

5plus Vita

Plot 4 - First Street, Manchester

Design and Access Statement

December 2012

MANCHESTER CITY COUNCIL

ask VITA

Plot 4: Aerial View of the First Street Site



‘The application proposals aim to deliver the transformational change set out in the [First Street] Framework to provide amenities and jobs, increase the amount of people visiting the site and create a sense of place required to ensure that First Street is well placed as one of Manchester’s most important regeneration opportunities.’

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1.0 Introduction

This Design and Access Statement accompanies an application for full planning permission being submitted for the redevelopment of land at Plot 4, First Street in Manchester City Centre.

The description of development is "Demolition of any on-site structures and redevelopment of site for 279 serviced apartments with ancillary reception area, gymnasium, lounges/meeting areas, plus ground floor commercial unit for uses with Class A1, A3 or A4, and associated cycle parking, servicing and access arrangements." The proposals will create accommodation targeted at the student residential sector together with ancillary space to support the residential use. It will also deliver substantial new, permanent public realm improvements.

The Plot 4 proposals will build upon the cultural and mixed use developments previously approved as part of First Street North, and submitted for First Street South.

The applicant is Vita, a luxury student residential accommodation provider, whose target market for the plot proposals is principally international, post graduate students who are seeking self-contained accommodation of the very highest quality. 279 individual apartments are proposed with associated leisure and support spaces (including Reception, Gym, Leisure use, Laundry Facilities) and a circa 1,900 sq ft ancillary unit.

BREEAM Very Good is targeted.

Strategic Context & The First Street Development Framework

The site is located within the wider First Street area of Manchester City Centre. A Development Framework for First Street was first endorsed by Manchester City Council's Executive Committee in 2005. The strategy for the site contained within this Development Framework aimed to respond to the growing demand for Grade A office space within the City Centre at that time.

In order to sustain economic growth and try to secure inward investment opportunities to maintain and enhance Manchester's competitiveness, there was a clear requirement to significantly increase office supply within Manchester, so that it could respond to needs of key growth market sectors, including those occupiers who were seeking large floorplates in price-sensitive locations.

The development of a number of priority fringe locations, including First Street, was identified as the most effective solution to meeting the expected demand for offices within the City Centre. This strategy was also reflected in the updated 2007 Development Framework for First Street, which again placed the primary emphasis on delivering commercial office development.

Whilst the delivery of significant new office development continues to be the core objective for the wider First Street site, it is now clear that office occupiers will only be attracted to the site if the early delivery of complementary leisure and amenity facilities can be achieved. At the present time, First Street lacks competitiveness partly because of the absence of these types of facilities.

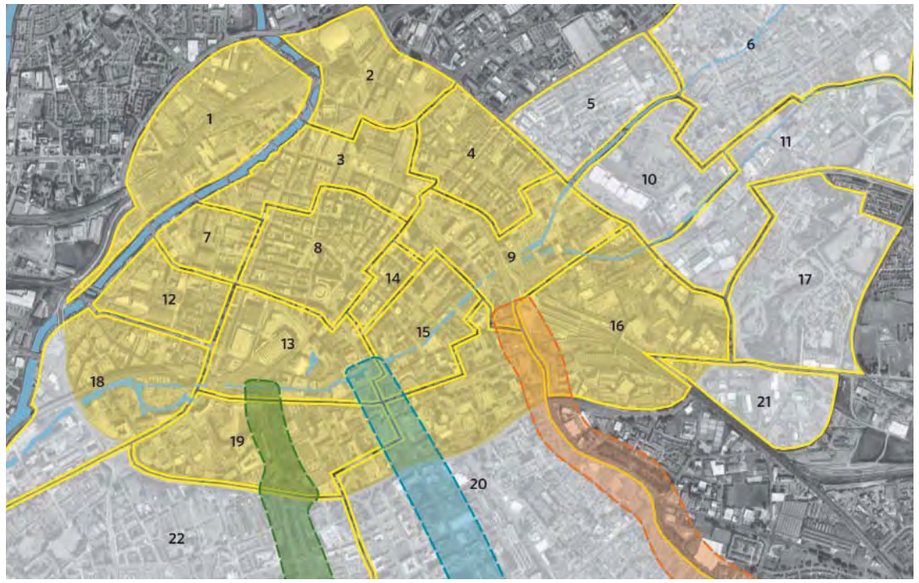
This shift in emphasis is reflected in the current version of the Development Framework, which was published in 2012 and endorsed by Manchester City Council's Executive Committee in July 2012. The primary focus of this document is on creating the "sense of place" at First Street, which is undoubtedly lacking at the current time.

The Development Framework recognises that only by embedding the site firmly within the context of its wider neighbourhood, and by positioning itself as a provider of facilities, services and accommodation for that wider neighbourhood, will First Street unlock its own potential and provide the stimulus for much wider physical regeneration activity in the future.

The planning application proposals have been formulated entirely in the context of this background to the site.

It is considered that the proposals support the desire to create clear linkages, deliver the next piece of the high quality public realm, build on the sense of place and integrate into the corridor and adjacent communities.

The proposals are robust and deliverable. The development embraces the unique characteristics of the wider neighbourhood, increase permeability, connectivity and confidence in the location.



City Centre Zones

1. Chapel Street Salford
2. Millennium Quarter
3. Retail Core
4. Northern Quarter
5. Ancoats
6. Miles Platting
7. Spinningfields
8. Central Business District
9. Piccadilly Gateway
10. New Islington
11. Ashton Canal Corridor
12. Leftbank
13. Conference Quarter
14. China Town
15. The Village
16. Eastern Quarter
17. Lower Medlock Valley
18. Castlefield
19. Southern Gateway
20. Knowledge
21. Chancellor Lane
22. Hulme



First Street Masterplan

2.0 Site and Context

Site Plan





First Street North: A rich, cultural context



First Street South: Supporting amenities and a focus at the end of First Street.

Key

- Plot 4
- First St. North
- First St. Central
- First St. South

Site Location

The site is Plot 4 of the First Street Masterplan. It forms a linchpin between First Street North, First Street Central and First Street South.

Plot 4 is a linear site running along the Eastern edge of the Masterplan. It encloses the Eastern side of the square at the South of No. 1 First Street and defines the North South pedestrian connection between Hulme and the City Centre.

First Street North comprises a new Cultural building to be home to the Cornerhouse and Library Theatre, a 210 bed 4* hotel, a 700 space multi-storey car park and associated retail, food and drink uses, all distributed around a high quality urban space. First Street North has planning permission and is due to start on site in 2013.

First Street Central is planned to form the “commercial heart” of First Street. A new office destination targeted at a range of commercial occupiers, particularly those seeking the benefits of a central and highly accessible city centre location, but crucially is competitively priced, to help distinguish the accommodation from other locations in the city centre.

First Street South is a mixed-use development comprising retail food store, car parking above, hotel, purpose built student accommodation, ground floor commercial uses and public realm improvement. First Street South was submitted for planning in June 2012.

The Plot 4 setting, adjacent to the cultural uses proposed for First Street North is arguably the best in Manchester. The potential for a high quality, luxury accommodation scheme, principally targeted at the underserved international student market, in this location provides a diversity of use which would bring the Masterplan to life.

3.0 Vita

Vita is a premium brand, the first of its kind dedicated to designing, developing and delivering the finest self-contained accommodation available to students in the UK.

Recognising the shift in the higher education market, Vita and its award winning team is pioneering the change in student property in locations across the UK by creating exceptional residences of the highest standard complete with first class facilities, unlike anything that has gone before.

For the investor, Vita offers a hassle free, fully managed property investment with assured returns in the UK's best serviced accommodation projects.

With the recent rise in tuition fees creating strong competition amongst institutions to attract students, universities are being forced to focus more than ever on the 'student experience', including a significant upgrade in the accommodation on offer. Likewise, in return for the higher fees, today's students expect a high standard of university living.

Vita properties have particular appeal for international and post-graduate students. Whilst the shift in the requirements of students has been acknowledged by higher education institutions, with reports of plans for modernised buildings, 'hotels on campus' and new facilities, the current reality is a severe shortage of premium quality residences and a total lack of facility that provides the highest quality serviced accommodation, within entirely self-contained units, targeted at the student sector.

Projects recently introduced to the market through the private sector, that have been popular amongst some investors, have so far still tended towards a more standard level of specification, leaving a gap for true high end accommodation available to be purchased by individuals, until now.

Delivery

The first Vita scheme is under construction in Liverpool at the Chapel. It is due for completion in September 2013. The second is proposed at Tinglings on Crosshall Street, Liverpool. They are both refurbishment schemes.

A typical bedroom module has internal dimensions of 3.25m x 5.5m and is fully self contained including kitchen and bathroom. We have assumed construction zones as described and proposed a floor to floor general arrangement of 2.75m as illustrated in the sketch opposite.

No communal kitchens, bathrooms or clusters are provided.

A mix of ground floor/ ancillary uses is proposed including:

+ Gym
+ Leisure Uses (cafe, lounge)
+ Reception
+ Laundry
+ Cycling Facilities



Tinlings, Liverpool: Visual Proposal



Vita: Ground Floor Uses



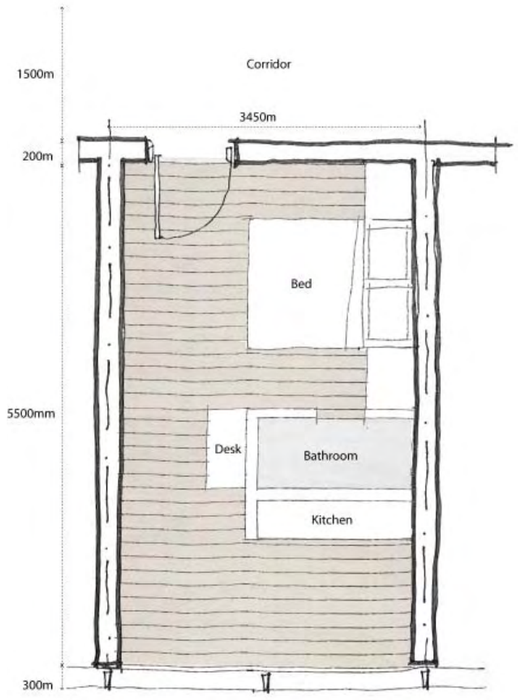
Vita: Typical Bedroom



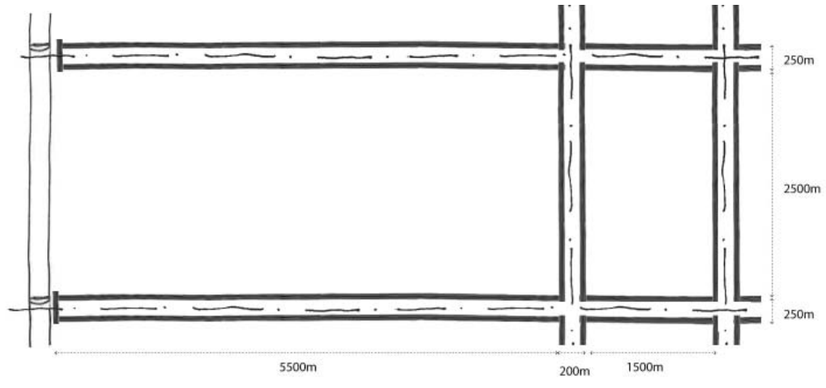
Vita: Ground Floor Uses



Tinlings, Liverpool: Typical Floor Plan



Vita: Typical Room Plan (1:50)

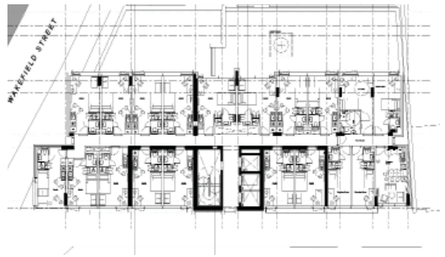


Vita: Typical Room Section (1:50)

4.0 Other Developments

Student Castle
Wakefield Street
Manchester

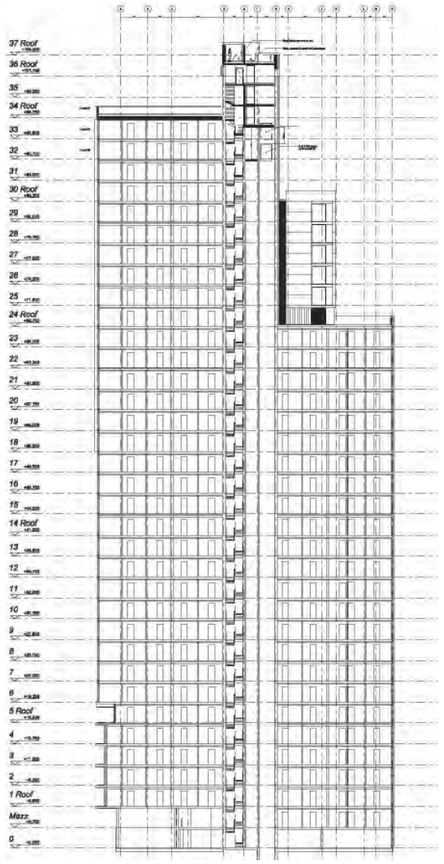
- Number of Rooms: 520
- Number of Floors: 33
- Rental Range: £135-258/wk
- Unit Size: 14-21sqm



Student Castle: Typical Floor Plan



Student Castle: View from Oxford Road Station



Student Castle: Section



The Hive: Typical Room Layout



Nido: View from street

Hive
Hoxton, Bethnal Green
London

The Vita unit is 17.8 sqm and fully self-contained with two DDA rooms of 26 sqm are proposed at first floor. Whilst targeted at the student sector, the development applied for is serviced apartments, given the level of service proposed, the quality of front of house space and self-contained nature of the bedrooms. Room sizes vary a great deal in this sector across the country with studio apartments between 12 and 36 sqm depending on brand and location. The 17.8 sqm proposed here sits in the middle band whilst containing all of the facilities expected in a studio apartment. 51 week lettings are proposed providing a more resident population than a serviced apartment development.

The units will be targeted principally at the international student market. In this regard, there are a number of schemes adopting a high quality approach to student accommodation.

Nido
Kings Cross
London

Student Castle is the most recently completed student accommodation scheme in Manchester. It has departed someway from the traditional model although it does include a high proportion (116 beds) of cluster accommodation with shared kitchen, living and dining areas.

NIDO by Blackstone developments have properties in London and Barcelona. They provide a mix of single and double occupancy studios and some shared apartments/ clusters.

Hive have properties in Hoxton (220 units) and Bethnal Green (203 units) in London. They provide a combination of two bedroom studios, self-contained studios and some clusters.

Nothing like the Vita brand, providing wholly self-contained units with no shared living facilities exists in the Manchester market at present.

5.0 Site Analysis

Context

The site currently has a very open context. The nearest adjacent buildings and structures are No. 1 First Street, the viaduct to the North and the single storey gas governor buildings. Macintosh Mills provides some context to the East. The approved future context will provide a more sheltered location.

To the West; the Northern half of the boundary is occupied by No. 1 First Street, a refurbished office building and the southern half is the landscaped square. The Masterplan sets up a 9m wide pedestrian route runs North South adjacent this boundary.

To the North is Plot 3, to be a multi-storey car park with 700 spaces. The adjacent road to the East, a continuation of Wilmott Street, carries traffic into the car park and occasional service traffic.

