Cambridge North One Milton Avenue 1&3 Station Row

Proof of Evidence S4, S6&S7 APP/W0530/W/23/3315611

09th May 2023



Greg Willis BA (Hons) Dip Arch (Cantab), RIBA ARB

1.0 Qualifications and Experience

- 1.1 I am Greg Ivan Willis. I am a registered Architect with over 20 years experience. I studied at the Universities of Nottingham and Cambridge and joined Make in 2005.
- 1.2 Since joining in 2005, I have overseen many of the practice's urban design schemes and large-scale projects, working extensively in Birmingham and London, as well as on Make's first two projects in India.
- 1.3 I have a broad experience across many sectors. Amongst other high profile commercial schemes, I have been responsible for delivering the 210,000 sq.ft. HSBC new headquarters in Birmingham, as well as the new 240,000 sq.ft. Government Hub building for HMRC, both part of the Arena Central development.
- 1.4 Within Education and Research, I have led teams for the delivery of a new 1500 student academy in Cambridgeshire as well as the successful design and consent for a conversion of a Grade II heritage building for the University of Birmingham into exhibition, academic and conference facilities.
- 1.5 I also play a key role in Make's research and development forum the Future Spaces Foundation which looks at the socio-economic, demographic, and technological phenomena that affect the way we interact and operate, both as individuals and communities.
- 1.6 Make was founded in 2004 by Ken Shuttleworth, and is a 100% employee-owned practice. We're a team of 150 in London, Hong Kong and Sydney providing architecture, interior and urban design services from concept to completion.
- 1.7 Since 2004, we've completed over 100 built schemes around the world. Whether it's workplaces of the future, transformational urban design, luxury interiors or boundary pushing virtual spaces, we have a wealth of cross sector, global expertise to draw on. Make's approach to sustainable design considers environmental, social and economic factors, including targeting reduced carbon. We aim to create a future that delivers social value for all.
- 1.8 Make were invited to enter a design competition to explore the development of plot S4 in August 2019. Following the appointment of ACME as masterplanners, Make were subsequently asked to develop the initial design in response and collaboration with the emerging masterplan.
- 1.9 In February 2020, Make were also asked to consider the site adjacent the railway. Following the appointment of ACME as masterplanners, Make were asked to develop the two plots, S6& S7, on the eastern edge for laboratory use.

Endorsement

1.10 The evidence which I have prepared and provide for this appeal reference APP/W0530/W/23/3315611 in this proof of evidence is true and has been prepared and is given in accordance with the guidance of my professional institution and I confirm that the opinions expressed are my true and professional opinions.



2.0 Scope of Evidence

- 2.1 In this evidence I first address the design development of building S4, One Milton Avenue and then buildings S6&S7, 1&3 Station Row together. In each case, I do so by explaining the following:
 - Brief
 - Site Context
 - Uses
 - Scale and Massing
 - Access and Movement
 - Sense of Place and Identity
 - Resources and Lifespan

Completed Make buildings



Fig. 01 St James's Market, London, Commercial.



Fig. 02 80 Charlotte Street, London, Commercial.



Fig. 03 Three New Bailey, Salford, Commercial.



Fig. 04 Thomas Clarkson Academy, Cambridgeshire, Education.

3.0 Brief - Building S4

- 3.1 The client's brief for building S4, known as One Milton Avenue, is to provide a genuine mixed use development set within an inclusive urban realm, incorporating a network of open public spaces. The scheme is to build upon the setting of Cambridge North as a significant transport interchange.
- 3.2 The building design and quality of the architecture is to draw upon the rich heritage of Cambridge, both in massing principles and materiality, whilst delivering commercially sound, modern facilities.
- 3.3 One Milton Avenue has been designed to achieve a BREEAM Excellent rating as a minimum. However, certain key design features have been included to ensure that BREEAM Outstanding remains a possibility. This is supported by the recent development of 10 Station Road by the appellant, as a BREEAM outstanding commercial development in Cambridge.
- 3.4 To ensure a high-quality level of design, in accordance with South Cambridgeshire Local Plan (SCLP), One Milton Avenue has been designed in accordance with the design principles set out in the masterplan, to achieve a comprehensive and inclusive response.

4.0 Context - Building S4

An introduction to the site

- As illustrated in the Design and Access Statement (CD1.03, p.21), the site for One Milton Avenue lies within the Milton Ward at the edge of the East Chesterton Ward and within the wider North East Cambridge Area Action Plan (NEC AAP). It sits immediately north-west of the recent development around the Cambridge North Station, including the Novotel hotel and One Cambridge Square office development.
- **4.2** To the west of the site is the Bramblefields Local Nature Reserve, Nuffield Road Allotments and Discovery Way, which comprises low density residential development of between one and three storeys.
- 4.3 In the context of the masterplan, One Milton Avenue sits at the start of the Milton Avenue Character Area as defined in CD1.06d (p.125), and thus provides an important role as a key gateway building. This has resulted in the design development supporting the masterplan in three key areas:
 - The building mass and elevations responding positively to adjacent uses.
 - The building footprint responding to key pedestrian desire lines.
 - The building entrances responding to the adjacent public realm.
- 4.4 As illustrated within CD1.06c (p.108), One Milton Avenue lies between the development around Cambridge North station and the lower development west of Milton Avenue as proposed in the DRAFT NEC AAP. To this end, the height and massing of One Milton Avenue has been conceived as needing to vary between the different heights of the masterplan, (CD2.26) to be of an appropriate scale and not overbearing.

- 4.5 To the west lies Chesterton Way and beyond this, the Nuffield Road Allotments. Behind the existing, mature, verge and the allotments is the residential area around Discovery Way. The closest corner of One Milton Avenue is more than 100m away from the closest building off Discovery Way.
- 4.6 The exploratory design phase considered the proximity of the low density residential, west of Chesterton Way. Although this was not considered an appropriate template for development of the site, neither in scale nor architectural detail, both the character of Chesterton Way, as defined in CD1.06d (p.127), and the Architectural Design Principles established in CD1.04 (from p.54) were adopted to create an appropriate response to the specific setting.



Fig. 05 Illustrative aerial view of the masterplan, looking north showing One Milton Avenue in context.

4.0 Context - Building S4

An introduction to the building

- 4.7 One Milton Avenue occupies plot S4 of the masterplan, north of 1 Cambridge Square, which is currently under construction. The building faces onto Milton Avenue to the east and Chesterton Way to the west. The Link provides vehicle access to the south whereas Milton Walk to the north is dedicated for pedestrians and cyclists.
- 4.8 The main office reception, as well as the ground floor retail space, address Milton Avenue and the cluster of office development around Cambridge Square. Immediately adjacent the office entrance and on the prominent south-east corner, a retail unit provides active frontage.
- 4.9 To the north-east corner, the building is set back at ground level along key pedestrian desire lines to encourage pedestrian movement through the masterplan area into the residential area beyond. This is via a generous double height colonnade which mirrors the double height recess created for the office entrance.
- 4.10 The colonnade continues around the north, addressing the pedestrian and landscaped Milton Walk, with the entrance to the cycle amenities adjacent the new cycle route running east west. The landscaped Milton Walk also provides a suitable setting for additional activation space, ensuring active frontage adjacent all main pedestrian routes.
- 4.11 The Link street to the south is suitably sized, and basement construction appropriately detailed, to accommodate significantly large trees, creating a tree lined avenue / green link to the western edge. In addition, the office terraces to the west are suitably sized to accommodate landscaping to further soften the building edge, in consideration to sensitive receptors adjacent Bramblefields and Discovery Way.
- **4.12** Servicing is via a lay-by on The Link street, and vehicle entrance to the basement carpark is off Chesterton Way to the west.

