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One Portwall Square

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ONE PORTWALL SQUARE

One Portwall Square is a new-build office close to Temple Meads railway station in Bristol, UK. The site was originally part of the car park to the rear of 100 Temple Street, a large office building designed by John Wells-Thorpe during the 1970s including a raised squash court with parking below.

The building is conceived as a simple robust 21st century warehouse that can easily adapt over time to suit uses and ways of occupation yet to be envisaged. Occupant comfort and wellbeing are at the forefront of the design, using energy efficient systems including smart mixed-mode ventilation with opening windows and in-slab cooling.

A complementary palette of materials has been selected for the façade taking its cue from the neighbouring orange-red brick and pre-cast concrete buildings.

The building is also the new home for Allford Hall Monaghan Morris’s growing Bristol team, who occupy the ground and first floors of the building.

Sector:	Office
Location:	Bristol, UK
Address:	One Portwall Square Bristol BS1 6BH
Client:	Nord Development
Construction cost:	£10,286,242
Start:	October 2020
Completion:	August 2022
Contract type:	Design and Build

PROJECT TEAM

Client:	Nord Development
Architect:	Allford Hall Monaghan Morris
Project Managers:	Gardiner & Theobald
Structural/Civil Engineer:	Elliott Wood Partnership
Cost Consultant:	Gardiner & Theobald
MEP/Lift Engineer:	Arup
Planning Consultant:	Planning Ventures
Fire Engineer:	Arup
Transport Consultant:	Entran
Daylighting & Sunlight Consultant:	EB7
Environmental Consultant:	Arup
Main Contractor:	Skanska

AREAS

Gross internal	48,494 sqm
Net internal	33,767 sqm

ALLFORD HALL MONAGHAN MORRIS TEAM MEMBERS

Paul Monaghan, Cormac Farrelly, Thomas Bennell, Jonathan Hills, Jonathan Davidson, Kat Popowczak, Ruth King, Timothy Williams, Matthew Lambert, Justina Jakubkaite, Faya Tyagay, Barbora Vanek.

For further information and images please contact:
Allford Hall Monaghan Morris
Morelands
5-23 Old Street, London
EC1V 9HL

T: +44 (0)20 7251 5261
E: press@ahmm.co.uk

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PROJECT DESCRIPTION

Introduction

One Portwall Square is a new-build office for independent developer Nord on a site close to Bristol Temple Meads railway station. The site was originally part of 100 Temple Street, a large office with a raised squash court and parking below, designed by John Wells-Thorpe. The building is set back from Portwall Lane to create a new pocket square opening onto Portwall Lane and the Brunel Mile.

Architectural Ambition

One Portwall Square was designed to be an exemplar office building with benefits not only for the building occupiers but also the wider Redcliffe district. It redevelops a dormant site to provide office space of exceptional quality in the centre of the city. The privately owned and maintained but publicly accessible Pocket Square on the Brunel Mile dovetails with Bristol Council's aspirations for the emerging Redcliffe Corridor and improves the setting of 100 Temple Street from Portwall Lane. The building introduces a new and innovative approach to sustainability, comfort and wellbeing to the city of Bristol.

The building's appearance is simple and contextual, designed to optimise daylighting and ventilation and respond to the neighbouring 100 Temple Street. It is grounded with hardwearing materials that will weather well, while elements such as the balcony soffits and the entrance oculus create distinctive memorable moments that help to create a new sense of place.

Placemaking

The creation of a publicly accessible Pocket Square provides significant public realm improvements and a valuable pocket of open space. The scheme also contributes positively to the Brunel Mile; providing more engagement and activity and helps support the ongoing development of this part of the city.



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THE SITE

Site Location

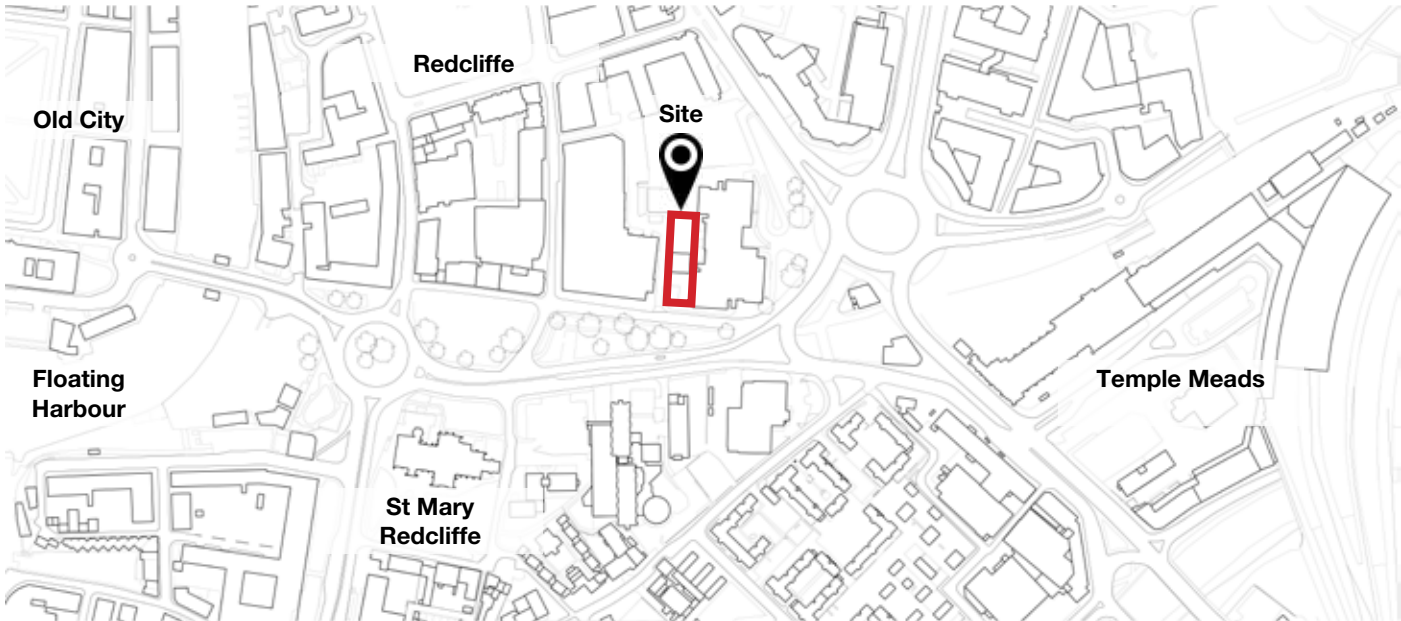
The site, previously occupied by a disused squash court, surface car and cycle parking, formed part of the demise of the 100 Temple Street office building. This prime city centre land is within a part of Bristol that has seen regular major change over the past 150 years, driven by its position at the south-eastern gateway to the city centre and the proximity of Temple Meads railway station.

The current landscape is dominated by large expanses of road infrastructure and surface parking, remnants of the inner ring road that was constructed through Queen Square in the 1930s and expanded in the 1950s following heavy wartime bombing.

There has for many years been a desire to regenerate the area to provide a better introduction to the city for travellers alighting at Temple Meads Station. A number of developments are now coming forward, some connected to the Bristol City Council Temple Quarter Enterprise Zone, that aim to rebalance the character and land use away from vehicles in favour of pedestrians and cyclists and a more urban, intense grain.

The site has excellent transport links, being:

- Within six minutes walk of Temple Meads Station.
- Adjacent to a major bus route.
- Adjacent to dedicated cycle lanes and within easy reach of the Bristol-Bath Railway Path.
- Adjacent to the Brunel Mile - an important pedestrian route linking Temple Meads Station to Canon's Marsh via Portwall and the Harbourside.



Site location plan

Industrial heritage

There is a long history of industrial and warehouse buildings north of Portwall Lane, and surviving examples remain an important part of the cityscape, such as the Grade II listed No. 60 Ringers Tobacco Factory on Redcliff Street.

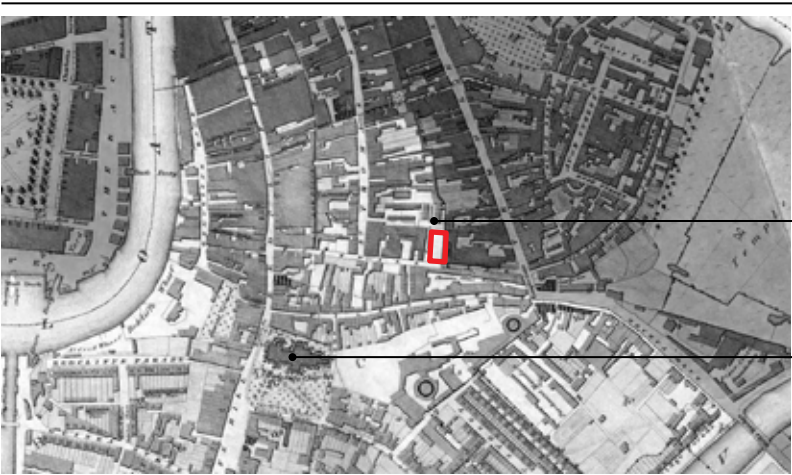
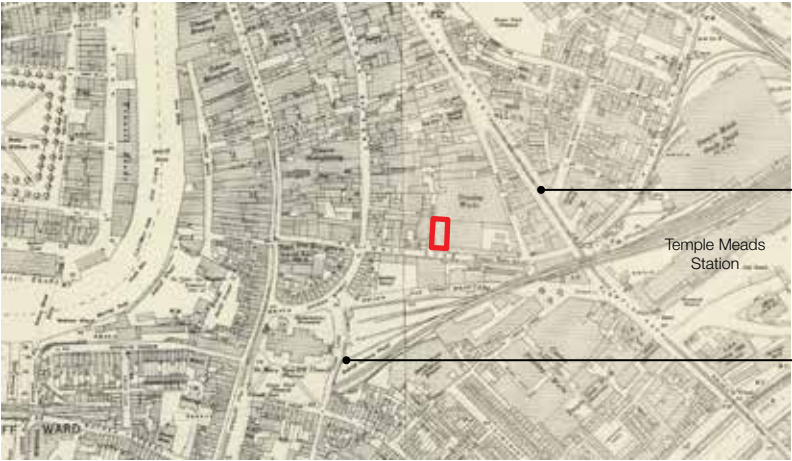
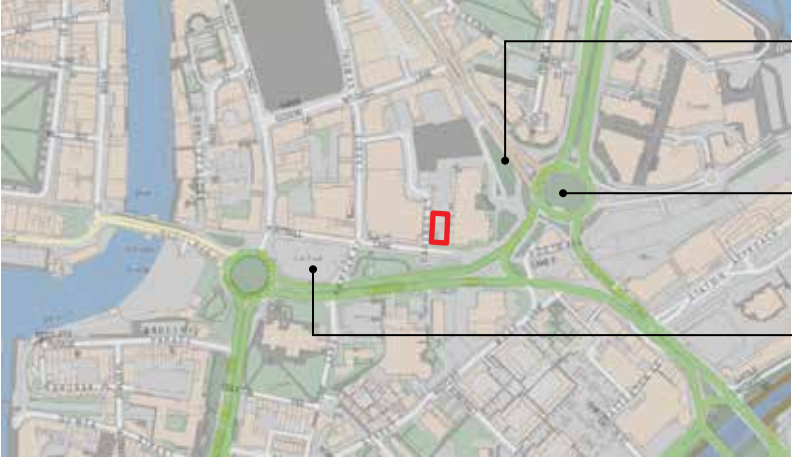
Post-war the industrial uses of the area slowly declined leaving large vacant sites. In recent years the proximity of Temple Meads and the redevelopment of the harbourside have shifted the office centre of the city away from Lewins Mead towards Redcliffe. Several large mixed-use sites are now also under construction.

The Urban Fabric

The historical map from 1898 - 1939 shows a tight urban grain, formed by the printing works to the east of Canynge Street, and by buildings all along the frontage on the west. This condition of dense streets is replicated all along the city blocks to the east of the site.

Wartime bombing, post-war planning policies and infrastructure projects opened out this grain, introducing large surface car parks, roads and amenity landscape areas. There has for some years been a desire to knit these areas back together, and the redevelopment of the Temple Circus roundabout is one example of a return to a denser urban fabric.

THE SITE

	Tight city granularity and density	1828
	Victoria Street creates a direct link to Temple Meads Station, the first of the major road schemes that would impact this area so significantly in future years.	1898 - 1939
	Temple Way forms another cut through the existing fabric, this time linking with Old Market.	1950
	Almost no pre-1950s buildings remain. Buildings are mostly large and surrounded by space or wide roads.	2017

THE SITE

100 Temple Street

100 Temple Street is admired by the Pevsner guide to Bristol, with the description “Its staggered masses achieve a pleasing three-dimensional quality. Five well-composed red brick storeys, screened by slim paired supports of contrasting aggregate.” Built as the headquarters for the insurance firm London Life in 1980, it is distinctive, rigorous and carefully detailed. With the impending creation of the new Temple Square to the east, it will gain a suitable civic presence.

The building was designed by John Wells-Thorpe, architect of the 1970s Hove Town Hall. After serving as vice-president of the RIBA and President of the Commonwealth Society of Architects, he was appointed OBE for services to architecture in 1995.

Very deep floor plates were originally enlivened by the unusually high floor-floor height of 4.125m and a diagonal coffered concrete soffit. The separate wings are designed so that there are always windows, and therefore views, on two sides of every workspace, which mitigates the depth of floor.