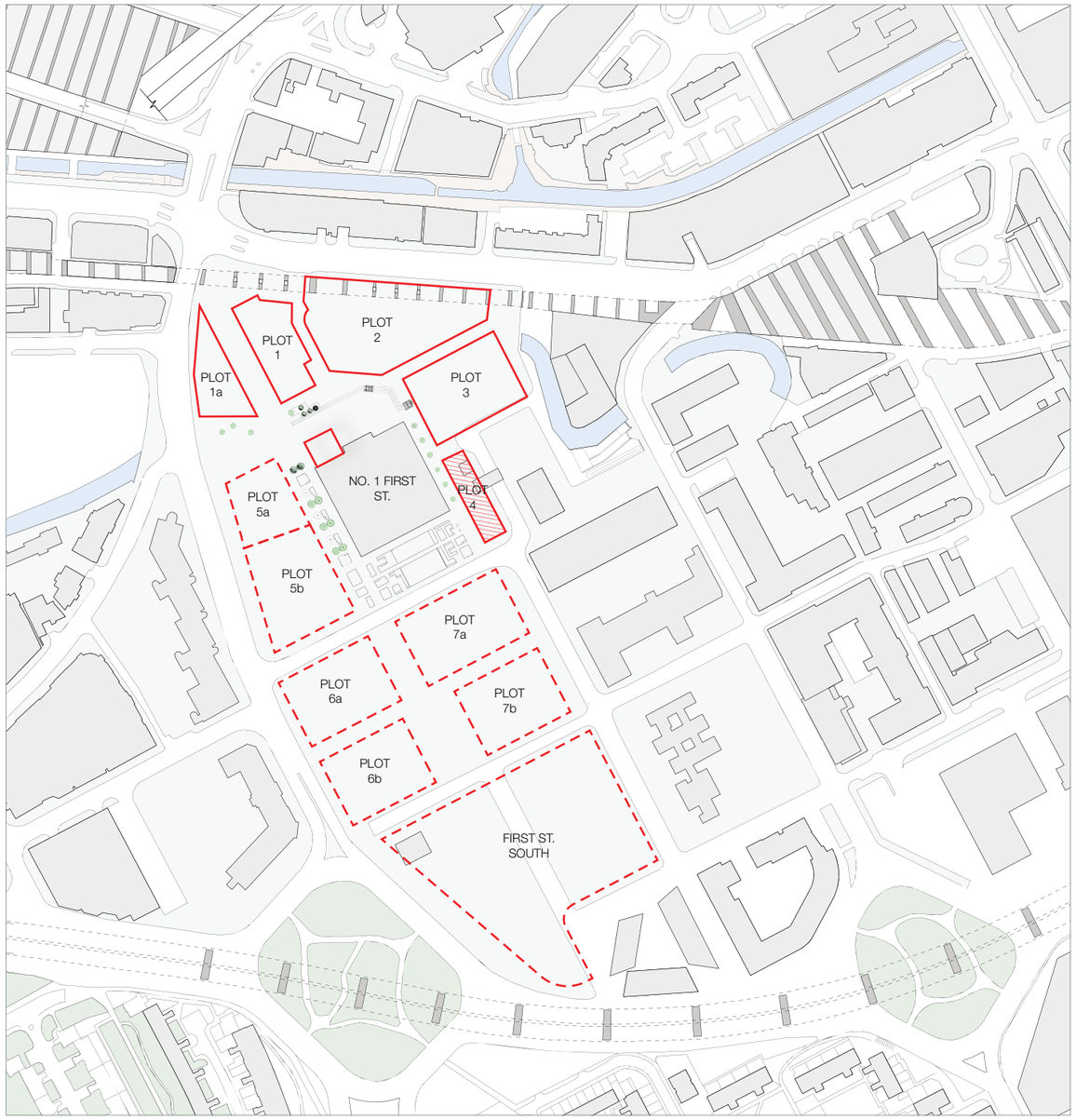
Across the service road to the East are two gas governer buildings. They are single storey and carry an exclusion zone which precludes any development within those areas.

To the South is River Street. Beyond that, the land is designated in the Masterplan for principally office use. This is currently a surface car park.

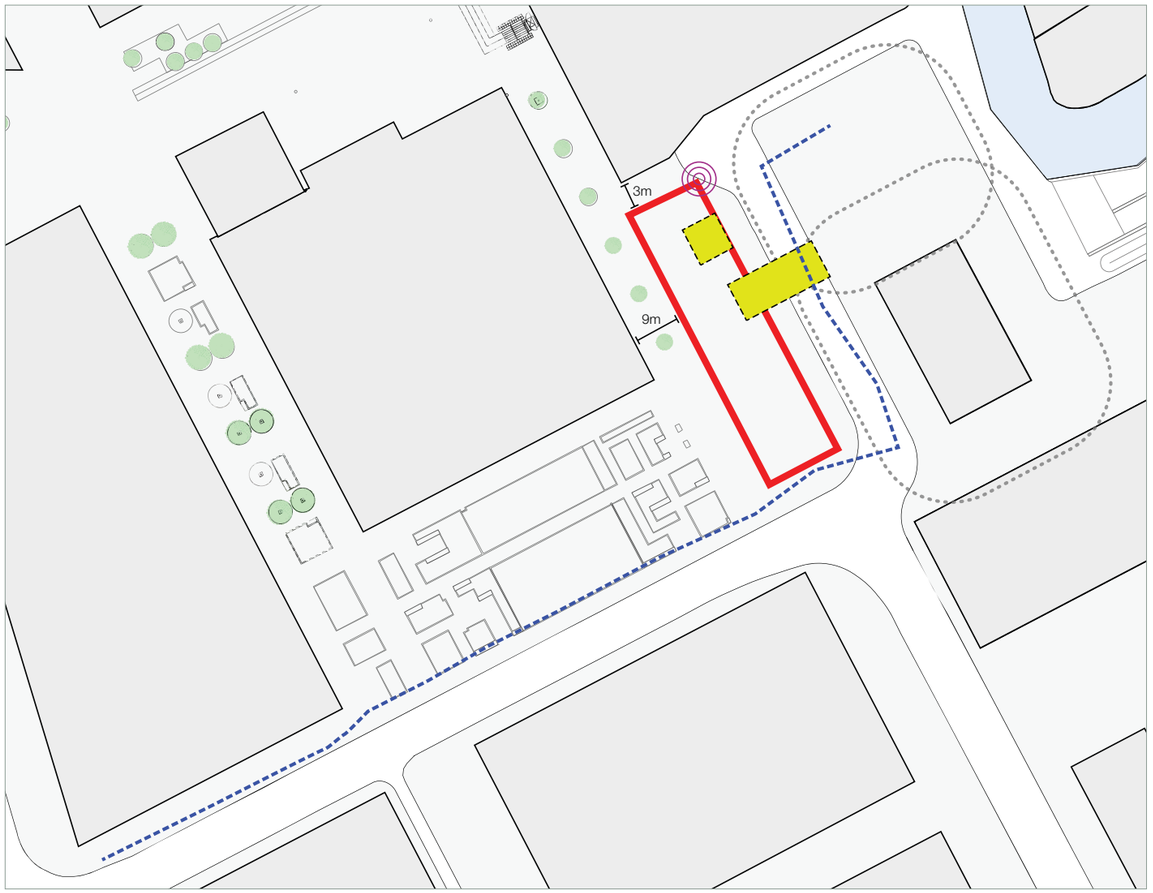
Further South, the existing surface car park and small office building are the subject of a planning application for First Street South, the anchor destination comprising a retail store, car parking spaces, a hotel and student residential accommodation.

Materials are rich in texture and colour. Many of the existing buildings in the area are red brick. No. 1 First Street has a mixture of glazing and terracotta cladding.





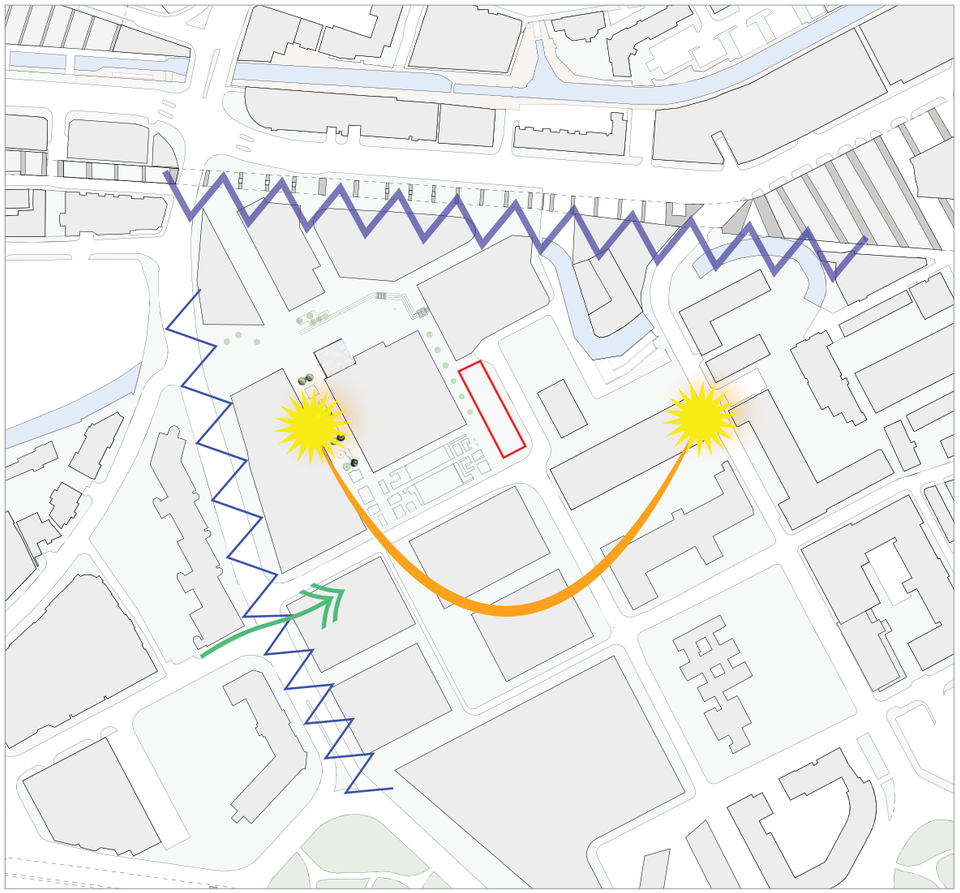
5.0 Site Analysis



Plot Constraints

Below ground to the South and East is a gas main with associated easement that also carries an exclusion zone.

Plot 4
Gas Easement
Site Clearance
Reduced Clearance
Gas Exclusion Zone



Environmental Site Analysis

The site is well shielded from the major noise sources. First Street North will reduce the impact of the railway viaduct. The long elevations are North East and South West facing. The South West elevation will be subject to solar gains.

Plot 4
Noise - Railway
Noise - Roads
Sun Path
Prevailing Winds
Rivers & Canals

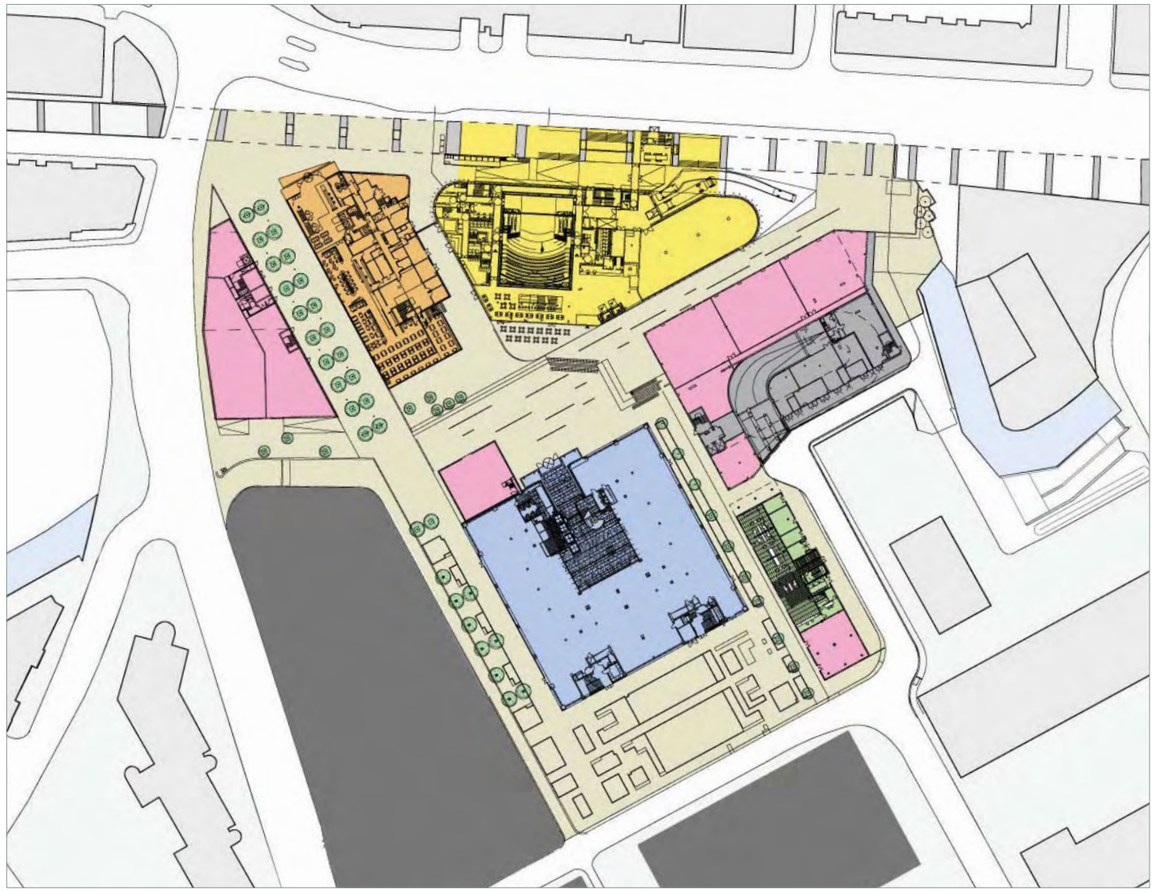
5.0 Site Analysis

Social Context

The introduction of a residential use in the centre of the First Street Masterplan will bring more activity and diversity. Confidence is growing in this location, as a by-product of the investment in First Street North, residential uses are steadily gaining the infrastructure to support them.

The particular occupiers targeted by this development will bring an appropriate, complimentary use. The provision of the support facilities required at the ground floor of the accommodation present a high quality product which will sit side by side with the uses already proposed in the First Street North and the wider First Street Masterplan.





Planned Future Context

No. 1 First Street is built and occupied, First Street North has planning permission and will be under construction concurrently with Plot 4 at the current programme, subject to planning.

5.0 Site Analysis





Historic Context

The site has been extensively remediated following it's previous use as a Gas Works. A Heritage Report is submitted under seperate cover.

Planning Policy Context

The key national, regional and local planning policies and strategies that are relevant to the planning application proposals are outlined below.

The planning application is accompanied by a Planning Statement prepared by Drivers Jonas Deloitte, which tests the proposals against the relevant provisions of these policies.

National Planning Policy

National policy guiding the proposals is provided by the National Planning Policy Framework (NPPF, March 2012). The application proposals accord fully with the key tenets of relevant National Planning Policy. The proposals will provide high quality luxury accommodation contained within a landmark building of exceptional design quality in an accessible City Centre location.

The proposals will play an important role in establishing a "sense of place" that is identified by the First Street Development Framework as being essential in order to stimulate the regeneration of the entire First Street site and its wider neighbourhood.

The scheme has excellent sustainability credentials and accords fully with Government's objective of encouraging sustainable development. The application site is located on previously developed land within the City Centre and easily accessible by a range of modes of public transport.

Regional Planning Policy

+ Regional Spatial Strategy for the North West to 2021 (RSS13); and
+ North West Regional Economic Strategy.

The proposed development meets the key policy requirements set out in the existing Regional Spatial Strategy for the North West and accords with the key objectives of the North West Regional Economic Strategy.

The application proposals involve the redevelopment of previously developed land identified as a regeneration priority within the Regional Centre, which will make efficient use of existing public transport facilities. The proposals will create employment and play a key role in the establishing of First Street North as a significant new destination within Manchester City Centre that will be crucial to the long term success of the City Region's economy.

Local Planning Policy

The Core Strategy is the key, over arching Development Plan Document within the Local Development Framework. The Core Strategy sets out the long term strategic policies for Manchester's future development and forms the framework that planning applications will be assessed against, including the proposed Vita development.

The planning application proposals accord entirely with the key provisions of the Core Strategy, by delivering exceptionally high quality development that will help to transform the character of one of the Council's priority regeneration sites.

The proposed Vita development is unlike any other accommodation product currently targeted at the student market in Manchester. It is a 'high end' product aimed specifically at international and post graduate students who demand a much higher standard of 'serviced', self-contained accommodation.

