



# **2022 Emerging Spatial Framework**

## **Summary**

**October 2023**

# 1 Introduction

## **Development of the Emerging Spatial Framework**

This document provides a summary from the emerging spatial framework for the Cambridge Biomedical Campus, developed in 2022. The emerging spatial framework represents an important step in realising the whole-campus vision for coherent growth, shared campus amenities and greater environmental quality - the first time a holistic approach has been taken to campus development.

The emerging spatial framework was informed by engagements with community representatives, campus members and landowners, as well as with officers from Greater Cambridge Shared Planning. The document includes options for use of land not presently allocated in the local plan; this is subject to both the development of proposals from landowners and processes which would be led by planning authorities.

It was also informed by previous documents identifying opportunities on the campus for growth, including the suite of Vision 2050 documents.

## **Purpose of the Emerging Spatial Framework**

The campus landowners and constituent members have developed individual proposals to various degrees of resolution, from outline planning consents to early feasibility work.

The emerging spatial framework has sought to work ‘with the grain’ of existing plans, making strategic improvements on them, and providing an ‘overlay’ of place-based interventions in order to form a framework that increases the coherence, attractiveness and amenity of the campus.

As part of this, the emerging spatial framework will promote a land use mix for the campus and its proposed expansion, which gives effect to the objectives set in the Vision 2050. This will enable the Campus to progressively evolve into a comprehensive, world class centre for biomedical practice and research integrated with its neighbours and environment.



# 1 Introduction

- **Vision:** in 2021 the Campus published its Vision 2050 - 'A Place for Life'.
- **Aspiration:** Cambridge Biomedical Campus will be globally leading and locally rooted, the preferred destination for life sciences, where research, commercialisation and real-world application come together to create life-saving innovation in a vibrant local community.
- **Local:** it serves the local Cambridgeshire community as well as forms part of a global ecosystem of biosciences research and development.
- **National:** the campus's site within the 'golden triangle' of Oxford, Cambridge and London re-enforces its status as a leading provider and destination of world leading biosciences.
- **Global:** Cambridge Biomedical Campus is a world-leading site for healthcare, clinical research, teaching, and commercial activity.

# 1 Introduction

## Current status

The 2022 document represented a moment in time. Over the preceding months, proposals have been iterated to reflect feedback and further work being undertaken by landowners. The expectation is that CBC Ltd will receive a comprehensive set of proposals in late 2023 from landowners, outlining desired changes to the 2022 emerging spatial framework. The intention is for CBC Ltd to respond to these and agree an updated document in early 2024.

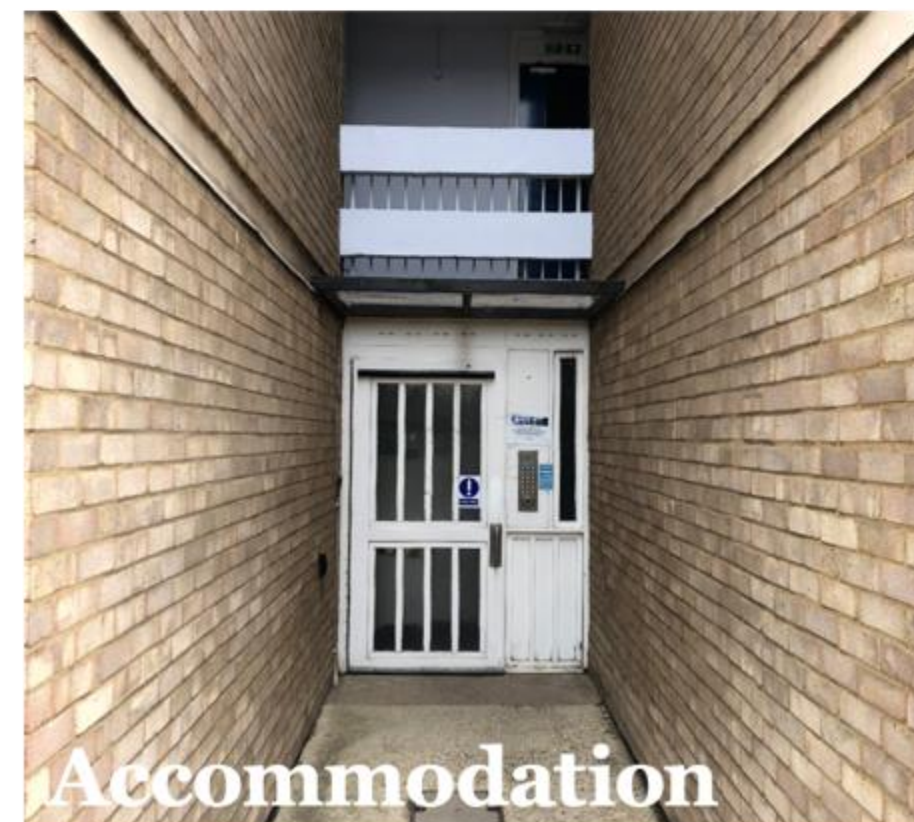
Recognising the dynamic nature of the emerging framework, this summary document does not include some information. For example, details relating to the future quantum of development and plot specific allocations are largely absent from this summary. This is because CBC Ltd is aware of proposals being prepared by landowners which may supersede details in the 2022 version of the emerging spatial framework.