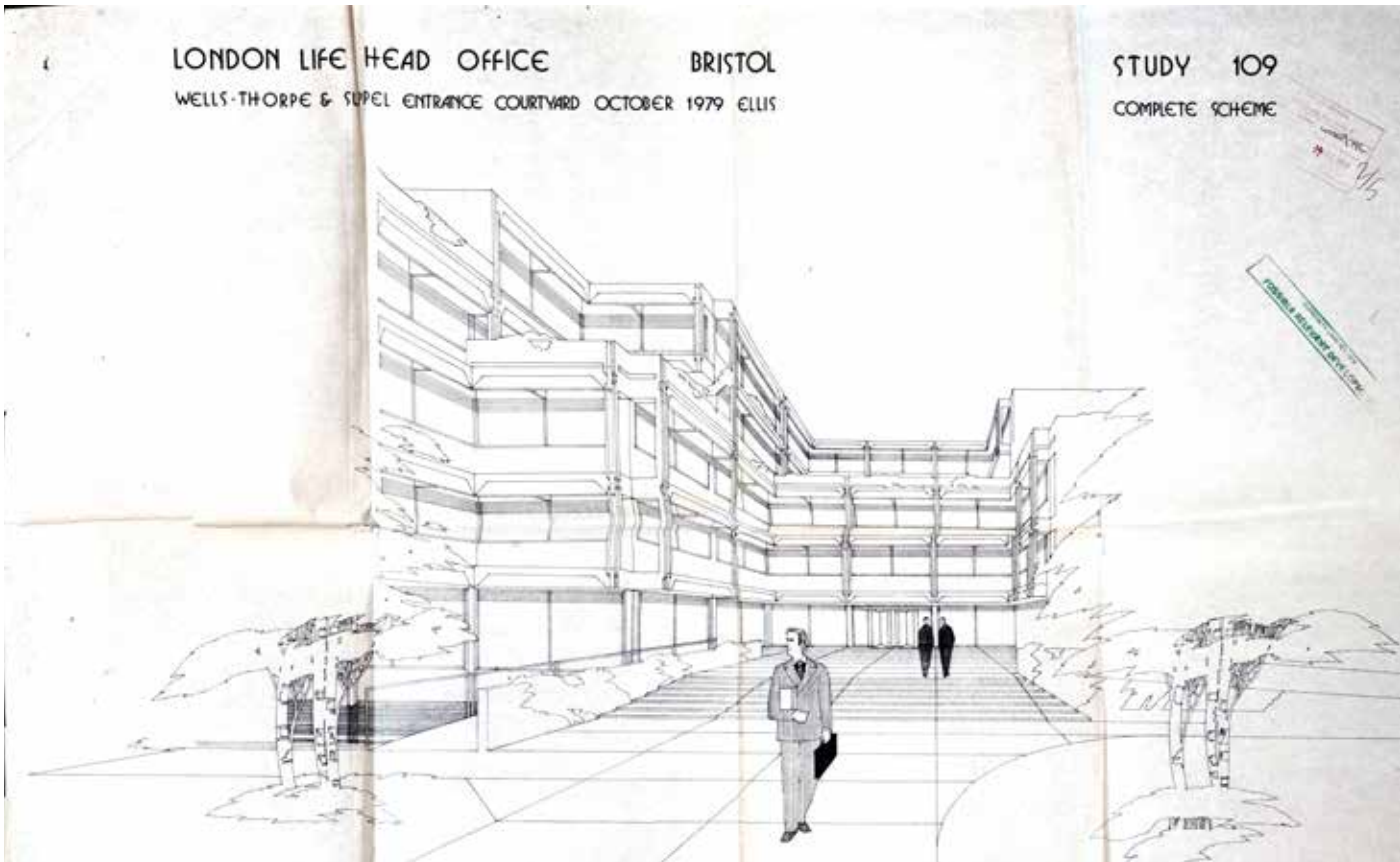


100 Temple Street from Canynge Street



100 Temple Street from Portwall Lane

THE SITE



100 Temple Street architect's perspective



100 Temple Street main entrance

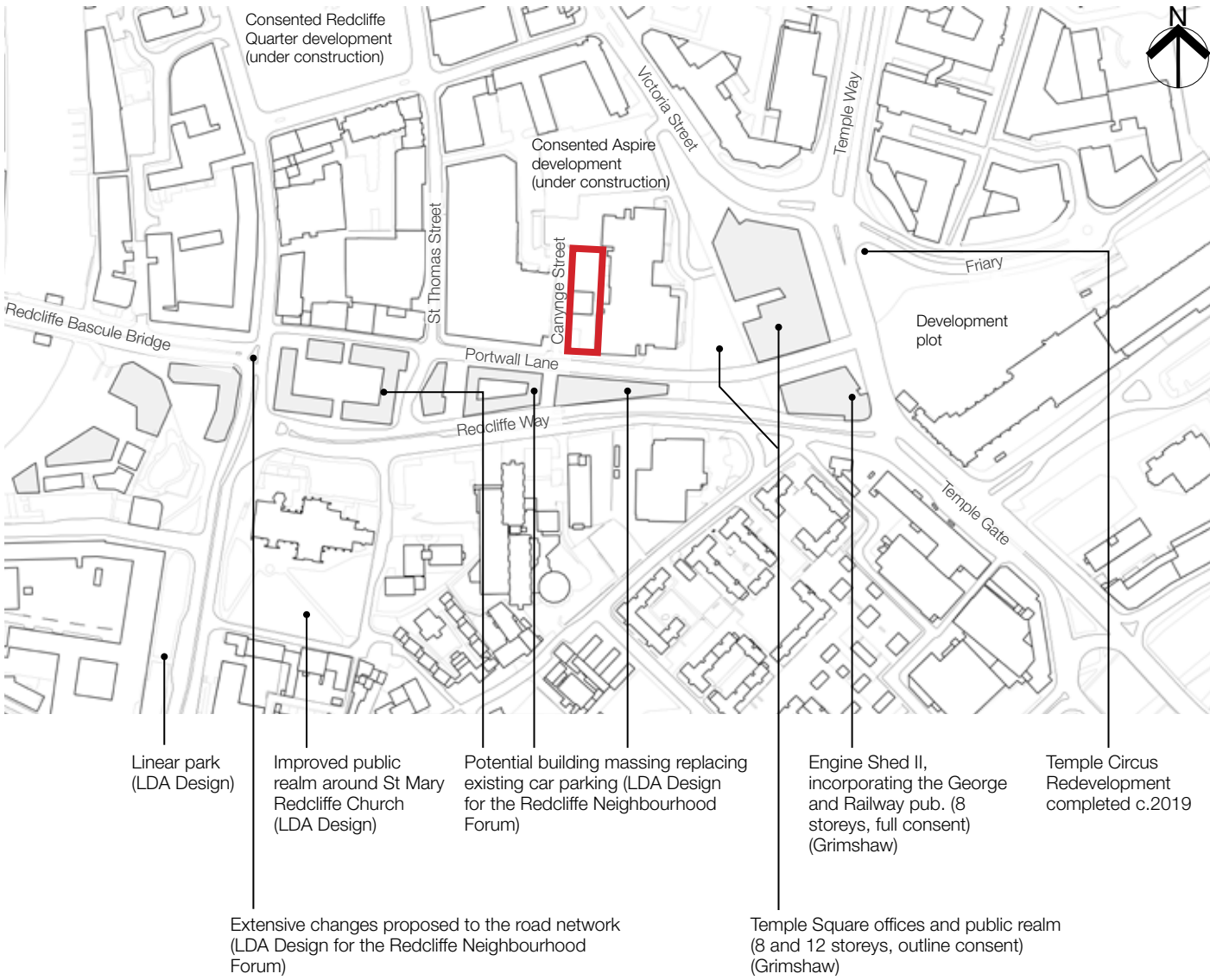
THE SITE

Emerging Context

Redcliffe is undergoing significant renewal and it is important to consider what the area may be like in five years' time if the proposed developments occur.

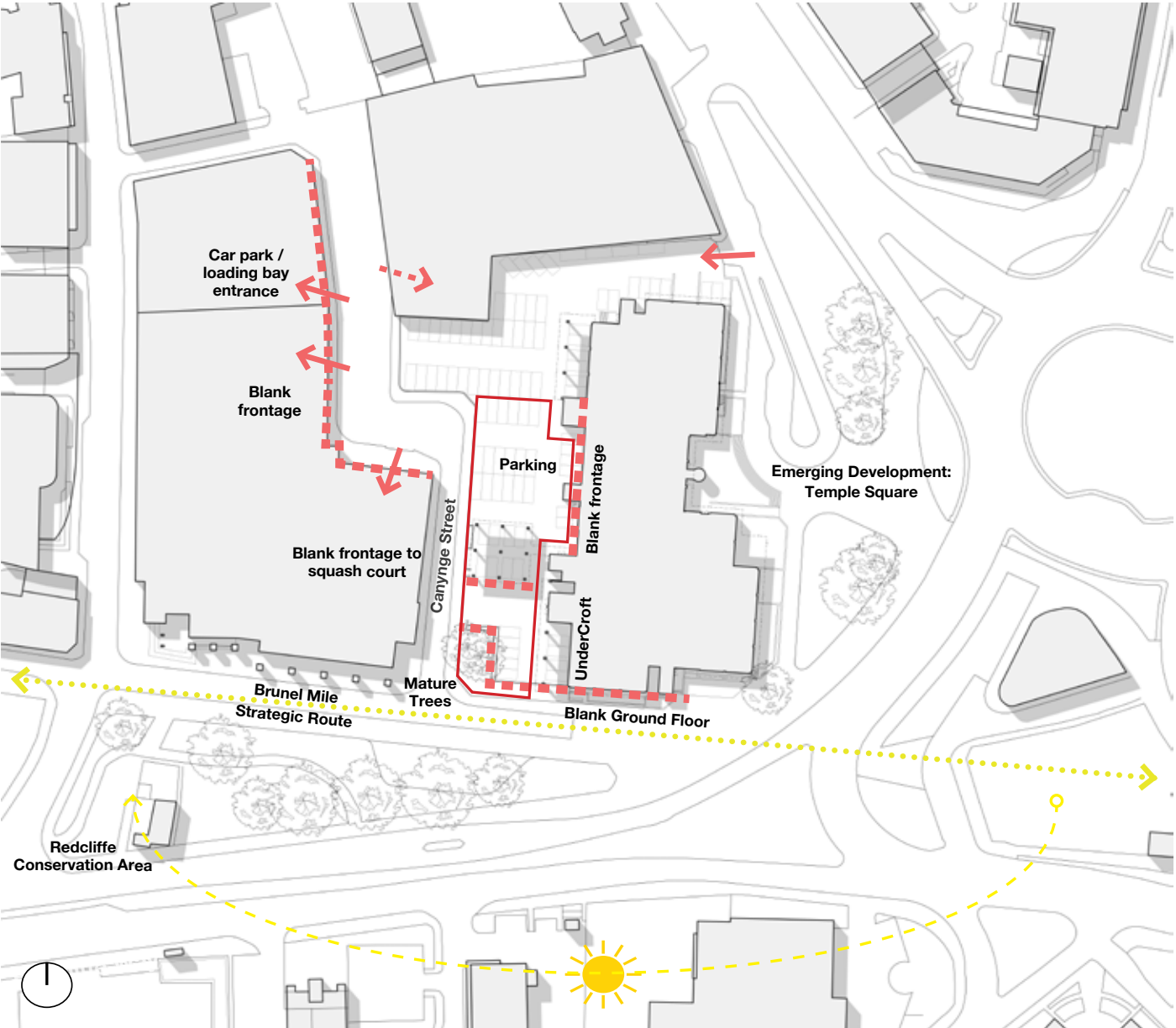
This map is a combination of those schemes that are in the public domain. There are different degrees of certainty in terms of their design and construction progress, so the area as built may not precisely resemble this map, but it provides a good overview.

The map shows a district where some of the wide, highway dominated and formless spaces between buildings have been replaced by a denser more urban grain that gives priority to pedestrians. The development of One Portwall Square contributes to this process, by infilling an area of surface car parking - reducing traffic volumes, making better use of highly serviced city centre land and increasing vibrancy.



THE SITE

Opportunities & Constraints



Opportunities

- Under utilised site.
- Opportunity to 'repair' and infill part of a city block .
- New frontage to Canynge Street.
- Opportunity to provide contextual and respectful response to surrounding buildings.
- Good southerly orientation for key facade and the opportunity to create a new Pocket Square along Portwall Lane.
- Vast majority of the site is in Flood Zone 1.
- On a key route between Temple Meads and the Habourside to the west, the Brunel Mile.
- Two attractive semi-mature silver maple trees mark the southern boundary.
- There is an opportunity for the creation of some retail space (by others) within the undercroft of 100 Temple Street adjacent a new Pocket Square.

Constraints

- The design intent was to respect the westerly windows to 100 Temple Street, overlooking the Pocket Square.
- Primarily blank frontages of the existing buildings along Canynge Street.
- The ground floor western edge of 100 Temple Street provides for access, maintenance, plant and means of escape, so relocations where necessary and service arrangements were agreed with the owner of 100 Temple Street.

DESIGN CONCEPTS

One Portwall Square was conceived as a simple robust 21st century warehouse that can easily adapt over time to suit uses and ways of occupation yet to be envisaged.

Occupant comfort and wellbeing were at the forefront of the design, using energy efficient systems including smart mixed-mode ventilation with opening windows and in-slab cooling.

An Exemplar Office

The building has a clear diagram of served and serviced spaces. The core is located to the east facing mainly blank facade, with the main floor plate expressed as a simple and legible linear space that can be easily subdivided.

The proximity to 100 Temple Street has been a key consideration in the building's design, reflected in the generous floor to floor height of 4.2m to floor levels which match those of its neighbour. This provides a clear height to the office floorplates of 3.65m, aiding daylighting, ventilation and occupant amenity.

The design uses a low spandrel that wraps around the building, forming the balustrade to the cantilevered south-facing terraces at each level and shading the storey below. This places glazing where it needs to be, while maximising daylight.

Provision of out door amenity space for building occupants on every level.

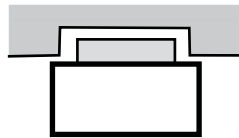
A Contextual Approach

The approach to massing responds to the immediate context and is mindful of creating a positive impact on the neighbouring Conservation Area. The creation of a new south facing Pocket Square along Portwall Lane respects 100 Temple Street and the silver maple trees, preserving the outlook and daylight to 100 Temple Street office floor plates. The square also provides potential for retail provision (by others) facing and helping to activate the new square.

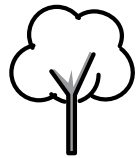


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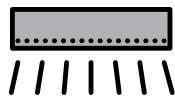
Key ideas



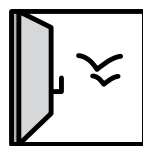
A found condition in the city
Repairing the urban grain



A new place for Bristol
A new public square



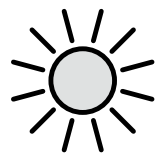
A new way of servicing
Concrete core cooling



Back to basics
Opening windows



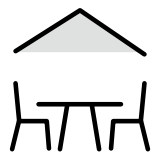
21st century warehouse
Large volumes
Lean approach, robust finishes