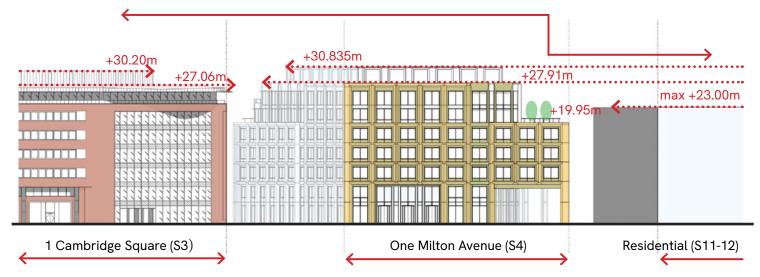


Fig. 06 Context elevation along Milton Avenue.

- 4.13 There are two terraces to level 5 and 6. A brick parapet at level 5 ties the composition together. Wherever there is a step in the brick façade, for example to match the adjacent height of 1 Cambridge Square, a vertical metal and glass recess is exposed between the brick planes.
- 4.14 Above the brick parapet, the metal and glass facade continues to provide a more lightweight backdrop to the terraces, as well as continuing to include the rooftop plant screen within the overall building composition.
- 4.15 The terraces proposed are meaningful. They are legible, habitable, and capable of accommodating quality planting. The terraces also serve to provide amenity for the office occupiers. In this post-covid world, high quality external space is a premium for the physical and mental wellbeing of office users.

Model images of One Milton Avenue



Fig. 07 View of stepped terraces facing west.



Fig. 08 View looking North along Milton Avenue.



Fig. 09 View looking south, showing terraces to the north-west and south-west.

4.0 Context - Building S4

- 4.16 The mass and material composition have been carefully considered to ensure a unified approach which also responds positively to each elevation. The primary terrace at level 5 ensures a comparable height with the outline residential heights opposite, ensuring an appropriate setting for the character of Milton Walk in between.
- 4.17 The north-west elevation is divided into two facades, with the western end set back, to ensure an 18m distance across Milton Walk to the face of the proposed residential block opposite. In addition, and to reduce shading, the level 5 terraces have been sized both on the north-west and south-west elevations, to enable more daylight, particularly afternoon / evening light, to reach around the western elevation into Milton Walk. (See fig, 10).
- 4.18 One Milton Avenue is a proposed office building (GEA of 18,575 m2) including basement parking (cycles and vehicles) and ground floor retail, off Milton Avenue. The building is seven storeys above ground plus plant.
- 4.19 Mr Derbyshire's evidence deals with the economic benefits of the appeal proposal, namely the need for offices, laboratories and R&D space, the cluster effect and the catalyst affect the appeal site will have for the wider AAP. Therefore, drawing on our significant office experience, Make has designed One Milton Avenue to build upon the success of the adjacent 1 and 2 Cambridge Square commercial developments, as well as the new Cambridge North Station, to strengthen and compliment this commercial cluster.
- 4.20 CD1.09a (from p.212), illustrates how the design of One Milton Avenue has responded to the Architectural and Commercial Design Principles as set out in the masterplan, see CD1.04 (from p.62). These include:
 - Stepping the building line in plan to avoid long, flat building faces.
 - Stepping the building in section to provide terraces for greenery and amenity.
 - Creating recessed 'cut outs' to create visual interest and break down uniformity.
 - Working with a neutral palette to integrate with the wider context.
 - Provide articulation at a large scale through stepped massing at coherent intervals and depths.
 - Provide articulation at a finer scale through the detailing of architectural elements.
 - Provide activation at ground floor level / create space for class E/F uses.
- 4.21 The building design seeks to respond positively to the character of each adjacent area through the considered composition of the various architectural design principles described above. One Milton Avenue is a suitably urban scale, building on the cluster of commercial development around Cambridge Square and the transport Interchange.
- 4.22 One Milton Avenue is also a sensitive building, as it skilfully steps in scale and form, responding to the proposed residential building heights north along Milton Avenue. The change in scale is also at a material level. Changes in material create key 'tide' lines around the building, uniting the composition. In addition, the elevations predominantly consist of individual windows facing the residential, as opposed to larger areas of glazing or blank facade, which may appear overbearing.
- **4.23** Although distanced from the low level residential around Discovery Way, One Milton Avenue also steps to this elevation to soften the edge and continue the architectural design principles along Chesterton Way.

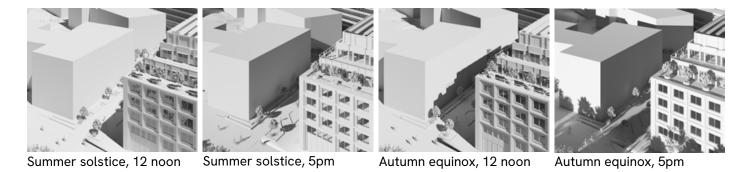


Fig. 10 Shading study exploring the impact of the setbacks on the elevation of the residential blocks opposite.

Midday and afternoon sun tracks around the north-west corner of One Milton Avenue, with evening sun leading directly up Milton Walk, leaving the southern elevation of the residential in its own shadow.

Key

- 1. Stepping the building line in plan to avoid long, flat building faces.
- 2. Stepping the building in section to provide terraces for garden spaces and greenery.
- 3. Varying the degree of stepping to provide articulation both from short and distant views.
- 4. Creating recessed 'cut outs' to create visual interest and break down uniformity.
- 5. Provide activation at ground floor level.
- 6. Provide external amenity for workspaces via terraces.
- 7. The building relates to the residential on Milton Walk by:
- Stepping back in plan to the north-west.
- Stepping back at level 05 on the northern elevation to compliment the building heights.
- Stepping back at levels 05 and 06 on the western elevation to allow more afternoon / evening light.

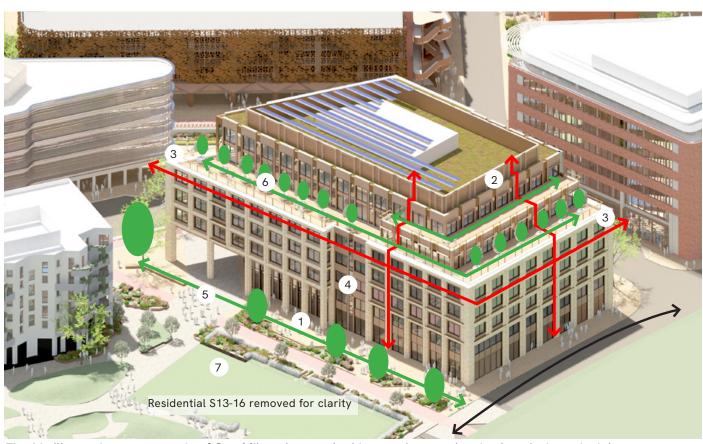


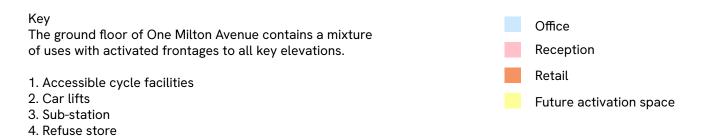
Fig. 11 Illustrative axonometric of One Milton Avenue, looking south-east, showing key design principles.

