6.0 Facade & Materiality

6.1 Concepts and Aspirations

The proposals have been shaped as a response to the existing vernacular of the site alongside a number of reoccurring comments and observations from community groups and interested parties.

Key considerations

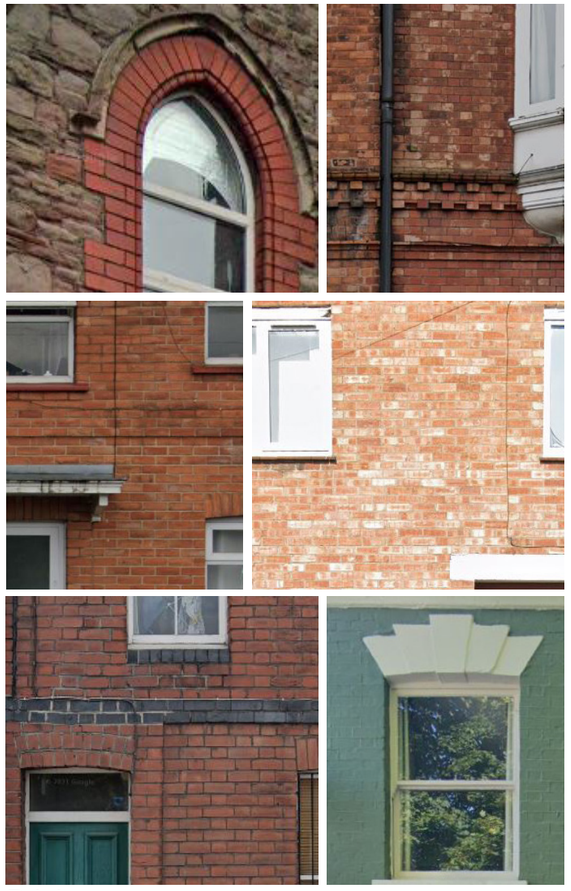
- Community group averse to “monolithic” wall of development
- Student accommodation mandates high level of repetition to drive efficient and consistent student experience
- How can a highly regular floor plate provide individuality and understanding of scale

Key aspirations

- A sympathetic proposal that acknowledges the scale and composition of the area.
- A character and appearance that is respectful of the existing vernacular.
- A proposal that celebrates and uses variation from plan through to facade.

Building on the local vernacular

Material precedent



Brick

Stone/concrete

Contextual precedent

Shaftesbury Chapel

Historic withy beds

Shaftesbury House

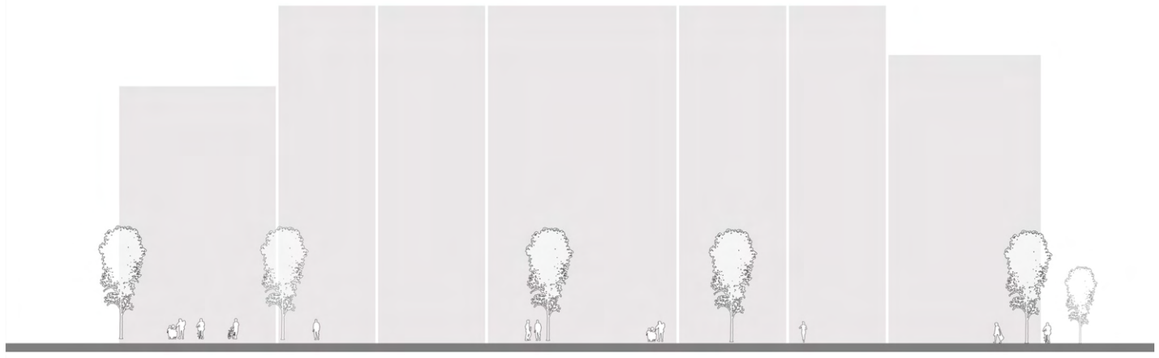
Marble mosaic

Boiler shed

Gardiner Haskins building

6.2 Massing

1. Base massing



2. Divided into separate blocks that correspond to the internal arrangement of the building

3. Set back upper floors and varying parapet heights

A strategy for the elevation is to divide the long elevations into a number of smaller blocks in order to reduce their apparent scale and better relate to their surroundings. This aligns with the guidance set out in Policy DM27 Blocks and Plots.

There are several articulated divisions on each long elevation, allowing the blocks themselves to be smaller and more vertically proportioned - similar to the street scene of Old Market shown above. The divisions relate to the internal organisation of the building with additional divisions being placed to define the cores and studios as well as the shared flats with standard rooms.

