

# Wayfinding and Legibility



Figure 1.13: View of north frontage of Millennium Centre



Figure 1.14: View of entrance to Premier Inn



Figure 1.9: View of Pierhead building from Site 1



Figure 1.10: View of Pierhead building from Site 2

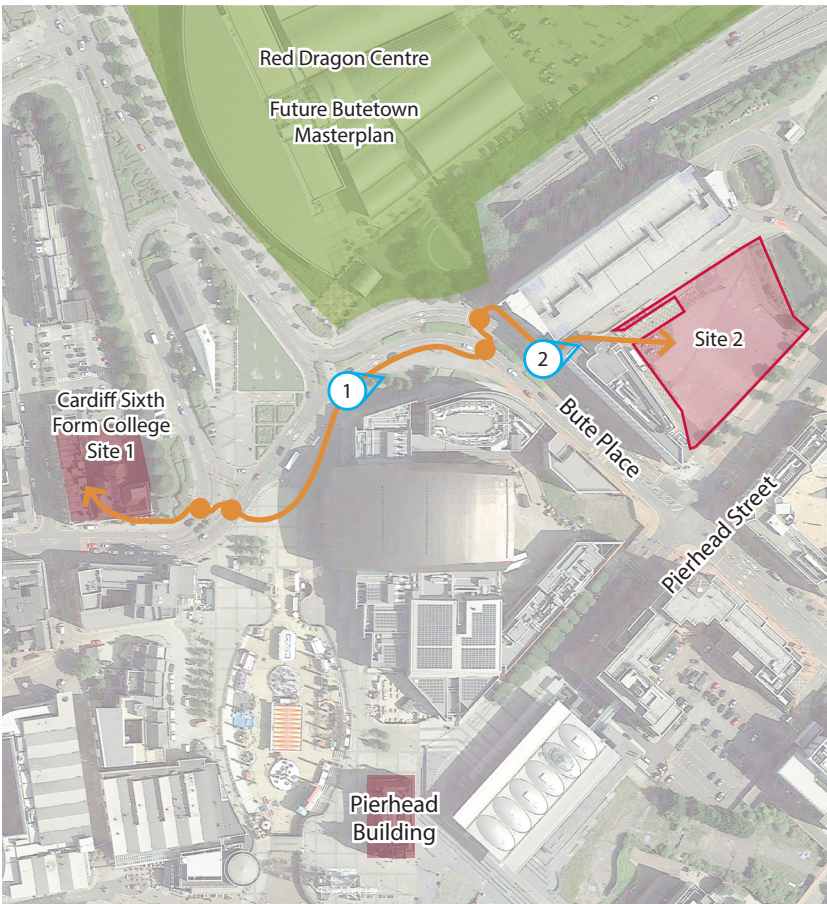


Figure 1.7: Pedestrian connection between Sites 1 and 2 along north of Millennium Centre