The following supplementary guidance and regeneration strategies / initiatives are also relevant:

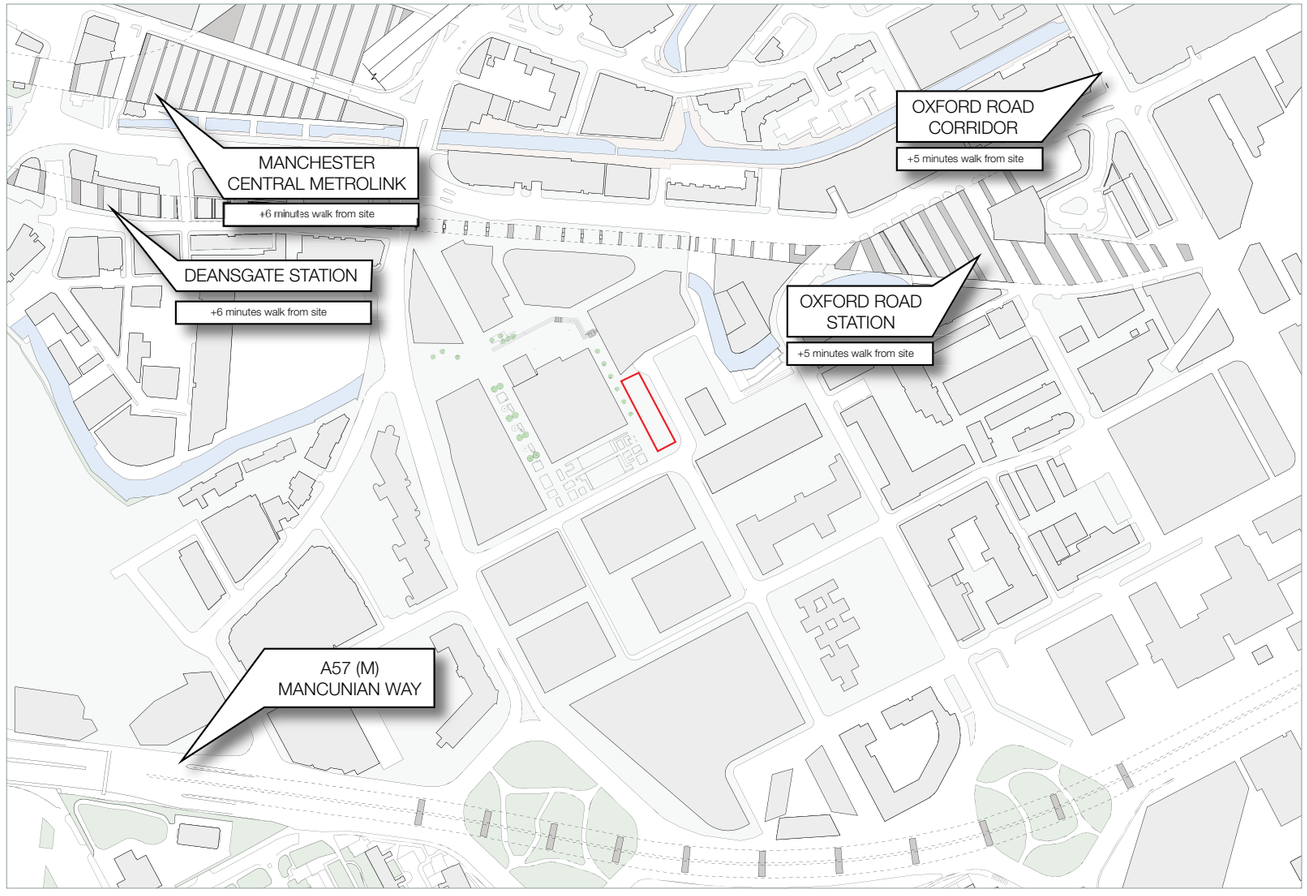
+ Guide to Development in Manchester – Supplementary Planning Document and Planning Guidance;
+ Manchester City Centre Strategic Plan;
+ Manchester Independent Economic Review;
+ The Manchester Sustainable Community Strategy 2006 – 2015;
+ The Central Manchester Strategic Regeneration Framework;
+ The Corridor Manchester Strategic Vision to 2020; and
+ The First Street Regeneration Framework.

The proposed development will make a significant contribution towards achieving the key objectives of these regeneration strategies / initiatives, as is explored in detail within the Planning Statement that forms part of the application submission.

5.0 Site Analysis

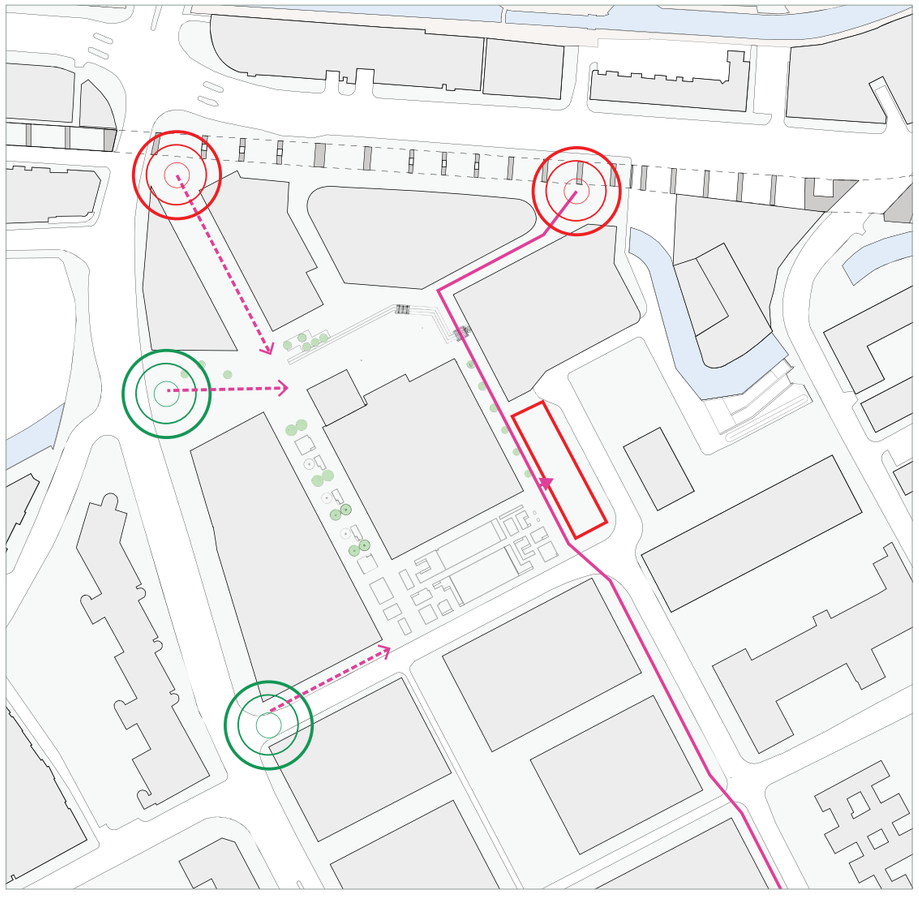
The location of the site, within walking distance of Bus, Rail and Metrolink Stations maximises the opportunity for residents, and customers to the ground floor commercial unit, to utilise existing sustainable transport infrastructure.

Oxford Road station, located approximately 500m to the West of the site, is a major railway station which not only connects to local and regional services but also national destinations. Deansgate station and Deansgate/ Castlefield Metrolink station are also located within approximately 5 minutes walking distance of the site. Oxford Road is a key strategic bus corridor into the City Centre and is one of the busiest bus routes in Europe. The site is therefore well located to encourage the use of sustainable modes of transport.



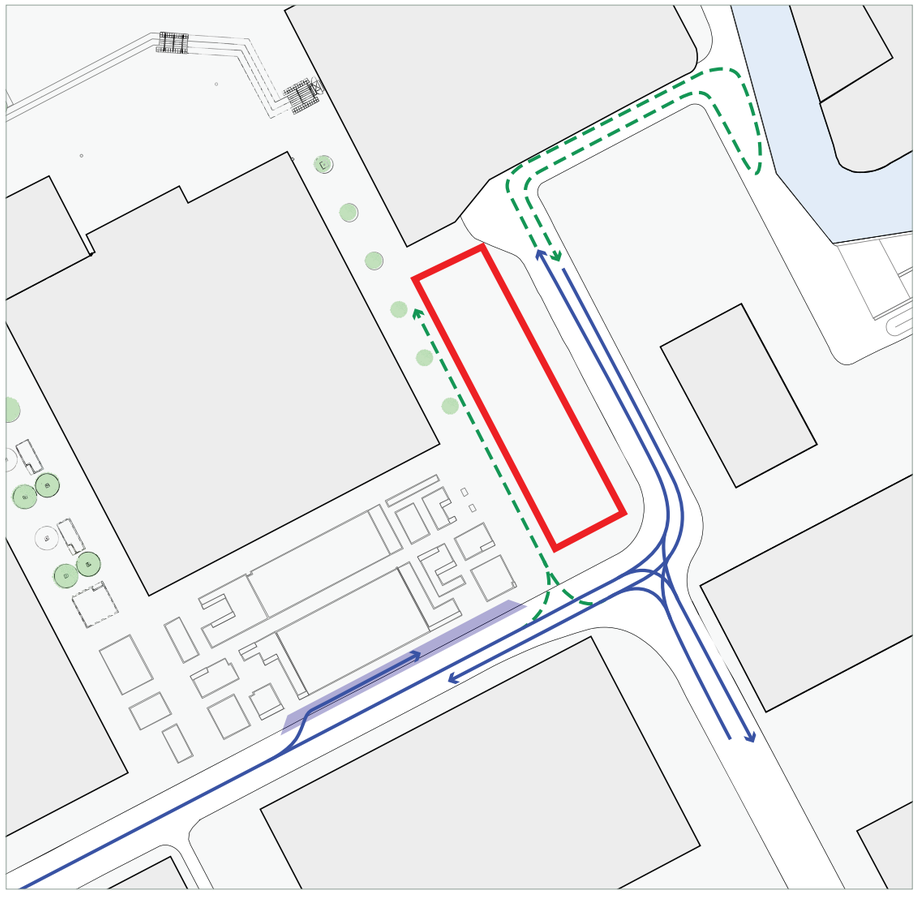
Transport Links

5.0 Site Analysis



Pedestrian Movement

- Plot 04
- Primary Routes
- Secondary Routes
- Primary Thresholds
- Secondary Thresholds



Vehicle Movement

- Plot 04
- Vehicle Movement
- Proposed Layby
- Emergency Vehicle Movement

The application site is located within walking distance of surrounding University Campuses and will encourage pedestrian and cyclist movement throughout the City Centre through improved pedestrian linkages between First Street, the City Centre and Hulme.

The principles of access and transport follow those set up for the First Street Masterplan. Regular traffic movements will be associated with the car park to the North.

Parking is not proposed given the proximity of car parks to the site and the limited site area. A drop off lay by is proposed on the southern edge of the square. Occupants and visitors can also use taxi drop-off points on Whitworth Street West and Medlock Street.

Emergency access is provided to two sides of the building without using the landscaped pedestrian zones but as part of the wider Masterplan it is proposed that fire tenders could access between First Street North and Plots 3 & 4.

6.0 Massing Options

GF Site Arrangement (1:1000)

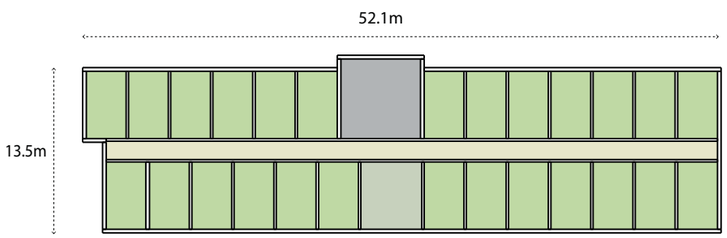
Typical Floor Layout (1:500)

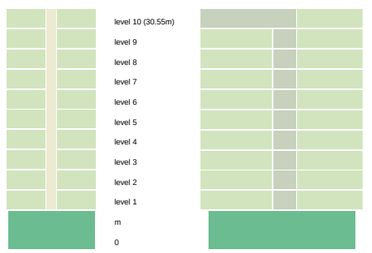
Building Section

Area Summary

Option 4 - One stair





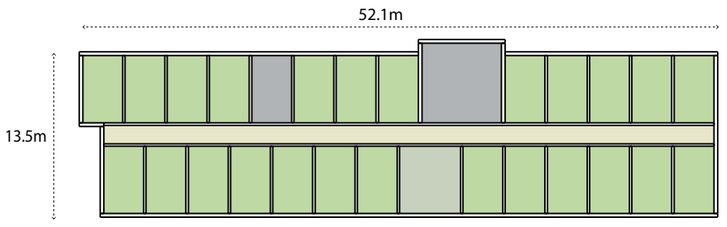


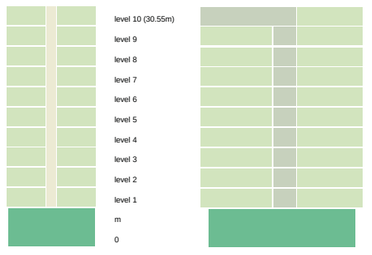
- 9 floors x 27 units + 1 floor x 25 units = 268 total units
- +2 floors (lobby and mezzanine)
- Typical bedroom floor -GIA = 659sqm / 7,093sqft
- Typical bedroom floor -NIA = 495sqm / 5,328sqft
- Total GIA = 7,286sqm / 78,426sqft (Approx)

268 units/
27 units per floor

Option 5 - Two stairs





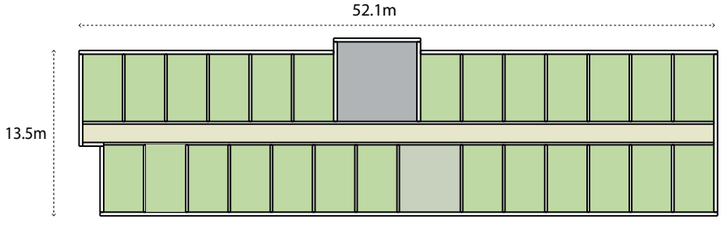


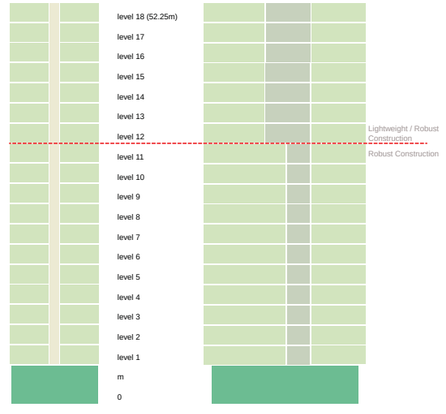
- 9 floors x 26 units + 1 floor x 25 units = 259 total units
- +2 floors (lobby and mezzanine)
- Typical bedroom floor -GIA = 659sqm / 7,093sqft
- Typical bedroom floor -NIA = 477sqm / 5,134sqft
- Total GIA = 7,286sqm / 78,426sqft (Approx)

259 units/
26 units per floor

Option 6 - Sprinklered







- 11 floors x 27 units + 7 floors x 26 units = 479 total units
- 7 x Upper floors, 11 x Lower floors
- +2 floors (lobby and mezzanine)
- Typical bedroom floor -GIA = 666sqm / 7,168sqft
- Typical bedroom floor -NIA = 496sqm / 5,338sqft
- Total GIA = 12,957sqm / 139,469sqft (Approx)

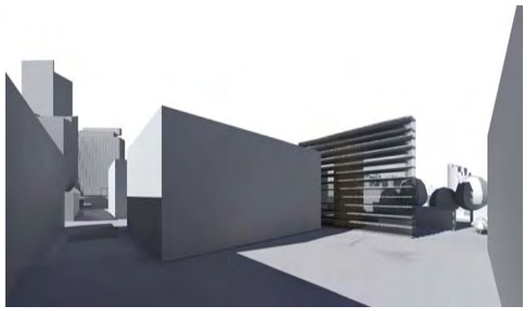
479 units/
27 units per floor

6.0 Massing Options

Aerial View



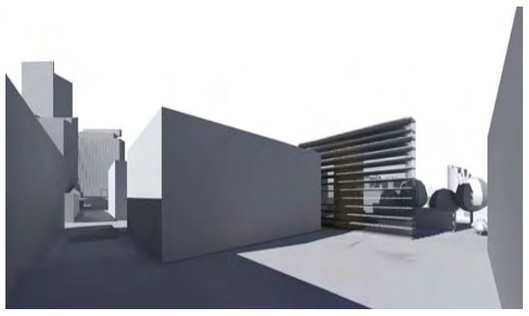
Street View



Comments

- A single core generates extended travel distances. Although the scheme is on the sprinkler height threshold there is still a risk that sprinklers are required.
- Accommodates Plot 03 to the North
- This option can allow for lightweight construction techniques
- Builds close to gas easements
- Two lifts are required with this option





- A second stair brings the typical floor closer to a code compliant scheme. Travel distances are slightly extended
- This option can allow for lightweight construction techniques
- Builds close to gas easements
- Two lifts are required with this option





- Could be delivered as robust or hybrid construction.
- Marginally above the requirement for wet risers. Reducing the floor to floor heights/ reducing the ground floor height/ fire engineering could remove the requirement for wet risers.
- Three lifts are required.