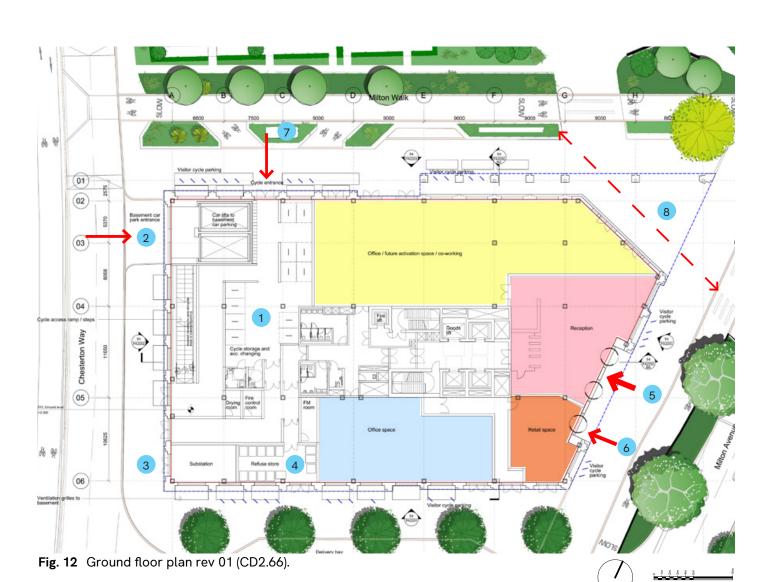
5.0 Uses - Building S4

5. Main office entrance6. Retail entrance7. Cycle entrance

8. Pedestrian access to Milton Walk

- 5.1 In addition to the reception and office space on ground floor, several other facilities have been provided to contribute to a sustainable mix of uses, including retail, co-working space and cycle amenities.
- 5.2 Future activation space, as illustrated in fig. 12, describes either potential retail or front of house commercial activity, such as a business lounge or staff cafeteria. The final use will depend on commercial demand and/or tenant need. However, both will require active frontages and therefore the building, and adjacent public realm, have been designed accordingly.





6.0 Scale and Massing - Building S4

- 6.1 As described in CD1.06b (p.102), alongside the evolution of the masterplan principles and the detailed design of One Milton Avenue, a detailed LVIA study was conducted to test the impact of the wider scheme. This study assisted in the refinement of the articulation and massing of One Milton Avenue, particularly when viewed from the existing residential to the west.
- 6.2 The exploration of this study and the potential impact on the design was used as a design tool to inform the final building design. The input of both Bidwells (LVIA) and Turleys (Heritage) was considered in the final massing and tested in the VuCity model.
- 6.3 One Milton Avenue provides a modern, sustainable office building that extends the existing commercial development of Cambridge Square, while supporting the wider masterplan as it develops to the north. To this end, several key principles were advanced as being significant design drivers. These included:
 - The importance of the building as the gateway to the next development.
 - The building as a mediator between the office cluster and the residential quarter.
 - A strong sense of material identity to compliment the masterplan.
- One key townscape principle, as defined in the North East Cambridge, Landscape, Character and Visual Impact Appraisal: Development scenarios Design Guide, concerns the heights in relation to the surrounding built environment (p.68). (The LCVIA, as part of the NEC AAP evidence-based documents, is discussed by Mr Derbyshire as being of very limited weight. However, the design of One Milton Avenue draws upon the relevant design guidance).
- 6.5 One Milton Avenue has been designed to transition between the height of 1 Cambridge Square to the south, and the lower residential development to the north. This is achieved through the introduction of meaningful amenity terraces to levels 5 and 6 on the north and west elevations.
- 6.6 Through considered study of the western edge, the design also developed to include a terrace facing Chesterton Way. This successfully unifies the overall composition as well as providing quality external amenity enjoying evening light.
- 6.7 The building mass is conceived as having a clear base, middle and top. The base of the building is composed of brick. Rising to 7 storeys on the south-east corner, to match the height of 1 Cambridge Square, the brick base is predominantly 5 storeys, wrapping around all four elevations. Above, the middle section is defined by terraces to levels 5 and 6, with the metal and glass materiality forming a 'lighter' more 'pavilion' character. This is appropriately set back from the brick edge so as to be perceived as the lining of the brick envelope. The plant level screen on the top of the building is set back from the south and east, so as not to loom over the brickwork corner when viewed from Cambridge Square. The top is conceived as a continuation of the middle, with the scale and rhythm of the metal window surrounds continuing across the perforated metal rooftop plant screen.
- 6.8 The total number of storeys matches the consented 1 Cambridge Square, the only minor difference in height being due to small incremental increases in floor-to-ceiling heights (due to changes in national guidance BCO Guide 2019), as well as the increased roof screen to conceal more sustainable plant beyond. Although One Milton Avenue has been designed to achieve a BREEAM Excellent rating as a minimum, certain key design features have been included to ensure that BREEAM Outstanding remains a possibility. The sustainable plant is such an upgrade.

6.0 Scale and Massing - Building S4



Fig. 13 Illustrative view of One Milton Avenue from the north-east corner looking south-west, with 1 Cambridge Square behind.



Fig. 14 Illustrative view of the entrance to One Milton Avenue looking north-west.



Fig. 15 Illustrative street view looking south-west, with 1 Cambridge Square behind.

7.0 Access and Movement - Building S4

- 7.1 An inclusive approach to access has been adopted throughout the design with the mixture of ground floor uses, pedestrian colonnades and clear division of pedestrian, cycle and vehicle routes providing a logical and permeable solution. A naturally ventilated basement serves both cars and cycles with accessible facilities on the ground floor. Vehicle access to the basement is via two car lifts off Chesterton Way, whilst servicing is from a loading bay adjacent to The Link. Both vehicle access points have been detailed by the transport engineer and have been carefully separated from the pedestrian and cycle access points to the north and east.
- 7.2 Following consultation, the principal entrance to the cycle store off Milton Walk was revised to increase accessibility. This enlarged entrance is accessed off Milton Walk, which contains a cycle route and visitor cycle parking. (CD2.66, S4 Ground Floor Plan.)



5. Accessible parking bays
6. Four passenger lifts serving basement to level 06
7. Dedicated fire-fighting lift

A
B
C
D
E
F
G
H
1



Fig. 16 Basement plan showing access and movement strategy (CD2.65).

7. Dedicated fire-fighting lift

- 7.3 Cycle storage is either external at grade, internal at ground floor, or internal at basement level. The majority of spaces are at basement level with safe, legible access and welfare facilities clustered around the main building core. All the cycle facilities are part of an 'end of trip' strategy where an increased level of fit out specification will be developed in detail design to ensure that the cycle entrances are a high-quality entrance for both user and building visitor.
- 7.4 Although a substantial number of Sheffield Stands are provided, in all three locations described above, the majority of the 400+cycle parking is delivered in a modern double stacked arrangement within the basement. This is to ensure as much of the ground floor as possible is preserved as active frontage.



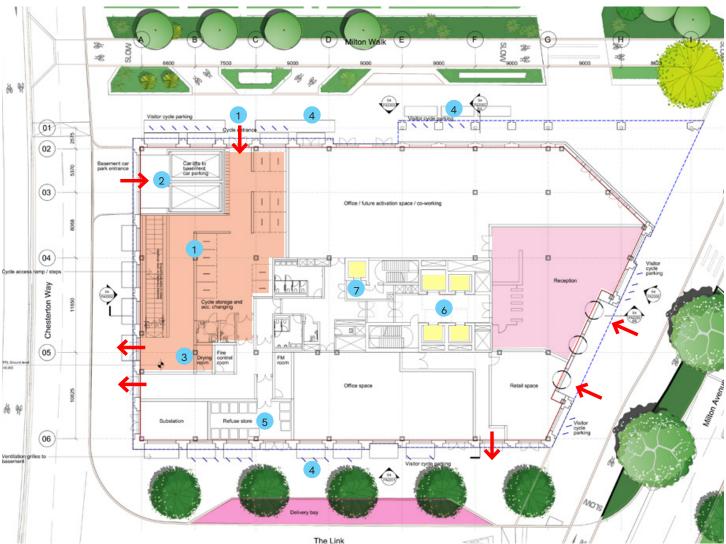


Fig. 17 Ground floor plan showing access and movement strategy (CD2.66).

NB - additional acc. parking on Milton Avenue adjacent entrance.