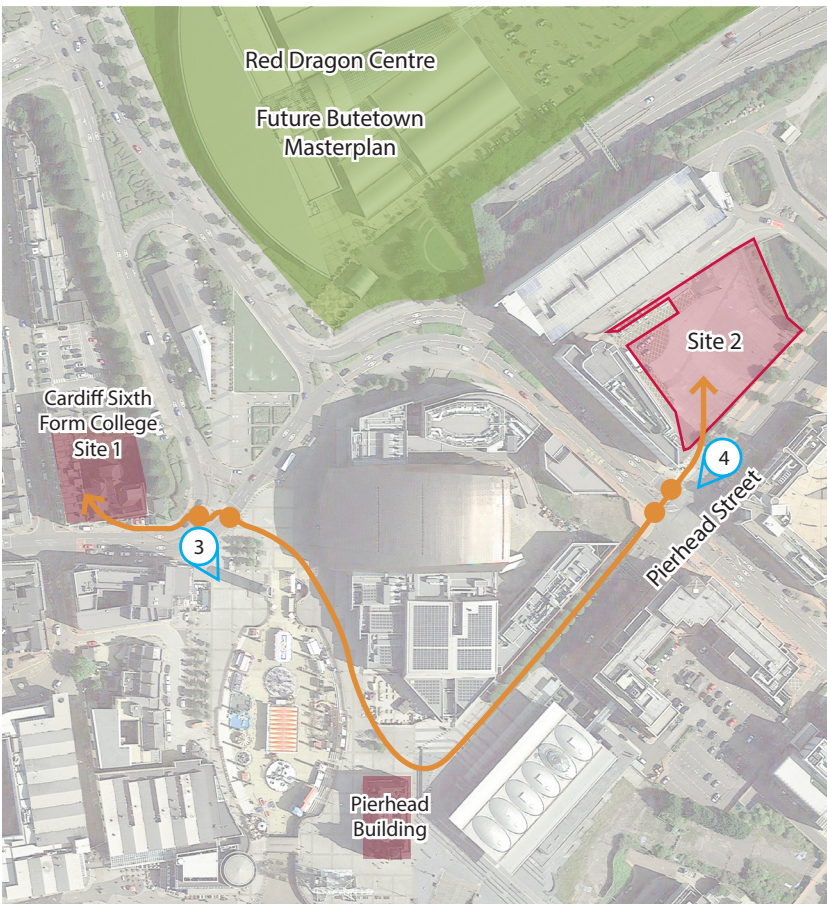


Figure 1.11: Pedestrian connection between Sites 1 and 2 along Pierhead Street



Figure 1.8: Access to the site from Bute Place

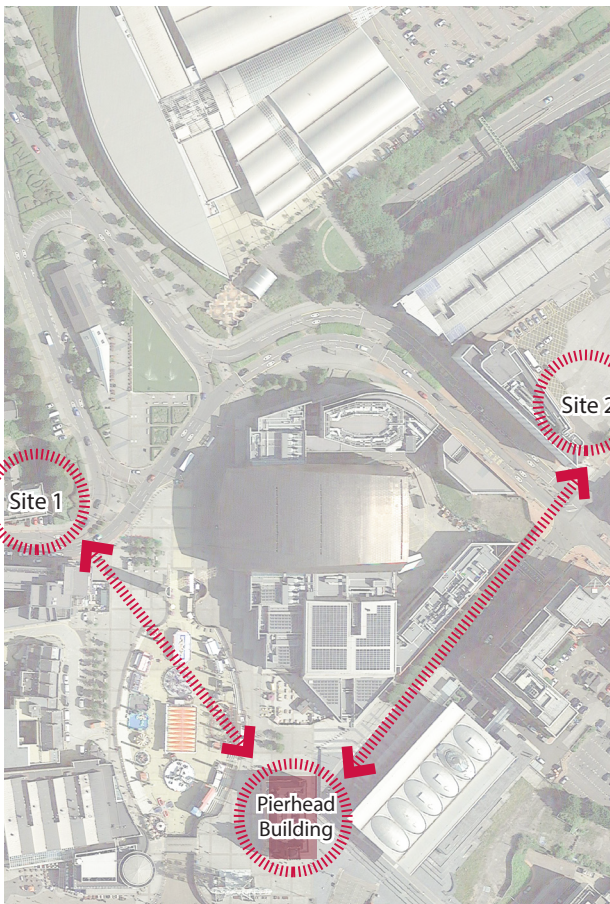


Figure 1.12: Visual connections between Sites 1 and 2

- The success of the wider masterplan of Site 1 (the Cory's Building and 1 and 3 Bute Place) and Site 2 (Pierhead Street, subject of this DAS) will heavily rely on pedestrian connections between both destinations.
- Location of entrances to the boarding accommodation building at Pierhead Street will be key to ensure that a clear and legible pedestrian route is established between the two sites.
- As part of the design review by Design Commission for Wales, it was suggested that the main entrance to the new building could be located on the North-West corner of the site. In order to deliver this entrance, the pedestrian route from the Campus Building to the Boarding Accommodation Building would run along the northern edge of the Millennium Centre, which is a predominantly inactive frontage. The connection is not a legible route. Access from Bute Place into the site would be through a narrow alley way between a Premier Inn and a car park, walking underneath the hotel entrance and via a change of level. Furthermore, the entrance would be directly opposite to the servicing yard from the hotel and a dead frontage from the car park.
- The proposed design will create a main entrance to the site and the building in the southern corner of the site. The connection to the Campus Building will be via Pierhead Street, along the southern edge of the Millennium Centre and diagonally across the Roald Dahl Plac.
