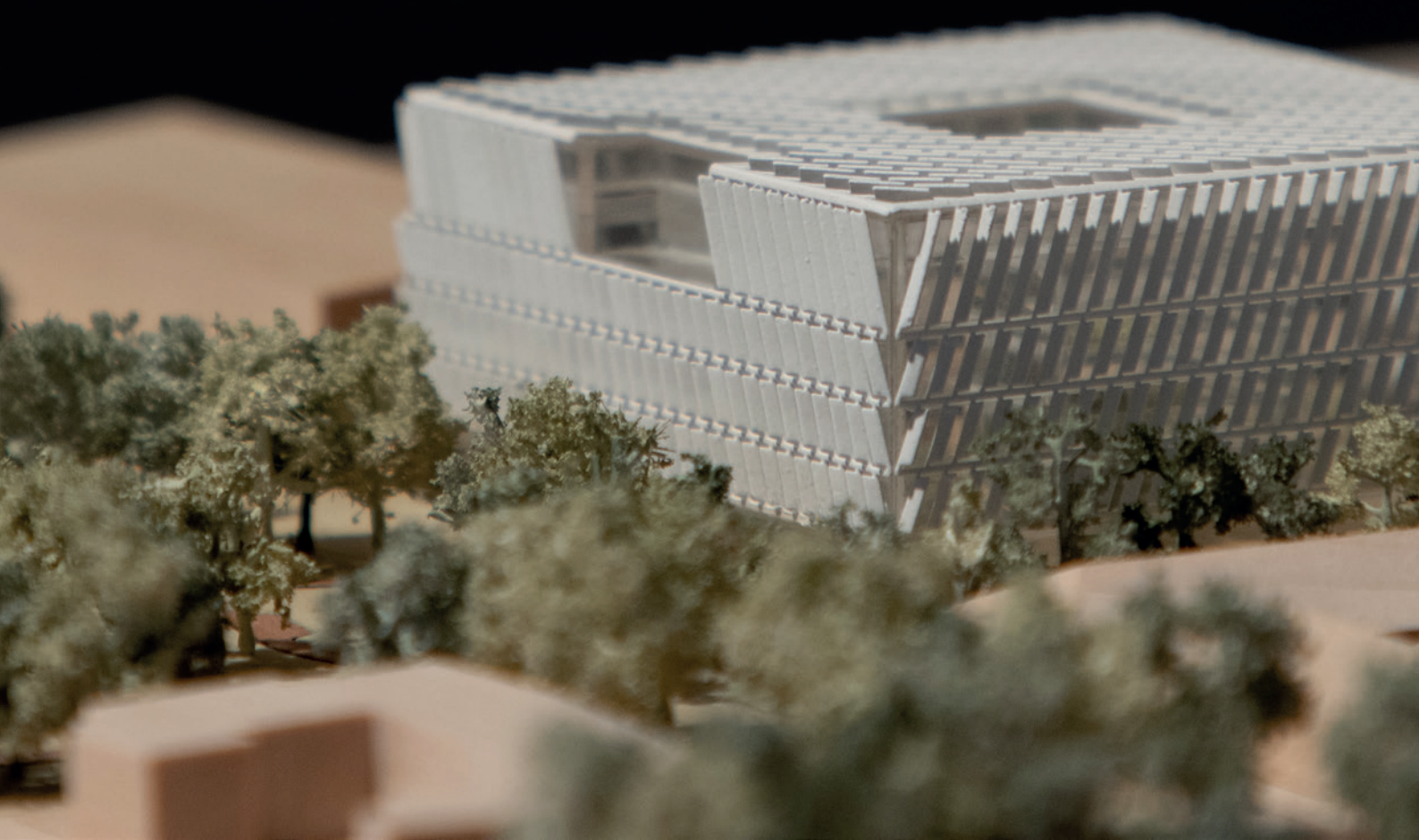


planning consent:  
**Unit 440, Cambridge Science Park**



# planning consent: **Unit 440, Cambridge Science Park**

A landmark, sustainable new building for Cambridge Science Park (CSP) has received planning consent from Cambridge City Council and South Cambridgeshire District Council.