During feasibility studies we reviewed six options against the parameters of Plot 4, originally looking at approximately 480 rooms.

Through the course of the feasibility study we also reviewed a lower density proposal to test the economy of a scheme with simpler construction, fire strategy and shorter programme. The adjacent options review a circa 250 bed scheme which could be predominantly constructed using lightweight techniques and a circa 500 bed scheme generating a building just beneath the height requirement for wet risers.

The shorter programme associated with the lower density scheme identified options 4 and 5 as the preferred options for further development. The differences relate to the fire strategy. Of the two, Option 4 has been selected to take forward to planning.

Legend:

- Residential - Standard Bedroom unit
- Lobby/Common Area
- Retail/F&B
- Circulation
- Plant/Servicing
- Core
- Site Boundary
- Mezzanine Level

7.0 Scheme Description

Use and Amount

The proposals are for 279 luxury student bedrooms with associated ancillary space. A 1,800 sq ft retail space, capable of subdivision, is proposed at ground floor. It is expected that the retail space, whilst being operated independently, will provide a function that is complimentary to the accommodation above. Consultation has taken place with the retail agents advising on First Street North to target occupiers that will not compete with those proposed as part of the cultural hub.

The studios occupy 10 floors above the ground floor unit. Each unit is 17.8 sqm with a kitchenette, bathroom, sleeping area and study space.

In addition to the retail unit the ground floor accommodates;

- Reception
- Lounge / Study Space
- Gym
- Laundry
- Plant Spaces
- Refuse Store
- 58 cycle spaces

Given the proximity of adjacent parking facilities no on site parking will be provided.

Layout

The site is located close to established open space, improving community and retail facilities, adjacent the city centre and is close to public transport nodes. These characteristics need to be built upon through the implementation of safe, enjoyable pedestrian routes. High levels of transparency and active use at ground floor are proposed as means of supporting this.

The proposals occupy the full plot boundary, thereby reinforcing the strong pedestrian links. The building lines and views set up as part of the Masterplan process are reinforced.

At ground level, the site has a relatively open aspect to the South West corner. It is proposed to position the entrance to the building here, off the square. This provides surveillance and activity to the central square. An open, manned reception will monitor access to the building. It is proposed to link the ground floor and mezzanine lounge uses visually, in an open plan space with strong visual connections to outside.

The North East of the plot will accommodate the plant requirements. The southern extent of the plot will house the retail unit, allowing active frontage to three sides.

A typical floor comprises 28 units, 15 to the South-West and 13 to the Norh-East with a central corridor. A fire fighting core is positioned in the centre of the North-East elevation.

Inclusive Access

Entrance to the building and access through it is accessible. 4 accessible bedrooms can be accommodated adjacent the core at first floor level but only 2 of those would be fitted out with accessible bathrooms. This follows analysis of historic occupancies and review with building control.

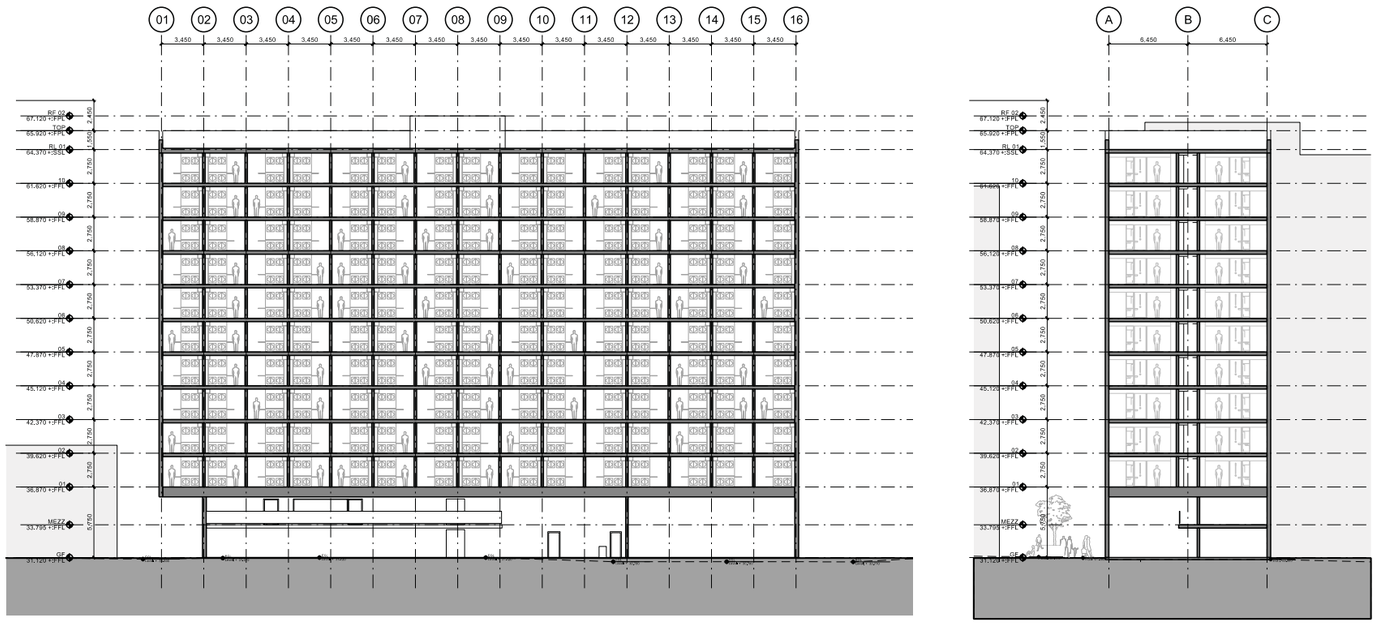
Access for the Fire Service

Access is provided through the fire fighting core on the East elevation. There are no disabled refuge points as the building has a residential use designation.

Servicing Access

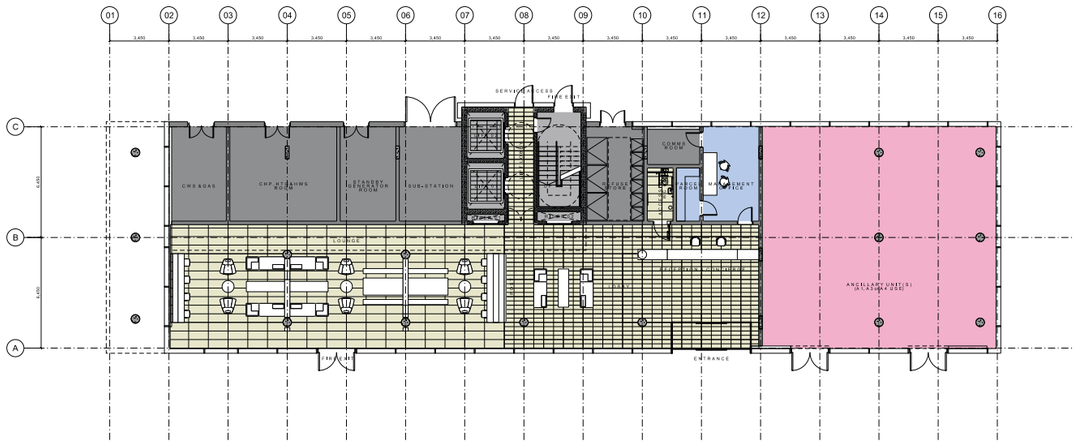
Refuse and plant rooms are proposed on the on the north east elevation. Access is intermittent to most of these functions.

A lay- by is proposed to River Street, providing loading to service the retail unit and the accommodation above.