- This route uses the Pierhead Building as a key anchor and wayfinding device. The landmark building will be visible along Pierhead Street as soon as people come out of the Boarding Accommodation building. Once pedestrians reach the Pierhead Building and the Roald Dahl Plac, Bute Place building (part of the Campus) in red brick will be visible and recognisable. Similar wayfinding would be experienced in routes from Site 1 to Site 2.
- Good wayfinding will help create a clear, safe and legible route between both sites.



## Materiality

- The local context of the Cardiff Bay is featured by a collection of landmark buildings with strong gravitas. a historic material palette was established through the early developments within Cardiff Bay:
- Pierhead Building: Gothic Revival building designed by Welsh architect William Frame in red terracotta brick.
- Cory's Building: free Italianate style in cream granite stone.
- 1 and 2 Bute Place: Italian Renaissance style in red brick with and grey granite columns.
- New modern buildings have introduced alternative material palettes within the bay. For example, the Millennium Centre in Welsh Slate and champagne coloured stainless steel or The Senedd in glass, steel and timber. These buildings become new landmarks in the local context by virtue of the modern forms and different materials used.
- The proposed design for the Boarding Accommodation building in Pierhead Street will aim to deliver a contextual building which draws inspiration in architecture and materials from historic buildings in the bay, such as Cory's, Bute Place and Pierhead Building. The building will be constructed in brick predominantly in red and white colours.
- This approach will help create a building that sits well in its context and does not loudly try to create a new landmark.