The principle of different parapet heights for the blocks by setting back the upper floors, helps to create more variation. These will have a different facade treatment, with a pleated metal facade that is visually lighter than the brick main façades.

6.0 Facade & Materiality

6.3 Primary Materials

4. Distribution of primarily red brick and grey brick blocks

Bristol, and the area surrounding the Dings in particular, employs a very wide range of building materials even in historic buildings, ranging from painted render in many colours to buff, grey, and red stone and brick. Compared to other parts of Bristol, however, this area has more visible red brick in tones ranging from hard bright red to softer oranges, and also grey Pennant stone.

Local landmark buildings including the former Gardiner Haskins buildings and the Shaftesbury Hall opposite the site, as well as smaller houses across Kingsland Road, are faced in red-orange brick.

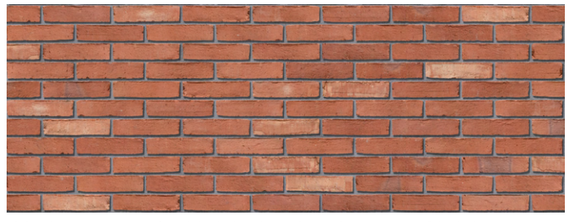
We have chosen to use two primary brick colours: orange/red and grey, to relate directly to local building materials.

Orange/red brick at Gardiner's Warehouse (Soapworks), Straight Street (1841-1882)

Grey Pennant stone at The Wool Hall (The Fleece), St. Thomas Street (1830)

Orange/red brick detail the Shaftesbury Hall, Kingsland Road opposite the site

Polychromatic stonework with a base and top of grey Pennant stone with red sandstone and buff limestone, Gardiner's Warehouse (Gardiner Haskins), 1884



Modern orange/red brick showing the type of brick intended for this scheme (to be conditioned)

Modern grey brick showing the type of brick intended for this scheme (to be conditioned)

6.0 Facade & Materiality

6.4 Window variation

The principle of adding variation to the facade by adding panels below and above the windows are derived from a functional set of requirements for daylight, ventilation and internal layouts. They allow for differentiation with the associated living, communal and bedroom spaces.

As seen along Old Market, where buildings of different ages and uses stand alongside one another along a street, there is usually some variation in floor and sill levels and window sizes. This contributes to the interest of the whole street scene.

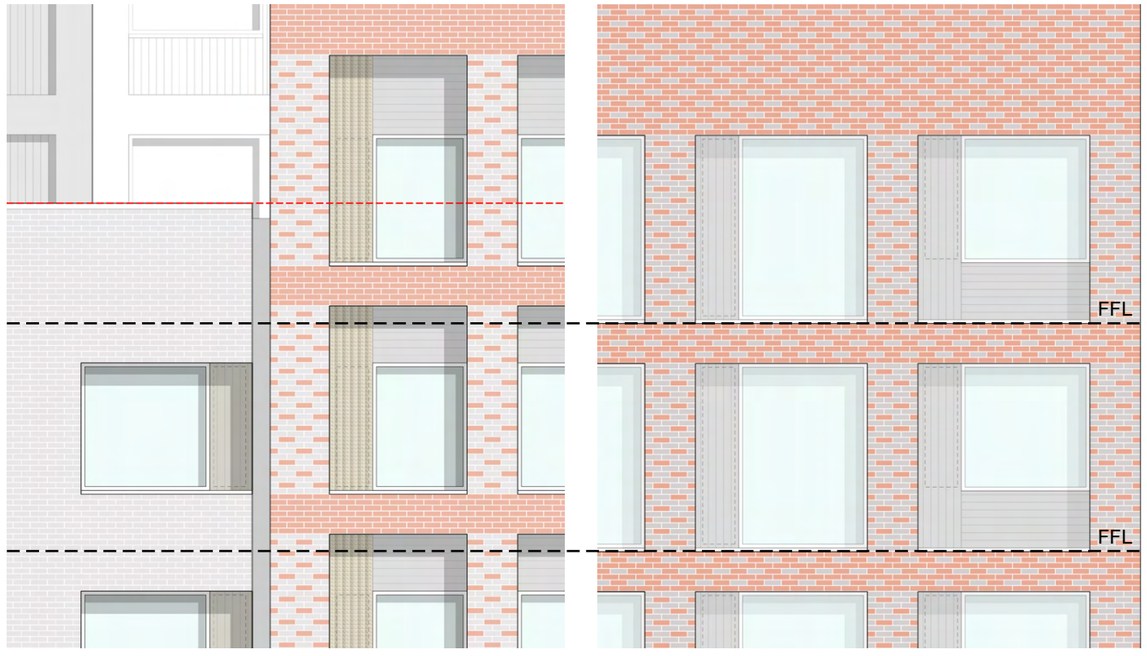
As this scheme is a single building, floor levels and actual windows are consistent across the whole elevation. This repetition can become dull and undermines the approach of dividing the facade into smaller blocks by revealing the identical rooms and floor levels behind. The proposal creates several apparent window opening types by introducing a panel above or below the window, allowing the apparent sill level to be shifted up or down for each block. It also reduces the amount of brick between the windows, reducing the apparent weight of the facade.

