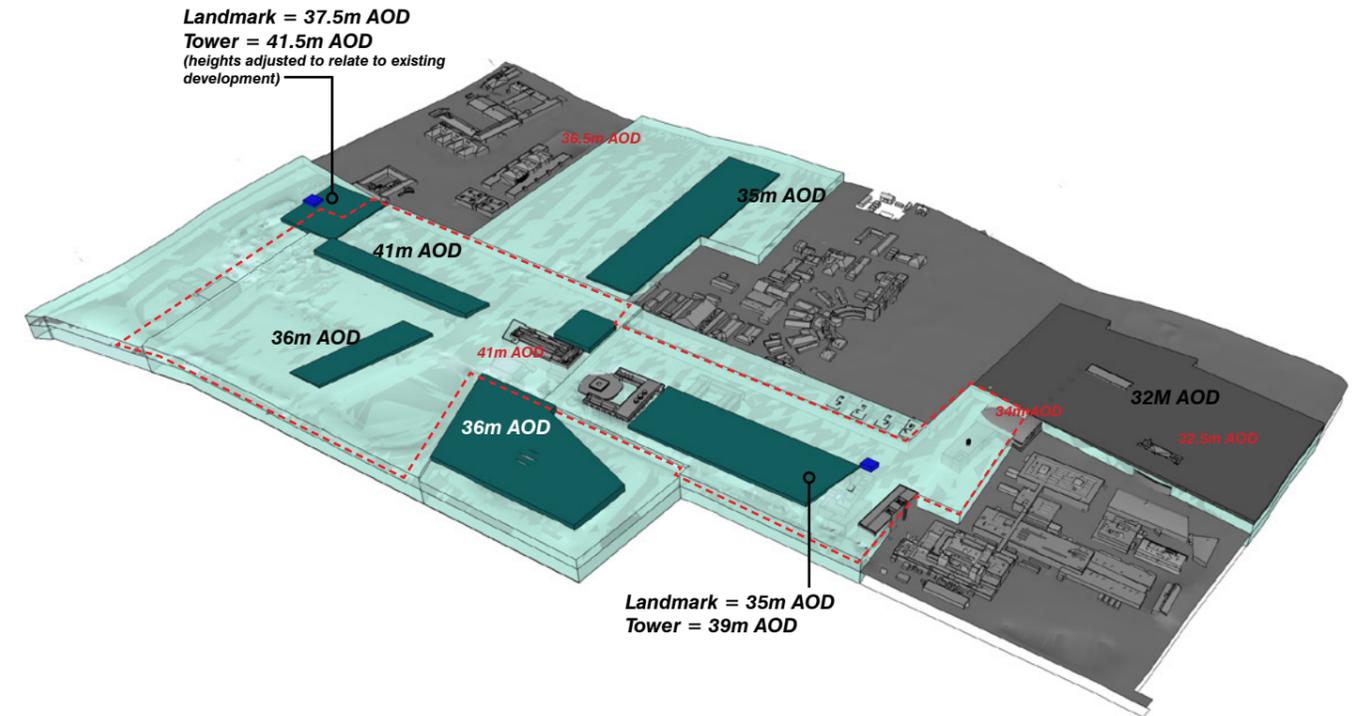
3.6.36 These baseline height guidelines allow buildings to reach up to 37m AOD in the south-western part of the site. Along the southern frontage, the buildings could reach 29.5 to 35m AOD. The area around Schlumberger building, which had a more moderate allowance, could reach up to 33m AOD, due to higher terrain levels. East and west edges are kept lower, at approximately 21.5m AOD in the west and just under 30m AOD in the east.

3.6.37 Existing buildings are shown within the model and the instances where they extend beyond the height limitation can be seen.

3.6.38 Figure 100 shows the zones for landmark buildings and the locations for Towers, as described in the Design Guidelines. To illustrate these elements, an additional 4m has been modelled to represent possible landmark buildings within the zones, while a further 4m has been allowed for locations marked as Towers.

3.6.39 However, in the 1999 Design Guidelines there is a requirement to relate proposed height to that of neighbouring developments, although not necessarily match them. This has the aim in part to produce variation in skyline. So in Figure 100 some of the resultant heights for taller zones and elements have been adjusted to ensure that they relate to neighbouring existing buildings.

3.6.40 In this diagram, the rooftops of Materials Science and Metallurgy building and the CAPE are still visible and extend beyond the height limitation.



100. Representation of the 1999 Development Guidelines for heights - suggested location for landmark buildings (+4m) and Tower locations (+4m)

--- Higher development zone (15.5m from finished ground level, up to 37m AOD)  
 34m AOD Existing Building heights

## 3.7. Benchmarking analysis

### Case studies - masterplanning

3.7.1 The six case studies were selected as successful examples and comprehensive precedents which can strongly relate to and inform development at West Cambridge. They also serve to describe the aspirations of similar institutions and to promote an ambitious, but deliverable vision at West Cambridge. They provide relevant precedents on the basis of their scale, mix of uses (academic and/or commercial research), and design, delivery and management considerations. None of the selected examples were an exact match to West Cambridge in terms of (sub)urban context, size and/or maturity but together they provided important lessons. In addition to the 6 comprehensive studies, some specific topics such as open spaces, were covered with additional research.