Figure 1.15: Defining a street frontage along the Dock Feeder



Figure 1.16: Pierhead Building



Figure 1.17: 1-3 Bute Place building within Site 1



Figure 1.18: Cory's building within Site 1



# Height Composition

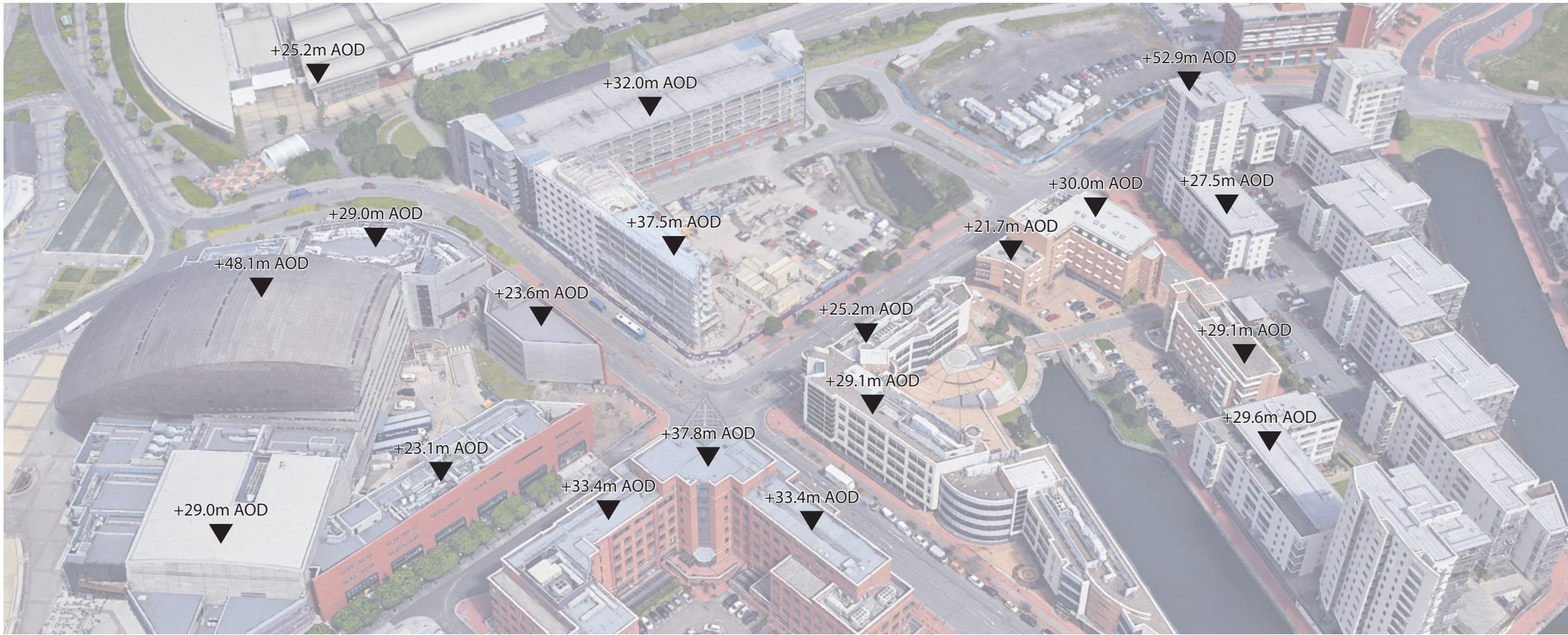


Figure 1.19: Aerial view showing existing building heights

- There is a general datum of height in the local context of Pierhead of 6 to 8 storeys.
- There is an opportunity to deliver a tall building creating a new townscape marker in the junction of frontages along Pierhead and the Dock Feeder.
- The proposed massing and height arrangement in the site is to create a stepped profile that climbs from a contextual height of 10 storeys on the southern corner of Pierhead street to a marker height of 18 storeys on the Dock Feeder corner.
- The stepped approach mediates between the height of the local context and the new proposed tall building.