A new standard in wellness
Volume and light



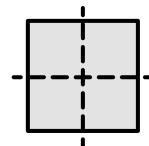
Outstanding occupant facilities



Occupant amenity
A terrace on every floor



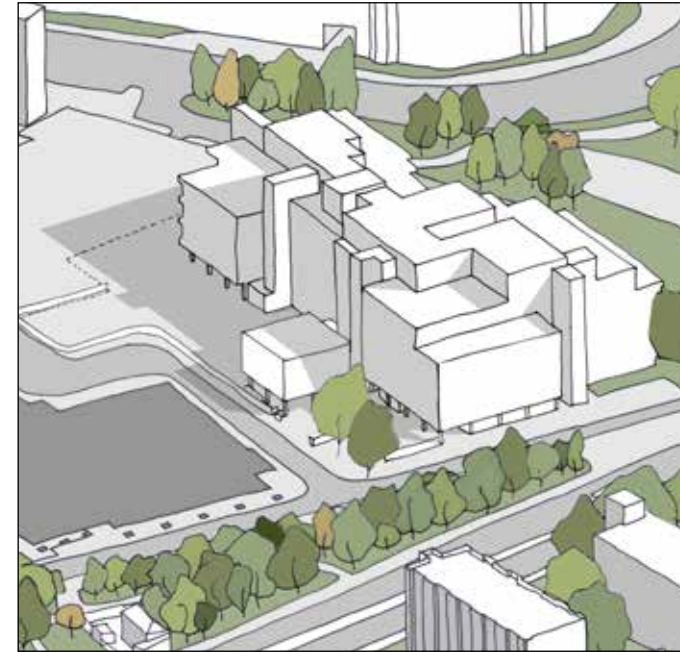
Low carbon
Smart energy use



Long life loose fit
Simple flexible floorplates

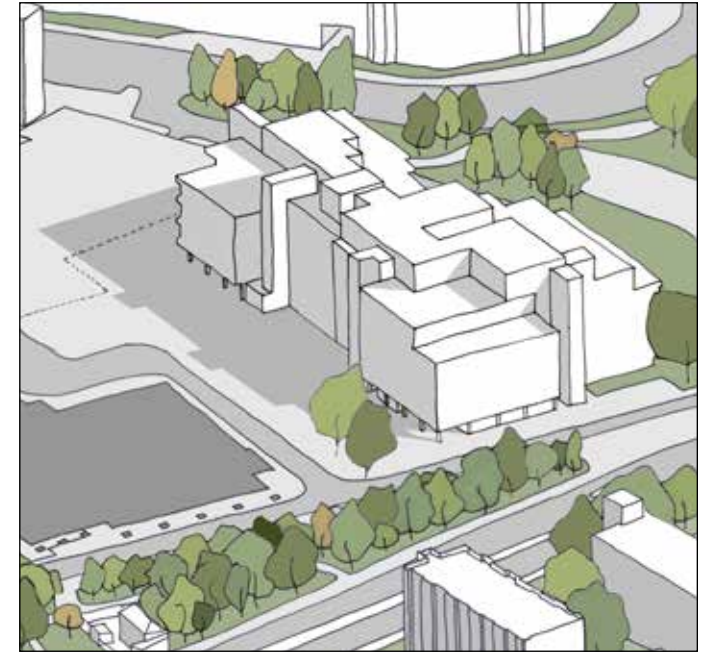
MASSING

Massing



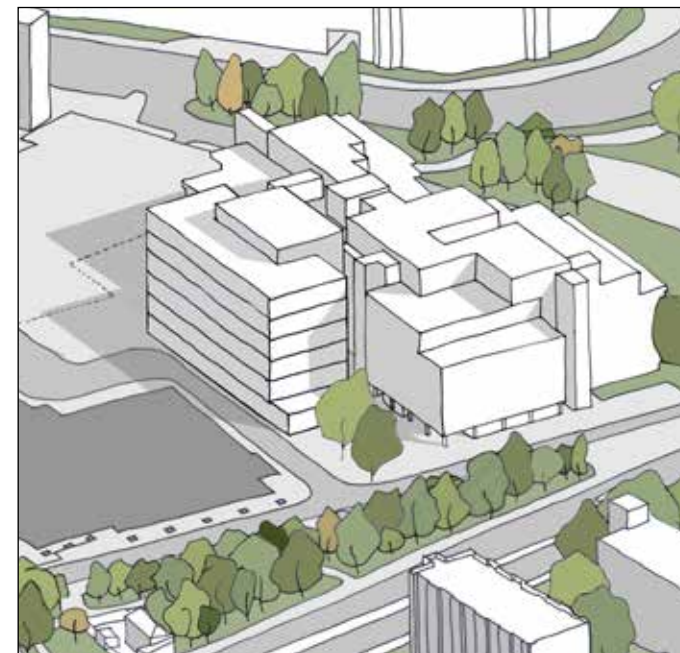
Existing Condition

- Disused squash court set in surface car parking.
- Adjacent storage undercroft to 100 Temple Street.
- Brick wall forms a barrier along Portwall Lane.
- Two mature Silver Maple trees provide relief and greenery.



Demolition

- Squash court removed and 100 Temple Street made good.
- Existing Silver Maple trees protected and retained.
- Wall along Portwall Lane demolished and site opened up to Portwall Lane.



Base Massing

- Massing interlocks with the footprint of 100 Temple Street.
- Setback from Portwall Lane creates a new pocket square and celebrates the trees.
- Six storeys respond to the floor to floor heights of 100 Temple Street.



Depth and Articulation

- The southern elevation responds to the deeply layered and horizontal elevations of 100 Temple Street with full width terraces that also provide solar control where most needed.

FACADE

Inspiration

The design of the facades was inspired by the classic Modernist architecture of the 1950s by Mies van der Rohe and the Chicago firm of architects Skidmore, Owings and Merrill. These buildings are known for their formal rigour, clarity, simplicity and attention to detail.



Inland Steel Building, Chicago, by Skidmore Owings and Merrill, 1958.
Photograph by Hedrich Blessing



PepsiCo Headquarters, New York by Skidmore Owings and Merrill, 1960.
Photograph by Ezra Stoller



Neue Nationalgalerie, Berlin by Ludwig Mies van der Rohe, 1968

FACADE

The building has three main facade types which express the diagram and respond to pressures of the context:

1. Office floors

The office floors above the ground floor are wrapped with trays of lightweight metal with a strong horizontal emphasis. Above the dark metal spandrels, continuous bands of glazing provide expansive views from the offices.

2. Solid brick base

The building is grounded by a solid base that allows the different requirements of the ground floor to be accommodated. The brick surface is more robust than metal, better able to resist chipping and denting, and will weather more naturally.

3. Utilitarian cladding

The eastern walls of the building and the service core are clad with cost-effective metal sandwich panels that achieve the required performance. These are an industrial product that is quick and simple to erect, often used for large industrial and retail sheds. The panels themselves have a neat appearance but flashings and fixings must be handled carefully.

Other materials provide accents in particular areas:

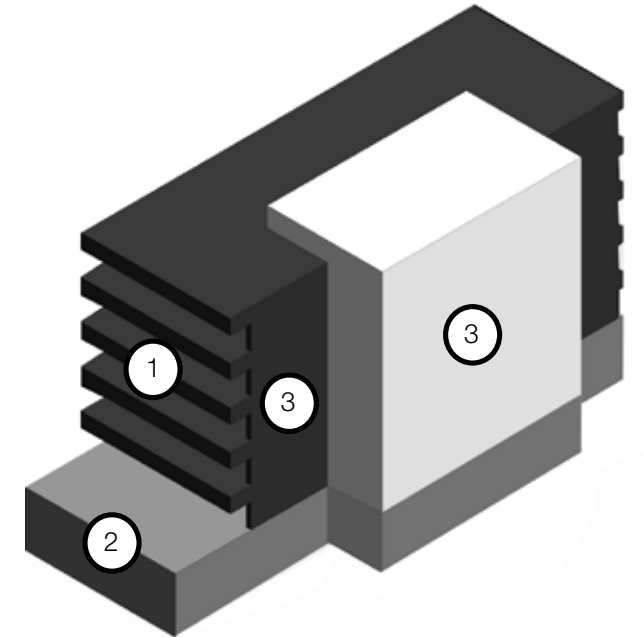
4. Balcony soffits

From the Pocket Square the soffits to the balconies are almost as visible as the south elevation itself and provide an opportunity to introduce a distinctive accent. An

aluminium plank soffit system, by Hunter Douglas, can be supplied in any RAL colour.

5. Entrance lining

A vertical baguette lining to the reception curves outwards to welcome those arriving at the building.



FACADE

Responding to 100 Temple Street

Designed during the 1970s, 100 Temple Street is a building of quality in a late modern style. Notable features include its honest expression of its construction and materials and clear response to its functional requirements - expressed most clearly in the concrete solar shading shelves that lend a strong horizontality to the elevations.

One Portwall Square is immediately adjacent to 100 Temple Street and they form two sides of the new pocket square, so it is vital that they have a positive relationship. We have chosen to replicate the unusually high floor to floor levels of 100 Temple Street so that the floors line through, but we are also working with the underlying philosophy of simplicity, clarity and designing to meet functional requirements.

Functional considerations

The different elevations of the building have different aspects and functional requirements. In particular the proportion of glazing must vary depending on aspect, to

control daylight and spread of flame. We have been careful to develop an elevation design that can accommodate these shifts in glazing percentage while maintaining a consistent expression on the three glazed sides.

The design uses a low spandrel that wraps around the building, conceptually a stack of plates or drawers, which forms the balustrade to the terraces to the south that overlook the Pocket Square and shade the glazing below. Between the spandrels, ribbon windows give the building a lightness and provide expansive views from the interior.

Vertical elements create different rhythms that lend subtle interest to the long western elevation, particularly when viewed obliquely along Canynge Street. A robust base of dark brick meets the street at ground floor level.

FACADE

Detailed design and materials

A dark palette of materials has been selected to complement the orange-red brick buildings to either side and to appear recessive behind the trees in the Pocket Square. Metal spandrels, with their crisp corners and flat surfaces, provide a counterpoint to the rough concrete and brick of 100 Temple Street.

The elevations are set out on a BCO-compliant 1.5m module, which is expected by most office occupiers. This module can become repetitive if it is not varied and we have used larger panes of glass to increase the open quality of the elevations.

Where the building meets the street we have given the building a robust brick base that will weather well.



North
Maximum 35% glazed to prevent fire spread



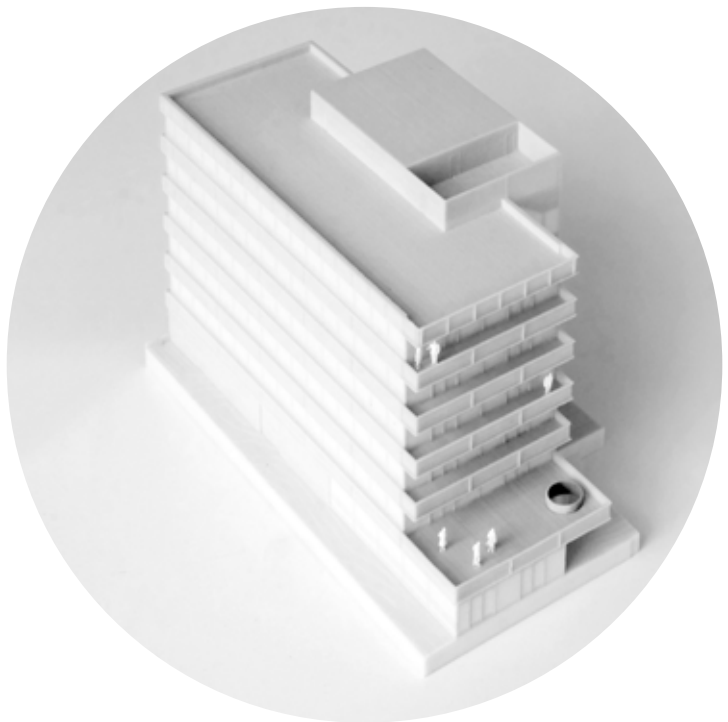
East
Maximum 0% glazed to prevent fire spread



West
Maximum 60% glazed to prevent overheating



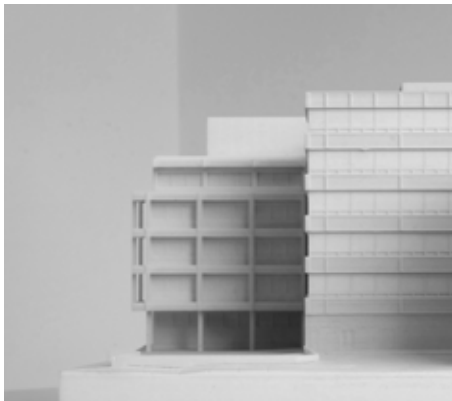
South
Maximum 80% glazed because shaded by balconies



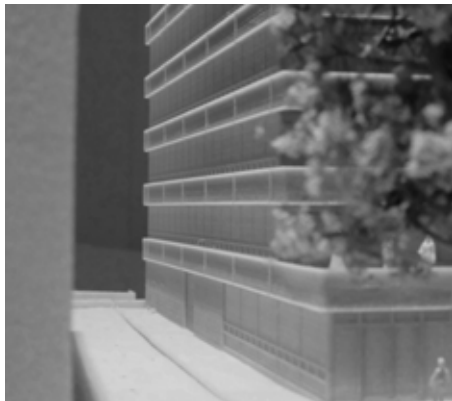
The glazed areas of the elevation are determined by functional constraints.



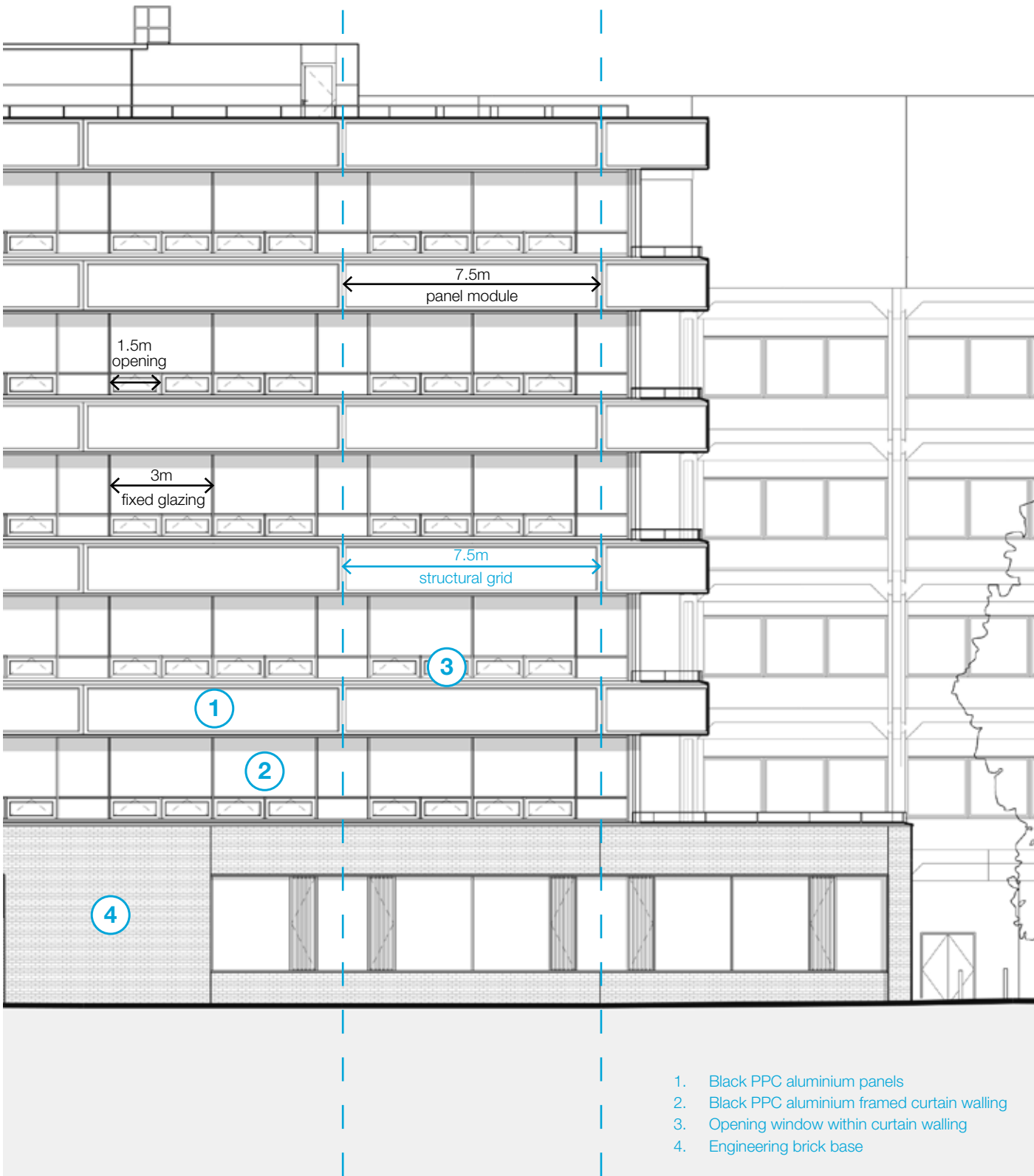
Depth of facade creates solar shading and occupant amenity



Horizontal emphasis lines through with 100 Temple Street



Secondary vertical elements create rhythm especially when viewed obliquely



1. Black PPC aluminium panels
2. Black PPC aluminium framed curtain walling
3. Opening window within curtain walling
4. Engineering brick base

STRUCTURE AND SERVICES

The design of the structure and services of the Building were vital to achieve our ambition of delivering an innovative piece of commercial architecture for Bristol, and were driven by the floor to ceiling, plan depth and mechanical services strategy.

Occupant wellness

Studies have shown that office workers that are provided with a comfortable environment are happier and healthier, and this translates into fewer sick days and better overall productivity. It is recognised that environmental comfort means more than simply meeting set points for temperature and light levels. Comfort requires access to good quality, controllable daylight and the ability to change the internal environment, for example by opening windows.

Mixed mode: lower energy

Opening windows are an essential part of the mixed-mode energy strategy at Portwall Gate. When external conditions are suitable in spring and autumn, they provide the primary means of ventilation.

