



Quod
CBC

Early assessment of need for
amenity on campus

October 2023
Version 2.0

Purpose

- This note seeks to assess the need for new and improved amenity facilities and spaces at CBC to inform the draft Infrastructure Delivery Plan and the emerging Spatial Framework.
- The assessment considers growth in employment and visitors to the hospital over the Local Plan period.
- The note covers:
 - Open space
 - Leisure facilities
 - Nursery facilities
 - Hotel and conferencing
 - Retail
- The note does not cover specific types of employment space, such as co-working and incubator spaces.

Previous Analysis of Demand

Previous Analysis of Demand

Knight Frank Demand and Deliverability Report (December 2022)

- Gap analysis based on US market exemplars of established life sciences ecosystems identified a need for:
 - **Hospitality and service** – ranging from food and beverage to large scale hotel accommodation
 - **Collaboration spaces** – internal and external, including a significant conference/auditorium facility. 500 people plus. External spaces for meet/greet/collaborate, as well a relaxing green space
 - **Wellness** - gym/spa/wellness facilities – for physical and mental wellbeing
 - **Community** - an integrated campus where individuals can work, play, and live creates success and sustainability. Those locations where residential mixes with commercial and other health and research uses deliver an enhanced environment and overall performance.
- Report concluded that the following items should be included in the emerging Spatial Framework:
 - 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

Previous Analysis of Demand

MetroDynamics Assessment of Minimum Requirements (June 2021)

- Advised on potential requirements from GCSP, development partners and occupiers.
- Surveyed occupiers at CBC which identified the need for improved amenity, including:
 - Leisure and sports facilities, cultural and performance spaces
 - Start up, scale up, incubation space, collaboration and temporary translation space
 - Hotel and conference centre

	Planning requirement	Development Partner Requirement	Tenant Requirement
Land use mix, urban design, density and enlivenment			
Sustainable transport			
Favour for life sciences and R&D			
Best in class estate management			
Retail, leisure and F&B			
Market housing mix (sale and rent)			
Nursery			
Leisure and sports facilities, culture and performance spaces			
Key worker housing, affordable for CBC staff (+overall affordable) & supported living			
Start up, scale up, incubation space, collaboration and temporary translation space			
Hotel and conference centre			
Proactive and market leading infrastructure			
Flexible leasing arrangements			

Previous Analysis of Demand

Hawkins\Brown Emerging Spatial Framework (December 2022)

- Gap analysis of the facilities at national and global comparators.
- Concluded that the Spatial Framework should include:

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

	Shared technical	Conference	Hotel	Cafe/F&B	Nursery	Sports/Leisure	Retail	Car share/ Connecting points	On-site energy
CBC		○		●	○	●	●		●
Babraham	●	●●		●					
Wellcome Genome Campus	●	●●	●	●	○	●●			●
Granta Park	●	●		●	●	●●		●	
Cambridge Science Park	●	●	●	●	○	●		●	
Alderley Park	●	●●	●	●		●●			
Oxford Science Park	●		●	●●	●	●		●	
Park 2020, Amsterdam	●		●	●	●	●	●	●	●
High Tech Campus, Eindhoven	●	●		●●	●	●●	●		
Kendall Square, Boston	●	●●	●	●●	○	●	●●		●
Biopolis, One-North, Singapore	●			●	●	●		●	

Previous Analysis of Demand

Coverpoint CBC Amenity Viability Report (September 2014)

- Coverpoint Catering Consultancy Ltd was instructed to advise on the nature and extent of the opportunity for a new foodservice offer in a central CBC location.
- The report identified the need for the campus population (staff and visitors) to grow from the 2014 level in order to sustain a new standalone facility.
- A facility of approximately 2,500 sqft F&B (inc. 1,000 sqft back-of-house) was considered to be appropriate and viable upon the opening of the Astra Zeneca campus.
- To be operated Monday to Friday, servicing the staff, patients and visitors of CBC
- A number of proposed locations for food services were identified with the first appearing to be most suitable:
 - The Green and the Gardens
 - AstraZeneca
 - The Forum (by CUH)
 - Papworth Hospital
 - Cambridge University Research Buildings