3.7.2 The gathered information includes:

- development plan shown in a scale comparative to West Cambridge;
- location in city and connectivity to surroundings;
- land use mix and areas;
- massing, urban grain and density;
- urban character: building types, landscaping and open spaces;
- social facilities and supporting uses; and
- access, car parking and servicing.

3.7.3 Stanford Research Park and MIT University Park were selected as examples of highly successful research parks which have achieved significant reputational benefits and contributed to links with businesses to their respective Universities. ETH Honggerberg and Technical University Delft provide strong comparable cases of 1960s campuses transformed by integration within their cities at all levels, through greater public transport accessibility, improvements to public realm, open space and social amenity and to the engagement with business and the wider urban community. In London, both Imperial West and Chiswick Park show how scale, density and active management can make all the difference to a high density University mixed use annex - or a high value business address, with a distinctive culture of open space and shared activity.

3.7.4 Each case study shows how many of the questions raised between academic and commercial research at both West and North West Cambridge have been tackled successfully elsewhere, whether in relation to the approach to knowledge transfer or to providing high quality public transport linkages, delivered jointly with their city authorities.

### Technical University Delft

3.7.5 Rotterdam, Delft and Leiden have the ambition to be in the top 3 of knowledge and innovation regions in Europe by 2025.

3.7.6 In line with this goal, the University of Delft has focused on linking businesses into the University and students to entrepreneurship, developing accommodation for businesses and research institutes alongside the academic campus.

3.7.7 In addition, significant transport improvements have been introduced, including bus links and a tram line connecting to the central station. This enables the transformation of former car parks and roadways into green, pedestrian and cycle friendly space. The new space, Mekel Park, is located at the centre of the University campus and now connects University buildings that were formerly separated by roads, traffic and car parks.

3.7.8 Immediately to the south of the University campus is Technopolis - a new science park. Over the next 25 years it is expected to become home to scientific institutes, technology start-ups and international companies. The park-like campus is to be a meeting place for researchers and entrepreneurs, where they share their knowledge and work together on innovations in medical technology and industrial biotechnology.

### ETH Honggerberg

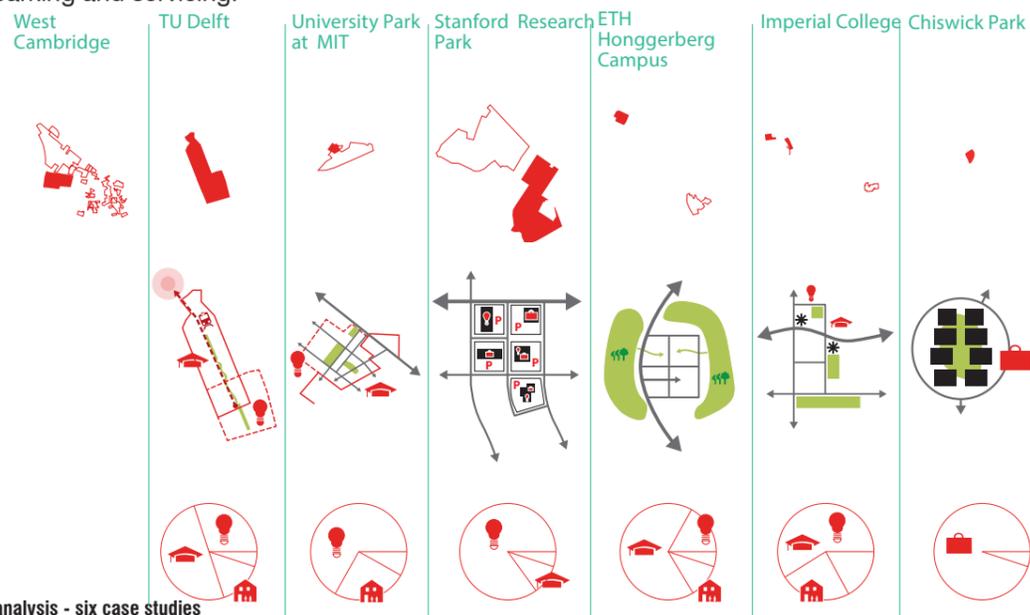
3.7.9 This edge of city University campus has developed out since the 1960s, operating as a satellite to the main Zurich city centre site and focusing on sciences and architecture.

3.7.10 Historically, principally academic in nature and campus style, the University now has an objective of transforming the location into an urban quarter that acts as an interface between academia, industry and the general public.

3.7.11 The new master plan aims at moving towards accommodating entrepreneurial and business collaboration activity with a 'Science City' agenda. It consists of estimated 345,000m<sup>2</sup> of development based on a flexible framework that can adapt to the constantly changing demands of science, the economy and society without destroying coherence – with minimal design rules.

3.7.12 The University also plans development of over 1,000 student housing units on a nearby site.

3.7.13 The University has set up Division for Events and Location Development to help to organise events and enliven Honggerberg Campus. The events include food markets and music events, a student-run solar cinema in summer, Scientifica science days and various cultural activities, events and workshops integrating science, art, technology and design. One of the events is "Treffpunkt Science City", a popular science series that conveys science to wider community and attracts numerous visitors.



102. Technical University, Delft



103. ETH Honggerberg Campus