Balancing carbon, cost, and flexibility, Unit 440 will provide high quality, innovative workspace and will be instrumental in giving form to the Science Park's future vision; a catalyst for development at CSP.

As Cambridge Science Park enters its sixth decade, its owners Trinity College are keen that new development embody the values of collaboration, innovation and inspiration which are at the heart of the globally competitive science and technology for which CSP is known. This new building has been specifically designed to meet those aspirations with innovative low carbon design elements; delightful, efficient, flexible workspaces; and a design that considers the broader CSP context. Unit 440 will deliver 11,000 sqm of commercial/research space suitable for tenants in R&D, tech, innovation and life sciences.

The project brief emphasised the importance of sustainability to the scheme and from the outset our design team worked to embed this as a design principal rather than an 'extra'. The design proposal employs simple geometry and a compact building form to minimise building fabric, with an efficient spatial organisation that maximises functionality. Upfront, operational and sequestered carbon have all been assessed using design tools, including a materials matrix to weigh up the positives and negatives of a selection of materials, with the consideration of embodied carbon at the core.

An essential ambition for Unit 440 is for a building resilient to the changing climate. Opportunities to increase biodiversity, generate energy on site, manage water use and mitigate overheating are all key features.



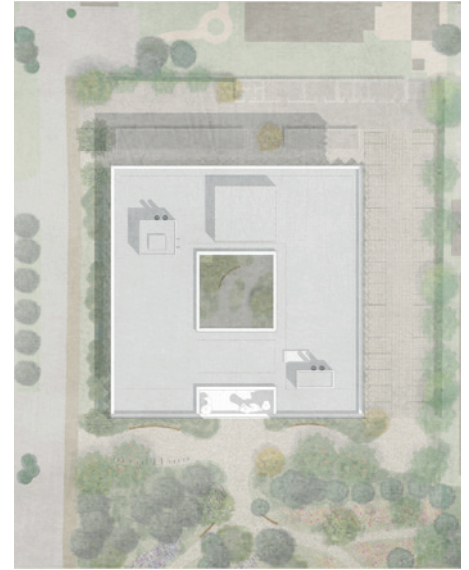




Ground floor



Floor 01



Roof plan

### Spatial organisation

Square in plan, and organised using regular and repeated modules, the building is designed for subdivision to accommodate up to two tenants per floor. The ground floor is cut through to open a direct connection between the park to the south and a courtyard at the centre of the building. The Main Lobby is located at this intersection between park and courtyard, creating a highly legible entrance and attractive arrival experience.

The central courtyard also enhances natural daylight across the floorplate, provides views out over green space, and supports the ventilation strategy.

Rising to five floors in total, the first to third floors provide tenant space serviced by two cores, facilitating the potential for sub-division. Our indicative proposals demonstrate a 60% laboratory and 40% office layout, with the laboratories overlooking the courtyard, north-west and north-east elevations while the office space is located along the south-west and south-east elevations with the best aspect.

### Facade

Unit 440's orientation on its site and the design of its facades have been developed to take advantage of solar gain and manage overheating.

The building has a high-performance envelope, with shading optimised depending on orientation. The outermost layer is a veil of shading fins. Designed through rigorous testing including desktop analysis on internal solar gain, glare, internal daylight and overheating, the veil of fins also contributes a strong architectural character to the building.

While the facade components vary in density, spacing and orientation responding to specific site parameters, they share a common language and modular parts for a coherent design that facilitates buildability, maintenance, and end of life re-use and disassembly.

Eric Martin, Director of Allies and Morrison's Cambridge Studio said: "This was an exceptional opportunity to advance the practice's work in life sciences underpinned by our sustainability strategy. Responding to Trinity College's ambitious brief, Unit 440 establishes a benchmark for sustainable design of lab-enabled buildings. We have been privileged to lead a talented design team that pushed the boundaries of this typology where every aspect was scrutinised and developed to achieve an efficient, elegant, and expressive building that embodies the step change envisioned for the Cambridge Science Park."