Previous Analysis of Demand

Avison Young Hotel and Leisure Assessment (December 2019)

- Assessed the opportunity for a new hotel on campus.
- Primary demand research demonstrated high demand for hotel accommodation from users of CBC, including staff at the hospitals, research institutions and local companies as well as people visiting patients in hospital.
- Established a gap for a good quality, branded upscale product, to include:
 - 180 bedrooms
 - F&B and gym facilities
 - 5 flexible meeting rooms (allowing a total expanded space for approx. 100 attendees)
- Lack of this type of facility on the southern fringe.
- Additional bedrooms (second hotel) and conference facilities also considered likely to be viable at a future date.

Table 7.3.2: Project Performance Model for the Proposed 180 Bedrooms Upscale CBC Hotel

Segment	Growth 2019	Growth 2020	Growth 2021	Growth 2021 +	2019	2020	2021	Rooms sold per day				
Demand Growth	0.00%	3.43%	4.00%	4.00%				2022	2023	2024	2025	2026
Frustrated Demand				6.8%	181	187	195	203	211	219	228	238
Market Room Sold					2,818	2,918	3,036	3,160	3,289	3,422	3,562	3,707
Rooms available					3,365	3,365	3,365	3,894	4,289	4,384	4,426	4,506
Project hotel no. of rooms								180				
Other additions					0	0	529	245	95	42	80	80
Total Room Supply					3,365	3,365	3,894	4,319	4,414	4,456	4,536	4,616
Project Hotel Market Penetration Factor								1.04	1.04	1.04	1.04	1.04
Project Occupancy % projected share								76.3%	77.8%	80.3%	82.1%	84.1%
Project Occupancy %								68.7%	73.9%	80.3%	82.1%	84.1%
Double Occupancy Factor				139.7%								
Number of guests								63,057	67,845	73,690	75,413	77,200