The adjacent diagram shows the land use distribution up to the end of the Local Plan Period (2041) based upon current site capacity  
This plan illustrates the projected scenario where the campus has no more lab/office space after 2031 within the Local Plan period.



# 2 Areas for Enhancement

## 2.1 Overview



# 3 Comparators

## The emerging spatial framework has drawn on insights from other places

### 3.1 Legibility

#### Every public space matters

In a campus with limited external spaces, the redevelopment of RMIT's main academic buildings and library provides a hierarchy of public spaces that offers vibrancy, social opportunities and changing events and character.

### 3.2 Outdoor Amenity

#### Integrated landscape can improve the functional performance and clinical outcomes of a hospital

The Fiona Stanley Hospital is designed to maximise the benefits of accessible landscape for all users.

Numerous studies conducted by evidence-based healthcare designer Roger Ulrich (a consultant on the hospital's design) have shown that green vistas, natural sunlight and access to natural surroundings can improve patient psychological and physical wellbeing, reduce the duration of their stay and even reduce their need for pain medication.

#### Landscape amenity provides an inspirational environment for employees and the larger community

Green zones, urban plazas, public gardens and canal boardwalks at Park 20|20 stimulate the creativity and effectiveness of employees by creating safe and healthy environments for work and recreation.

### 3.3 Transport

#### Transport and landscape combine to create a hospital forecourt

Hospital Network Antwerp (ZNA) fronts onto a new public space that integrates pedestrian and cycle connections, tram and bus stops, underground parking and emergency access, with a 5000 sqm perennial garden.

Winding through the centre of the garden is a wide pedestrian path with secondary narrow paths to create a calming environment for hospital users.

#### Autonomous vehicles enable a consolidated transport strategy

An autonomous shuttle service operates at Harwell Science Campus with no cost to campus users and with zero CO<sub>2</sub> emissions.

Operated using 4G/5G networks and satellite technology, the shuttle can respond to peak demands on the campus.

### 3.4 Biodiversity

#### Supporting biodiversity through the built environment creates a dramatic environmental awareness

The China Fortune Business Centre for research and innovation fully integrates the landscape with the buildings through a series of courtyards, podiums and pathways.

Seasonal planting adds a sense of drama whilst supporting a range of species.

### 3.5 Facilities

#### Convenient access to recreational facilities supports a positive work-life balance

The Apiary at Granta Park provides a 25m swimming pool, tennis and squash courts, a climbing wall, spin studio, class studios and a fully equipped gym.

Operated by Nuffield Health, the Fitness and Wellbeing Centre provides a valuable facility for the campus and the community.

Housing on-site experts, the centre also offers in-depth health assessments, private GP services and emotional wellbeing services.

#### Collaboration thrives on shared, flexible spaces

The Glasshouse at Alderley Park provides a haven for innovative, hi-tech companies, that recognises that variety of spaces and the scalability that new enterprises require.

#### Innovation needs a platform

Located at the heart of an R&D ecosystem, the conference centre at High Tech Campus Eindhoven offers a complete event location, from adjustable meeting rooms to auditoria for up to 300 people.

### 3.6 Residential Accommodation

#### Specific housing offers can grow the campus community

Situated within Singapore's One-North creative and technology district, Lyf One-North is conceived primarily as a co-living development but also as a community hub for the neighbourhood, with unique public and communal spaces.

### 3.7 Community

#### Mixed-use urban environments provide an opportunity for the campus users to mix and socialise

Featuring shops, restaurants and cafés, One Kendall Square provides a mixed-use urban environment at the heart of a research and development campus.

### 3.8 Utilities

#### Connected systems enable a circular economy

Park 2020 was conceived as "one big live organism," with the separate buildings working together to treat waste, collect water, and generate energy. Wastewater and restaurant "green waste" is treated on site, with resulting biogas used to power turbines for electricity and heat reused for hot water. Greywater is used for toilet flushing, and stormwater runoff is stored on site.