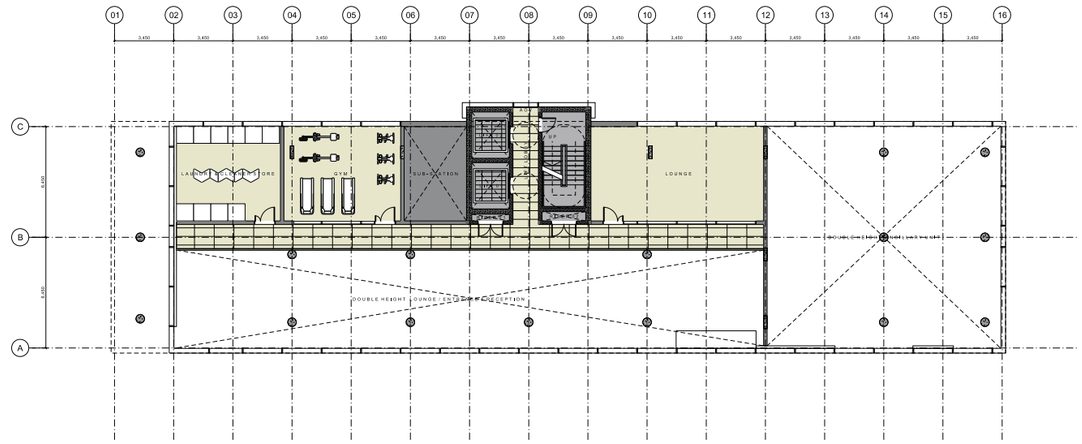


Building Sections

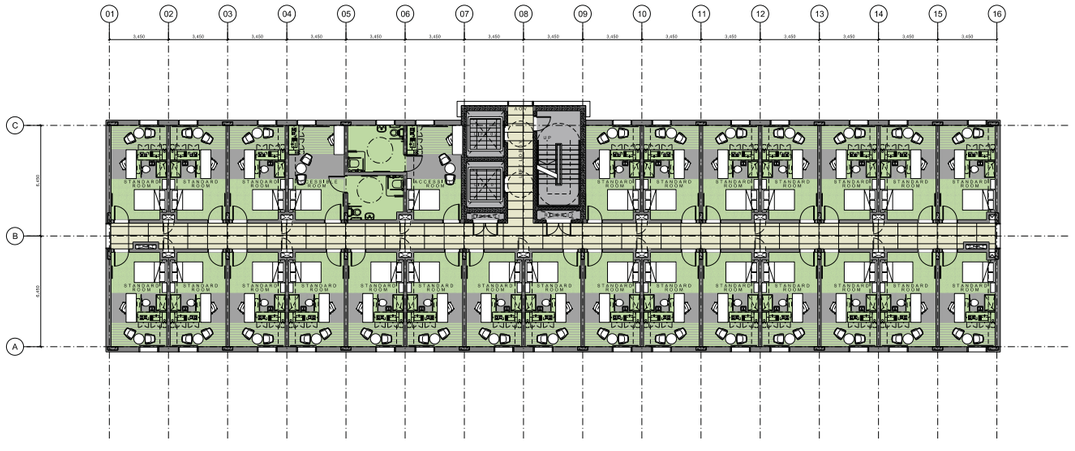
7.0 Scheme Description



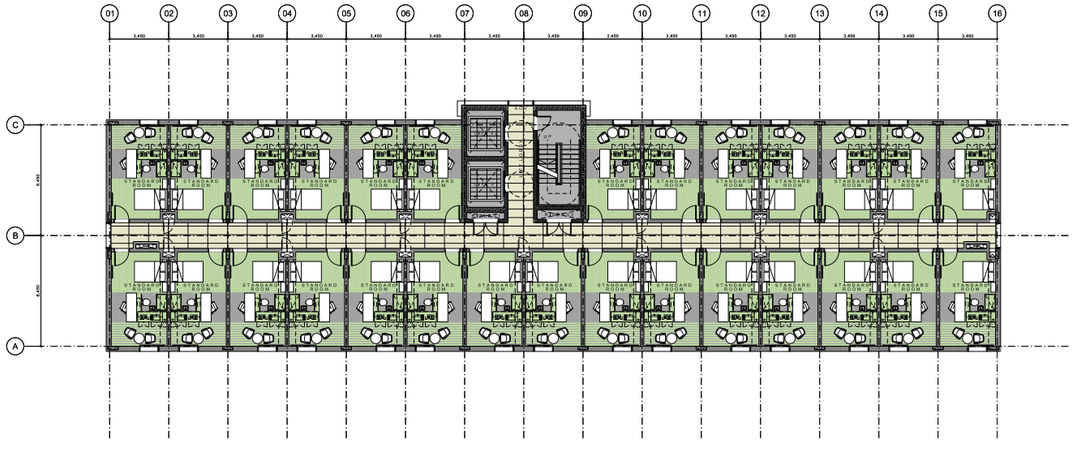
Ground Floor Plan



Mezzanine Floor Plan



First Floor Plan

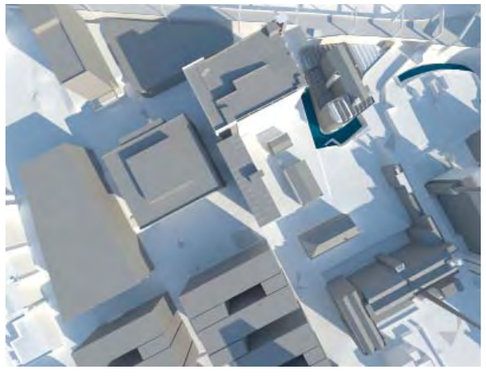


Typical Upper Floor Plan

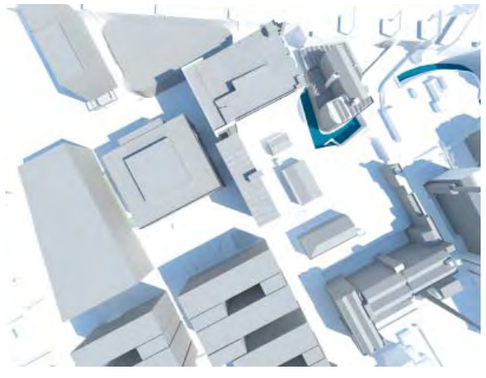
7.0 Scheme Description

Sunpath Analysis

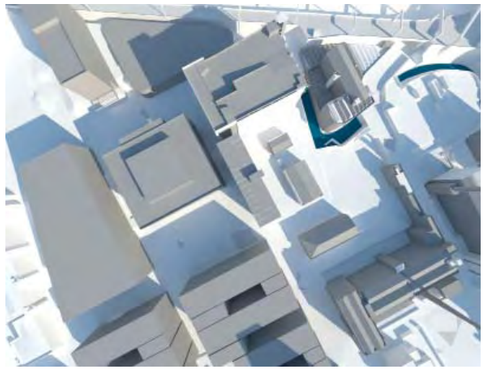
March 9 AM



June 9 AM



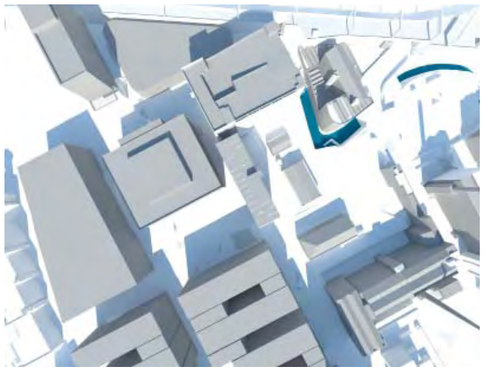
September 9 AM



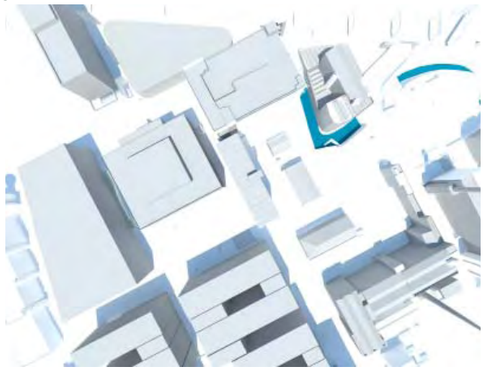
December 9 AM



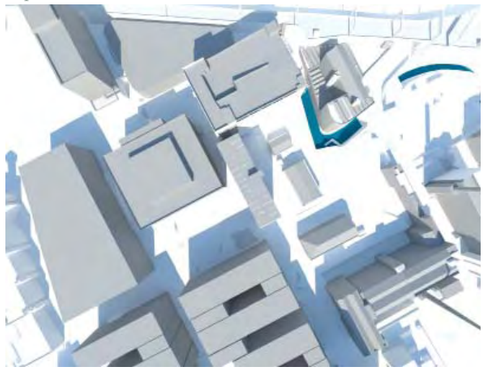
March 12 PM



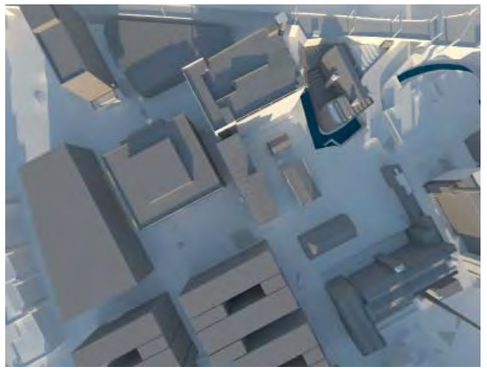
June 12 PM



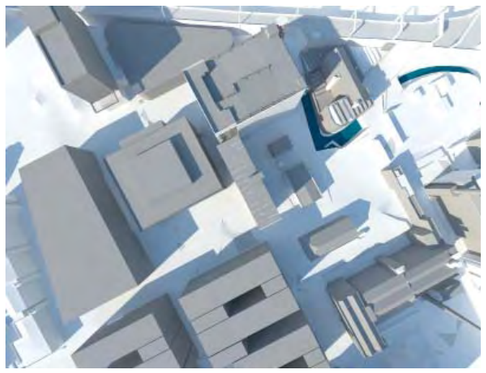
September 12 PM



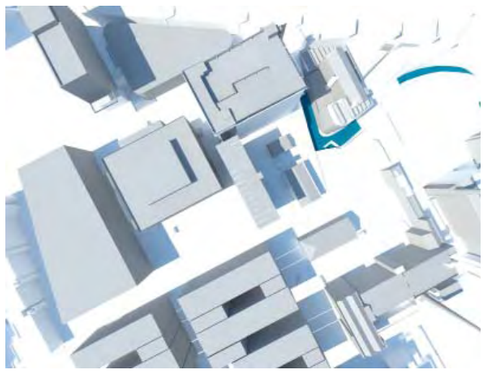
December 12 PM



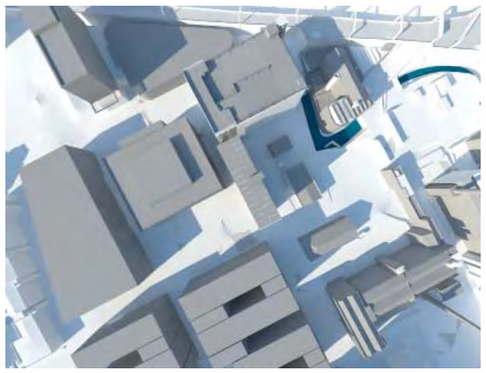
March 3 PM



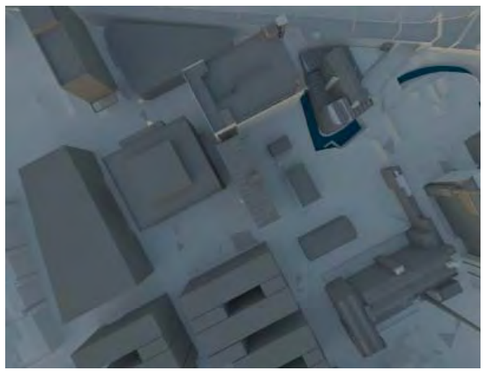
June 3 PM



September 3 PM



December 3 PM



7.0 Scheme Description







Scale

The building is approximately 50m long, 13.1m wide and approximately 34m high. A review of the massing of 270-280 units was considered sufficient to fulfil the aims of the First Street Masterplan.

The building comfortably closes the Southern Square along its eastern boundary without dominating the space or detrimentally impacting on the setting of Macintosh Mills.

7.1 Internal Configuration

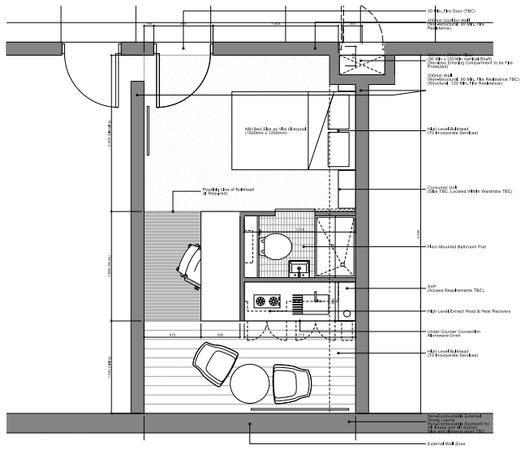
The preferred Vita layout creates a self-contained unit with distinct living, sleeping and bathroom facilities through the centrally located pod. This is one of the key differences between Vita and other serviced apartment and student residences.

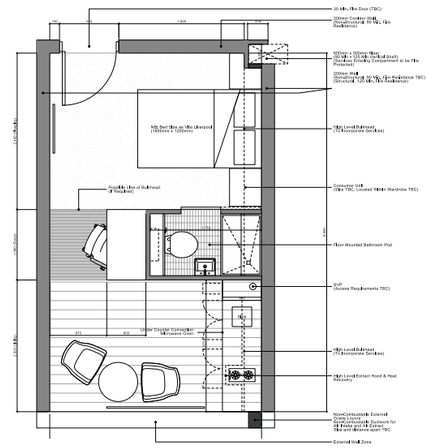
The separation of sleeping from cooking/ dining spaces sets the Vita module apart in its provision of truly usable accommodation throughout the year.

Construction zones have been allowed between floors and between bedrooms to provide flexibility in structural frame selection. This has been ratified and coordinated with the design team to meet acoustic, thermal, fire and structural requirements.

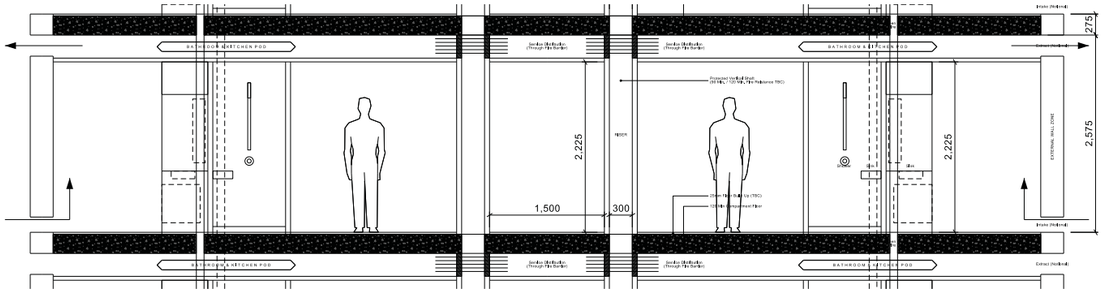
Typical Unit

There are two typical room options under review.

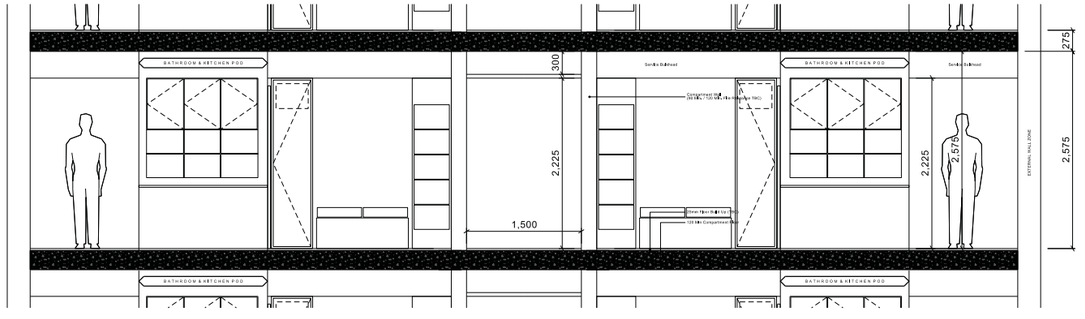




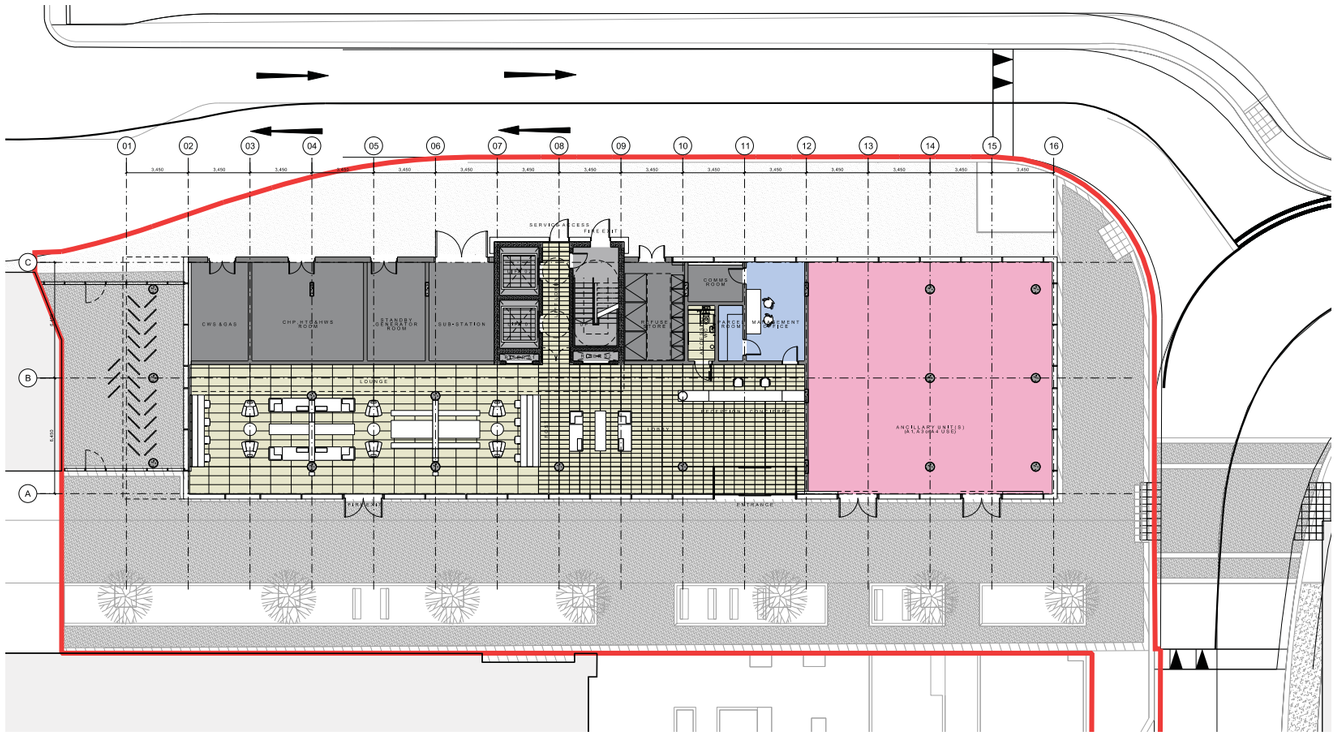
Typical Floor Section



Section A-A



7.2 Vita Social/ Study Spaces



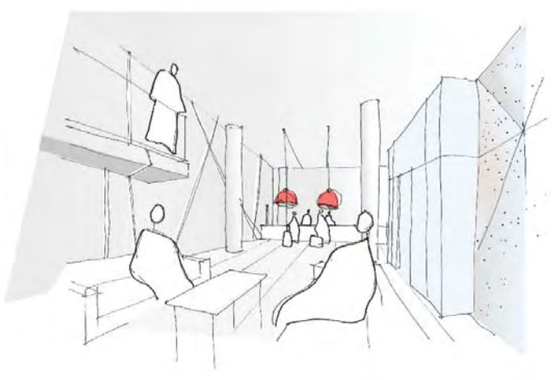
The entrance is integrated with the Southern Square and is positioned along the Western elevation.

The provision of a generous lounge space underpins the Vita brand. It provides a safe, comfortable social space and community environment that encourages interaction, relaxation and study.

A natural subdivision of spaces allows the entrance and core to be monitored by reception. Guests are welcomed and residents have a clear point of contact. Seating is proposed associated with this.

The lounge spaces at ground floor are open plan, to provide visual connection between reception, lounge and study spaces, gym and leisure uses. Subdivision and notional rooms are created using furniture such as post boxes to divide the volume.

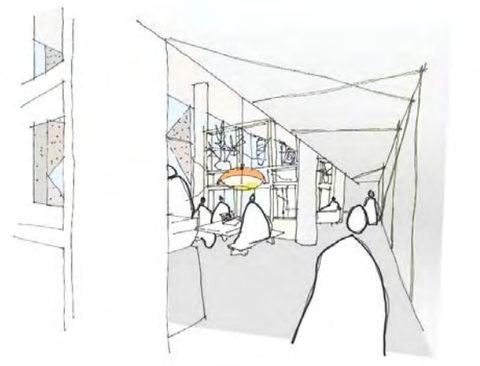
A mezzanine is proposed with visual connection to the ground floor to make those spaces feel a part of the front of house space thereby encouraging them to be used.



Sketch view towards reception



Sketch view of study / lounge



Sketch view of study / lounge

7.3 Engineering Principles

Mechanical & Electrical Summary (Ramboll)

The building services strategy has been developed in response to the Client's requirements for a high quality accommodation with individual self contained rooms and provision of a number of central amenities. The development also needs to facilitate the inclusion of a retail opportunity at the street level.

The M&E concept strategy has been developed to meet these demands, those of building regulations and the Manchester City Council's (MCC) Core Strategy requirements for new buildings. These requirements include reducing energy requirements, implementing energy efficiency and then applying appropriate low or zero carbon technologies (LZCTs). MCC require a 15% reduction in CO2 emissions over Part L 2010 using the strategy outlined above.

The accommodation will need to comply with approved document Part L1A 2010 and this will be demonstrated by using the Standard Assessment Procedure (SAP) calculations version 9.90, which is a government tool approved for demonstrating compliance with Part L1A 2010. The tool uses a Notional Building, based on a 2002 standard building and applies an improvement factor to set a Target Emission Rate (TER). The actual building (Dwelling Emission Rate, DER) must be equal to or better than the TER in order to comply with the regulations.

Minimising Energy Requirements

In order to reduce the carbon emissions the primary objective is to minimise the energy used in the first instance and this can be done by making improvements to the building envelope, at present the scheme has worked to the following U-values:

- External Walls – 0.26 W/m2K
- Exposed/Ground Floor – 0.18 W/m2K
- Roof – 0.18 W/m2K
- Glazing – 1.80 W/m2K

In addition to U values there are other considerations to minimise energy and these include orientation of the building to make the most of the suns' energy during the winter months, but avoid too much direct solar gain during the summer which will require more energy for cooling. Overhangs and shading devices (including solar glazing) can be used in the areas with the highest subjection to direct solar gain.

Also of considerable influence is uncontrolled air infiltration into the building which can be limited by targeting a leakage rate as follows:

- Air Permeability – 5 m3/(m2.h)

After considering the fabric the next consideration is plant and equipment and where possible any equipment used on the site should be high efficiency and low energy in order to keep the carbon and energy usage low. This also reduces heat gains, decreasing the requirement for cooling and the risk of overheating.

The next stage is to consider the low and zero carbon technologies, there are two options still under consideration at this stage: -

The Preferred Option: CHP

The preferred option would be to use a Combined Heat and Power (CHP) system to provide electricity to the building as well as using the heat by-product to provide domestic hot water and space heating. By using a system of two modulating CHP units in parallel with one another, it will provide enough flexibility to provide for the building as the load varies. This is in contrast to a traditional single CHP system which tends to be quite large with little modulating capacity.

The CHP plant will be capable of achieving the 10% carbon emissions saving for BREEAM and the 15% carbon reduction required for the Core Strategy Policy without any additional technologies involved and aiding the simplicity of the buildings services design.

Summary for Thermal Comfort Analysis

A thermal study has identified that there may be potential issues with thermal comfort in some of the apartments. In an attempt to reduce the impact a recommended treatment for each façade is highlighted below:

North / South

The North and South have minimal levels of glazing located in the corridors. As the corridors are transient and the glazing is openable, low-e glazing should be sufficient here.