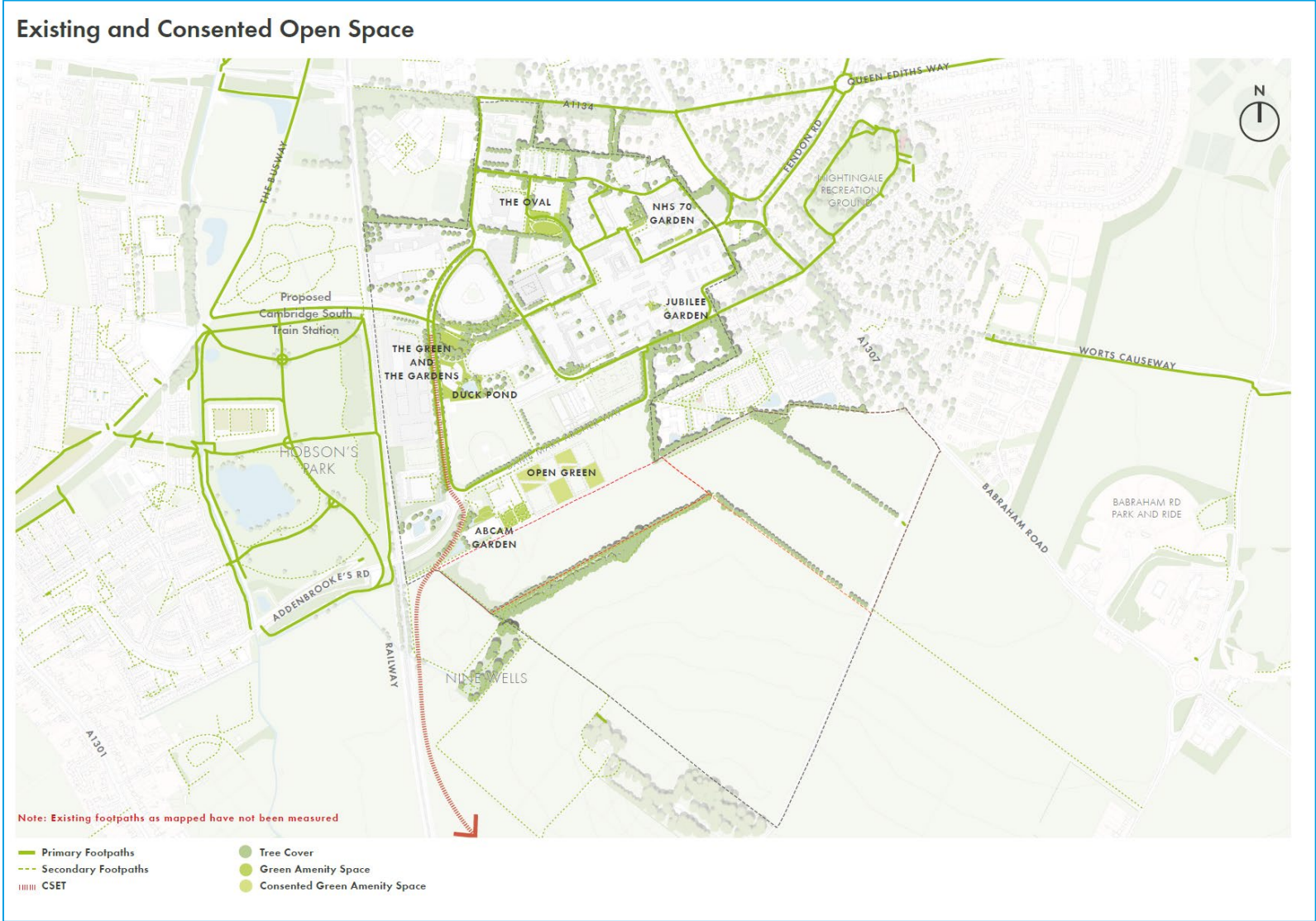
Source: Avison Young

* To allow for market establishment we have discounted occupancy by 10% in year one and 5% in year two

Assessment of Existing open space

Accessible Areas of Open Space: On-site

Existing Open Space	Category / Type of OS	Area (ha)
Green and the Gardens (Phase 1)	Informal open space	1.66
The Oval (Phase 1)	Informal open space	0.73
Abcam Garden (Phase 2)	Informal open space	1.18
Duck Pond (Phase 1)	Informal open space	0.65
NHS 70 Garden (Phase 1)	Informal open space	0.2
Jubilee Garden (Phase 1)	Informal open space	0.05
Open Green (Phase 2)	Informal open space	1.38
Total		5.85 ha
Campus site area		69.4ha
% of existing open space on Ph1 and Ph2 sites		8.42%



Accessible Areas of Open Space: Off-site



Off-site space	Category / Type of OS	Area (ha)
Nightingale Recreation Reserve	Informal open space	5
Hobsons Park Reserve	Informal open space	42.5
	Allotment (Community garden)	1.8
	Outdoor sports facility (Skate park)	0.7
Nine Wells Reserve	Nature Reserve	1.2
Total		51.2 ha

Existing Areas of Open Space: Summary

Name	Catefory / Type of OS	Area
Green and the Gardens (Phase 1)	Informal open space	1.66
The Oval (Phase 1)	Informal open space	0.73
Abcam Garden (Phase 2)	Informal open space	1.18
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Hobsons Park Reserve	Informal open space Allotment (Community garden) Outdoor sports facility (Skate park)	42.5 1.8 0.7
Nine Wells Reserve	Nature Reserve	1.2
Nightingale Recreation Reserve	Informal open space	5
	Total	57 ha