# 4 Placemaking Principles

## 4.1 Overview



### 01 Activate Landscape

- Encourage outdoor spaces for multiple activities including working, meeting and recreation
- Promote a visible and multi-purpose blue-green network
- Enhance biodiversity

### 02 Promote Whole Life Carbon

- Transition to all electric across campus
- Work with natural systems for drainage and flood alleviation
- Pursue energy efficiency and on-site generation
- Enact circular economy principles including waste and water usage
- Uphold high building certification standards

### 03 Support Health Through Environment

- Create spaces for active and passive leisure
- Create outdoor spaces for recuperation and respite, particularly near patient care facilities
- Create food/crop growing and other outdoor activities for staff, researchers and visitors

### 04 Connect the Campus

- Maintain primacy of blue light routes while rationalising all vehicular routes
- Create beautiful streets for walking, cycling and dwelling
- Provide legible walking networks connecting the main campus nodes
- Prevent rat-running

# 4 Placemaking Principles

## 4.1 Overview



### 05 Densify and Intensify

- Make most efficient use of land through appropriately dense building
- Enable the interaction of people through mixed use nodes and multi-purpose public spaces

### 06 Support Life

- Provide a broad hospitality and recreational offer
- Share amenities between buildings and user groups

### 07 Engage the Public

- Create welcoming building entrances with publicly accessible ground floor uses
- Create ground floor frontages that enhances the public realm, e.g. through exhibition space

### 08 Think Beyond the Boundary

- Provide a broad hospitality and recreational offer
- Share amenities between buildings and user groups
- Engage the public
- Create welcoming building entrances with publicly accessible ground floor uses
- Create ground floor frontages that enhances the public realm, e.g. through exhibition space



# 5 Emerging Spatial Framework

## Framework Principles

### Principle 01: Healthcare Core

Diverse character areas are anchored by healthcare at the core of the campus



### Principle 02: Transport Corridors

Public transport is consolidated onto easily accessible corridors alongside segregated cycle infrastructure. Public transport is able to penetrate the heart of the campus with a new east-west connection helping to support orbital connectivity



### Principle 03: Distributed Amenity

Key public spaces and shared amenities are distributed at primary intersections



### Principle 04: Green and Blue Chains

Alternative pedestrian networks are encouraged through 'Green and Blue Chains' that link shared amenities together.

This will help target 20% Biodiversity Net Gain through the inclusion of a diverse species rich grassland, scrubland and wetland.



### Principle 05: Welcoming Entrances

Welcoming buildings with publicly accessible ground floor uses create satisfying arrival experiences into the campus.



# 5 Emerging Spatial Framework

## Enhanced Campus Facilities

### Enhanced campus facilities enliven the public realm

The below has been informed by the Vision 2050 Minimum Requirements Surveys, commercial advice, comparator analysis and the campus needs survey. On this basis, the Spatial Framework proposes the following illustrative uses;

- 2x Hotels
- Conference Centre
- Public Exhibition Spaces
- Residential Accommodation
- Leisure Centre inc;
  - Indoor pool
  - Gym
  - Cafe
  - Spa
  - Sports hall
  - Consultation rooms
  - Climbing wall
- Retail/Food and Beverage
- Community Centre
- Nursery



## Movement Strategy

### Public Transport

#### Consolidated Public Transport

New transport corridors link the Cambridge South Station to Hills Road and to Granham's Road via the potential expansion land.

A long term strategy could see a secondary network of public transport such as an autonomous campus shuttle that can serve localised demand.

### Pedestrians

#### A Hierarchy of Pedestrian Routes

Pedestrian access will rely on continuity of access and a hierarchy of connections, from the introduction of the 'Green Chain' and main public routes, to the more intimate spaces between buildings.

### Cycles

#### Legible Cycle Infrastructure

Cycle infrastructure will be clearly defined as the following:

- A** Fully segregated cycle infrastructure that follows the main transport corridors
- B** Slow speed, lower traffic volume roads with cycles in the carriageway
- C** Off road routes with segregation between pedestrians and cyclists
- D** Shared paths

### Blue Light

#### Protected Blue Light Access

Blue light access is protected as a priority for the operations of the hospitals

### Private Vehicles

#### Consolidated Parking Strategy

Through traffic is discouraged by the removal of access to Robinson Way from Dame Mary Archer Road.

Surface car parking is predominantly replaced with new multi storey car parks through a consolidated parking strategy

### Servicing

#### Peripheral Servicing

The service strategy relies on access primarily from the peripheral roads, enabling reduced traffic along Keith Day Road

## Utilities

The emerging spatial framework has been informed by technical appraisals regarding best practice and emerging technological advances in utilities. The adjacent strategies are to be considered illustrative and subject to further development and viability testing.

