CBC EMERGING SPATIAL FRAMEWORK

PART 2:
EVIDENCE BASE BY THEMATIC LAYER EXPLORED TO DATE

Allies and Morrison

October 2023

Allies and Morrison

Quod

HOARE LEA

Lighting Noise Air Quality

terrafirma

kmc

Introduction

DOCUMENT PURPOSE, PART 2

Document Structure:

The work forms a dossier of 3 separate documents to be read together:

1. Context Review, Design Principles and Emerging Framework Plan
2. Evidence Base by Thematic Layer (includes information to review all 5 thematic layers discussed with GCSP to date.)
3. Development Quantum, Phasing and Infrastructure Delivery

These documents entail a compendium of all information that has been generated to accompany workshops with GCSP, including information ,following relevant feedback that was discussed.

The following workshops have been carried out to date, guiding the work that has been generated post December 2022:

Meeting 2 on 16th March: Feedback on constraints work, vision and principles

Meeting 3 on 12th April: Design Workshop with GCSP: (Themes explored: Green and Blue Infrastructure, Communities, Land Uses)

Meeting 1 on 2nd March: Programme of engagement and objectives; Memorandum Of Understanding (MOU); Headline feedback on 2022 submission.

Meeting 4 on 20th April: Design Workshop with GCSP: (Themes explored: Connectivity, Scale Capacity and Edge Treatment.)

Meeting 5 on 9th May: Follow up meeting on Key Issues.

Meeting 6 on 24th May: Policy Preparation: Evidence and other inputs required.

Meeting 7 on 20th June: Mini Workshop on Key Moves.

Introduction

STRUCTURE

The further development of the Emerging Spatial Framework has been structured as three separate documents, as listed below. The following pages, which form part 2, present the evidence base generated in response to the thematic layers set out by GCSP.

1. CONTEXT REVIEW, PRINCIPLES AND EMERGING FRAMEWORK PLAN

1.1 CONTEXT REVIEW

1.2 DESIGN PRINCIPLES AND EMERGING FRAMEWORK PLAN

2. EVIDENCE BASE BY THEMATIC LAYER

2.1 GREEN INFRASTRUCTURE

2.2 COMMUNITY

2.3 LAND USES

2.4 CONNECTIVITY

2.5 SCALE, CAPACITY AND EDGE TREATMENT

3. DEVELOPMENT QUANTUM, PHASING AND INFRASTRUCTURE DELIVERY

3.1 EXISTING AND CONSENTED CAMPUS LAND USES

3.2 PROPOSED AREAS OF ENHANCEMENT

3.3 KEY INTERVENTIONS RELATING TO CONNECTIVITY

3.4 ILLUSTRATIVE PHASING

3.5 DEVELOPMENT QUANTUM

2.1 GREEN AND BLUE INFRASTRUCTURE

Green Infrastructure Initiatives Wider Context



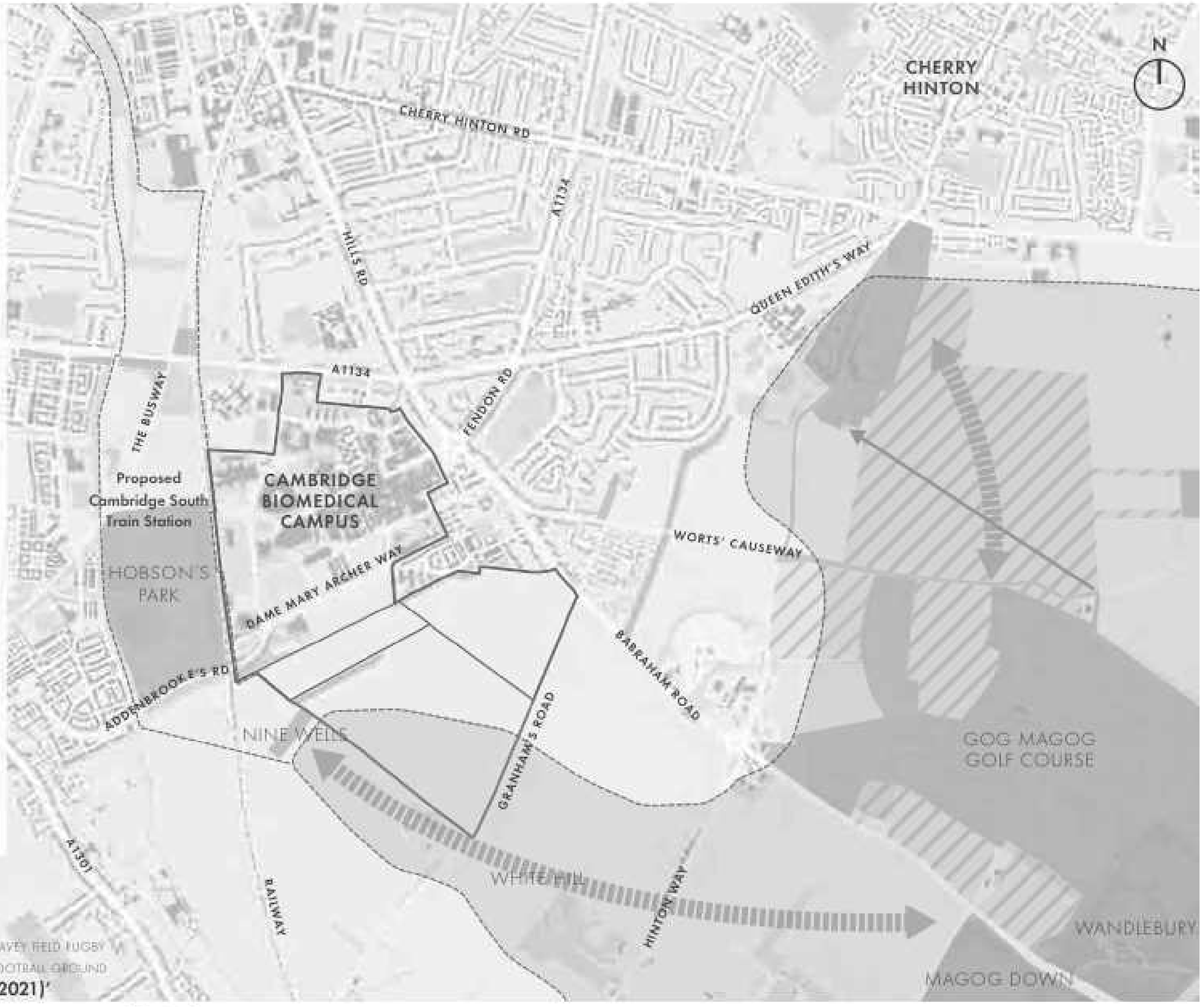
- Gog Magog and Chalkland fringe
- SSSI
- Wildlife sites
- Woodland
- Nature reserve
- Country park and recreation sites
- Sport fields
- Orchards and allotments
- Cambridge South East Transport

Green Infrastructure Opportunities Wider Context

The report "A Nature Recovery Network (NRN) for Cambridge and its Surrounds" (2021) identifies five priority landscape areas for investment in the enhancement and creation of natural habitats and provision of strategic natural greenspaces.

This includes the Gog Magog Hills Priority Area which overlaps with the Study area and covers the chalk grassland SSSIs of Cherry Hinton Chalk Pits, Fleam Dyke, Gog Magog golf course and Roman Road, as well as other Wildlife Sites and accessible natural greenspaces such as Wandlebury Country Park, Magog Down and Beechwoods LNR.

Objectives for this part of the Gog Magog Hills Priority Area include: creating stepping stones of chalk grassland and other associated habitats within a distance of no more than 1km from the core areas or other stepping stones; establishing a broad corridor of nature friendly farming practices and GI access links; and enlarging the buffers around Nine Wells (arable grass field margins and woodland) to create a larger stepping stone habitat area linking the Gog Magog Hills and River Cam Priority Areas.



Info Extracted from 'Cambridge Nature Network (2021)'

- Gog Magog and Chalkland fringe
- Priority Area Boundary
- Core Area
- Stepping Stone
- Core extension
- Stepping Stone extension
- Corridors
- Roman Road SSSI

Green Infrastructure Opportunities Campus Context



- Gog Magog and Chalkland fringe
- Priority Area Boundary
- Core Area
- Stepping Stone
- Stepping Stone extension
- Corridors

Green Infrastructure Constraints Wider Context

FLOOD RISK

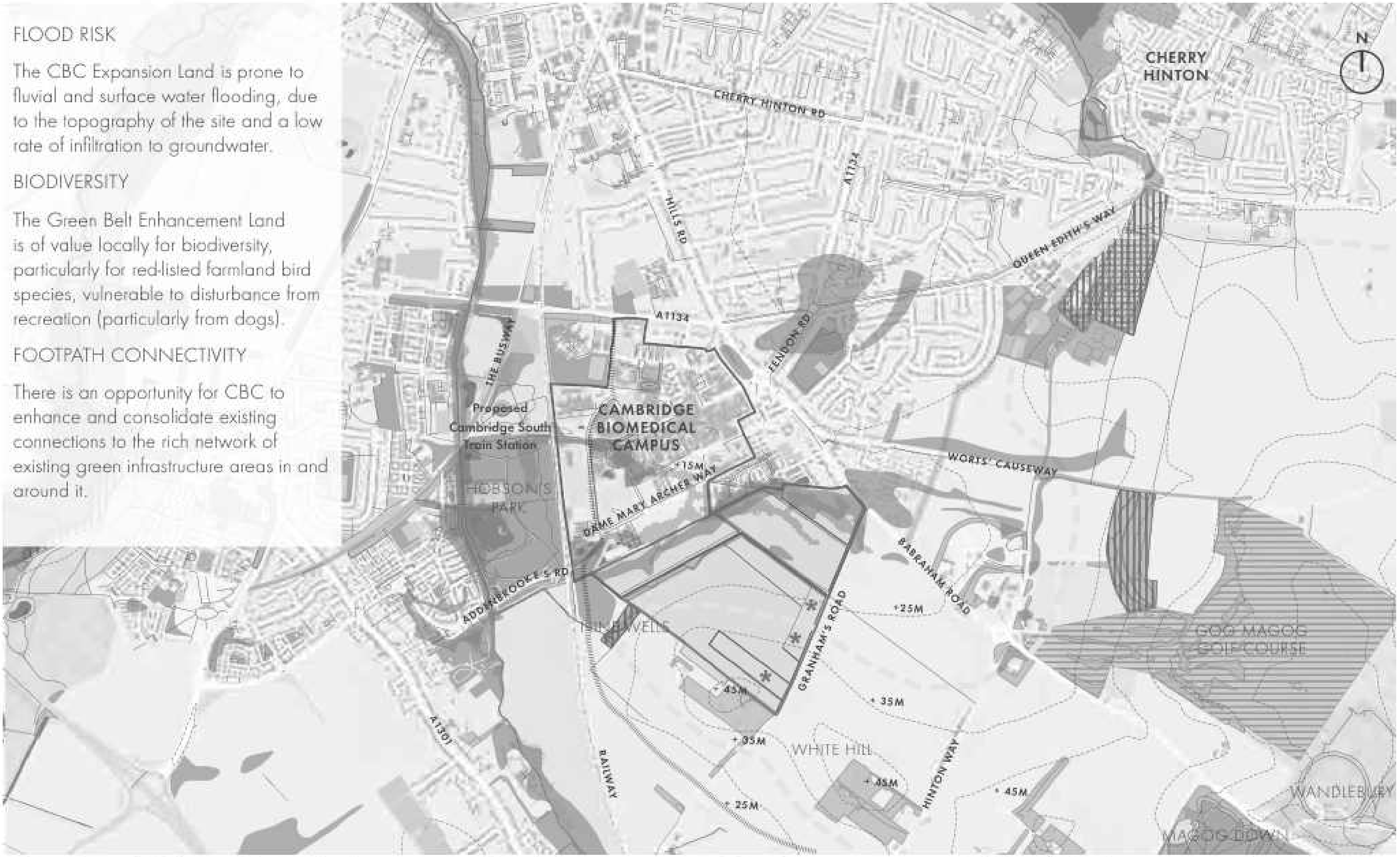
The CBC Expansion Land is prone to fluvial and surface water flooding, due to the topography of the site and a low rate of infiltration to groundwater.

BIODIVERSITY

The Green Belt Enhancement Land is of value locally for biodiversity, particularly for red-listed farmland bird species, vulnerable to disturbance from recreation (particularly from dogs).

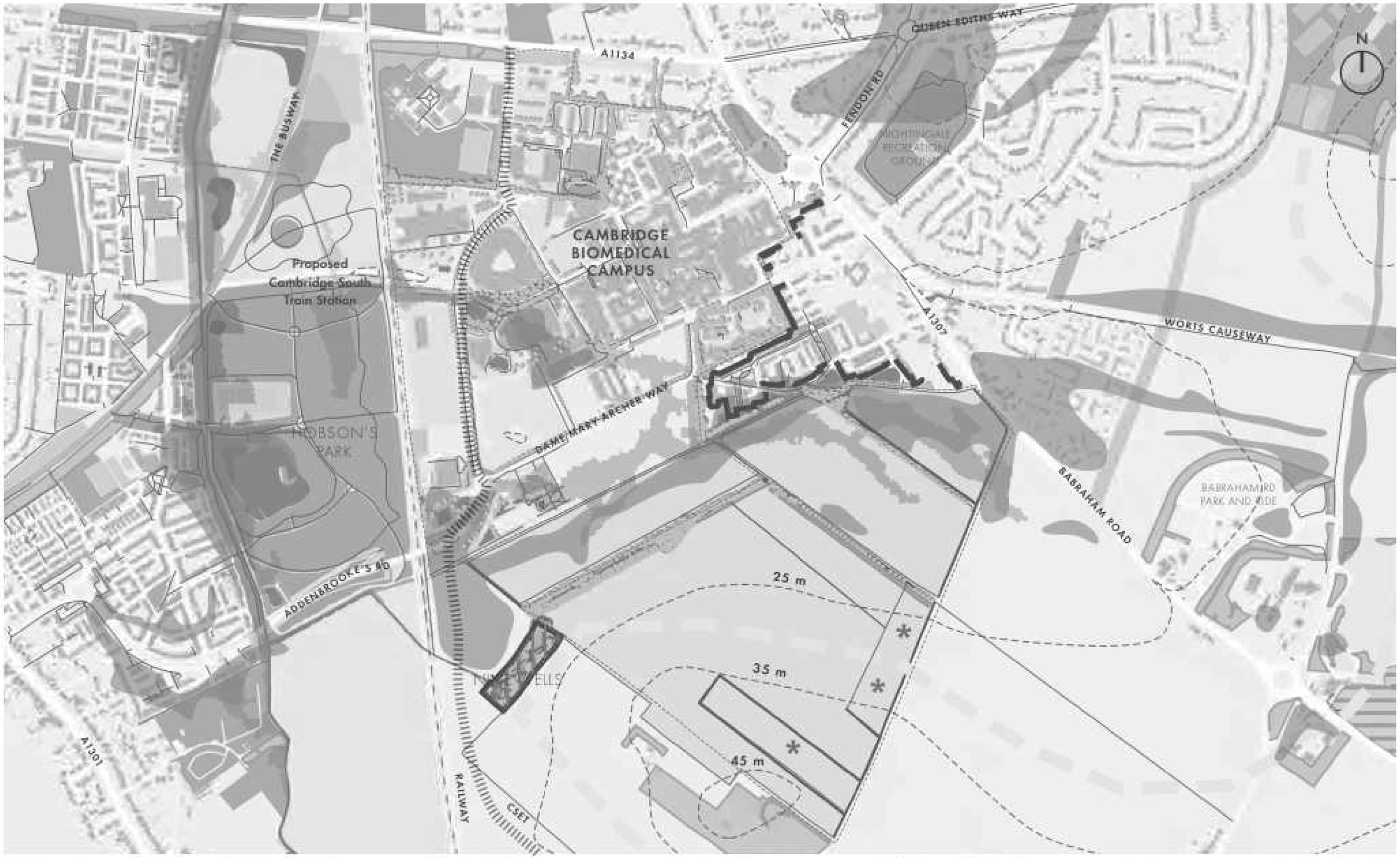
FOOTPATH CONNECTIVITY

There is an opportunity for CBC to enhance and consolidate existing connections to the rich network of existing green infrastructure areas in and around it.



- Low surface water flood risk
- Flood zone 2
- Flood zone 3
- Existing blue infrastructure
- Waterways
- Wildlife sites
- Woodland
- Nature reserve
- Country park and recreation sites
- Sport fields
- Orchards and allotments
- SSSI
- Third party land parcel
- Gog Magog Hills Priority Area
- 10 metre contour lines
- Hedgerow
- Arable land
- Footpaths

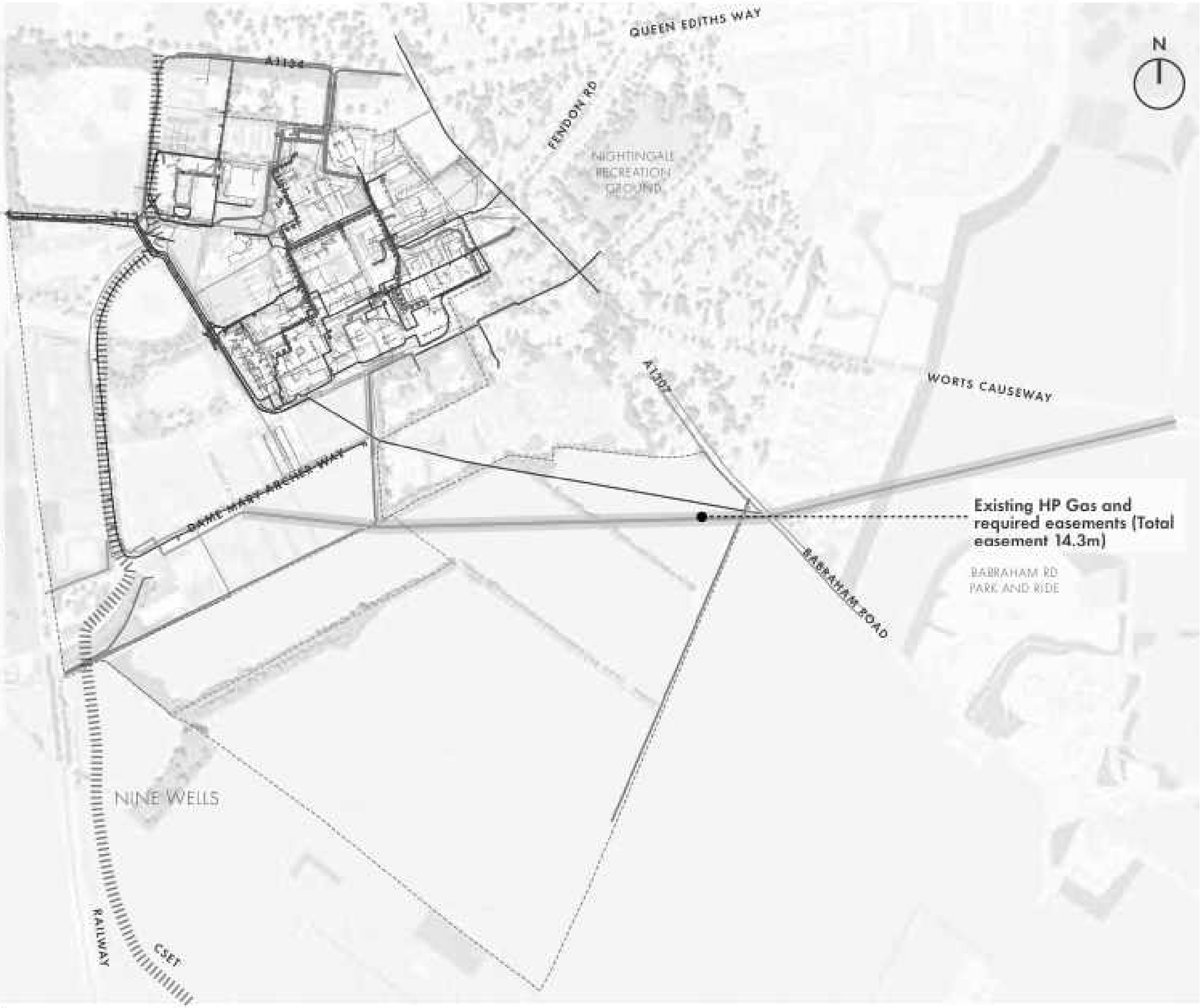
Green Infrastructure Constraints Campus Context



- Low surface water flood risk
- Flood zone 2
- Flood zone 3
- Existing blue infrastructure
- Waterways
- Wildlife sites
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- Country park and recreation sites
- Sport fields
- Orchards and allotments
- SSSI
- * Third party land parcel
- Gog Magog Hills Priority Area
- 10 metre contour lines
- Hedgerow
- Arable land
- Footpaths
- Sensitive Adjacencies
- Tree Cover

Utility Constraints

- A High Pressure Gas Main runs through the south of CBC, crossing the middle of parcel S/CBC/A (Phase 4 Land) and the south of parcel S/CBC/M15 (Phase 2 Land). The existing total easement accounted for this currently is 14.3M. If this were to be diverted and renewed the existing total easements accounted for would reduce to 3M
- The High Pressure Gas Main runs along Dame Mary Archer Way to the south, limiting planting opportunities to its southern edge.
- There is a significant amount of existing utilities west of Phase 1 Land and where the current Addenbrooke's hospital sits. The services shown in the adjacent map are taken from a combination of historic Ground Penetrating Radar (GPR) surveys and record information provided by the Cambridge University Hospital Trust (CUH). A new GPR survey for this area will be undertaken to inform next phases of work.



Utility Constraints - High Pressure Gas Main running through Expansion Land Proposed Realignment Route Options

Proposed Main Pipeline route and easement traced from 204445_PLN_EA_7.1.

Option 1 Proposed HP Gas Diversion Route (HSE Consultation Zone 12.2m)

Existing HP Gas and required easements (Total easement 14.3m)

Option 2 Proposed HP Gas Diversion Route, routed within potential road alignment (HSE Consultation Zone 12.2m)

Option 1 Proposed Diversion Route, within Phase 2 Land (HSE Consultation Zone 12.2m)

Option 2 Proposed Diversion Route, within Phase 2 Land within potential road alignment (HSE Consultation Zone 12.2m)



Plan 204445_PLN_EA_7.1, by Cadent indicating proposed MP diversion route and easement (5.35m)

- Existing HP Gas
- Existing HP Gas Building Proximity Distance (14.3m)
- Proposed HP Diversion Route 1
- Proposed HP Diversion Route 2
- Proposed Gas HP Building Proximity Distance (3m)
- HSE Consultation Zone (12.2m)
- Proposed MP Diversion Route (Traced)
- Proposed MP Diversion Route Easement (5.35m)

Utility Constraints - High Pressure Gas Main running through Expansion Land Proposed Realignment Route Options

CBC Expansion Land (zoomed-in dip)



Plan 204445_PLN_EA_7.1, by Cadent indicating proposed MP diversion route and easement (5.35m)

Proposed Main Pipeline route and easement traced from 204445_PLN_EA_7.1.

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DAME MARY ARCHER WAY

BABRAHAM ROAD

PHASE 2 LAND

PHASE 3 LAND

PHASE 4 LAND

NINE WELLS

- Existing HP Gas
- Existing HP Gas Building Proximity Distance (14.3m)
- Proposed HP Diversion Route 1
- Proposed HP Diversion Route 2
- Proposed Gas HP Building Proximity Distance (3m)
- HSE Consultation Zone (12.2m)
- Proposed MP Diversion Route (Traced)
- Proposed MP Diversion Route Easement (5.35m)

Green and Blue Infrastructure Opportunities explored to date

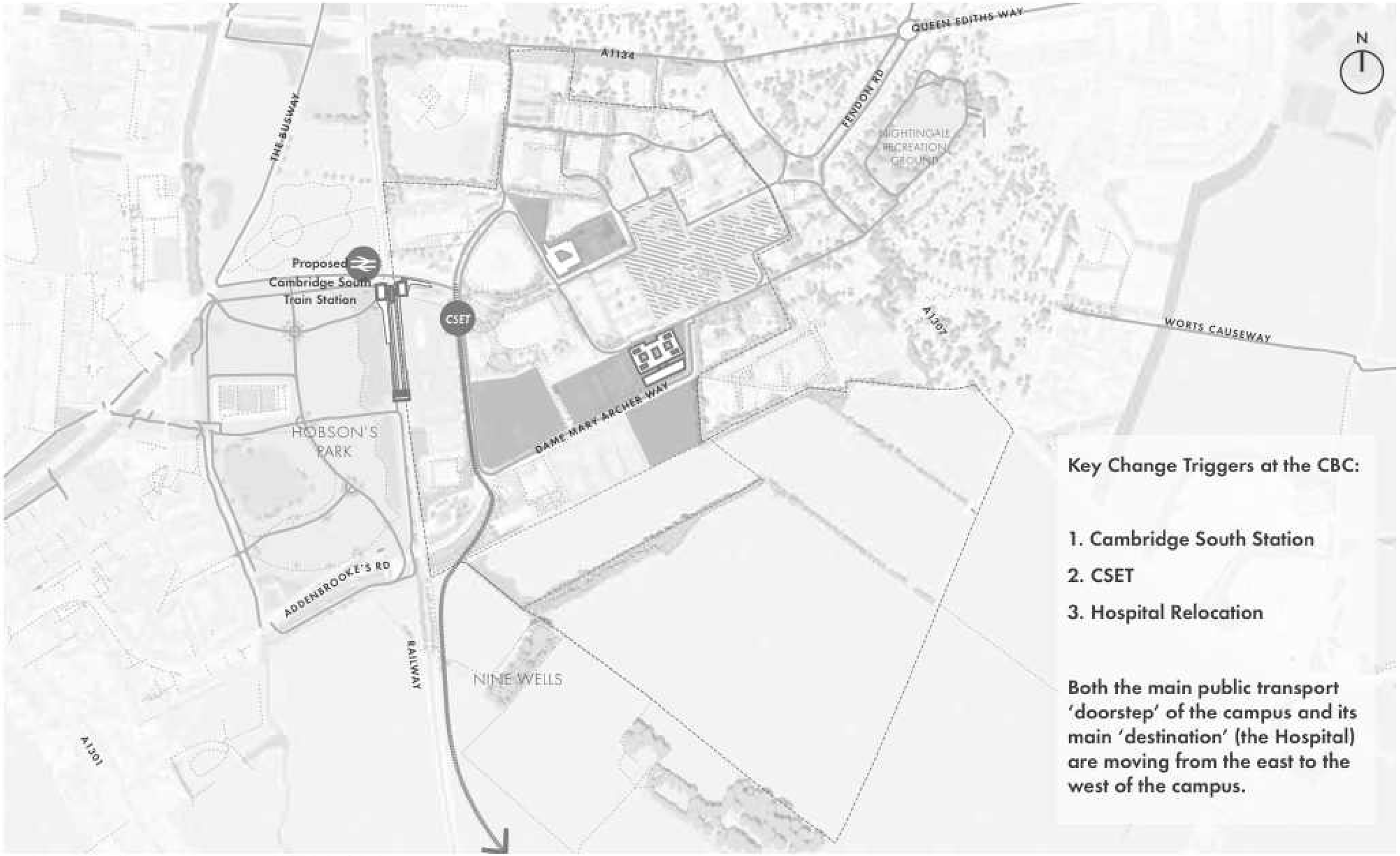
1. Repair campus connectivity
2. Enhance and Distribute Campus Outdoor Amenity
3. Support Biodiversity through the Built Environment
4. Repair Campus 'Landscape Setting'
5. Enhance Green Belt Land
6. Consolidate Green and Blue Infrastructure Corridors
7. Mitigate Pluvial Flooding

1. **Repair Campus Connectivity** (Existing Pedestrian and Active Travel)



Primary Footpaths
Secondary Footpaths

1. **Repair Campus Connectivity** (Pedestrian and Active Travel)



1. **Repair Campus Connectivity** (Pedestrian and Active Travel Opportunity)



- Primary
- Secondary
- Principal North-South Route
- CSET
- CBC Loop
- Principal East-West Route

1. Repair Campus Connectivity, Best in Class Example - Pedestrian and Active Travel

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.



Right: ZNA Cadix, Antwerp

Cambridge Biomedical Campus

Extract from CBC Spatial Emerging Spatial Framework, December 2022, Hawkins\Brown, p.29

1. **Repair Campus Connectivity** - Lease Constraints



2. Enhance and Distribute Campus Outdoor Amenity (Existing Outdoor Amenity)



- Green Amenity Space
- Consented Green Amenity Space

2. Enhance and Distribute Campus Outdoor Amenity (Existing Outdoor Amenity & Tree Cover)



- Green Amenity Space
- Consented Green Amenity Space
- Tree Cover

2. Enhance and Distribute Campus Outdoor Amenity (Opportunity for Enhanced Outdoor Amenity and Tree Cover)



2. Enhance and Distribute Campus Outdoor Amenity - Accessible Open Space Framework

ACCESSIBLE OPEN SPACE FRAMEWORK



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- There are considerable opportunities for moving from the campus to other areas of green spaces within the vicinity.
- This will be facilitated with signage and wayfinding.

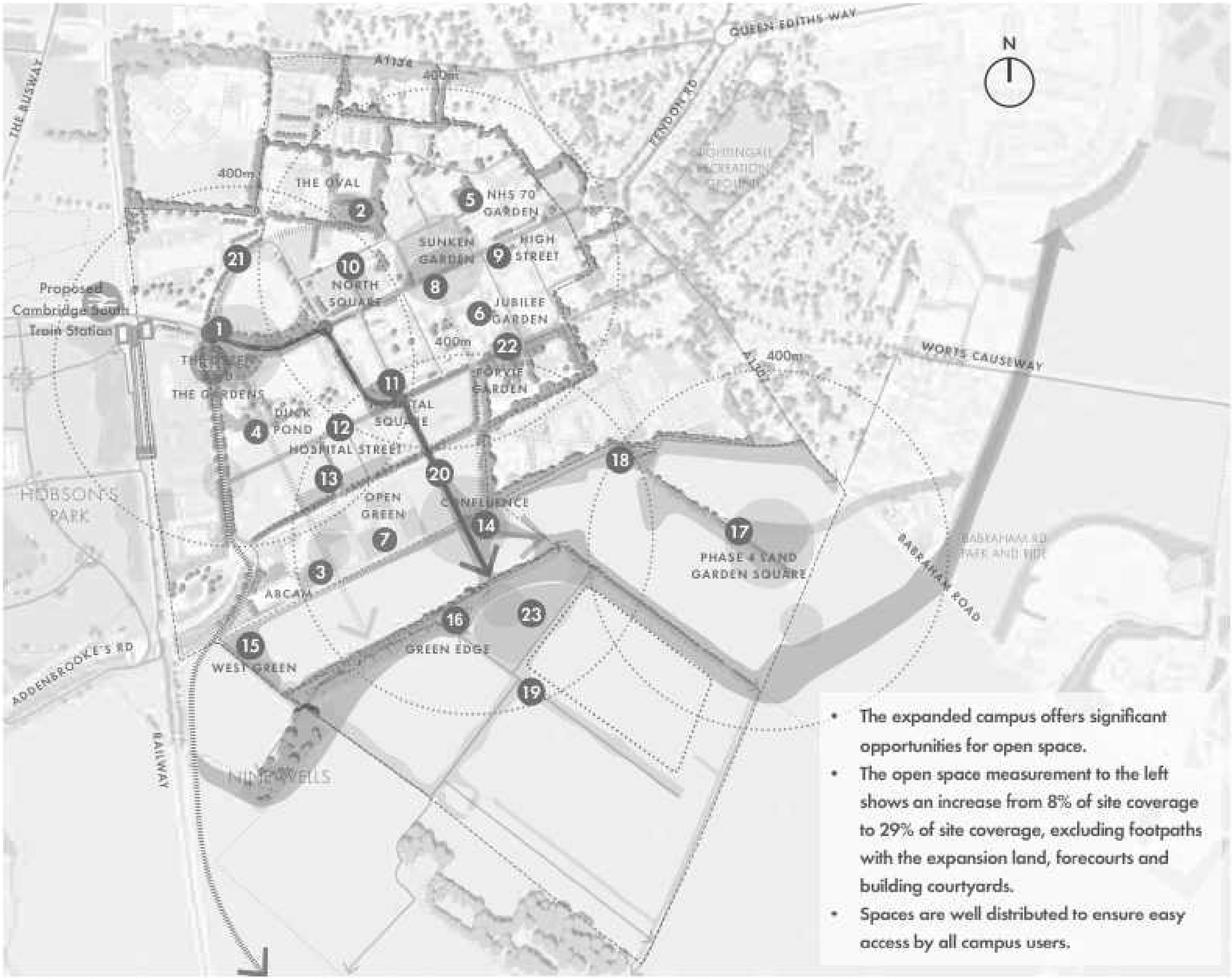
Legend

- Primary Green Link
- Secondary Green Link
- Green Loop
- Public Right Of Way
- Bridleway
- Primary Pedestrian Access
- Secondary Pedestrian Access
- Cycleway
- Major Roads
- Railroad Viaduct and Kingsbridge Line
- Extended Open Space
- Existing Green Space
- Existing Blue Infrastructure
- Hospital Core
- Key Public Open Space
- Secondary Public Open Space

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Extract from CBC Green Infrastructure Proposal, July 2023, Logika, p.21

2. Enhance and Distribute Campus Outdoor Amenity - Proposed Areas of Open Space



- The expanded campus offers significant opportunities for open space.
- The open space measurement to the left shows an increase from 8% of site coverage to 29% of site coverage, excluding footpaths with the expansion land, forecourts and building courtyards.
- Spaces are well distributed to ensure easy access by all campus users.

no.	Existing Open Space	Area (ha)
1	Green and the Gardens (Phase 1)	1.66
2	The Oval (Phase 1)	0.73
3	Abcam Garden (Phase 2)	1.18
4	Duck Pond (Phase 1)	0.65
5	NHS 70 Garden (Phase 1)	0.2
6	Jubilee Garden (Phase 1)	0.05
7	Open Green (Phase 2)	1.38
	Total	**5.85**
	Campus site area (S/CBC/M15)	**69.5**
	% of existing open space on Ph1 and Ph2 sites	**8.42%**

	Proposed Open Space	Area (ha)
	Existing open space (Total)	5.85
8	Sunken Garden	0.79
9	High Street (extended building forecourts)	0.43
10	North Square	0.62
11	Hospital Square	0.4
12	Hospital Street (extended building forecourts)	0.89
13	Green North of Dame Mary Archer Way	0.74
14	Confluence (Phase 2 + 3)	1.41
15	West Green (Phase 3)	0.82
16	Soft Green Edge	7.46
17	Garden Square (Phase 4)	4.33
18	Northern Buffer (Phase 4)	1.17
19	Footpaths within expansion land*	0.6
20	Green link (north-south)	1
21	CBC Loop	3.47
22	Poppye Garden	0.3
23	Open Green (Green Belt Enhancement Land)	1.3
	Total	**31.58**
	Expanded campus area (incl. Granham's Rd. Realignment Proposal)	**104.7**
	% of proposed open space	**30%**

- Primary Footpaths
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- Tree Cover
- Emerging Node for Campus Amenity

2. Enhance and Distribute Campus Outdoor Amenity, Best in Class Example

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.



Right: Fiona Stanley Hospital, Melbourne

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Cambridge Biomedical Campus

Extract from CBC Spatial Emerging Spatial Framework, December 2022, Hawkins\Brown, p.27

2. Enhance and Distribute Campus Outdoor Amenity, Best in Class Example

3.2 Outdoor Amenity

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.



Right: Park 20|20, Netherlands

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Cambridge Biomedical Campus

Extract from CBC Spatial Emerging Spatial Framework, December 2022, Hawkins\Brown, p.28

3. Support Biodiversity through the Built Environment, Best in Class Example



Khoo Teck Puat Hospital, Singapore



Rehab Centre, Basel



New North Zealand Hospital, Hillerød

3. Support Biodiversity through the Built Environment, Best in Class Example

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.



Right: China Fortune, Shanghai

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Cambridge Biomedical Campus

Extract from CBC Spatial Emerging Spatial Framework, December 2022, Hawkins\Brown, p.31

3. Support Biodiversity through the Built Environment, Best in Class Example



Extract from Research and Case Study for GCSP, May 2023, Logika, p.9

3. Support Biodiversity through the Built Environment, Best in Class Example



Extract from Research and Case Study for GCSP, May 2023, Logika, p.10

3. Support Biodiversity through the Built Environment, Best in Class Example



Extract from Research and Case Study for GCSP, May 2023, Logika, p.11

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Health Outcomes Evidence of Nature in Hospitals

Patients

Viewing Nature

- Areas with prominent planting and a connection with nature are effective in producing recovery from stress within **3 to 5 minutes**
- Acutely stressed healthcare patients can **experience measurable restoration** (reduced blood pressure, for example) after only a few minutes of viewing settings dominated by greenery, flowers and/or water
- Three or four very thorough studies suggest that viewing gardenlike scenes **reduce pain**, as indicated both by patient reports of the level of subjective pain and through changes in the recorded intake of pain mitigating drugs
- Patients with a view of nature, compared to those who overlooked a wall, **spent less time in the hospital** and developed **fewer minor postsurgical complications** (such as persistent headache or nausea requiring medication)
- Patients with a view of nature **needed far fewer doses of strong narcotic pain drugs** and took many more weak oral doses.
- Patients with the view of nature more frequently **received positive written comments** in their medical records about their condition from both doctors and nurses.

Extract from Research and Case Study for GCSP, May 2023, Logika, p.1

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Health Outcomes Evidence of Nature in Hospitals

Patients

Viewing Nature

Table 1. Comparison of analgesic doses per patient for wall-view and tree-view groups.

Analgesic strength	Number of doses					
	Days 0–1		Days 2–5		Days 6–7	
	Wall group	Tree group	Wall group	Tree group	Wall group	Tree group
Strong	2.56	2.40	2.48	0.96	0.22	0.17
Moderate	4.00	5.00	3.65	1.74	0.35	0.17
Weak	0.23	0.30	2.57	5.39	0.96	1.09

(Ulrich 1984)

Extract from Research and Case Study for GCSP, May 2023, Logika, p.2

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Health Outcomes Evidence of Nature in Hospitals

Patients and Staffs

Relationship between design factors and healthcare outcomes

Table 1. Summary of the Relationships Between Design Factors and Healthcare Outcomes

Healthcare Outcomes \ Design Strategies or Environmental Interventions	Single-bed rooms	Access to daylight	Appropriate lighting	Views of nature	Family zone in patient rooms	Carpeting	Noise-reducing finishes	Ceiling lifts	Nursing floor layout	Decentralized supplies	Acuity-adaptable rooms
Reduced hospital-acquired infections	**										
Reduced medical errors	*		*				*				*
Reduced patient falls	*		*		*	*			*		*
Reduced pain		*	*	**			*				
Improved patient sleep	**	*	*				*				
Reduced patient stress	*	*	*	**	*		**				
Reduced depression		**	**	*	*						
Reduced length of stay		*	*	*							*
Improved patient privacy and confidentiality	**				*		*				
Improved communication with patients & family members	**				*		*				
Improved social support	*				*	*					
Increased patient satisfaction	**	*	*	*	*	*	*				
Decreased staff injuries								**			*
Decreased staff stress	*	*	*	*			*				
Increased staff effectiveness	*		*				*		*	*	*
Increased staff satisfaction	*	*	*	*			*				

* Indicates that a relationship between the specific design factor and healthcare outcome was indicated, directly or indirectly, by empirical studies reviewed in this report.

** Indicates that there is especially strong evidence (converging findings from multiple rigorous studies) indicating that a design intervention improves a healthcare outcome.

(Roger S Ulrich, Craig Zimring, Xuemei Zhu, Jennifer DuBose, Hyun-Bo Seo, Young-Seon Choi, Xiaobo Quan Anjali Joseph, 2008/4

Extract from Research and Case Study for GCSP, May 2023, Logika, p.3

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Health Outcomes Evidence of Nature in Hospitals

Staff / Employees

- Evidence that gardens and access to plants **reduce employee stress, increase job satisfaction, may reduce staff turnover** and aid in attracting and hiring qualified personnel
- Healthcare gardens are used heavily by staff for personal **restoration and to provide a positive escape** from workplace stresses

(Cooper Marcus and Barnes 1995, 1999) (Whitehouse et al. 2001) (Sadler 2001)

Extract from Research and Case Study for GCSP, May 2023, Logika, p.4

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Health Outcomes Evidence of Nature in Workplace

Employees

Nature

- Window views of nature appeared to **buffer aspects of job stress** and positively affect the incidence of self-reporting of general well-being
- Office workers with a window view of nature reported **feeling less frustrated and had higher life satisfaction and overall health**
- A campus layout that allowed easy access to green outdoor areas particular where they were adjacent to workplaces, provided **more restorative benefits from demands and stress of worklife**

(Leather et al. 1998) (R. Kaplan 1993) (Ulrika K. Stigsdotter 2004)

Extract from Research and Case Study for GCSP, May 2023, Logika, p.5

Quantities & Elements of Effective Restorative Gardens

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Case Study	Site Area (Ha)	Beds/Patients	Floor Area	Green/blue Area	Planted Area %	Types of Landscape	Strategic locations & features	Water
Fiona Stanley Hospital Evidence-based healthcare designer Roger Ulrich was a consultant on the hospital's design	32 Ha	783 beds	15 Ha	6.5 Ha	20.3	Ground level green spaces Linear park Lakeside parklands Intimate rehabilitation courtyards Intensive rooftop gardens Conservation landscape Views of the landscape	a) A 400 metre concourse unifies the site - linking the inside and outside of the building and passing all of the main open spaces and plazas b) Key circulation routes and strategic zones - capture views of the landscape c) Integration of landscape-based therapy tools d) Outdoor rehabilitation facilities e) Linear park for respite and recreation f) Creating a strong sense of place and belonging g) Reuse stormwater for irrigation h) Retained bushland conservation areas surrounding the hospital i) Re-establish greenways and links in the local habitat j) Botanically diverse roofscape to bridge the habitat and offer restorative outlook	Scenic lakes Swale Integrated parkland detention areas
Khoo Teck Puat Hospital (KTPH)	3.5 Ha	550 beds	Not available	Not available	Green plot ratio:3.92 (total surface area of horizontal and vertical greenery is almost 4 times the size of the land that the hospital sits on) - 18% of floor area	25 gardens - pleasant environment for social support and privacy. In the wards - views of greenery Vertical greening Green canopies	a) Hospital entrance landscape b) Basement courtyard garden c) Podium perimeter greening d) Intergenerational garden with Yishun Pond e) Rooftop community garden f) Hosting 100 species each of birds, butterflies, fish and plants	Health promoting Yishun Pond Lush garden with shallow ponds on hospital level 1
Dumfries and Galloway Royal Infirmary (BREEAM Excellent)	6.35 Ha	344 beds	Not available	Not available	Not available	17 courtyards and gardens which function as places of rest and healing as well as provide views from inside. Open, social landscape with circulation routes and rest spaces High levels of daylighting and views out into the gardens and landscape Woodland campus Roof gardens	a) Woodland hospital campus b) 3 interconnected inpatient wards each with their own garden c) Palliative care bedrooms private gardens for beds to be wheeled outside d) A women and children's unit, featuring an internal courtyard and dedicated children's garden which is linked to the main building but is served by its own separate entrance. e) Open, social spaces, circulation routes include rest spaces: Areas to promote interaction between staffs f) Promote integration between the external and internal spaces g) Roof gardens for patient enjoyment h) Outdoor rehabilitation facilities.	Nil

Extract from Research and Case Study for GCSP, May 2023, Logika, p.6

4. Repair Campus 'Landscape Setting' - (Existing CBC Hard Edge, Strategic Viewpoint 7)

This is a strategic view from Little Trees Hill identified in the Local Plan (2018) as part of Policy 60 Appendix F: Tall Buildings. It is also mentioned in the Inner Green Belt Study as one of the key elevated viewpoints at the edge of the Gog Magog Hills affording views across much of Cambridge



Gog Magog chalk hills
supportive landscape

Visually cohesive
Historic core

ANNE MCLAREN BUILDING
ADDENBROOKES CAR PARK
ADDENBROOKES CHIMNEY
CAMBRIDGE ASSESSMENT
CHEMISTRY DEPT
BOTANIC HOUSE

RADIOTELESCOPE
FOX HILL
WYMPE HILL
DISTRICT HEATING CENTRE
ADDENBROOKES HOSPITAL
UNIVERSITY LIBRARY
KING'S CHAPEL
CATHOLIC CHURCH SPIRE
CARTER BRIDGE

SOFT GREEN EDGE

BOWL LANDFORM

HARD EDGE

Babraham Road

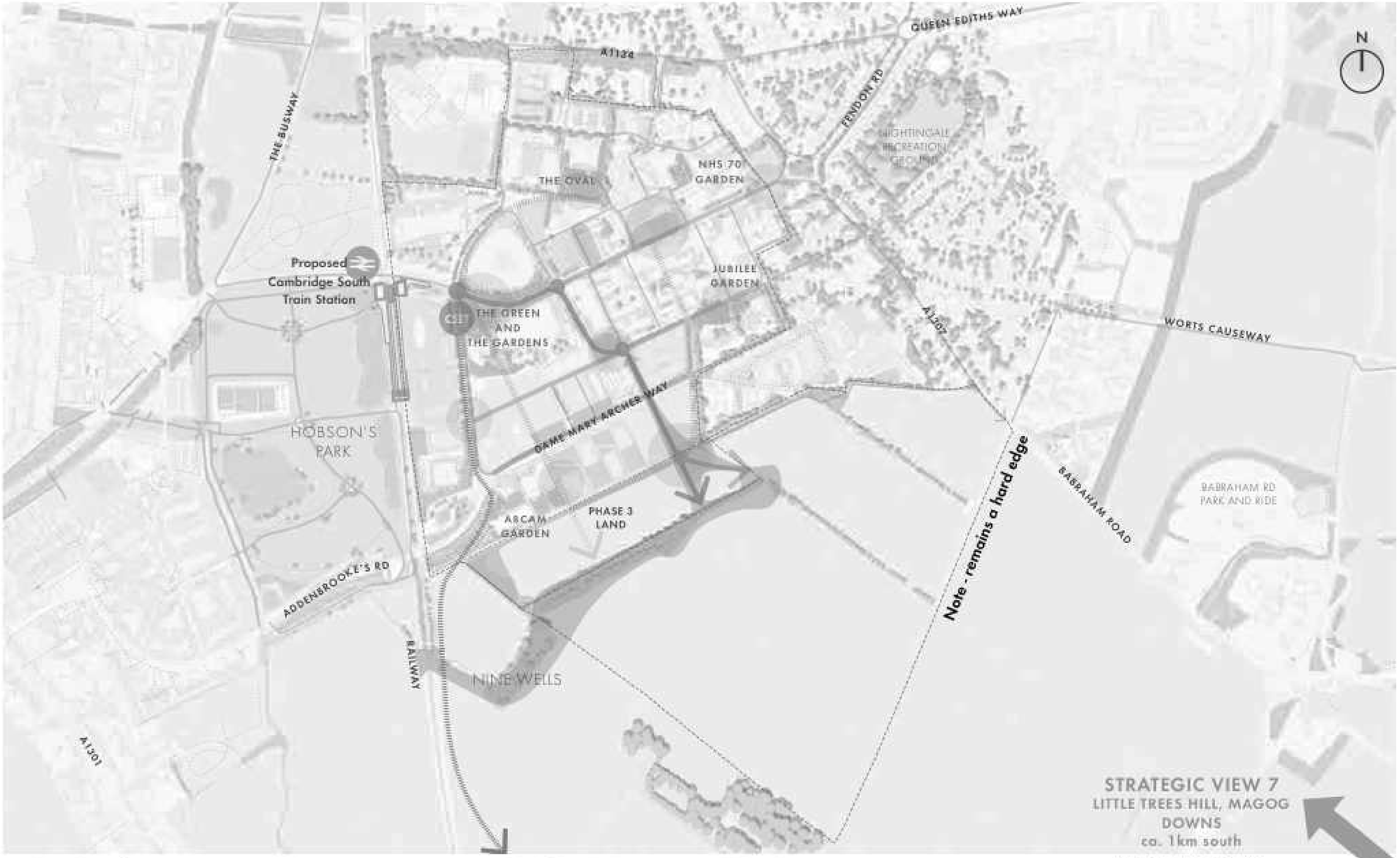
Haverhill Road

4. Repair Campus 'Landscape Setting' - Including Phase 4 Land - Opportunity for a Continuous Enhanced Soft Green Edge



- Primary Footpaths
- Secondary Footpaths
- Consented Buildings
- CSET
- Loop
- Principal North-South Route
- Principal East-West Route
- Green Amenity Space
- Consented Green Amenity Space
- Tree Cover
- Emerging Node for Campus Amenity
- Soft Green Edge

4. Repair Campus 'Landscape Setting' - Potential scheme without Phase 4 Land



- Primary Footpaths
- Secondary Footpaths
- Consented Buildings
- CSET
- Loop
- Principal North-South Route
- Principal East-West Route
- Green Amenity Space
- Consented Green Amenity Space
- Tree Cover
- Emerging Node for Campus Amenity
- Soft Green Edge

5. Enhance Green Belt Land



5. Enhance Green Belt Land

GREEN BELT ENHANCEMENT LAND

Potential opportunities to improve the landscape and green infrastructure within and around the site have been identified below. The principles illustrate the ambitions of the landowners and CBC Ltd., but will need to be developed through further engagement with GCSP.