Existing Amenity Facilities

Existing Health and Fitness Centre



Frank Lee Centre

Frank Lee Centre

- Owned and operated by the Addenbrooke's Charitable Trust (ACT) who hold a long lease from CUH to secure the long-term provision of affordable leisure facilities for NHS staff.
- Not for profit model – fees are set at an appropriate level to support on-going maintenance and a full schedule of classes.
- Sports facilities include a 25m pool, gym, sports hall, squash courts, 2 tennis courts/ 5-a-side pitches.
- Leisure facilities include a bar, restaurant, beautician, osteopath and function rooms that can be hired for meetings and parties.
- Current membership of 3,300 members, which is below full capacity.
- Available to NHS employees plus friends and family and some partners on campus, including Cancer Research and UoC.
- Gold membership fee is £45 per month (compared with David Lloyd at approx. £120 per month and Nuffield Gym at £55 per month)
- No contract required, pay on a month-by-month basis
- Opening hours
 - Monday to Friday - 7am to 10pm
 - Saturday 8am to 10pm
 - Sunday 8am to 4pm

Existing Nurseries



Bright Horizons Nursery Long Road

Bunnybrookes Nursery in Frank Lee Centre

Bunnybrookes and Long Road Nurseries

- Bunnybrookes is available to Addenbrooke's staff only.
- Long Road nursery accepts a small number of children from the local community in addition to families of Addenbrooke's staff.
- The nursery is provided at a substantially discounted rate to Addenbrookes staff.
- Bunnybrookes is currently open to 50 children per day. It is unable to operate at full capacity (88 children per day) due to lack of qualified staff.
- Bunnybrookes has a waiting list of c. 50 families.
- There are no plans to expand the nurseries until they can be assured of recruitment.

Existing short stay accommodation



Elsworth House Patient and family accommodation

Pemberton Guest House

Pemberton Guest House

- Affordable, on-site accommodation facility for relatives of patients who are admitted to Addenbrookes hospital and Royal Papworth Hospital.
- Nine rooms.
- £60 per night for a twin room (compared with £100+ for Travel Lodge).
- Operates at approx. 85% capacity.

Elsworth House

- Small number of basic rooms available for pre and post-operative patients and relatives of patients.
- Must be booked by the hospital trust.
- Patient rooms are paid for by the trust. Relatives pay a small charge to Sanctuary housing.

Existing Amenity Facilities: Summary

Nursery Facility	Existing Floorspace	Number of spaces for children
Bright Horizons Long Road*	Tbc	Up to 152 children (all <u>available</u> places are taken*)
Bright Horizons Bunnybrookes*	Tbc	Up to 88 children (all <u>available</u> places are taken*)
Total		240 children

* Known to have staffing issues and therefore not able to offer as many places as the site could provide

Leisure Facility	Existing Floorspace	Number of spaces for members
Frank Lee Centre*	Approx. 3,500sqm	Currently 3,300 members with some spare capacity
Total floorspace		3,500 sqm

* Membership criteria apply

Short stay Facility	Existing Floorspace	Number of rooms
Pemberton Guest House	Tbc	9 rooms
Elsworth House*	Tbc	18 rooms
Total		27 rooms

* Restrictions apply. Guests must meet specific hospital criteria

Future staff and visitor population growth

Estimated growth in employees and visitors on site

- Growth at CBC has been split into two categories:
 1. The working population
 2. The number of patients/visitors on site
- Population estimates were provided by KMC on 11 August based on the AAM floorspace schedule dated 10 August 2023:

	2023 (existing)	2050 (consented and proposed)	Total % Uplift
Employees	18,697	39,963 (i.e. + 21,266)	+ 113.7%
Patients/Visitors	18,200	30,092 (i.e. + 11,892)	+ 65.3%
Total	36,897	70,055 (i.e. + 33,158)	+ 89.9%

Starting point: based on site population uplift

- As a basic metric to start the analysis, the growth in staff and visitors has been used to multiply up existing provision – i.e. at the same ratios, what increased provision would be required? This approach provides an early guide only. It assumes that existing provision is sufficient and therefore must be used with real caution.
- The multiplier has not been applied to hotel provision as existing short stay facilities are known to be substantially over subscribed.