A Building Management System (BMS) continually monitors internal and external temperature, humidity, wind speed and CO2. When external conditions are suitable for natural ventilation, a simple red/green traffic light encourages occupants to open the windows and the mechanical systems then switch off to avoid the risk of energy wastage.

Heating is via trench units located at the perimeter which are controlled by the BMS. Cooling is provided by pipes embedded in the concrete slabs. Occupants can activate additional boost cooling (estimated to be 5% of the year) from the perimeter trench units which incorporate fan

assisted cooling in addition to heating. The spaces are purged during the night by the mechanical ventilation system, which uses the cool night air to pre-cool the concrete slabs and the building's thermal mass, minimising active cooling during the day.

Concrete Core Cooling

Concrete Core Cooling embeds cooling pipes into the building's structural floor slab in a similar way to underfloor heating. It makes use of the concrete's thermal mass to provide a large cooled ceiling that responds to temperature fluctuations slowly, helping to smooth them out. Unlike the conventional method of cooling air, the reduced temperature is spread evenly and cold draughts are eliminated.

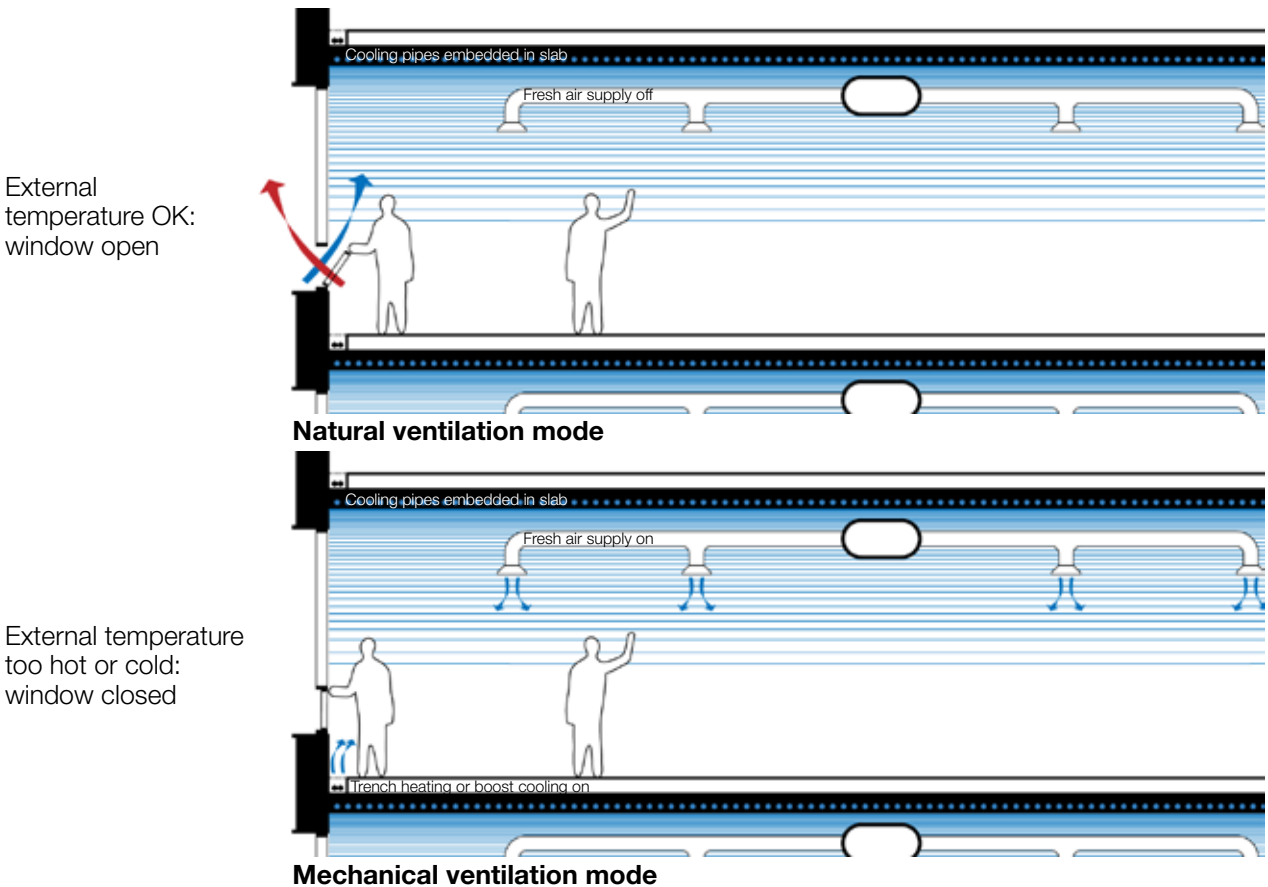
High ceilings: more daylight, lower energy

The high floor to ceilings unlock and amplify these effects. Higher windows allow daylight further into the space. Opening windows ventilate deeper into the plan.

There is also a much greater than typical volume of hot air above head height, where it is not felt or breathed. This forms a buffer, allowing more time for the natural ventilation or concrete core cooling to cool or replace the air before it becomes uncomfortable, and avoiding the need for energy-intensive fast-response systems.

The structure is the finish

By exposing the concrete structure, the building gains a distinctive character and robust appearance. It is more honest and legible. The design does not include unnecessary linings and suspended ceilings which, as they typically have a lifetime much less than the building, are often replaced. This process of continual renewal creates large volumes of avoidable waste.



INTERIORS

Project aims

At the highest level, One Portwall Square set out to raise the bar in terms of design, occupant comfort, place-making and sustainability whilst delivering a building at regional cost norms.

Its aims are broad reaching and ambitious:

- Mixed-mode ventilation systems with Concrete Core Cooling. No ceiling-mounted fan coil units or false ceilings.
- External south-facing amenity space on all upper floors plus the provision of Bristol's newest square.
- All heating is from Bristol's Heat Network: no boiler, no gas usage.

One Portwall Square was designed to be 'long life-loose-fit', allowing for maximum flexibility, adaptability and longevity. The building does more with less: concrete slabs provide finish, enclosure and cooling and balconies provide shading, character and occupant amenity. Stripping everything back to its raw components meant it was possible to create floorplates that were flexible and simple, but also had special character and quality.

For multi-floor lets, structural soft spots were incorporated in all slabs to allow floors to be connected internally. The first-floor soft spot has already been activated and incorporated into the fitout for AHMM.

Each floor can be subdivided into two tenancies, with separate electricity and heating/cooling metering and mechanical servicing for each.

Materiality

One Portwall Square uses robust materials simply and honestly and expresses the structural elements as finishes where appropriate. Above ground, materials are coated metal and glass with a minimum lifespan of twenty-five years. A base of vitrified blue bricks provides a robust interface between the building and the ground, capable of resisting impact and graffiti cleaning, if necessary.

Internally, finishes are conceptually divided between self-finished, expressed materials and easily repairable and renewable finishes such as painted plasterboard. Expressed materials are robust and require little maintenance. Within the Cat A spaces, easily repairable materials have been used for the surfaces that tenants need to fix into or paint.

Internal environment

Opening windows give occupants the ability to directly control their environment and provide a connection to the exterior. This connection is enhanced by the ribbon windows across three of the four elevations, allowing a panoramic view, with three metre-wide fixed panes above eye level. Generous terraces on each floor provide the opportunity to step casually outside for a moment without needing to travel in a lift.



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INTERIORS



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Entrance

The recessed entrance is highlighted by an oculus of the same bright orange, appearing to be illuminated even on dull days. A splayed wall curves into the recess, ensuring there is no confusion between the ground floor office space and the building's reception.

Reception

The gallery-style reception is generous, with a sequence of well-lit spaces between the main entrance and lifts. Materials have rich, deep tones with the external dark blue bricks used behind the reception desk.

Core & circulation

A narrow, efficient core slots into a recess in the adjacent building footprint. Lifts are placed centrally to the floors, opening directly onto the floorplate, while staircases are placed at the outer edges to allow for daylight, views out, ventilation and easy access and escape.

The south stair opens out to the reception area, adjacent to the reception desk. The prominent location of the stair before the lifts, encourages their use, supporting active travel and providing daylight and spatial variety.

Common parts are simple and robust with a timeless quality, with their character derived from exposed structural materials or through the bold use of colour such as the orange floor to the cycle and changing areas and access panels within the washrooms.

AHMM OFFICE FIT-OUT

Circulation

Circulation and entry were a key consideration in the design of the AHMM office fit-out. Entry for pedestrian, cyclists and visitors were considered alongside the configuration for the base-build core and circulation. These considerations led to the location of reception at first floor. In this location all building users, entering either by stairs or lift, enter into the heart of the plan. The open reception area maximises the visual impact of the office space itself as well as views out and the expansive glazing.

Layout

The first floors the principle office space, with the office seating area taking advantage of the natural light, views and ventilation provided by the glazing on three sides. The enclosed, cellular spaces are located in a spine down the centre of the building, backing onto the solid opaque walls facing the core and 100 Temple Street.

The enclosed spaces comprise back of house areas (print room, kitchen, server room); three meeting rooms (two of which take advantage of the glazing to the north and south); two acoustically treated “quiet pods” for remote meetings and private calls and finally, a quiet room with its own muted and calming colour palette differentiating it from the rest of the office.

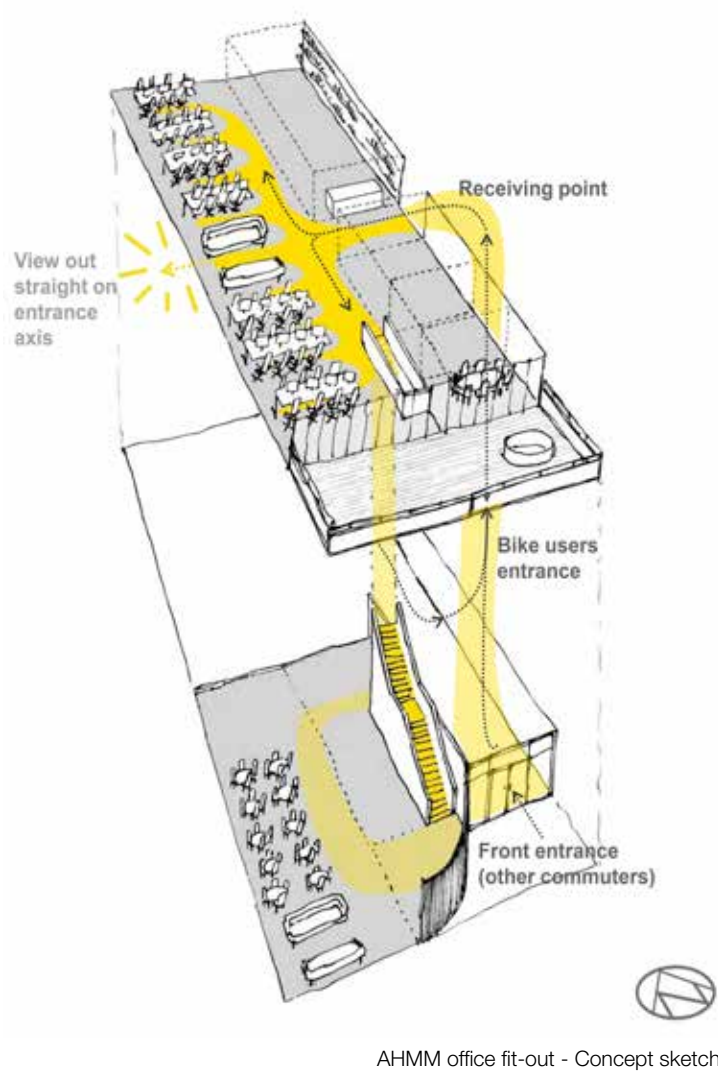
The ground floor was conceived as a “blank canvas” space with multiple uses: kitchen / refectory for eating and informal meetings; materials library and model display; pin-up and crit space; exhibition space; formal presentation / meeting space.

Materials

The materials used in the fit-out aimed to reflect the simple and robust materials used base build and to have a family resemblance to other AHMM offices, although not to replicate these. The most prominent elements are the partitions clad in black lacquered beech battens (concealing acoustic insulation). These serve a number of purposes: They provide visual interest and texture; they provide acoustic attenuation, thus avoiding the need for visually intrusive acoustic treatments; and they provide a visual link and connection between ground and first floors.

Colour

The approach to colour also replicated the approach to colour in the facade with black being the predominant colour, with yellow picking out key elements. Yellow Bolon

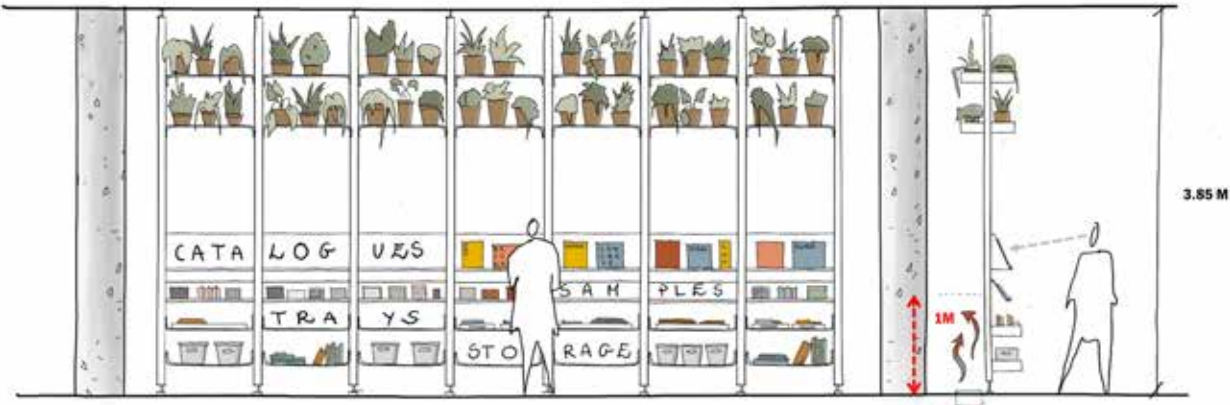


AHMM office fit-out - Concept sketch

recycled flooring adds brightness to the depth of the plan and delineates circulation zones. Yellow USM storage also serves to delineate the circulation and front of house areas from the main office work space.

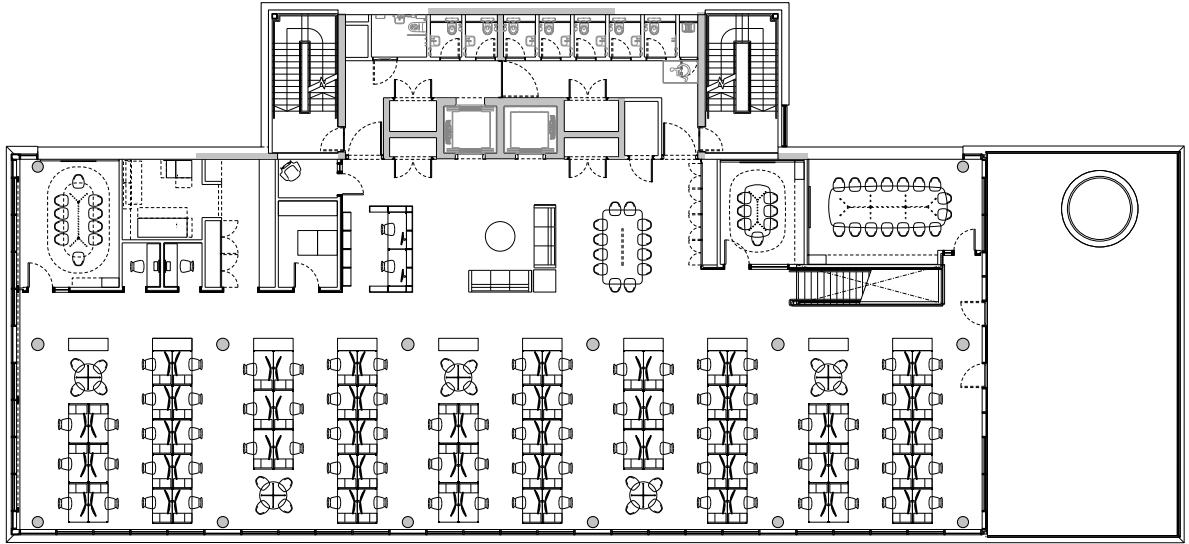
Planting

The USM storage units house 152 plants in integrated planters. These provide added colour and biophilia as well as a visual connection to the greenery (in summer) of the silver maple trees in the square.