- To maximise the biodiversity value of the Site by enhancing the quality of existing agricultural, grassland and woodland belt habitats and the species currently present, thus achieving 20% BNG, mitigating for adverse impacts caused to farmland species through loss of habitat, and providing an ecological link from Nine Wells LNR to the Gog Magog Hills.

EXPANSION LAND

- To combine a flood risk focus with a recreation focus, improving quality of life for those living and working on the Site, whilst building resilience to climate change







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GI DESIGN PRINCIPLES

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OVERARCHING OBJECTIVES



GREEN BELT ENHANCEMENT LAND

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EXPANSION LAND

"To combine a flood risk focus with a recreation focus, improving quality of life for those living and working on the Site, whilst building resilience to climate change"

11 July 2023

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Extract from CBC Green Infrastructure Proposal, July 2023, Logika, p.12

GI DESIGN PRINCIPLES – GREEN BELT ENHANCEMENT LAND

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TREE & WOOD PRINCIPLES



- The existing woodland belt will be protected by setting development (including roads) back by at least 20m from the trunks.
- Its condition will be enhanced through appropriate management and buffer planting.
- Nine Wells LNR will be protected and enhanced by creating a buffer of additional scrub planting around it, and by linking it to the woodland belt through new hedge and tree planting.
- Trees will also be planted within the development footprint, and within new hedgerows.

HEDGEROW PRINCIPLES



- Existing defunct or poor condition hedgerows will be enhanced through appropriate management and new hedge laying.
- Historic hedgerows will be reinstated at appropriate places on the Green Belt Enhancement Land to provide ecological connectivity within and beyond the Site, and to line the newly created paths (thus keeping people and dogs on the paths and away from ground nesting birds).

11 July 2023

14

Extract from CBC Green Infrastructure Proposal, July 2023, Logika, p.14

GI DESIGN PRINCIPLES – GREEN BELT ENHANCEMENT LAND

Logika GROUP

FARMLAND PRINCIPLES



- Agricultural use of existing arable fields will continue, with changes to cropping practices such as removing use of herbicides and pesticides – effectively managing entire fields as conservation headlands.
- Existing grassy margins will be restored and new ones created to provide additional habitat for farmland bird species, as well as ecological connectivity within and beyond the Site.
- Grazing animals will be introduced to the arable fields following cropping (i.e. used as hay meadows).
- A footpath network that utilizes double hedgerows and fences will enable people to enjoy the Site without disturbing the farmland birds.

GRASSLAND PRINCIPLES



- Existing arable land on the upper slopes of White Hill (within the 40-45m contour) will be converted to species-rich chalk grassland to contribute towards creation of additional stepping stone habitat within the proposed corridor of the Gog Magog Hills Nature Recovery Network Priority Area.
- This area will be managed as permanent, species-rich, pasture for grazing animals, thereby building soil health and soil carbon in the process.

11 July 2023

15

Extract from CBC Green Infrastructure Proposal, July 2023, Logika, p.15

GI DESIGN PRINCIPLES – EXPANSION LAND

Logika GROUP

FLOOD RISK PRINCIPLES



- Permeable surfaces and use of Sustainable Drainage Systems (SuDS) will be maximized across the development footprint to ensure water efficiency.
- SuDS features will be unlined to maximise infiltration potential and sustainability.
- Discharge to the receiving outfall will be maximised using gravity, e.g. using swales/channels rather than pipes to retain infrastructure at shallow depths, and blue roofs located at high level to facilitate gravity connections, thus ensuring the sustainability of the scheme.
- SuDS will be carefully designed so as to reduce risk elsewhere on the campus

RECREATION PRINCIPLES



- Recreation facilities will be embedded into the development footprint, including footpaths and cycleways, both formal and natural play space, pocket parks and courtyards.
- Attractively vegetated footpaths and cycleways will link the buildings on site with each other, with the rest of the CBC site to the north, with the recreational routes on the Enhancement Land, and beyond to the wider countryside.
- Users of the development will be provided with a variety of tranquil public amenity areas.

11 July 2023

17

Extract from CBC Green Infrastructure Proposal, July 2023, Logika, p.17

GI DESIGN PRINCIPLES – EXPANSION LAND

Logika GROUP

MULTI BENEFIT PRINCIPLES



- The multifunctionality of greenspace created on the Expansion Land will be maximised (providing aesthetics, wellbeing, recreation, flood risk reduction, cooling/shading, enhanced water quality, and habitat for wildlife), albeit without compromising the quality of its primary purpose in any specific location.
- Form, fabric, and landscape (i.e. open space and vegetation, including tree planting and green roofs and walls) will be used to optimise ambient lighting, heating, cooling, and ventilation.
- Vegetative screening will be used alongside roads to reduce exposure of pedestrians and cyclists to air pollution.
- Habitat for wildlife will be maximised by incorporating native species planting into other GI features such as parks, playing fields and SuDS, and including bird and bat boxes where appropriate.
- Surface water runoff will be cleaned by natural systems wherever possible.
- Rainwater harvesting will be introduced where possible to create the most sustainable water cycle.
- Carbon sequestration will be enhanced through appropriate planting of woody species across the developed area.

Extract from CBC Green Infrastructure Proposal, July 2023, Logika, p.18

5. Enhance Green Belt Land

FEEDBACK ON OUR PROPOSALS

Logika GROUP

GCSP published a report to members in January 2023 which commented on the work that had been submitted in December 2022. Here are some of the extracted comments:

3.15

The Green Belt enhancement would need to focus on biodiversity. This is likely to take the form of enhancement of the agricultural landscape to provide a better environment for wildlife, which will enable public access around specific routes and locations. Whilst detailed implementation will still need to be resolved the issues identified are considered capable of being suitably addressed at this point.

3.20

As stated above, initial work exploring biodiversity mitigation suggests the focus of the land within the wider area of change and White Hill may be best suited to biodiversity enhancement rather than a formal approach to open space, but there would still be opportunities for public access and connections to green infrastructure within the campus and to the wider area. A site masterplan would need to provide comprehensive landscaping plan, including considering the approach to the city edge. Whilst detailed implementation will still need to be resolved, the issues identified are considered capable of being suitably addressed at this point.

Extract from CBC Green Infrastructure Proposal, July 2023, Logika, p.23

5. Enhance Green Belt Land

BIODIVERSITY AND GREEN INFRASTRUCTURE

Logika GROUP

CONCLUSIONS, IMPLICATIONS AND CAVEATS

- BNG uplift of ~100 units or >55%.
- Mitigation of impacts on farmland bird species through proposed retention of majority Green Belt Enhancement Land as conservation-focused agricultural land.
- Contributions to connectivity and stepping stones as part of Gog Magog Hills Priority Area, with enhanced woodland, new hedgerows and new grassland (calcareous if possible given chalk soils).
- Additional hedge/fence-lined recreational routes across the Enhancement land, benefitting people whilst protecting wildlife. Opportunities to provide linkages with offsite greenspaces.
- Significant gains for regulating and cultural services, esp. recreation, flood risk reduction, sense of place, carbon sequestration, interaction with nature and mental health.



11 July 2023

24

Extract from CBC Green Infrastructure Proposal, July 2023, Logika, p.24

RECREATIONAL PROVISION



Logika GROUP

- Recreation opportunities will be provided on the enhancement land as an important secondary function. This includes a network of more than 2,500m of footpaths, cyclepaths and bridleways linking to the city, surrounding communities and the countryside including Magog Down.
- An area of informal open space near the summit of White Hill will be included and other 'pocket' areas of recreation can be considered.
- These routes will be lined by hedgerows so as to prevent disturbance of groundnesting birds and other important wildlife that occur in the adjacent arable fields, but will still provide a significant opportunity to deliver accessible nature-rich green space in the area.

20

Note: An assessment of the proposal to enhance the Green Belt land was completed in November 2022. The proposal has evolved since the assessment but a similar level of biodiversity and environmental net gain is expected.

5. Enhance Green Belt Land

BIODIVERSITY AND ENVIRONMENTAL NET GAIN

ENHANCED SCENARIO – GRANHAM'S ROAD REALIGNMENT

60% BIODIVERSITY NET GAIN

In total, 283 habitat units and 83 hedgerow units would be provided on Site, representing an overall 107 units / 60% gain for habitats, and a 30 units / 58% gain for hedgerows.

This is broken down as follows:

- Expansion Land: 105 habitat units would be provided (representing a 33% gain), along with 23 hedgerow units (a 13% gain).
- Green Belt Enhancement Land: 178 habitat units would be provided (representing an 82% gain), along with 61 hedgerow units (an 85% gain).

Achieving BNG of 20% for the Site overall would require just under 212 habitat units to be attained, meaning that there would be an approximate surplus of 71 habitat units if this scenario is taken forwards.

100% CULTURAL SERVICES GAIN
90% REGULATING SERVICES GAIN
79% PROVISIONING SERVICES LOSS



Extract from CBC Expansion Land & Green Belt Enhancement Land Vision Report, December 2022, Allies and Morrison, p.70

Note: An assessment of the proposal to enhance the Green Belt land was completed in November 2022. The proposal has evolved since the assessment but a similar level of biodiversity and environmental net gain is expected.

6. Consolidate Green and Blue Infrastructure Corridors (On-Site areas - CBC and Expansion Land)



Blue Infrastructure Corridor (on site)

5 metre contour lines

6. Consolidate Green and Blue Infrastructure Corridors, Best in Class Example

On-Site areas - South CBC and Expansion Land)



Chiswick Business Park, Gennersbury, London

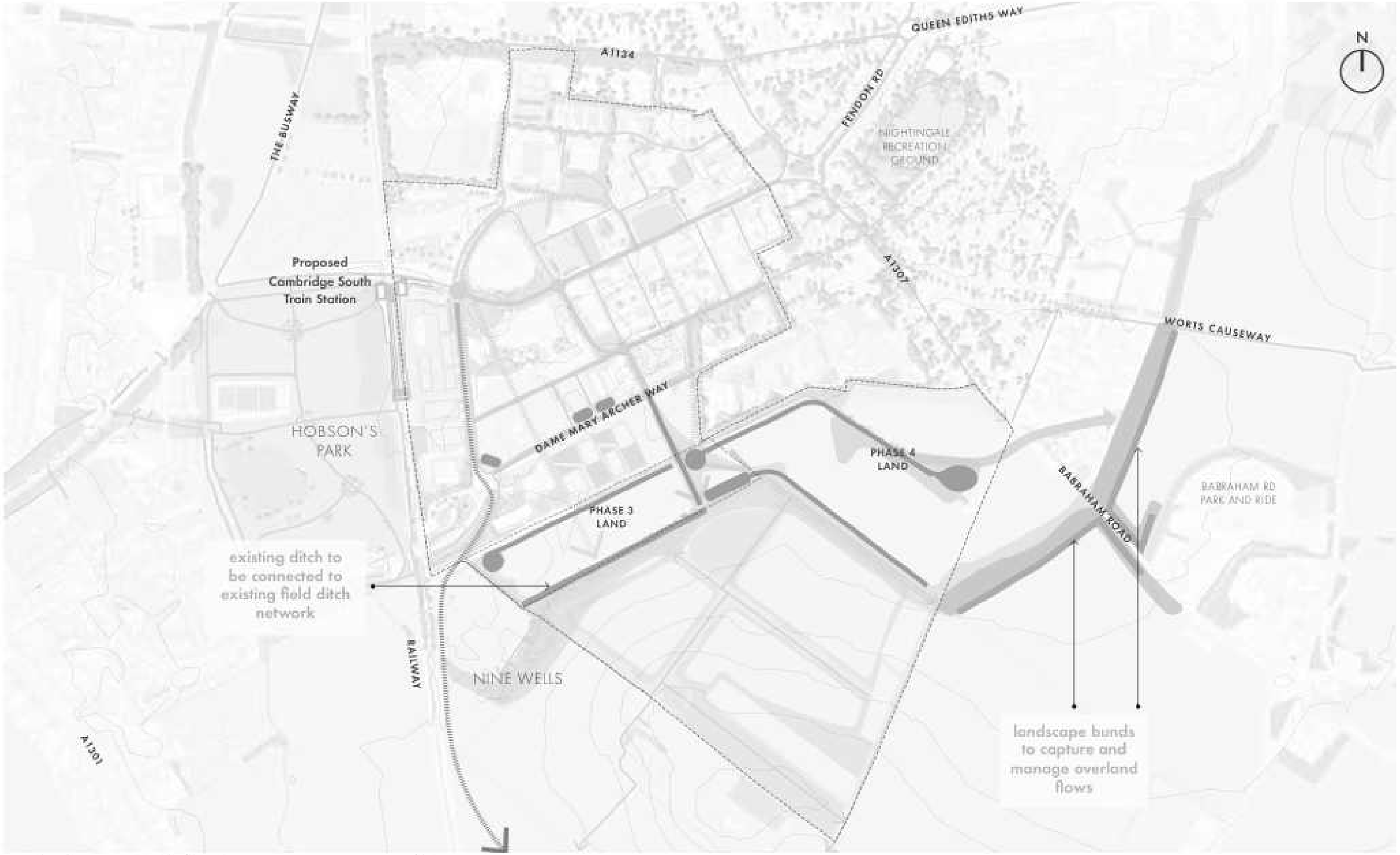




The Towers at Merriman Square, Cape Town, South Africa

Eddington, Cambridge

7. Mitigate Pluvial Flooding - Landscaped Bunds (Off-site areas)



Blue Infrastructure Corridor (on site)

Existing Ditch to be connected to network

Landscape Bunds (off site)

5 metre contour lines

Existing Flow Route Locations

Logika Noise Air Quality CONSULTANTS

- Existing overland flow routes have been interrogated, to understand the main conveyance routes towards the Site.
- This enables appropriate locations to be considered.



Extract from Flood Management Report, January 2023, Logika, p.5

Flood Storage Areas

- Potential exists for overland flows to reach the site from elevated land to the east and southeast.
- Taking a robust approach, high level modelling was undertaken to quantify benefits of off-site management.
- Overland flows retained and managed within landcaped bunds located to the southeast.



Flood Depth (100 Year Event +40%)

Extract from Flood Management Report, January 2023, Logika, p.8

Difference in Overland Flows

Logika Noise Air Quality CONSULTANTS

- Management of overland flows offsite would protect the site from existing surface water flow paths.
- Flood management areas would be linked to the wider drainage ditch network, to allow controlled disharge of retained water to Nine Wells and Hobson's Brook.
- Controlled outflows from bunded retention areas would ensure that volumes of water retained would be reduced in comparison to extents shown in initial model results.
- Rainwater falling on the site itself (dark blue areas) would be captured by the on-site SuDS system.



Flood Depth Difference (100 Year Event +40%)

Extract from Flood Management Report, January 2023, Logika, p.9

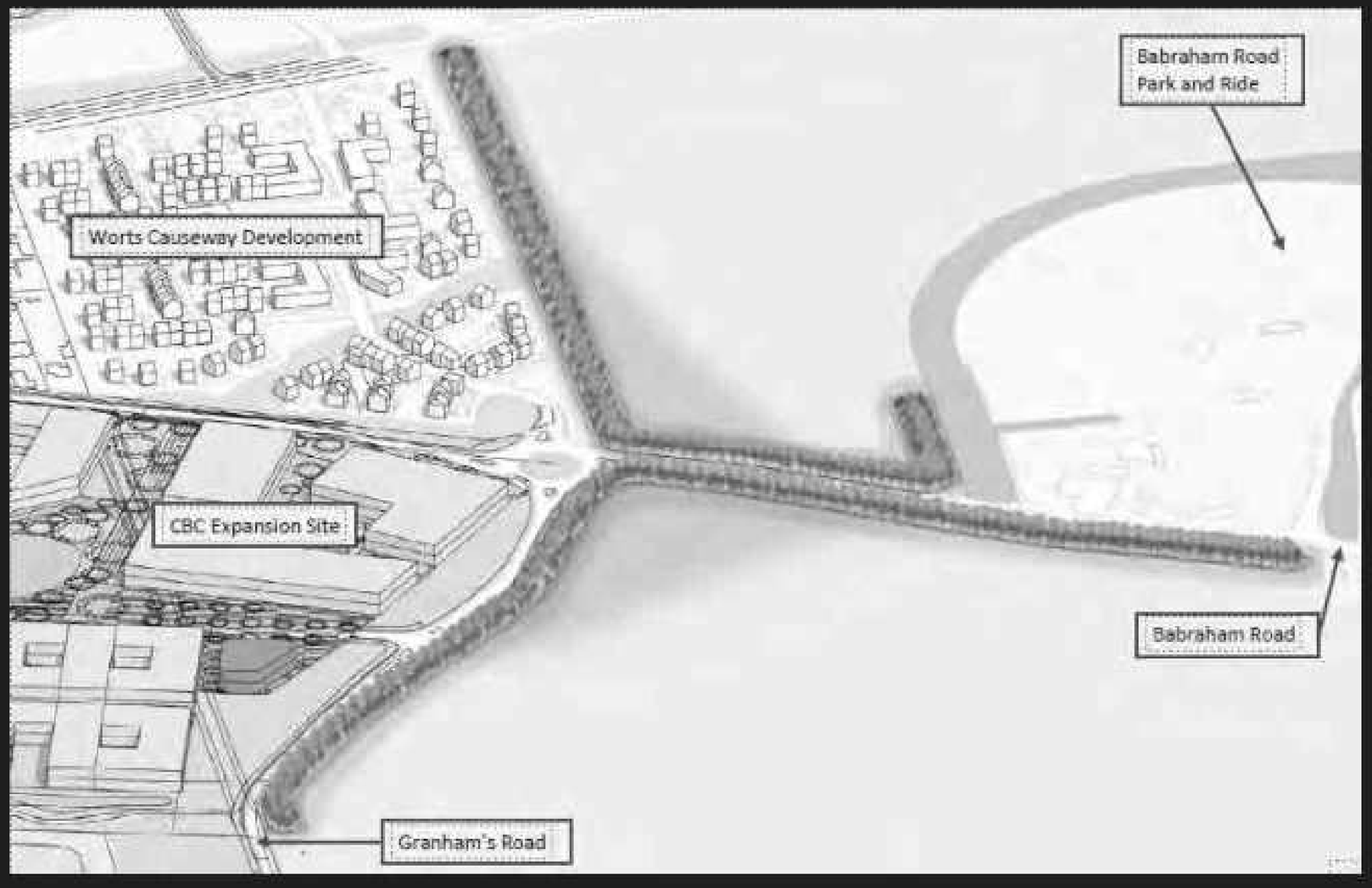
CBC Expansion

The Proposed Solution

Logika Noise Air Quality CONSULTANTS

- Risk can be managed through the incorporation of raised earthwork features along the boundaries of the adjacent Council owned land, to capture overland flows propagating towards the CBC Expansion Site.
- Captured flows would be drained to the existing local drainage network at a controlled rate, to ensure that flood risk around Hobson's Brook will not be increased.
- The high level model featured a 2-metre height bund as a conservative estimate and no discharge to the local drainage network.
- The modelled bund height can be reduced if discharge is allowed from the retention areas.

19 May 2023



Extract from Flood Management Report 02, May 2023, Logika, p.6

CBC Expansion

Operation of System

Logika Noise Air Quality CONSULTANTS

- The hydraulic model simulated an extreme scenario in terms of retained water (i.e., 1 in 100 annual probability).
- The model did not include a discharge mechanism for retained flows, hence the extent of accumulated water was a conservative estimate.
- Typical operation of system would see significantly smaller ponding within earthworks than shown in the model.

19 May 2023



Extract from Flood Management Report 02, May 2023, Logika, p.7

7. Mitigate Pluvial Flooding - Landscaped Bunds (Off-site areas)

Runoff Management Features

Logika Noise Air Quality CONSULTANTS

CBC Expansion

- Functional earthworks could be designed to feature integrated soft landscaping, in order to tie into existing land boundaries and blend in with the surrounding landscape.
- A clay core would be specified at the centre of each feature, to prevent seepage of overland flows.
- Appropriate tree planting and landscaping could also be used to 'soften' edges of the CBC Expansion Site within wider green belt.



Bosch, R. (2023) *Available at: https://unsplash.com/photos/*

19 May 2023

8

Extract from Flood Management Report 02, May 2023, Logika, p.8

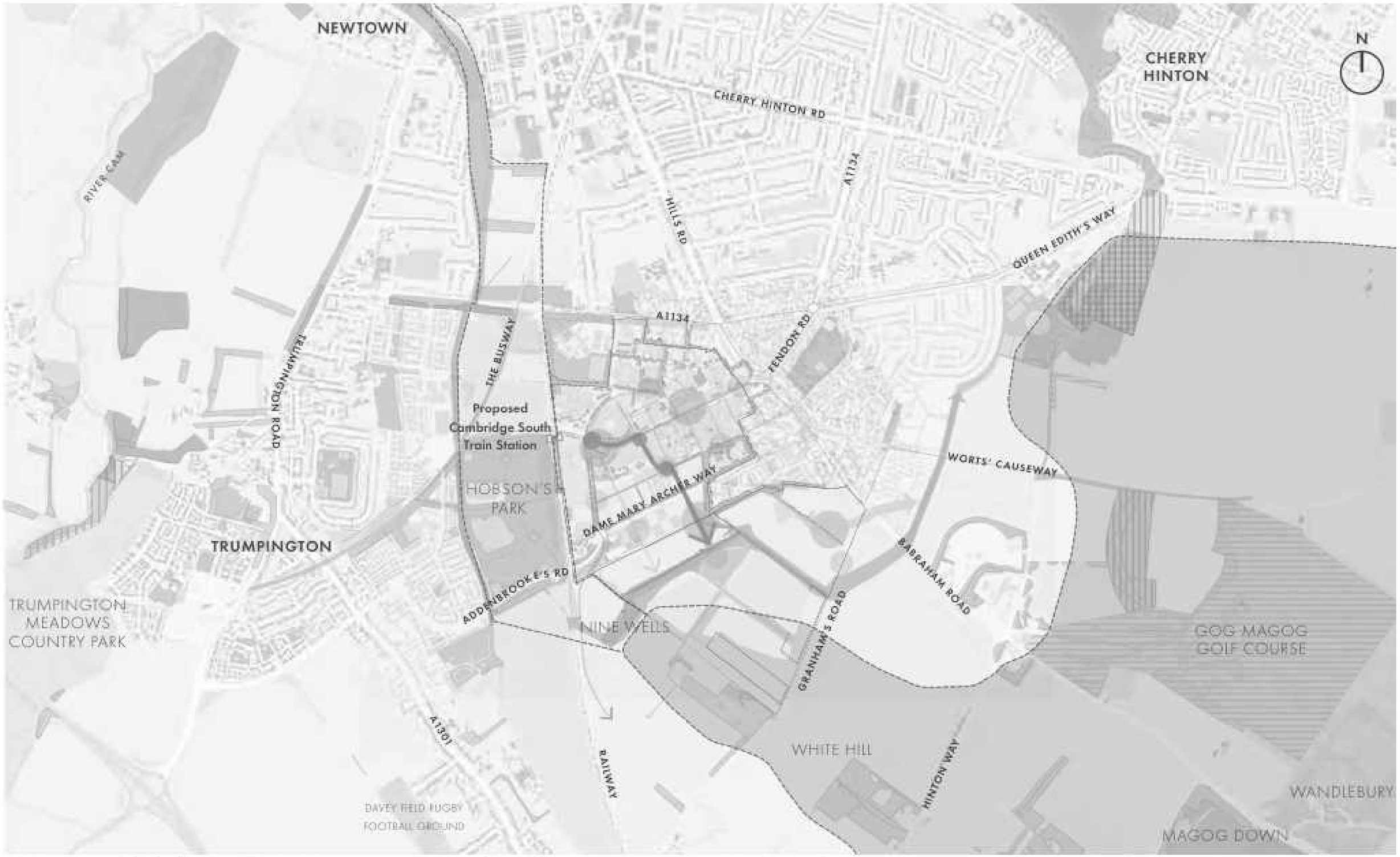
7. Mitigate Pluvial, Flooding Best in Class Example - Landscaped Bunds (Off-site areas) - Precedent Images







A robust Green Edge to Cambridge



- Gog Magog and Chalkland fringe
- Priority Area Boundary
- Core Area
- Stepping Stone
- Core extension
- Stepping Stone extension
- Corridors
- Roman Road SSSI
- Potential Node for Campus Amenity
- Open Green Amenity
- Conservation Farmland
- Public Footpaths within Hedgerows

2.2 COMMUNITY

Defining campus requirements

- **Campus communities**
- **Campus facilities**
    - **Survey of campus occupiers**
    - **Gap analysis**
    - **KF ingredients list**

Extract from GCSP Workshop, April 2023, Quod, p.2

Hospital

Staff

- 12,000 Addenbroooke's and Rosie staff (June 2019) comprising:
    - 80% permanent staff
    - 10% fixed term temporary staff
    - 10% bank staff
    - >1% locums
- 2,100 Royal Papworth Hospital (inc. HLRI)
- Normal shift pattern 07:00 to 19:00 (day) and 19:00 to 07:00 (night)

Patients and visitors

- Patients and visitors – c. 16,000 daily trips
- Outpatient appointments from 08:00 to 18:00.
- Visiting hours for most wards from 11:00 to 20:00.

Extract from GCSP Workshop, April 2023, Quod, p.3

Residents

Sanctuary Housing

- CUH have approximately 1,100 beds of onsite accommodation, managed by Sanctuary Housing.
- Mostly flats with shared facilities.
- Accommodation is viewed as a short term housing solution.
- Occupants are primarily employees working in Nursing and Midwifery and Anglia Ruskin University students studying nursing, midwifery, and other health related courses or on placement at CBC.
- Some rooms are available to non-staff e.g. accommodation within Elsworth House is available for families of patients or those who are awaiting procedures (free for patients and £24 per night or relatives).

Extract from GCSP Workshop, April 2023, Quod, p.7 - Slide updated in July 23

University of Cambridge, School of Clinical Medicine

Students

- C. 1,000 post graduate students attending CBC daily.
- C. 1,000 undergraduate students who split time between CBC and other partner hospitals.
- Teaching hours between 08:00 and 18:00.

Staff

- C. 2,800 staff members:
    - 61% full time
    - 39% part time

Extract from GCSP Workshop, April 2023, Quod, p.7 - Slide updated in July 23

Research and Development

- Abcam – c. 800
- AZ campus – up to 2,200 staff (upon occupation)
- MRC LMB – c. 560 staff (2022)
- Other – tbc

Extract from GCSP Workshop, April 2023, Quod, p.6

Forecast growth – daily on site

Existing at 2017		Existing at 2023		At 2050	
Staff	Visitors	Staff	Visitors	Staff	Visitors
21,220	14,500	18,697	18,200	39,963	30,092

Source: KMC Transport Study, July 2023

Note: Subsequent updates are set out in the Transport Strategy by KMC, dated Oct 2023

Extract from GCSP Workshop, April 2023, Quod, p.7 - Slide updated in July 23

Minimum requirements survey – summary analysis by MetroD

Planning requirement

Developer partner requirement

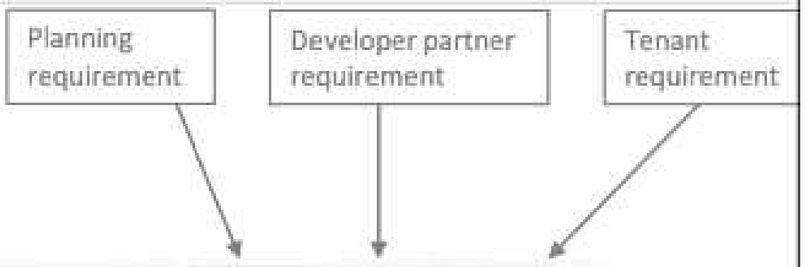
Tenant requirement

MINIMUM REQUIREMENT		TOTAL	Requirement Classification		
			Baseline		Addition
Development 'ask'	*Specific targets (Draft for agreement/ variation with NewCo)*		PLANNING	PARTNER	
Land use mix, urban design, density and enlivenment	The Masterplan and implementation of the scheme (at plot, phase and multi-phased levels) must recognise the core design principles of Vision 2050. This includes, but is not limited to, creating a place that is quasi-urban in density and form, with an efficient use of available land, permeable buildings and spaces (where such does not impact on operations), activation and enlivenment of the development at all stages and phases, a clear programme for arts, interim uses and community involvement.	32			
Sustainable transport	The establishment of a sustainable transport zero carbon neighbourhood will require a commitment to installing high quality active travel and public transport facilities in advance of need. Implemented sustainable transport on site must be inclusive, affordable and accessible. It must recognise the transport needs of employees, residents, business service providers, patients and visitors. It must also recognise Vision 2050 aims for health and wellbeing, and integrate with sustainable modes connecting beyond the immediate neighbourhood. Parking will still need to be part of the multimodal solution as appropriate, but within an established active travel hierarchy.	31			
Favour for life sciences and R&D	[….] of the commercial space within the development must be occupied by businesses, institutions or other organisations whose principle focus is in life sciences, or whose operations on site are dedicated to life sciences. Within this mix, the aim should be to achieve a balanced representation of commercial, institutional (education and research), and population based healthcare operations to maintain and enhance the unique offer of CBC. [….]% of all new commercial floorspace must be provided as dedicated research space for Life Science Businesses. This space can also be supporting other obligations/ minimum requirements (e.g. SME wet/dry lab space, start-up space, scale up space, incubation space). [….%] of this space must be provided for non-profit research institutions at an all-in occupancy cost that is benchmarked against equivalent provision within Cambridge.	30			
Best in class estate management	Prior to the occupation of the first commercial building, an Estate Management Company must be established, resourced and funded to maintain and manage the new expanded CBC. The role, responsibilities, objectives and KPIs of the Estate ManCo must be defined and agreed prior to its establishment and agreed with CBC Ltd.	28			
Retail, Leisure and F&B	The retail, leisure and F&B offering must be sufficient to meet the diversity of needs from existing and future occupiers in CBC (both quantitative and qualitative needs) as well as be able to attract residents from the wider neighbourhood to use and enjoy the offer on site. [….]% of the total office and R&D ground floor space, and [….]m2 per [….]no. of homes shall be set aside for Class E (a-c). [……]% of each phase must be for public access F&B uses (not contained within controlled access environments).	24			
Market Housing mix (sale and rent)	The size, type, tenure and market price of [50%] of the new homes developed for open market sale/rent must be in accordance with the agreed CBC Ltd Housing Market Needs Assessment (HMNA) adopted as part of the relevant Development Plan at the point the development of the relevant phase commences. Where there is an identified gap in the affordability ratio (see explanatory note), the initial priority will be to use any available government incentives to address that gap (for properties available for sale). Beyond that, the focus will be to address any outstanding need through discounted market rent options rather than discounted for sale options.	24			
Nursery	Prior to the occupation of [….]% of the total office and R&D floor space, a purpose built nursery shall be established with an initial capacity of [….] and shall then expand as demand requires t a maximum capacity of [….]. This facility shall be primarily for the children and dependants of those working on campus. Any additional facilities required by the LPA to meet the needs of residents shall not be considered part of this provision	23			

Extract from GCSP Workshop, April 2023, Quod, p.8

Community Facilities

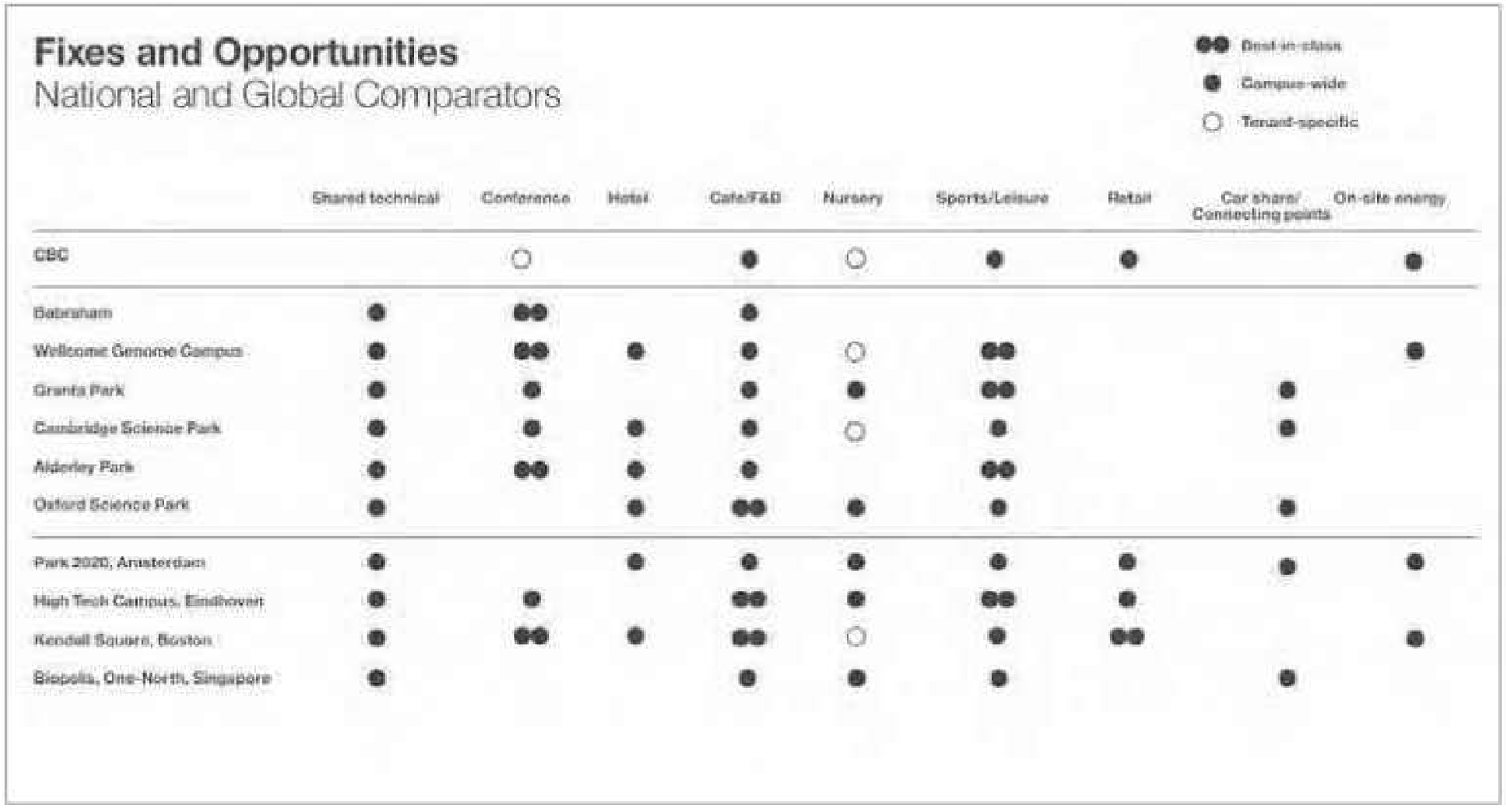
Minimum requirements survey – summary analysis by MetroD



Leisure & sport facilities, cultural & performance spaces	[....]% of the total commercial floorspace must be delivered as dedicated leisure and sports facilities, implemented to meet employee recreational needs across the existing and expanded CBC. Floorspace needs to be delivered on a phase by phase basis and is exclusive of any additional leisure provision required under Town Planning to support residential amenity. A Cultural/ performance facility of [insert technical requirements for capacity, rooms, function and M&E needs] must be provided within the first [3] phases of the development and remain operational for a minimum period of [10] years after the development has completed all phases.	21			
Key Worker affordable, for CBC workers (+ overall Affordable) & Supported Living	[50%] of Affordable Homes must be contractually tied to eligible employees within the existing and expanded CBC. No fewer than [XX] homes within any phase must comply with this requirement. The creation of a sustainable, inclusive and balanced neighbourhood requires accommodation of a wide range of types, with the needs of specific groups requiring particular focus. [5%] of all new homes built on site should be designed and delivered specifically to meet the needs of older residents.	21			
Start up, Scale up & Incubation space (and Labs). Collaboration & temporary translational research space	[....]% of all new commercial floorspace within any phase must be dedicated to incubating Start Up businesses (i.e. businesses in the initial growth period from inception to a successful 2nd funding round). [.....]% of all new commercial floorspace within any phase must be dedicated for businesses in the early accelerated growth phase (i.e. businesses that have moved to a well funded commercial/ near market stage and require additional space quicker than traditional building programmes can address). [....]% of all new commercial floorspace within any phase must be dedicated collaboration spaces for formal co-working. .....[% of all new commercial floorspace within any phase must be dedicated to short term occupational needs for translational research.	20			
Hotel & Conference centre	A hotel of [...] beds with additional facilities for [...], operating at a general market level equivalent to a [4] star offering. A conference centre of [insert technical requirements for capacity, rooms, function and ME needs]. Both must be provided within the first [3] phases of the development and remain operational for a minimum period of [10] years after the development has completed all phases.	17			
Proactive and market leading infrastructure/ utilities offering	The exact scale of potential capacity and resilience required within any phase to be agreed based on 'Best in Class/ Top 10 in agreed independent evaluation' competitor research locations globally and defined in the Business Plan.	16			
Flexible leasing arrangements	[....]% of all new commercial floorspace must be provided with flexible leasing arrangements that enable occupation for a period of minimum [1] month without an effective penalty (e.g. large deposit, early termination charge etc).	12			

Extract from GCSP Workshop, April 2023, Quod, p.9

HB early technical work on comparators



Extract from GCSP Workshop, April 2023, Quod, p.10

Slide presented to GCSP in November 2022

1 Exemplar Schemes - Comparative Facilities Study and gap analysis

- Best in class
- Campus
- Tenant-Specific



CBC



Park 2020, Amsterdam



High Tech Campus, Eindhoven



Kendall Square, Boston



Biopolis, Singapore

Shared Technical		●	●	●	●
Hotel/Conference	○		●	●	●
Food and Beverage	●	●		●	●
Nursery	●	●	●	●	●
Sports/Leisure	○		●	●	●
Retail	●	●	●	●	●
Car Share		●	●	●	●
On Site Energy		●			●
Connecting Points		●		●	

Cambridge Biomedical Campus

Extract from GCSP Workshop, April 2023, Quod, p.11

Slide presented to GCSP in November 2022

1 Essential Ingredients

For CBC to compete and achieve longevity a more comprehensive range of facilities and amenities are required to support commercial, research and clinical uses. These facilities and services are required to attract and retain the best talent in a sustainable environment.

- Retail and Food and beverage facilities- diversity of offer, distributed across campus
- Hotel/hospitality facilities- ideally a diverse offer
- Bespoke conference facilities- 500 + delegates
- Wellness/health and fitness facilities- gym/spa/medical/leisure
- Community facilities- to demonstrate the connection between local community and CBC
- Child care- crèche/nursery facilities
- Energy/power- to demonstrate resilience and longevity
- Service- concierge- a service offer which supports companies/employees based there
- Smart building environment- to demonstrate Environmental accountability
- Residential accommodation

Cambridge Biomedical Campus

Extract from GCSP Workshop, April 2023, Quod, p.12

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.