Existing Campus	Existing Areas (with 2023 working & visitor population)	Future Uplift to 2050
Existing open space (on-site)	5.6 ha	$5.6 \times 1.899 = \mathbf{10.63\ ha}$ (assumes blended rate of growth (89.9%) as open space is used by employees and visitors.)*
Gym	3,500sqm	$3,500 \times 2.137 = \mathbf{7,480\ sqm}$ (assumes higher rate of growth (113.7%) as gym is used by employees only and not visitors)
Nurseries	240 children	$240 \times 2.137 = \mathbf{513\ children}$ (assumes higher rate of growth (113.7%) as nurseries are used by employees only and not visitors)
Hotel	27 rooms	N/A as the baseline provision known to be insufficient

*The higher rate of growth would result in a requirement for 11.97 ha

Consented Amenity Provision

Consented Amenity

AstraZeneca: Gym,
Temporary MUGA and
Nursery)



Facility	Area
Gym	916 sqm
Nursery	677 sqm
Occupational health and wellness	167 sqm
Café, market, breakout and exhibition	323 sqm
Travel Hub	215 sqm
Staff Hub	126 sqm
Total	2,424 sqm

Consented amenity spaces

Nursery Facility	Floorspace	Number of spaces for children
AstraZeneca Nursery	677sqm	Estimated 64 children (AZ to confirm)
Total		64 children

*Now understood to be an open facility available to all campus workers

Leisure Facility	Floorspace	Number of spaces for members
AstraZeneca Gym	916sqm	Assumed to be available to all AZ employees on site (c. 2,000)
Total floorspace		916 sqm

Future Requirements

Outstanding requirements based on population growth

Nursery Facility	Number of spaces for children
2050 Requirement based on staff/visitor population growth	513 children (i.e. an additional 272 children)
AZ Contribution	64 consented
Outstanding requirement to be planned	208 children

Leisure Facility	Floorspace (sqm)
2050 Requirement based on staff/visitor population growth	7,480 sqm (i.e. an additional 3,980 sqm)
AZ Contribution	916 sqm
Outstanding requirement to be planned	3,064 sqm

Open Space (ha)	Area (ha)
2050 Requirement based on staff/visitor population growth	10.63 ha (for visitors and workers)
Area shown in emerging spatial framework	24.33 ha
Outstanding requirement	Emerging Spatial Framework exceeds requirement.

Outstanding requirements based on gap analysis

Hotel and Conferencing

- It would not be appropriate to scale up from the existing hotel facilities.
- The assumptions below were developed by Hawkins\Brown Architects together with Knight Frank. Until further work is undertaken, these assumptions are taken to form the baseline.
- Appropriate plots to meet this potential need have been allocated on the framework plan. The plots incorporate space for expansion or contraction, as needed.
- A detailed assessment of need and market demand will be required before the submission of a planning application.

Hotel and Conferencing Facility	Area
Mid-range hotel with conferencing facilities	8,000 sqm
Budget hotel	5,000 sqm