By combining these different window opening types, a surprising amount of variation emerges across the elevation.

Special windows

The design develops the idea of using a limited number of unusually shaped windows to create special moments that bring distinctiveness to the elevations. These circular and arch-shaped windows have been used on the first floor to express common spaces and circulation, while giving the interiors their own character and quality. On the elevation to Alfred Street shown above, the arch and circular windows show where the common spaces are placed next to the bridge.

These special windows are a deliberate reference to the Shaftesbury Hall building opposite the site on Kingsland Road. Its eclectic style makes similar use of arches and circular windows at distinctive points of the elevations, such as the corner and entrances. Note also the use of repeated gables, which formed the inspiration for the townhouse elevations.



Window opening type 1: No panel above or below

Window opening type 2: Panel above

Full height window to kitchen

Window opening type 3: Panel below

Shaftesbury Hall, opposite the site, in the early 20th century

6.0 Facade & Materiality

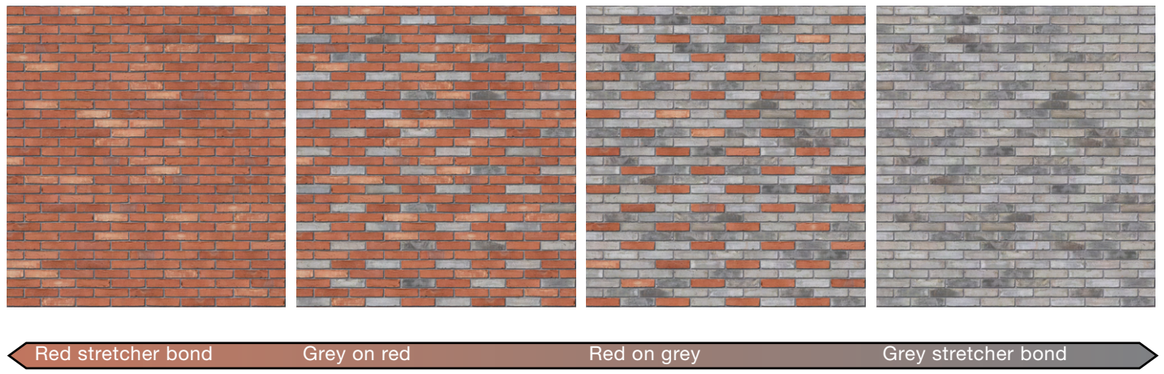
6.5 Pattern and Detail

Many of the 19th century buildings in the local area use several masonry materials in the composition of the elevation, from the very Bristolian combination of Pennant stone with Bath stone dressings, to Pennant stone with brick dressings, or red brick with Bath stone.

The scheme takes inspiration from the building on Old Market shown on the right, with brickwork in a Flemish bond with buff headers and red stretchers, resulting in a diamond pattern. The elevation is given a horizontal emphasis with a Bath stone string course and cornice at the storey levels.

To use this pattern in a controlled and contemporary way across a much larger elevation we developed a few rules for guidance:

- Where the block has type 1 window openings without panels above or below, the brick pattern or colour is consistent across the whole block.
- For other blocks the piers between the windows are treated differently to the bands at floor levels.
- Adjacent blocks have different treatments.
- Corner blocks have less contrast than blocks in the centre of an elevation. For example a corner block might have bands in red, and piers in grey-on-red. A central block might have bands in red and piers in red-on-grey.
- The base piers match the bands, grounding the elevation.