East

Analysis has shown that using low-e glazing produces borderline thermal comfort results with respect to CIBSE Guide A. Solar glazing provides a more convincing pass and should be including in the cost analysis at this stage. It has been shown that brise soleil has minimal impact, so is not recommended. With solar glazing and no brise soleil the East elevation is meeting the CIBSE recommendations, so comfort cooling is not required for the apartments on this elevation.

West

As the West elevation does not have openable windows, cooling will be required to maintain reasonable thermal comfort. Solar glazing should be used to keep cooling loads and cost to a minimum.

7.3 Engineering Principles

Structures Summary (Capita Symonds)

The key drivers specific to this project that need to be considered:-

i) Different usages (Commercial / Retail Areas, Residential Accommodation).

ii) The potential requirements within residential units for bathroom / kitchen pod solution

iii) Site constraints.

By aligning column grids at ground floor level to reflect the upper bedroom levels, the degree of transfer structure may be minimised.

Where transfer structure is unavoidable, consideration as to the design parameters of such elements needs to be given e.g. heavier structural solutions will require more significant transfer elements.

Sketch structural schemes have been produced reviewing precast concrete superstructure, a lightweight solution and an insitu concrete frame with post tensioned slabs.

Acoustics Summary (Sol Acoustics)

Environmental noise surveys around the proposed development site have identified the pre-existing environmental noise levels during the day and night.

The recommended acoustic performance of facade elements to achieve the recommended internal noise levels within habitable rooms has been determined. In particular, it has been determined that a double glazed unit of 4 mm float glass/ thermal cavity/ 6 mm float glass would be acoustically suitable for windows to habitable rooms.

Environmental noise limits have also been recommended for building services plant serving the Development.

Internal activity noise limits are given for the proposed commercial unit at ground floor of the Development.

Fire Strategy (Arup Fire)

The extended travel distances associated with the provision of a single core have been reviewed with the Fire Officer and Building Control.

Compensatory features have been incorporated into the scheme to support this approach.

The requirements associated with the external spread of flame have been coordinated with the facade design.

8.0 Significant Views

The following images demonstrate the most significant views of the proposed scheme in the context of the First Street Masterplan and the wider context of Manchester.

Views A & B are seen to be the key views of the scheme as approached from the South.

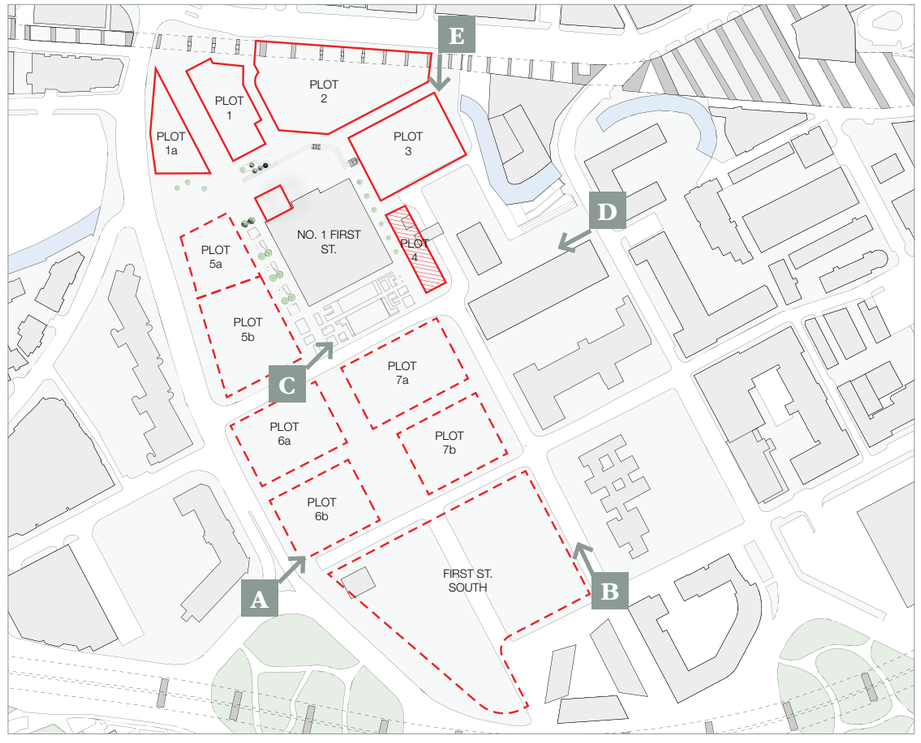
View C is important to describe the proposals in the context of the Southern quare.

The proposals are not especially visible from the vantage point in View D.

The view E from Whitworth Street West will be obscured by Plot 3 of First Street North.

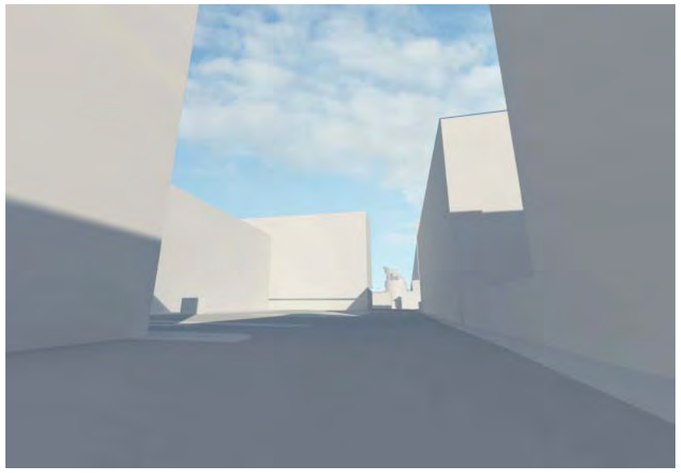
The building will form part of the dynamic views from the elevated railway viaduct and the Mancunian Way.

Key Plan



View A

The View from the Medlock Street Roundabout.



View B

View along Wilmott Street, looking at the scheme from the South



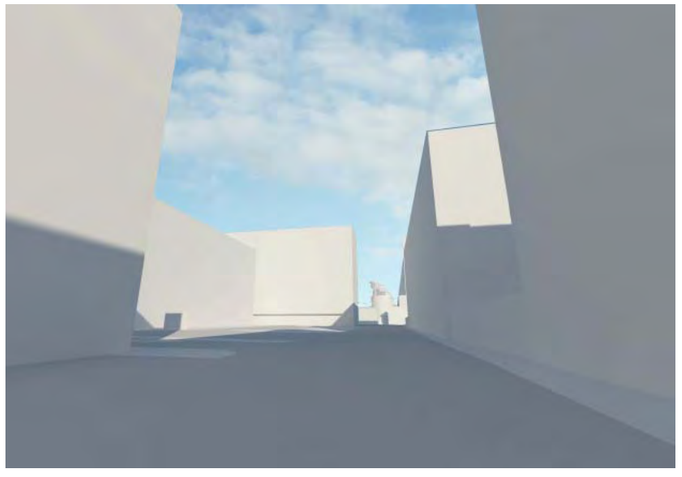




8.0 Significant Views

View C

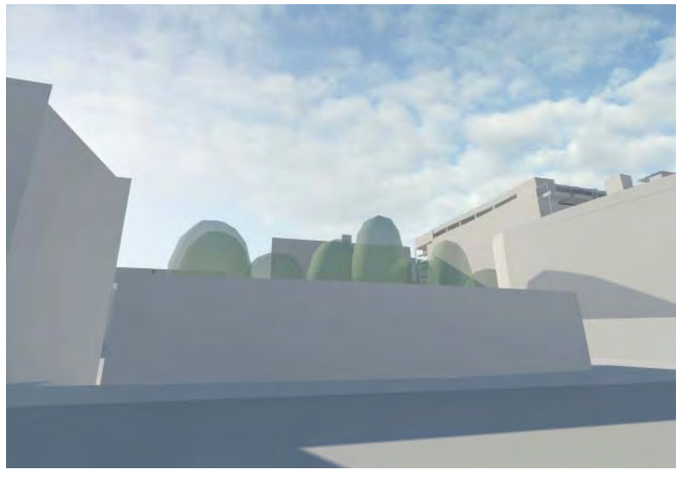
A view of the scheme across the new First Street public realm





View D

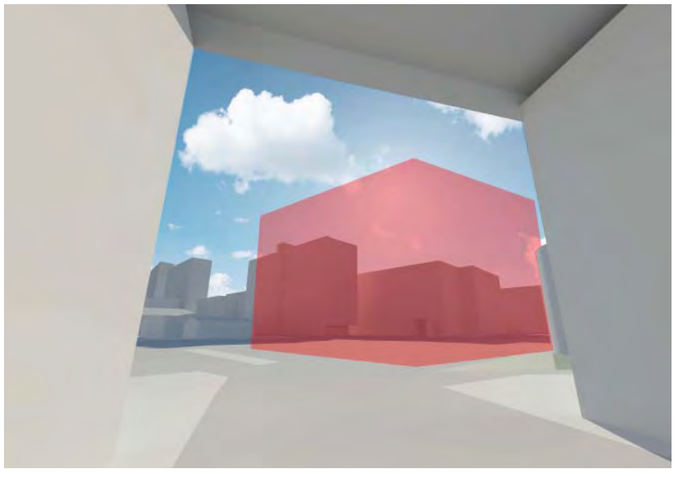
An obscured view of the scheme from the East from Cambridge Street





View E

Looking through one of the railway arches along Whitworth Street. This view will be obscured by the proposed car park at Plot 3.





9.0 Facade Study

Guiding Principles

We have identified several criteria that the facades will need to satisfy.

- Context
- Orientation
- Transparency at Ground Level
- M&E strategy integration to facade
- Expression of internal function
- Regular facade without monotony
- Privacy
- It will adhere to a rational and economic design

The following images describe our initial views of positive methods of addressing the identified criteria, and sketches exploring early ideas.

Orientation

The South-East and South-West facades are subject to solar gains and low sun angles. Providing an appropriate proportion of glazing can limit excessive solar gains whilst optimising daylight levels and views out. Coupled with vertical solar shading, solar gains can be minimised.

Fire Strategy

The proximity to adjacent buildings and the nature of their façade treatment dictates the technical criteria for this building. The North-West and South-East facades are affected in this way. The South-West elevation must be sealed (no opening windows) and the North-West elevation must be 100% protected.

Ground Floor Uses

It is the intention to maximise glazing for the ground floor occupied spaces. Plant spaces will be clad in an opaque material to match upper levels.

Roof Level

Plant space and parapet.

Context

The palette of materials across the proposed First Street Masterplan buildings and immediate context is robust and warm in tone.













Transparency at Ground Level

Increasing the transparency at lower levels maximise active frontage, improves connectivity to the street and provides and encourages activity within the public realm.



M&E Strategy Integration

Mechanical ventilation systems will require access through the fabric of the building to vent. This can be integrated into other facade elements or screened.







9.0 Facade Study

Expression of Internal Function

A modular form expressed through the facade treatment externally gives an indication to the use of the building. Views out, daylight in and an element of privacy are important. There is a requirement to provide ventilation through the façade.

The flank elevations will provide a proportion of thermal mass. It is proposed that these façades will carry an imprint of the modules set up on the North-East and South-West facades but in largely solid materials.

Windows are proposed at the end of the corridors to provide views out and some daylight.





Regular Facade without Monotony

Potential options are to use punched facades or introduce variation in opening sizes & positions.











Provide an Element of Privacy

The residential nature of the proposed scheme requires an maintained element of privacy to provide a comfortable living environment for tenants. The close proximity of built and proposed buildings to Plot 4 at suggests an increased level of control is required to ensure a comfortable coexistence.







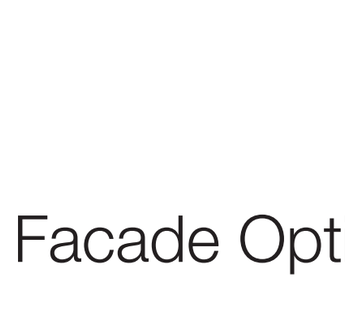




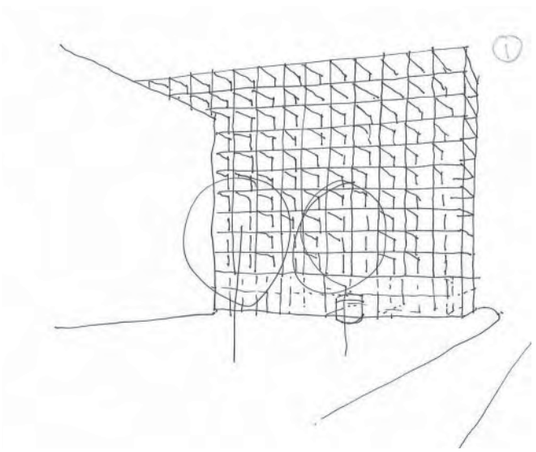
9.1 Facade Options

It is recognised that economic planning and rational internal arrangements can generate repetitive facades. The challenge with this building type is how to provide an envelope with interest without whimsical detailing.

The relatively small module of the apartments, particularly in context with the adjacent buildings, produces a repetitive, rigorous facade with little opportunity for articulation.



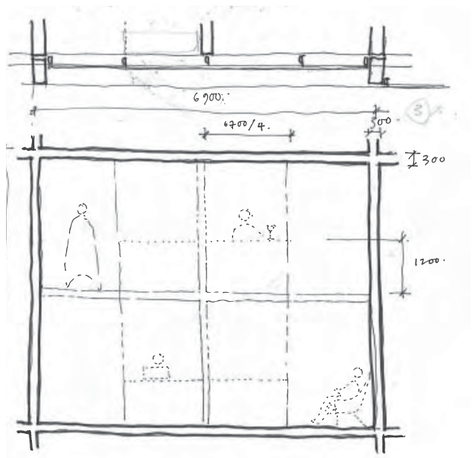
Single Unit Module



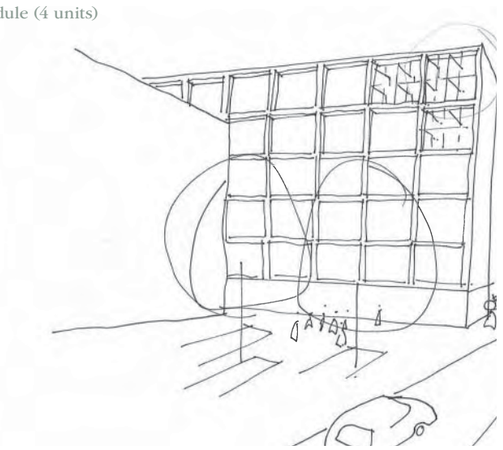
Sketch Option 1 - Express the module

Expressing a larger module and grouping units together in an expressed frame can break the repetition in the facade .

Furthermore, introducing articulation across the facade can create a more interesting and dynamic form. Grouping the unit glazing module and moving them in and out will create rhythm across the facade.



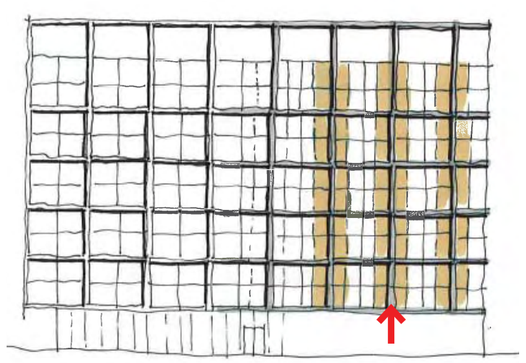
Extended Module (4 units)



Printed Glass



Ventilation Louvres



Expressed Frame

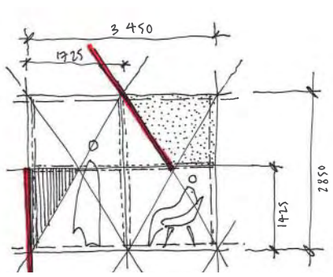
Rationalised Facades -
Incorporating Technical Requirements

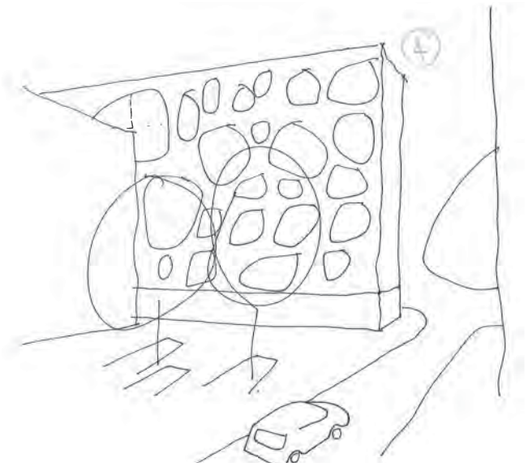
9.1 Facade Options

Sketch Option 2 - Disguise the Module

This option breaks away from the monotony of horizontal and vertical emphasis in the facade resulting in an aesthetic that disguises the module altogether.