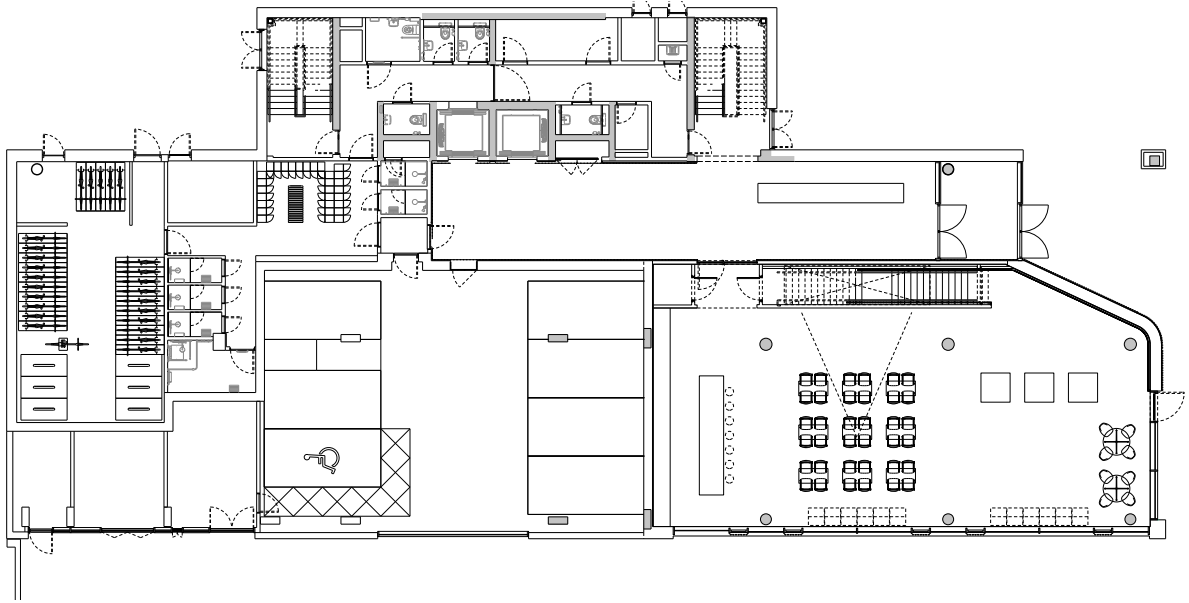


AHMM office fit-out - Materials library sketch

AHMM OFFICE FIT-OUT



AHMM office fit-out - First floor plan



AHMM office fit-out - Ground floor plan



AHMM office fit-out - Storage sketch

LANDSCAPE

Townscape

A new place for Bristol

The site provided a natural opportunity to create a new Pocket Square. This was driven by the site constraints including the overlooking windows of 100 Temple Street, retention of the existing trees, the desire to create a delightful and vibrant setting for the building, and the surrounding urban context.

A space to breathe

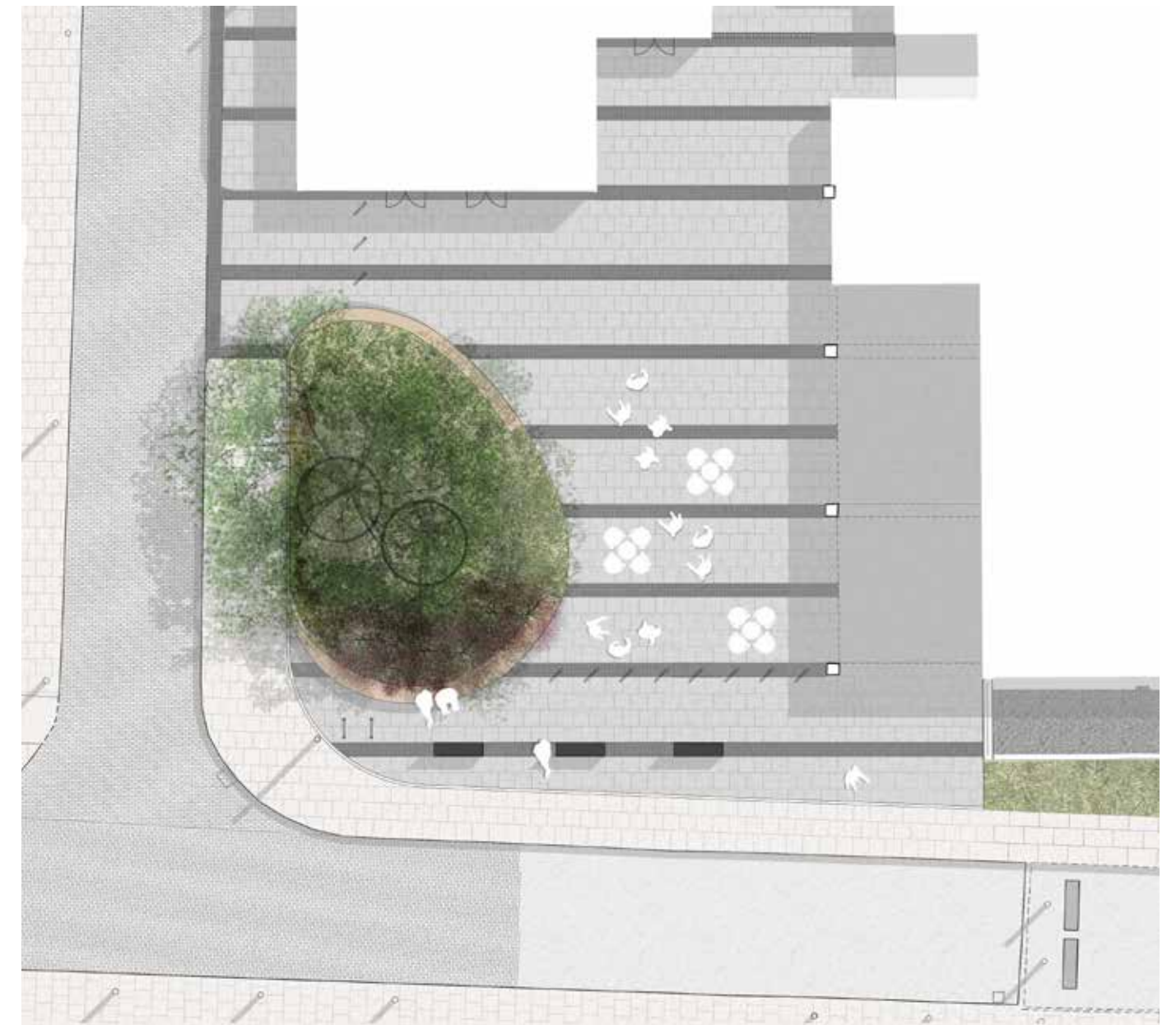
Historically Portwall Lane was a narrow, hard surfaced lane of industrial character. The forthcoming Redcliffe Corridor proposals seek to restore this medieval street scale. For the past 70 years, however, the street has had a very different character - much more open with mature trees on the southern side. Once the Redcliffe Corridor proposals are constructed, some of these trees may be lost and small pockets of green space along the lane will become more noticeable and valuable.

Realising the potential of 100 Temple Street

100 Temple Street is a building of high quality which, from Canynge Street, is marred by its scruffy and unwelcoming setting. Replacing the private car park with a publicly accessible, privately maintained Pocket Square has transformed the setting of the building.



LANDSCAPE



Pocket Square

The design for the Pocket Square centres on the two retained silver maple trees, with the rest of the space paved in the manner of a small town square. These are surrounded by an enclosed, slightly raised area defined by a curving bench that negotiates the change in level. This space, necessitated by the current raised level of the roots of the trees, creates an intimate space to sit or converse underneath the canopy above.

The material palette of concrete and granite refers to the exposed granite aggregate columns of 100 Temple Street, with the paving pattern aligning with the column grid. The paving extends to the face of the columns of the 100 Temple Street undercroft, with separate proposals due to be brought forward by Bristol Council for this area.

Street furniture, including concrete benches and bollards, is robust and placed to prevent unauthorised vehicle access to the square while appearing as unobtrusive as possible.



Sustainability

High performance glazing and concrete core cooling work together to bring expected energy use well below a comparable new building, while rooftop solar panels supply free electricity to the common areas and lifts. Heating and hot water will be provided by Bristol's District Heat Network providing cheaper and greener energy.

The project achieved BREEAM 2018 Excellent with a score of 78. The scheme uses 22% less energy than a typical new office building and a 60% reduction in carbon emissions in use compared to the Building Regulations Part L 2013 requirements. These reductions include 40% from passive measures such as mixed mode ventilation, highly efficient MEP systems and 20% from roof mounted photovoltaics.

The Bristol Heat Network connection avoids the need for a boiler and associated maintenance and replacement. While a secondary life-safety emergency electricity supply, instead of a diesel generator, avoids the risks, costs and pollution of diesel delivery and handling.

High internal volumes provide an air buffer above head height, allowing internal temperatures to fluctuate while occupied zones remain comfortable, reducing peak load on services.

Site

The site is a city centre urban infill, on key public transport and active travel routes. The new Portwall Square provides urban greening and attenuated drainage. Less than 500 metres from Temple Meads Station and 150 metres from the nearest bus stop, the site is well connected to public transport encouraging occupiers to commute sustainably.

Transport

A dedicated cycle entrance and best in class cycle facilities encourages active travel. Sixty-six cycle storage spaces encourages sustainable travel and represents 165% provision against BCO 2019.

Overheating

Passive shading, high airtightness and low U-values reduce reliance on mechanical systems, making the building more resilient to extreme weather. South facing terraces provide solar shading.

Structure and fabric

A detailed assessment to optimise concrete usage, resulted in a change to the structural grid, reducing slab depths and concrete use.

The concrete frame incorporates 30% GGBS cement replacement. Slab soffits are exposed in office areas to activate the thermal mass of the structure, enhanced by chilled water pipework within the slabs.

High volumes, exposed concrete soffits and columns provide aesthetic impact whilst utilising thermal mass. Robust, self-finished materials reduce embodied energy and ongoing carbon consumption associated with the replacement of finishes.

Ventilation

A mixed-mode ventilation system allows the building to be naturally ventilated for approximately 45% of the year, saving energy.

Renewable energy

A photovoltaic cell array delivers a 20% CO2 emissions reduction (60% overall reduction) beyond the Building Regulations Part L2A 2013 requirement

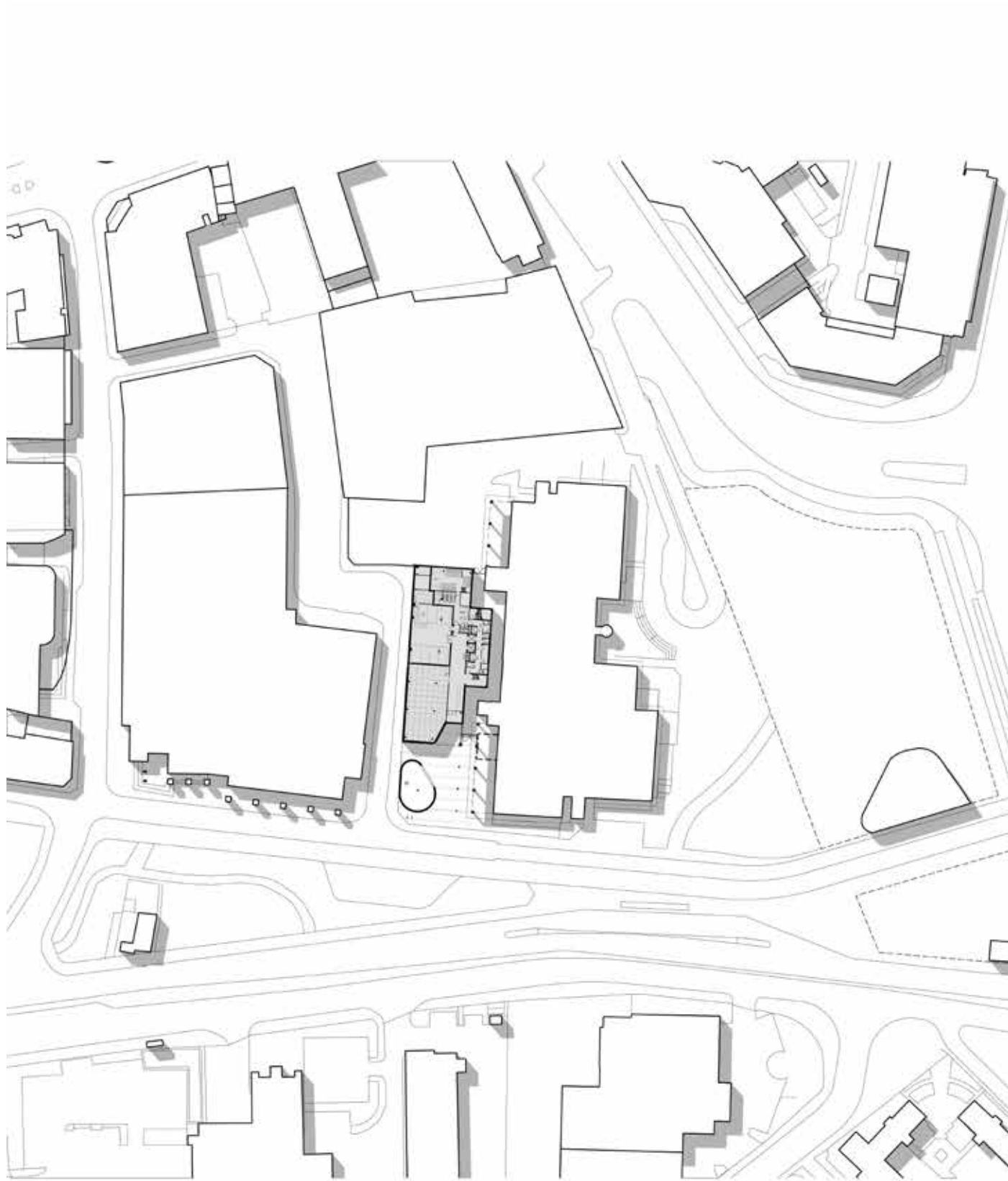
Wellbeing

Studies have shown that office workers that are provided with a comfortable environment are happier and healthier, and this translates into fewer sick days and better overall productivity. It is recognised that environmental comfort means more than simply meeting set points for temperature and light levels. Comfort requires access to good quality, controllable daylight and the ability to change the internal environment, for example by opening windows.

Portwall Square creates a tranquil open space, with trees providing urban greening and biophilia. Opening windows give occupants the ability to directly control their environment and provide a connection to the exterior. This connection is enhanced by the ribbon windows across three of the four elevations, allowing a panoramic view, with three metre-wide fixed panes above eye level. Generous terraces on each floor provide the opportunity to step casually outside for a moment without needing to travel in a lift.