Right: Granta Park, Cambridge

Cambridge Biomedical Campus

Extract from CBC Spatial Emerging Spatial Framework, December 2022, Hawkins\Brown, p.32

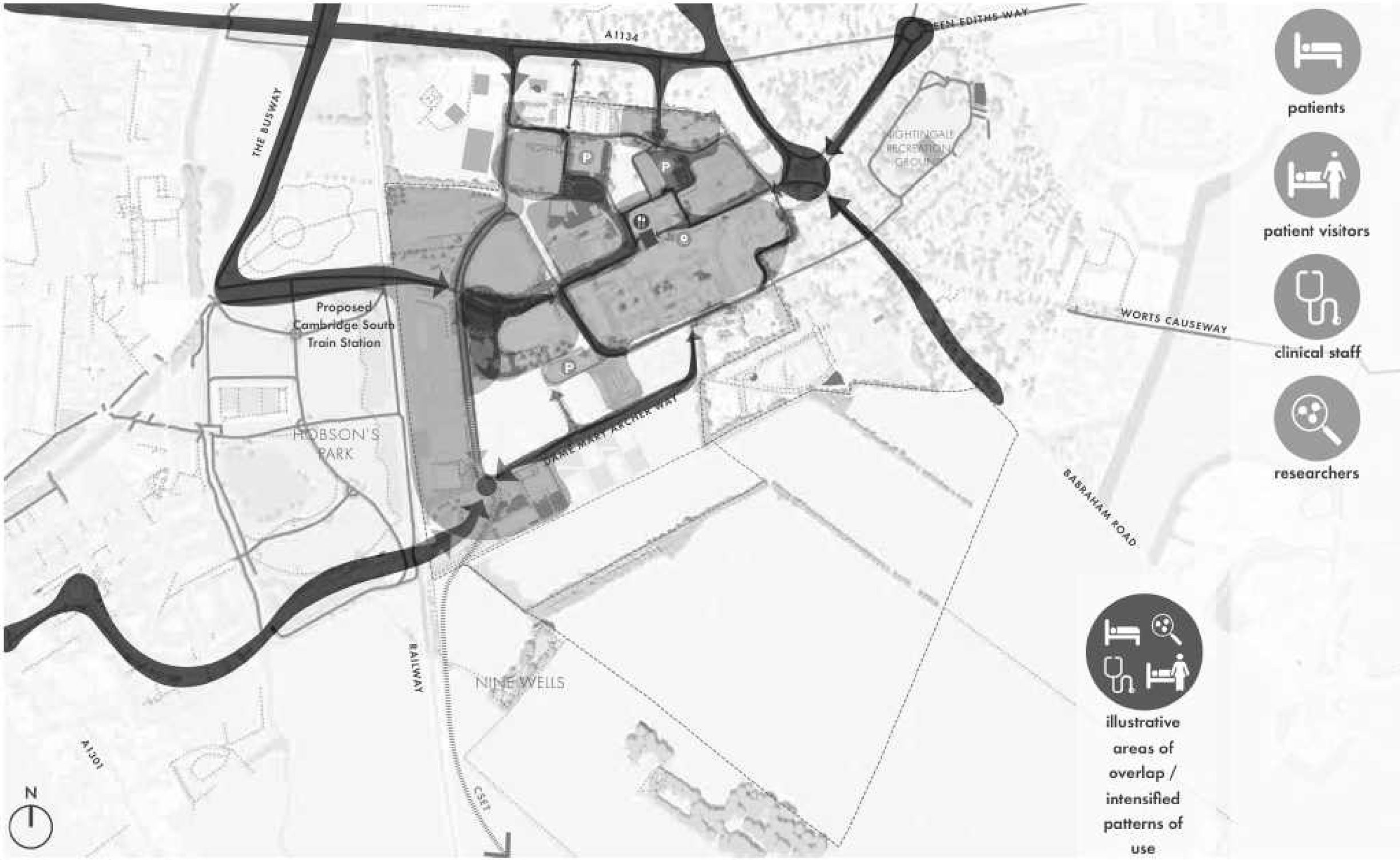
Existing Campus Patterns of Use Alongside Existing Campus Facilities - Patients and Visitors



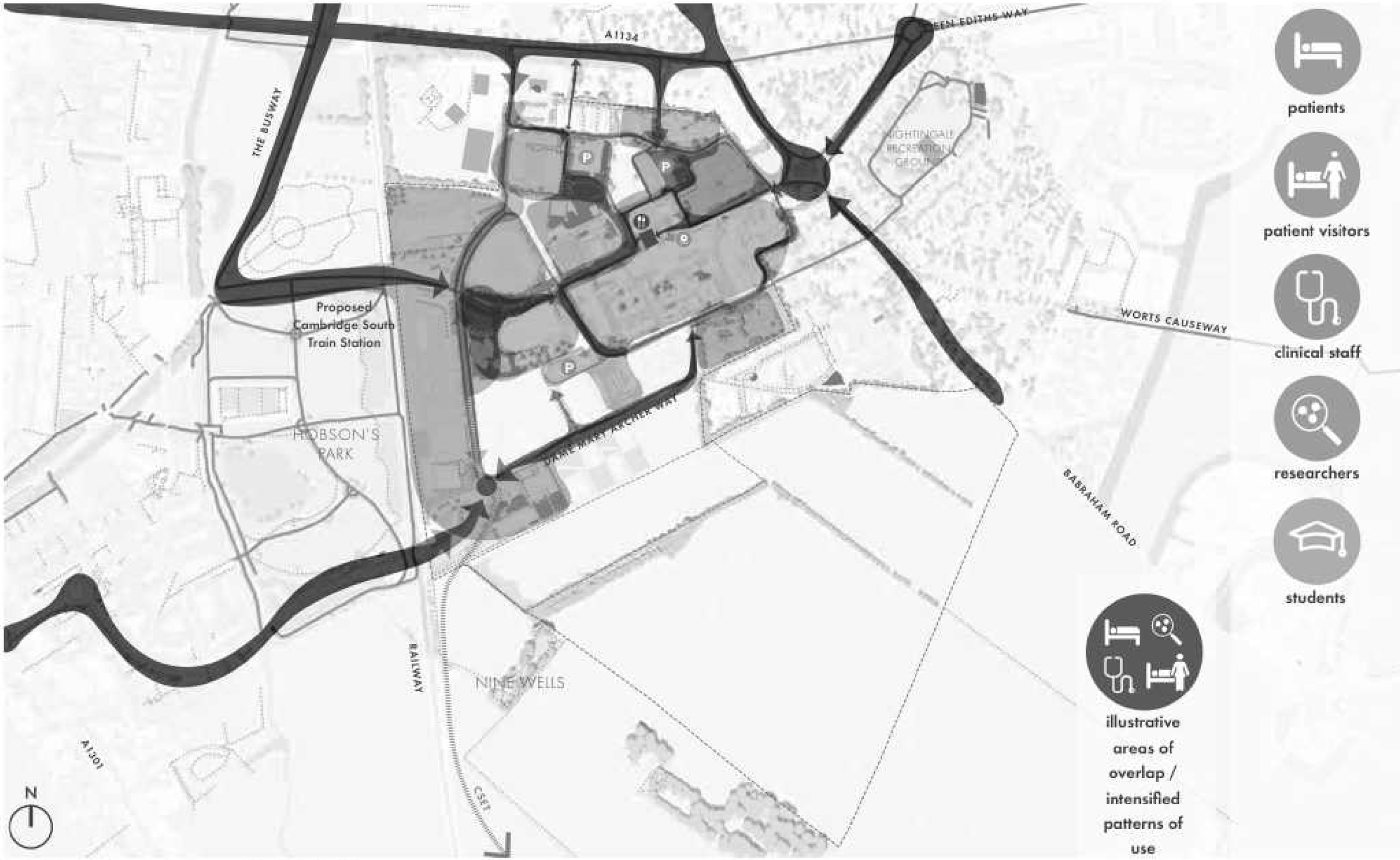
Existing Campus Patterns of Use Alongside Existing Campus Facilities - Clinical Staff



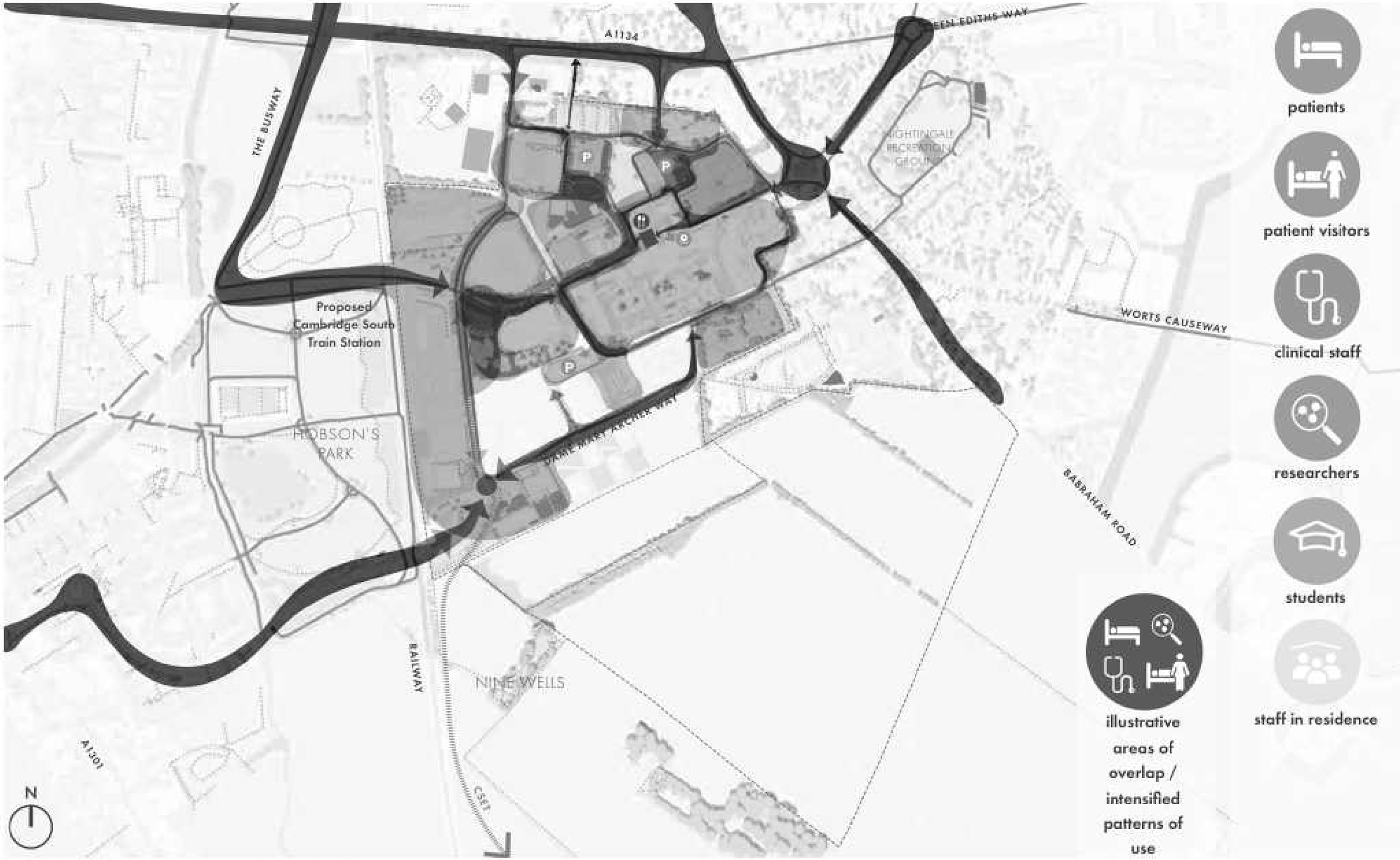
Existing Campus Patterns of Use Alongside Existing Campus Facilities - Researchers



Existing Campus Patterns of Use Alongside Existing Campus Facilities - Residents



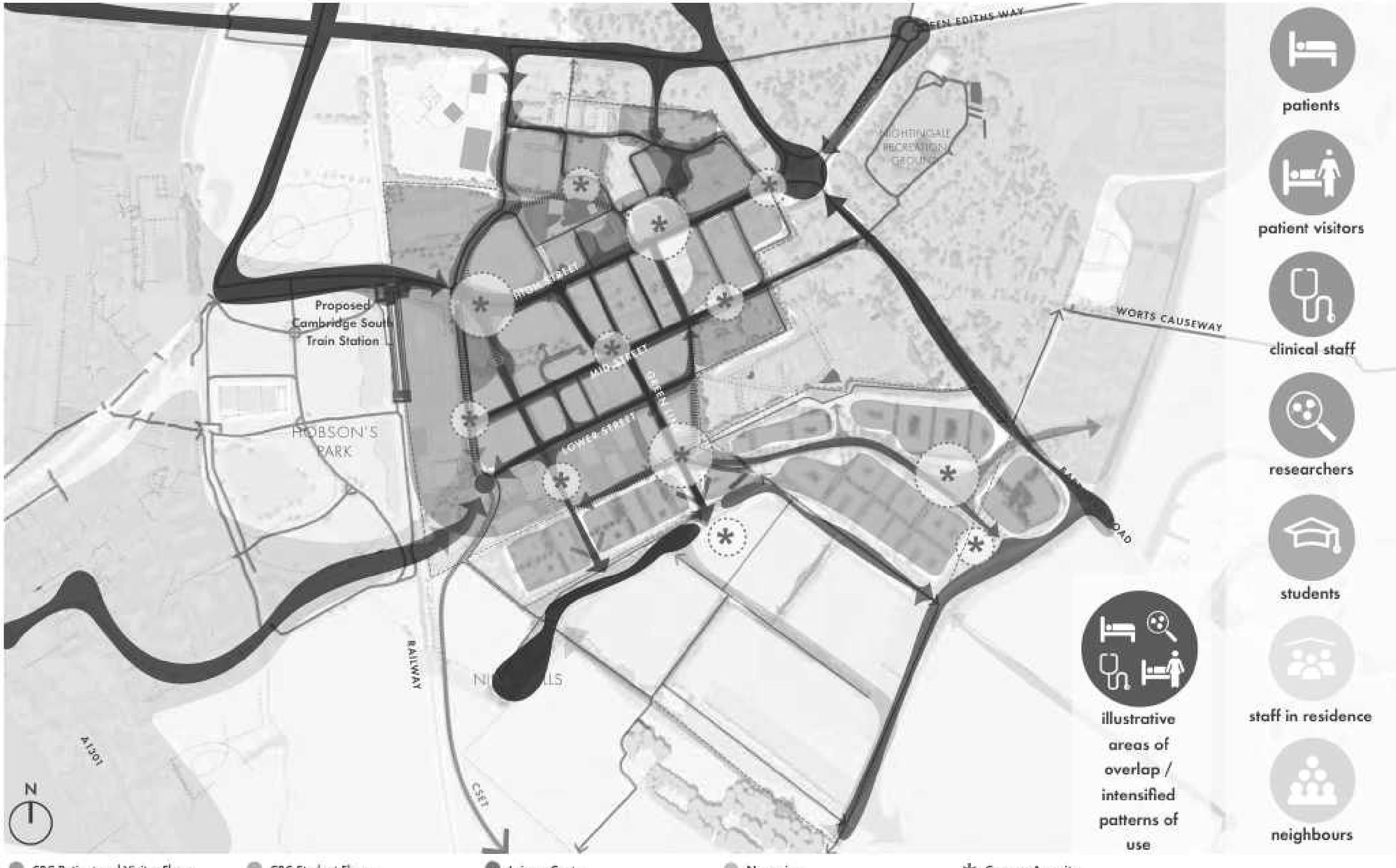
Existing Campus Patterns of Use Alongside Existing Campus Facilities - Residents



Existing Campus Patterns of Use Alongside Existing Campus Facilities - Neighbours

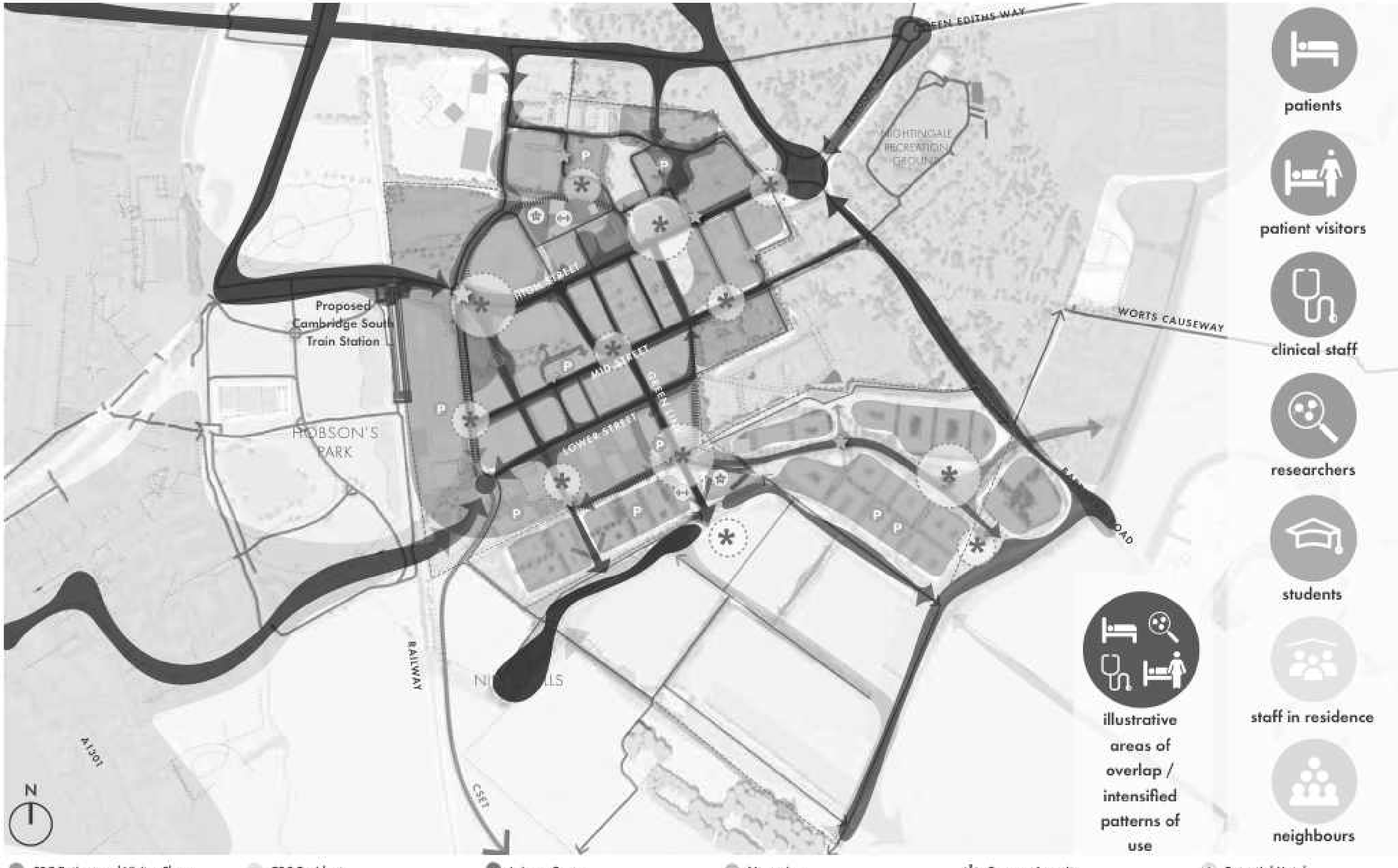


Projected/Future Campus Patterns of Use & Indicative Location for Campus Amenity (in key nodes)



- CBC Patient and Visitor Flows
- CBC Clinical Staff Flows
- CBC Researchers Flows
- CBC Student Flows
- CBC Staff in Residence Flows
- CBC Neighbours Flows
- Leisure Centre
- Playgrounds
- Sport pitches
- Nurseries
- Campus Amenity

Projected/Future Campus Patterns of Use & Indicative Location of Community Facilities as per Spatial Framework

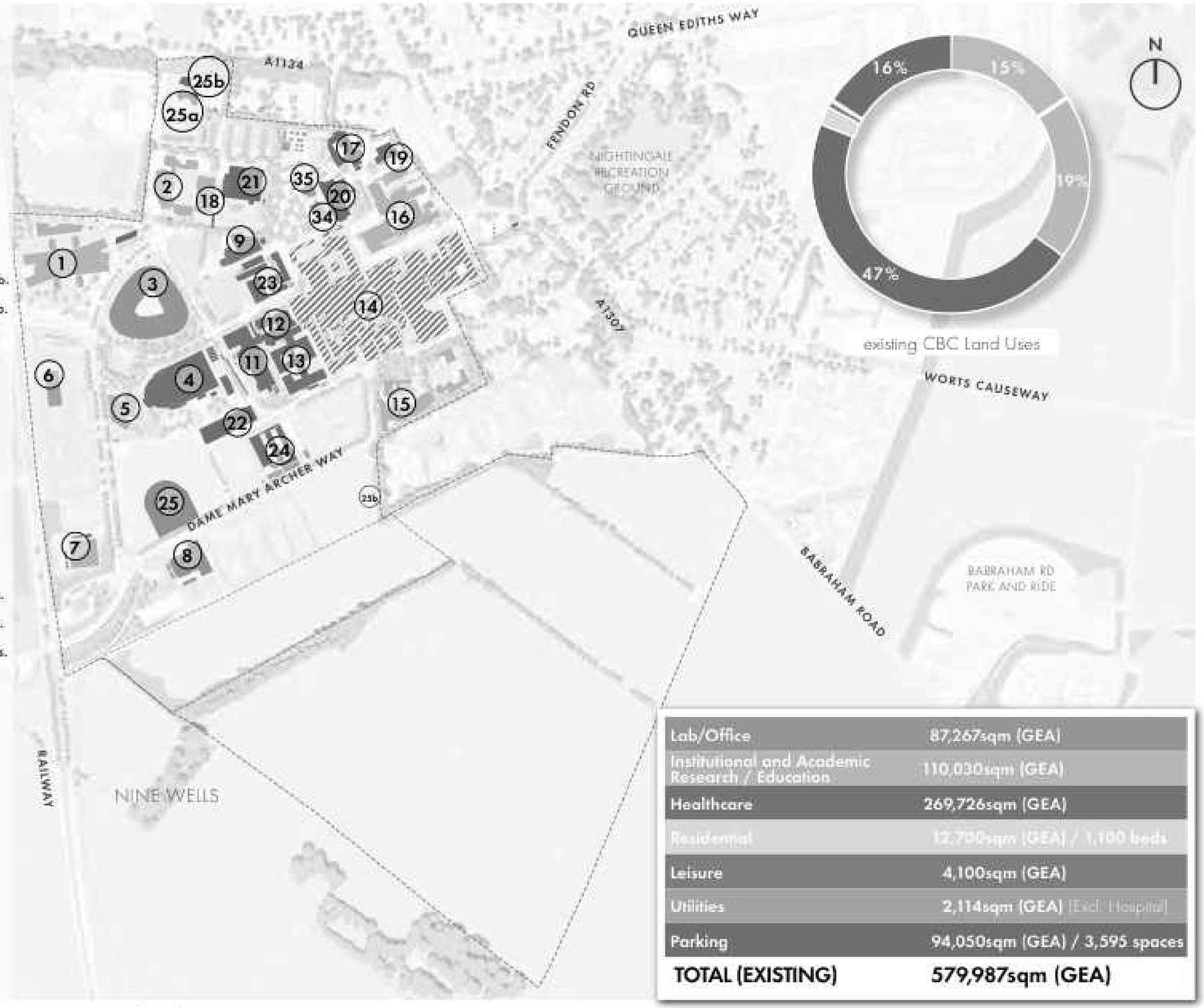


2.3 LAND USES

A Healthcare-led Campus

Existing Campus Land Uses & Quantum

1	MRC Laboratory	25,209sqm (GEA)
2	Cancer Research UK	16,280sqm (GEA)
3	AstraZeneca Headquarters	50,563sqm (GEA)
4	The Royal Papworth Hospital	33,300sqm (GEA)
5	Heart and Lung Research Institute	6,639sqm (GEA)
6	AstraZeneca Energy Centre	1,514sqm (GEA)
7	Anne Mclaren Building	9,033sqm (GEA)
8	ABCAM	11,495sqm (GEA)
9	Frank Lee Centre	3,500sqm (GEA)
10a	Staff accommodation (northern plot)	3,400sqm (GEA) / 292 b.
10b	Staff accommodation (southern plot)	9,300sqm (GEA) / 800 b.
11	Addenbrooke's Treatment Centre (ATC)	10,000sqm (GEA)
12	Cambridge Clinical Research Centre (CCRC)	15,000sqm (GEA)
13	Rosie Hospital	15,000sqm (GEA)
14	Addenbrooke's Hospital	180,000sqm (GEA)
15	Forvie Site	13,923sqm (GEA)
16	University of Cambridge School of clinical Medicine	40,543sqm (GEA)
17	Cambridge Blood Donor Centre	5,000sqm (GEA)
18	Jeffrey Cheah Biomedical Centre	19,613sqm (GEA)
19	Ambulance Station	1,000sqm (GEA)
20	Addenbrooke's Car Park 1 (MSCP 1)	30,050sqm (GEA) 1,114 s.
21	Hospital Staff Car Park 4 (MSCP 4)	34,000sqm (GEA)1,259 s.
22	Hospital Car Park 2 (MSCP 2)	30,000sqm (GEA) 1,222 s.
23	Surge Wards	3,998sqm (GEA)
24	Regional Surge Centre 40 & Orthopaedic Theatres & Wards	3,628sqm (GEA)
25	Helipad	-
25a	Bright Horizon Nursery	600sqm (GEA)
25b	Occupational Health & Wellbeing	2,800sqm (GEA)
34	Deakin Centre	4,000sqm (GEA)
35	Substation	600sqm (GEA)

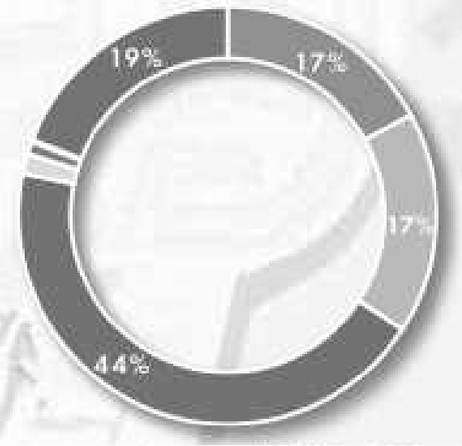


Lab/Office	87,267sqm (GEA)
Institutional and Academic Research / Education	110,030sqm (GEA)
Healthcare	269,726sqm (GEA)
Residennal	12,700sqm (GEA) / 1,100 beds
Leisure	4,100sqm (GEA)
Utilities	2,114sqm (GEA) (Excl. Hospital)
Parking	94,050sqm (GEA) / 3,595 spaces
TOTAL (EXISTING)	**579,987sqm (GEA)**

- Healthcare
- Lab/Office
- Inst. & Academic Research/Education
- Residential
- Leisure
- Utilities
- Parking
- Current Addenbrooke's Main Hospital Estate
- Helipad

Consented Campus Land Uses and Live Applications

26	Cambridge Children's Hospital	46,300sqm (GEA)
27a	Phase 2 Lab / Office	35,209sqm (GEA)
27b	Phase 2 Healthcare	15,878sqm (GEA)
28a	AZ South R&D Building	13,502sqm (GEA)
28b	AZ Hive	3,593sqm (GEA)
28c	AZ Phase 2 Lab / Office	15,000sqm (GEA)
29	Plot 9	14,193sqm (GEA)
30	Cambridge Cancer H. (CCRH) (LIVE APPLICATION)	29,213sqm (GEA) (LIVE APPLICATION)
31	MSCP East Plot 2	30,000sqm /1,200 sp.
32	MSCP West Plot	20,000sqm /710 sp.
33	MSCP (Astra Zeneca)	13,000sqm /486 sp.
	TOTAL (CONSENTED + LIVE)	235,888sqm (GEA)

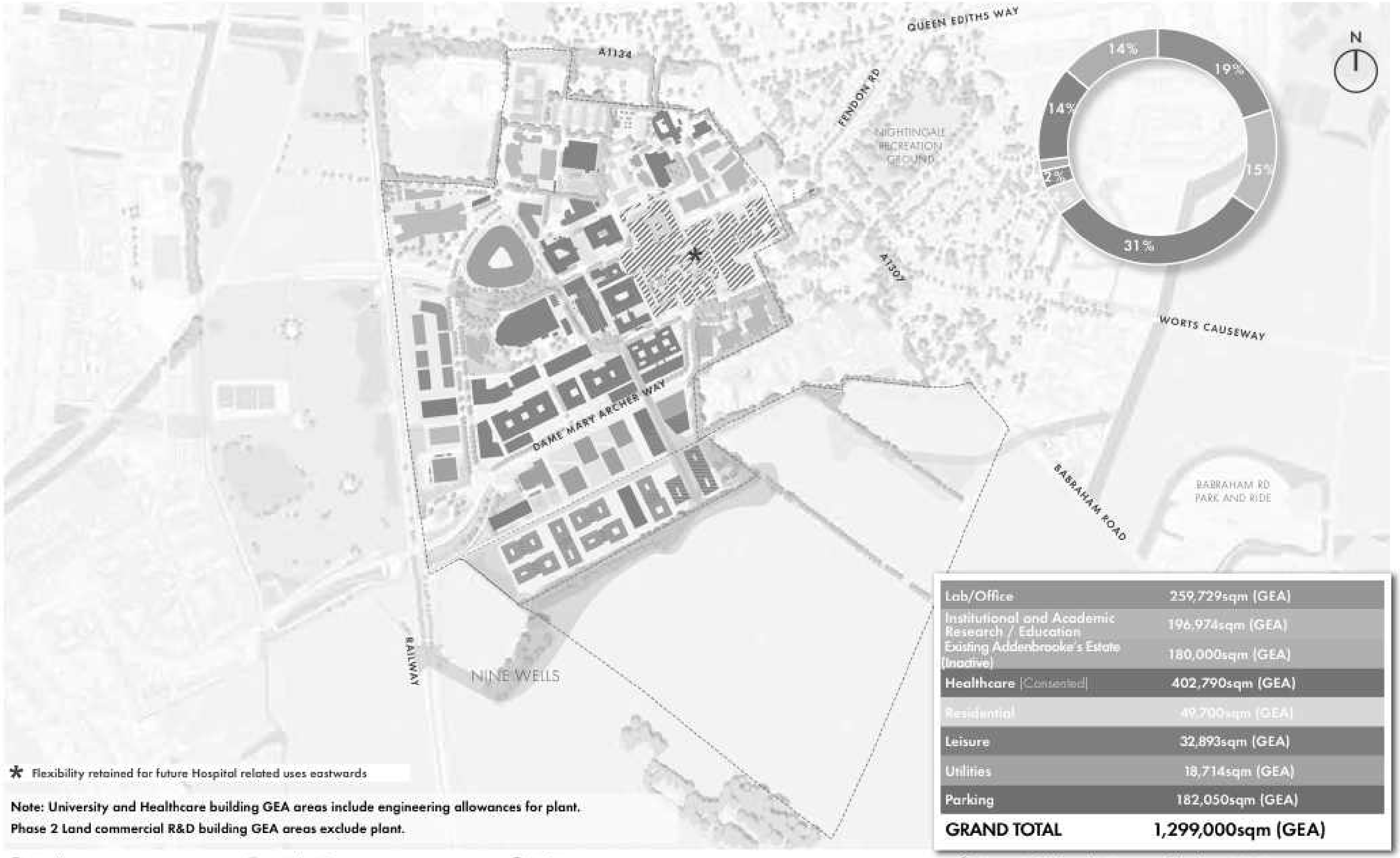


existing and consented CBC Land Uses

Lab/Office	139,962sqm (GEA)
Institutional and Academic Research / Education	135,239sqm (GEA)
Healthcare (Consented)	361,117sqm (GEA)
Residential	12,700sqm (GEA)
Leisure	7,693sqm (GEA)
Utilities	2,114sqm (GEA)
Parking	157,050sqm (GEA)
GRAND TOTAL (Ex. & Con)	**815,875sqm (GEA)**

- Healthcare
- Lab/Office
- Inst. & Academic Research/Education
- Residential
- Leisure
- Utilities
- Parking
- Current Addenbrooke's Main Hospital Estate
- Helipad

CBC 2040 Land Uses (Phase 4 Land Exclusion Scenario)



Lab/Office	259,729sqm (GEA)
Institutional and Academic Research / Education	196,974sqm (GEA)
Existing Addenbrooke's Estate (Inactive)	180,000sqm (GEA)
Healthcare (Consented)	402,790sqm (GEA)
Residential	49,700sqm (GEA)
Leisure	32,893sqm (GEA)
Utilities	18,714sqm (GEA)
Parking	182,050sqm (GEA)
GRAND TOTAL	**1,299,000sqm (GEA)**

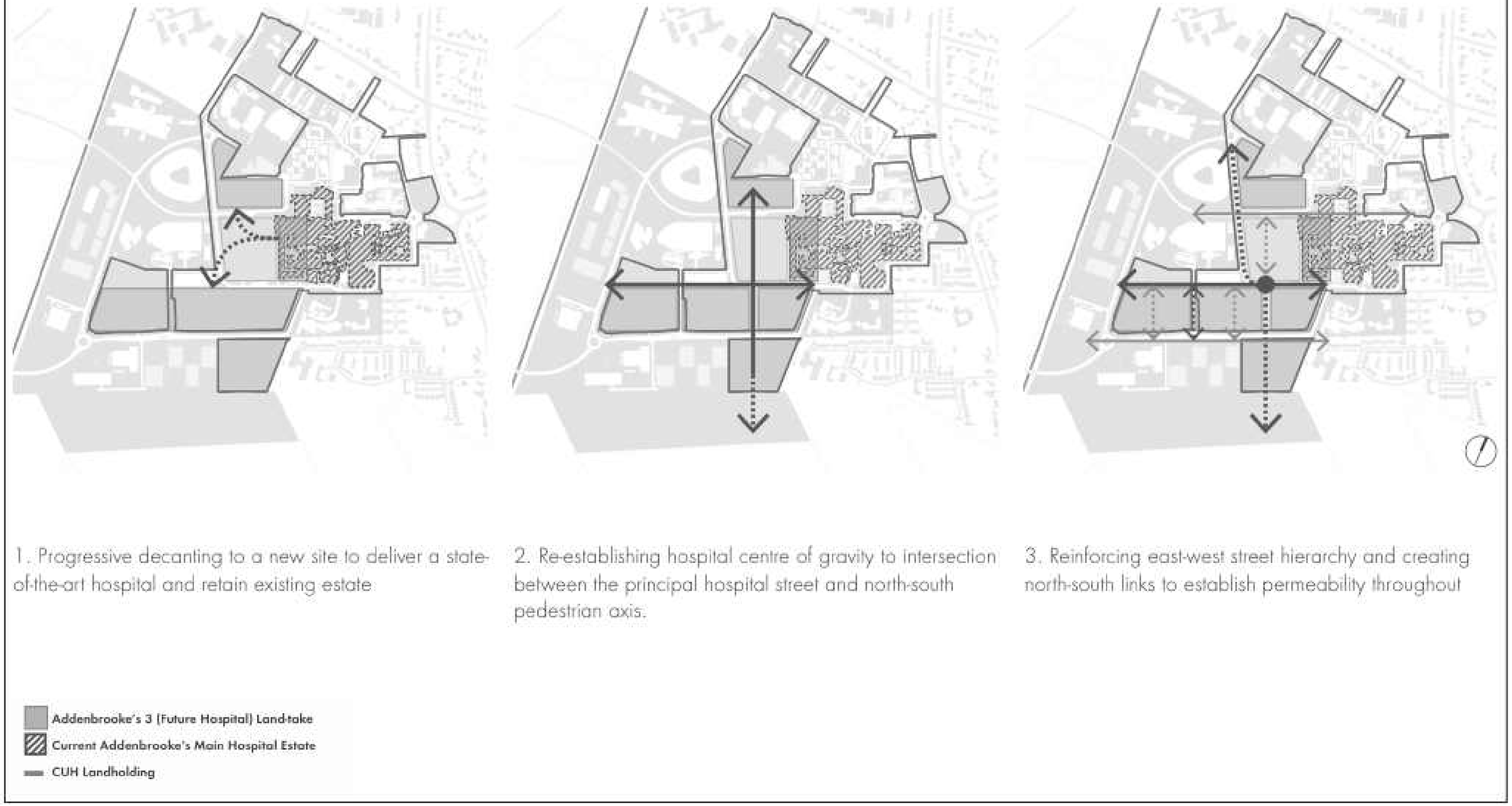
Current Addenbrooke's Estate – still in place in 2040

* Flexibility retained for future Hospital related uses eastwards

Note: University and Healthcare building GEA areas include engineering allowances for plant.
Phase 2 Land commercial R&D building GEA areas exclude plant.

- Healthcare
- Lab/Office
- Inst. & Academic Research/Education
- Residential
- Leisure
- Utilities
- Parking
- Ground Floor Amenity Use
- Option for Healthcare or Lab/Office Buildings

Shift of the Healthcare 'Centre of Gravity' for the Campus

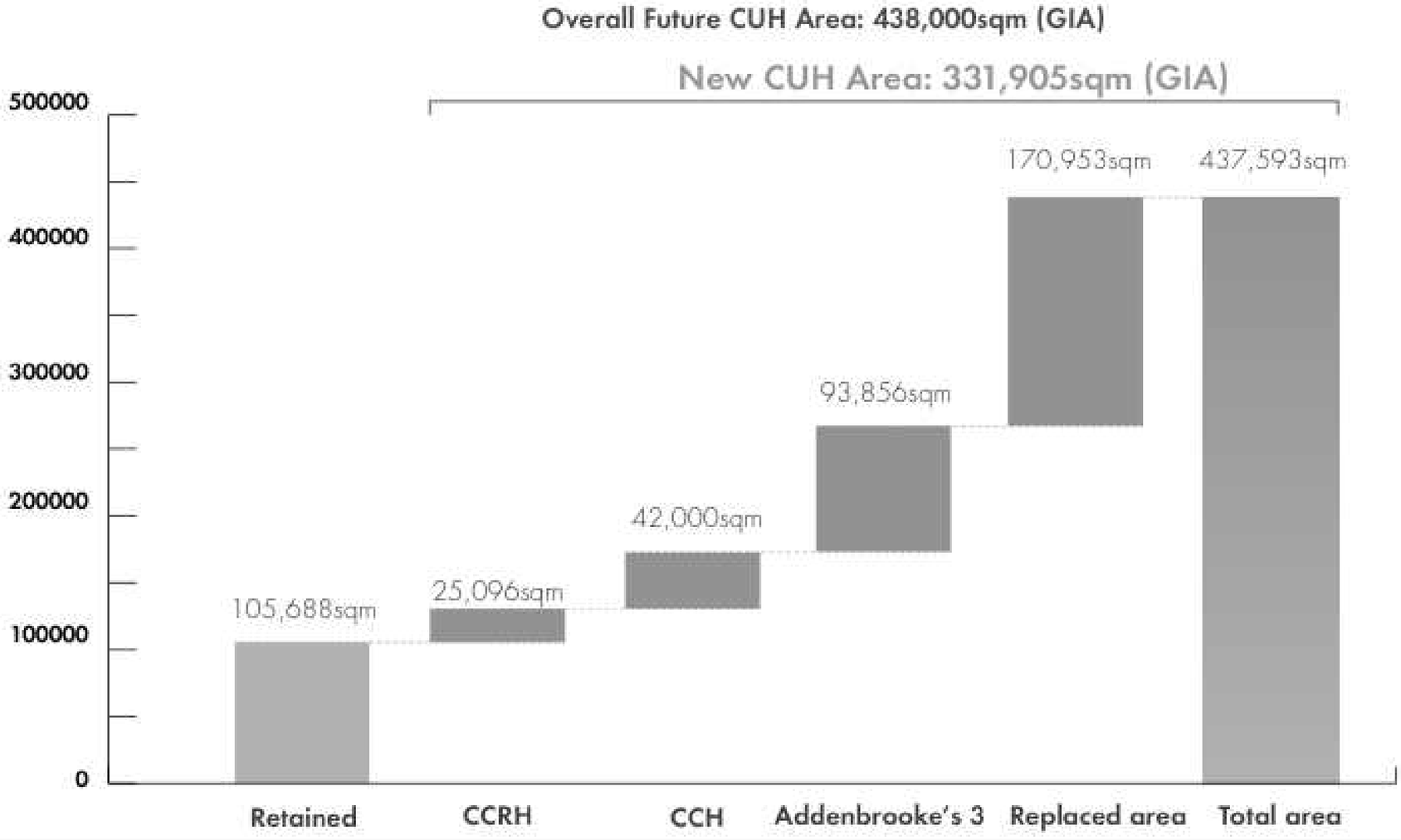


Extract from CUH Masterplan Report, January 2022, Allies and Morrison

Shift of the Healthcare 'Centre of Gravity' for the Campus

Healthcare Planners have worked up the future operational and clinical requirements, aligned to the Addenbrooke's 3 Business Case, and they are represented in the analysis below:

- There is ca. 303,000sqm (GIA) of CUH owned area on the site at present, of which ca. 106,000sqm (GIA) is to be retained on site.
- The floor area of the departments to be built for the future Addenbrooke's Hospital, including the CCRH, CCH, the new Acute Hospital (medium option in SOC), Planned Care, Outpatient & Diagnostic Hub and the replacement of remaining services, is ca. 331,905sqm (GIA)
- This results in an Overall Area for the future Hospital Estate (including the buildings to be retained) of ca.438,000sqm (GIA)



Extract from CUH Masterplan Report, January 2022, Allies and Morrison

Shift of the Healthcare 'Centre of Gravity' for the Campus

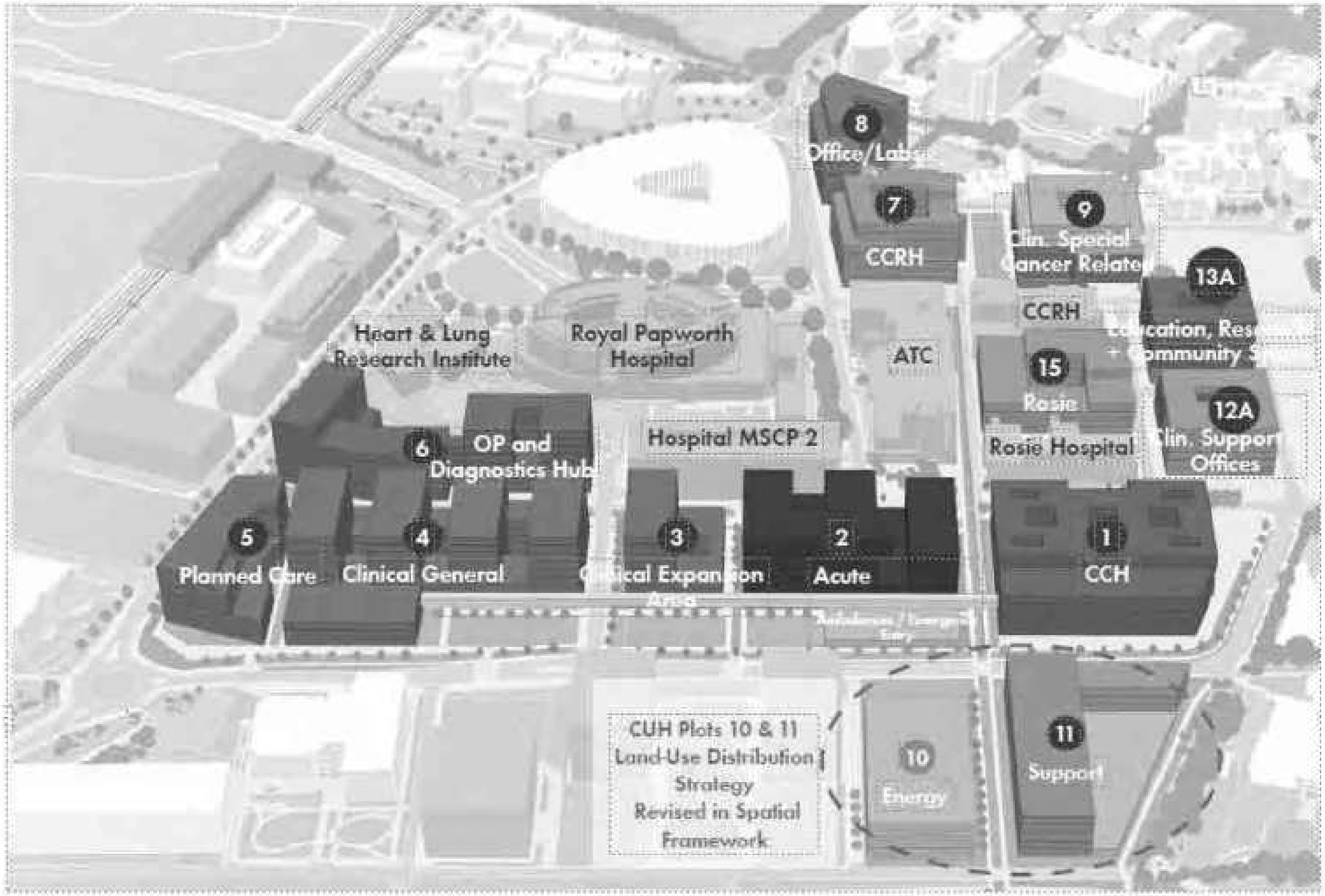
Proposed GIA
(by Healthcare- planner):

CCH	42,000
CCRH	25,096
Acute	41,760
Plan. Care	18,453
Diagnostics	35,827
Maternity	18,150
Clinical G.	59,090
Clinical Sp.	8,058
Cancer Rel.	1,605
Office/Labs	36,372
Admin.	17,284
Mgmt.	11,549
Commercial	3,546
Amenity	8,059
Total	**336,516*1**

*1 (incl. underground com. 9,667)

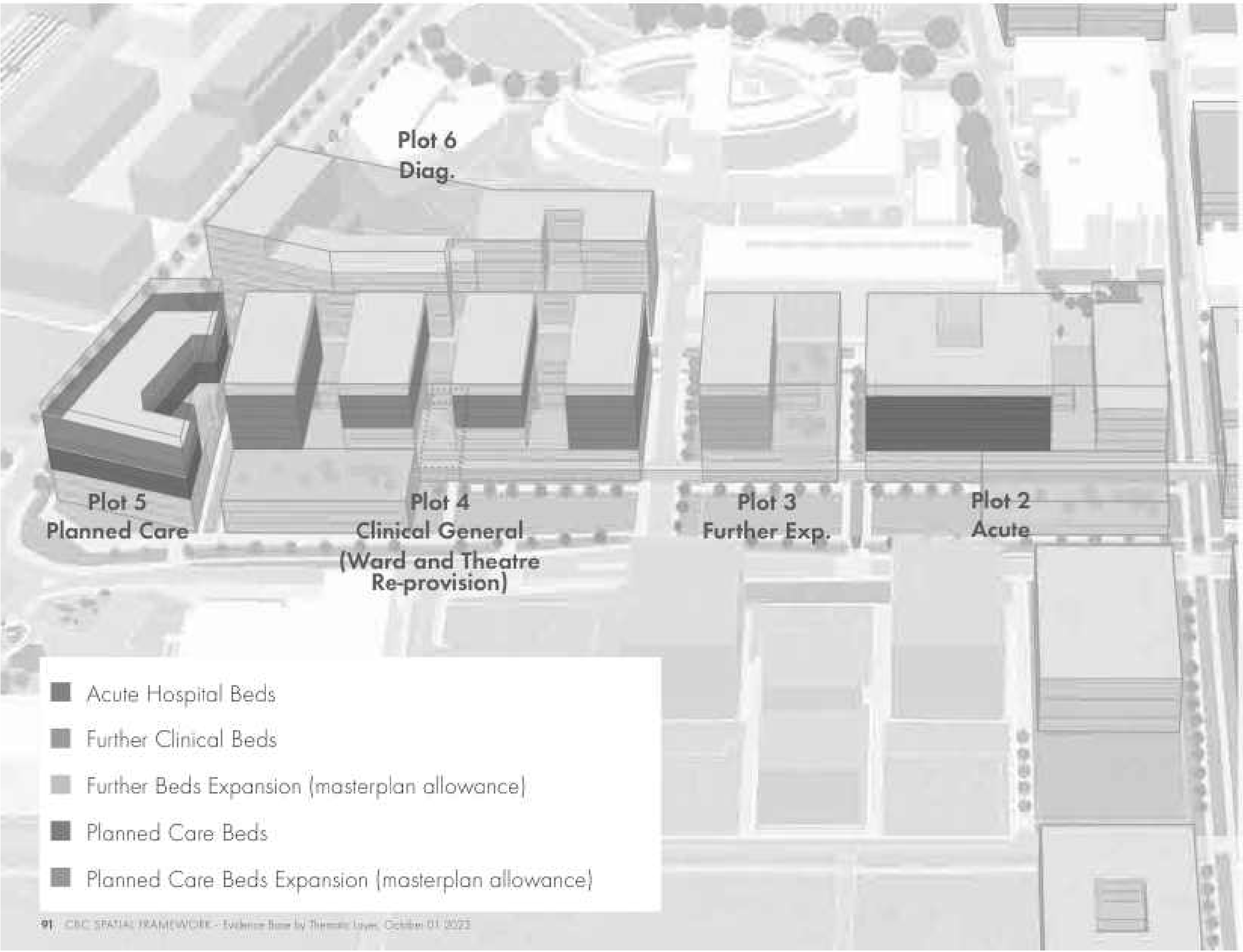
CUH Masterplan	385,863*2
Utilities/Serv	16,542
Parking	17,186
Clinical Expansion (Wards)	15,619

*2 In addition to the clinical brief (ca. 50,000 GIA)



Extract from CUH Masterplan Report, January 2022, Allies and Morrison

Addenbrooke's 3 Beds Need



- **Plot 2 - Acute**

  BEDS achieved: 320

  (10Wardsx32Beds)

  BEDS Clinical Brief: 319

  (7.7Wardsx32Beds)

  + 73Beds for Critical Care Unit

- **Plot 3 - Further Expansion**

  BEDS exp. allowance: 160

  (+5Wardsx32Beds) - Masterplan allowance for an additional 5 storeys of wards within maximum heights envelope of +45m

- **Plot 4 - Clinical General**

  BEDS achieved: 576

  (18Wardsx32Beds)

  BEDS Clinical Brief: 576 BEDS

  (18Wardsx32Beds)

- **Plot 5 - Planned Care**

  BEDS achieved: 95

  (2Wardsx35Beds + 25 Recovery)

  BEDS Clinical Brief: 95

  (2Wardsx35Beds + 25 Recovery)

  BEDS exp. allowance: 105

  (+3Wardsx35Beds) - Masterplan allowance for an additional 3 storeys of wards within maximum heights envelope of +45m

7.3 Land Use Distribution

A fully functioning urban extension to Cambridge (Vision 2050)

The adjacent land uses provide a rich mix of healthcare, commercial research and development, higher education, residential, leisure and supporting retail.