6.0 Facade & Materiality

6.6 Secondary Materials

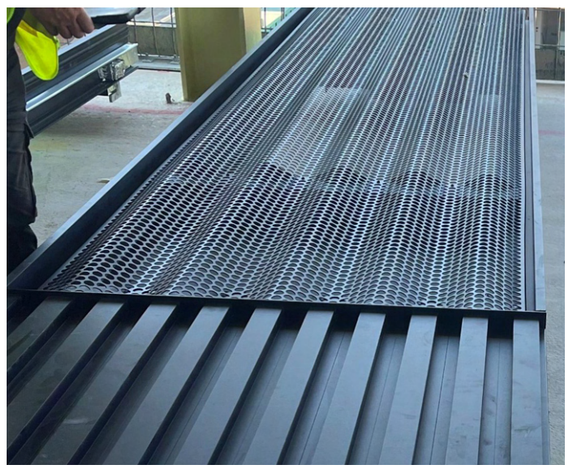
The metallic, secondary parts of the facade are an opportunity to introduce further controlled variation and interest, and define the individual blocks. The exact colours and finishes will be agreed with a physical sample or mockup as part of a planning condition but we have shown the revised intent here.

The window frames and fixed horizontal panels will be a dark grey/brown, recessive to reinforce the appearance of the window assembly as an opening in the brickwork.

The vertical vent panels will vary in colour by block, in a consistent order across the building from Sussex Street to the cycle path, which will assist with wayfinding. The colours shown here have been selected from an image of willow harvesting in the winter, a reference to the pre-industrial use of the site. The soft blue-grey/green/brown tones subtly contrast with the brighter red brick and harmonise with the grey brick. They are also similar to colours used for woodwork and window frames in the 19th century, the era of the local buildings that we have referenced.

The metal cladding for the upper floors will be pale to appear light and secondary to the brick facades below. The silver/brown tones shown here are derived from willow buds, again referencing the historic land use of the area.

Colours extracted from an image of willow harvest in the winter. Image credit: USDA National Agroforestry Center 2009



Perforated corrugated metal vent panel above a ribbed fixed panel, from a different AHMM project (not intended for colour reference, to be conditioned).

Silver/green/brown tones from an image of willow buds intended for use on the set-back upper floor façades.

6.0 Facade & Materiality

6.7 Overview

An Illustrative view of a portion of the facade.

Key:

1. Precast coping
2. Selected facing brickwork - colour/ pattern varies between blocks
3. Recessed joint detail between blocks
4. Profiled PPC metal panel
5. Fixed perforated PPC metal panel with opening vent behind; colour varies between blocks
6. PPC aluminium window frames
7. Full height window to kitchen/living space
8. PPC aluminium curtain walling and PPC metal doors

Illustrative view of the west elevation to Kingsland Road

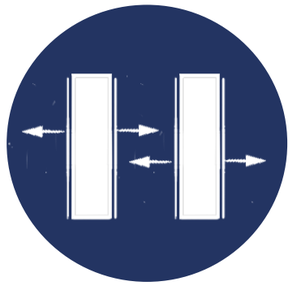
7.0 Sustainability

7.1 Inherent Sustainable Design Principles

Inherent Sustainable Design Principles

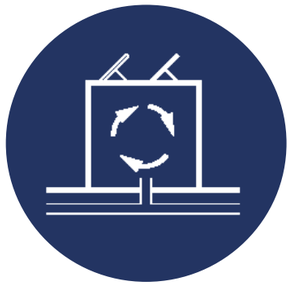
Sustainability and building performance inform all design decisions from general site arrangement to material selection. Some of these principles are summarised on the right.

*Further information and detail can be found in MEP/ Ecologist/ Transport Consultants documentation and reports that support this application and Design & Access Statement.



1. Optimised Massing

The linear block arrangement ensures that all inhabitable rooms benefit form optimal solar orientation. The generous spaces between the buildings ensure good solar ingress to all external landscaped areas.



2. Low Carbon and Renewable Sources

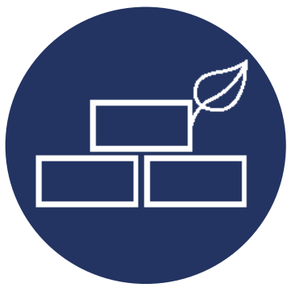
On-site energy production will be provided by roof mounted PV arrays. Air source heat pumps will provide low energy heating and cooling. Additionally provision will be made for a future connection to the Bristol District Heating System.