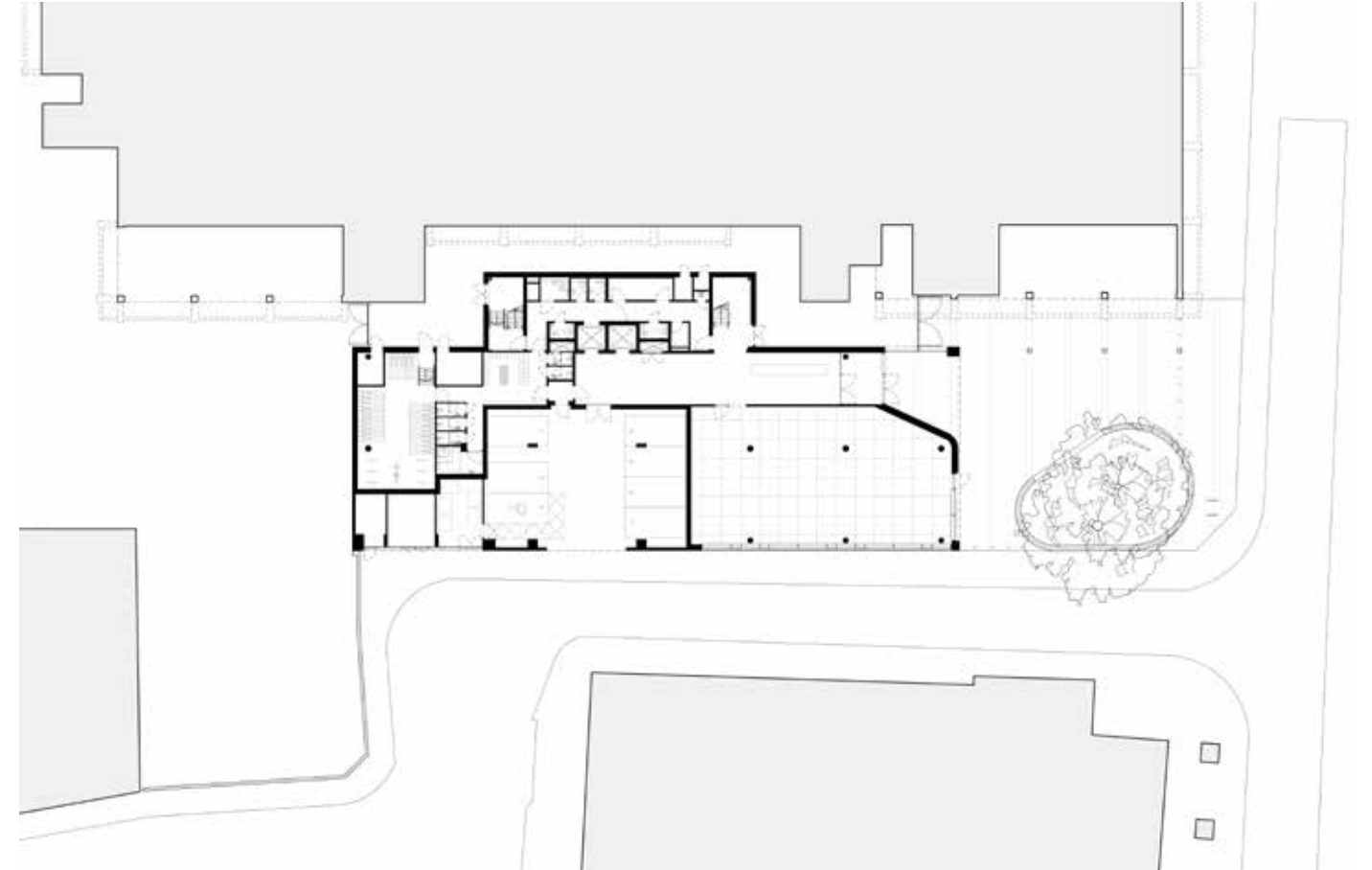


SITE PLAN

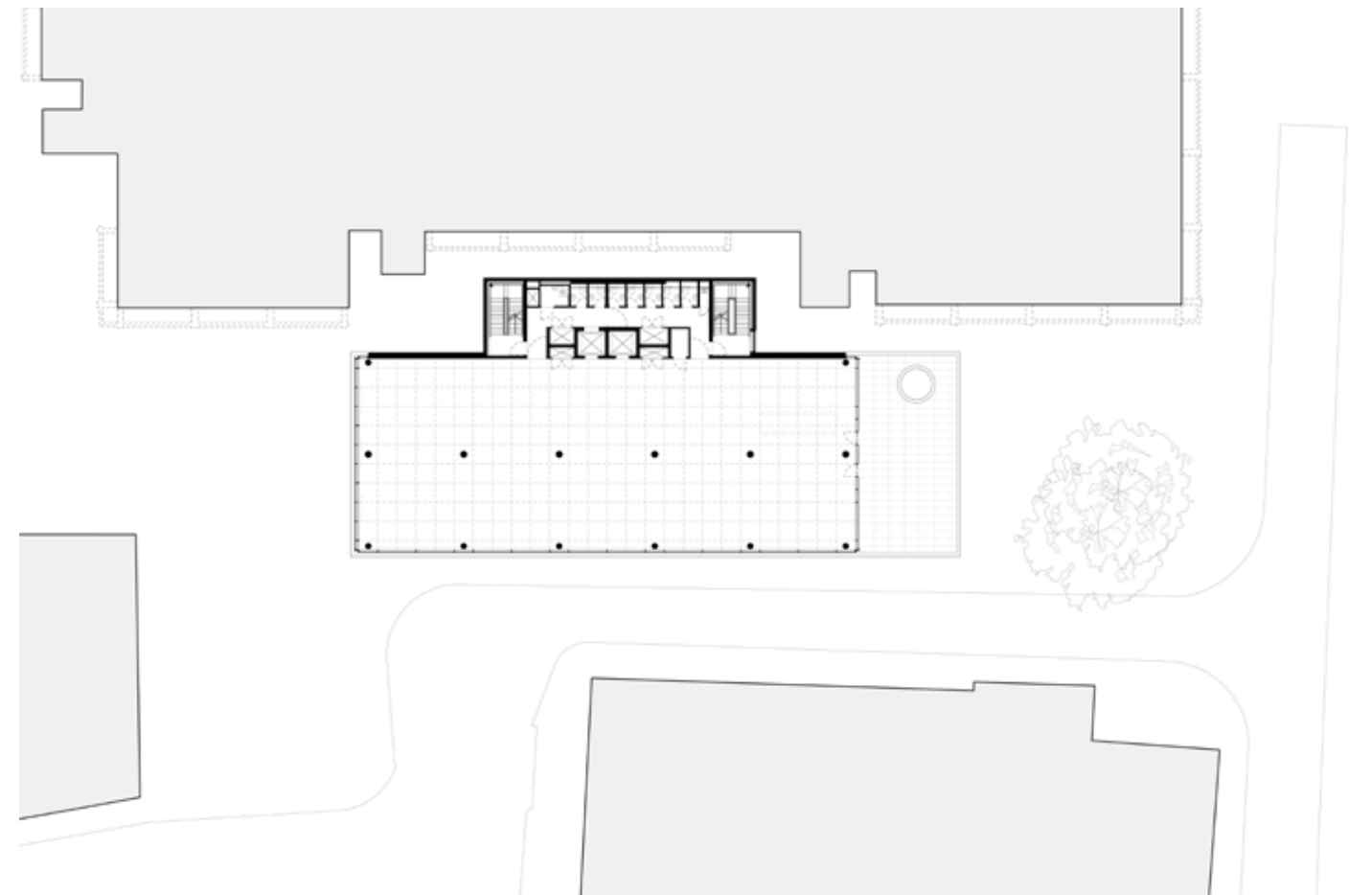


Site plan

FLOOR PLANS

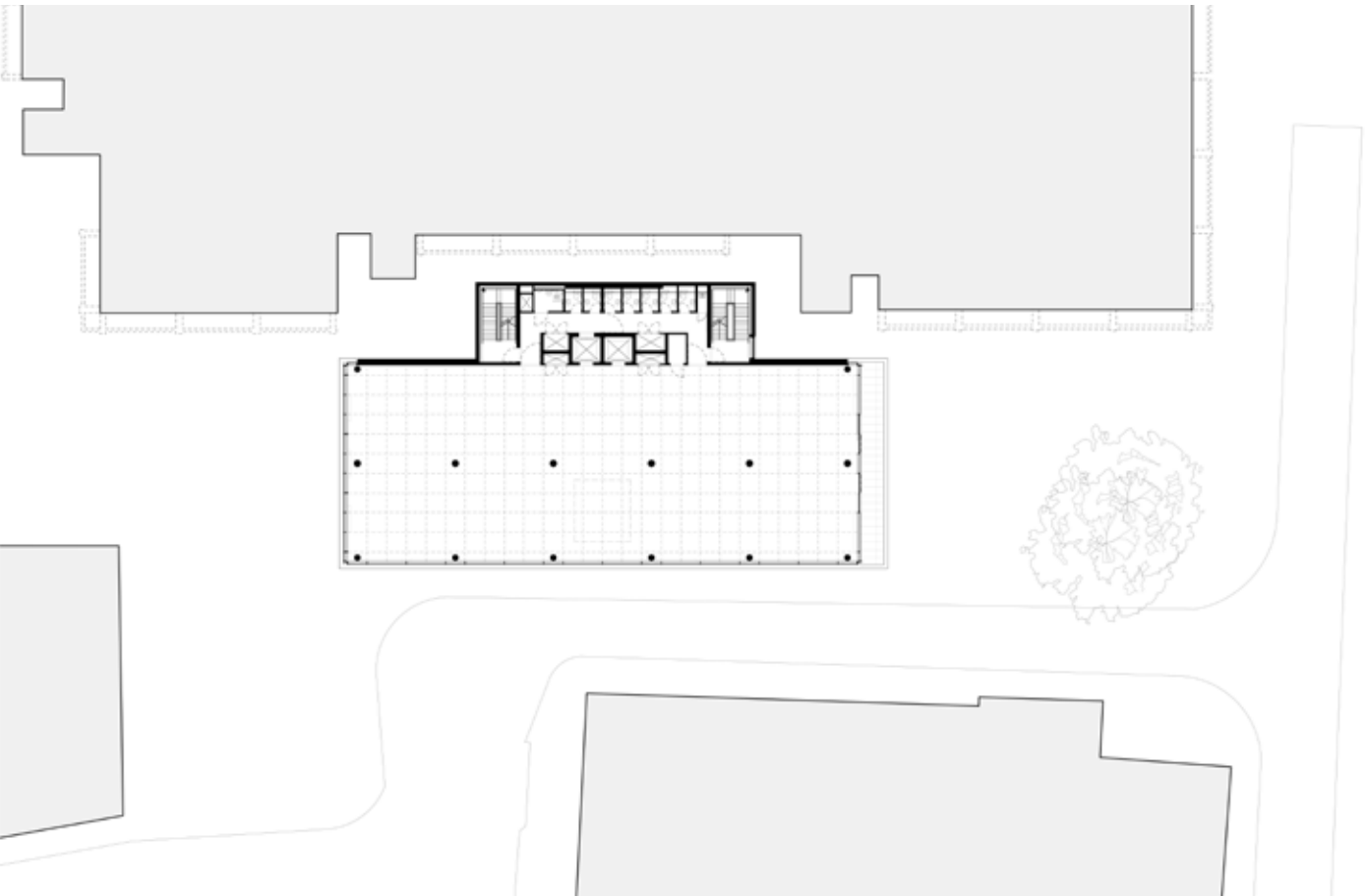


Ground floor plan

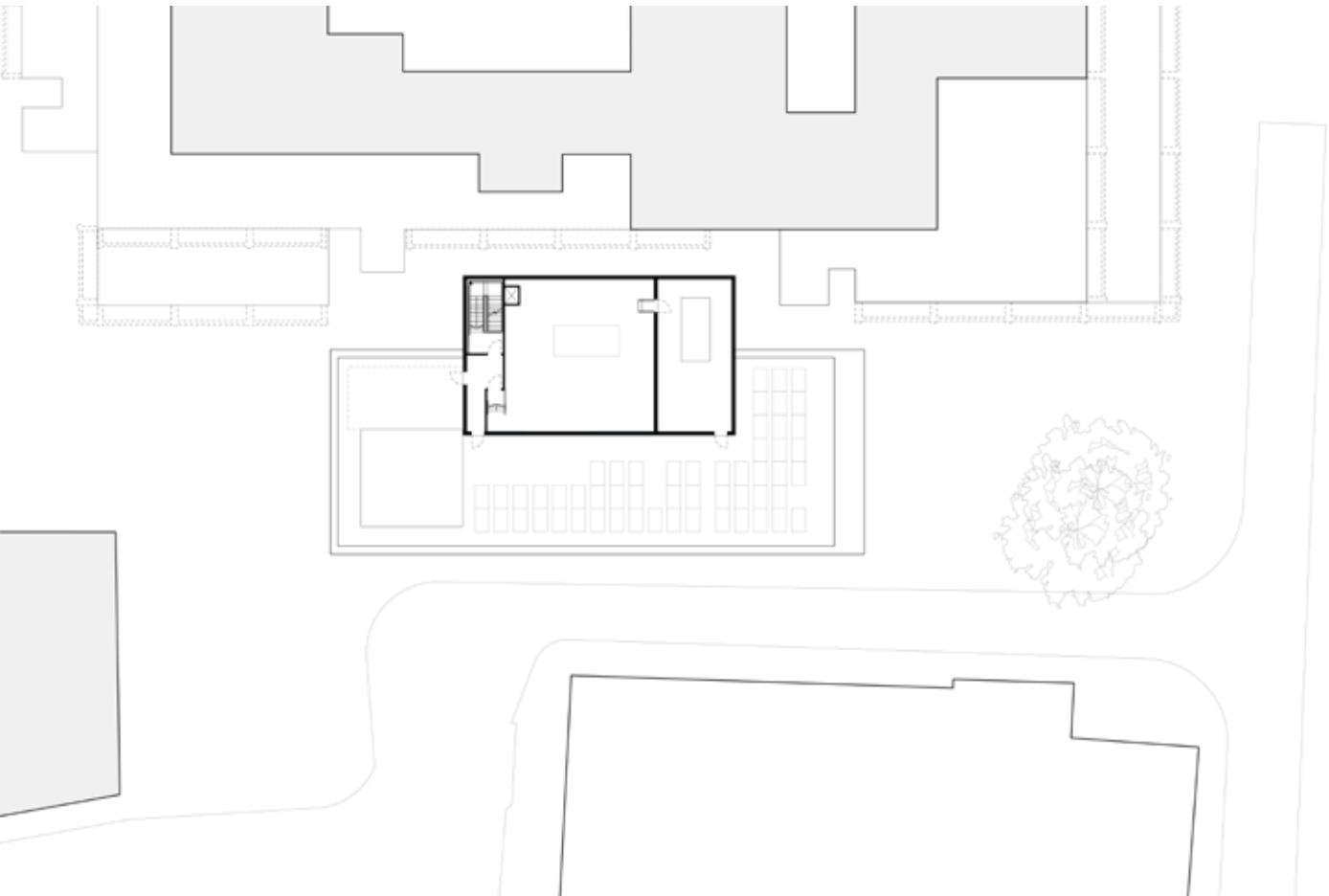


Level 01 floor plan

FLOOR PLANS

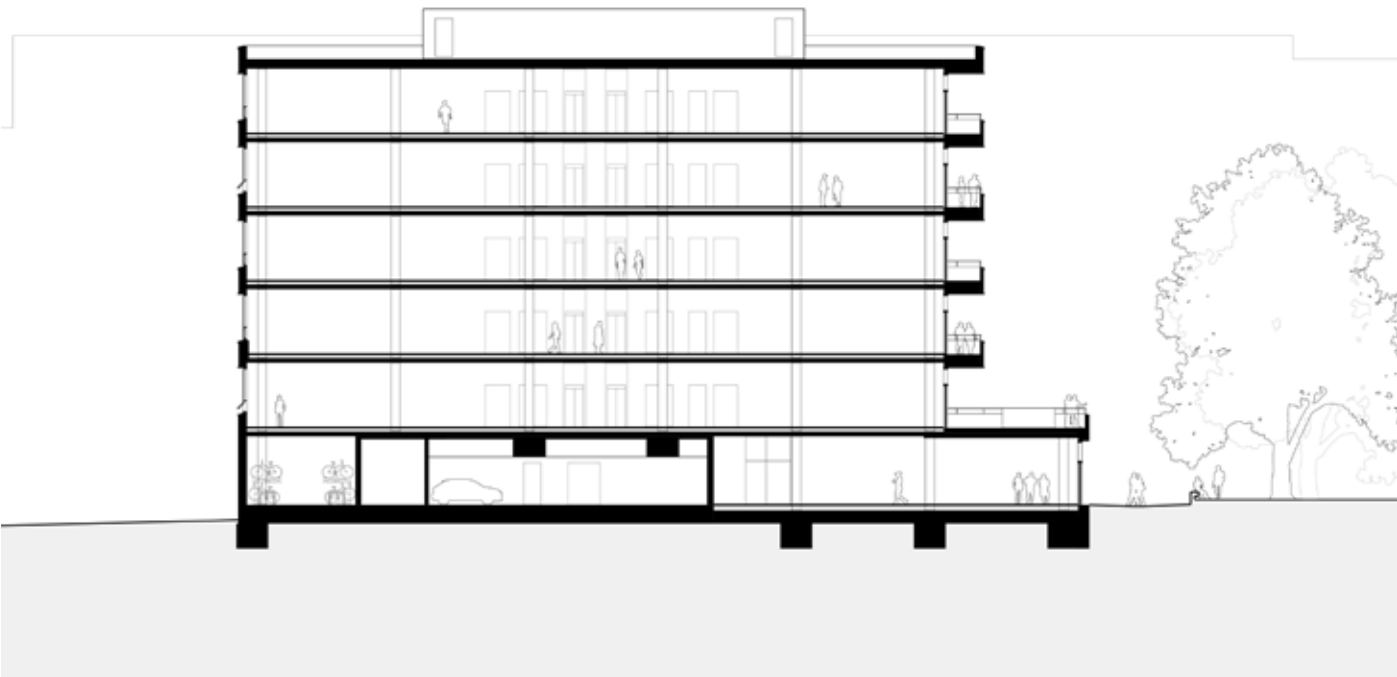


Levels 02-05 typical floor plan

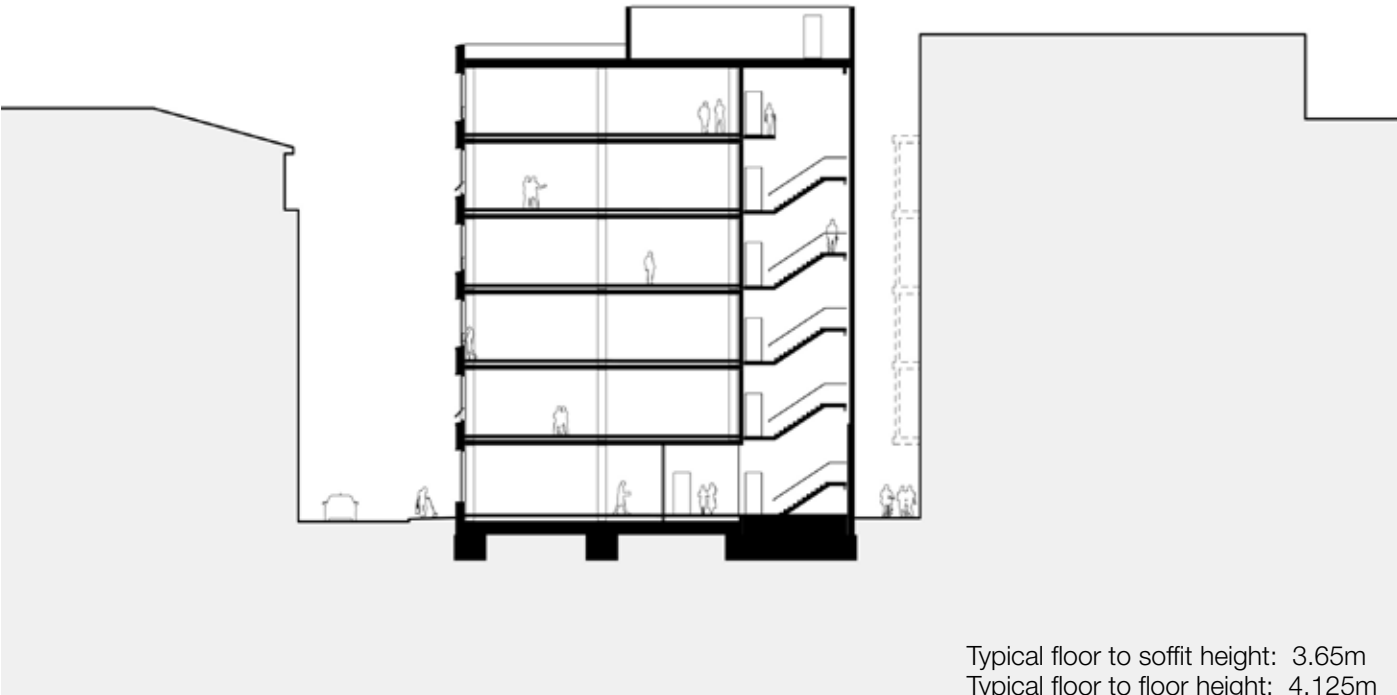


Roof plan

SECTIONS



Long section