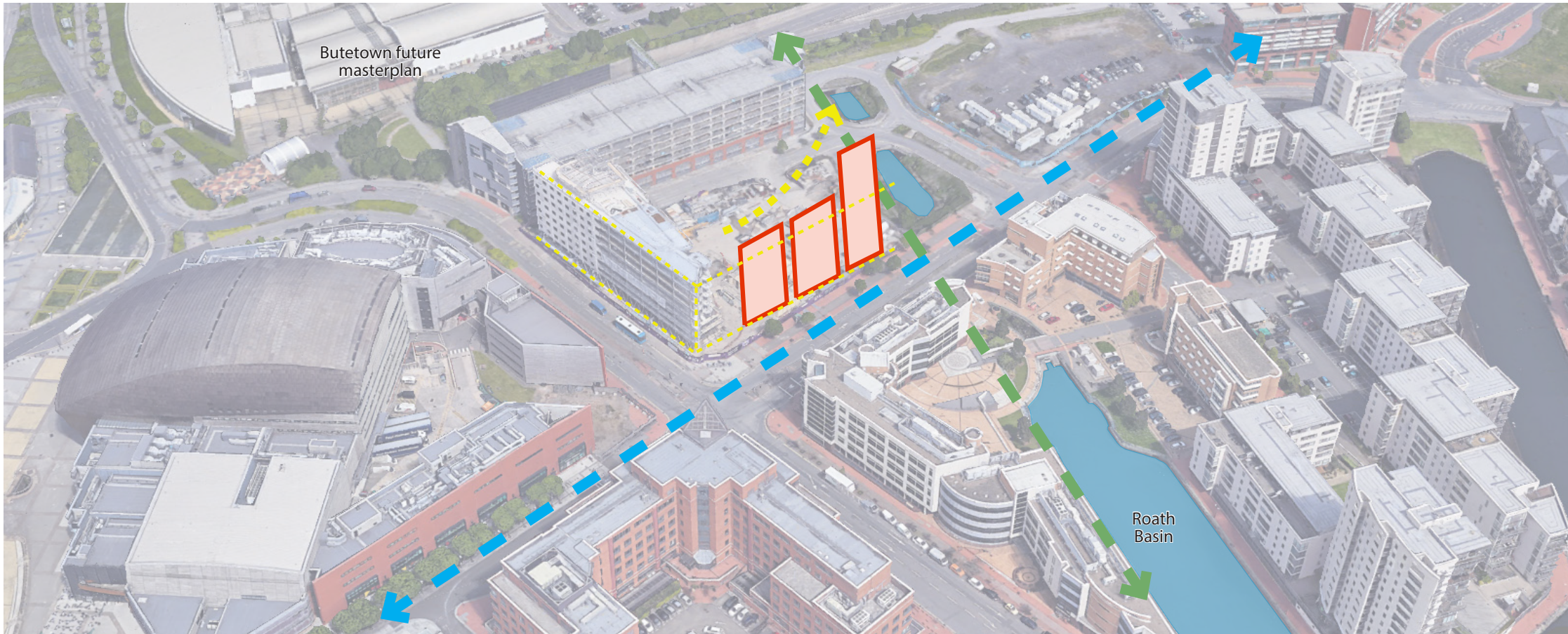
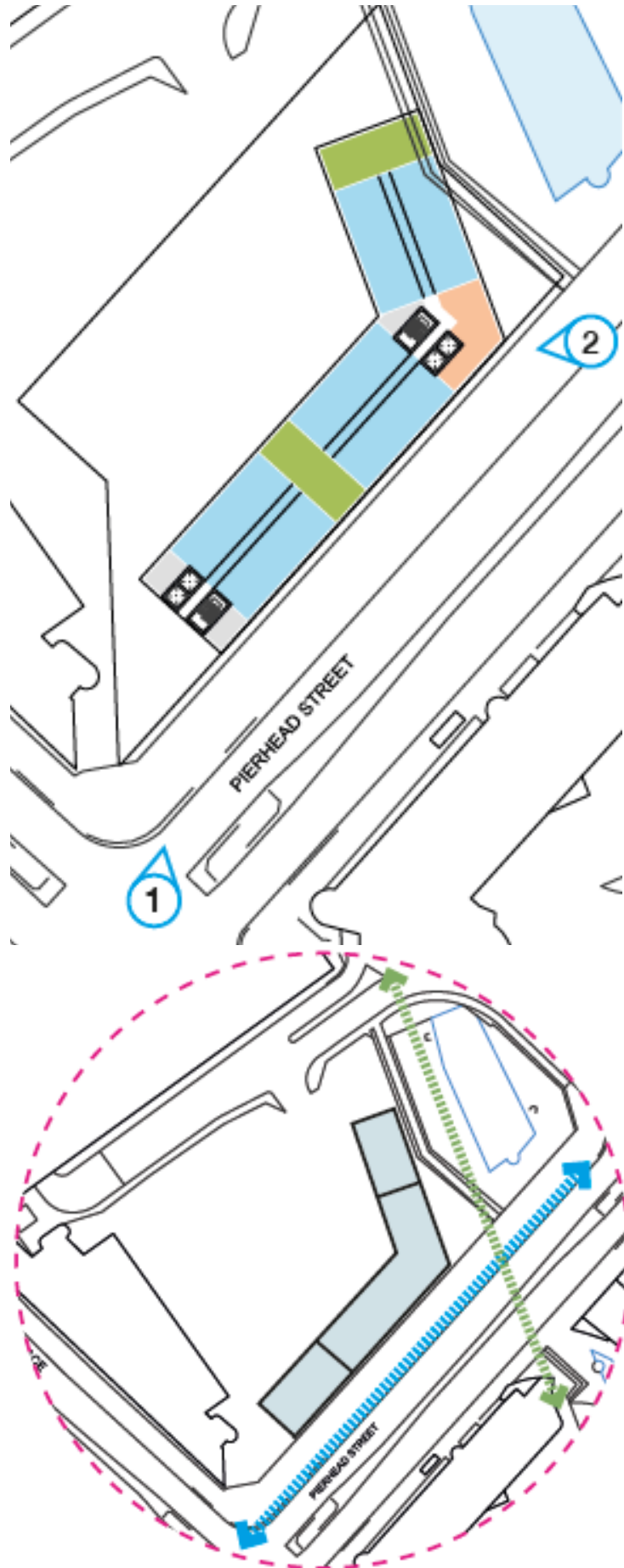