3. Increased Biodiversity

Significant increase in biodiversity (from 0.0 to 1.4 habitat units*) will passively manage the urban heat island effect and improve ecology and habitation creation.

4. Fabric First Approach

A high performance building envelope will ensure an appropriate level of thermal insulation and air tightness to reduce heating loads and help manage internal temperatures.



5. Minimise Whole-Life Carbon

Highly efficient structural grid and well selected materials and building systems will help reduce whole-life carbon costs.

6. Combined Water and SuDS

Brown and green roofs, permeable paving and rain gardens will gather surface water runoff to minimise impact on civil infrastructures

7. Reducing Operational Energy

Using innovative systems to reduce operation energy use. Minimise need for small power through passive energy systems, optimal daylighting and natural purge ventilation.

8. Efficient Form Factor

The surface to volume ratio of the building (form factor) directly affects heat loss. The New Henry Street proposal has a highly efficient form factor which will to reduce heat loss.

9. Promoting Green & Healthy Lifestyle

Highly sustainable urban location will promote active methods of travel encouraging a healthy lifestyle and reducing load on existing vehicular infrastructure and associated air pollution.

7.0 Sustainability

7.2 Targets & Aspirations

Planning Targets

New Henry Street will be meeting the Local Authority's requirement to achieve BREEAM excellent as a minimum standard. We will also comply with all building regulations including Part L & O which specifically deals with sustainability through conservation of power.

The proposal will also target and seek to improve upon the emerging BCC planning target of achieving a minimum Biodiversity Net Gain of 10%. This work has been supported by undertaking an existing ecological assessment.

Other Standards

There are opportunities in the future for additional sustainability targets to be applied to the project. Outlined are a selection of guides and awards that can be given to designs that showcase standards of Net zero carbon, low life carbon and efficient energy use.

Opportunities to enhance the environmental credentials of the New Henry Street proposal have been explored by undertaking various studies including:

- Life-cycle carbon analysis
- Carbon budgeting - using analysis to inform material selection
- Natural ventilation analysis - subject to air quality assessment and acoustic report
- Daylighting and overheating analysis - used to inform glazing ratios
- Sustainable urban drainage and rainwater attenuation strategies

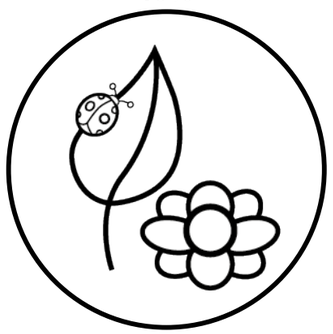
The design team and Client have used these additional assessment tools to inform design decisions with further review to be undertaken at the next RIBA design stage.

PLANNING REQUIREMENTS:

BREEAM EXCELLENT

BUILDING REGULATIONS PART L & O

BIODIVERSITY NET GAIN 10%



OTHER STANDARDS:

RIBA 2030 CLIMATE CHALLENGE

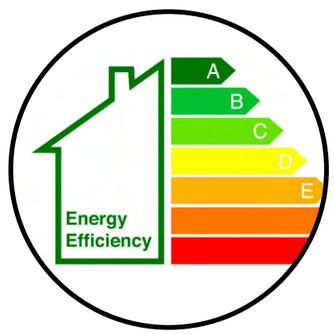
NET ZERO CARBON

LETI

URBAN GREENING FACTOR

NABERS

EPC



7.0 Sustainability

7.3 Future Flexibility

Flexible Design

Allowing flexibility in building design, allows for changes of use later in a buildings life. This promotes future adaptability of a building to accommodate a range of different uses that meet the ever evolving needs of a city.

Suitable robustness is designed into the superstructure to deal with various loads, servicing requirements and occupancies of whatever future use is proposed.

Student Residential Layouts

The height, scale and massing of the New Henry Street proposal lend itself to future adaptability as an alternate residential/hotel type arrangement.

Key structural and dimensional factors:

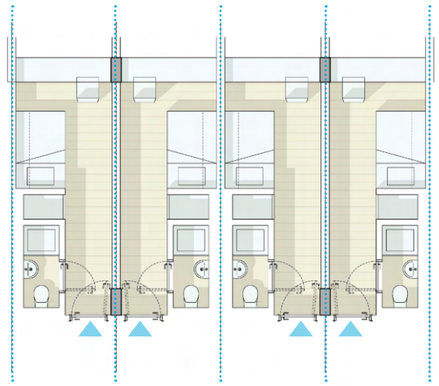
- Residential floor to floor height 3m
- Typical floor plate width 15m
- Shallow, well orientated floor plates creates good internal daylighting conditions
- Reinforced concrete frame - performs well from a fire and acoustic perspective
- 5.2m structural bay

AHMM have tested internal layouts across a typical 4 room segment of the proposal. These demonstrate how a wide range of alternate accommodation models could be incorporated into this scheme.