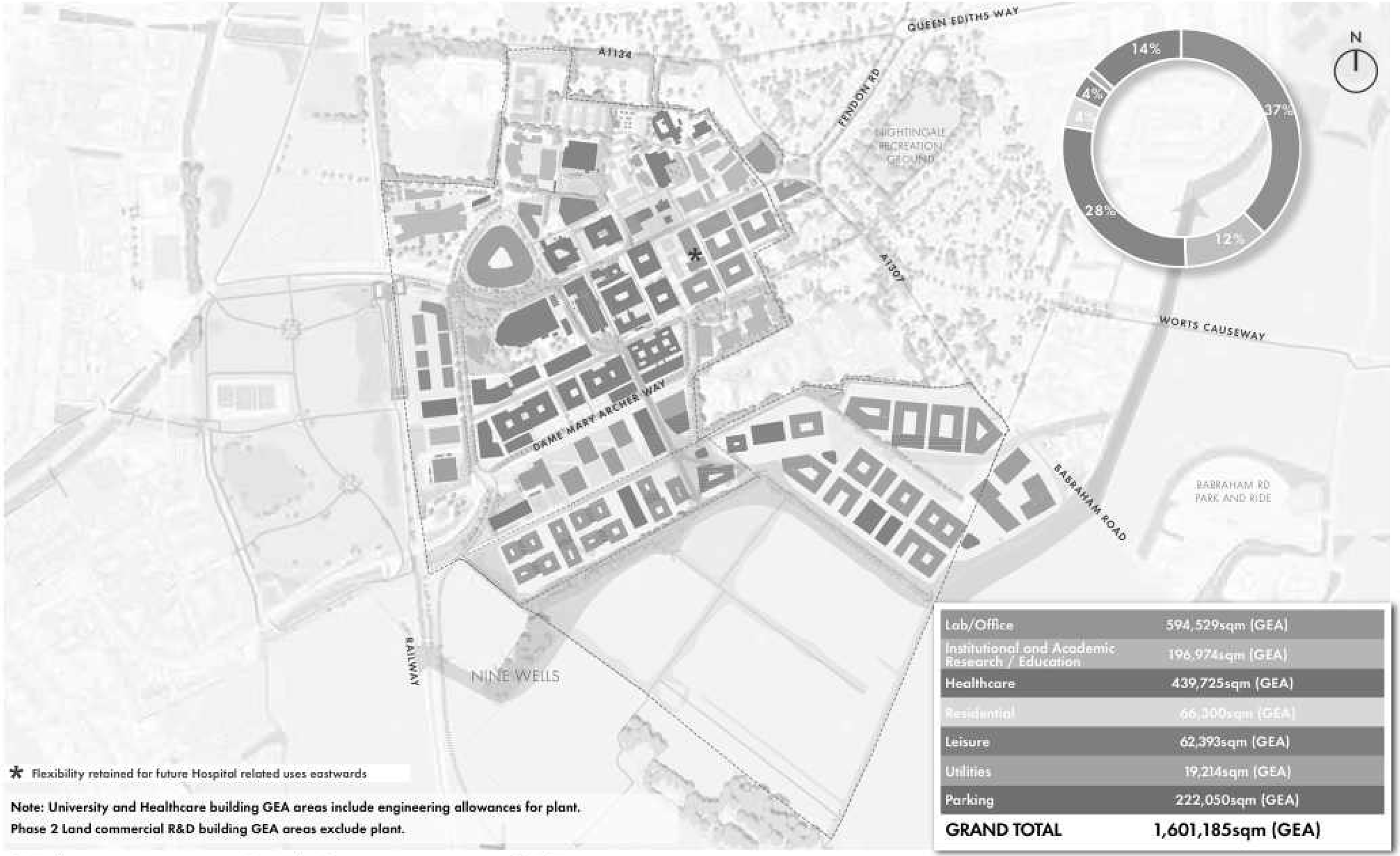


Cambridge Biomedical Campus

64

Extract from CBC Spatial Emerging Spatial Framework, December 2022, Hawkins\Brown, p.64

CBC 2050 Vision Land Uses - October 2023



Lab/Office	594,529sqm (GEA)
Institutional and Academic Research / Education	196,974sqm (GEA)
Healthcare	439,725sqm (GEA)
Residential	66,300sqm (GEA)
Leisure	62,393sqm (GEA)
Utilities	19,214sqm (GEA)
Parking	222,050sqm (GEA)
GRAND TOTAL	**1,601,185sqm (GEA)**

* Flexibility retained for future Hospital related uses eastwards

Note: University and Healthcare building GEA areas include engineering allowances for plant.
Phase 2 Land commercial R&D building GEA areas exclude plant.

- Healthcare
- Lab/Office
- Inst. & Academic Research/Education
- Residential
- Leisure
- Utilities
- Parking
- Ground Floor Amenity Use

2.4 CONNECTIVITY

Connectivity Context - Strategic City Wide Connectivity and CBC

- **By 2030, The Greater Cambridge Partnership will have delivered a significant number of off road busways providing reliable and quick public transport options to and from growth areas.**
- **However, the value of these connections is somewhat lessened due to them not connecting to one another.**
- **Therefore there is significant importance on the primary 'on road' bus corridors to support the bus network**. In turn, these corridors are dependent upon the relatively few crossings of the rail network in order to connect the east of the city with the west.



Segregated Busways
Primary on road bus corridors
Rail Network
Crossing points of the rail corridor by buses
Train Stations
Park and Ride locations
CBC
Growth areas

kmc
transport planning



CBC is currently a **barrier**, with a distinct separation between the north south routes along Babraham Road, Cambridge Guided Busway (S), and services along Trumpington Road. The implication of this compromised connectivity is that the estate itself can be accessed but it **does not support journeys through it, between other P&R's and growth areas**. This fails to maximise the opportunity of Cambridge South and in time, EWR. CBC needs to be redesigned to do more for connectivity at a city scale.



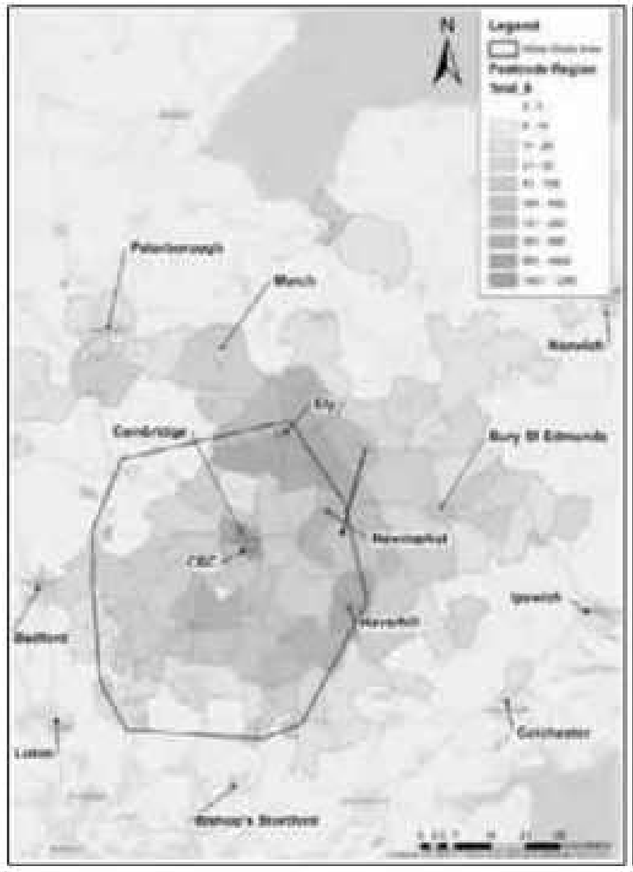
The addition of two key connections **can transform connectivity in the south of the city**: (i) An enhanced gateway from Hills Road coupled with an East West High Street. (ii) A connection from Babraham Park and Ride to CBC, Cambridge South, and the Cambridge Guided Busway (S) provides the opportunity for buses to **bypass congestion** along Babraham Road and access the city centre via the existing segregation afforded by the CGB(S).

Extract from GCSP Design Workshop, May 2023, kmc, p.8

kmc transport planning



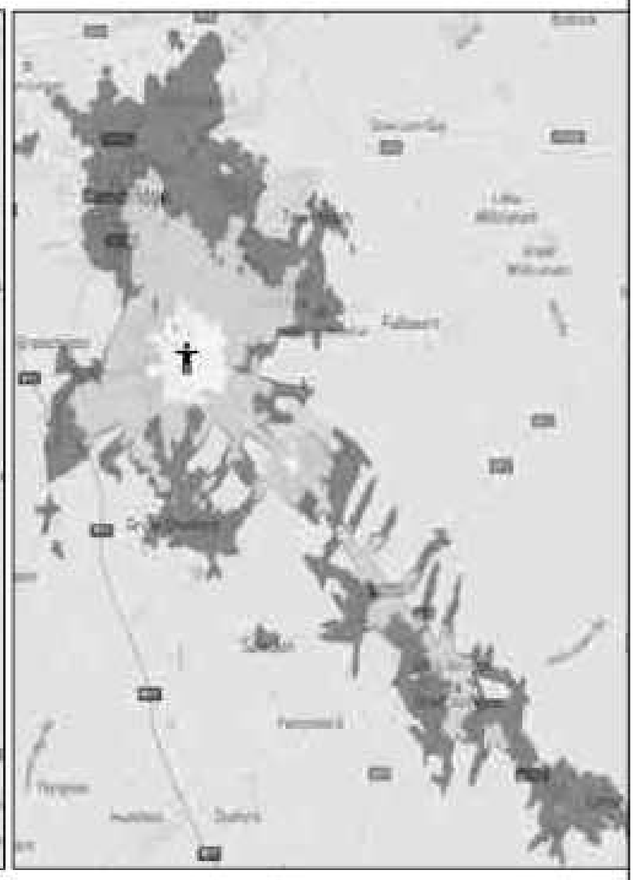
Patients Home Locations



Staff Home Locations



Existing Walk and Rail up to 45 minutes



Existing Bus Access in 45 minutes

Extract from GCSP Design Workshop, May 2023, kmc, p.7

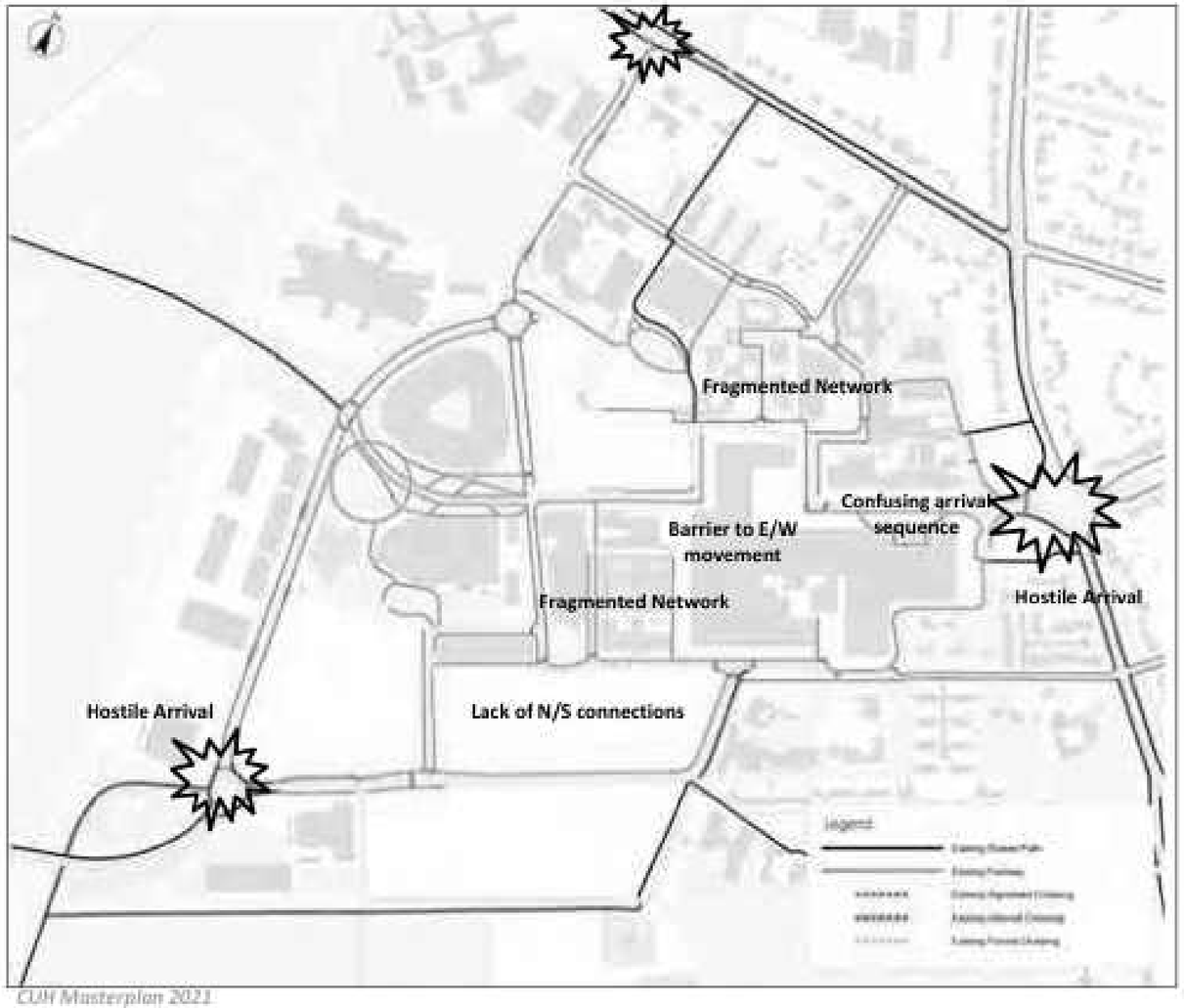
Existing Connectivity Constraints Summary

- Severance of Railway Corridor
- Barrier effect of built form and incomplete networks precluding N/S and E/W movements
- Funnelled effect of Hills Road entrance due to lack of SE connectivity
- Congestion along Addenbrooke's Road and Babraham Road
- Hostile Gateways
- Lack of current rail access
- Lack of bus legibility, directness and interchange

kmc
transport planning

Pedestrian Movement and Infrastructure

- Fragmented and indirect pedestrian network.
- Key north south and east west connections lack directness and or completeness.
- At crossings priority is often not afforded to pedestrians
- Some walking routes, particularly to Park and Rides lack activity.
- Street furniture clutters and narrows footways
- Condition of footways is inconsistent
- Legibility / wayfinding is poor
- Gateways to site can be hostile or lack notable features
- Lack of quality infrastructure on approaches to site with shared infrastructure and 2-stage crossings.
- Dame Mary Archer Way signed and designed for 30 mph
- Lack of direct connectivity to south and Babraham Road from heart of campus - although Knightly Avenue and link to Babraham Road is strong connection
- Piecemeal Delivery, offering poor desire lines / indirect routes



CUH Masterplan 2021

Extract from Connectivity Workshop, April 2023, kmc, p.2

Pedestrian Movement and Infrastructure

kmc
transport planning


1.5m footway on Robinson Way


Conflicts on Main Drive


Car Park Entrance ramp plays role in navigation of site



2.0m SUP on Dame Mary Archer Way


Hills Road Access with 2-stage toucan crossings


Main Drive and Adrian Way – Guardrail and Desire Lines


East West Movements compromised by Addenbrookes

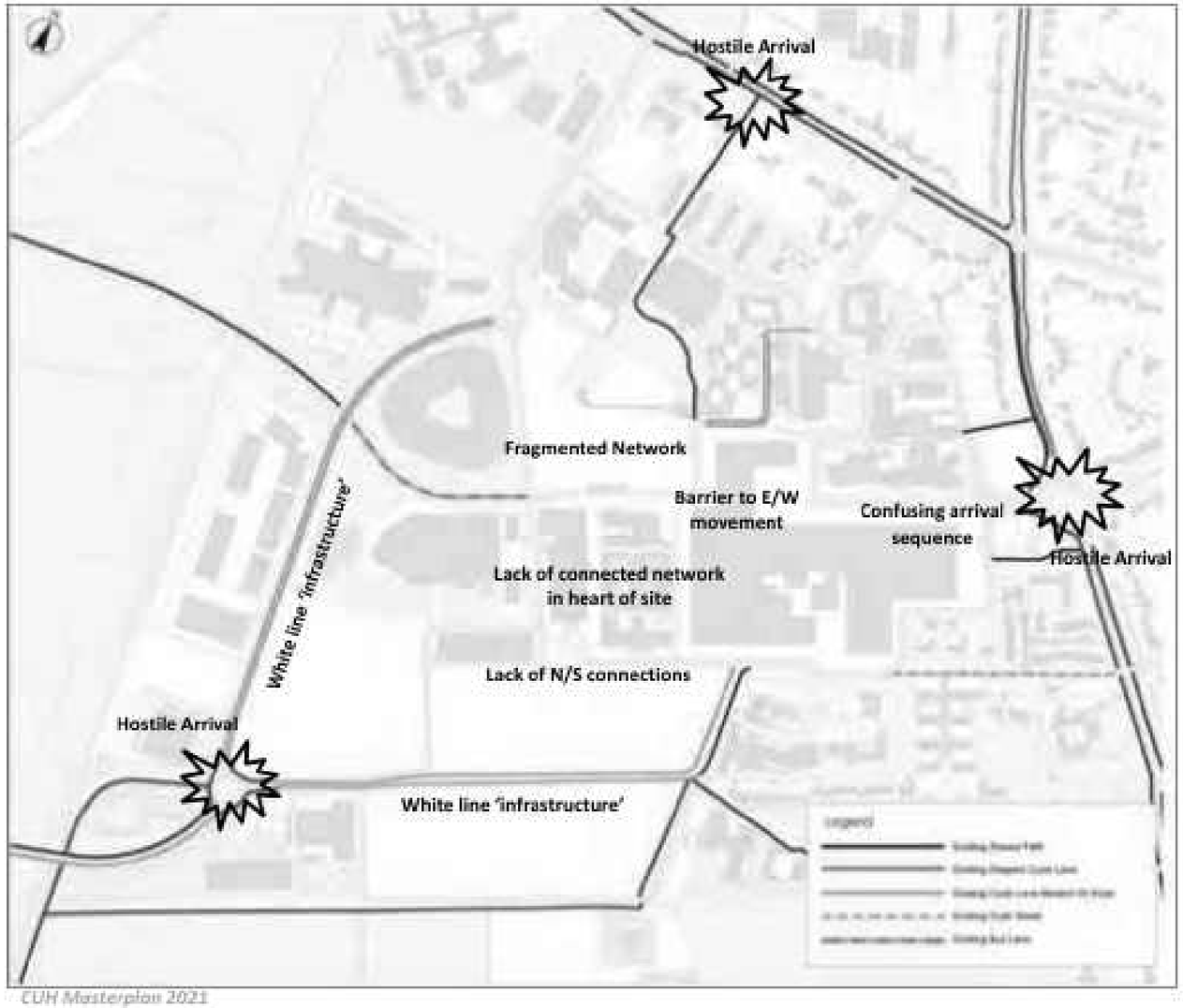

Richard Howe Way lack activity and quality infrastructure

Extract from Connectivity Workshop, April 2023, kmc, p.3

Cyclist and Micro mobility Movement and Infrastructure

kmc transport planning

- Fragmented and indirect cyclist network
- As with pedestrian network, key north/ south and east / west connections lack directness and or completeness.
- Lack of consistent segregated infrastructure with little provision able to meet LTN 1/20 standards.
- Hostile junctions/ gateways especially Hills Road and at Francis Crick Avenue.
- Crossings external to the site are often shared with pedestrians and 2-stage
- No coherent story as to how campus links with some offsite GCP proposals
- DNA path limited in usable width and condition but important asset
- Connections from P&R's lack surveillance and activity and are shared with pedestrians.
- Lack of direct connectivity to south and Babraham Road from heart of campus - although Knightly Avenue and link to Babraham Road is strong connection



CUH Masterplan 2021

Extract from Connectivity Workshop, April 2023, kmc, p.4

Cyclist and Micro mobility Movement and Infrastructure

kmc transport planning


Dame Mary Archer Way – White line 'segregation'


Good Quality Connection into CBC from Babraham Road


Shared User Path to Babraham P&R (pre CSET)


DNA Path' – 2.0 m width


Addenbrookes Road / Francis Crick/ Dame Mark Archer – lack of consistent infrastructure

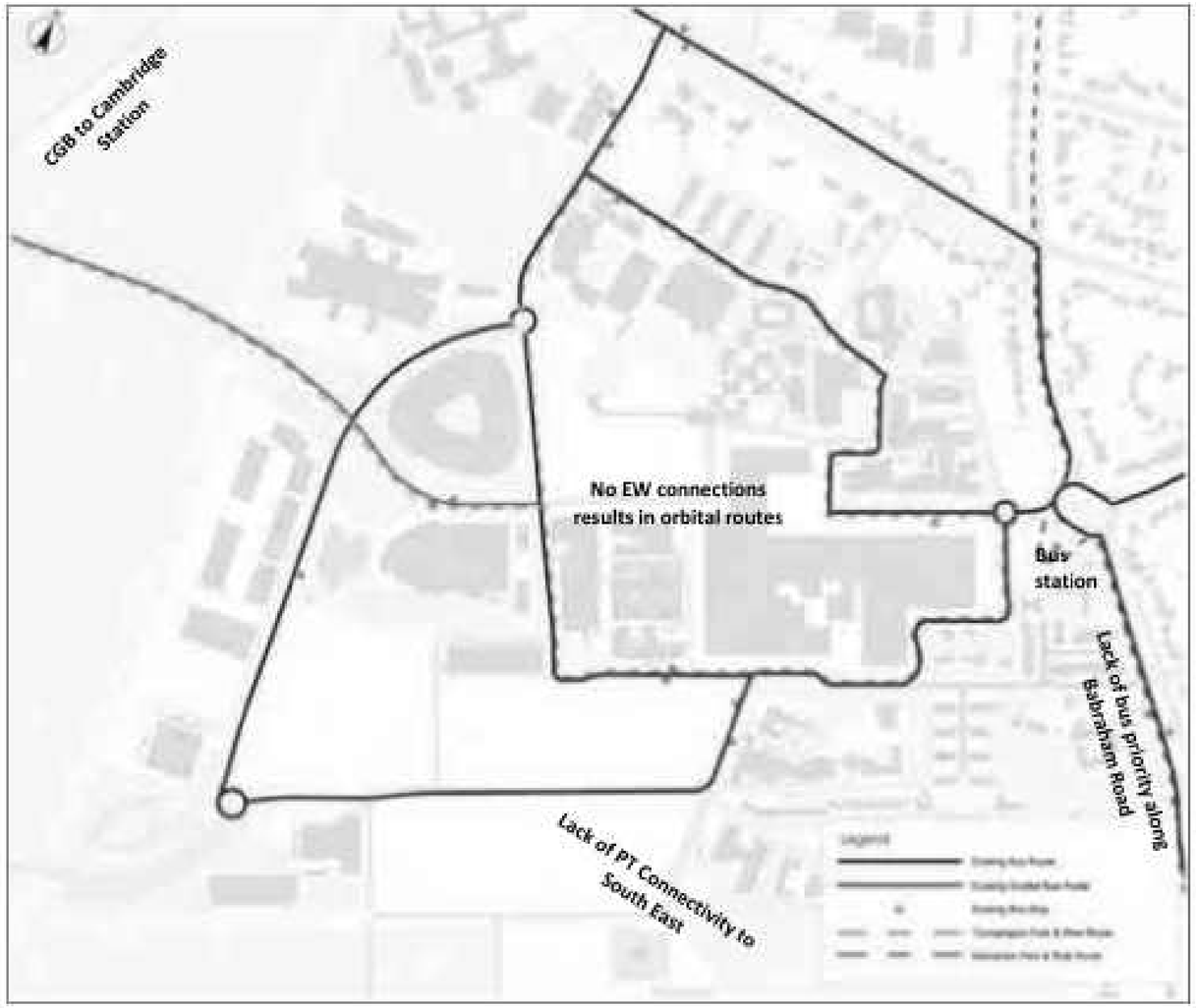

Hills Road Entrance - 2 stage toucan crossings

Extract from Connectivity Workshop, April 2023, kmc, p.5

Public Transport Network and Infrastructure

kmc transport planning

- A significant number of buses currently serve the Campus
- Patient courtesy bus is provided by CUH and operates around the site
- Poor interchange (physical infrastructure and information)
- A lack of E/W connectivity which effects city services at strategic level an makes bus routing complex
- Land hungry, unintegrated bus station at the Hills Road entrance to the site. Further stops around the wider campus as follows:
  - Robinson Way (eastbound and westbound – outside The Rosie Hospital
  - Robinson Way (westbound) – outside MSCP2 – bus layby only.
  - Main Drive (inbound)
  - Dame Mary Archer Way (South of Robinson Way, nb and sb
  - Francis Crick Avenue (southbound – south of busway)
  - Guided Busway south of AstraZeneca
- No current rail access
- Delays to buses along Babraham Road
- Lack of connectivity into site from south east to link bus way to P&R.
- SB only GCB due to fatalities



CUH Masterplan 2021

Extract from Connectivity Workshop, April 2023, kmc, p.6

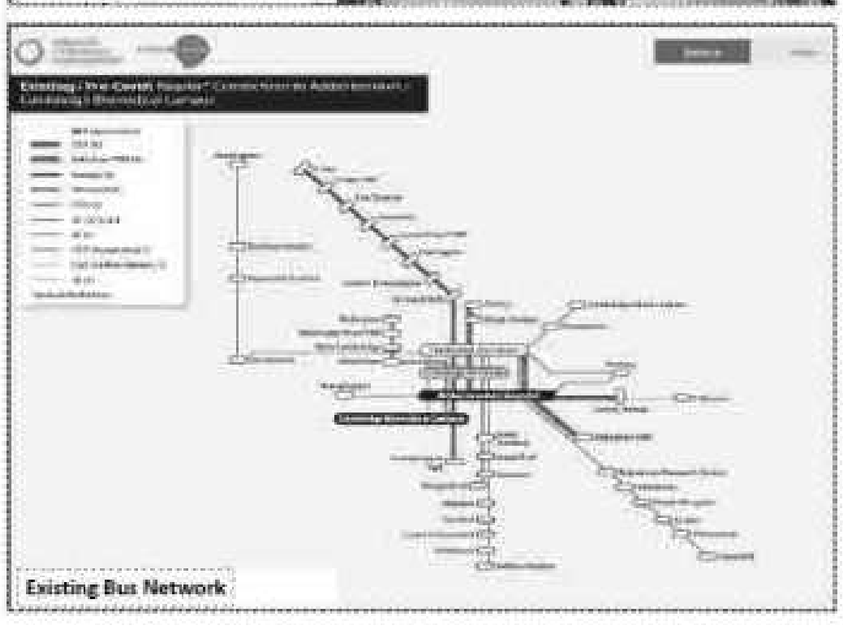
Public Transport Network and Infrastructure

kmc transport planning


Existing Hills Road Bus Station


End of segregated bus provision at Keith Day Road


Babraham Road Bus Corridor

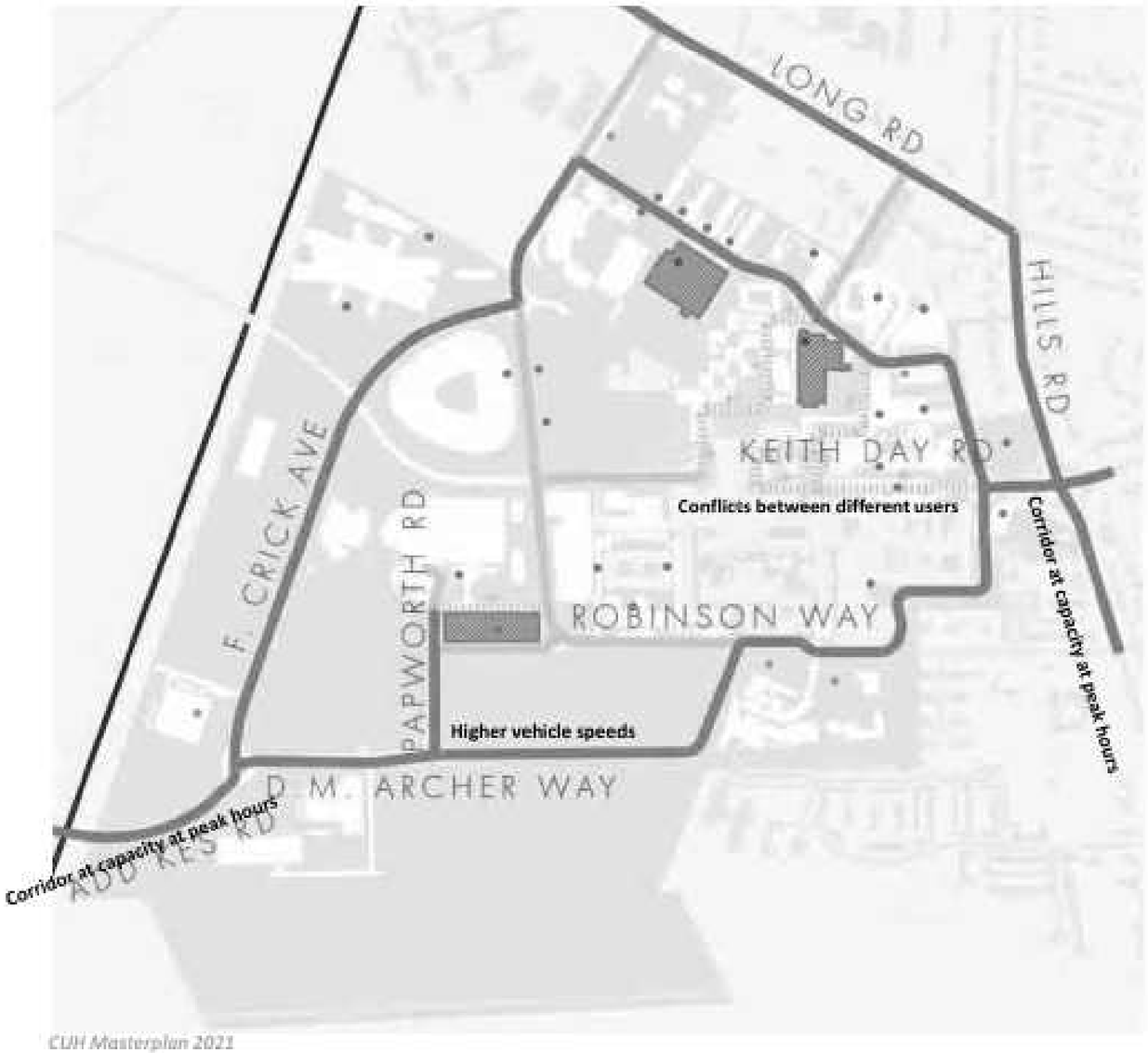

Existing Bus Network


Bus Stop Provision on Dame Mary Archer Way

Extract from Connectivity Workshop, April 2023, kmc, p.7

Private Vehicle Network

- The private car dominates the campus and can make the environment for pedestrians and cyclists unpleasant.
- A primary orbital network which runs around the perimeter of the site with one secondary route (Robinson Way) which runs north to south through the centre .
- Congestion at key gateways and at peak hours – significant pressure on Babraham Road and Hills Road access.
- Dame Mary Archer Way has higher vehicle speeds making it difficult for people crossing who may have mobility difficulties
- Some rat running traffic and a lack of effective prohibition from existing ANPR cameras
- Dispersed parking model in conjunction with a lack of hierarchy of routes which results in car penetrating all parts of the campus and bringing them into conflict with pedestrians and cyclists.
- A clustering of road traffic collisions mainly focused on Main Drive



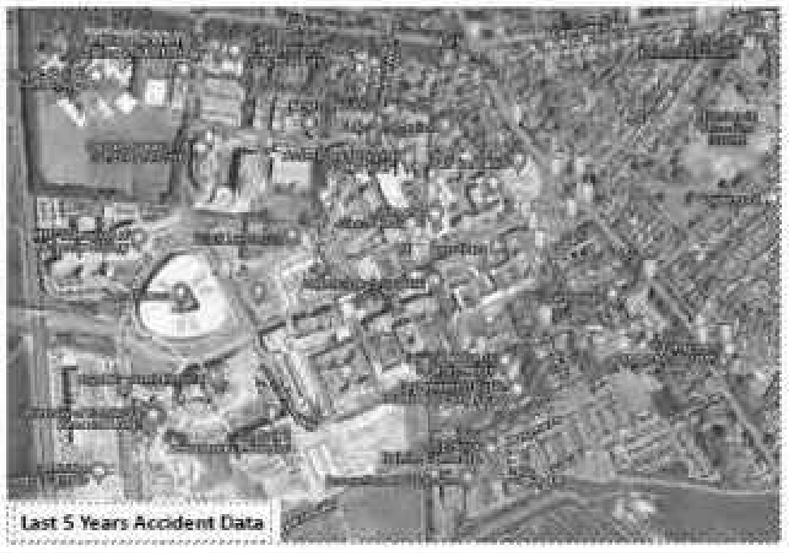
CUH Masterplan 2021

Extract from Connectivity Workshop, April 2023, kmc, p.8

Private Vehicle Network

kmc transport planning









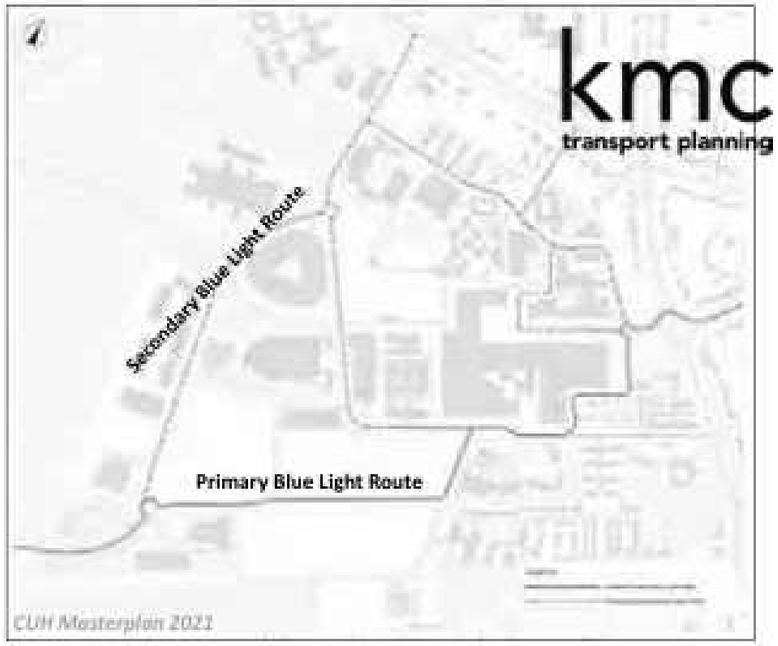




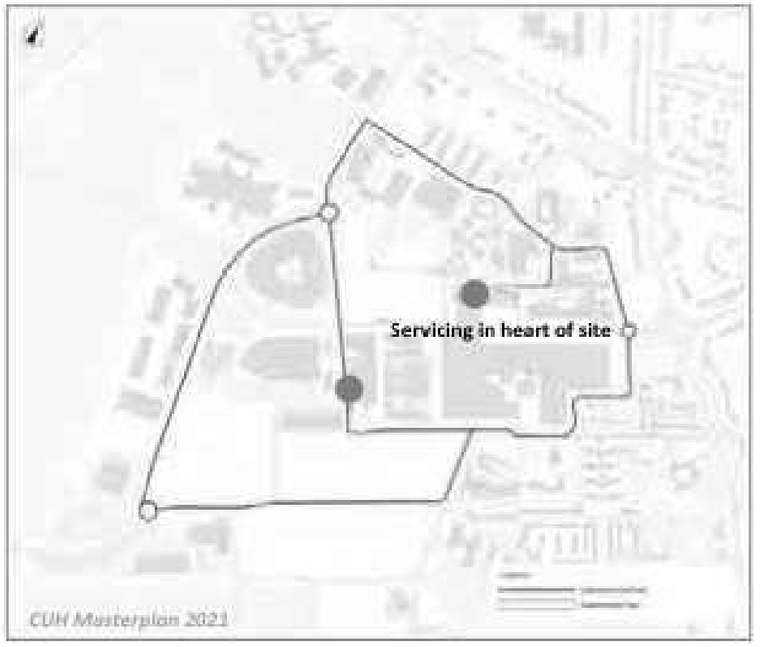
Extract from Connectivity Workshop, April 2023, kmc, p.9

Blue Light Network & Servicing

- Primary Blue Light Route uses Addenbrooke's Road, Dame Mary Archer Way and Robinson Drive, and Hills Road to the east.
- Secondary network of ambulance routes for transfer of patients between buildings and connections into Long Road for resilience from north.
- Blue Light Network has lack of resilience from east due to mixing and competing with general traffic



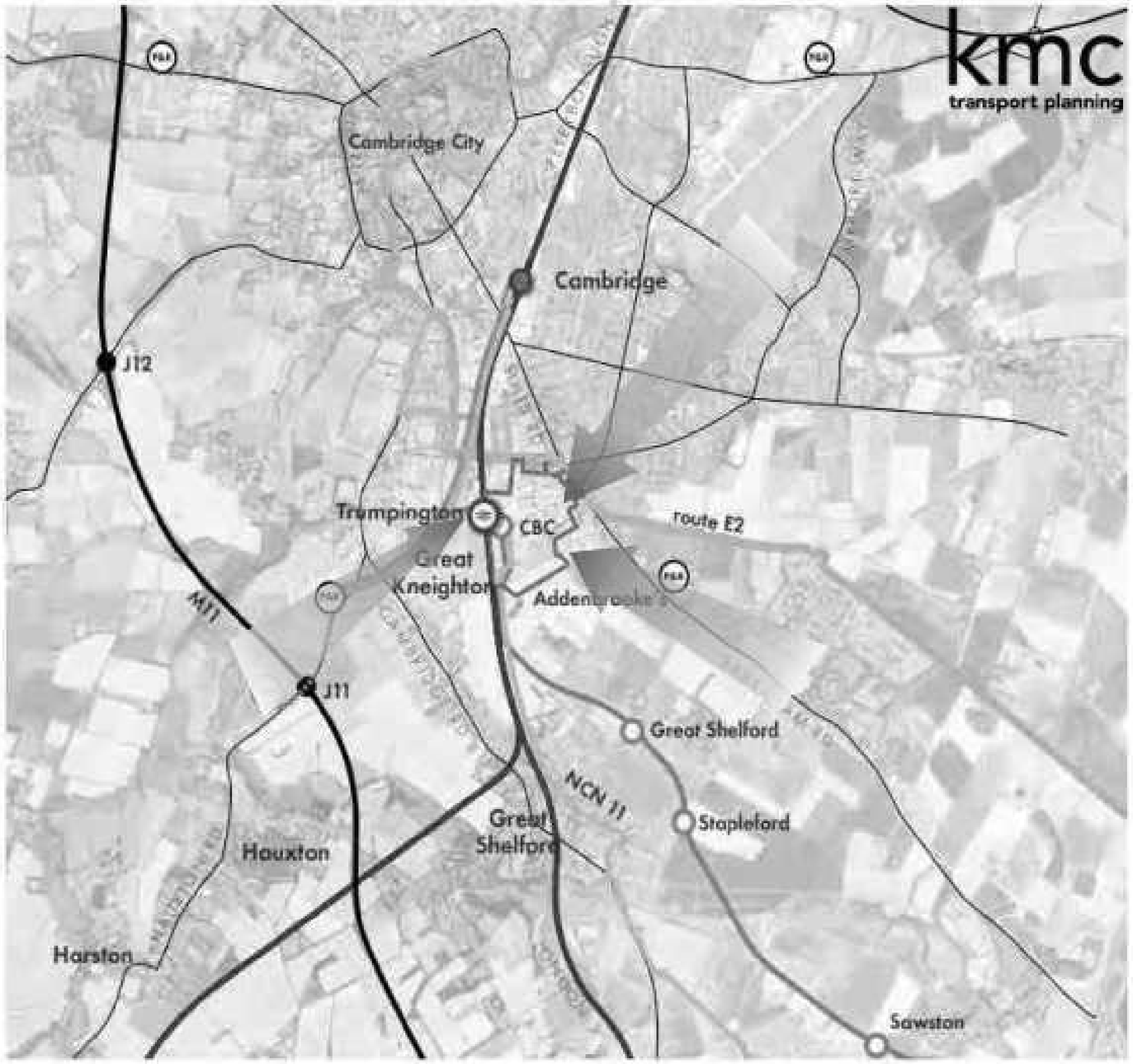
- There are currently two CUH related service yards for the existing hospital, one accessed from Main Drive and one accessed from Robinson Way to the rear of the Addenbrooke's Treatment Centre
- Main Drive is a busy part of the campus and current servicing areas can become overloaded, creating crowding within the heart of the campus area and conflict with Ambulances.



Extract from Connectivity Workshop, April 2023, kmc, p.10

Strategic Implications of Constraints

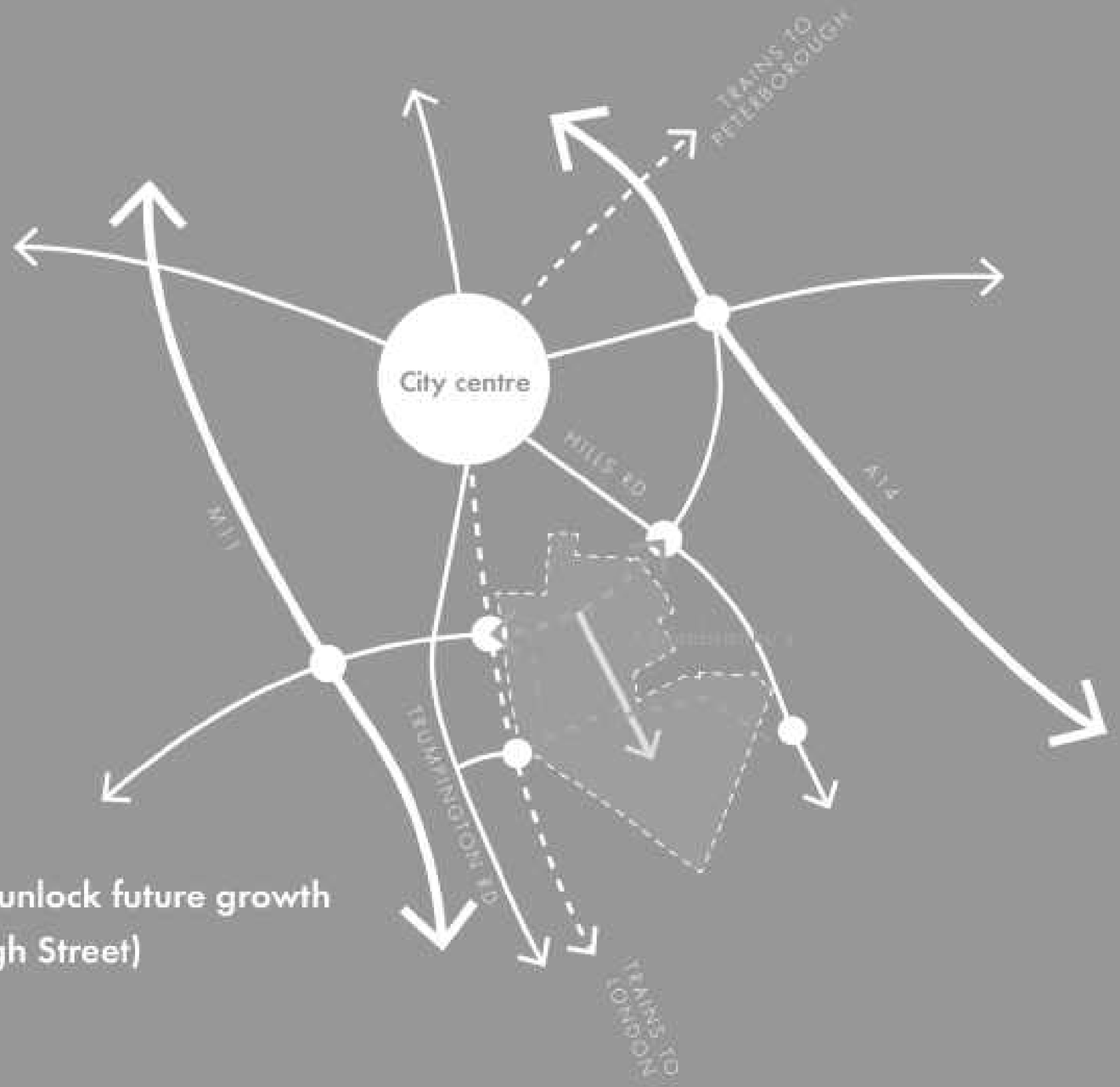
- Higher capacity transport solutions are needed to mitigate growth and to provide opportunities for future expansion. To this end, future connections are being progressed:
  - *Network Rail's Cambridge South Station*
  - *Cambridge South-East Transport Study Phase 1 and 2*
  - *Sawston Greenway*
  - *The South West Travel Hub*
  - *East West Rail*
- However, the lack of connectivity within the site impacts orbital connectivity from east and the opportunity to link Cambridge East to Cambridge South and the CGB.
- The lack of connectivity from the southeast puts pressure on Babraham Road and Hills Road and precludes connectivity between this corridor and Cambridge South and the CGB.
- Without improving the connectivity within the site, the benefit of these investments will be fettered.