8.0 Sense of Place and Identity - Building S4

- 8.1 The aim of the masterplan Architectural Design Principles, as set out in CD1.04 (from p.54), is to adopt a "palette of materials and shades that are present in both historic and contemporary Cambridge". The masterplan seeks to "create a distinctively local identity that lends itself well to its context and aids place-making." One Milton Avenue is conceived as being at the forefront of the development of contemporary Cambridge. It presents a character that is urban in its context, yet embellished with a finer grain of detail and warmth of material palette. It is an excellent example of how commercial buildings can be both practical and considered. It delivers on a city scale, on a commercial scale and, crucially, on a human scale. Cambridge is changing, the future of the workplace is changing. One Milton Avenue is at the leading edge of both.
- 8.2 The masterplan further sets out how material choices, order, rhythm, texture, and colour all require careful consideration in creating a local identity which simultaneously draws upon Cambridge's rich heritage.
- 8.3 The 'Cambridge context' has also been recently added to, most notably in the development of CB1 around Cambridge station, which has also sought to create a modern 'cluster' of considered buildings. There are many similarities with Cambridge North, such as the careful and restrained use of materials. However, there are notable differences too, particularly in the detailing and the response to environmental and site specific concerns.
- 8.4 A key principle is for the design to assist the transition in scale from the office cluster to the proposed residential buildings. This change in scale is achieved in three ways:
 - A change in size, from the height of 1 Cambridge Square to the level 05 terrace relating to the residential plots S11-12, S13-16.
 - A change in architecture details One Milton Avenue deliberately adopts a language of individual windows, rather than larger areas of glass or brick facade, (as in 1 Cambridge Square), in order to make it more human scaled with a finer grain.
 - An change in materials, with the brickwork stepping down to reveal a 'lighter', more delicate aesthetic.
- 8.5 In accordance with the masterplan design principles, a complementary palette of limited materials enhance the character of the development and legibility of the building. Deep brickwork reveals increase natural shade whilst maintaining a strong identity. The concept has been to evoke a sense of craft, through an articulated brick composition.
- 8.6 The composition of the brick piers and headers have been arranged to increase natural shading. This varies across the elevations so that the elevations are specific to their setting.
- 8.7 Problematic solar gain is also reduced through the inclusion of brise soleil to the upper levels on the key southern and western elevations, and the depth and composition of the facades have been carefully tested to maintain a sense of articulation while suitably increasing thermal performance to tackle climate change.
- **8.8** All this refined detailing is possible through the considered use of traditional materials, such as brick, to provide a highly sophisticated yet passive response to reducing the overall energy demand of the building.



Fig. 18 North-west elevation (CD1.155).

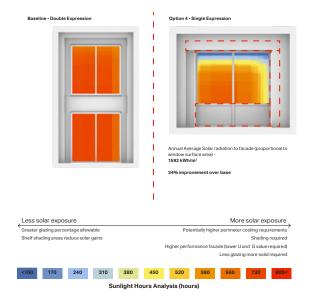


Fig. 19 Facade modelling to minimise solar gain.



Fig. 20 Terraced upper levels with 'lighter' materiality.



Fig. 21 Facade depths and articulation respond to orientation, maximise shading and minimise solar gain.

8.0 Sense of Place and Identity - Building S4

8.9 Buff coloured brick stock has been selected as an appropriate response to the local Cambridge aesthetic, with two shades of metallic panels selected to enhance the warm palette of materials. The lighter bronze finish has been chosen to mediate between the brick and the glazed areas, whereas the darker bronze finish has been used to highlight key architectural features, such as the window frames, balustrades and brise soleil.

Key

- 1. Metal cladding to rooftop plant with perforated panels within featured arched surrounds.
- 2. Full height windows to top floors.
- 3. External brise soleil where required.
- 4. Doors to terraces on levels 5 and 6.
- 5. Two heights of brick framing separated by slot of metal and glass.
- 6. Metal cladding reveal between brick articulation.
- 7. Windows with low-level spandrels to typical floors and metal sills to brickwork.
- 8. Full height windows, entrance doors and deep brick reveals to lower floors.

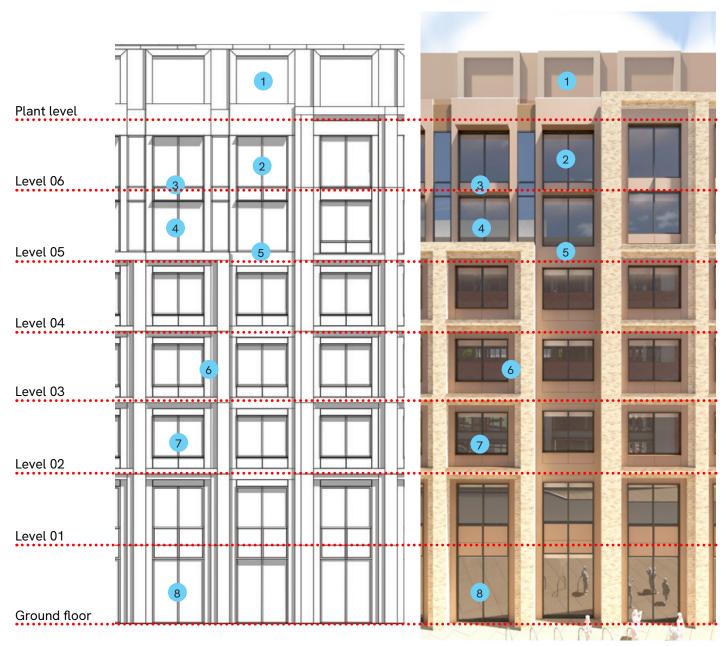


Fig. 22 Bay facade study for One Milton Avenue.

9.0 Resources and Lifespan - Building S4

- 7.1 The environmental strategy has been developed in line with the Cambridge North Sustainability Strategy (CD1.202). This includes:
 - A high thermal performance building fabric, minimise solar gain and heat loss.
 - Consideration of low and zero carbon technologies inclusion of an all-electric system.
 - Rooftop area capable of accommodating renewable technologies and equipment.
 - Green roofs / amenity terraces and brown / biodiverse roofscapes.
 - Future flexibility structural grid and distribution of services have been tested for multiple tenant variations.
 - 1. The building's mass has been carefully considered to maximise the amount of natural shading through deep reveals, inset entrance areas and colonnaded pedestrian spaces.
 - 2. The building fabric has been designed with a high thermal performance, the size and orientation of windows are designed to minimise solar gain and heat loss.
 - 3. Consideration of low and zero carbon technologies has led to the inclusion of an all-electric system.
 - 4. Designed to accommodate air source heat pumps and PVs for renewable energy.
 - 5. Smart meters record energy and water usage.
 - 6. Electric vehicle charging is included in the basement.
 - 7. Materials for robustness and resistance, have been chosen to withstand environmental change.
 - 8. The primary staircase has been strategically positioned to promote an active lifestyle.
 - 9. Sufficient cycle storage and changing facilities have been included.
 - 10. Green amenity roof.
 - 11. Brown biodiverse roof.
 - 12. Water efficiency has been increased through reduced flow rates in showers and WCs.
 - 13. Rainwater recycling to be considered in detail design for irrigation.

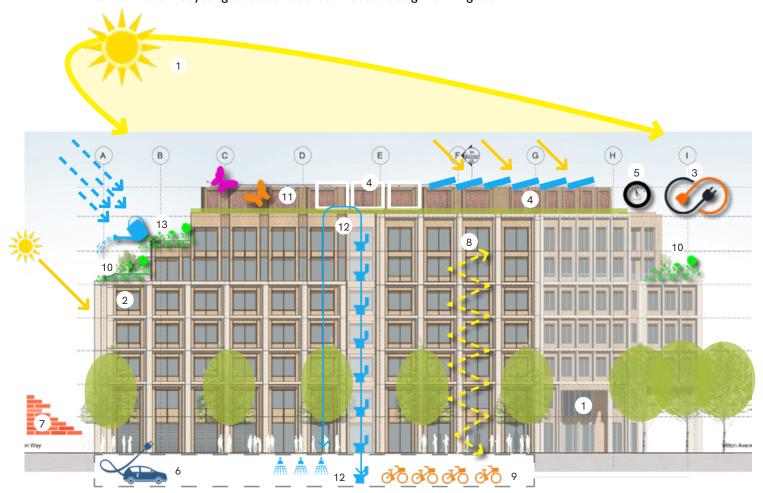


Fig. 23 Illustrative diagram highlighting key environmental principles.