Room location plan:

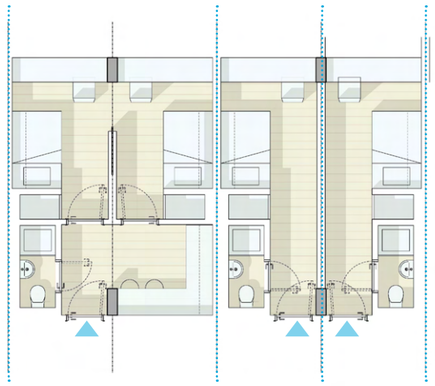
01. Typical Study Bedroom Arrangement

4 ensuite student rooms across 2 structural bays.



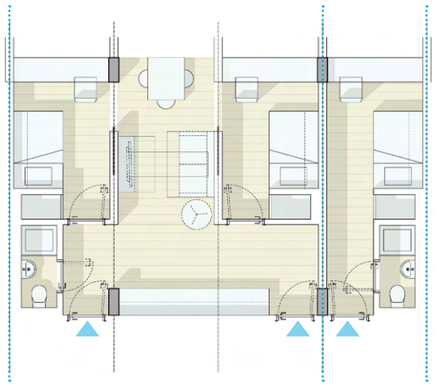
02. Typical Study Bedroom + Studio/2Dio

2 ensuite student rooms. Opportunity to combine 2 typical rooms into a premium studio unit or economy 2dio unit (as shown).



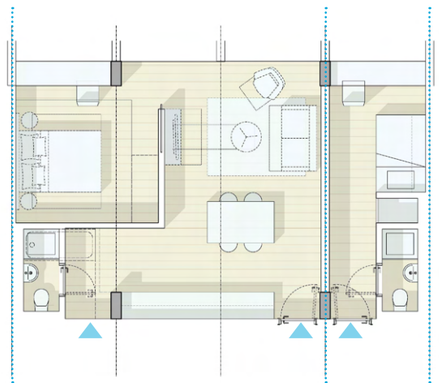
03. Shared Flat + Typical Study Bedroom

1 ensuite student room. 3 room 'bays' merged into a 2 study bedroom sharing flat with shared bathroom and communal kitchen/living space with views out.



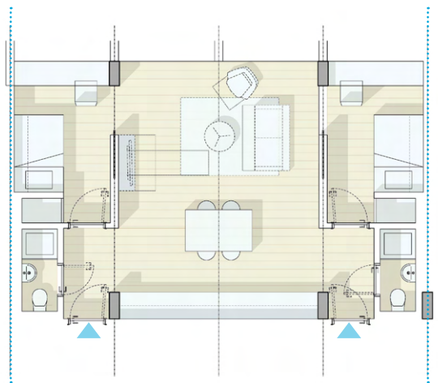
04. Studio Flat + Typical Study Bedroom

1 ensuite student room. 3 room 'bays' converted into generous studio flat.



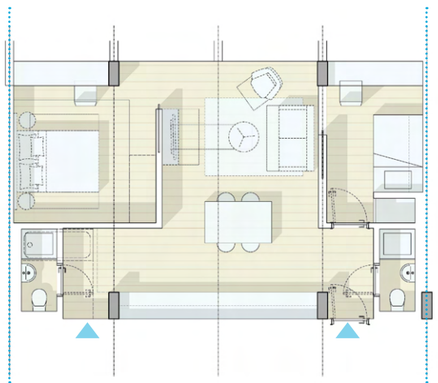
05. Premium Shared Flat - A (PRS/Student)

4 room 'bays' converted into shared 2 bedroom flat with large shared kitchen/living area and 2 non-suite bathrooms. Ideal for sharers to split rent 50/50 due to equality of provision.



06. Large Shared Flat - B (PRS/Student)

4 room 'bays' converted into shared 2 bedroom flat with large shared kitchen/living area and 2 non-suite bathrooms. One double bedroom and a single bedroom suitable for young couples in need of dedicated home working space.