## Structural design

The design targets a long building life with a flexible office/ laboratory approach. This has informed the building's storey height, structural grid, and floor plate arrangement.

The building's structure is proposed as a hybrid timber-concrete composite solution. Precast concrete slabs are supported on precast concrete downstand beams, the slabs stiffened at mid-span by timber ribs to improve the vibration performance - essential for a building accommodating laboratories. The hybrid solution has lower embodied carbon, an integrated coordinated services zone, potential for biogenic carbon storage as well as good floor to ceiling heights.

Harry Bocking, Senior Engineer at Webb Yates said *"The challenge of vibration control in laboratory structures requires the careful tuning of mass and stiffness. Traditionally, this has been achieved by means of carbon intensive reinforced concrete. With Unit 440, Webb Yates Engineers have broken this mould by instead employing a cutting-edge timber and pre-cast concrete composite 'kit of parts'; timber stiffening ribs provide stiffness, while concrete planks provide mass. This significantly reduces the volume of concrete in the floor slabs when compared to traditional solutions. Innovative cut-outs in the timber beams enable integrated service distribution, and this reduces the required floor to floor height when compared with a waffle slab. As a result the overall building height can also be reduced, with multiple related benefits.*

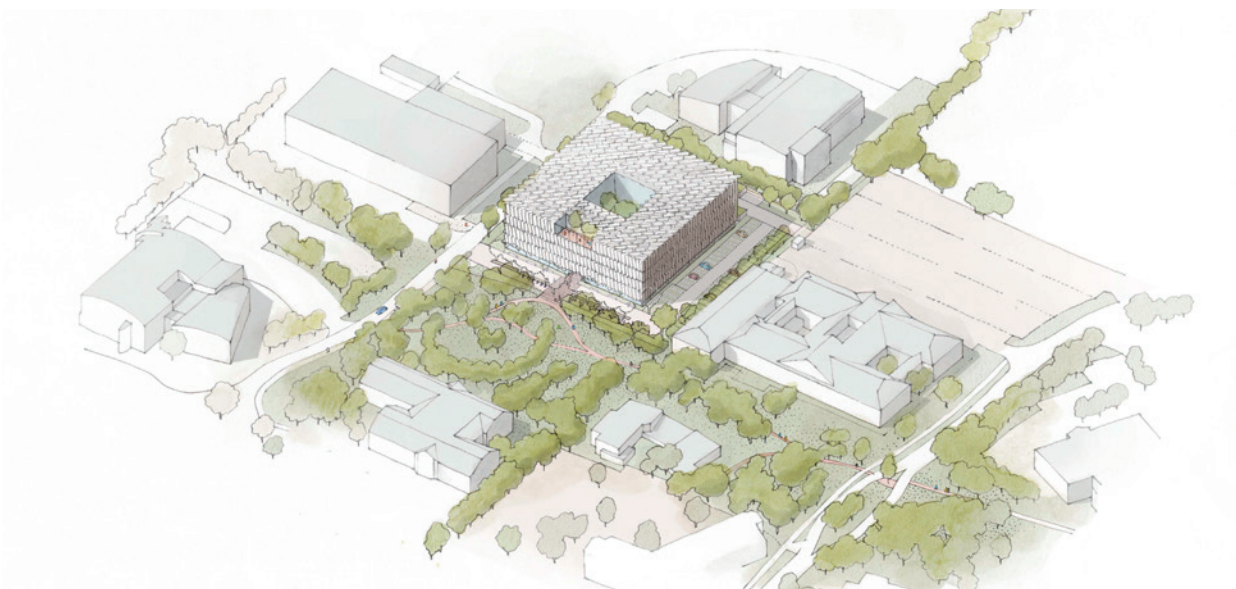
*"The project marks a significant step in the application of lower carbon hybrid structures, which is something that Webb Yates has been advocating, researching, and developing over the last decade."*

## Landscape

Today, Cambridge Science Park has a mature and pleasant landscape character which is very much part of its 20th century legacy. The Unit 440 site is the final parcel available along a green spine at the heart of the Science Park providing the opportunity to both engage with and enhance this green space.