10.0 Conclusion - Building S4

10.1 One Milton Avenue is a proposed office building (GEA of 18,575 m2) including basement parking (cycles and vehicles) and ground floor retail, off Milton Avenue. The building is seven storeys above ground plus plant. The following summary is in reference to the design characteristics of the National Design Guide, 2021.

Context

- 10.2 The building draws upon the urban cluster established around the existing transport interchange and provides a transition with the rest of the masterplan area and the new residential to the north. Similarly, One Milton Avenue acknowledges the distant low level residential to the west by adopting the design principles established in the masterplan in softening this urban edge.
- 10.3 The design of One Milton Avenue embraces the masterplan philosophy that juxtaposition between different urban typologies in a city is to be welcomed. CD1.06d (p.127), defines the character of Chesterton Way as a green transport and cycle corridor which offers direct connection to Cambridge North Station as well as an edge to the Bramble Fields and residential to the west. This cross section of different uses, scales and building forms is to be enjoyed as a natural background to any city site, punctuated with inclusive transport links and tied together through a meaningful landscape strategy.

Identity

10.4 The building draws upon the rich heritage of Cambridge, both ancient and modern, through its use of appropriate materials and its detailing of brickwork. The brick headers and window reveals vary according to the elevation to provide a unique character whilst maximising the solar shading benefits.

Built form

10.5 The building form is of an appropriate scale, relating to its immediate built context of 1 Cambridge Square. The same number of storeys, it is slightly taller due to changes in national guidance and increased environmental performance. It provides quality commercial floorplates, both adaptable and flexible, and benefits from multiple levels of external amenity, which also enhance its external appearance and assist in transitioning the building scale in its setting.

Movement

10.6 An inclusive approach to access has been adopted throughout the design with the mixture of ground floor uses, pedestrian colonnades and clear division of pedestrian, cycle and vehicle routes providing a logical and permeable solution.

Nature

10.7 The environmental strategy has been developed in line with the Cambridge North Sustainability Strategy which includes enhanced water management and a supportive approach to biodiversity.

Public spaces

10.8 The building design seeks to respond positively to the character of each adjacent area through the considered composition of the various architectural design principles outlined in the masterplan, including active frontages, primary entrances and pedestrian colonnades; all enhancing the quality public space and supporting interaction.

Uses

10.9 In addition to the office space, several other facilities have been provided across the ground floor to contribute to a sustainable mix of uses, including retail, co-working space and cycle amenities.

Resources and Lifespan

- 10.10 Materials have been assessed for robustness and have been chosen to withstand environmental change. Future flexibility has been considered, both in the structural grid and distribution of services. One Milton Avenue has been designed to achieve a BREEAM Excellent rating as a minimum. However, certain key design features have been included to ensure that BREEAM Outstanding remains a possibility.
- 10.11 One Milton Avenue is of an exceptional design quality which is uniquely crafted to its specific setting. It will offer quality, flexible accommodation which serves both the modern workplace and the wider environment, whilst also providing a beautiful legacy for Cambridge North and its wider context.

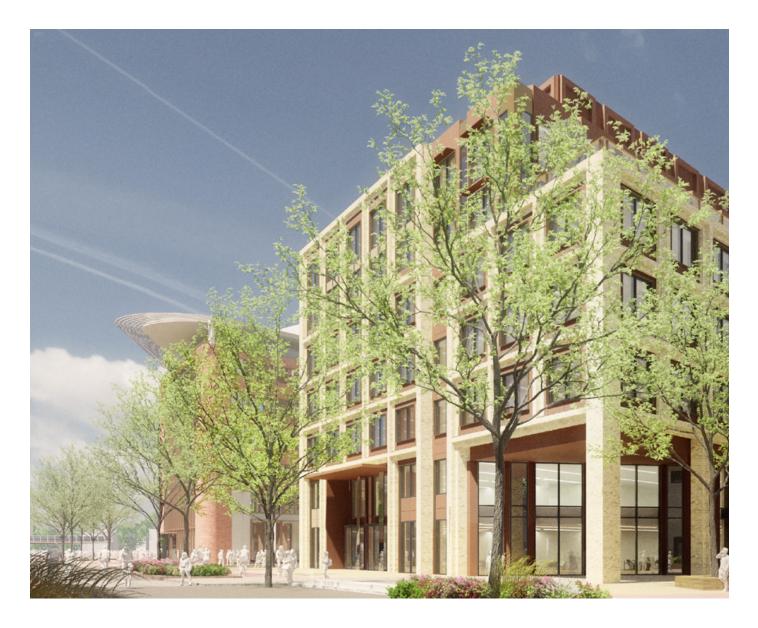


Fig. 24 Illustrative view of the entrance to One Milton Avenue with 1 Cambridge Square behind.

11.0 Research and Development buildings Buildings S6&S7

- 11.1 Buildings S6&S7 are situated adjacent the railway on the eastern edge of the masterplan area. Known as 1&3 Station Row, they are two mixed-use buildings with predominantly commercial laboratory use.
- 11.2 Science moves quickly. Keeping one step ahead isn't just about world-class equipment, but also open, collaborative workspaces that encourage internal and external partnerships and where casual conversations can lead to major breakthroughs.
- 11.3 Make has over a decade of experience designing for the unique needs of scientific researchers and the buildings they occupy. These range from complex, sophisticated services to support high energy consumption and stringent ventilation requirements, to door widths and circulation strategies that allow for moving bulky equipment. They also include the growing role of big data and meta-analysis in science, as well as advances in technology including AI and robotics.
- 11.4 Post-occupancy evaluations on Make's six laboratory buildings at the University of Oxford reveal important lessons about how researchers use different spaces and how much they value collaboration and flexibility. These spaces enhance human wellbeing and encourage collaboration, ultimately advancing ground-breaking research and underpinning new partnerships.
- 11.5 The best workplaces can be an asset to the community as well, and by providing mixed uses and a vibrant, green, well-connected public realm, we create inclusive places which express the identity of the community.
- 11.6 Modern commercial laboratories are not silos, rather the occupants seek to actively benefit from being located in a well serviced area with high levels of accessible amenities.
- 11.7 1 and 3 Station Row are laboratory buildings, facilitating life science research and development, and therefore, have been designed with specific design parameters. These differ from a traditional office in various ways including:
 - Increased floor to floor heights.
 - Increased horizontal planning grid.
 - Increased services.
 - Increased servicing provision.
 - Increased technical specification including structural frame.
 - A robust approach to flexibility and adaptability to cater for a range of sciences.
- In February 2020, Make were asked to present a series of studies examining the strip of land adjacent the railway on the eastern edge. The initial concept was for two buildings atop a single multi-storey car park. Following the appointment of ACME as masterplanners, and the separation of the car park into a separate building plot, Make were asked to develop the two remaining sites on the eastern edge for laboratory use.

Completed Make Research and Development buildings



Fig. 25 Old Road Campus Research Building, Oxford, Laboratory.



Fig. 26 The Innovation Building, Oxford, Commercial Laboratories.



Fig. 27 Big Data Institute, Oxford, Research and Development.