Some of the proposed solutions are to serve individual plots and can be delivered sequentially and integrated into the individual plot design.

Others are intended to operate on a sitewide basis and impact upon development quantum. These also have an implication for phasing which is shown indicatively in the following slides.

### Individual Plots/Buildings

|                       |  |
|-----------------------|--|
| Battery Storage (BTM) | Behind the meter battery to increase renewable energy usage whilst improving resiliency to energy prices and climate change. Flexible and can be delivered sequentially. Recommended to be delivered early to benefit from decarbonisation, energy savings and resilience.                         |
| Microgrids            | A smart microgrid would offer a long-term source of revenue generation through providing low-carbon electricity (from on site renewables) to tenants across the site. Flexible and can be delivered sequentially   |
| Rainwater Harvesting  | New construction buildings to include rainwater harvesting. This will include rainwater collection tanks alongside associated pumps, filtration systems and pipework. Stored rainwater to be used for W/C flushing and irrigation. Building by building intervention and absorbed into build costs |
| Air Quality Monitors  | Air quality monitors installed throughout new buildings and retrofitted where possible to allow air quality monitoring. Minimal Cost Item, could be delivered as building by building intervention and absorbed into buildings costs   |
| Solar PV              | Roof-mounted PV is maximised across all roofs on the site. Flexible and can be delivered sequentially. Recommended to be delivered early to benefit from decarbonisation, energy savings and resilience.   |

### Sitewide

|                       |   |
|-----------------------|---|
| Battery Storage (FTM) | Cryogenic Battery provided early in Phase 3 land for revenue generation |
| Data Centre           | On site Data Centre   |

# 5 Emerging Spatial Framework

## Illustrative Phasing

### Illustrative phasing up to 2025

University academic development is largely dependent upon external sources of funding. As a consequence the supply of funding is not as reliable or consistent as for commercial research development, and the phasing assumptions set out in the Spatial Framework are indicative. It is expected, however, that the University of Cambridge sites would be developed by the end of the Local Plan period up to 2041.

The current estimates are that development of the Forvie Site may come forward in the period 2025-2030 (a first phase of development is at feasibility design stage), the Island Site from 2030-2040, and Plot 9 from 2025-2030.

### Illustrative phasing 2025-2030

**I - Sanctuary Housing**  
Total GEA: 21,900 sqm  
Residential: 21,900 sqm

**H - Frank Lee**  
Total GEA: 51,800 sqm  
Healthcare: 19,850 sqm  
Lab/Office: 22,950 sqm  
Leisure: 8,000 sqm  
Retail/F&B: 1,000 sqm

**Cambridge Cancer Research Hospital**  
Area included within Q - Clinical Core

**Cambridge South Station**

**F - AstraZeneca Site**  
Total GEA: 26,600 sqm  
Committed to AstraZeneca

**N - Plot 9**  
Total GEA: 18,000 sqm  
Lab/Office: 18,000 sqm

**O - Phase 3 Expansion**  
Total GEA: 108,000 sqm  
Lab/Office: 70,000 sqm  
Research Institute: 20,000 sqm  
Battery (FTM): 3,000sqm  
Parking: 15,000sqm

#### Key:

- - North-South Link
- 'Green Chain'
- Major Transport Connection
- Existing Buildings
- New Buildings
- ★ Potential Meanwhile Use



**G - Northern Gateway**  
Total GEA: 25,000 sqm  
Residential: 24,400sqm  
Nursery: 600sqm

**K - Front Door**  
Total GEA: 19,700 sqm  
Lab/Office: 19,700 sqm

**The High Street**  
Early relocation of the food court to enable the E-W transport connection. Potential meanwhile uses to be explored here

**B - Forvie**  
Total GEA: 25,900 sqm  
Higher Education: 25,900 sqm

**Cambridge Children's Hospital**  
Area included within Q - Clinical Core

**C - Confluence (Expansion)**  
Total GEA: 36,200 sqm  
Lab/Office: 22,200 sqm  
Hotel/Conference: 11,000 sqm  
Community: 2,000sqm  
Retail/F&B: 1,000sqm

CSET

# 5 Emerging Spatial Framework

## Meanwhile Use

### Plant the seed for future uses

Shipping containers or lightweight modular structures, which can be constructed within months, can provide low cost research and development space that acts as a test bed for start-ups and SMEs.

### Inhabit construction hoarding

Low-tech solutions can enliven the edges of construction sites, creating a sense of place for the current users of the campus.

### Invite the community in

Stackable sports pitches can provide much needed amenity space for the campus and community alike.

### Recycle and Re-use

Generating zero waste to landfill during construction, the use of modular construction can be dismantled for recycling or re-use.