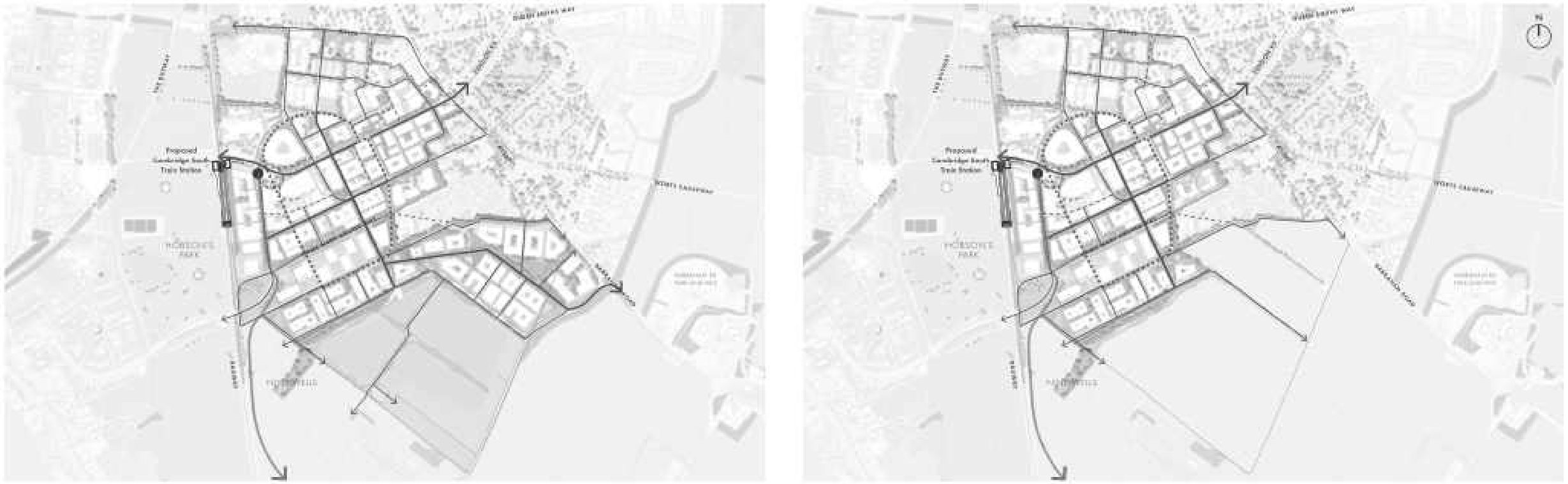
Extract from Connectivity Workshop, April 2023, kmc, p.11

Opportunity Summary

- Additional access to the CBC (via Expansion Land) to unlock future growth
- Opportunity to provide E/W access through CBC (High Street)
- N/S link to the countryside



CBC 2050 Vision Campus Connectivity Strategy - Pedestrian Movements (with and without Phase 4 Land)



- The CUH masterplan provides a good basis for pedestrian movement and connections across the campus and **much improved east west pedestrian connectivity is achieved through the delivery of the 'High Street'***
- A new **strategic north south connection that would connect the Phase 2 land to the Frank Lee site** would be provided;
- **Hills Road junction is redesigned and configured to create a better gateway** from the city alongside much-safer walking and cycling conditions, may be dependent on the removal of CBC traffic from this junction via the Phase 4 expansion land to facilitate this change;
- Changes to the private vehicle network provide an opportunity to deliver **a better and less conflicted route into the campus from Red Cross Lane**;
- **Most significant change relates to the inclusion of the Phase 3 and 4 Expansion land to the south of the existing campus.** This presents an opportunity to **better connect and integrate the Babraham Road Park and Ride with the campus** and also to improve the utility of the existing Public Right of Way that connects Granham's Road to Nine Wells Nature Reserve.

* **The High Street is contingent on at least partial Hospital re-development: Food Court, Intermittent Dialysis Unit and Modular Theatres affected. Closer study on affected Hospital buildings is required to more accurately assess the time-frame for the delivery of the High Street (currently estimated at 2035 in illustrative phasing strategy). CUH intends to undertake this study to inform the next stages of work.**

Primary Network
Secondary Network
Principal Network (N-S and E-W)
***** Loop**

CBC 2050 Vision Campus Connectivity Strategy - Cycle Movements (with and without Phase 4 Land)





- Proposals **prioritise a strategic east west connection along the High Street*** but also deliver a primary connection north south using Robinson Way and the route through the Phase 2 land;
- The expansion land being brought into the campus and with it enhanced connectivity to the south;
- **Consistent infrastructure** that reads as part of the wider city will be provided. Improvements to segregated cycling along Addenbrookes Road will be delivered;
- All connections will seek **to tie into existing and planned external enhancements to the cycle network** such as CSET Phase 1 and 2, the access path alongside the Cambridge
- Guided Busway, and the Cross City cycle schemes delivered on Hills Road;
- Additionally, to principles of the movement framework, **cycle parking will be plentiful**. As a principle, employee parking will be within secure, covered locations on-plot or at basement level within buildings. Visitor parking would be provided close to the building entrances and designed sympathetically into the public realm;
- Connections to Babraham Road Park and Ride will be enhanced (to a greater or lesser extent subject to Granham's Road options).

* **The High Street is contingent on at least partial Hospital re-development: Food Court, Intermittent Dialysis Unit and Modular Theatres affected. Closer study on affected Hospital buildings is required to more accurately assess the time-frame for the delivery of the High Street (currently estimated at 2035 in illustrative phasing strategy). CUH intends to undertake this study to inform the next stages of work.**

Primary Network
Secondary Network
Principal Network (N-S and E-W)

CBC 2050 Vision Campus Connectivity Strategy - Private Vehicle Movements (with and without Phase 4 Land)





- The approach to private vehicles is key to the success of many of the other elements of this movement strategy;
- Proposed **to minimise the volume of additional car parking available within the scheme** by capitalising on the opportunities generated by Cambridge South Station and CSETS and other demand management tools;
- Vehicular access would be rationalised by providing **an orbital route around the campus** to allow vehicles to navigate to key destinations (e.g. MSCPs) but reducing the level of general vehicula access to buildings by identifying a small number of access routes for specific buildings for drop off and short stay facilities;
- Approach limits the number of private vehicle routes through the Campus and thus **reduces the number of potential conflict points between pedestrians, cyclists and public transport users**;
- Locating **future MSCPs on the orbital road**, reducing circulation within the Campus heart;
- The expansion land means that **additional access is provided and therefore a relief to the Babraham Road and Hills Road access north of Granham's Road.**

Primary Private Vehicle Route
'Hospital Street' - safeguarded from wider traffic to facilitate hospital-related pick-up and drop-off only
Secondary Private Vehicle Route
Illustrative consolidated car parking model (MSCP)

CBC 2050 Vision Campus Connectivity Strategy - Public Transport Movements (with and without Phase 4 Land)





- **The Campus will soon be served by a host of high-quality public transport services**, with a new national rail station at Cambridge South and the CSETS;
- **An east-west public transport spine via the High Street*** would unlock the potential for direct and express services through the Campus that link to rail opportunities at Cambridge South, CSETS, but also provide interchange with the Guided Bus network. This **east west connection helps to support connections from the east side of the city and potentially orbital connectivity to support further growth**;
- A number of pick-up and drop-off stops for DRT or community services which compliment the fixed route services. It is anticipated that these services will become autonomous which will reduce operating costs over time;
- **The integration of the expansion land to the south provides the opportunity for bus services to enter the campus from Babraham Road** and avoid congestion on Babraham Road and Hills Road. This connection allows services to serve the campus and then access the existing Cambridge Guided Busway via Cambridge South station;
- 'P&R to P&R' service that could connect the SW Travel Hub with the Babraham Road P&R via the campus;
- Potential to remove the Hills Road bus station and replace it with stops on the eastern end of the 'High Street' and on Hills Road itself.

* **The High Street is contingent on at least partial Hospital re-development: Food Court, Intermittent Dialysis Unit and Modular Theatres affected. Closer study on affected Hospital buildings is required to more accurately assess the time-frame for the delivery of the High Street (currently estimated at 2035 in illustrative phasing strategy). CUH intends to undertake this study to inform the next stages of work.**

Primary Network
Secondary Network
Bus Stop - Fixed Routes
Bus Stop - On Demand
Bus Stop - 400m radius

CBC 2050 Vision Campus Connectivity Strategy - Blue Light Movements (with and without Phase 4 Land)





- **The Additional secondary routes ensure that if a primary route is obstructed, alternative opportunities exist**;
- Secondary routes also provide access to the existing ambulance station as well as ambulance drop-off and pick-up locations which are not critical;
- The Expansion Land provides further resilience by providing priority access from Babraham Road without the need to use the Hills Road junction.

— **Primary Network**
- - **Secondary Network**

CBC 2050 Vision Campus Connectivity Strategy - Servicing Movements (with and without Phase 4 Land)





- To provide additional capacity and cater for the new buildings, a **new logistic hub is proposed by the CUH masterplan to be built**;
- The CUH masterplan has proposed that **the location of this logistic hub would be at the eastern end of the Phase 2** land as it is well located to be served off the primary vehicle network;
- A further **logistics hub close to Keith Day Road is also by the Emerging Spatial Framework**;
- **The addition of Phase 4 land allows servicing access away from constrained heart of the campus**.

— **Primary Network**
- - **Secondary Network**
● **CUH Related Service Yard**

Connectivity
Granham's Road Options

kmc transport planning







Extract from GCSP Design Workshop 03, May 2023, kmc, p.13

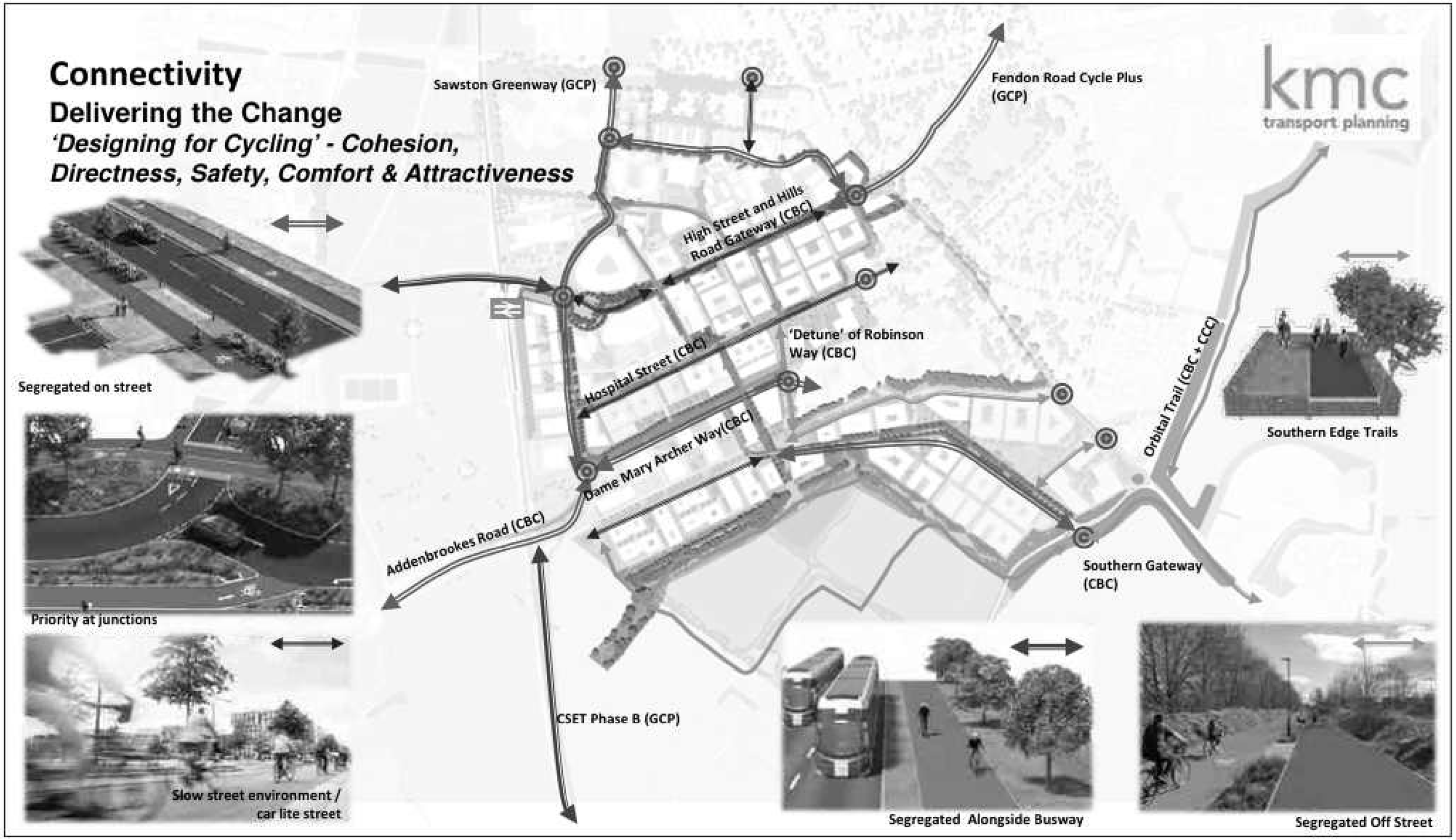
Connectivity
Delivering the Change

'A Walkable Campus'

- Permeable Block Structure between 50m and 100m
- Leisure / Community Uses distributed within 400m distances of all parts of the campus
- Walking routes designed around landscape
- Cambridge South close to maximum walking distance from Trumpington P&R and Babraham Road P&R



Extract from GCSP Design Workshop 03, May 2023, kmc, p.9



Extract from GCSP Design Workshop 03, May 2023, kmc, p.10



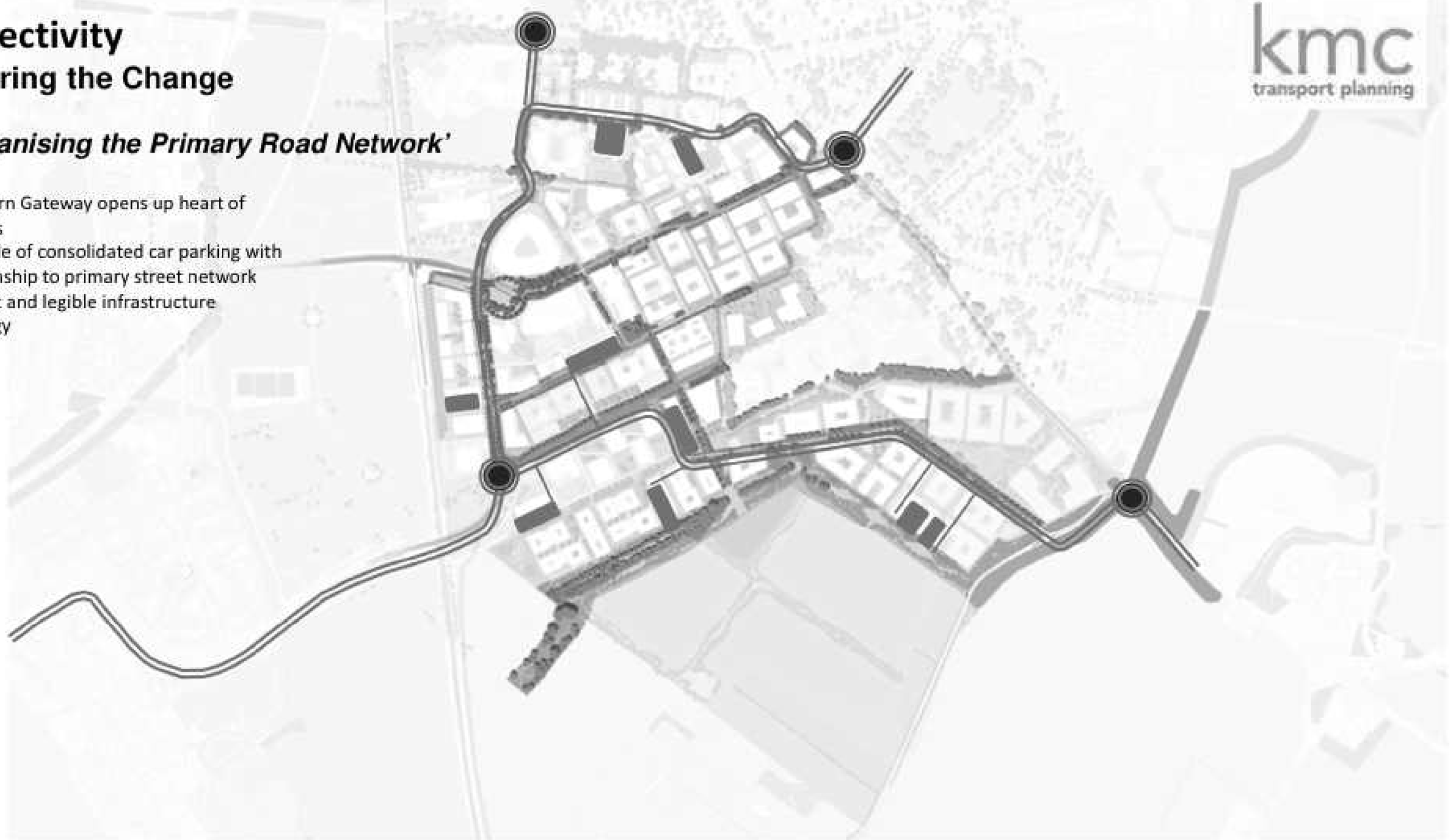
Extract from GCSP Design Workshop 03, May 2023, kmc, p.11

Connectivity
Delivering the Change

'Reorganising the Primary Road Network'

- Southern Gateway opens up heart of campus
- Principle of consolidated car parking with relationship to primary street network
- Distinct and legible infrastructure typology

kmc transport planning



Extract from GCSP Design Workshop 03, May 2023, kmc, p.12

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.



Right: ZNA Cadix, Antwerp

29

Cambridge Biomedical Campus

Extract from CBC Spatial Emerging Spatial Framework, December 2022, Hawkins\Brown, p.29

Transport: Best in Class Examples

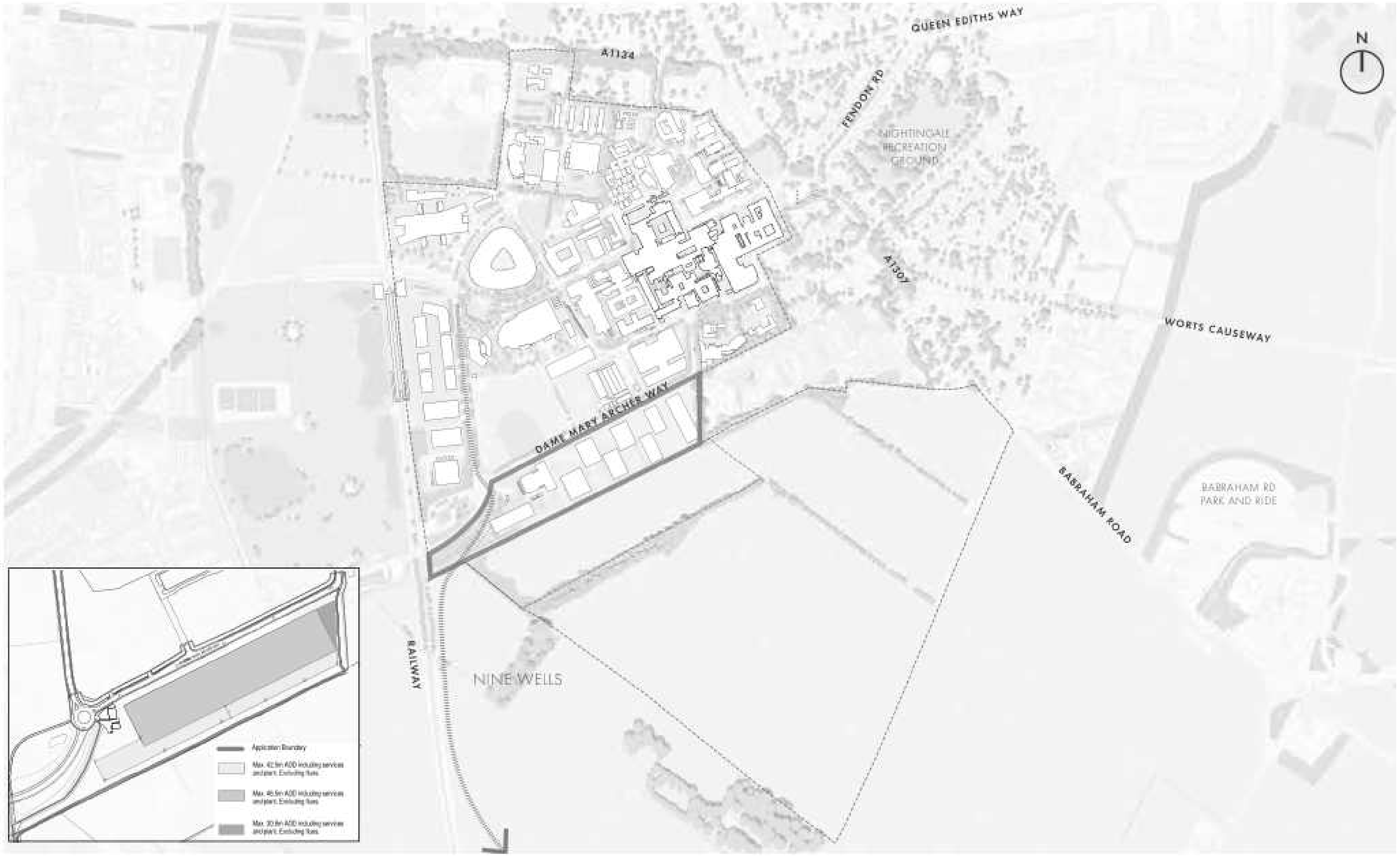

Fontys University of Applied Sciences, Eindhoven, The Netherlands


High Tech Campus, Eindhoven, The Netherlands


Bocconi University Campuc, Milan, Italy

2.5 SCALE, CAPACITY AND EDGE TREATMENT

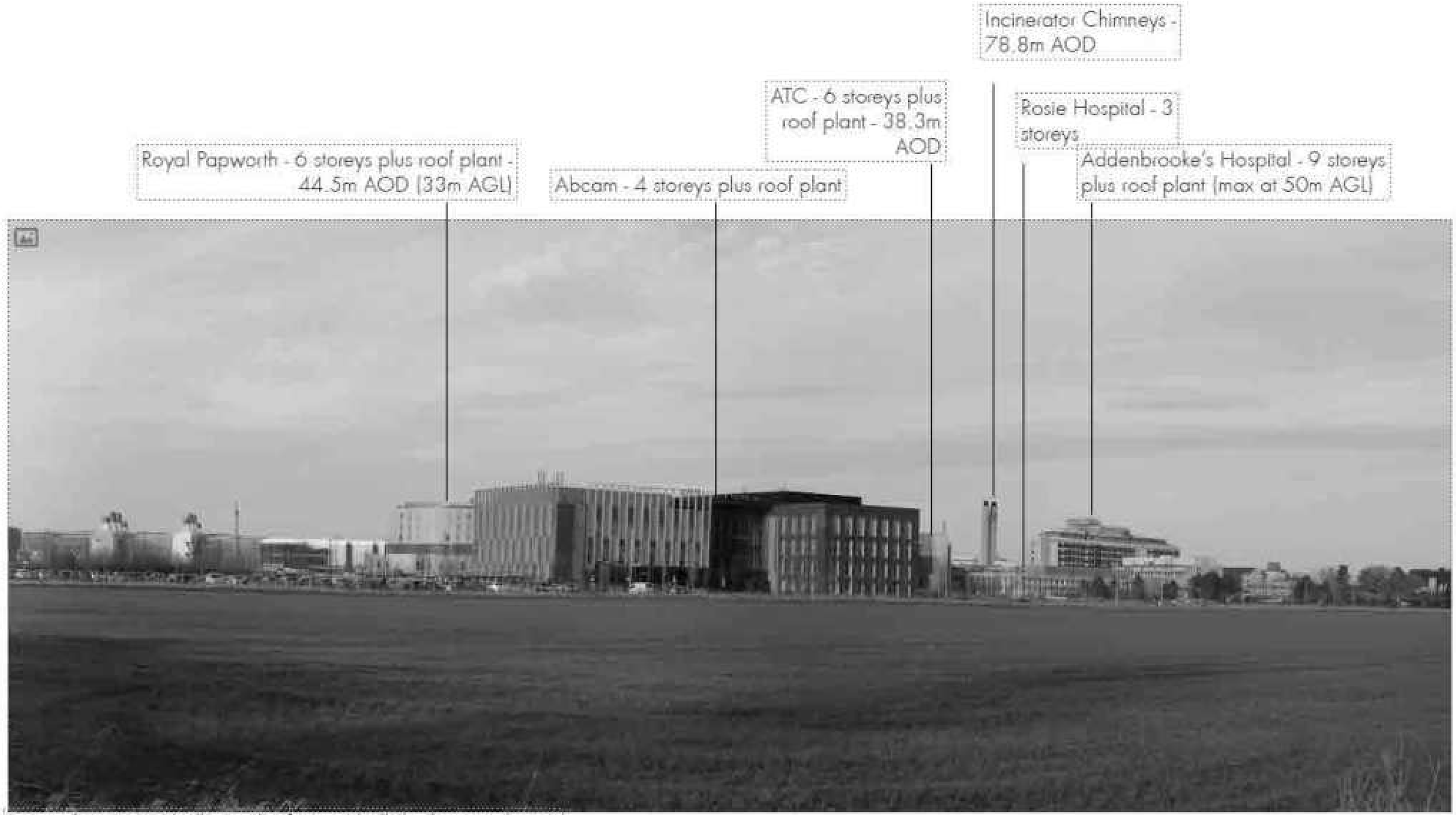
Existing & Consented Campus Edge (Phase 2 Land)



---- Proposed Area of Major Change

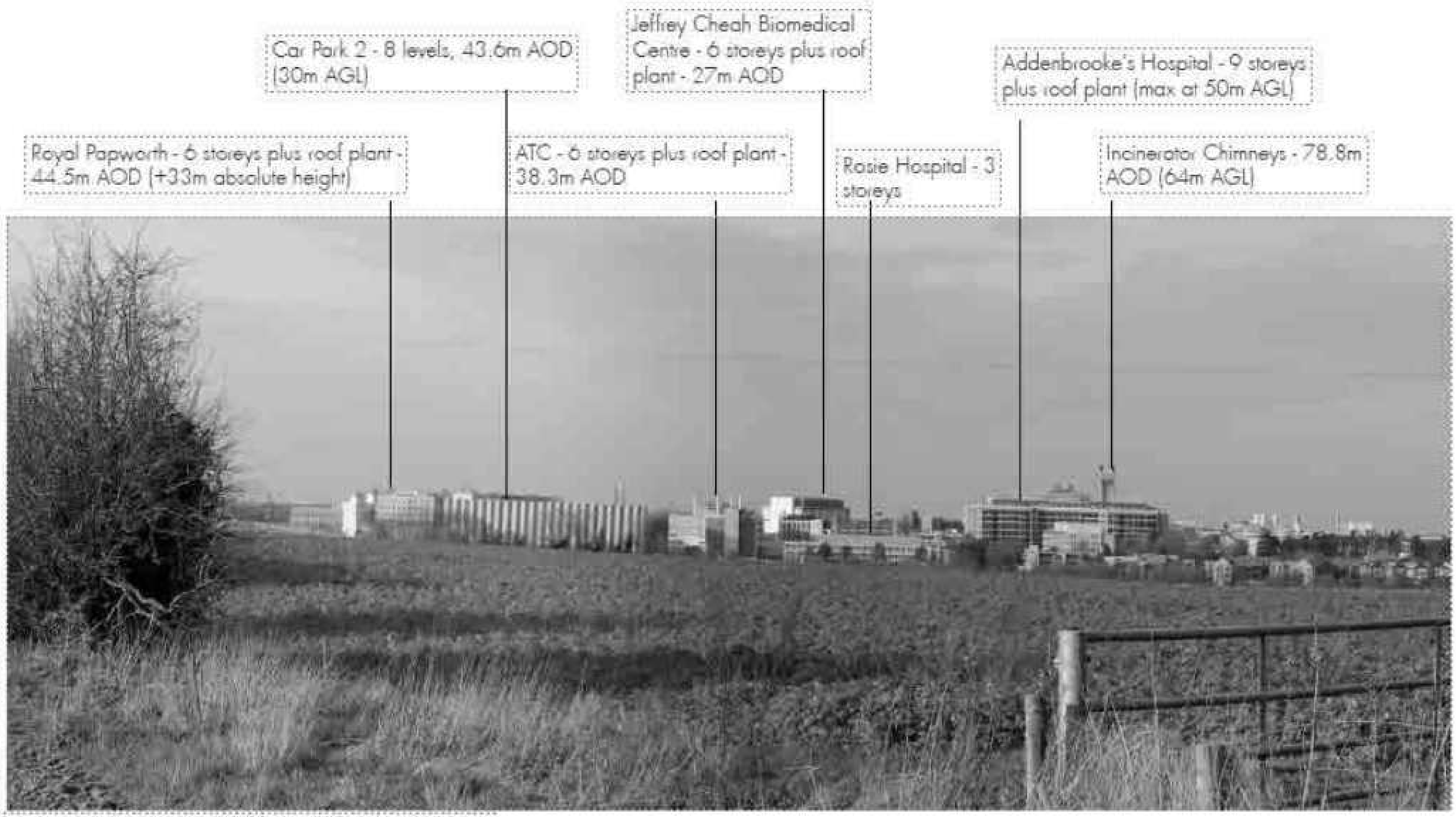
---- Expansion Land Phases 3 and 4

Existing Campus Edge (Existing Building Heights)



Footpath to Nine Wells, north of Nine Wells looking north east

Existing Campus Edge (Existing Building Heights)



Granham's Road, east of White Hill Farm looking north

Existing Campus Edge (Phase 2 Land)



1947

The Ministry of Health report of 1947 designated Addenbrooke's as a teaching hospital. Cambridge University welcomed this decision and plans became advanced for a new larger Addenbrooke's.

By December 1951 forty four acres on Hills Road was purchased (see above) The land which was mainly farmland was quickly developed.

The first buildings where completed during the 1990's with the old Addenbrooke's hospital closing its doors by 1964



2000

In 2000 the site has developed to include most accommodation towards Hills Road with a large area of parking and retained farmland to the west.

The 2020 vision envisaged this land as the new Biomedical Campus.

In 2004 Addenbrooke's and Rosie Hospitals became a Foundation Trust



Today

The vision for a world-renowned Biomedical Campus is taking shape.

Cambridge Biomedical Campus Phase 2, Design and Access Statement, nbbj, p.15

Existing Campus Edge (Phase 2 Land)

Vision

CBC phase 2 is envisaged as a landscape led development blurring the southern boundary of Addenbrooke's

The site would rely on several key moves to achieve this.

Communal car parking. MSCP would provide for all parking for tenants to free up the surface for landscaping. Blue badge and cycle parking would be still located on plot

Character landscape zones. Our application would support conditions to secure the landscape design for the benefit of all.

Plot sizes can vary in size to allow flexibility for tenants to develop the right scheme for their operations. Plot sizes will follow the development frame noted opposite.

Plot height. To establish maximum heights through a visual impact assessment.

Precedent

Our closest model for this development is Chiswick Park in London which locates its plots around a landscaped heart. In the next section we show how this approach may work in terms of layout.



'A master plan with a strong sense of place. A place rooted within the landscape in which it sits'

46 nbbj

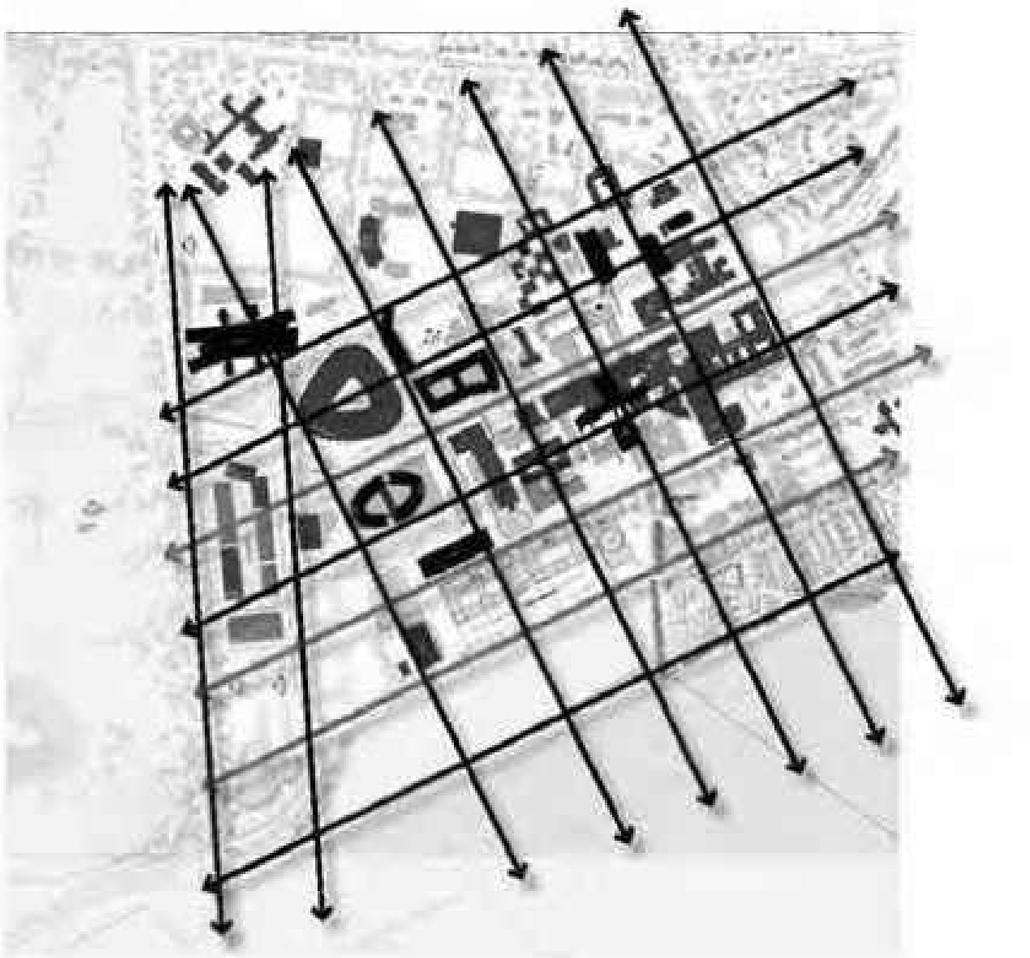
Cambridge Biomedical Campus Phase 2, Design and Access Statement, nbbj, p.46

Existing Campus Edge (Phase 2 Land)

4.2 PHASE 2 MASTERPLAN: OPPORTUNITIES

The site presents a fantastic opportunity to complete the frontage to Dame Mary Archer Way and development line from Bell School.





Urban form

Three principal horizontal routes link the emerging masterplans to Addenbrooke's.

A focus on the North to South links highlights the underlining urban grid which characterizes CBC and Addenbrooke's. Adopting the grain of existing development will underpin the morphology of phase 2.

Cambridge Biomedical Campus Phase 2 Certificate Design and Access Statement (2018)

Cambridge Biomedical Campus Phase 2, Design and Access Statement, nbbj, p.36

Existing Campus Edge (Phase 2 Land)



Permeability

The North to South grid suggests routes and supports greater connections across the site

The Parameter Plans allow for connectivity to the north, but the delivery of pedestrian and cycle routes to the north will be delivered by the on going build out of CBC Phase 1, as its detailed design will determine their exact number and alignment. Such routes will make phase 2 feel more included within the existing developments. Additional links to neighbouring developments such as the bell school site are also possible



Scale 1

The Site has two principal elevations being both visible from the southern entrance along Davis Mary Archer Way and the long views from the Gog Magog Hills to the South. Views are important not only at street level but also at elevated viewpoints to the West and South

The site has great orientation with a Southeastern aspect.

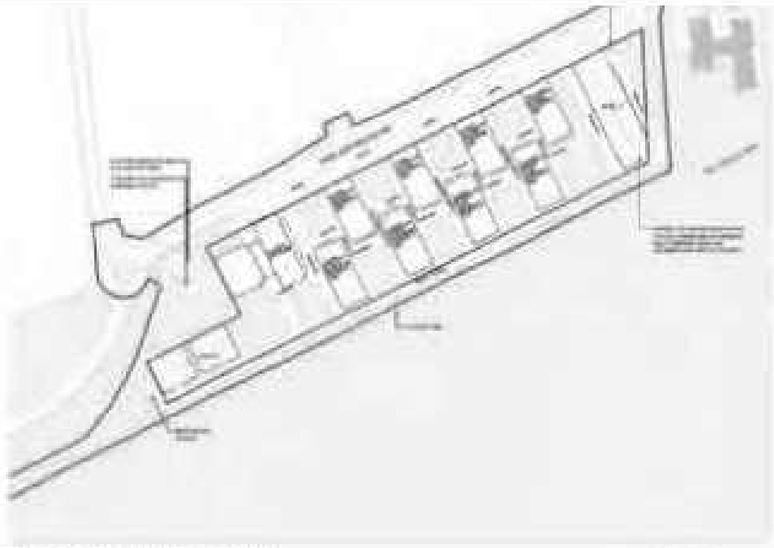
Cambridge Biomedical Campus Phase 2, Design and Access Statement, nbbj, p.37

Existing Campus Edge (Phase 2 Land)



Access

The design of Dame Mary Archer Way limits potential access points to phase 2. "A new internal access road will be required to improve accessibility through the Site. It could be possible for the internal access road to be extended south to serve a future expansion of CBC



Linear or finger block typology



Courtyard block typology

Cambridge Biomedical Campus Phase 2, Design and Access Statement, nbbj, p.39 and 50 (Phase 2 Land Design Iterations exploring the southern edge condition)

Existing Campus Edge (Phase 2 Land)

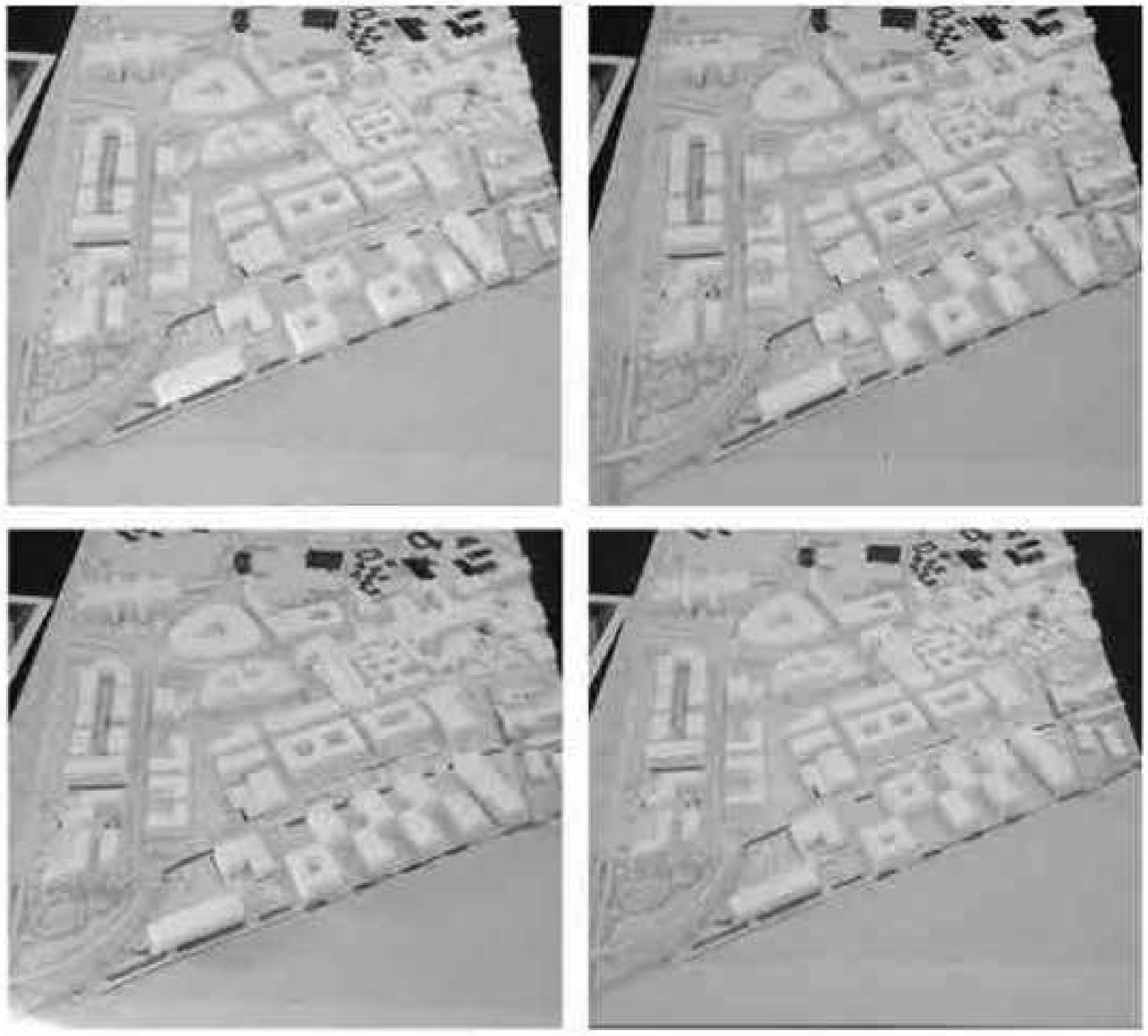
Building in robustness

The strong vision will create a relationship between building and landscape

This robust approach allows buildings of varying sizes to be located whilst respecting a similar amount of open landscaping.

The images opposite show how plans and courtyard typologies can be used together in different permutations.

The variations retain the phase 2 'principles', overall quantum and parking numbers are constant throughout.