12.0 Brief - Buildings S6&S7

- 12.1 The client's brief for buildings S6&S7, known as 1&3 Station Row, is to provide commercial science space capable of accommodating life science research and development. The buildings have been suitably designed to be both flexible and adaptable, and to provide space for a range of tenants, from smaller scale incubator space through to more established users and possible head-quarter environments.
- To this end, the building and its services, have to be capable of being appropriately divided into connected 'technical' and 'non-technical' space to suit a range of tenancies. Bidwells advised the optimum average sub-tenancy being circa 10,000 sq.ft.
- 12.3 1&3 Station Row have been designed to achieve a BREEAM Excellent rating as a minimum. However, certain key design features have been included to ensure that BREEAM Outstanding remains a possibility.
- 12.4 To ensure a high-quality level of design, in accordance with SCLP, 1&3 Station Row have been designed in accordance with the design principles set out in the masterplan, to achieve a comprehensive and inclusive response.

13.0 Context - Buildings S6&S7

An introduction to the site

- As illustrated in the Design and Access Statement (CD1.03, p.21), the site for 1&3 Station Row lies within the Milton Ward, within the wider North East Cambridge Area Action Plan (NEC AAP). It sits north-east of the recent development around the Cambridge North Station, including the Novotel hotel, immediately adjacent the railway line. The site is currently a large surface car park.
- 13.2 The site is not located within the Cambridge Green Belt. However, the Cambridge Green Belt lies to the east of the site, to the east of the railway line, and further south-east and north-east of the site. To the east of the site, the land between the railway lines and the River Cam is occupied by a low-density, low-rise development of caravan parks and low-grade industrial units accessed from Fen Road.
- 13.3 One key townscape principle, as defined in the North East Cambridge, Landscape, Character and Visual Impact Appraisal: Development scenarios Design Guide, concerns the heights in relation to the eastern edge (p.71). (The LCVIA, as part of the NEC AAP evidence-based documents, is discussed by Mr Derbyshire as being of very limited weight. However, the design of 1&3 Station Row, draws upon the relevant principles of good design).



Fig. 28 Illustrative aerial view of the masterplan, looking north-west showing 1&3 Station Row in context.

13.0 Context - Buildings S6&S7

An introduction to the buildings

- 13.4 1&3 Station Row occupy plots S6 and S7 of the masterplan, north of the existing hotel (Two Cambridge Square), and plot S5 (The Mobility Hub). The buildings face onto Station Row to the west and Cowley Road East to the east. Beyond Cowley Road East lies the railway. Cowley Road borders the northern elevation of 3 Station Row, with Station Row Passage providing access between the south-side of 1 Station Row and the adjacent Mobility Hub. In between 1 and 3 Station Row is Chesterton Passage, running east west.
- 13.5 The primary building entrances are off the pedestrian friendly Station Row, with the buildings staggered and the entrances set back behind projecting bays to provide further legibility. Adjacent the main building entrances and in prime location when viewed up Station Row, retail units have been added to increase the active frontage.
- 13.6 1 Station Row has a GEA of 11,407 m2 and 3 Station Row has a GEA of 12,061 m2. In addition, there is a combined basement for cycle and vehicle parking. Both buildings are four storeys above ground plus plant with step backs to levels 3 and 4 to the east and west elevations, offering amenity space for the building users.
- 13.7 The side passages contain pocket parks, and visitor cycle parking. The eastern elevation contains colonnaded pedestrian links either side of an external delivery loading area. Locating the ground floor support services to the eastern edge adjacent the service area ensures the entire frontage of Station Row can have active frontage and remain pedestrian and cycle friendly, in accordance with the Station Row Character Area, as defined in the masterplan, see CD1.06d (p.122).
- Mr Derbyshire's evidence deals with the economic benefits of the appeal proposal, namely the need for offices, laboratories and R&D space, the cluster effect and the catalyst affect the appeal site will have for the wider AAP. Therefore, drawing on our significant laboratory experience, Make has designed 1&3 Station Row to meet this demand in providing high quality, adaptable and flexible, commercial laboratories.



Fig. 29 Models of 1&3 Station Row, exploring the articulation of the 'fingers' in massing and detail. East elevation facing Cowley Road (East) and the railway.



Fig. 30 View of terrace over building entrance, Station Row.



Fig. 31 View of set back terrace and plant screen, eastern edge.





Fig. 32 Sectional bay model of 1&3 Station Row, exploring articulation of the eastern edge in detail and materiality.

13.0 Context - Buildings S6&S7

- 13.9 The LCVIA states that the eastern edge is particularly sensitive due to the potential effects on views and landscape character. It suggests a number of design principles and how they could apply to development at the eastern edge of the site. It can be demonstrated that the buildings S6 and S7 have responded to these principles in the following ways:
 - S6 and S7 are set back at different distances from the railway edge.
 - Within the building footprints, different building elements of S6 and S7 are set back.
 - There is a variable roofline along the eastern edge articulating a roofscape between 13.4m, 17.6m, 20.9m and 22.1m in height.
 - Rather than solid walls, the landscape strategy has pursued distance, landscape verges, low level fencing and mature trees to define the separation between railway and building edge.
 - A substantial planting zone, more than 8m wide in some areas, has been created to accommodate semi-mature trees, in accordance with the Character Area of the Eastern Edge and Green Corridors as defined in the masterplan, (see CD1.06d p.123).
 - Along the eastern edge, a number of appropriately scale streets, including Chesterton Passage and Station Row Passage, have been created to provide permeability within the built form.
- **13.10** The following have been undertaken to avoid an abrupt transition between development and countryside:
 - The articulation of the building edge.
 - The articulation of the building height as set out in the masterplan parameters CD2.26.
 - The articulation of the materials and planning grid.
 - The inclusion of amenity terraces.
 - The inclusion of landscaping on the upper levels.
 - The set-back of the buildings behind significantly scaled landscaping.
- 13.11 Both the character of the Eastern Edge and Green Corridors, as defined in CD1.06d (p.123) of the masterplan and the Architectural Design Principles established in CD1.04 (from p.54), were adopted to create an appropriate response to the specific setting. In particular, the design intent of the massing, detailed articulation, material choice and landscaping has been carefully considered to provide a layering along the eastern edge rather than an abrupt and monotonous building line.
- The LVIA (CD1.42) as part of the application was a key design tool in developing this strategy. The exploration of this study and the potential impact on the design was used to inform the final building design. The input of both Bidwells (LVIA) and Turleys (Heritage) was considered in the final massing and tested in the VuCity model. Following a number of reviews, height was reduced (a whole storey was removed from S7), further articulation was added and additional landscaping was introduced. As per fig. 33, it was demonstrated that the long distance views were better distinguished through materiality, light and shade, rather than through any subtle change in height.
- 13.13 The LVIA (CD1.42) also highlighted the urbanisation of the railway sidings. To that end, an appropriate design response has been to treat this as an important piece of cityscape, presenting a considered edge which is sufficiently layered to provide architectural interest and variation as you move along its length. The materials, textures, colours, depths of elevations and activated terraces, have all been added to break down the bulk of two singular laboratory buildings, into a rhythm of smaller elevations and green corridors, which provide visual interest.





Fig. 33 Height and material options were undertaken with key LVIA views by VuCity. The addition of greenery proved more significant than a notional 1.5m increase in parapet height.

Key

- 1. An articulated roofplane.
- 2. The buildings steps both in plan and in elevation.
- 3. A low-level boundary between the site and the railway, with significant greening softening the edge.
- 4. Rhythm of vertical expression along the building's elevations help break down the mass.
- 5. Generous greening opportunities provided to the eastern edge, at high and low level.
- 6. Legible building plots create green links.