Innovation Space

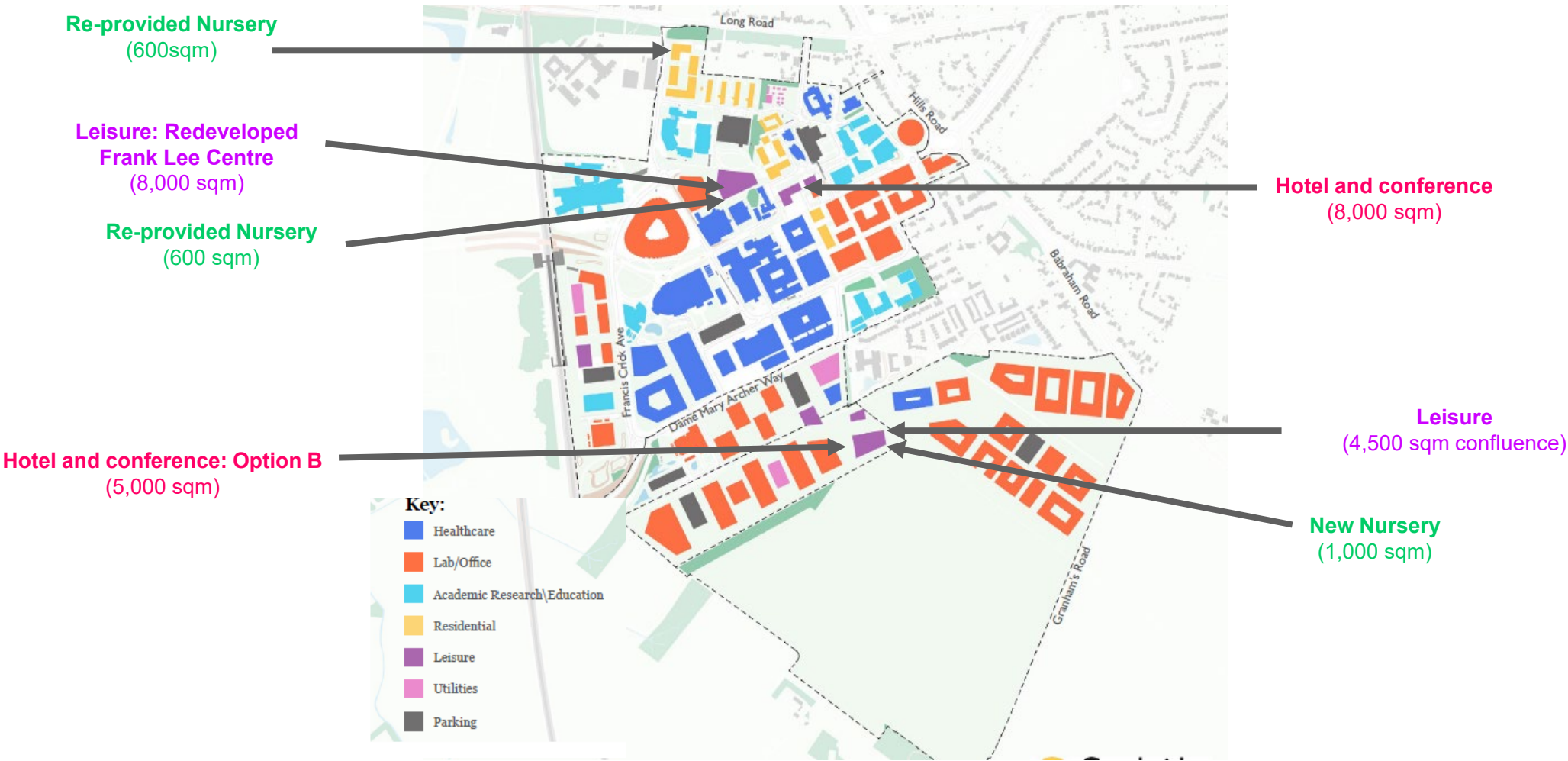
- The gap analysis also identifies the requirement for start-up spaces /innovation spaces that can be used by students, researchers and entrepreneurs. For example, St John’s Innovation Centre in Cambridge Science Park provides an incubation environment to accelerate the growth of innovative Life Science and Technology firms.
- The scale of a new facility should be determined through further assessment closer to the point of delivery.

Outstanding requirements based on gap analysis, cont.