Typical floor to soffit height: 3.65m
Typical floor to floor height: 4.125m

Short section

ELEVATIONS

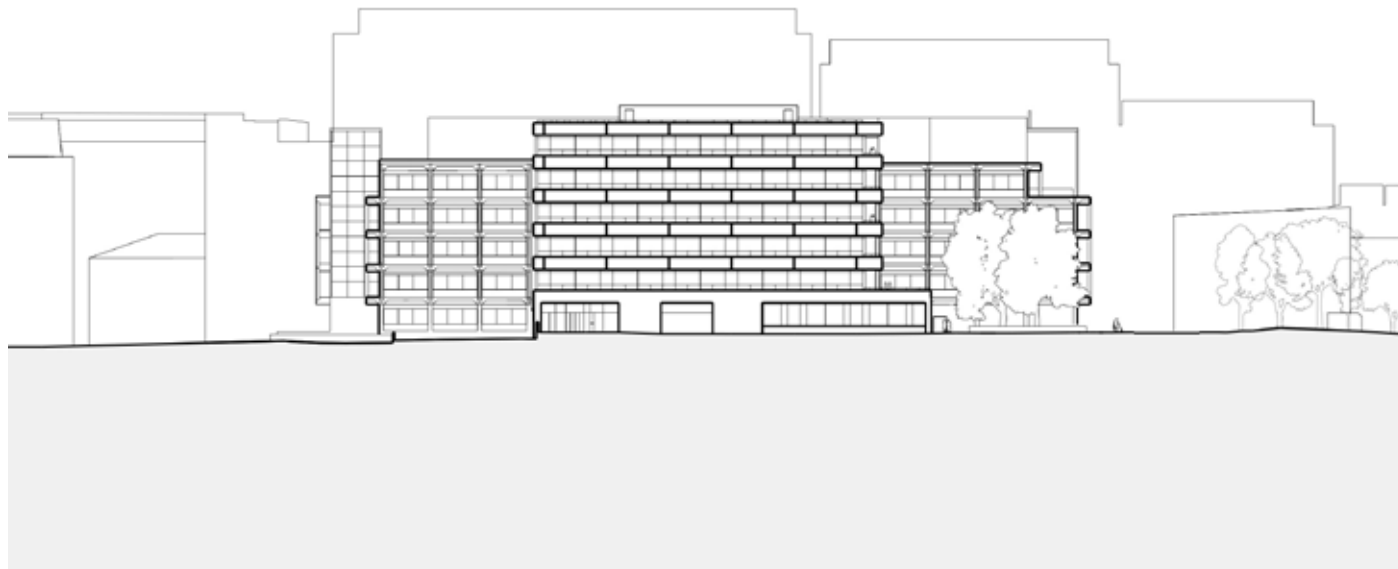


Portwall Lane context

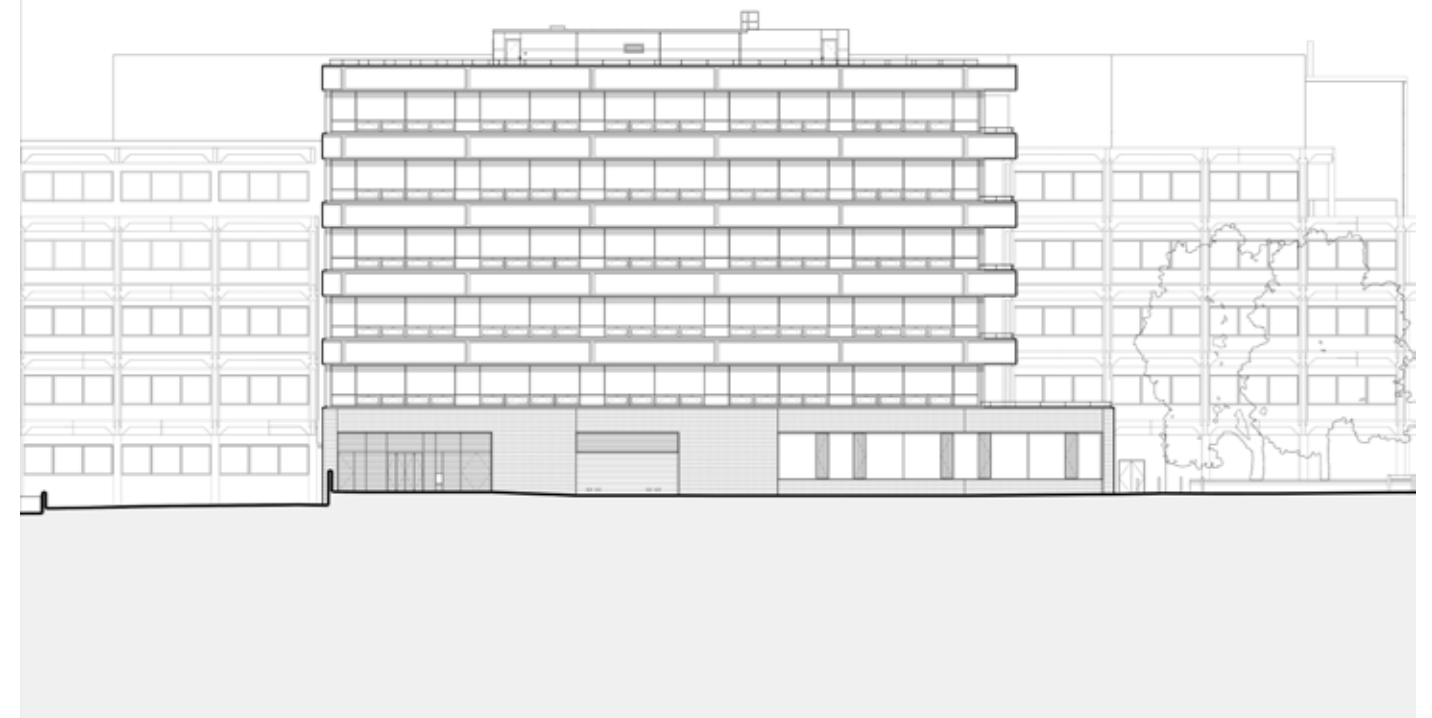
ELEVATIONS



Portwall Lane elevation



Canynge Street context



Canynge Street elevation

PHOTOGRAPHY



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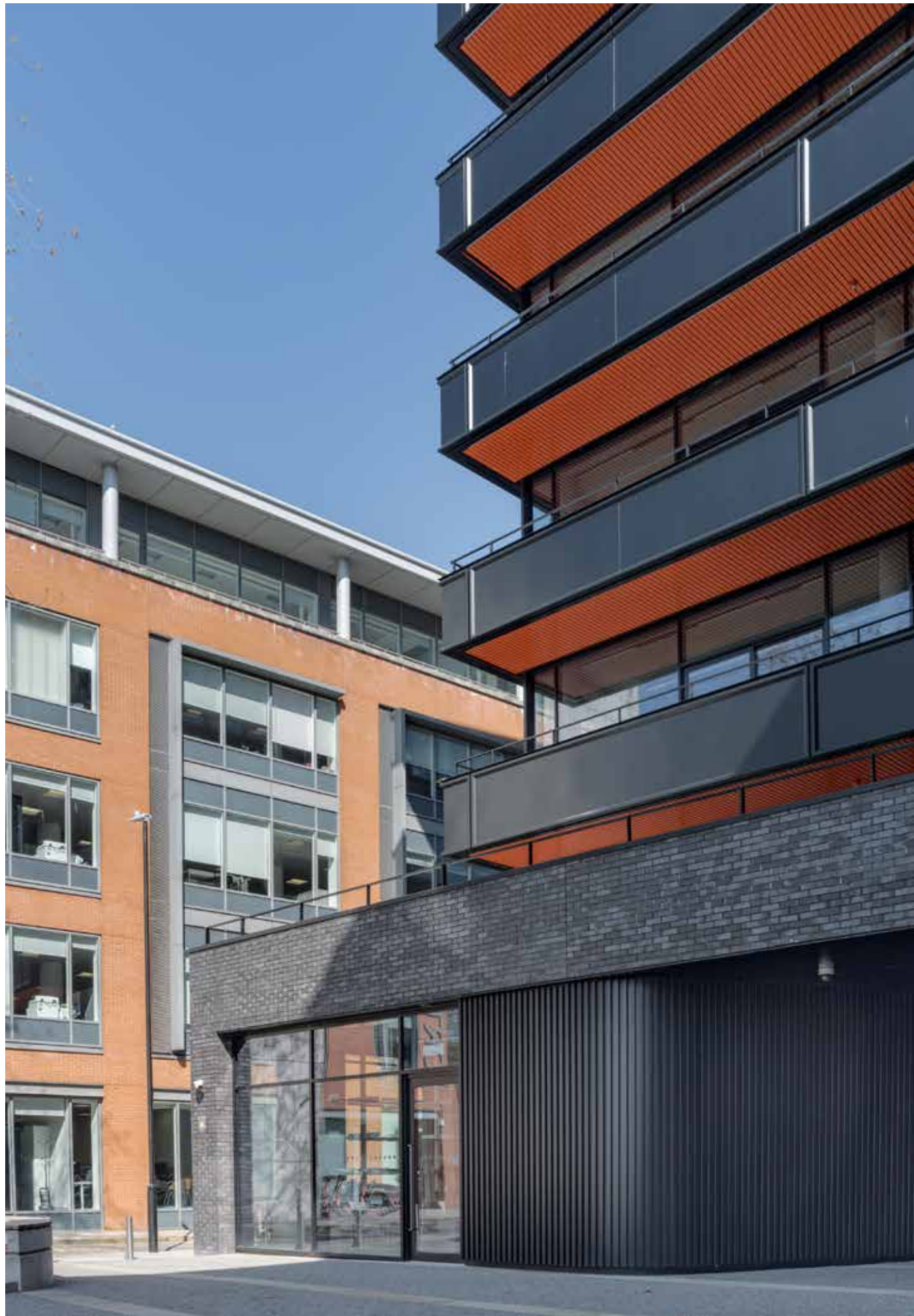