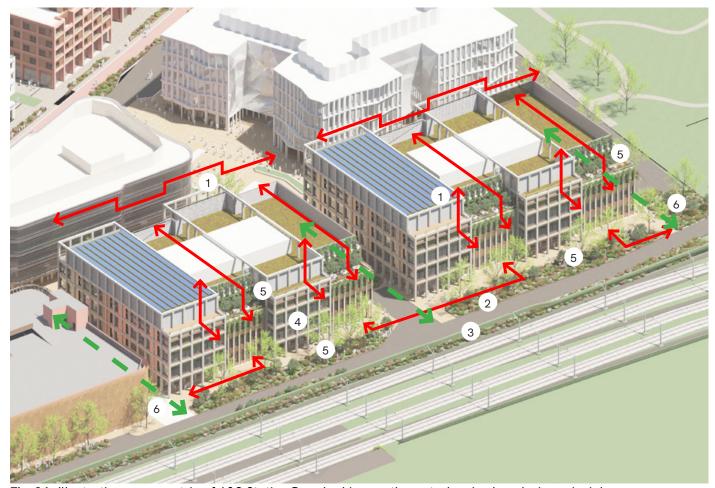


Fig. 34 Illustrative axonometric of 1&3 Station Row, looking north west, showing key design principles.

14.0 Uses - Buildings S6&S7

- 14.1 In addition to the reception and R&D space on ground floor, several other uses have been provided to contribute to a sustainable mix of accommodation, including retail, co-working space and cycle amenities.
- 14.2 Future activation space, as illustrated in fig. 35, describes either potential retail or front of house commercial activity, such as incubator space or tenant welfare facilities. The final use will depend on commercial demand and/or tenant need. However, both will require active frontages and therefore the buildings, and adjacent public realm, have been designed accordingly.

Key
The ground floors of 1&3 Station Row
contain a mixture of uses with activated
frontages to Station Row and servicing
directed towards the eastern elevation.

The side passages contain pocket parks and visitor cycle parking.

- 1. Accessible cycle facilities
- 2. Plant and stores
- 3. Sub-station
- 4. Refuse store



Fig. 35 S6&S7 Ground floor plan (CD2.75).



Office / laboratory

Future activation space

Reception

Retail

15.0 Scale and Massing - Buildings S6&S7

- 15.1 1&3 Station Row provide modern, sustainable laboratory accommodation, building on the commercial cluster around Cambridge Square, while supporting the wider masterplan as it develops to the north. To this end, several key principles were advanced as being significant design drivers. These included:
 - The importance of the buildings on the eastern edge of the masterplan.
 - The buildings provide the setting to two new streets and link passages.
 - A strong sense of material identity to compliment the masterplan.
- 15.2 These ensure a clear vision and positive contribution in line with the masterplan principles. Central to the massing strategy for 1&3 Station Row was the adoption of the masterplan approach to further divide the two buildings into a series of 'fingers' running east-west. This approach allows the laboratories to be considered as a row of smaller elements, providing a unified rhythm of building form.
- 15.3 Studies were undertaken to ensure a well proportioned scale across the elevations, to ensure legibility when viewed along Station Row, and visual interest when passing along the railway line.



Fig. 36 Illustrative view of the entrance to 1 Station Row looking north.

15.0 Scale and Massing - Buildings S6&S7

- 15.4 Through detailed exploration, an articulated approach of the building form behind a softened and landscape edge, has been adopted. This includes:
 - Articulated fingers with multiple terracing to levels 3 and 4, heights corresponding to the laboratory MEP plant strategy.
 - A stepping in plan between S6 and S7 and a step back from the railway, to enable significant and varied landscaping to soften the eastern edge.
 - Greening of terraces to further break down the mass and material bulk of the buildings.
 - A change in materials across the 'fingers' to further provide a visual contrast throughout the year, emphasising light and shade to avoid the appearance of a solid block of colour.
- 15.5 The eastern elevation is perceived as a continuation of the urban edge, established with the construction of the adjacent hotel and station. To that end, and alongside the detailed application of the Mobility Hub, the scale and massing of the buildings present a positive elevation towards the railway. Rather than a 'back', they address the eastern edge as a series of highly articulated and beautifully detailed terraces.
- 15.6 At a distance, studies show that greater articulation between the fingers is achieved through material difference and greening of the terraces, rather than subtle changes in height. (See fig.33) The more consistent height, as perceived from this distance, is entirely in keeping with a city where the skyline is only punctuated with significant landmarks.



Fig. 37 Illustrative view of 3 Station Row looking south.



Fig. 38 1&3 Station Row showing set backs from railway and new trees, looking south.



Fig. 39 1&3 Station Row, showing gaps and materiality when viewed from the east.



Fig. 40 1&3 Station Row showing green terraces to the east.

16.0 Access and Movement - Buildings S6&S7

- An inclusive approach to access has been adopted throughout the design of 1&3 Station Row with the mixture of ground floor uses, integrated landscaping and clear division of pedestrian, cycle and vehicle routes providing a logical and permeable solution. A naturally ventilated basement serves both cars and cycles, with accessible facilities on the ground floor. Vehicle access to the basement is via a ramp off Cowley Road, whilst servicing is from a shared loading bay off Cowley Road East. Both vehicle access points have been detailed by the transport engineer and have been carefully separated from the pedestrian and cycle access points off Station Row.
- 16.2 Following consultation, the principal entrances to the cycle stores were switched to Station Row to increase legibility and connection with the adjacent cycle route. The entrances to the accessible ground floor cycle spaces and amenity were retained within the green corridors / pocket parks to provide a more spacious and private access point. (CD2.75, S6 and S7 Ground Floor Plan.)



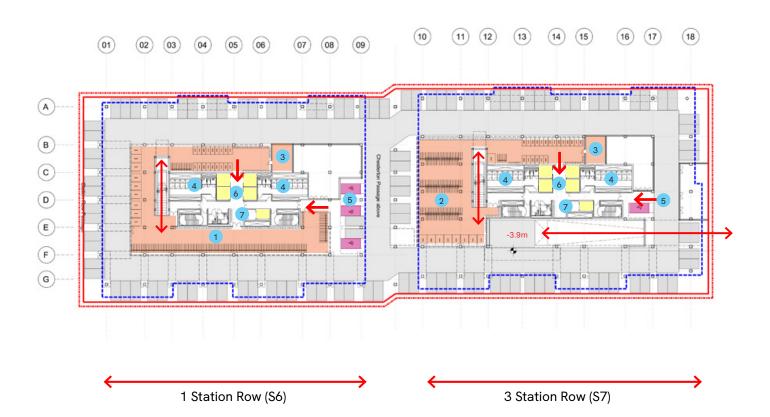


Fig. 41 Basement plan showing access and movement strategy. (CD2.74).

7. Dedicated services lift



basement to level 03

- 16.3 Cycle storage is either external at grade, internal at ground floor, or internal at basement level. The majority of spaces are at basement level with safe, legible access and welfare facilities clustered around the main building cores. All the cycle facilities are part of an 'end of trip' strategy where an increased level of fit out specification will be developed in detail design to ensure that the cycle entrances are a high-quality entrance for both user and building visitor.
- 16.4 Although a substantial number of Sheffield Stands are provided, in all three locations described above, the majority of the 700+ cycle parking is delivered in a modern double stacked arrangement within the basement. This is to ensure as much of the ground floor as possible is preserved as active frontage.



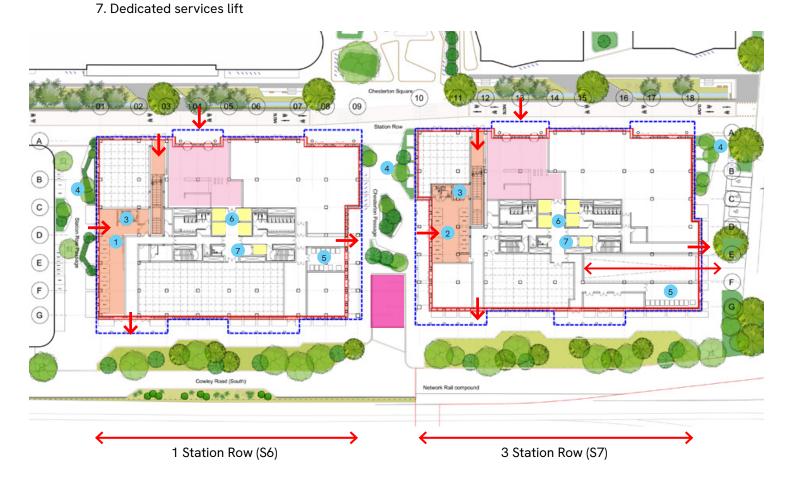


Fig. 42 Ground floor plan showing access and movement strategy. (CD2.75).