7.0 Sustainability

7.3 Future Flexibility

Current Application - PBSA Layout

Floor 02-03: Typical student accommodation

Summary:

- Student accommodation
- 150 student bedrooms per typical accommodation floor
- 3,425msq GIA per typical floor
- 6 circulation cores

Key:

- Town houses - 10 bed economy units
- Cluster bedroom - maximum 8 beds per cluster
- Cluster living/kitchen space
- Studios

Alternate Configuration - Private Residential Layout

Floor 02-03: Residential apartment accommodation

NOTE: *Alternate layouts have been developed to **demonstrate the principle** of adapting the current PBSA application to a private residential typology only.*

Summary:

- Private residential apartment layouts
- 34 apartments
- 8 town houses
- 3,435msq GIA per typical floor
- 6 circulation cores
- 5-6 flats per core (Urban Living SPD best practice)
- No single aspect North facing units.

Key:

- Town houses (4 Bed + family units)
- 3 bed apartment
- 2 bed apartment
- 1 bed apartment
- Studio

7.0 Sustainability

7.3 Future Flexibility

Employment & Amenity Spaces

The ground floor will house a high quantity of retail, employment/maker space and community spaces. These will help to activate the streets and public realm and provide space for existing and new small creative businesses and retail space.

Key structural and dimensional factors:

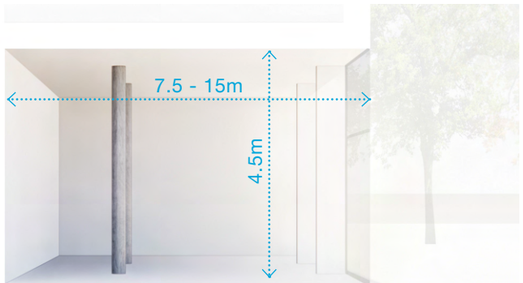
- Typical floor to ceiling 4.5m
- Glazing to core/wall depth approx 7.5m
- Larger through unit depth approx 15m
- Level thresholds provided from public realm for optimal access and delivery provision
- Reinforced concrete frame - performs well from a fire and acoustic perspective

A variety of occupational arrangements have been tested to illustrate how these highly flexible spaces could be reconfigured.

Flexible commercial space location plan:

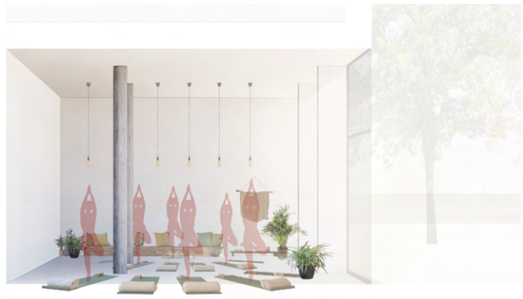
01. Commercial & Employment Space

Commercial shell and core space with 4.5m floor to ceilings height. Glazing ratios can be adjusted to meet the functional requirements.



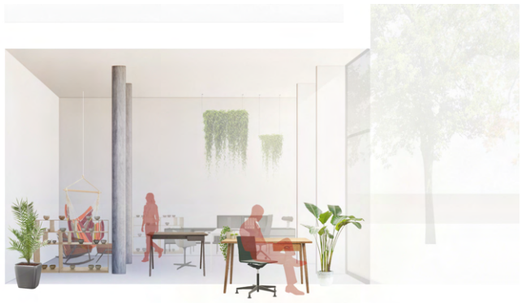
02. Community/Amenity Use

Generous volume with high levels of natural daylighting. Low service requirements with minimal impact on neighbouring residential accommodation.



03. Creative Workspace

Creative workspaces help activate the street and benefit from natural lighting. Simple service distribution requires minimal fit-out cost helping to attract smaller start-up businesses.

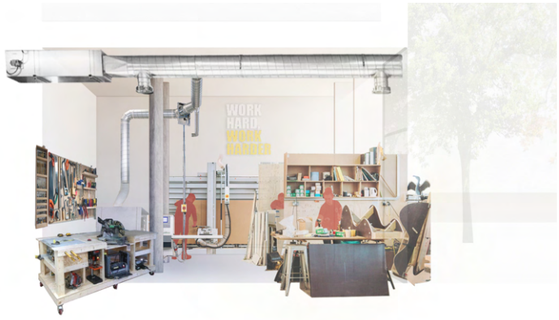


04. Community Cafe

4.5m floor to ceiling heights allow for an increased level of servicing at high level. An efficient structural grid ensures areas can be readily subdivided to create back of house/service spaces.