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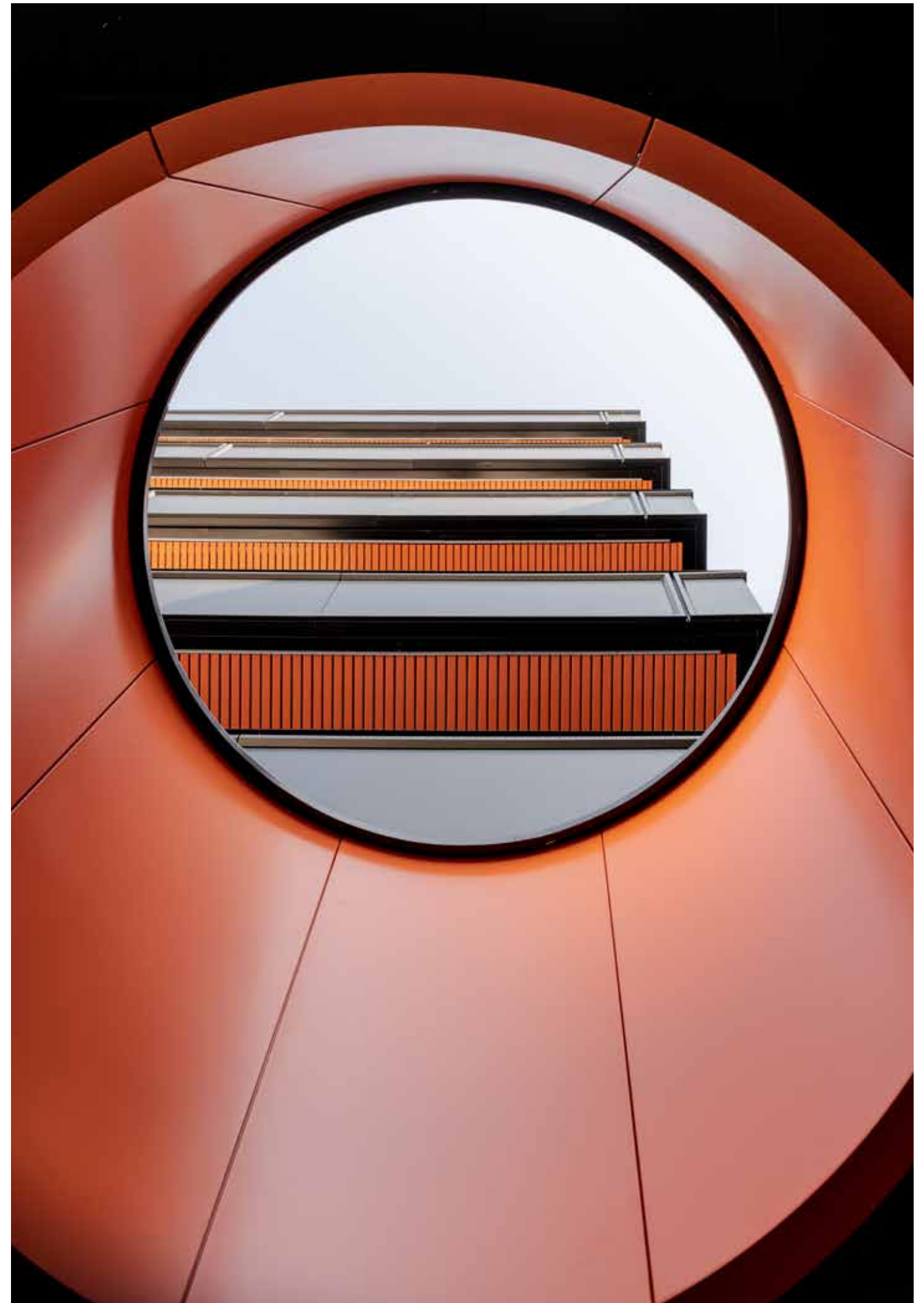
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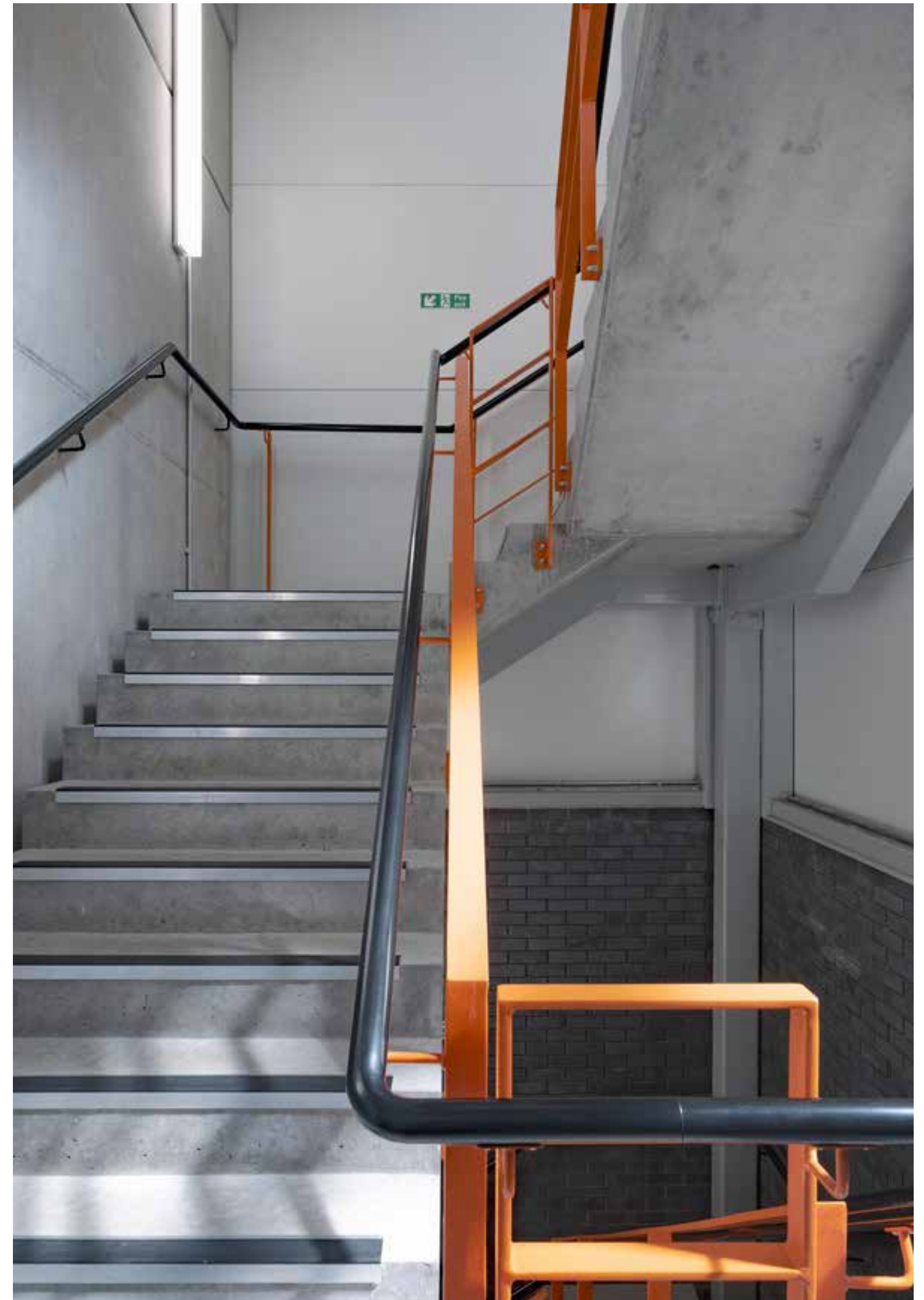
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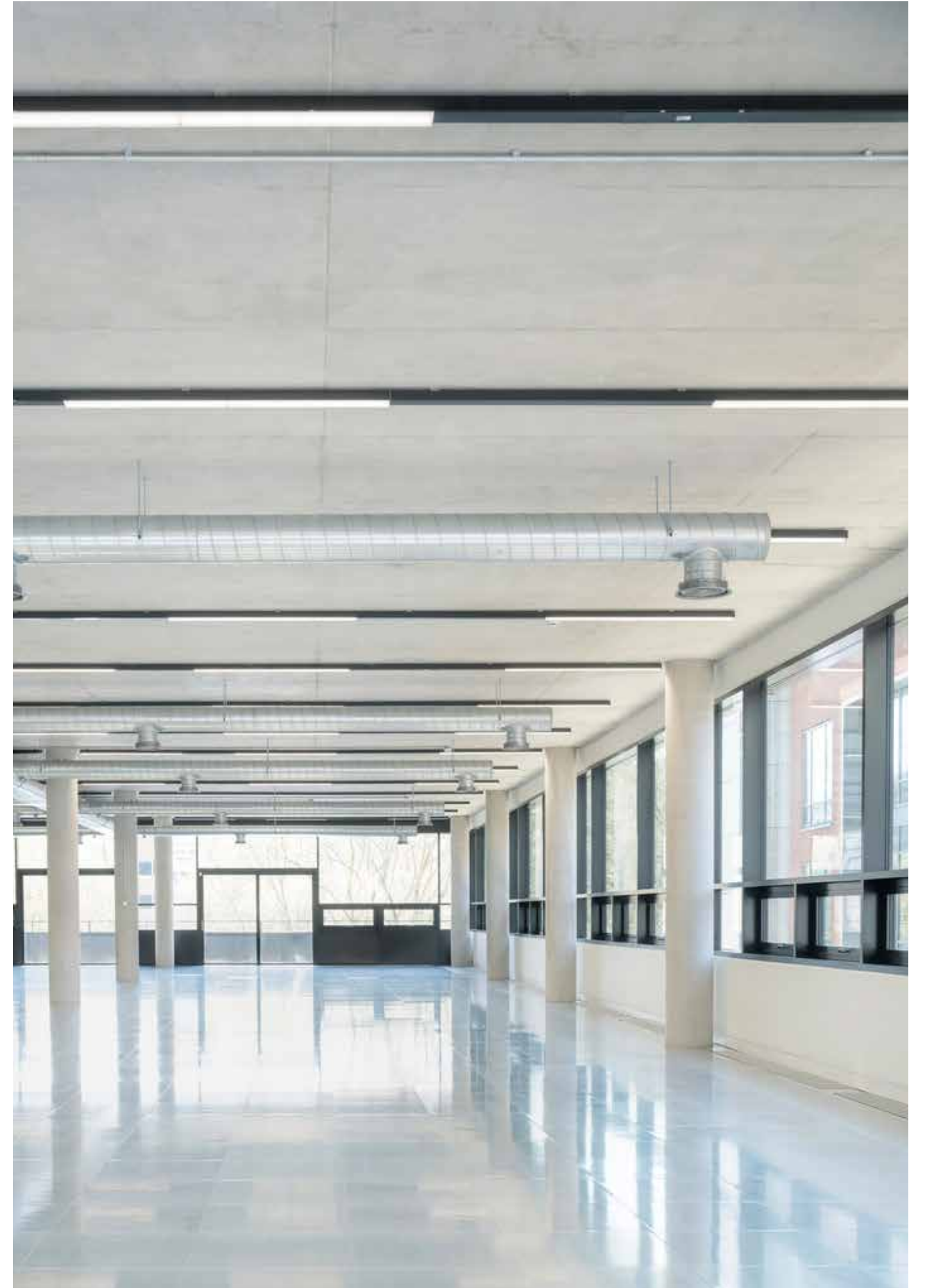
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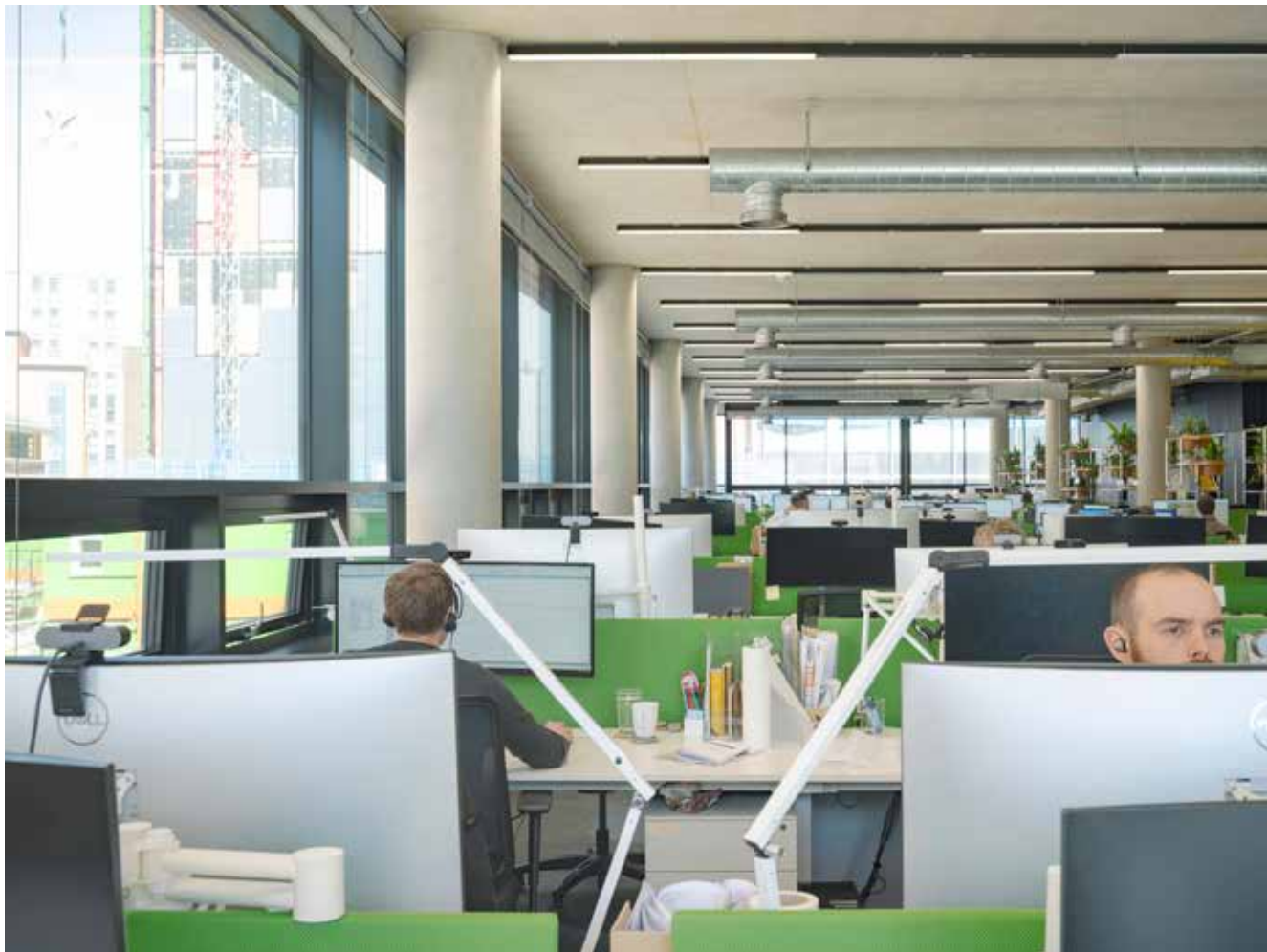
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