Cambridge Biomedical Campus Phase 2, Design and Access Statement, nbbj, p.51 (Phase 2 Land Design Iterations exploring the southern edge condition)

nbbj 51

Cambridge Biomedical Campus Phase 2, Design and Access Statement, nbbj, p.51 (Phase 2 Land Design Iterations exploring the southern edge condition)

New Campus Edge - Phase 3 Land & Further Green Belt Release being considered through GCLP (Phase 4 Land)

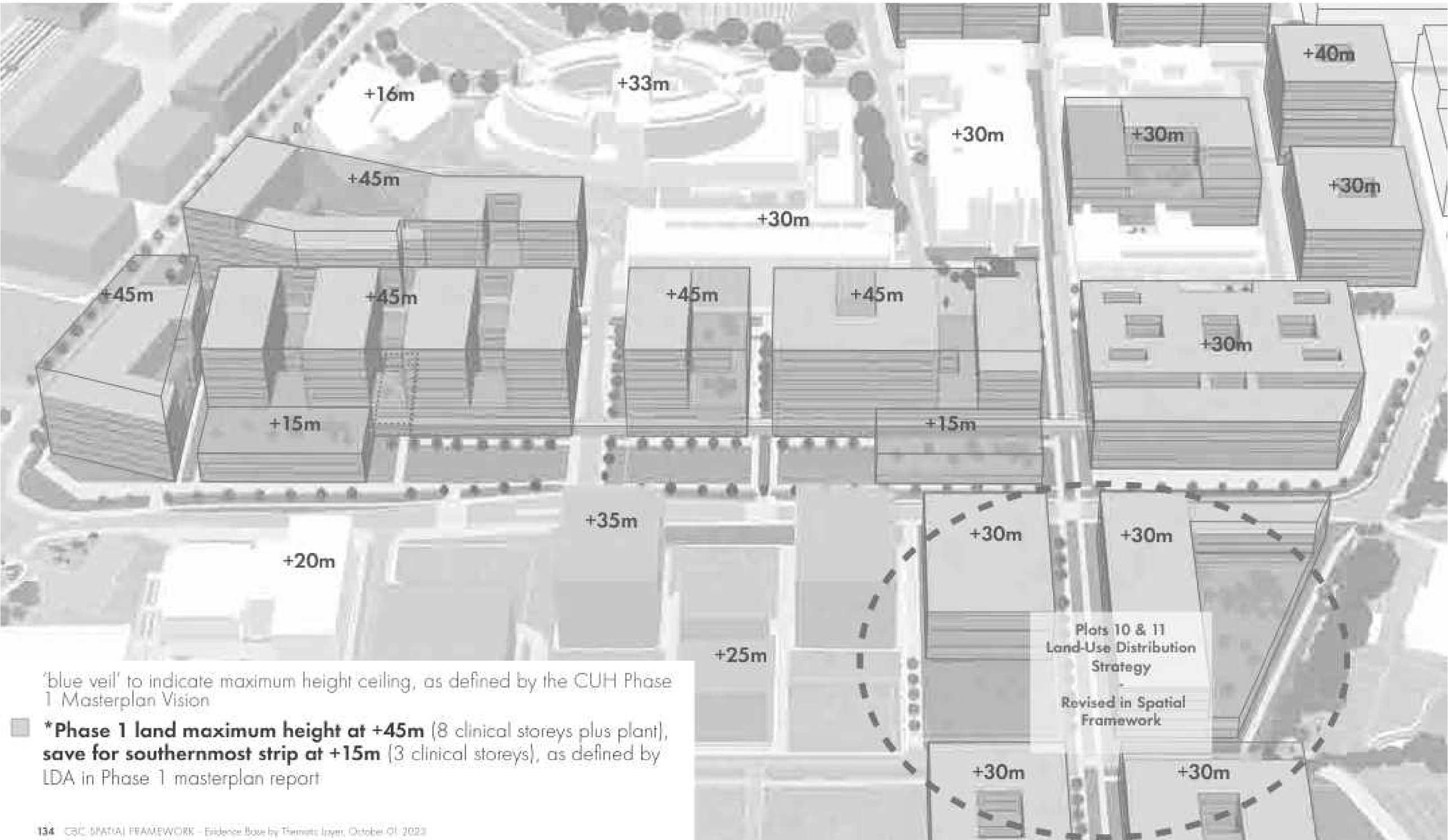


Proposed Area of Major Change

Phase 3 Land

Phase 4 Land

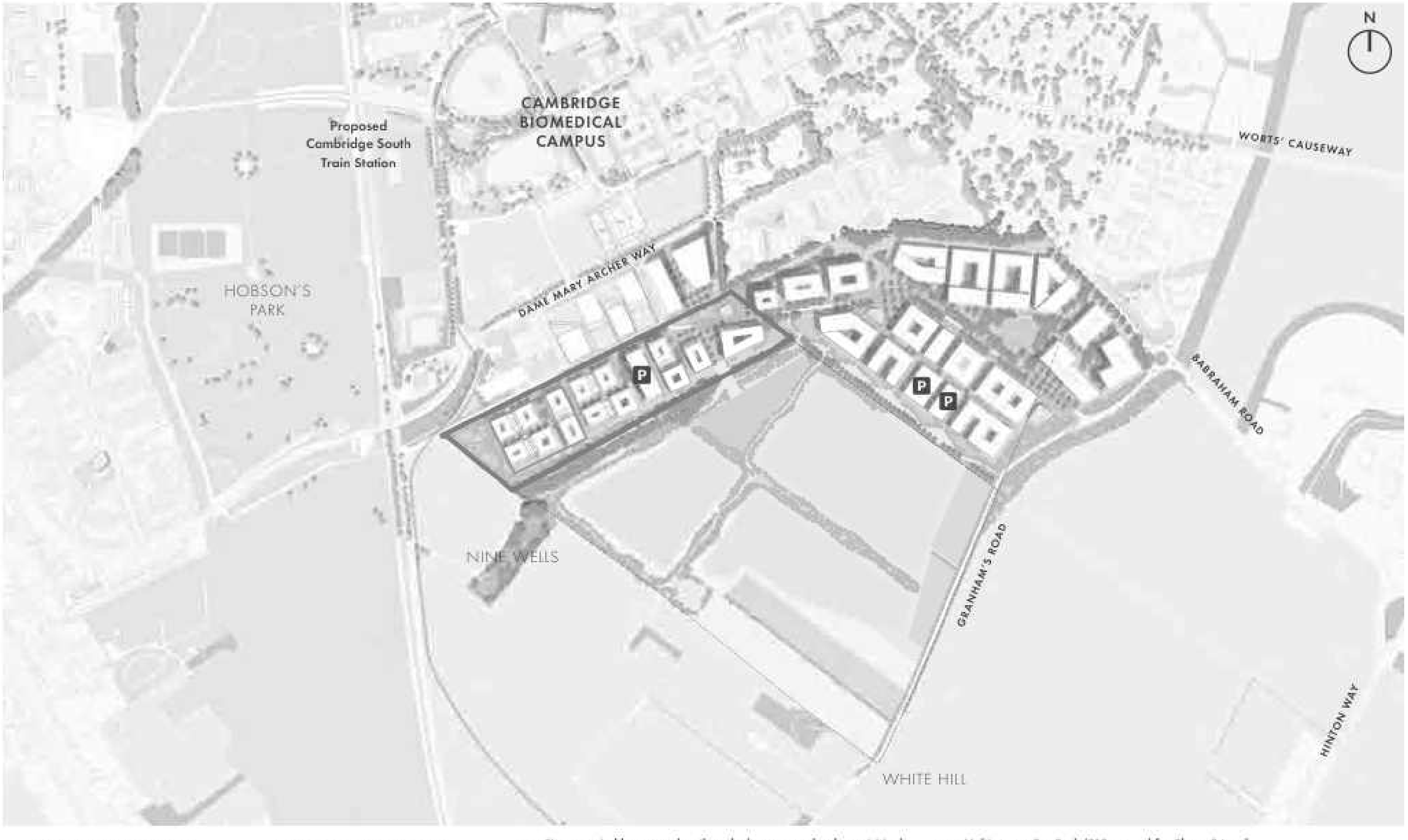
Healthcare Core - Addenbrooke's 3 Maximum Heights Envelope



'blue veil' to indicate maximum height ceiling, as defined by the CUH Phase 1 Masterplan Vision

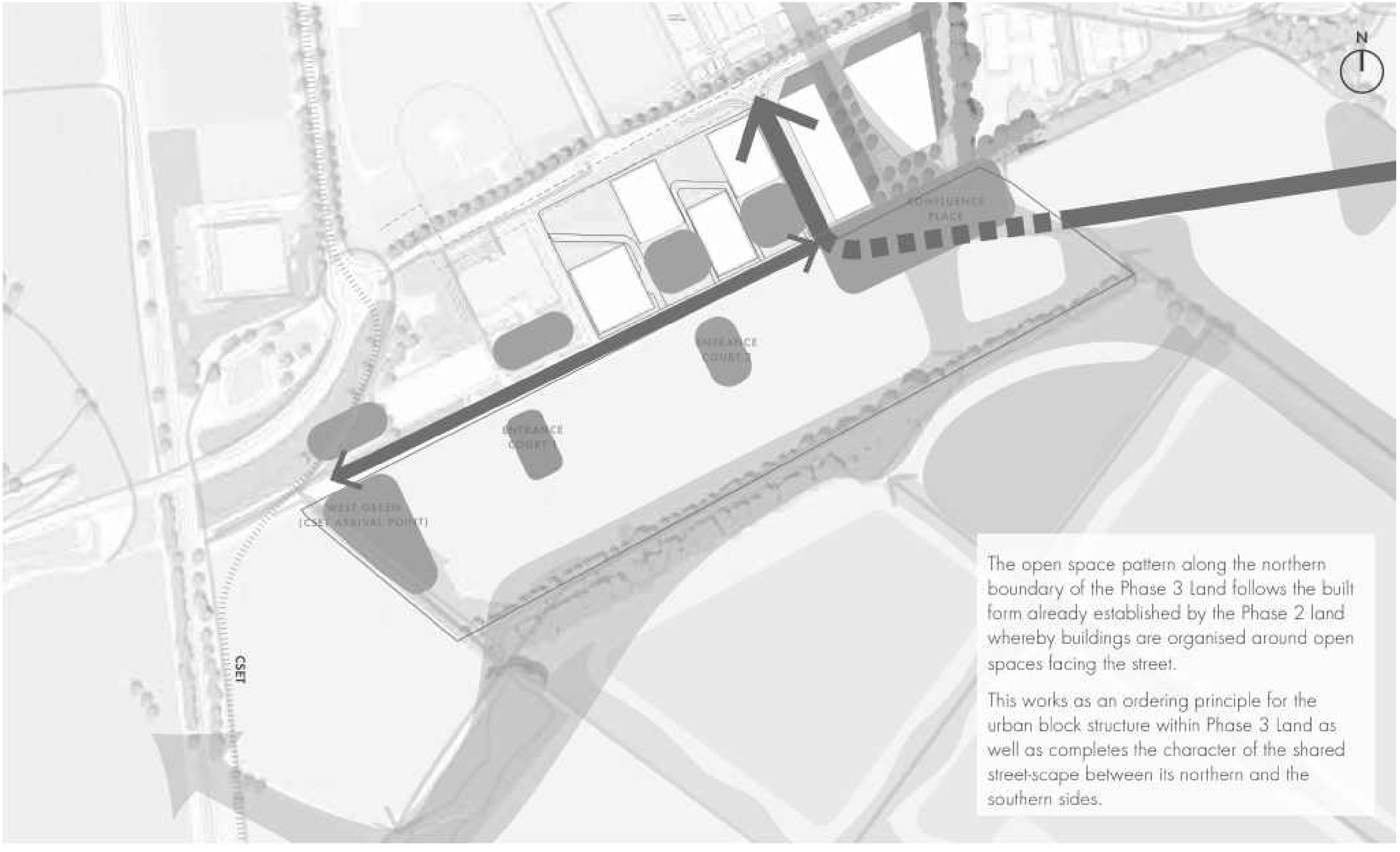
***Phase 1 land maximum height at +45m** (8 clinical storeys plus plant), **save for southernmost strip at +15m** (3 clinical storeys), as defined by LDA in Phase 1 masterplan report

New Campus Edge (Phase 3 Land)



—— Phase 3 Land Site Boundary
- - - - Green Belt enhancement land boundary
- - - - Phase 4 Land Site Boundary
- - - - Granham's Road Realignment Site Boundary
Site occupied by network rail works (temporary land acquisition) up to completion of CSET ca. 2026
—— Phase 3 Land Plots to be developed in Phase 3 of development
P Multi-storey Car Park (919 spaces) for Phase 3 Land development only.

Phase 3 Land Typology of Spaces: Northern forecourt zone and street-scape



The open space pattern along the northern boundary of the Phase 3 Land follows the built form already established by the Phase 2 land whereby buildings are organised around open spaces facing the street.

This works as an ordering principle for the urban block structure within Phase 3 Land as well as completes the character of the shared street-scape between its northern and the southern sides.

— Phase 3 Land Site Boundary

Boulevard North of Phase 3 Land

Proposed Primary Road Expansion Land

Open Space Pattern within Phase 3 and Phase 2 Land

Green Belt Enhancement Land New Hedgerows

Pedestrian Priority Measures where road crosses Confluence

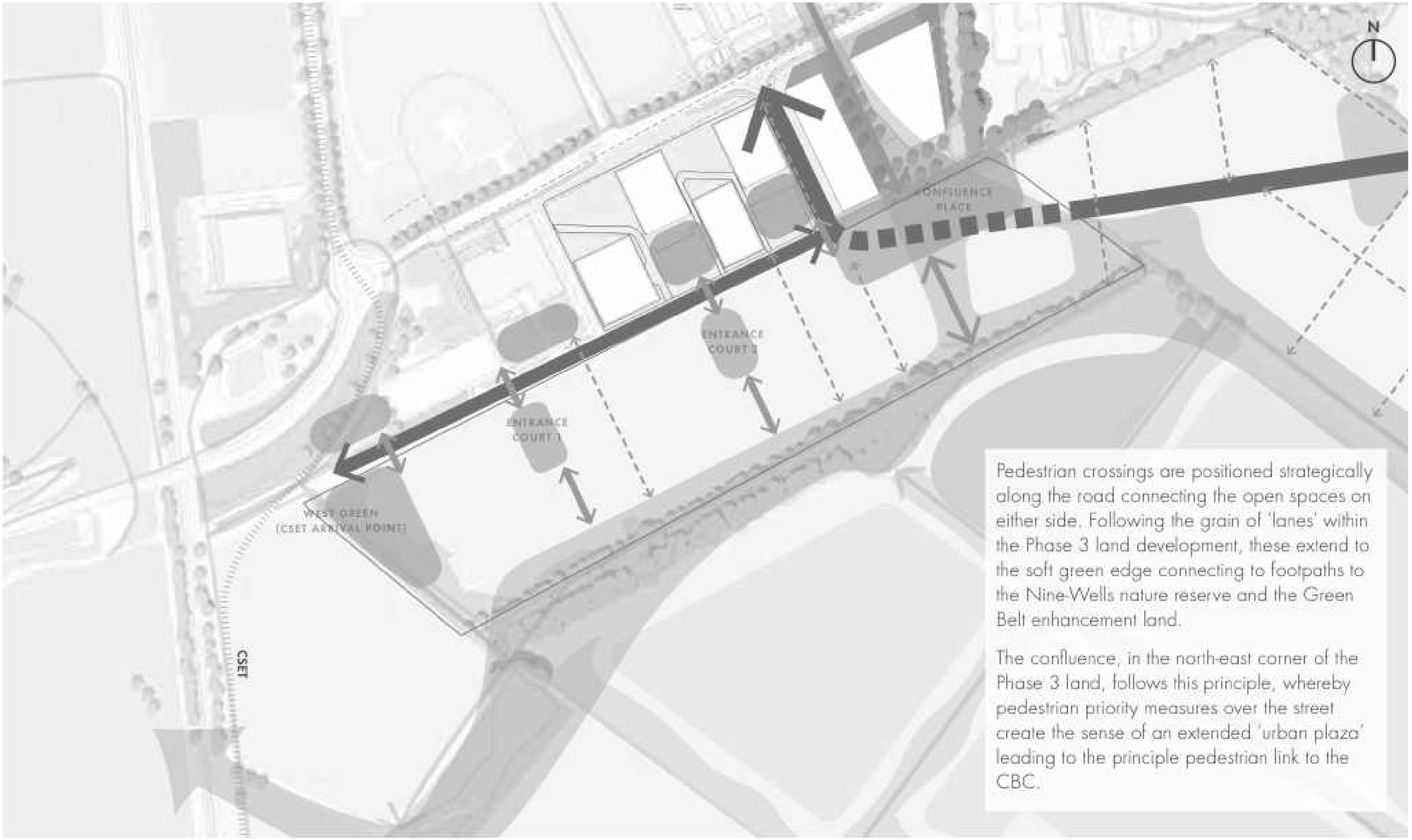
Soft Green Edge

Proposed Footpaths Enhancement Land

Green Belt Enhancement Land New Hedgerows

Conservation farmland

Phase 3 Land Typology of Spaces: Pedestrian lanes and footpath network

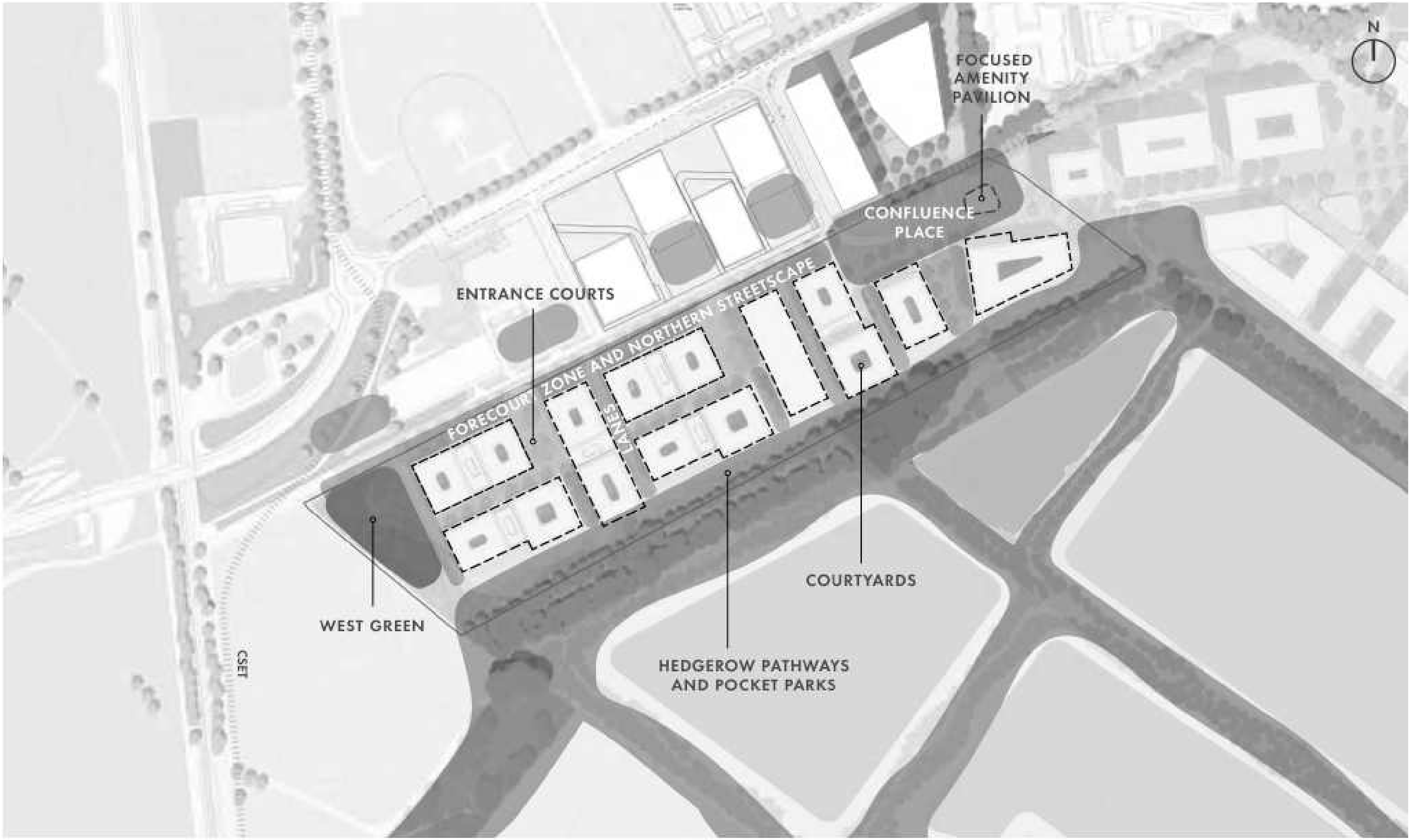


Pedestrian crossings are positioned strategically along the road connecting the open spaces on either side. Following the grain of 'lanes' within the Phase 3 land development, these extend to the soft green edge connecting to footpaths to the Nine-Wells nature reserve and the Green Belt enhancement land.

The confluence, in the north-east corner of the Phase 3 land, follows this principle, whereby pedestrian priority measures over the street create the sense of an extended 'urban plaza' leading to the principle pedestrian link to the CBC.

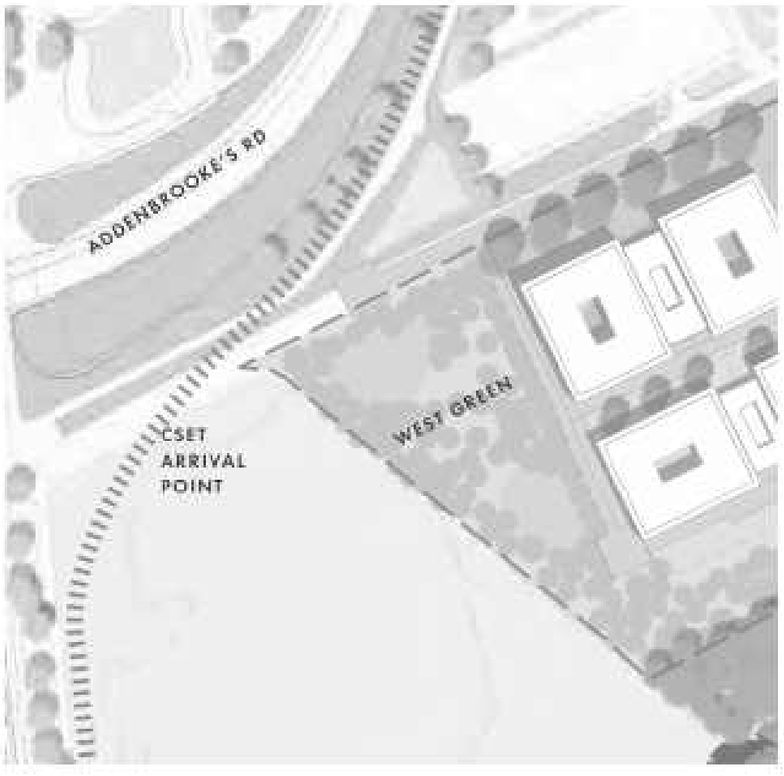
- Phase 3 Land Site Boundary
- Boulevard North of Phase 3 Land
- Proposed Primary Road Expansion Land
- Open Space Pattern within Phase 3 and Phase 2 Land
- Green Belt Enhancement Land New Hedgerows
- Pedestrian Priority Measures where road crosses Confluence
- Soft Green Edge
- Proposed Footpaths Enhancement Land
- Green Belt Enhancement Land New Hedgerows
- Conservation farmland
- Proposed Lanes
- Connecting Open Spaces

Phase 3 Land Typology of Spaces: Emerging Outdoor Spaces



- Phase 2 Land Open Space
- Phase 3 Land Site Boundary
- Phase 3 Land Site Boundary
- Boulevard North of Phase 3 Land
- Proposed Primary Road Expansion Land
- Open Space Pattern within Phase 3 and Phase 2 Land
- Green Belt Enhancement Land New Hedgerows
- Pedestrian Priority Measures where road crosses Confluence
- Soft Green Edge
- Proposed Footpaths Enhancement Land

West Green



A green open space that marks the arrival point from the west . It will also create an important green buffer area linked to Nine Wells Nature Reserve.


Attenuation pond with planting screening development

— Phase 3 Land Site Boundary

Forecourt Zone And Northern Street-Scape



Particular emphasis is placed on the shaping of the Phase 3 Land forecourt zone and shared street-scape between the Phase 2 and Phase 3 Land.

The street scape extends within the Phase 3 Land red-line boundary as a 20-metre-wide buffer zone, with features for rain-water conveyancing, footpaths, street furniture and tree planting.

Joint working between Phase 2 and Phase 3 Land is encouraged in later stages of design, to ensure the delivery of the shared street-scape and to allow for a coherent material palette and approach to landscaping.

— **Phase 3 Land Site Boundary**





Entrance Courts





Courts break the continuity of the street-line and form thresholds that lead to the building entrances. They function as gathering points with seating and vegetation for shading, as well as potential spill-out spaces to complement indoor ground-floor amenity areas.

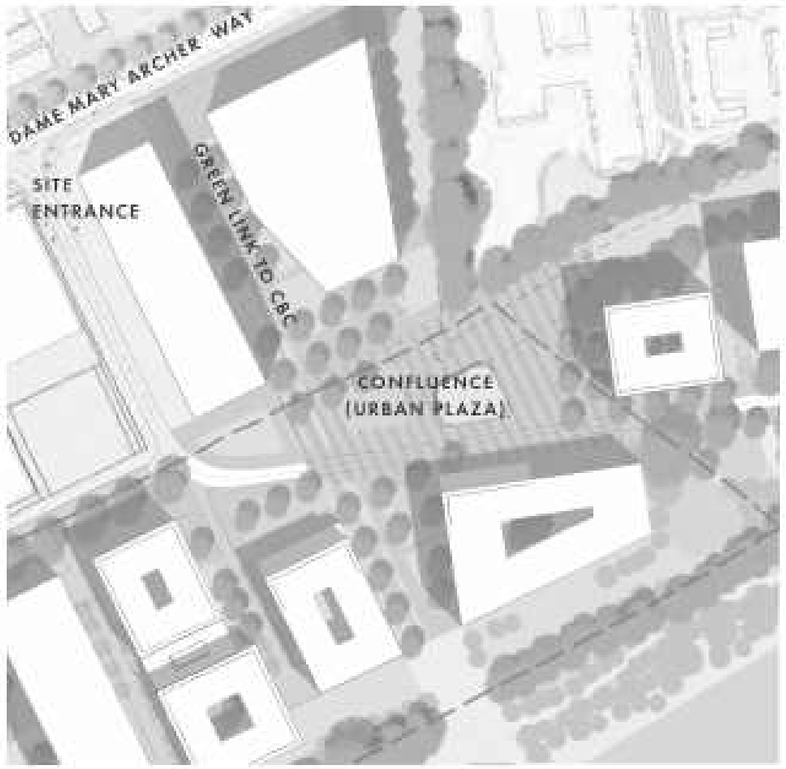
In terms of landscape treatment these are seen as a mix of hard-scaped, continuing the street-scape paving, whilst incorporating soft-scape, potential water-features, trees and shrubs.





— **Phase 3 Land Site Boundary**

Confluence



The confluence will be one of the CBC key public spaces, at the intersection of the green link from the north and the expansion land to the south.

The objectives for it are threefold; the space is to acquire a degree of openness to allow connections and views to the Green Belt, to accommodate the main vehicular and active travel corridor to the campus and to retain a public character throughout, accompanied by public-facing buildings with active ground-floor frontages. In this light, its materiality is defined by a mix between generously planted green/blue corridors and areas of hard landscaping, allowing it to be a flexible space where large scale events can take place.


Centenary Square, Birmingham.
Grasmere Massie Architects

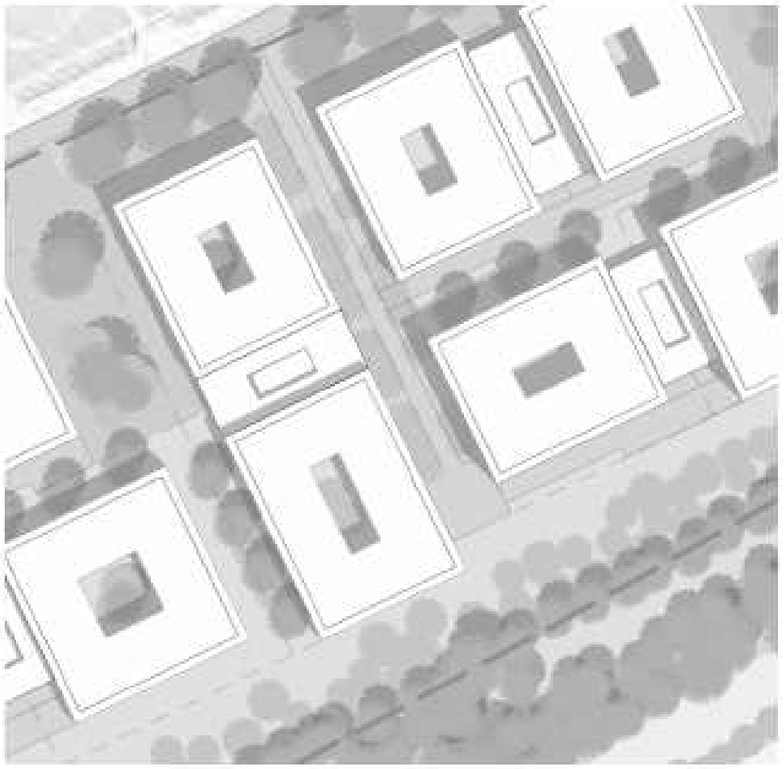

Square, King's Town


Pancras Square, King's Cross, London LA



— **Phase 3 Land Site Boundary**

Lanes





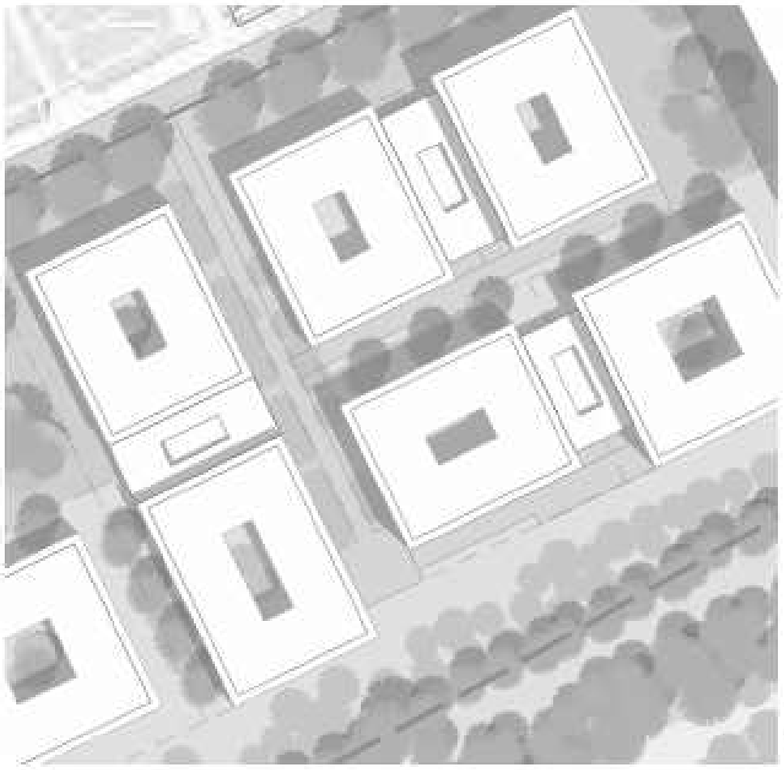




Lanes range from 10 to 20 metres in width, responding to their location in the masterplan and their surrounding building heights. They will have a well-defined landscape character, incorporating greening, trees and seating, where appropriate. Whilst designed to accompany pedestrian flows between development plots, they maintain a portion of hard-scaped, paved surface to allow for deliveries, service and emergency vehicular access when necessary.

— **Phase 3 Land Site Boundary**

Courtyards



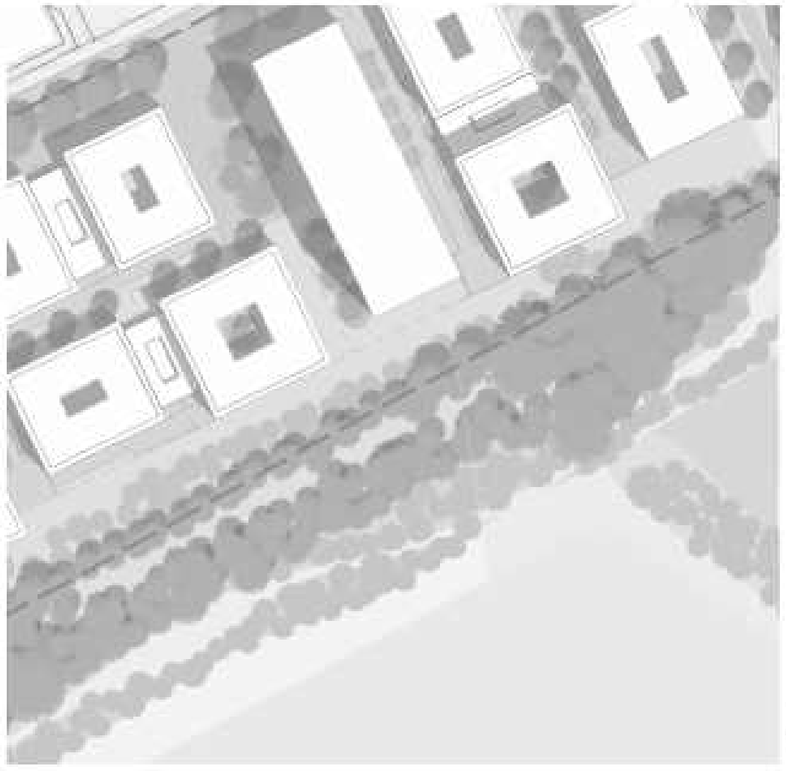




These private enclosures within development plots, are meant to provide secluded areas of outdoor space for staff and those using the buildings, whilst also allowing for a level of permeability to the building themselves, providing light and internal landscape views. The landscape strategy could feature shrubs and trees, as well as footpaths, water-features and hard-surface areas for seating where applicable.

— **Phase 3 Land Site Boundary**

Hedgerow Pathways And Pocket Parks



Extended and enhanced hedgerows and tree clusters to provide linear landscape features and walkable connections between the different areas of the developments. Expanded areas within will provide opportunities to locate gathering areas, play spaces and other amenities.

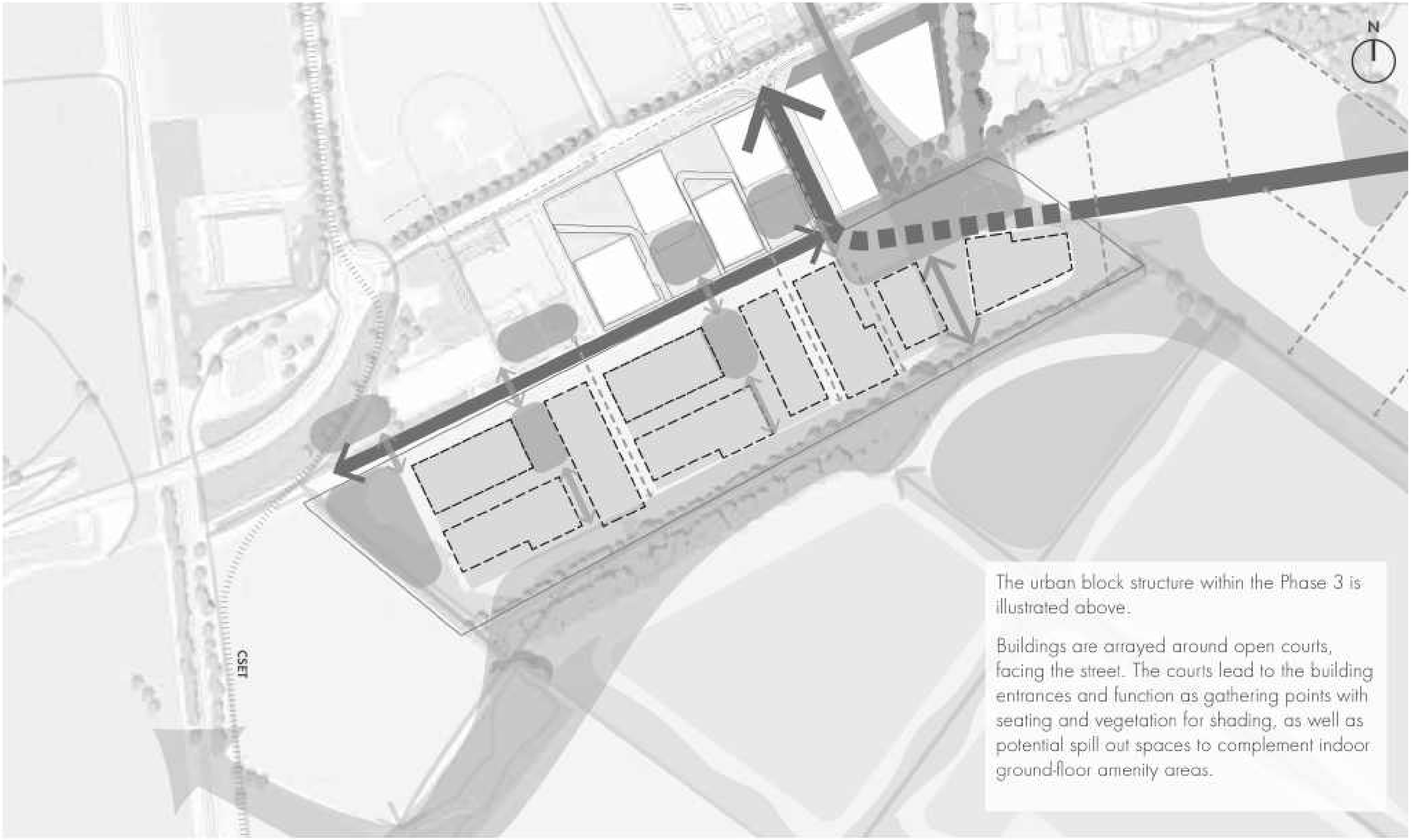

White City Television Centre, Gillespies


Jakriplatsen and Lövängsgatan, Stockholm, AJ Landscap


Hechtel-Eksel, Belgium, BuroLandshap and De Gregorio & Partners

— Phase 3 Land Site Boundary

Phase 3 Land: Urban Block Structure



The urban block structure within the Phase 3 is illustrated above.

Buildings are arrayed around open courts, facing the street. The courts lead to the building entrances and function as gathering points with seating and vegetation for shading, as well as potential spill out spaces to complement indoor ground-floor amenity areas.

Phase 3 Land Site Boundary
Boulevard North of Phase 3 Land
Proposed Primary Road Expansion Land
Open Space Pattern within Phase 3 and Phase 2 Land
Green Belt Enhancement Land New Hedgerows
Pedestrian Priority Measures where road crosses Confluence
Soft Green Edge
Proposed Footpaths Enhancement Land
Green Belt Enhancement Land New Hedgerows
Conservation farmland
Proposed Lanes
Connecting Open Spaces
Amenity Pavilion
Urban blocks

Phase 3 Land: Approach to Built Edges



The edges to the south articulate a 'city edge' condition accounting for buffer zones to the mature tree-belt to protect nature and safeguard views from White Hill.

Buffer zones range from 20 t 40 metres; with 40 being the maximum buffer zone distance to accommodate for the sensitive adjacency to Nine Wells Nature reserve.

Following comments from engagement with GCSP the southern edge of Phase 3 Land is sought to be broken down and mitigated through tree-planting within the enhanced hedgerow planting zone.

— Phase 3 Land Site Boundary

■ Built edges

● Linked Open Amenity Space

● Open Space Pattern within Phase 3 and Phase 2 Land

● Green Belt Enhancement Land New Hedgerows

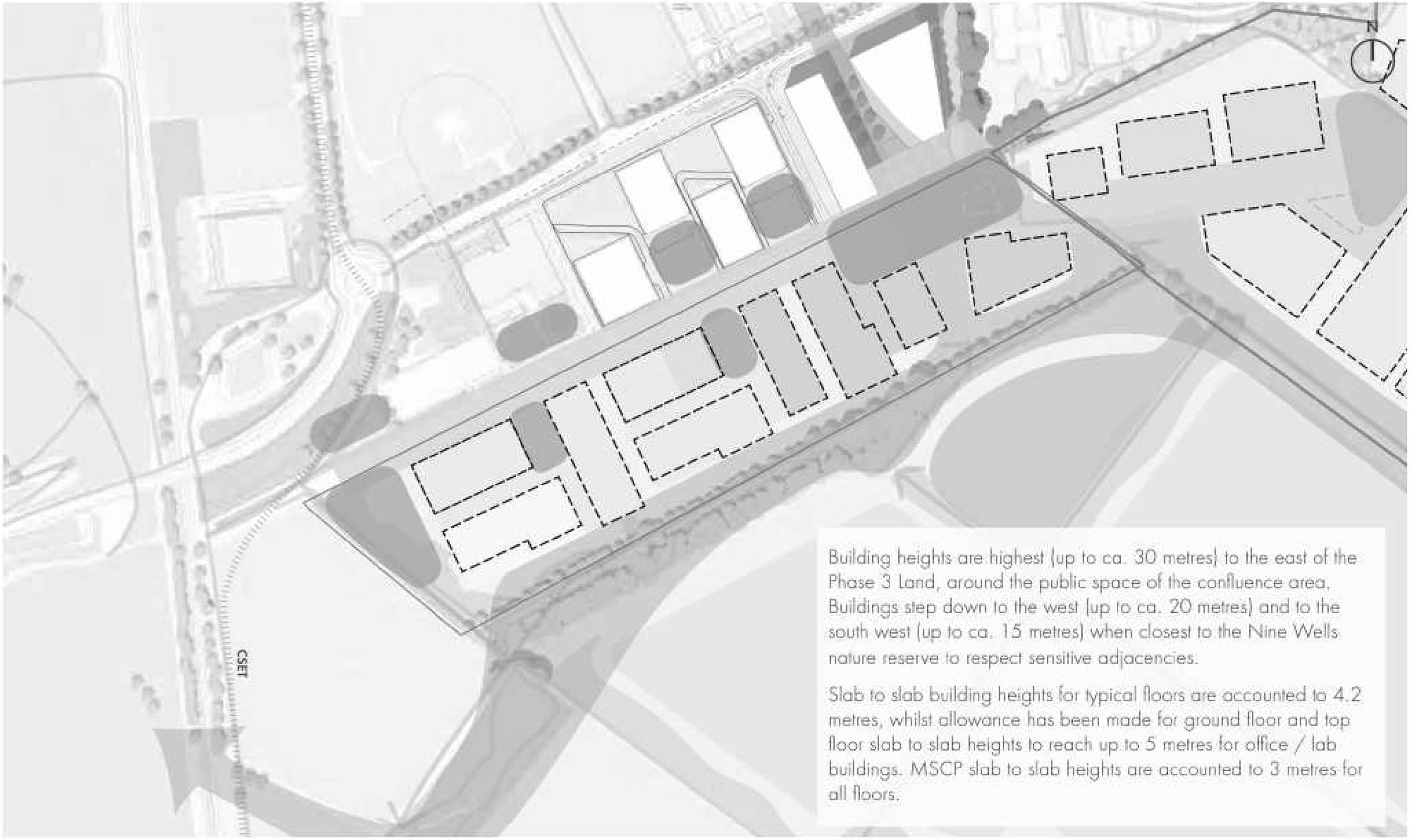
● Soft Green Edge

→ Proposed Footpaths Enhancement Land

– – Amenity Pavilion

– – Urban blocks

Phase 3 Land: Maximum Height-Envelopes Considered



Building heights are highest (up to ca. 30 metres) to the east of the Phase 3 Land, around the public space of the confluence area. Buildings step down to the west (up to ca. 20 metres) and to the south west (up to ca. 15 metres) when closest to the Nine Wells nature reserve to respect sensitive adjacencies.

Slab to slab building heights for typical floors are accounted to 4.2 metres, whilst allowance has been made for ground floor and top floor slab to slab heights to reach up to 5 metres for office / lab buildings. MSCP slab to slab heights are accounted to 3 metres for all floors.

— Phase 3 Land Site Boundary

Linked Open Amenity Space

Open Space Pattern within Phase 3 and Phase 2 Land

30m Maximum Heights Envelope

25m Maximum Heights Envelope

20m Maximum Heights Envelope

15m Maximum Heights Envelope

Amenity Pavilion

Urban blocks

New Campus Edge (Phase 3 Land)



★ Allowance for outdoor amenity / recreational use

— Phase 3 Land Site Boundary

New Campus Edge (Phase 3 Land)

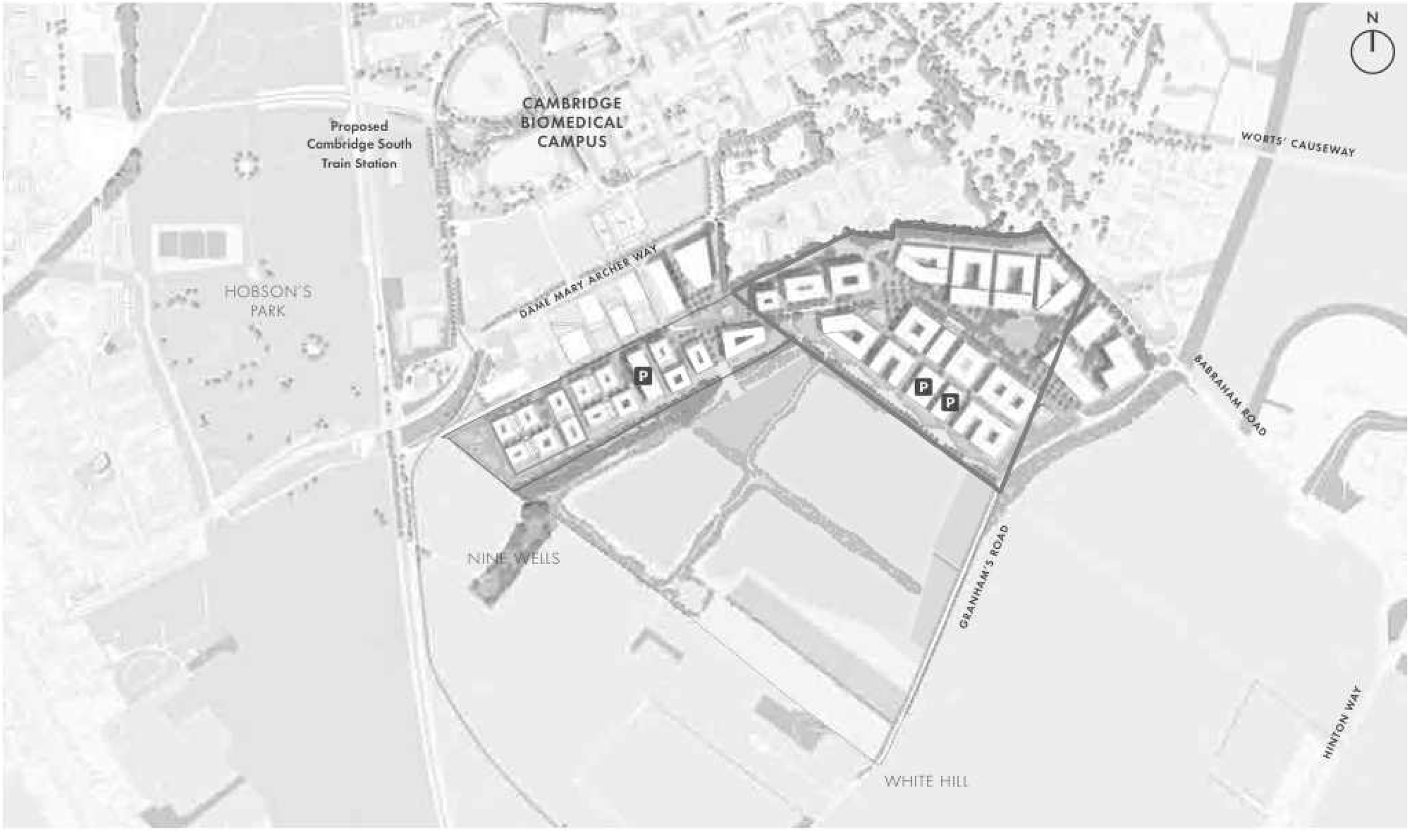


* Allowance for outdoor amenity / recreational use

— Phase 3 Land Site Boundary

Heights indicated in the diagram above are absolute building heights

New Campus Edge (Phase 4 Land)



Phase 3 Land Site Boundary

Green Belt enhancement land boundary

Phase 4 Land Site Boundary

Granham's Road Realignment Site Boundary

Site occupied by network rail works (temporary land acquisition) up to completion of CSET ca. 2026

Phase 3 Land Plots to be developed in Phase 3 of development

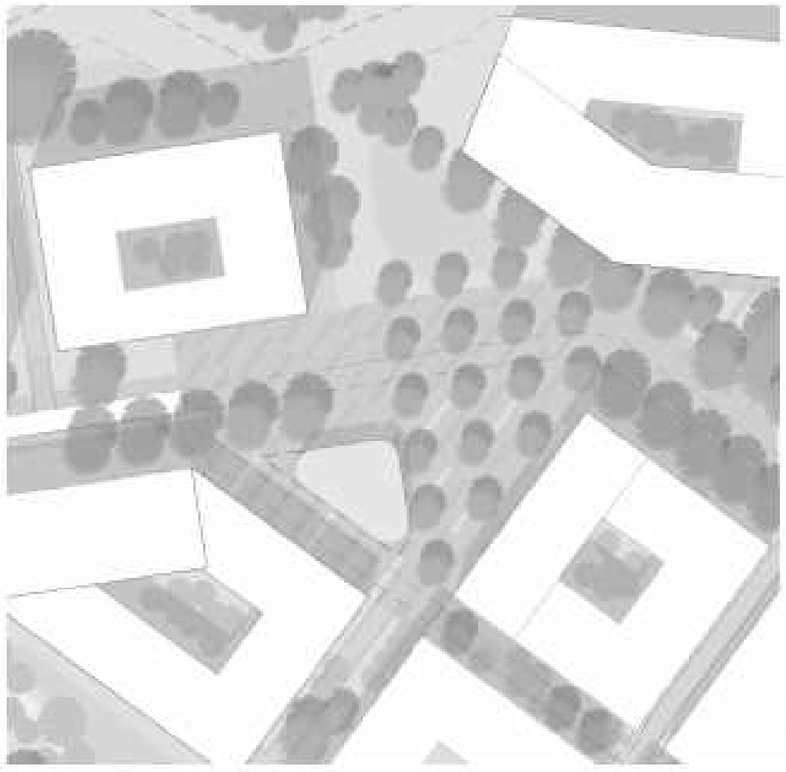
P Multi-storey Car Park (919 spaces) for Phase 3 Land development only.

Phase 4 Land: Approach to Built Edges



— **Phase 4 Land Site Boundary**

East Court



A compact urban square with seating areas, pockets of planting and access to amenity spaces at the ground floor level of surrounding buildings. This is a vibrant transitional space between the Confluence Place and the Garden Square.







Garden Square



This is the green heart of the place to the east, a village green. A place for relaxation, generously planted at different levels providing a strategic role for water attenuation.