05. Workshops & Maker Spaces

Generous internal volumes can accommodate creative business with high servicing and ventilation requirements. Larger through units can be arranged to have dedicated servicing/delivery access points. Facade and glazing systems can incorporate mechanical ventilation systems.



06. Creative Space with Mezzanine

The increased floor to ceiling heights allow from mezzanines to be introduced to provide additional floor space to meet occupational needs.

7.0 Sustainability

7.4 Environmental Design - AHMM Process

Allford Hall Monaghan Morris is keenly aware of the effects of human activity on the environment, the ecological damage and climatic change that this has caused in the past and will continue to cause in the future without significant mitigating action. AHMM therefore takes a serious and informed interest in the influence its business activities have on the environment and is committed to minimising damage and making the most of opportunities to contribute positively to the wider environment.

Design and Project Work for Clients

AHMM is committed to achieving the most appropriate solutions to any brief, by striking a balance between sometimes conflicting environmental, social and commercial requirements. AHMM's internal sustainability review process aims to:

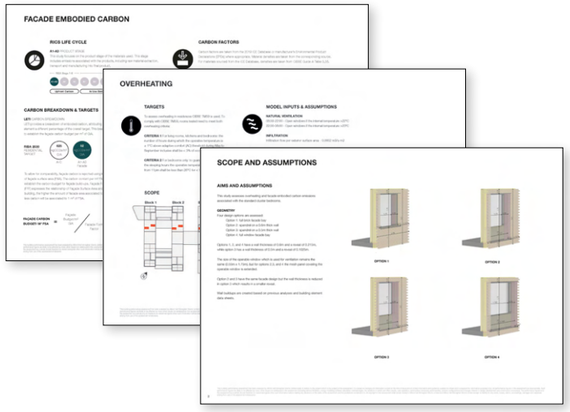
- Identify opportunities to improve the environmental performance of the buildings it designs, from the point of view of energy consumption, ecological impact and social sustainability.
- Specify the use of environmentally sound technologies, processes and materials wherever possible.
- Make clients, consultants, contractors and suppliers aware of the company's commitment to reducing the negative impact on the environment and encourage them to do the same.

The New Henry Street proposal has undergone in-house review to assess a number of key environment factors that influence the design. This is done to supported the work of the wider Consultant Team.

This process is done to inform Clients and help inform the decision making process to identify opportunities to maximise the environmental and social sustainability while still achieving commercial and programmatic requirements.

Some of the additional project specific studies as well as more broad strategic overview are summarised here.

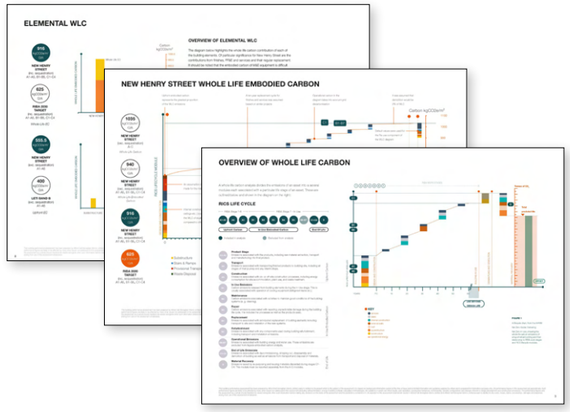
Project Specific Studies



Overheating & Facade Embodied Carbon

Study, based on RIBA Stage 2 information, to assess a range of facade options and their daylighting and overheating performance.

These bay studies also assessed the embodied carbon of each option. This has gone on to inform materiality and construction approaches will be further developed at the next design stage.



Whole Life Carbon Assessment

An RIBA Stage 2 whole life carbon assessment has been done to help identify areas where carbon saving could be made without compromising the core principles of the proposal.

The scheme has been Benchmarked against:

- RIBA 2030 Residential Targets
- LETI Band B Residential Targets

Strategic Approach

Delivering Net Zero - A Guide For Architects

Our Sustainability and Building Performance Team supports and influences the development of this new form of architecture in three areas: Our Projects, Our Profession and Our Practice.

We have launched a new guide to Delivering Net Zero in Use, developed as part of our Knowledge Transfer Partnership with UCL's Institute for Environmental Design and Engineering. Download it here.