This approach would distinguish Vita from the adjacent commercial building and car park.



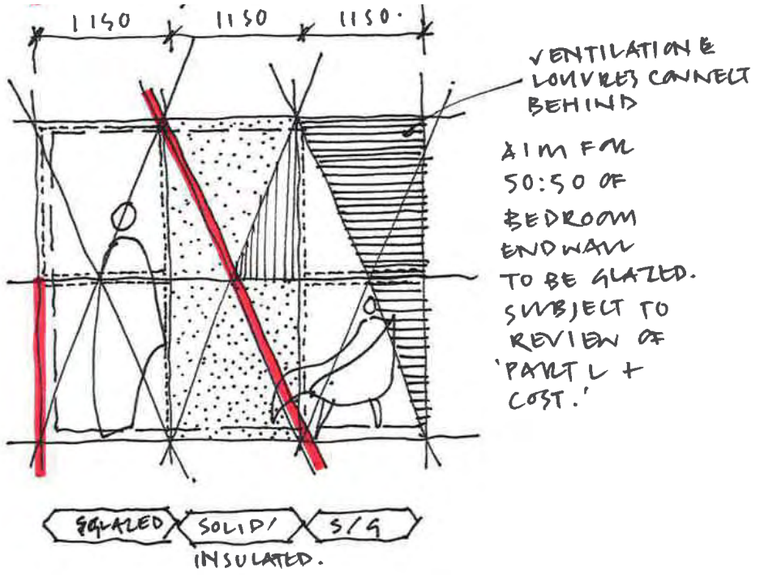


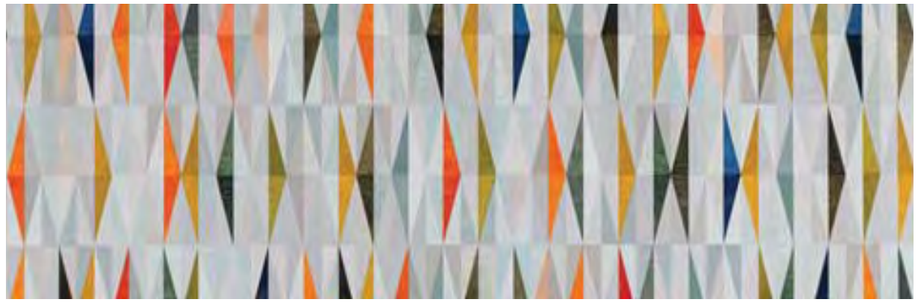
This sketch option integrates a diagonal emphasis, a mixture of glazed and solid panels to provide the privacy, natural lighting, shading and ventilation necessary for the units.

The screened areas would also provide necessary solar shading, a method for controlling unwanted heat gains and glare along the South-East & South-West elevations.

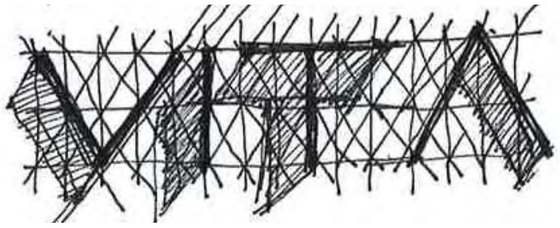
This facade system also communicates well with the Vita branding and image aspirations as a high quality and refined product.

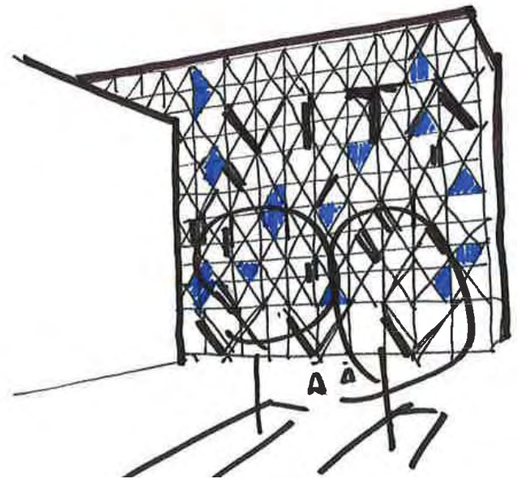
This option has been selected to take forward into further development.





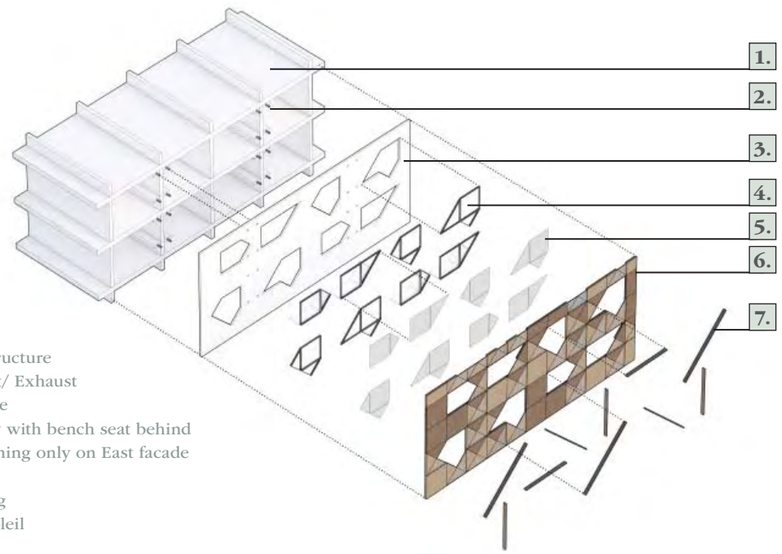
'The Greater Light', Biggs & Collings



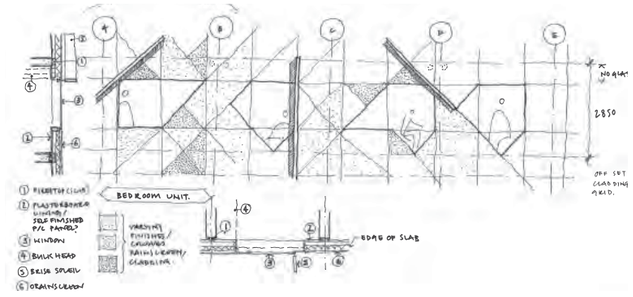


9.2 Facade Development

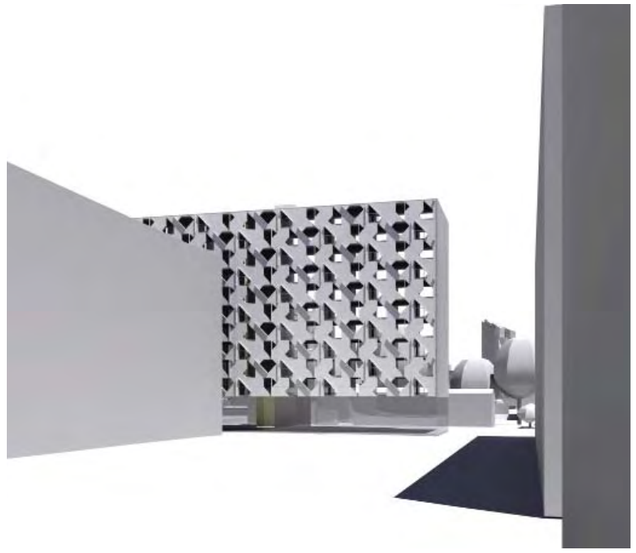
Facade Bay - Option 1



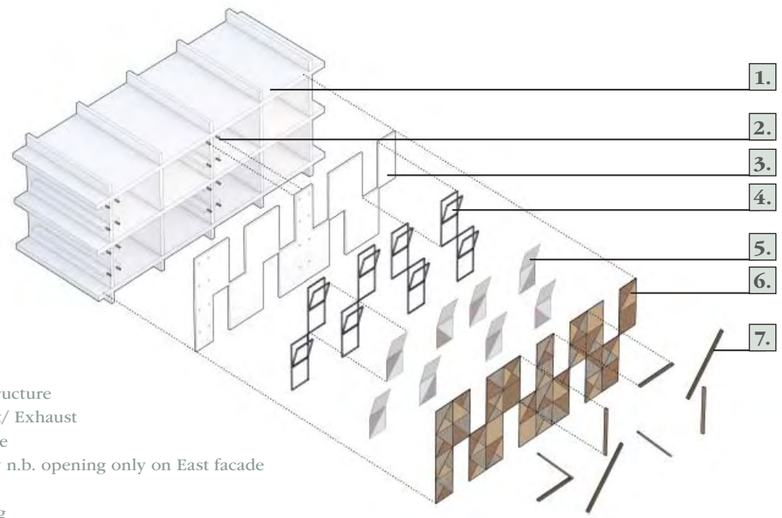
1. Superstructure
2. Air Inlet/ Exhaust
3. Substrate
4. Window with bench seat behind n.b opening only on East facade
5. Glazing
6. Cladding
7. Brise Soleil



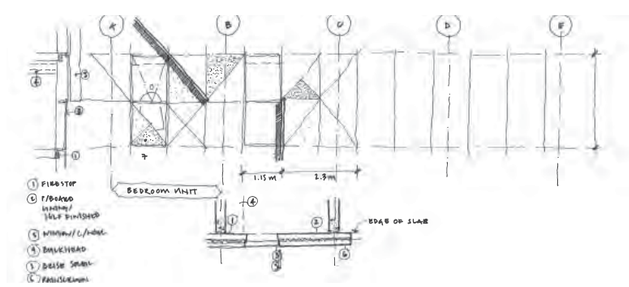


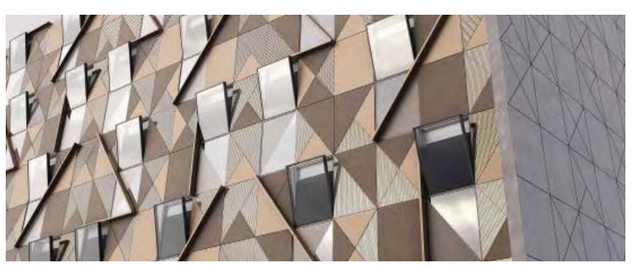


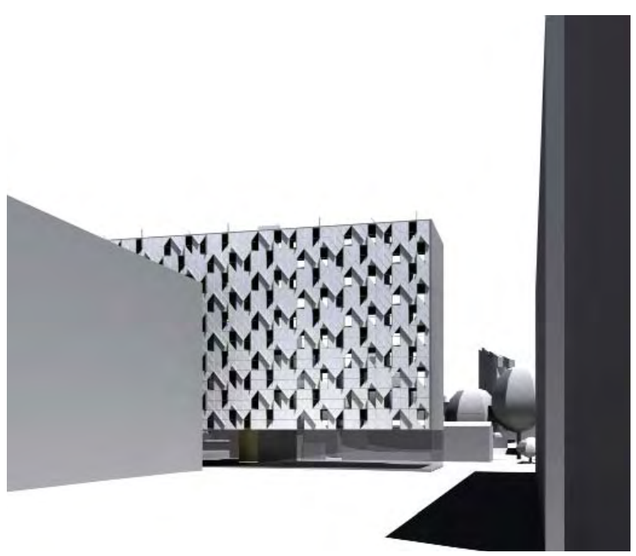
Facade Bay - Option 2



1. Superstructure
2. Air Inlet/ Exhaust
3. Substrate
4. Window n.b. opening only on East facade
5. Glazing
6. Cladding
7. Brise Soleil









Left: Work in Progress Image

9.2 Facade Development

Precedents

1. The Montcalm Hotel, London
2. Victoria Tower, Stockholm
3. Manor School, York
4. GSW HQ, Berlin
5. Fabrica, Manchester

The proposed façade treatment works with the adjacent, proposed and existing context. A rich palette of materials is proposed to sit comfortably with the environment.

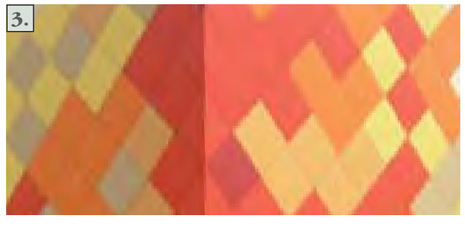
The North-East and South-West façades, or bedroom facades will incorporate a mix of materials. They will build up a diagrid arrangement of reflective and nonreflective, transparent and opaque materials to give a structure without uniformity.