NB - additional acc. parking on Cowley Road adjacent basement entrance.



17.0 Sense of Place and Identity Buildings S6&S7

- 17.1 The two buildings face onto Station Row with their primary entrances and ground floor amenities designed to work with the unique landscaping in the predominantly pedestrianised street. The stepping out of both 1&3 Station Row from the line of the Mobility Hub (\$5\$) makes the entrances and building frontages legible when viewed along Station Row. Service access is via Cowley Road East, where the building lines have been established to allow for significantly scaled trees and planting, further softening the sensitive eastern boundary.
- 17.2 In between the S5, S6 and S7 plots, run a series of east west passages which offer green corridors between the buildings, ensuring visual permeability whilst also offering pocket parks and accessible cycle entrances.
- 17.3 In accordance with the design principles established in the masterplan, the bulk of the building mass has been divided into a series of 'fingers', running east-west. These fingers are further expressed in form and materiality to create a unifying rhythm across the principal western and eastern elevations.
- 17.4 The design development of the facades centres around the introduction of two planning grids. These articulate the alternating fingers, provide legible ground floor entrances, and define the recessed terraces. The larger, more civic grid is composed of a precast composition, and is continuous from the ground to the screened plant level. The smaller, more vertical grid is composed of brick piers and contains the building cantilevers, marking the entrances and stepping back to reveal the level 03 amenity terrace and the level 04 plant room screen.
- 17.5 In accordance with the masterplan design principles, a complementary palette of materials enhance the character of the development and legibility of the building. The brick stock has been selected as an appropriate response to the general Cambridge aesthetic, with natural precast concrete / stone panels providing a visual contrast between the alternating blocks. Complementary metal spandrels have been selected for the opaque elements and the lining to the brick piers, offering visual warmth and a finer grain of detail.



Fig. 43 1 Station Row (S6), south-east elevation (CD2.81).

17.6 The 'fingers' and roof planes are further articulated through a significant number of terraces.

These provide amenity to both the east and the west with enhanced greenery on the setbacks facing the railway edge, and the fen landscape beyond. A change in material and colour on the eastern terraces provides further visual contrast throughout the year, regardless of the planting.



Fig. 44 Studies showing how vertical louvres can be used as 'shadow' lines.



Fig. 45 Facade studies exploring rhythm and verticality through different planning grids.

17.0 Sense of Place and Identity Buildings S6&S7

Key

- 1. Precast concrete grid and perforated metal.
- 2. Metalwork continues to provided screen to open plant area with perforated metal screen.
- 3. Glazed spandrels.
- 4. Metal/glass balustrade.
- 5. Brick piers with metal fins to reveals (colour varies with elevation, champagne / silver).
- 6. Precast concrete grid.
- 7. High and low-level metal spandrels (colour varies with elevation, champagne / silver).
- 8. Recessed entrance, metal soffit and drum doors at entrance.



Fig. 46 Bay facade study for 1&3 Station Row.

18.0 Resources and Lifespan - Buildings S6&S7

- 18.1 The environmental strategy has been developed in line with the Cambridge North Sustainability Strategy (CD1.202). This includes:
 - A high thermal performance building fabric, minimise solar gain and heat loss.
 - Consideration of low and zero carbon technologies inclusion of an all-electric system.
 - Rooftop area capable of accommodating renewable technologies and equipment.
 - Green roofs / amenity terraces and brown /biodiverse roofscapes.
 - Future flexibility structural grid and distribution of services have been tested for multiple tenant variations.
 - 1. Maximise natural shade in articulation.
 - 2. High thermal performance, the size and orientation of windows have been designed to minimise solar gain and heat loss.
 - 3. All-electric system.
 - 4. Designed to accommodate air source heat pumps and PVs, providing renewable energy.
 - 5. Smart meters record energy and water.
 - 6. Electric vehicle charging.
 - 7. Robust materials.
 - 8. Staircases have been centrally positioned to promote an active lifestyle.
 - 9. Cycle storage.
 - 10. Green amenity roof.
 - 11. Brown biodiverse roof.
 - 12. Water efficiency has been increased through reduced flow rates in showers and WCs.
- 13. Rainwater recycling to be considered in detail design for irrigation.

Fig. 47 Illustrative diagram highlighting key environmental principles.

19.0 Conclusion - Buildings S6&S7

19.1 1 Station Row has a GEA of 11,407 m2 and 3 Station Row has a GEA of 12,061 m2. In addition, there is a combined basement for cycle and vehicle parking. Both buildings are four storeys above ground plus plant with step backs to levels 3 and 4 to the east and west elevations. The following summary is in reference to the design characteristics of the National Design Guide, 2021.

Context

19.2 The eastern elevation is perceived as a continuation of the urban edge established with the construction of the adjacent hotel and station. Alongside the Mobility Hub, the scale and massing of the buildings present a positive elevation towards the railway. Rather than a 'back', they address the eastern edge as a series of highly articulated and beautifully detailed elements.

Identity

19.3 The buildings draw upon the rich heritage of Cambridge, both ancient and modern, through its use of appropriate materials and its vertical expression. The gridded elevations add rhythm and proportion, unifying the facades. The introduction of greenery to the eastern elevation increases the sense of rhythm and variation.

Built form

- 19.4 The building form is of an appropriate scale, and has been carefully considered as a series of fingers to provide further articulation. The plant level has been successfully incorporated through the continuation of the facade treatment and additional set backs to ensure it is not an overbearing presence.
- 19.5 From a close up pedestrian scale, or from a passing train, a high level of material and compositional detail between the fingers ensure visual interest. From a longer distance, the perceived silhouette is in keeping with a traditional city skyline, with the addition of greening and contrasting material colours providing suitable 'light and shade' distinction between the elements.

Movement

19.6 An inclusive approach to access has been adopted throughout the design with the mixture of ground floor uses, pedestrian colonnades and clear division of pedestrian, cycle and vehicle routes providing a logical and permeable solution.

Nature

19.7 The environmental strategy has been developed in line with the Cambridge North Sustainability Strategy which includes enhanced water management and a supportive approach to biodiversity.

Public spaces

19.8 The design seeks to respond positively to the character of each adjacent area including active frontages, primary entrances and pedestrian colonnades; all enhancing the quality public space and supporting interaction. In addition, through design development, the landscaping space on the eastern side has been increased to accommodate substantial planting, further increasing the visual amenity.

Uses

19.9 In addition to the laboratory space, several other facilities have been provided across the ground floor to contribute to a sustainable mix of uses, including retail, co-working space and cycle amenities.

Resources and Lifespan

- 19.10 Materials have been assessed for robustness and have been chosen to withstand environmental change. Future flexibility has been considered, both in the structural grid and distribution of services. 1&3 Station Row have been designed to achieve a BREEAM Excellent rating as a minimum. However, certain key design features have been included to ensure that BREEAM Outstanding remains a possibility.
- 19.11 1&3 Station Row offer exceptional laboratory space in a sustainable and accessible environment. The buildings have a high level of detailing with each elevation responding to its immediate setting. The two laboratories, perceived as a beautiful row of terraces, provide a thoughtful frontage to the development and a well considered, contextual response to the layered city edge.



Fig.48 Illustrative view from the east, showing planters and green glazed brickwork to the level 03 terraces.