As a pavilion in a park, the massing of the building is embraced by an immersive landscape. The main entrance opens out to CSP's green spine, from where this landscape is drawn through into a central courtyard. Vehicle circulation and car parking on the site is kept to a minimum, designed so that it can be phased out over time. Building services are housed in a pavilion defining the north edge of the site, adjacent to important pedestrian and cycle connections, while other site perimeters were seen as opportunities to deliver a 20% biodiversity net gain, improve stormwater capture through rain gardens, promote drought-tolerant plant species, enhance existing hedgerow, and plant tall trees to provide additional shade. On the fourth floor, a south-west facing terrace overlooks the park and provides views towards Cambridge.

Eric Hallquist, Director of Landscape Architecture at Allies and Morrison said *"The existing landscape framework and the sylvan character of the site were our first impressions of Cambridge Science Park. The new building had to be a pavilion in the park and a catalyst to improve the environmental performance of the landscape. We wanted to draw landscape deep into the building and provide views to a meaningful landscape from every window."*



Jamie Trivedi-Bateman, Director of Investment, Property, at Trinity College Cambridge said: “We are delighted that the Joint Development Control Committee unanimously supported our exciting proposals for Unit 440 at the Cambridge Science Park. Working in close collaboration with the Greater Cambridge Shared Planning team as well as the Cambridgeshire Quality Panel was instrumental to the success of the application and we are grateful for their clear guidance and valuable feedback throughout the process.

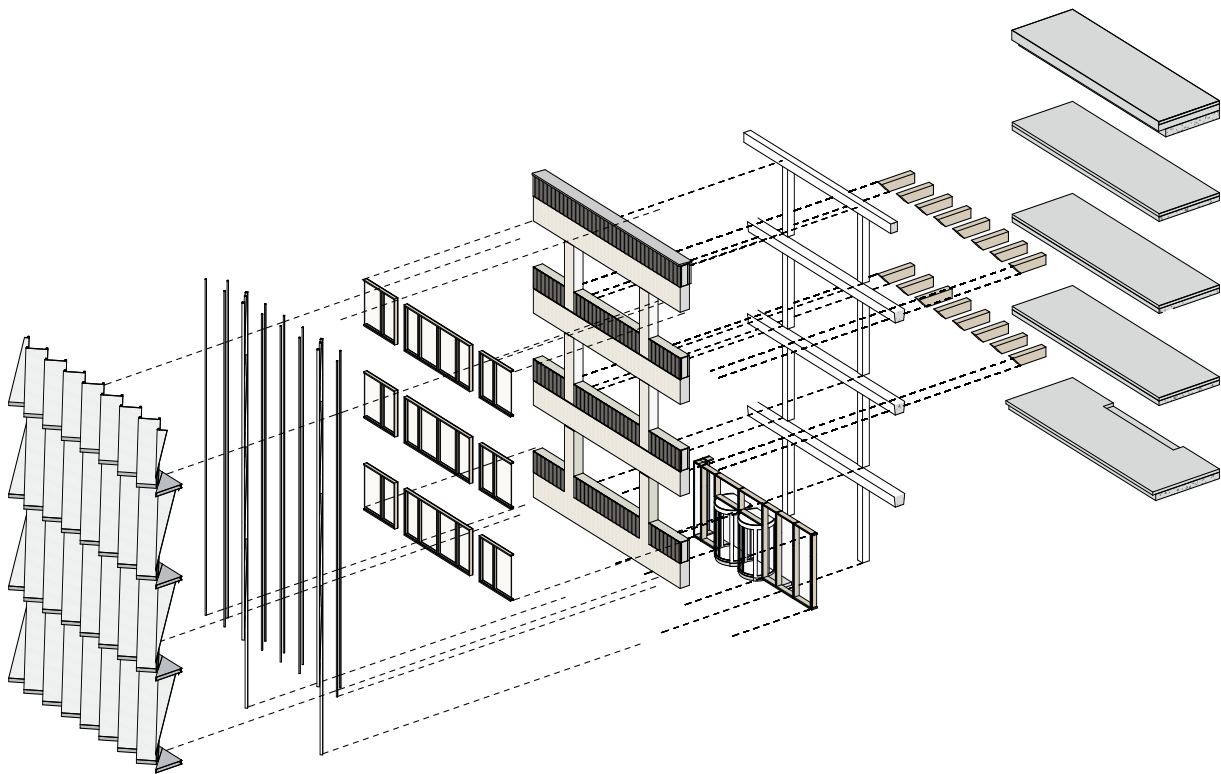
“This new, landmark building will meet the clear and critical demand for flexible lab and office space within the employment cluster that we have curated at the Science Park. Our commitment to providing modern, sustainable spaces will continue to enhance the Science Park’s reputation as a globally competitive science and innovation district.