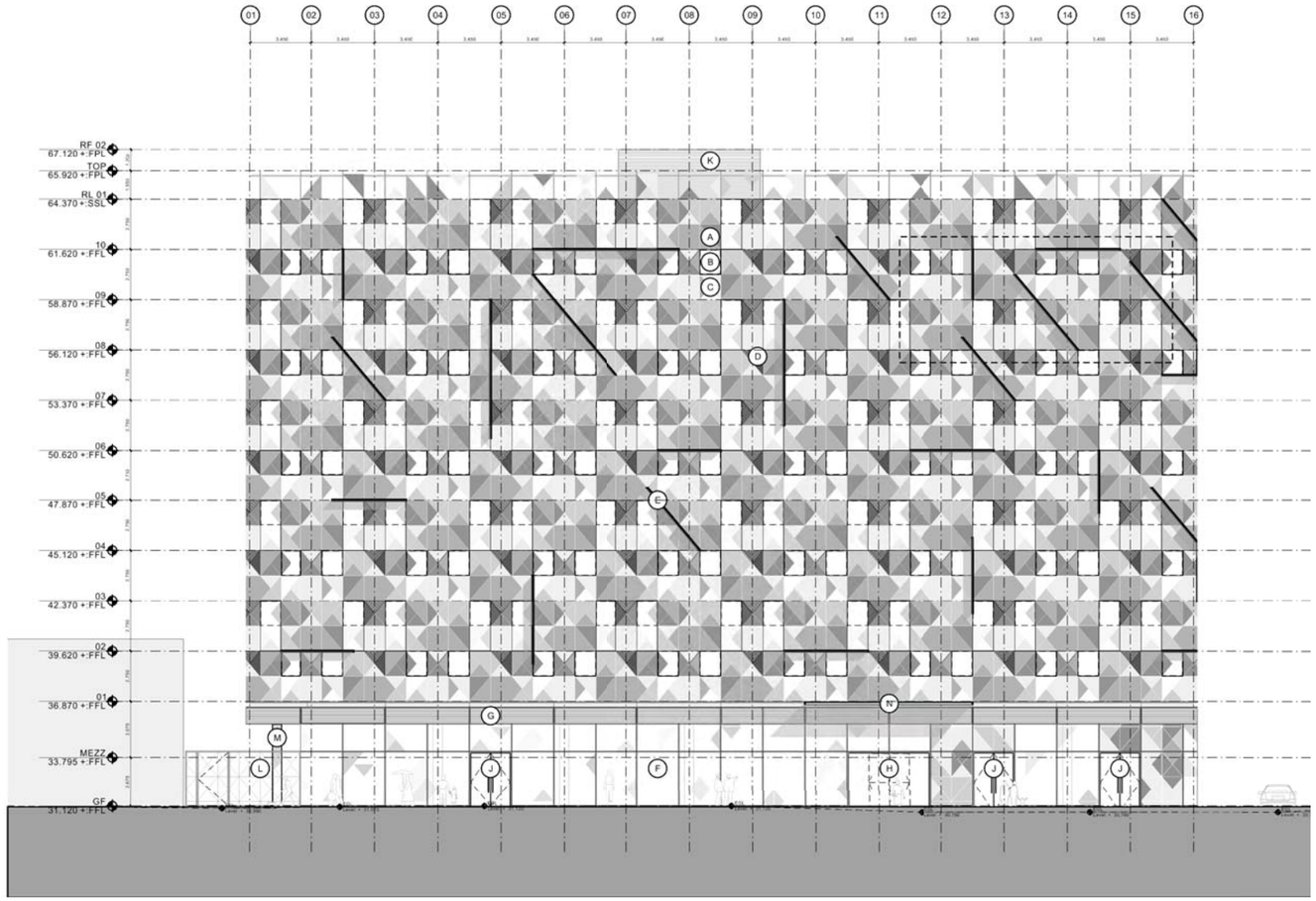


9.3 Elevations

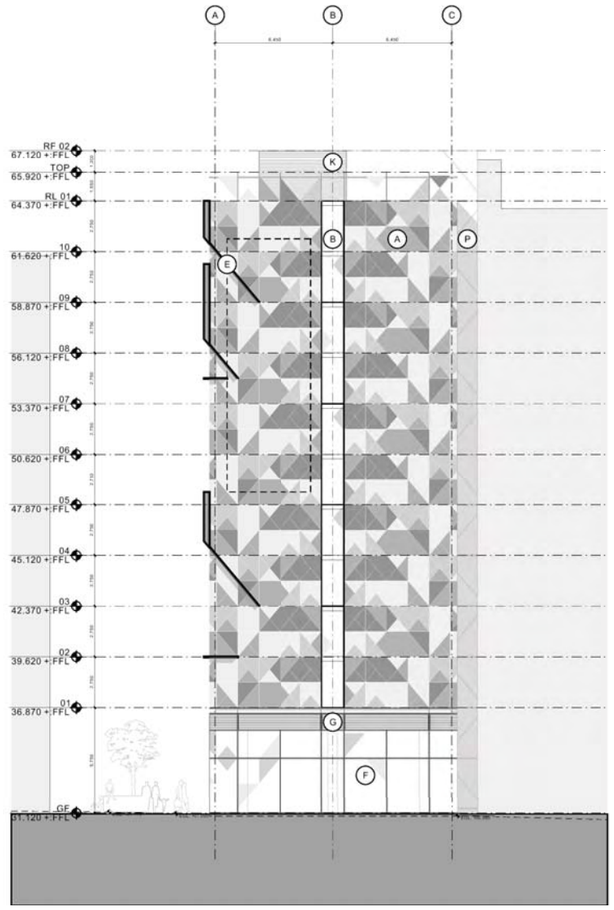


South-East Elevation

South-West Elevation

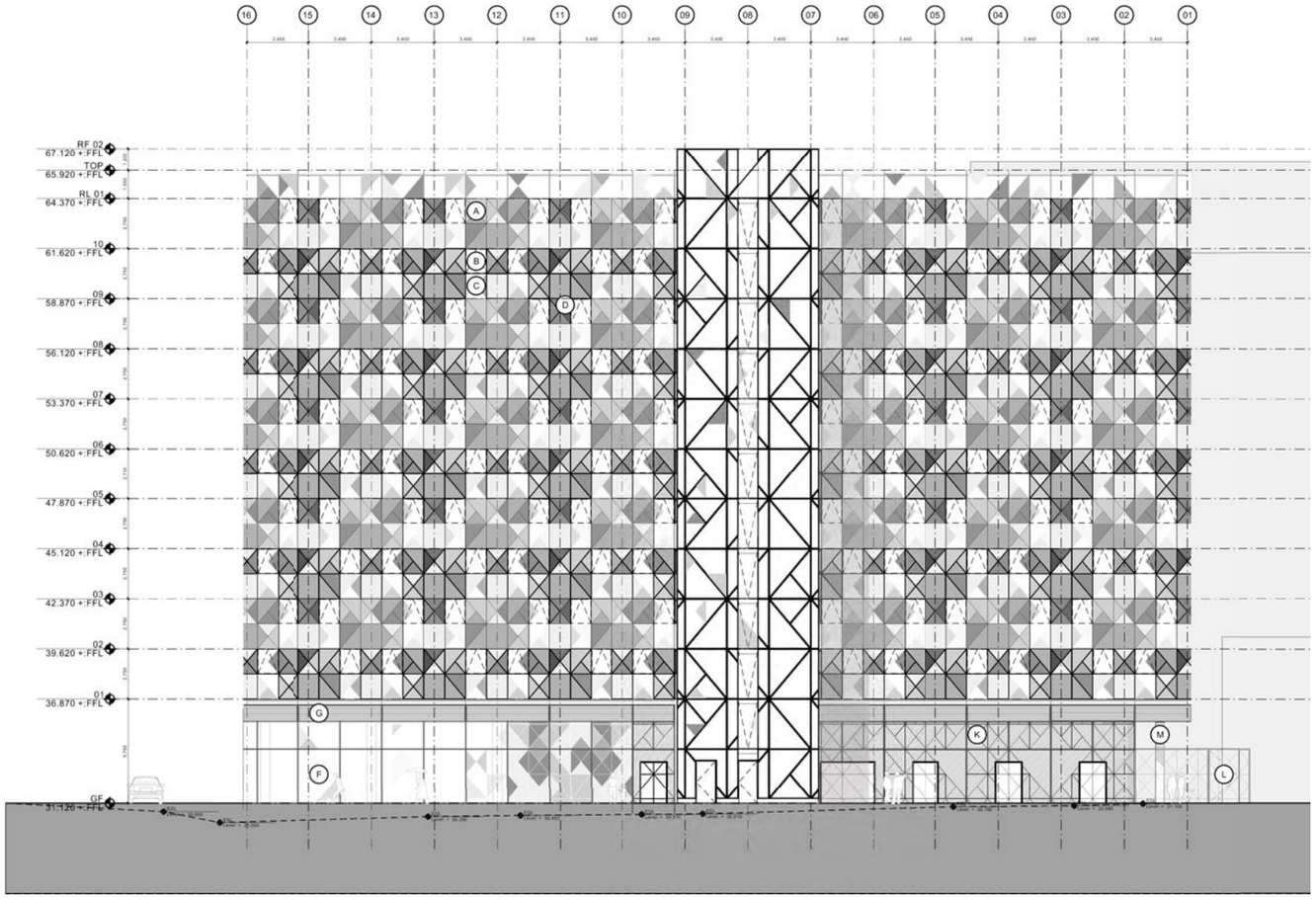


A. Rain Screen Cladding Panels (4 x types)
B. Glazed Window (with screen print)
C. Glazed Window (with screen print)
D. Angled Ventilation Louvre
E. Brise Soleil
F. Glazed Curtain Wall System (with screen print)
G. Ventilation Louvres
H. Glazed Sliding Entrance Door
J. Glazed Doors
K. Plant Screen Louvres (with louvred doors where applicable)
L. Metal Fence (with access doors)
M. External Column
N. Glazed Canopy



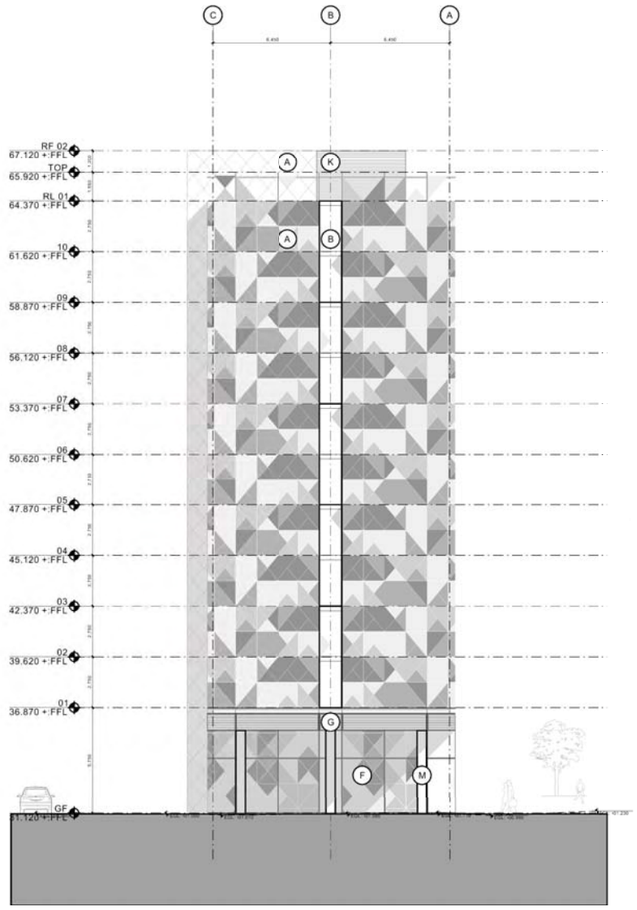
9.3 Elevations

North-East Elevation



A. Rain Screen Cladding Panels (4 x types)
B. Glazed Window (with screen print)
C. Glazed Window (with screen print)
D. Angled Ventilation Louvre
E. Brise Soleil
F. Glazed Curtain Wall System (with screen print)
G. Ventilation Louvres
H. Glazed Sliding Entrance Door
J. Glazed Doors
K. Plant Screen Louvres (with louvred doors where applicable)
L. Metal Fence (with access doors)
M. External Column
N. Glazed Canopy

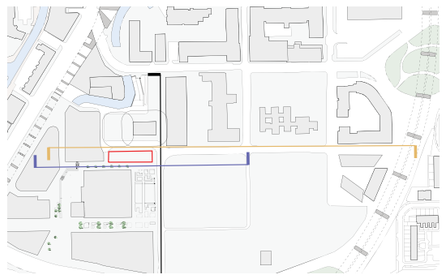
North-West Elevation



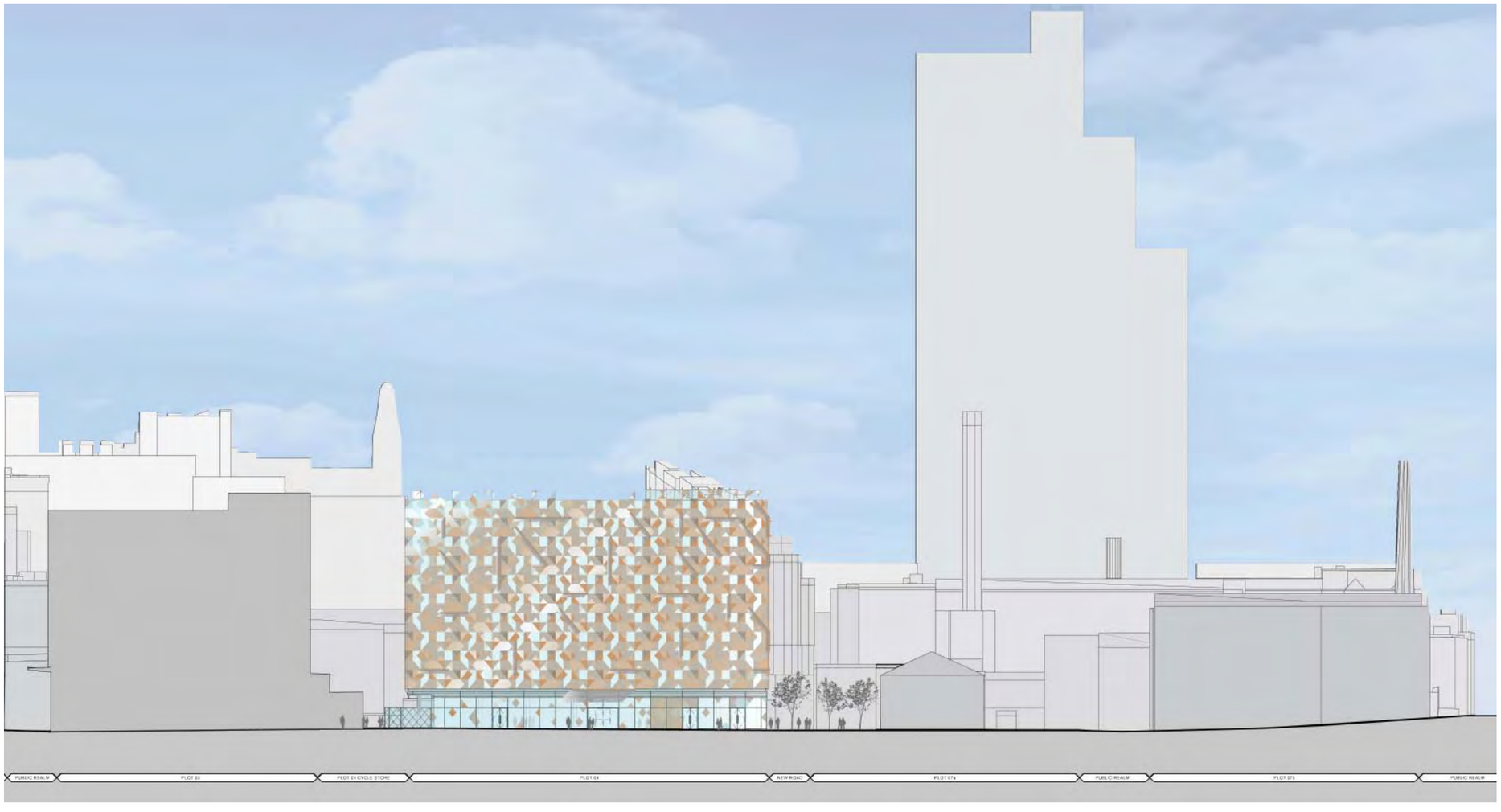
9.4 Elevations in Context



South Sectional Elevation



9.4 Elevations in Context



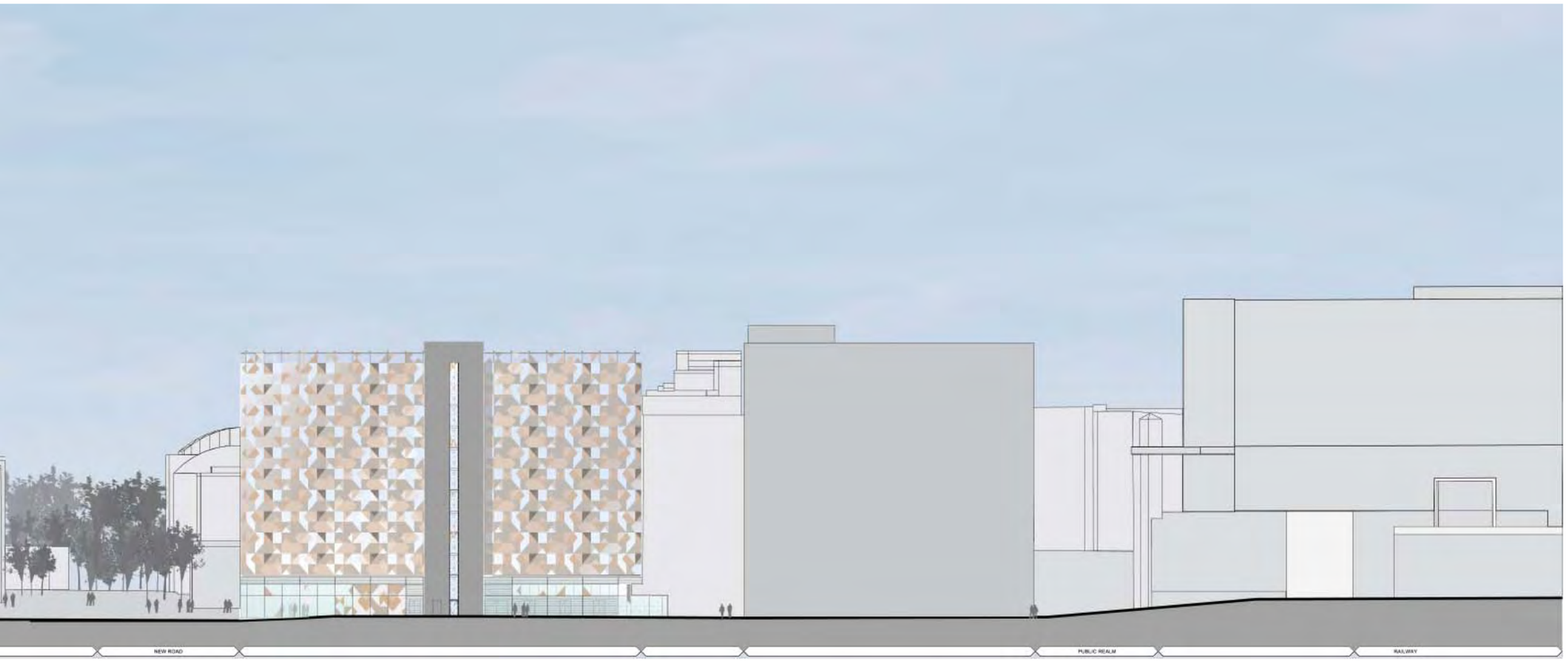
West Sectional Elevation



9.4 Elevations in Context



9.4 Elevations in Context



East Sectional Elevation