Phase 4 Land: Maximum Height-Envelopes Considered



Phase 4 Land Site Boundary

25m Maximum Heights Envelope

Linked Open Amenity Space

Open Space Pattern within Phase 3 and Phase 2 Land

20m Maximum Heights Envelope

15m Maximum Heights Envelope

Amenity Pavilion

Urban blocks

New Campus Edge (Phase 3 Land & 4 Land)



★ **Allowance for outdoor amenity / recreational use**

New Campus Edge (Phase 3 Land & 4 Land)



★ **Allowance for outdoor amenity / recreational use**

CBC Vision 2050 - Illustrative Maximum Height Envelopes (Considered to Date)



New Campus Edge: Best in Class Examples











New Campus Edge: Best in Class Examples


Science Park Amsterdam, The Netherlands





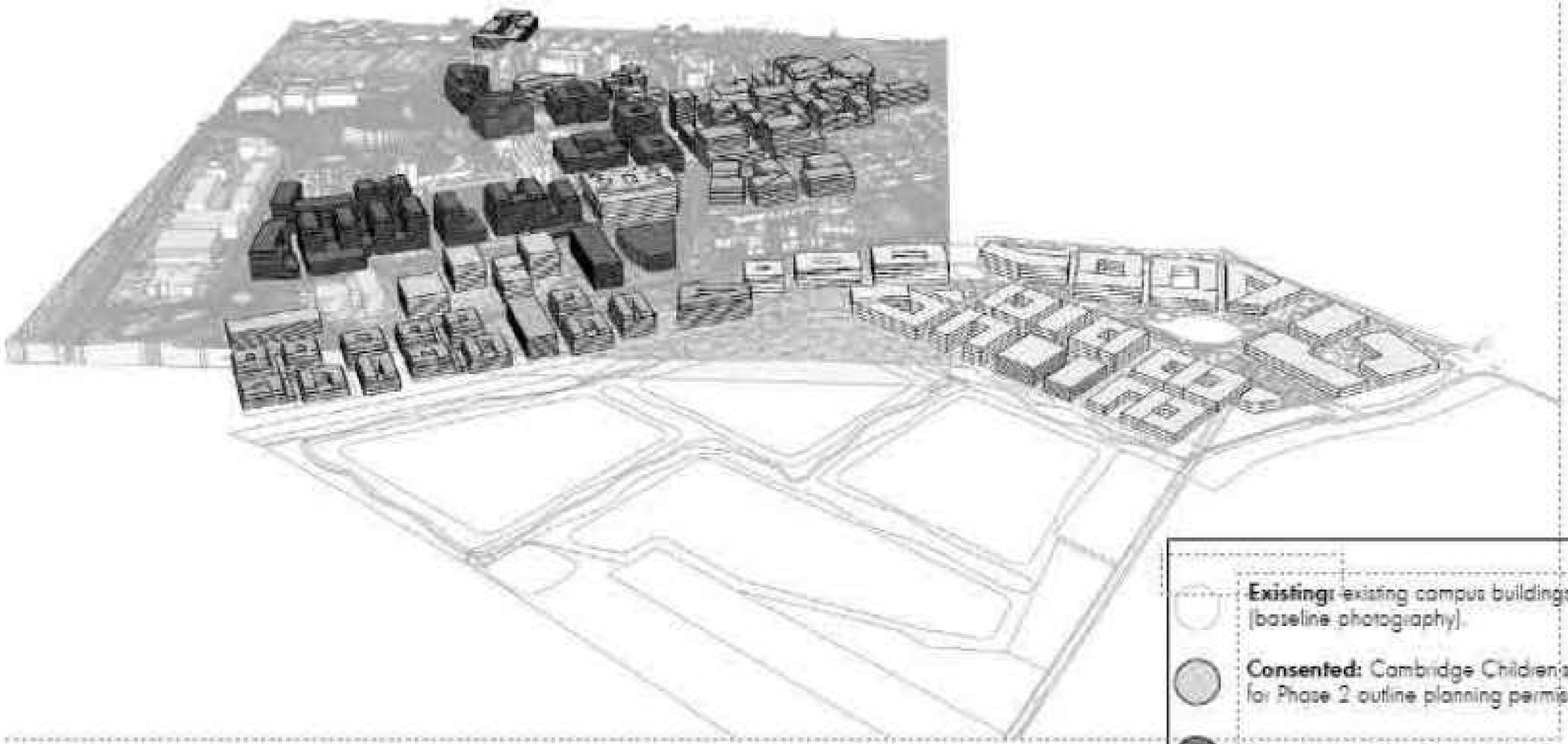

Science Park Amsterdam, The Netherlands


White City Place, London

Initial Viewpoint Tested



CBC Vision 2050 Illustrative Massing (Tested in the views)



Existing: existing campus buildings as of July 2023 (baseline photography).

Consented: Cambridge Children's Hospital (CCH), approved parameters for Phase 2 outline planning permissions.

Live Application: Cambridge Cancer Research Hospital (CCRH)

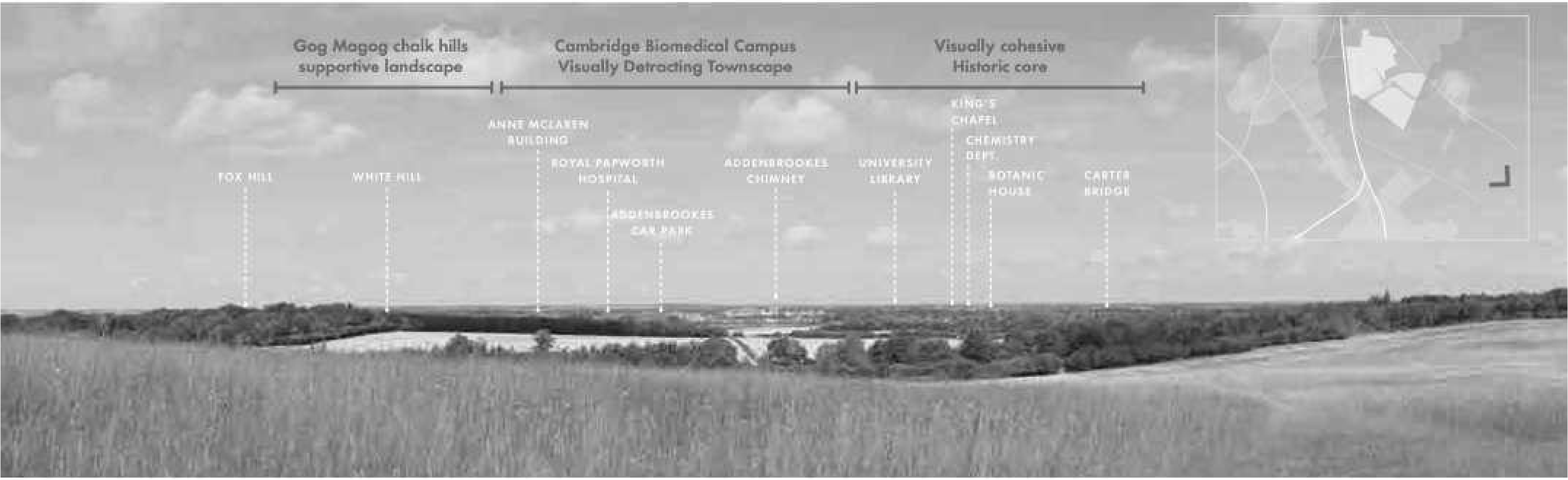
Addenbrooke's 3: proposed indicative massing necessary to accommodate new healthcare buildings *(note: current floor to ceiling heights accepted at 3m floor to floor at this stage, scope for floor to ceiling heights to be reduced at later stages)*

Phase 3 Land: Proposed indicative massing on the expansion land (as per the Local Plan First Proposals - labelled S/CBC/E/2).

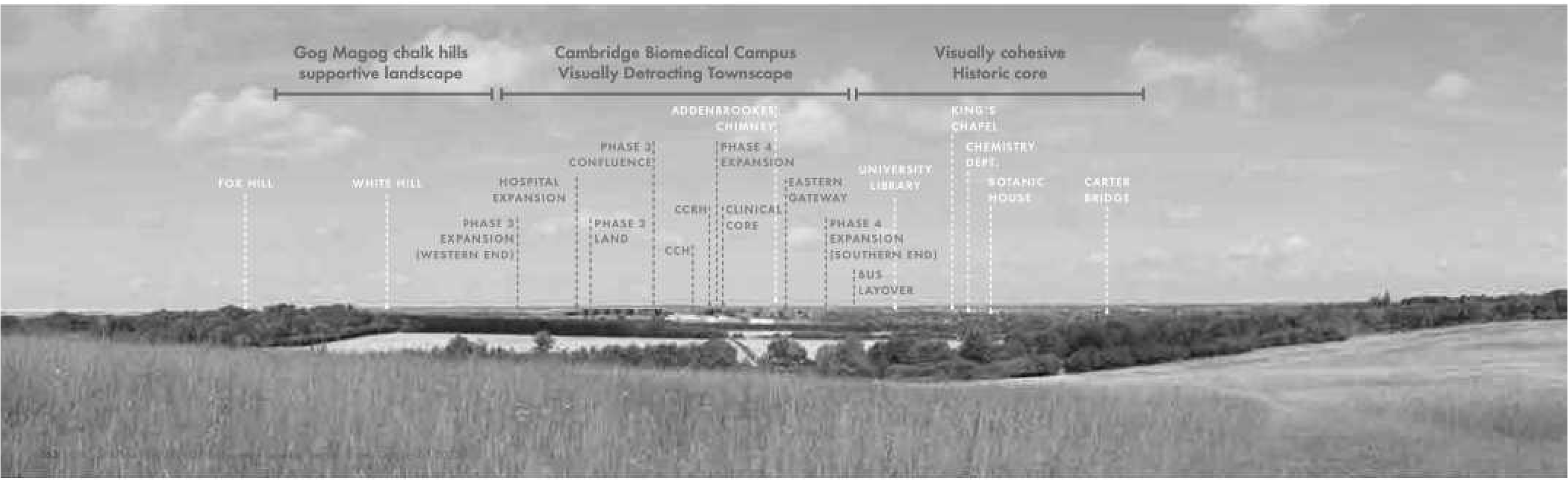
Phase 4 Land: Proposed indicative massing on the expansion land (as per the Local Plan First Proposals – labelled S/CBC/E/e – plus the area of land resulting from the realignment of Gianham's Road')

Enhanced Existing Campus: Proposed indicative massing on plots to be enhanced within the existing campus.

View 1 - Existing



View 1 - CBC 2050 Vision - (cumulative view)



View 1 (Zoom in) - Existing



ADDENBROOKES TREATMENT CENTRE
ARUP MCLAREN CAB
ADDENBROOKES CAR PARK
MRC LAB OF MOLECULAR BIOLOGY
ADDENBROOKES CHIMNEY
CAMBRIDGE ASSESSMENT
WHITE HILL
ARCAM
ROYAL PAPWORTH HOSPITAL
ASTRAZENECA
ADDENBROOKES HOSPITAL
NINEWELLS RESIDENTIAL
UNIVERSITY LIBRARY

View 1 (Zoom in) - CBC 2050 Vision (cumulative view)



Viewpoint 1 from SE

Viewpoint Assessment

Viewpoint 1 Description

Recognised Strategic viewpoint / Cultural value. To quote the Cambridge Strategic Heritage Assessment 2021:

Elevated views from the southeast

3.10.8 Topographically, the land to the southeast of Cambridge provides one of the few elevated locations where panoramic views over the City can be had. Some of these views are affected by the Addenbrooke's development and other modern development, but they do provide a useful reference position for seeing the spread of the City and understanding its form.

3.10.9 Key views in this area include:

- *Little Trees Hill, Magog Down (VP7) (see Illustration 27) – this provides a clear panorama over the city albeit dominated by Addenbrooke's.*

The Local Plan 2018 states;

F.16 One of the most important characteristics of Cambridge is the relationship between the rural setting of the city within a partial 'bowl' of generally low-lying landscape with higher ground to the south-east, south and west and low-lying fen and clay lands to the north and east.

F.17 The built environment of the city occupies a level area of land generally between 5m and 15m AOD (Above Ordnance Datum). … To the south-east lies a chalk ridge including the high point of the Gog Magog Hills, rising to 74m AOD.

Value: High.
Susceptibility to change: High-Moderate.
Sensitivity of visual receptor: High

Baseline Discussion arriving at assessed sensitivity

The view is experienced by users of the permissive paths of Magog Down made available by the Magog Trust. It has been identified as a key viewpoint overlooking the town in the Cambridge Strategic Heritage Assessment. Walkers and visitors to Magog Down are likely to have a high interest in their surroundings.

Factors influencing the assessment 'value';

Relevant Planning Designations: Local Plan Strategic view (no.7). Expansion land and viewpoint both within Green Belt, the former designated for Major Change and Improved Landscaping. View includes topography, landscape features and habitat types that illustrate the Chalklands LCA.

Recognised viewpoint / Cultural value: Local Plan Strategic view. Also referenced in Cambridge Strategic Heritage Assessment.

Scenic beauty: This panoramic view illustrates the city of Cambridge in its wider landscape setting, with far-reaching views beyond. The far-reaching views clearly show Cambridge in its "bowl", surrounded by higher land to the east, west and south. The lowest land in the city lies below the 5m contour along the River Cam. This narrow corridor of low land spreads out into the flat fens to the north of the A14. illustrate the city in its wider river valley setting.

Detractors: Scenic beauty has been adversely affected by the expanse of large buildings rising at the southern edge of the city, including those of the CBC but only to a significant degree with the tower of Addenbrooke's Hospital. The iconic University and buildings that comprise Cambridge's historic core are not visible at this angle and range.

Value
Elements of high and low value present but for the majority of the field of view, the value should be seen as **High.**

Susceptibility to change

Distance, topography, encroaching and intervening tree cover and context of other large-scale development suggests the Site can accommodate change. The extent depends on the arrangement, height and orientation of new buildings on the Site as well as good design detailing and proposed measures for landscape integration. Any change from the horizontal, low-level massing that is the predominant built form character, replaced by buildings that are tall, and / or contain vertical man-made elements extending above the existing built edges and treelines may present a negative effect. The introduction of lower, smaller buildings and finer grain of massing extending into the foreground could provide a more positive city/countryside edge than is currently the case and may have a beneficial effect on the scenic beauty.

Vista and scenic characteristics susceptible to the introduction of large buildings include the loss of open fields and obscuring the wooded valley side. Such changes may have a positive or negative effect on the appreciation of the natural topography and historic townscape behind.

The loss of tree cover and hedgerows, a distinctive element that define the landscape character, may have a negative effect.

Susceptibility
On balance the susceptibility to change is **High-Moderate**.

Sensitivity of Visual Receptor

Combining **High Value** with **High-Moderate Susceptibility** arrives at a **High Sensitivity**

Construction/demolition-stage Effects

- Cranes seen from a distance in summer and winter.
- Demolition and construction activities.
- Removal of open field in middle ground.
- Advanced planting likely to be providing some mitigation effect during construction period.
- While visual impact will be very noticeable, it is at nearly 3 kms distance and does not occupy the majority of the view and would not interrupt the horizon.

Magnitude of impact:

Medium-High

Operational-stage Effects

- From this elevated position, the Chalk Hills topography, city and fenland beyond are the dominant points of interest in the far-reaching and wide panoramic view. Within this context the Proposed Development is introducing change to a small area of the view composition, nevertheless an important one in the middle ground of view at the city's edge.
- The Addenbrooke's Hospital buildings introduce more height and mass within the built area but do not interrupt the horizon and views to the historic city core and landscape beyond.
- The proposed expansion land development replaces open field and extends the city toward the viewer, albeit somewhat contained by topography and existing woodland belts.
- The extension of built form to the south (on to the phase 3 and 4 land) is an opportunity to improve on the current high wall of built edge offered by the CBC. The massing orientation, stepping down in height and size from the previous phases, can be seen as a positive. Seen within the river valley landscape context and set against the rising backdrop, the smaller scale and variation in block elevations and roof profile is expected to introduce variety and a finer grain of detail, enhancing the aesthetic quality of the settlement edge.
- The existing built edge of recently built Urwin Gardens development to the site's NE boundary, although of an entirely different use and scale, presents principles of a good, well designed outward looking edge within green infrastructure that sets a good example and an interface that should be sensitively addressed.
- The introduction of Green Infrastructure and planted open spaces within the public realm and providing new boundary woodlands to the new extended settlement edge, assists in integrating the built form into the landscape.
- Development does not obscure visually important landscape features. The mature tree belts and wooded hills remain intact as does the rolling farmland foreground, with views of the city and fenlands beyond.
- Colour and materials applied through a Design Code should respect local Landscape and Townscape Character and add variety into the scene. The natural weathering process and colour of natural/ sustainable materials applied to buildings (with restrained use of glass) is expected to recede the massing and integrate into the established and establishing wooded foreground and backdrop.
- Considering the balance between improvement to settlement edge treatment (anticipating high quality detailed design and the successful establishment of boundary planting) with the incursion into countryside, reduces adverse visual effects and improves on the assessment from construction stage.
- Although negligible at this distance and angle of view, the proposed realignment of Granham's Road to the south will create a more continuous green infrastructure boundary opportunity that would further improve the foreground.

Magnitude of impact

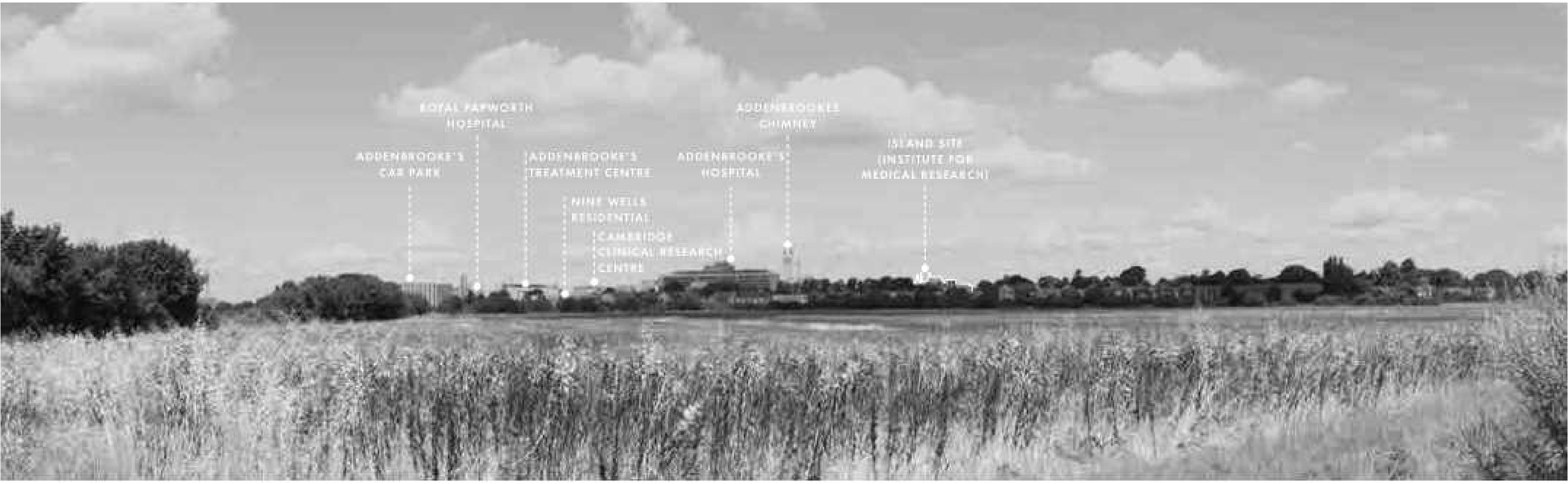
Low

Receptor Sensitivity	Impact Magnitude Construction Stage (high/medium/low)	Predicted Effect and Significance (Major adverse, Major/Moderate adverse findings are Significant)	Impact Magnitude Completion/operation (high/medium/low)	Predicted residual operational Significance of effect at 2050 (Major adverse, Major/Moderate adverse findings are identified as Significant)
High	Medium/High	**Major/Moderate adverse**	Low	**Moderate adverse**

Viewpoint 1 Summary Table

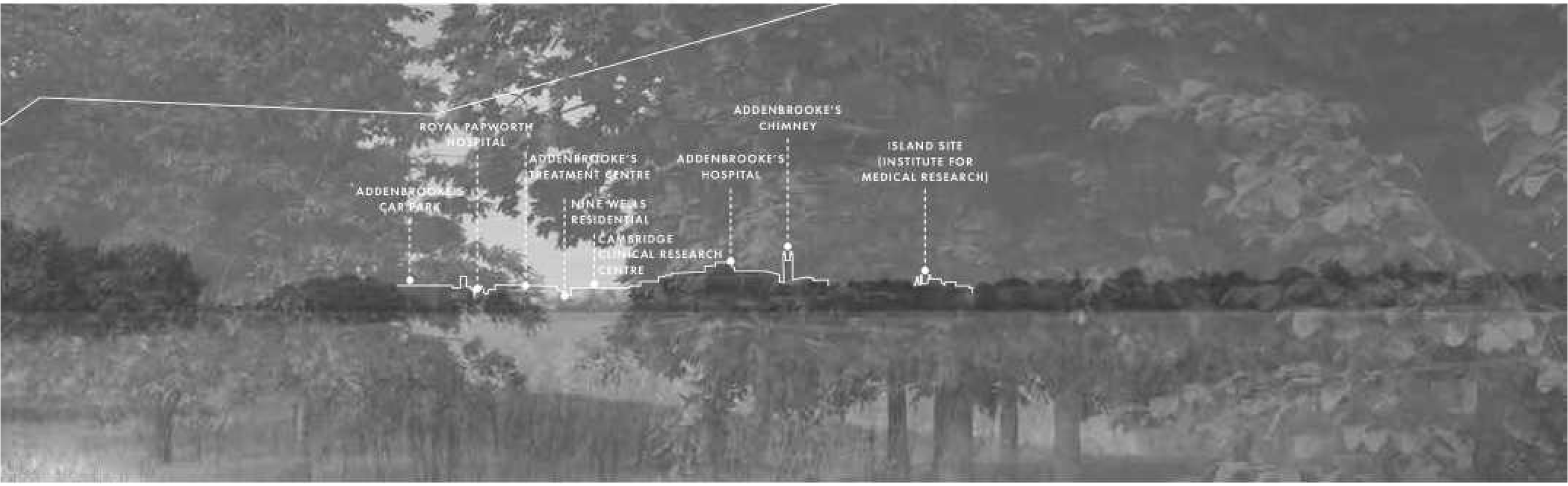
View 5 - Existing



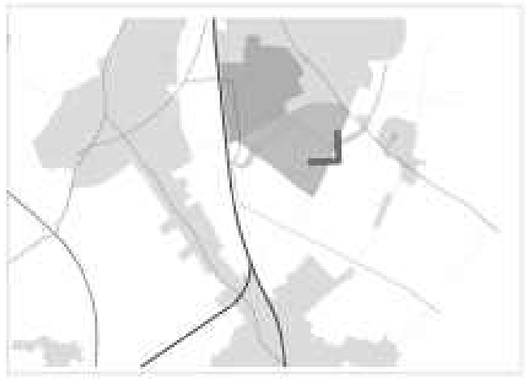


View 5 - CBC 2050 Vision (semi-opaque view)





View 5 - CBC 2050 Vision (cumulative view)





Viewpoint 5 from SE

Viewpoint Assessment

Viewpoint 5 Description

Not a recognised Strategic viewpoint but The Local Plan 2018 suggests;

F.23 Applications for tall buildings should carefully consider other local views on key approach roads. Applications for tall buildings also need to assess relevant key views from footpaths along the river corridor within the city which do not fall within the commons or The Backs, such as areas around Riverside.

F.24 It is possible to attach a degree of weight to those views that relate to the buildings, landscapes and settings, and particularly listed buildings and their settings, conservation areas, etc. Views of the historic core and the key buildings within the core are therefore particularly important to protect. …Other views of particular note include those experienced from the south-west of the city.

Value: Moderate.
Susceptibility to change: Moderate.
Sensitivity of visual receptor: Moderate.

Baseline Discussion arriving at assessed sensitivity

The view looking directly into the proposed expansion land site is experienced by drivers along Granham's Road seen through a gap in hedgerow or pedestrians walking north from the road on the public footpath. Walkers are likely to have a high interest in their surroundings.

Factors influencing the assessment 'value';

Relevant Planning Designations: The expansion land and viewpoint are both within Green Belt, the former designated for Major Change and Improved Landscaping. The view does not best represent topography, landscape features and habitat types that illustrate the Chalklands LCA. CBA LCA Fig 4.3 places the site in an area of only Moderate Strength of characteristics.

Recognised viewpoint / Cultural value: No.

Scenic beauty: This view across open field, clearly shows settlement edge, flat topography and built form interwoven with vegetation against the horizon.

Detractors: Scenic beauty has been adversely affected by the expanse of large buildings rising at the southern edge of the city, including those of the CBC but only to a significant degree with the tower and main building of Addenbrooke's Hospital. The condition of the field vegetation and variable boundary vegetation do not suggest an intact and good condition landscape. The iconic University and buildings that comprise Cambridge's historic core are not visible at this angle and range.

Elements of high and low value present but for the majority of the field of view, the value should be seen as **High.**

Susceptibility to change

Distance, topography, encroaching and intervening tree cover and context of other large-scale development suggests the Site can accommodate change. The extent depends on the arrangement, height and orientation of new buildings on the Site as well as good design detailing and proposed measures for landscape integration. Any change from the horizontal, low-level massing that is the predominant built form character, replaced by buildings that are tall, and / or contain vertical man-made elements extending above the existing built edges and treelines may present a negative effect. The introduction of lower, smaller buildings and finer grain of massing extending into the foreground could provide a more positive city/countryside edge than is currently the case and may have a beneficial effect on the scenic beauty.

Vista and scenic characteristics susceptible to the introduction of large buildings include the loss of open fields and obscuring the wooded valley side. Such changes have a positive or negative effect on the appreciation of the natural topography and historic townscape behind.

The loss of tree cover and hedgerows, a distinctive element that define the landscape character may have a negative effect.

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The introduction of lower, smaller buildings and finer grain of massing extending into the foreground could provide a more positive city/countryside edge than is currently the case and may have a beneficial effect on the scenic beauty. New boundary planting, once established, could almost entirely screen the view from the road at this point.

Susceptibility
On balance the susceptibility to change is **Moderate**.

Sensitivity of Visual Receptor

Combining **Moderate Value** with **Moderate Susceptibility** arrives at a **Moderate Sensitivity**

Construction/demolition-stage Effects

- Cranes seen in summer and winter.
- Demolition and construction activities.
- Removal of open field.
- Visual impact will be in close proximity to viewer and occupy the majority of the view and would interrupt the horizon.

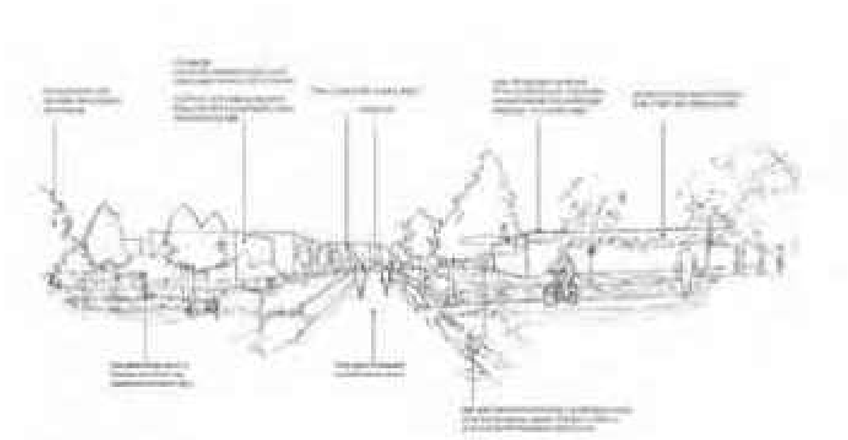
Magnitude of impact:

High

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Operational-stage Effects

- Proposed Development is introducing large scale change in close proximity to the viewer.
- The hospital area increases in height, mass and the extent of horizon lost.
- The proposed extension land development replaces open field, obscures much of the horizon and extends the city toward the viewer, albeit somewhat contained by existing woodland belts.
- The extension of built form is an opportunity to improve on the current high wall of built edge offered by the CBC. The massing orientation, stepping down in height and size from the previous phases, can be seen as a positive but would be barely seen from this viewpoint. The importance of lowered roofline and well designed architectural detail with well integrated landscape will be an important factor in mitigation.
- The introduction of Green Infrastructure and planted open spaces within the public realm and providing new boundary woodlands to the new extended settlement edge, will assist in integrating (and from this viewpoint, potentially screening, in part) the built form into the landscape.
- Colour and materials applied through a Design Code should respect local Landscape and Townscape Character and add variety into the scene. The natural weathering process and colour of natural/ sustainable materials applied to buildings (unless glass) is expected to recede the massing and integrate into the wooded backdrop.
- Considering the balance between improvement to settlement edge treatment with the incursion into countryside, reduces adverse visual effects and improves on the assessment from construction stage. New boundary planting, once established, could almost entirely screen the view from the road at this point but some account should be taken of filtered winter views and the open view at the entrance to and once on the public footpath on the development's side of the new planting. Our sketch from our initial work last year indicated this:



Magnitude of impact

Low

Receptor Sensitivity	Impact Magnitude Construction Stage (high/medium/low)	Predicted Effect and Significance (Major adverse. Major/Moderate adverse findings are Significant)	Impact Magnitude Completion/operation (high/medium/low)	Predicted residual operational Significance of effect at 2050 (Major adverse, Major/Moderate adverse findings are identified as Significant)
Medium	High	**Major/Moderate adverse**	Low	**Moderate/minor adverse**

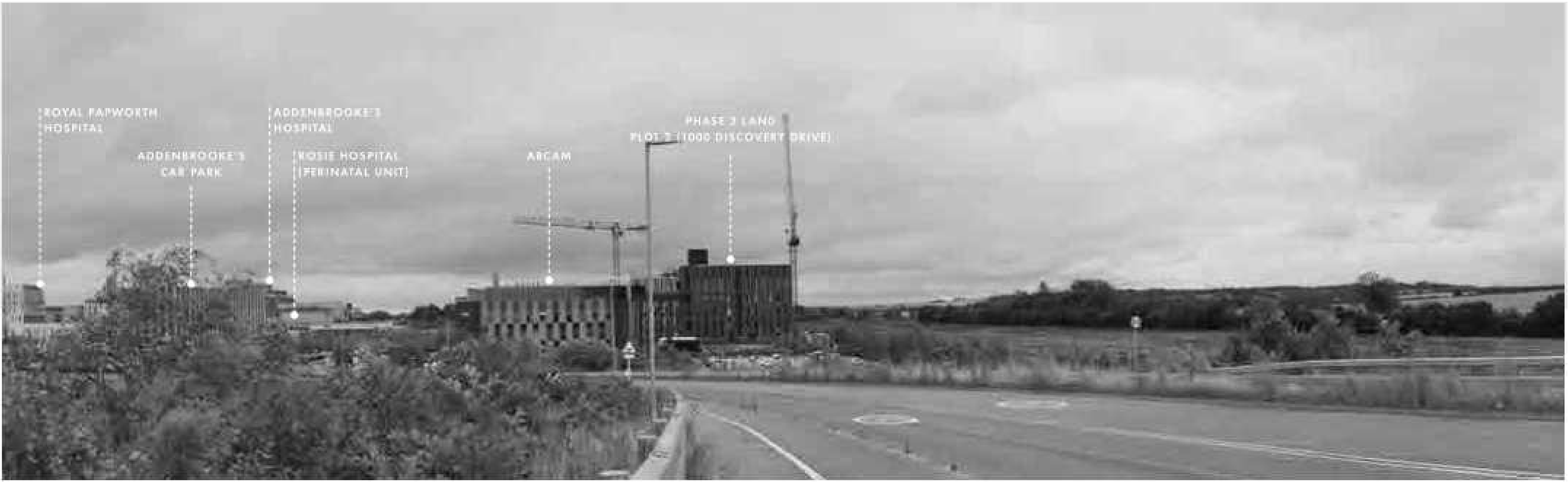
Viewpoint 5 Summary Table

terrafirma

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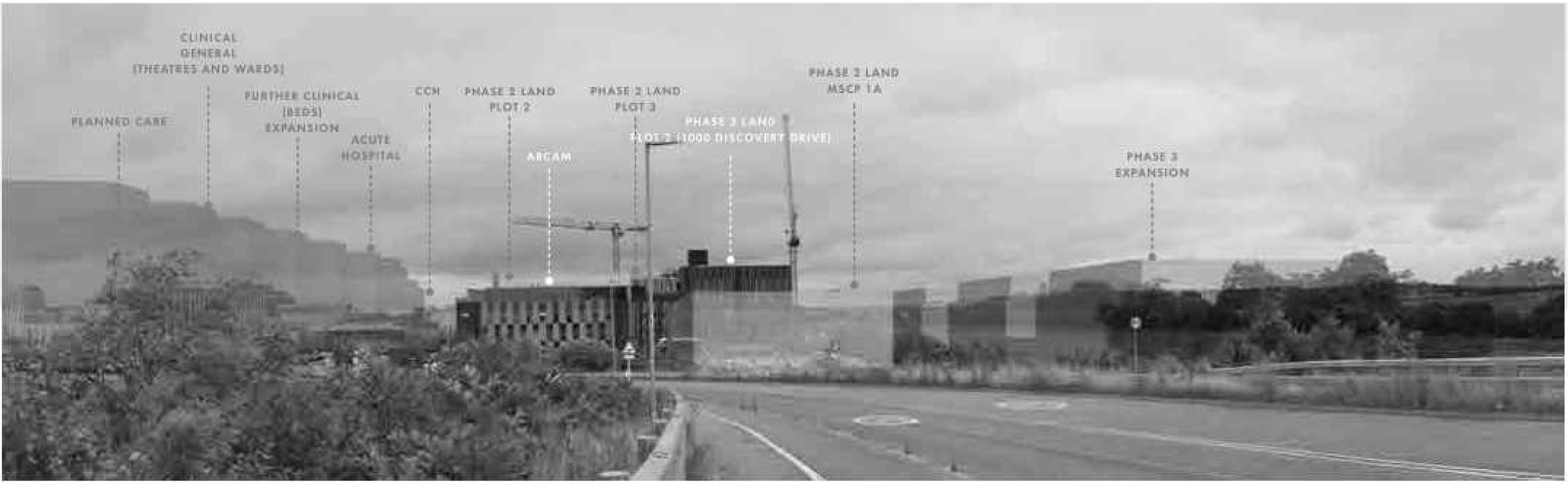
View 7 - Existing





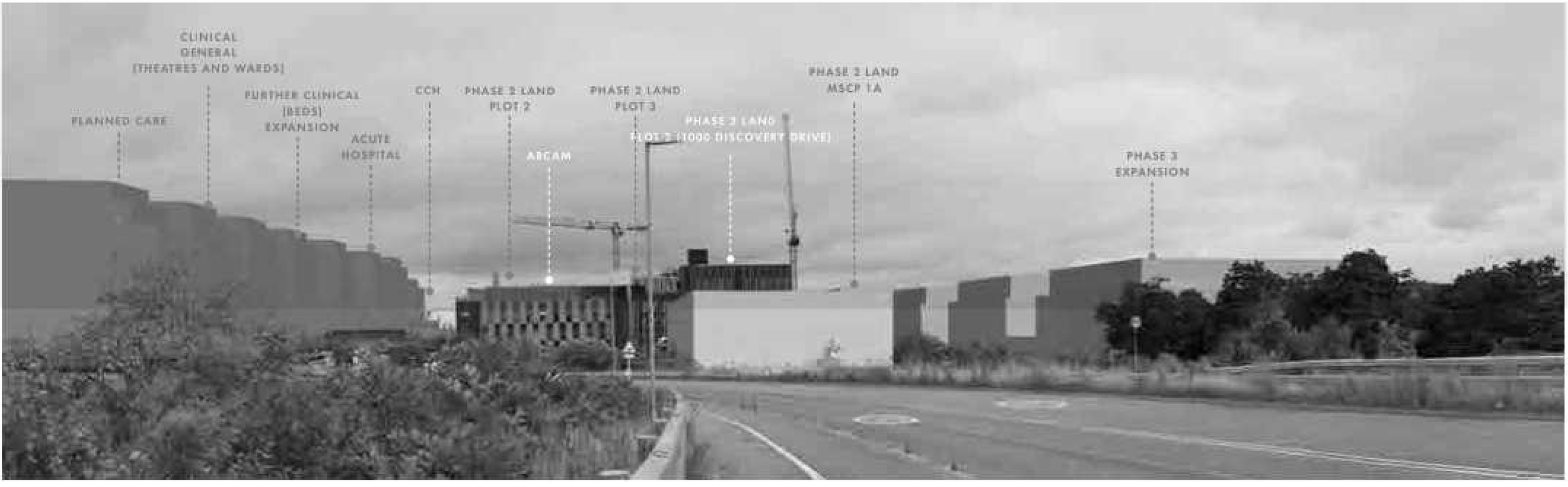
View 7 - CBC 2050 Vision (semi-opaque view)





View 7 - CBC 2050 Vision (cumulative view)





Viewpoint 7 from W

Viewpoint Assessment

Viewpoint 7 Description

Not a recognised Strategic viewpoint but the Local Plan 2018 suggests:

F.23 Applications for tall buildings should carefully consider other local views on key approach roads. Applications for tall buildings also need to assess relevant key views from footpaths along the river corridor within the city which do not fall within the commons or The Backs, such as areas around Riverside.

F.24 It is possible to attach a degree of weight to those views that relate to the buildings, landscapes and settings, and particularly listed buildings and their settings, conservation areas, etc. Views of the historic core and the key buildings within the core are therefore particularly important to protect. ...Other views of particular note include those experienced from the south-west of the city.

Value: Moderate.
Susceptibility to change: Moderate.
Sensitivity of visual receptor: Moderate.

Open, panoramic view, looking directly at the current and permitted CBC, with Phase 3, which has already been allocated, to the south (right hand side of picture). The view would be experienced by drivers, pedestrians and cyclists on Addenbrooke's Road railway bridge approaching CBC from the west.

Factors influencing the assessment 'value':

Relevant Planning Designations: Viewpoint is within Green Belt. The land occupied by built development (current, permitted and allocated) has already been removed from the Green Belt and allocated for development. View moderately represents topography, landscape features and habitat types that illustrate the Southern Fringe and Chalklands LCAs. CBA LCA Fig 4.3 places the site in an area of only Moderate Strength of characteristics.

Recognised viewpoint / Cultural value: No.

Scenic beauty: This view across road and open field, clearly shows existing and permitted CBC buildings predominating the settlement edge, flat topography and horizon, stepping down with the expansion land proposals. Arguably, the built form is in itself a feature of interest and the view anticipates an approach to a cohesive CBC district. The wooded block of Nine Wells and rising chalkland hills behind are a positive feature of the view, providing the countryside edge and landscape context.

Detractors: Scenic beauty has been adversely affected by the highway foreground and expanse of large buildings rising at the southern edge of the city, including those of the CBC. The condition of the field vegetation and variable boundary vegetation do not suggest an intact and good condition landscape in the foreground. The proposed CSET2 route would pass between the road and the permitted MSCP (in yellow).

Value

Elements of high and low value present but the for the majority of the field of view, the value should be seen as **Moderate.**

Susceptibility to change

Topography, condition and containment suggests the Site can accommodate change. The extent depends on the arrangement, height and orientation of new buildings on the Site as well as good design detailing and proposed measures for landscape integration.

Vista and scenic characteristics susceptible to the introduction of new buildings include the loss of open fields and obscuring the current horizon. May have a positive or negative effect in creating a new settlement edge.

Susceptible to loss of tree cover and hedgerows, a distinctive element that define the landscape Character.

The introduction of lower, smaller buildings and finer grain of massing extending into the countryside to the south, accompanied by extensive GI within and at boundaries could provide a more positive city/countryside edge than is currently the case and may have a beneficial effect on the scenic beauty.

Susceptibility
On balance the susceptibility to change is **Moderate**.

Sensitivity of Visual Receptor

Combining **Moderate Value** with **Moderate Susceptibility** arrives at a **Moderate Sensitivity**

Construction/demolition-stage Effects

- Cranes seen in summer and winter.
- Demolition and construction activities.
- Removal of open field.
- Visual impact will be in close proximity to viewer and occupy much of the view and would interrupt the horizon.

Magnitude of impact:

Medium-High

Operational-stage Effects

- The proposed development phases within the hospital area increase in height and mass.
- The proposed expansion land development (Phase 3, which is already allocated) replaces open field, obscures some existing horizon and extends built form into the countryside, albeit stepping down and somewhat contained by existing woodland belts.
- The extension of built form is an opportunity to improve on the current high wall of built edge offered by the CBC. The massing orientation, stepping down in height and size from the previous phases, can be seen as a positive and would be evident from this viewpoint. The landscape will be an important factor in mitigation.
- The extension of built form is an opportunity to improve on the current high wall of built edge offered by the CBC. The massing orientation, stepping down in height and size from the previous phases, can be seen as a positive and would be evident from this viewpoint. The landscape will be an important factor in mitigation.
- The introduction of Green Infrastructure and planted open spaces within the public realm and providing new boundary woodlands to the new extended settlement edge, will assist in integrating (and from this viewpoint, potentially screening ,in part) the built form into the landscape.
- Colour and materials applied through a Design Code should respect local Landscape and Townscape Character and add variety into the scene. The natural weathering process and colour of natural/ sustainable materials applied to buildings (unless glass) is expected to recede the massing and integrate into the established and establishing wooded foreground and backdrop.
- Considering the balance between improvement to settlement edge treatment with the incursion into countryside, reduces adverse visual effects and improves on the assessment from construction stage.

Magnitude of impact

Low

Receptor Sensitivity	**Impact Magnitude Construction Stage** (high/medium/low)	**Predicted Effect and Significance** (Major adverse, Major/Moderate adverse findings are Significant)	**Impact Magnitude Completion/operation** (high/medium/low)	**Predicted residual operational Significance of effect at 2050** (Major adverse, Major/Moderate adverse findings are identified as Significant)
Medium	High	**Major/Moderate adverse**	Low	**Moderate/minor adverse**

Viewpoint 7 Summary Table

View 10 - Existing





View 10 - CBC 2050 Vision (cumulative view)





Viewpoint 10 from E

Viewpoint Assessment

Viewpoint 10 Description

Recognised Strategic viewpoint / Cultural value. To quote the Cambridge Strategic Heritage Assessment 2021:

Elevated views from the southeast

3.10.8 Topographically, the land to the southeast of Cambridge provides one of the few elevated locations where panoramic views over the City can be had. Some of these views are affected by the Addenbrooke's development and other modern development, but they do provide a useful reference position for seeing the spread of the City and understanding its form.

3.10.9 Key views in this area include:

- *Junction of Shelford Road and Harcamlow Way (VP9 – see Illustration 28)*
- ***Limekiln Road lay-by (VP8) – partially obscured by fence and vegetation***

The Local Plan 2018 states;

F.16 Views from the rural hinterland of Cambridge from both elevated and level views of the spires and towers in the historic core are limited and generally distant.
a. Views from the south-east:

- *Junction of Shelford Road and Harcamlow Way (VP9 – see Illustration 28)*
- ***Limekiln Road lay-by (VP8) – partially obscured by fence and vegetation***
- *From the south-east of the city, panoramic views are afforded from the following locations around the Gog Magog Hills and Magog Down (associated with Wandlebury Country Park) and elevated land to the south-east of Cherry Hinton. The view from the junction of Shelford Road/Worts' Causeway and the Harcamlow Way is one of the few viewpoints where a panorama is afforded that takes in both Addenbrooke's Hospital, the City Centre and the hangars at Cambridge Airport;*
- *Little Trees Hill, Magog Down;*
- *Junction of Shelford Road and Harcamlow Way; and*
- ***Limekiln Road lay-by.***

Value: High.
Susceptibility to change: High-Moderate.
Sensitivity of visual receptor: High

Baseline Discussion arriving at assessed sensitivity

View experienced by users of Limekiln Road and its layby. Identified as a key viewpoint overlooking the town but acknowledged obscured by foreground fence and vegetation.

Factors influencing the assessment 'value';

Relevant Planning Designations: Local Plan Strategic view (no.8). Site and viewpoint both within Green Belt, the former designated for Major Change and Improved Landscaping. View includes glimpses (that could develop to filtered views in winter months when vegetation not in leaf) of topography, landscape features and habitat types that illustrate the Chalklands LCA .

Recognised viewpoint / Cultural value: Local Plan Strategic view. Also referenced in Cambridge Strategic Heritage Assessment.

Scenic beauty: This panoramic view is designated strategic view status as it illustrates the city of Cambridge in its wider landscape setting but the angle of view selected for this study is toward the proposed site and is for the large part obscured.

Detractors: Likely to include Addenbrooke's Hospital but obscured.

Value
Elements of high and low value likely to be present but the for the majority of the field of view, Due to designation, the value should be seen as **High.**

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Susceptibility to change
Intervening vegetation makes visual assessment impossible.

Susceptibility
With no visibility, the susceptibility to change is **Low**.

Sensitivity of Visual Receptor

Combining **High Value** with **Low Susceptibility** arrives at a **Medium Sensitivity**

Construction/demolition-stage Effects

- Cranes seen from a distance in winter.
- Demolition and construction activities.
- Removal of open field in middle ground.
- While visual impact is likely to be noticeable in winter, it is filtered at over 1km distance and does not occupy the majority of the view and would not quite interrupt the horizon.

Magnitude of impact:

Medium

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Operational-stage Effects

- The site is obscured in summer and would only be glimpsed with filtered views through layers of intervening vegetation when not in leaf and would be unlikely to break the horizon if suggested parameters adhered to.

Magnitude of impact

Nil

Receptor Sensitivity	**Impact Magnitude Construction Stage** (high/medium/low)	**Predicted Effect and Significance** (Major adverse, Major/Moderate adverse findings are Significant)	**Impact Magnitude Completion/operation** (high/medium/low)	**Predicted residual operational Significance of effect at 2050** (Major adverse, Major/Moderate adverse findings are identified as Significant)
Medium	Medium	**Moderate adverse**	Nil	**Neutral**

Viewpoint 10 Summary Table

View 11 - Existing





View 11 - CBC 2050 Vision (cumulative view)





Viewpoint 11 from E

Viewpoint Assessment

Viewpoint 11 Description

Recognised Strategic viewpoint / Cultural value. To quote the Cambridge Strategic Heritage Assessment 2021:

Elevated views from the southeast

3.10.8 Topographically, the land to the southeast of Cambridge provides one of the few elevated locations where panoramic views over the City can be had. Some of these views are affected by the Addenbrooke's development and other modern development, but they do provide a useful reference position for seeing the spread of the City and understanding its form.