Retail

- Existing retail uses within CBC are limited. The Knight Frank gap analysis identifies the need for investment in retail to attract the best talent and ensure an integrated and cohesive masterplanned precinct.
- The gap analysis specifies a diversity of retail offer, distributed across campus, which may include:
 - Supermarkets
 - Convenience stores
 - Pharmacies
 - Post office
- An assessment of need would be required closer to the point of delivery on the basis that retail needs and technology change over time, e.g. click and collect services and new technology enabling post office front door collections / parcel boxes. New facilities would be subject to an assessment of the impact on local centres.

Proposed Facilities – Potential Options



Proposed Areas of Open Space

- AAM has quantified the proposed open space on campus, including the expansion and enhancement land.
- Approximately 30% of the future campus would be dedicated open space for amenity, compared with 8.4% of existing campus.
- The framework plan commits to an even distribution of spaces around the campus, including in close proximity to hospital buildings to ensure that patients, staff and visitors all have appropriate access.
- The next iteration of the Spatial Framework will include a detailed assessment of how the quality and quantity of spaces to be provided at the campus compare favourably with other globally leading innovation districts.




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	Forvie 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%

*Assumes amenity from only the footpath and not surrounding landscape

Open space benchmarking



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.

Future Spatial Framework

Recommendations for the Emerging Spatial Framework

- Physical expansion of the campus will result in significant growth of the staff and visitor population.
- It is essential that employment floorspace is supported by additional amenity for both groups.
- The evidence presented in this report has been summarised below with recommendations for the emerging spatial framework.

Land Use	Recommendation
Nursery	The three existing/consented nurseries should be retained. An additional 1-2 nurseries may be required to provide spaces for approximately 200 additional children by 2050 based on assumed employment growth. The emerging spatial framework should include space for a minimum of one large or two smaller nurseries on campus (approx. 1,000 sqm, which is consistent with the KF gap analysis and H\B Framework) with appropriate space for expansion/contraction, as necessary. Future policy should support nursery provision. Demand for space should continue to be monitored. Major planning applications should be accompanied by a nursery delivery strategy assessing demand and operational viability. Working trends will need to be considered when considering future demand for space at employment destinations.
Leisure	Sports facilities may need double in size to support the additional 21,000 workers in CBC by 2050. Potential redevelopment and/or expansion of the Frank Lee Centre to accommodate future growth would create space in the heart of the campus. A second facility in phase 3 or 4 could be appropriate for more equal distribution across the site. A second facility could present an opportunity to meet local needs and open up the campus to the local community. The emerging spatial framework should incorporate space for one large or two smaller leisure centres on campus and future policy should support expansion subject to demand at the time of delivery. This level of provision would be consistent with the KF gap analysis and the H\B framework. Demand for space should continue to be monitored. Major planning applications should be accompanied by an amenity delivery strategy assessing demand and operational viability to determine future delivery requirements.
Open Space	The emerging spatial framework incorporates approx. 31 ha of open amenity space. This far exceeds the assumed requirement based on population growth. The proportion of useable open space in the emerging spatial framework would far exceed the existing proportion. The emerging design principles should reflect this level of provision. Extensive provision of green space is consistent with the KF gap analysis and H\B framework. The next iteration of the Spatial Framework should include a detailed assessment of how the quality and quantity of spaces to be provided at the campus compare favourably with other globally leading innovation districts.
Hotel	Existing overnight accommodation is very limited and restricted to specific occupants. There is demand for at least one hotel and associated conferencing within the expanded campus. Additional provision will be subject to viability and market demand at the time. The Emerging spatial framework should incorporate space for up to two hotels on campus and future policy should be supportive subject to demand at the time of delivery. This level of provision would be consistent with the KF gap analysis and the H\B framework.
Retail	There is demand for a new F&B facility in a central location. Employment and visitor growth could support a significant increase in convenience and comparison floorspace, subject to impact assessment on local centres. Future policy should be supportive subject to demand at the time of delivery and an assessment of the impact on local centres. Substantial improvements to existing provision would be consistent with the KF gap analysis and the H\B framework.