“We are particularly excited by the design work undertaken by Allies and Morrison, who have created an architectural landmark which will act as a catalyst for further innovation and sustainability at the Science Park.

“For over 50 years the Science Park has been a centre of innovation and hi-tech clusters. Developments such as this will ensure that we can continue to meet the demand that there is in Cambridge for lab-enabled floorspace at a time when interest has never been higher.”

Location	Cambridge, UK
Uses	Commercial, Life Sciences
Client	Cambridge Science Park
Status	Planning Consented
Area	13,100 sqm
Expertise	Architecture, Landscape
Environmental	Targeting BREEAM Outstanding, Passivhaus (pilot scheme), EPC A, WELL Ready, Nabers 5* (office areas)
Collaborators	Structure and Civils: Webb Yates, MEP: Buro Happold, Sustainability and Passivhaus: Buro Happold, Facade: Buro Happold, Landscape: Allies and Morrison, Acoustics: Sandy Brown, Fire: The Fire Surgery, Transport: KMC, Cost: CB3 Planning: Sphere 25, BIM: Allies and Morrison, Project management: Bidwells





## ABOUT CAMBRIDGE SCIENCE PARK

The Cambridge Science Park was established 52 years ago when Trinity College Cambridge embraced the concept that would change the hi-tech sector in Cambridge, the UK and beyond. Trinity College Cambridge owns the freehold of the Cambridge Science Park, which today comprises 150 acres, 1.7 million sq ft of high technology and laboratory buildings. It is home to 7,000 people at over 170 companies, ranging from existing start-ups to some of the world's technology businesses.

The companies and entrepreneurs at the Cambridge Science Park are working on life-enhancing technologies, ranging from non-invasive diagnostics and novel medicines to next-generation display and communication technologies. The wide range of occupiers in terms of size, sector, age and nationality offers unrivalled opportunities for collaboration, innovation and inspiration.

[alliesandmorrison.com](https://alliesandmorrison.com) / [@alliesandmorrison](https://twitter.com/alliesandmorrison)

---

## ABOUT WEBB YATES

Webb Yates Engineers is an award winning structural, civil and building services engineering design practice with offices in London and Birmingham. They offer a collaborative, enthusiastic and responsive service with an efficient, innovative and creative design approach. They are dedicated to bringing the built environment in line with planetary limits.

**web site address**

---

## ABOUT ALLIES AND MORRISON

Allies and Morrison is a practice of architects and urbanists based in London and Cambridge. We design beautiful buildings that have long life and can adapt over the generations. We also shape enduring places whether new pieces of city or settlements at any scale. All our projects are concerned with the crafting of every detail and the appreciation for the uniqueness of each context.

[alliesandmorrison.com](https://alliesandmorrison.com) / [@alliesandmorrison](https://twitter.com/alliesandmorrison)