3.10.9 Key views in this area include:

- ***Junction of Shelford Road and Harcamlow Way (VP9 – see Illustration 28)***

The Local Plan 2018 states:

F.20 Views from the rural hinterland of Cambridge from both elevated and level views of the spires and towers in the historic core are limited and generally distant.
a. Views from the south-east:

- *From the south-east of the city, panoramic views are afforded from the following locations around the Gog Magog Hills and Magog Down (associated with Wandlebury Country Park) and elevated land to the south-east of Cherry Hinton. The view from the junction of Shelford Road/Worts' Causeway and the Harcamlow Way is one of the few viewpoints where a panorama is afforded that takes in both Addenbrooke's Hospital, the City Centre and the hangars at Cambridge Airport;*
- *Little Trees Hill, Magog Down;*
- ***Junction of Shelford Road and Harcamlow Way**; and*
- *Limekiln Road lay-by.*

3.10.9 Key views in this area include:

- ***Junction of Shelford Road and Harcamlow Way (VP9 – see Illustration 28)***

LDA Study;
Strategic Viewpoint 9 is located on Worts' Causeway/Shelford Road, on the Gog Magog Hills to the south of Cambridge. Views towards Addenbrooke's are along the road. The incinerator chimneys are visible breaking the skyline, with other buildings such as the main hospital building and the Royal Papworth Hospital also visible beyond a low-lying rural context. The historic core is located in a separate part of the view.

Value: High.
Susceptibility to change: Low.
Sensitivity of visual receptor: Medium.

Baseline Discussion arriving at assessed sensitivity

View experienced by road users Shelford Road and Worts' Causeway PROW who are likely to have a high interest in their surroundings.

Factors influencing the assessment 'value';

Relevant Planning Designations: Local Plan Strategic view (No 9). Site and viewpoint both within Green Belt, the former designated for Major Change and Improved Landscaping. View includes topography, landscape features and habitat types that illustrate the Chalklands LCA.

Recognised viewpoint / Cultural value: Local Plan Strategic view. Also referenced in Cambridge Strategic Heritage Assessment.

Scenic beauty: This view across arable agricultural field with strong woodland boundaries. This panoramic view is designated strategic view status as it illustrates the city of Cambridge in its wider landscape setting but the angle of view selected for this study is toward the proposed site which is obscured by intervening topography and woodland.

Detractors: Likely to include Addenbrooke's Hospital but obscured.
These contrast with the iconic University and buildings that comprise Cambridge's historic core but these are not visible at this angle and range.

Value
Elements of high and low value present but the site is not visible. Due to designation, the value should be seen as **High.**

-

Susceptibility to change
Intervening topography and vegetation leave only a very small gap of view.

Susceptibility
With minimum field of visibility, the susceptibility to change is **Low**.

Sensitivity of Visual Receptor

Combining **High Value** with **Low Susceptibility** arrives at a **Medium Sensitivity**

Construction/demolition-stage Effects

- Little visibility likely, even with cranes and in winter.

Magnitude of impact:

Low

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Operational-stage Effects

- Increase in built form with new hospital area development perceptible at distance mid view but the extension land is obscured. It is unlikely to break the horizon (at least with any degree of obvious perceptibility).

Magnitude of impact

Nil

Receptor Sensitivity	**Impact Magnitude Construction Stage** (high/medium/low)	**Predicted Effect and Significance** (Major adverse, Major/Moderate adverse findings are Significant)	**Impact Magnitude Completion/operation** (high/medium/low)	**Predicted residual operational Significance of effect at 2050** (Major adverse, Major/Moderate adverse findings are identified as Significant)
Medium	Low	**Moderate/minor adverse**	Nil	**Neutral**

Viewpoint 11 Summary Table

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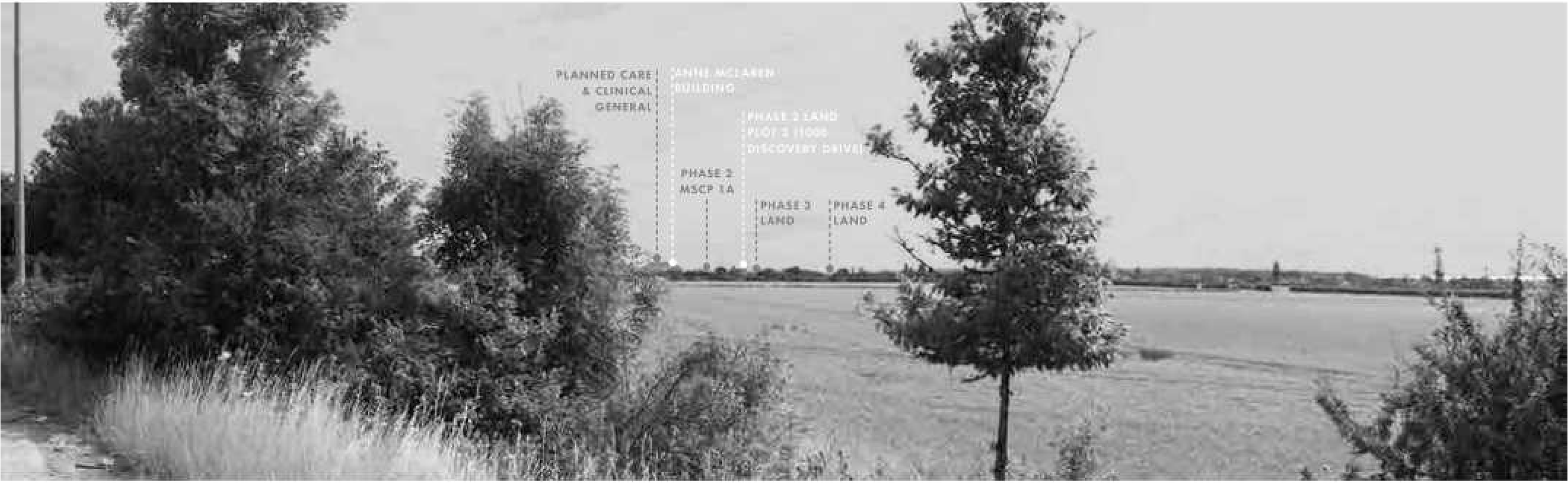
View 12 - Existing





View 12 - CBC 2050 Vision (cumulative view)





Viewpoint 12 from W

Viewpoint Assessment

Viewpoint 12 Description

Recognised Strategic viewpoint / Cultural value. The Cambridge Strategic Heritage Assessment 2021 includes views from the southwest but does not specifically refer to this one.

The Local Plan 2018 suggests:

F.23 One of the most important characteristics of Cambridge is the relationship between the rural setting of the city within a partial 'bowl' of generally low-lying landscape with higher ground to the south-east, south and west and low-lying fen and clay lands to the north and east.

F.24 Views from the rural hinterland of Cambridge from both elevated and level views of the spires and towers in the historic core are limited and generally distant.
a. Views from the south-west and south;

- *Grantchester Road;*
- *Grantchester Meadows; and*
- ***Hauxton Road, north of junction 11 of the M11.***

Value: High.
Susceptibility to change: Low.
Sensitivity of visual receptor: Medium.

Baseline Discussion arriving at assessed sensitivity

View experienced by road users and limited access for walkers.

Factors influencing the assessment 'value';

Relevant Planning Designations: Local Plan Strategic view (No. 6). Site and viewpoint both within Green Belt, the former designated for Major Change and Improved Landscaping. View includes topography, landscape features and habitat types that illustrate the Southern Fringe LCA.

Recognised viewpoint / Cultural value: Local Plan Strategic view.

Scenic beauty: This panoramic view is designated strategic view status as it illustrates the city of Cambridge in its wider landscape setting but the angle of view selected for this study is toward the proposed site and is for the large part obscured.

Detractors: Likely to include Addenbrooke's Hospital but obscured.

Value
Elements of high and low value likely to be present but the for the majority of the field of view. Due to designation, the value should be seen as **High.**

Susceptibility to change
Intervening vegetation will largely screen proposed development but with some filtered visibility in winter. It should unlikely break the horizon (at least with any degree of obvious perceptibility).

Susceptibility
With little or no visibility, the susceptibility to change is **Low**.

Sensitivity of Visual Receptor

Combining **High Value** with **Low Susceptibility** arrives at a **Medium Sensitivity**

Construction/demolition-stage Effects

- Cranes seen from a distance in winter.
- Demolition and construction activities.
- While visual impact is likely to be noticeable in winter, it is filtered at over 2kms distance and does not occupy the majority of the view and would not quite interrupt the horizon.

Magnitude of impact;

Low

Operational-stage Effects

- Hospital area development visible and breaks horizon. While Phase 3 & 4 development may have some filtered visibility in winter, it is at over 2kms distance and the extension land development would not interrupt the horizon.

Magnitude of Impact

Nil

Receptor Sensitivity	Impact Magnitude Construction Stage (high/medium/low)	Predicted Effect and Significance (Major adverse, Major/Moderate adverse findings are Significant)	Impact Magnitude Completion/operation (high/medium/low)	Predicted residual operational Significance of effect at 2050 (Major adverse, Major/Moderate adverse findings are identified as Significant)
Medium	Low	**Moderate/Minor adverse**	Nil	**Neutral**

Viewpoint 12 Summary Table

Summary Table

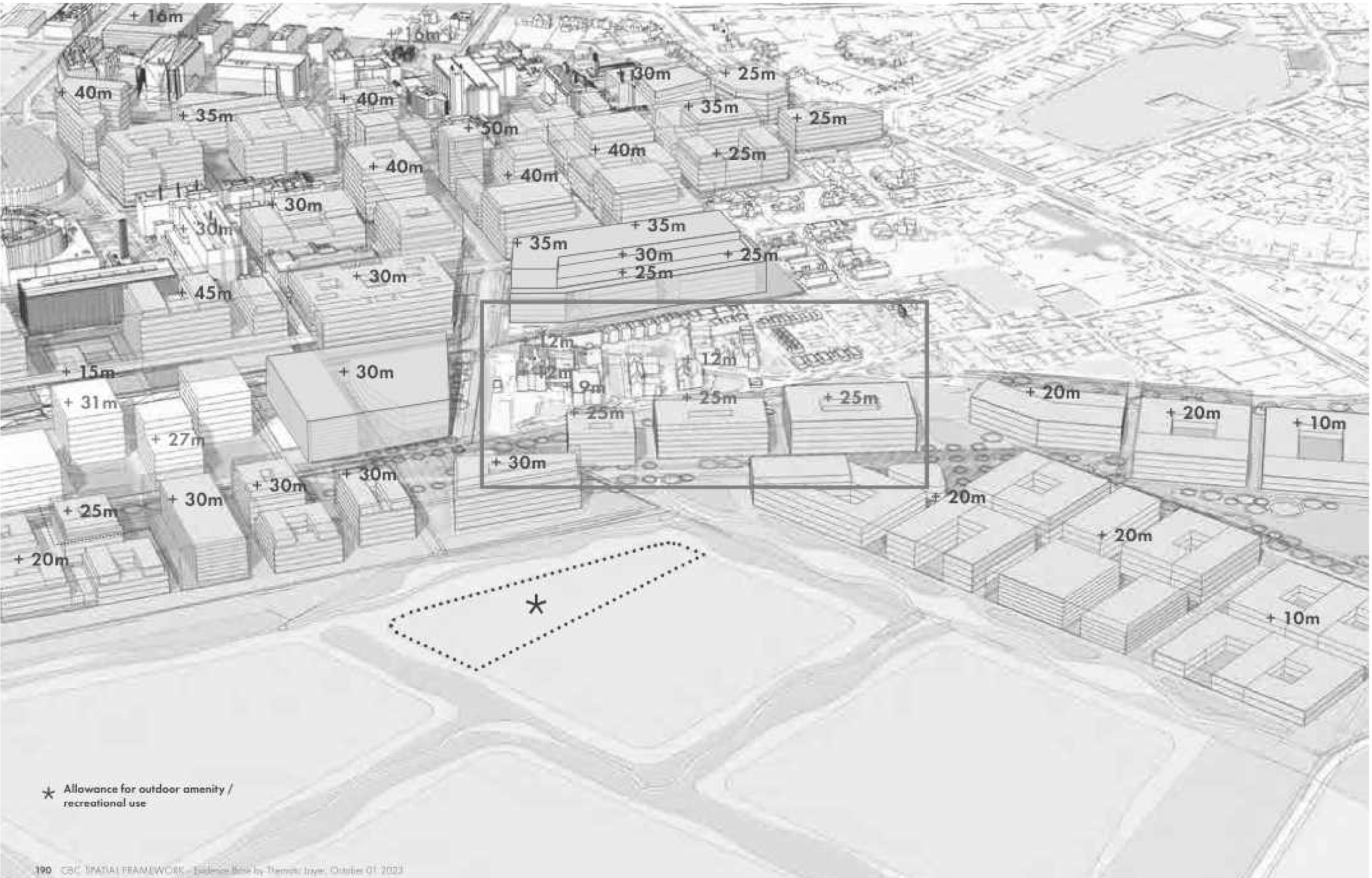
Representative viewpoint	Predicted effect and Significance of effect at 2050	Comment
1 from SE	Moderate adverse	Strategic View, significantly effected due to encroachment into foreground countryside. However, main harm is with existing built form and previous and permitted phases and there is an opportunity to improve the urban edge with the expansion if high quality detailed design and green infrastructure is proposed.
5 from SE	Moderate/Minor adverse	Not Strategic view but close up and significant. There is an opportunity to improve the urban edge with the expansion if high quality detailed design and green infrastructure is proposed.
7 from W	Moderate/Minor adverse	Not Strategic view but open panorama and significant. However, main harm is with existing built form and previous and permitted phases and there is an opportunity to improve the urban edge with the expansion if high quality detailed design and green infrastructure is proposed.
10 from E	Neutral	Strategic view though not aligned with its prime orientation and extension land obscured.
11 from E	Neutral	Strategic view though not aligned with its prime orientation and extension land obscured.
12 from W	Neutral	Strategic view though not aligned with its prime orientation and extension land largely obscured.

Summary recommendations

- **This study bears out the outcomes alluded to in earlier work last year where visual sensitivities were suggested to be within the immediate proximity to site and from high ground directly to the south.**
- **4 Strategic views were tested and only VP 1 (Cambridge Strategic View 7) was found to be affected. This confirms this to be the viewpoint most important to test visual parameters going forward but this scoring sits under the threshold of significance and could even be further improved depending on the quality of detailed design and the speed of establishment of new boundary vegetation.**
- **The two non-strategic viewpoints (5 and 7) were found to be adversely but not significantly affected and there would be others within close proximity to site boundaries as suggested in last year's study.**
- **Key recommendations from this work are to maintain the approach of stepping down the building height parameters as the CBC extends south into the countryside and to provide more variety in orientation and massing than the current built edge provided by CBC.**
- **Green Infrastructure is anticipated to permeate this and form new, well connected boundaries to enhance the extended settlement edge.**

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Edge Interfaces - Nine Wells Residential



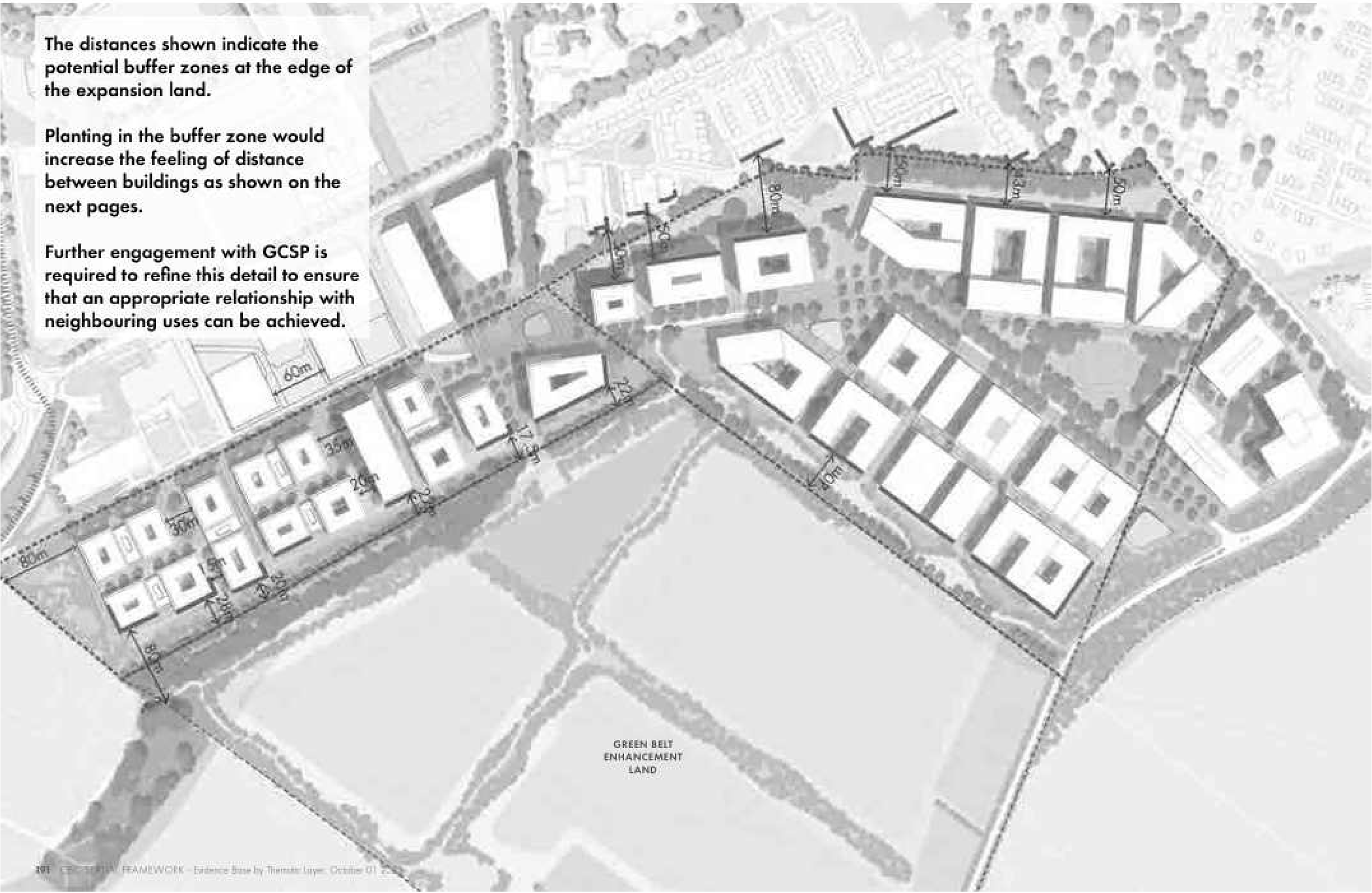
* Allowance for outdoor amenity / recreational use

New Campus Edge: Illustrative Buffer Zones (Including Nine Wells Nature Reserve & Residential Development)

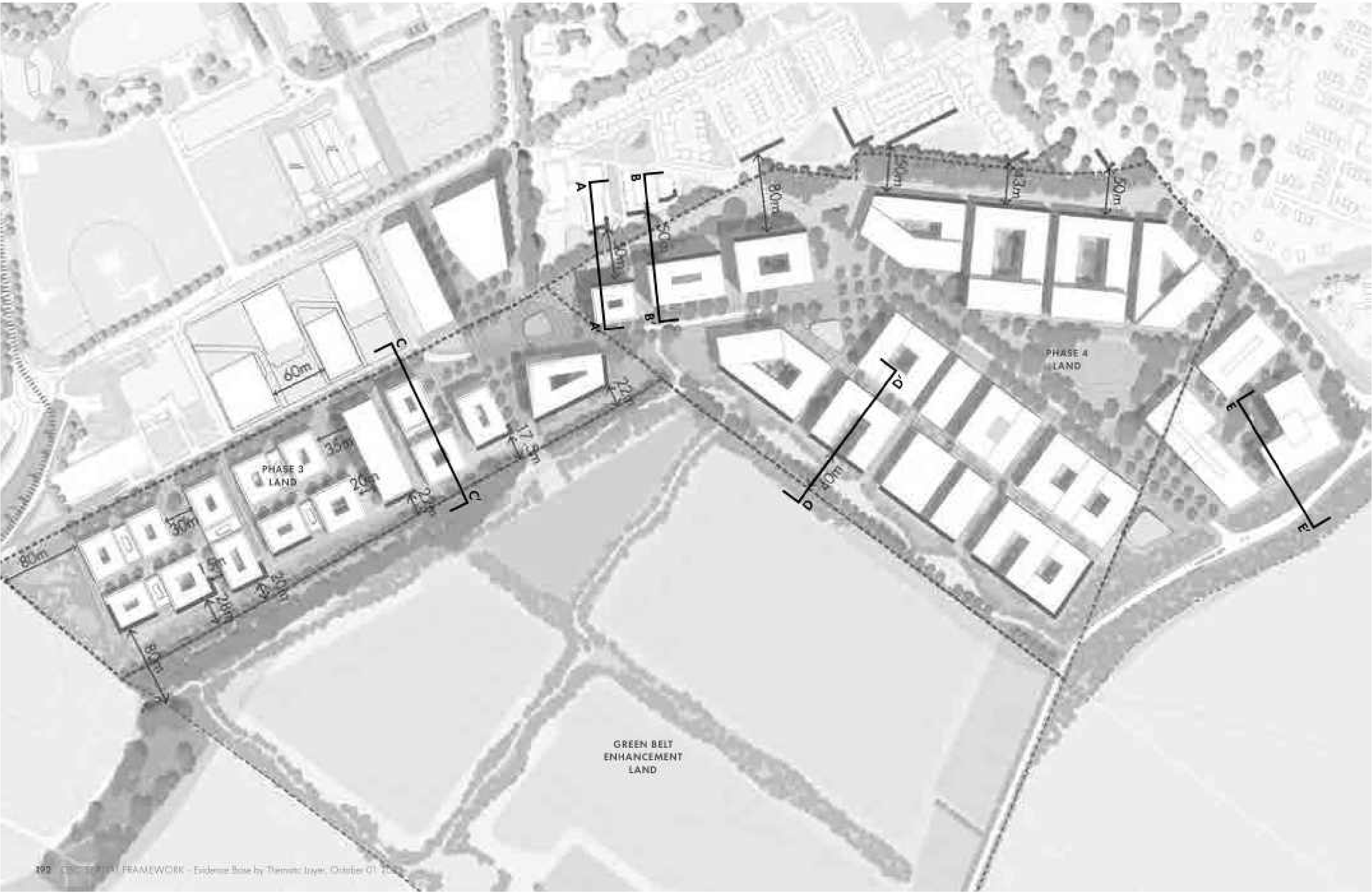
The distances shown indicate the potential buffer zones at the edge of the expansion land.

Planting in the buffer zone would increase the feeling of distance between buildings as shown on the next pages.

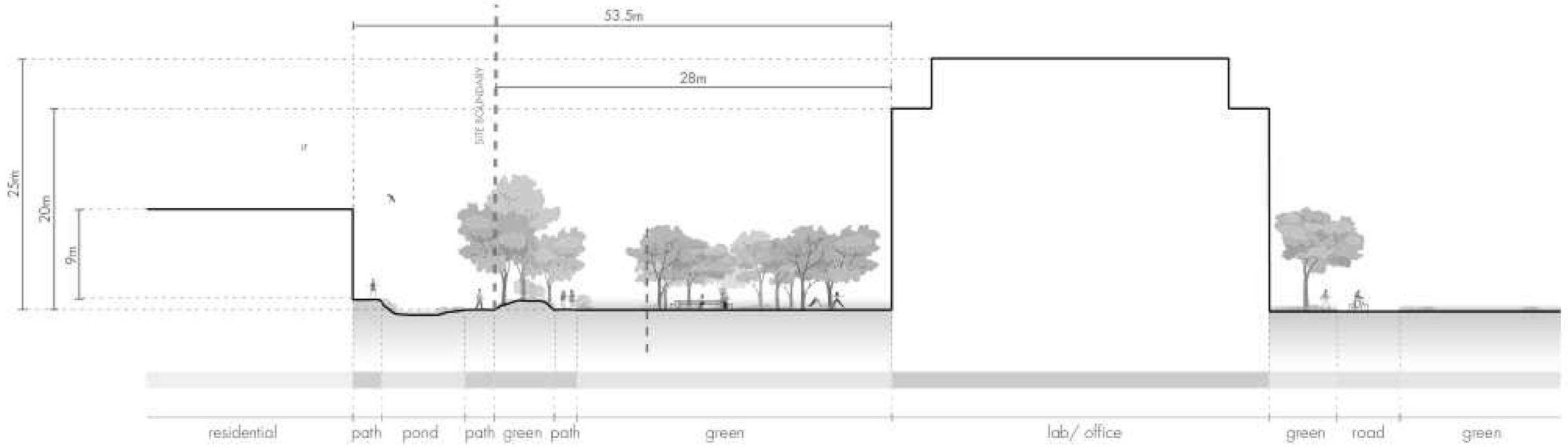
Further engagement with GCSP is required to refine this detail to ensure that an appropriate relationship with neighbouring uses can be achieved.



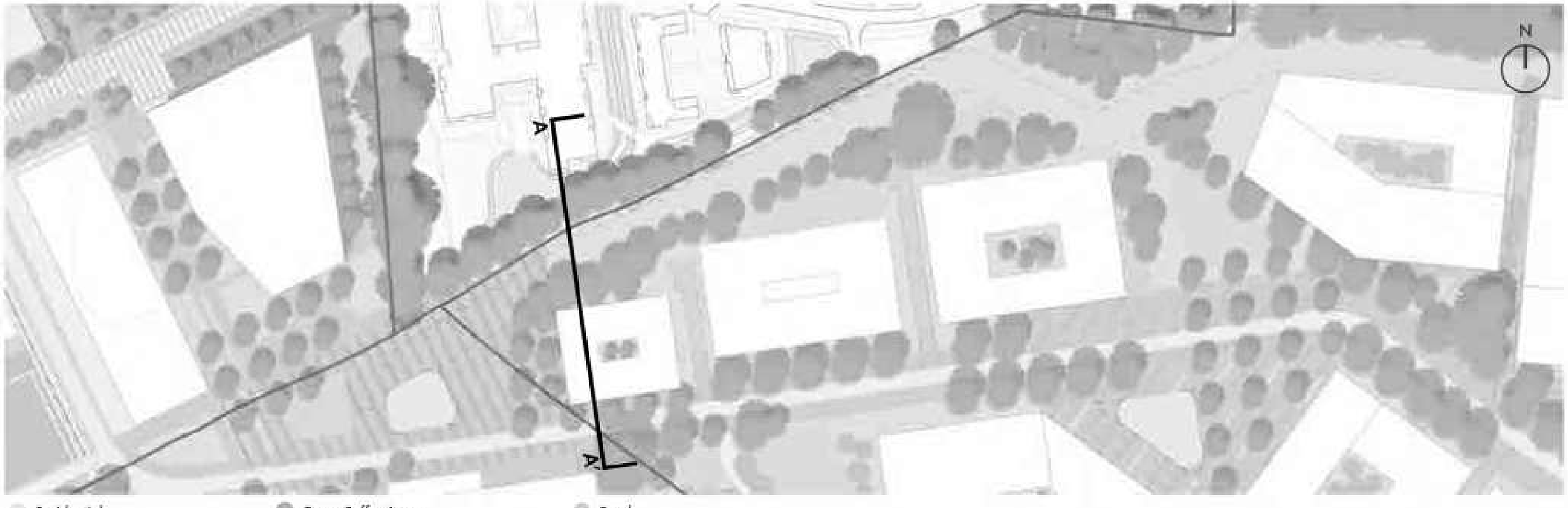
Edge Interfaces



Illustrative Cross Sections

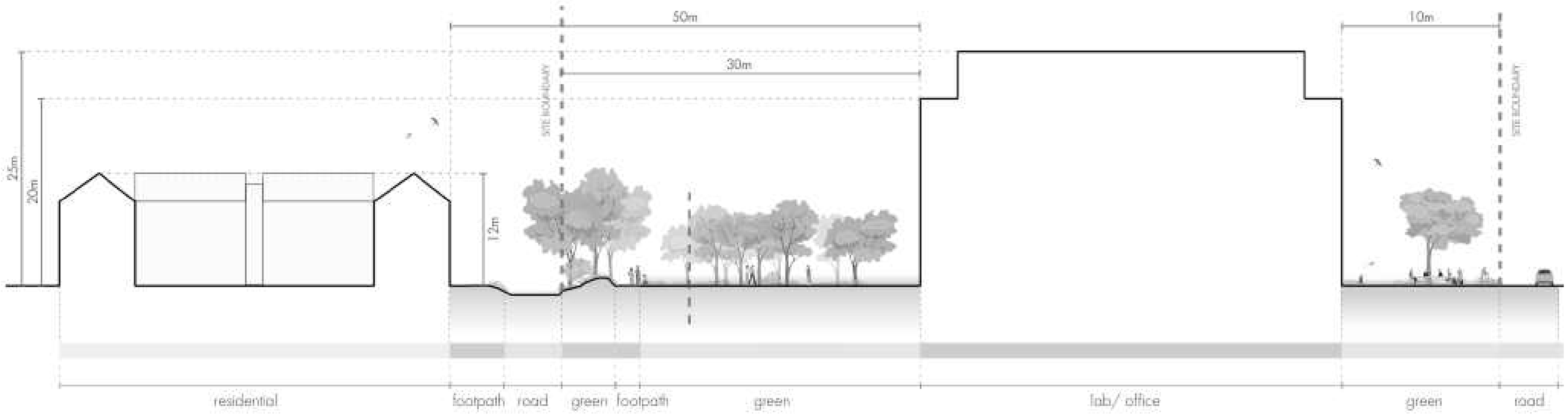


Section A-A'

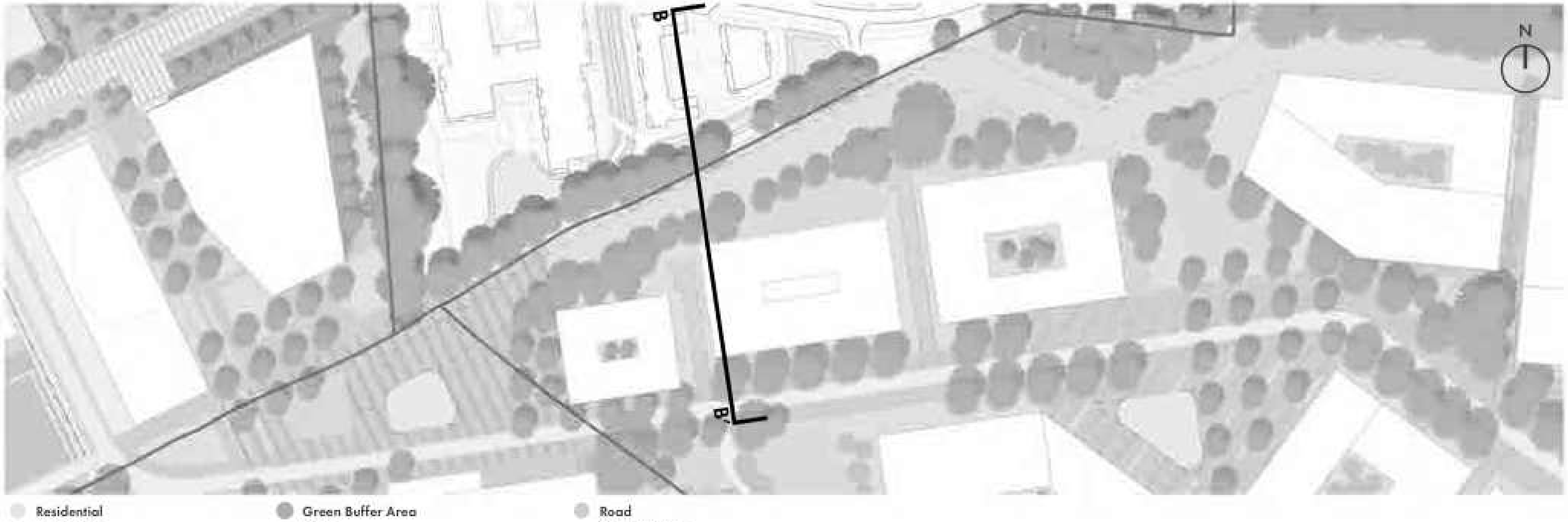


- Residential
- Lab/Office
- Footpath
- Green Buffer Area
- Green
- Balancing Pond
- Road
- Site Boundary

Illustrative Cross Sections

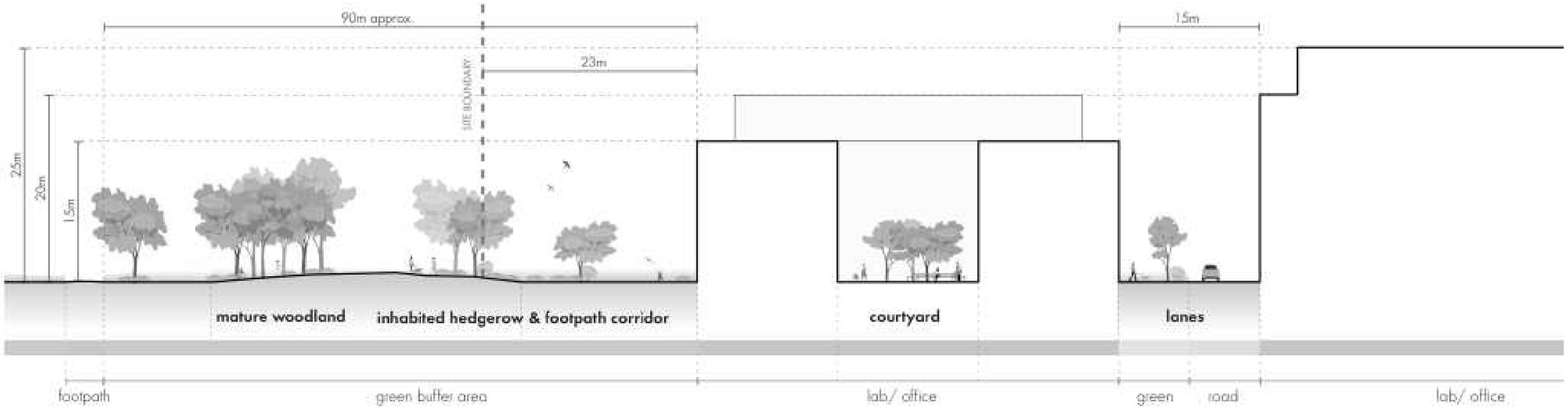


Section B-B'

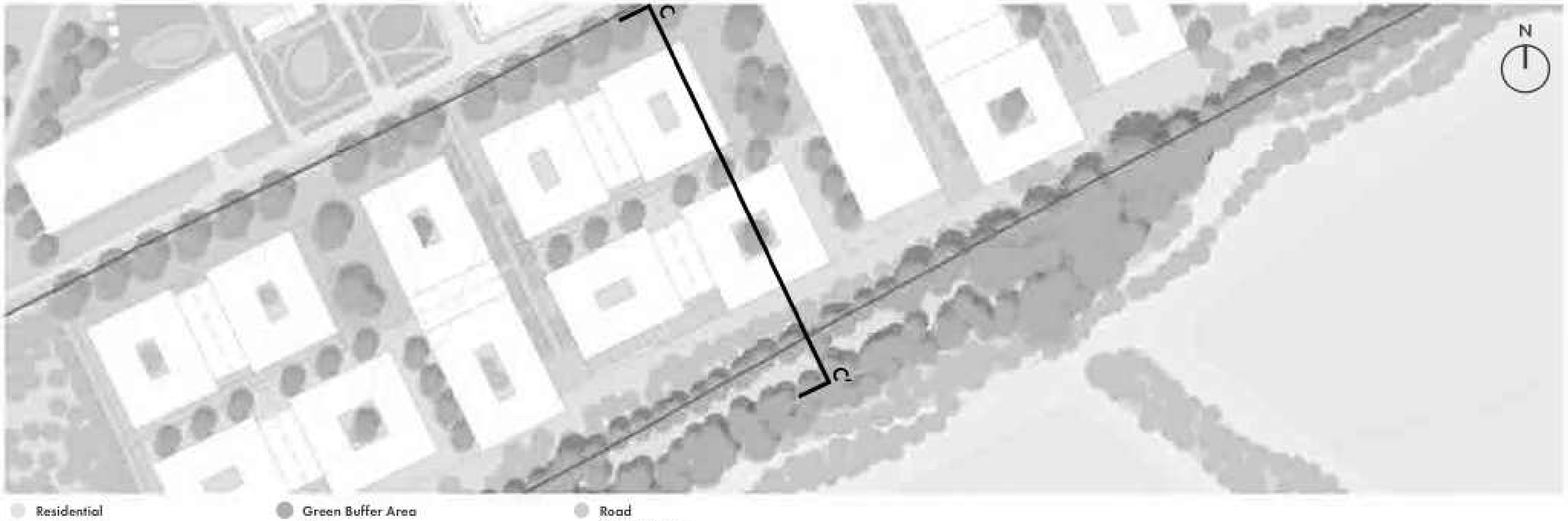


- Residential
- Lab/Office
- Footpath
- Green Buffer Area
- Green
- Balancing Pond
- Road
- Site Boundary

Illustrative Cross Sections

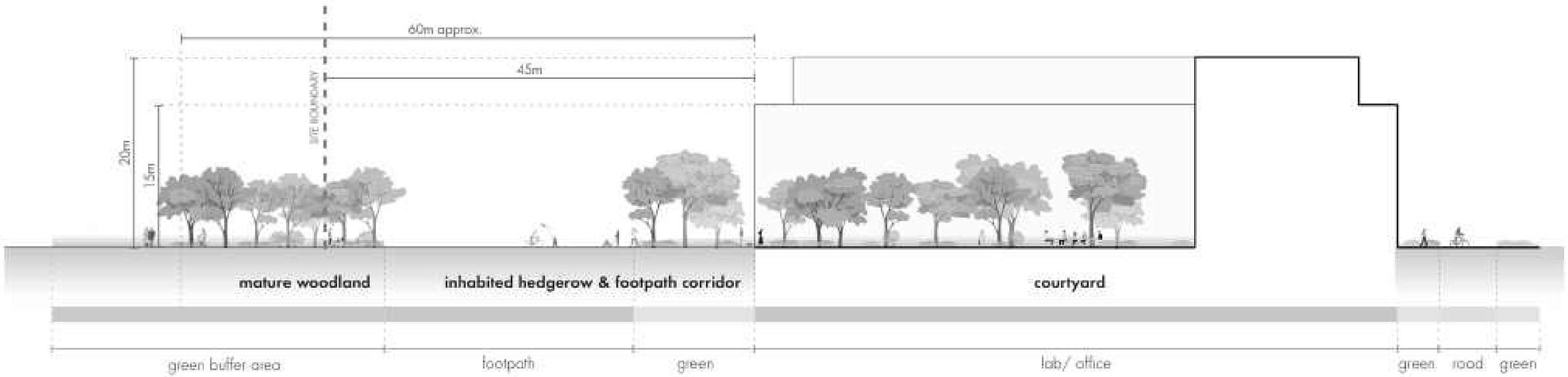


Section C-C'

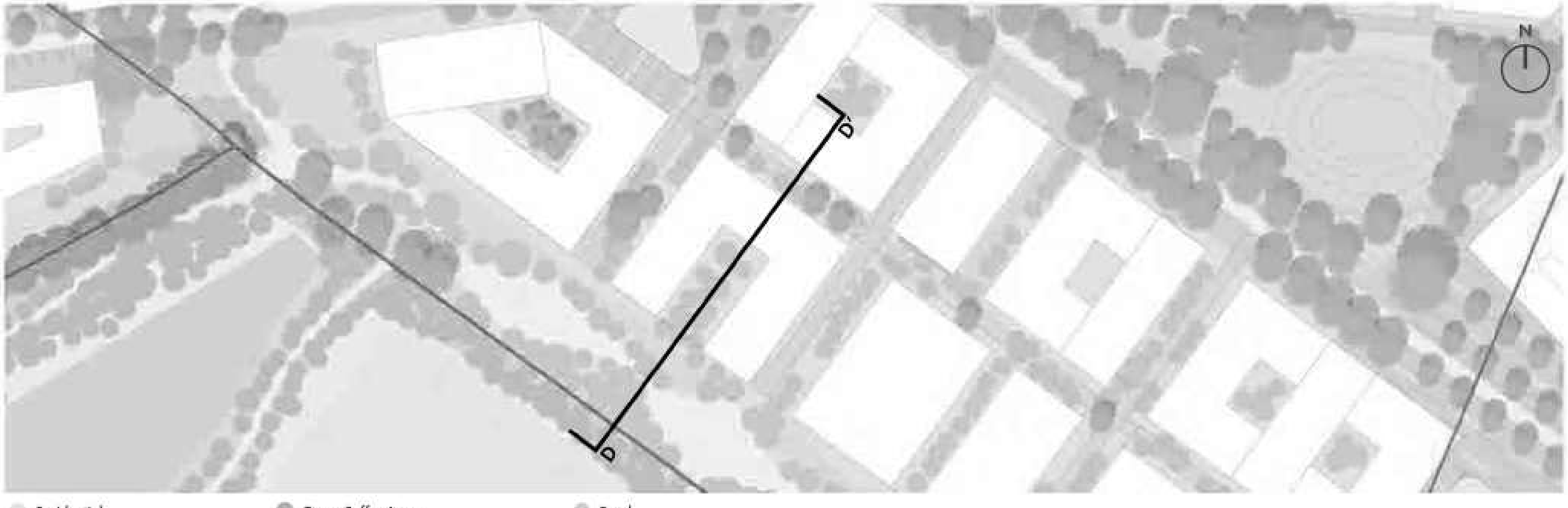


- Residential
- Lab/Office
- Footpath
- Green Buffer Area
- Green
- Balancing Pond
- Road
- Site Boundary

Illustrative Cross Sections

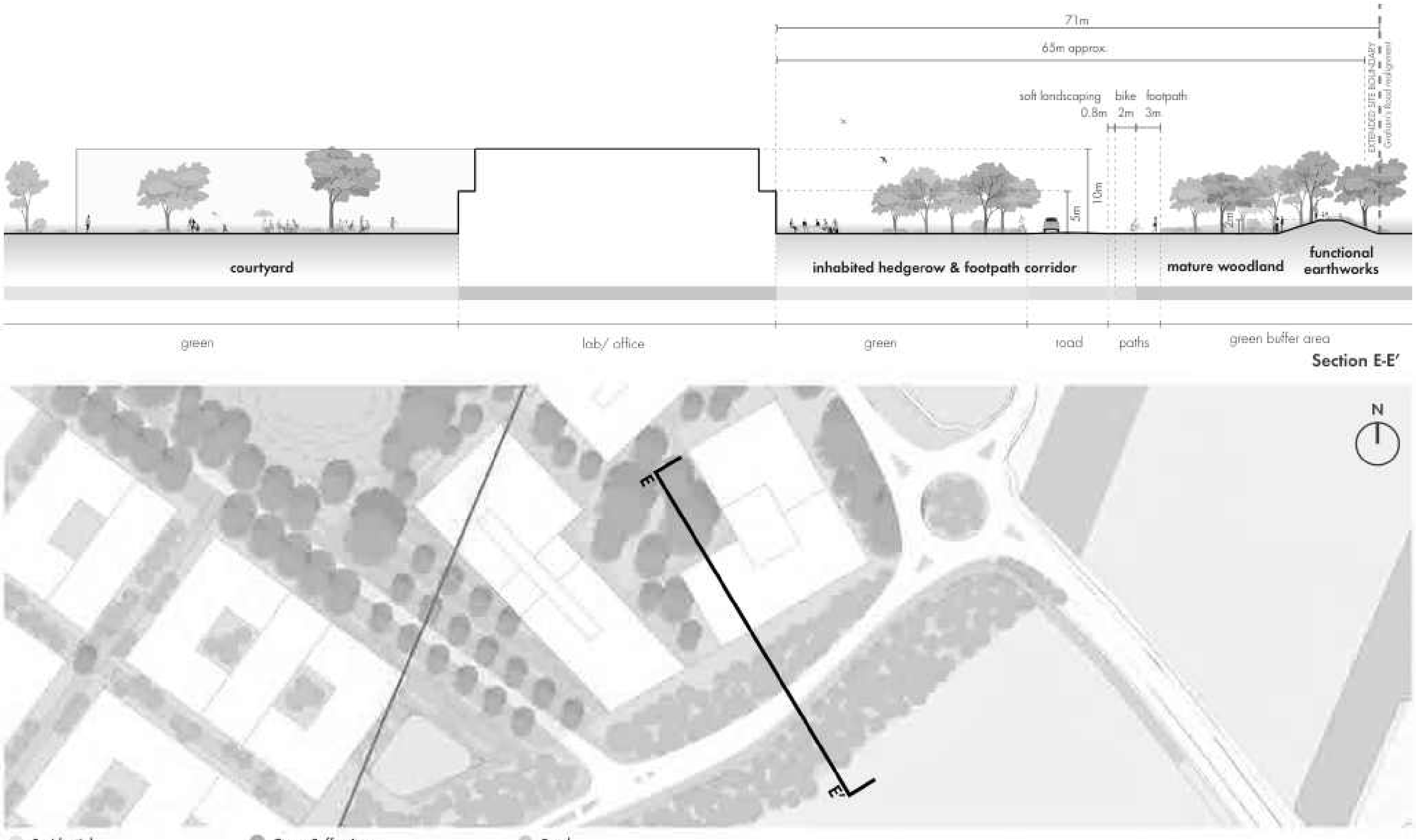


Section D-D'



- Residential
- Lab/Office
- Footpath
- Green Buffer Area
- Green
- Balancing Pond
- Road
- Site Boundary

Illustrative Cross Sections



Section E-E'

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Buro

HOARE LEA

Logika Noise Air Quality

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kmc

Issue register

DATE	ISSUE	NOTES
18.08.2023	1st DRAFT ISSUE	ISSUE FOR COMMENT
14.09.2023	2nd DRAFT ISSUE	ISSUE FOR COMMENT
18.10.2023	3rd DRAFT ISSUE	ISSUE FOR COMMENT
26.10.2023	FINAL ISSUE	

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