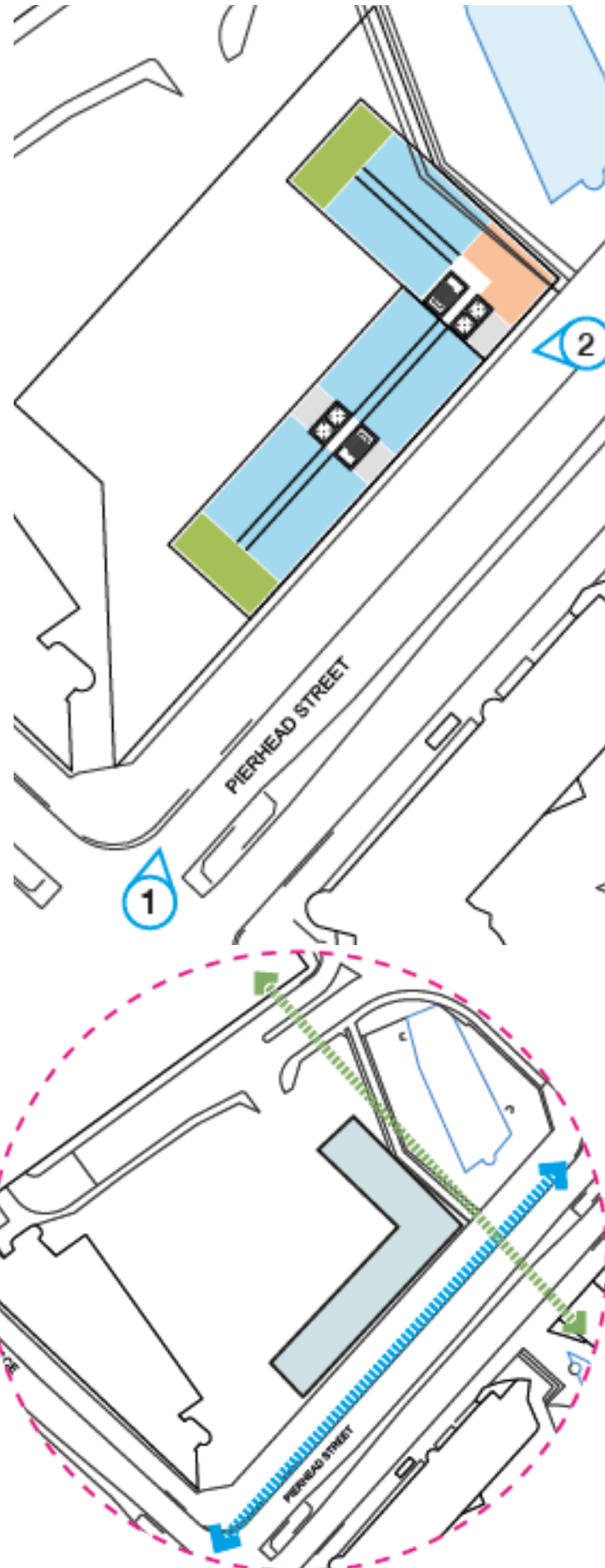
Figure 1.20: Aerial view showing proposed approach to massing and height articulation



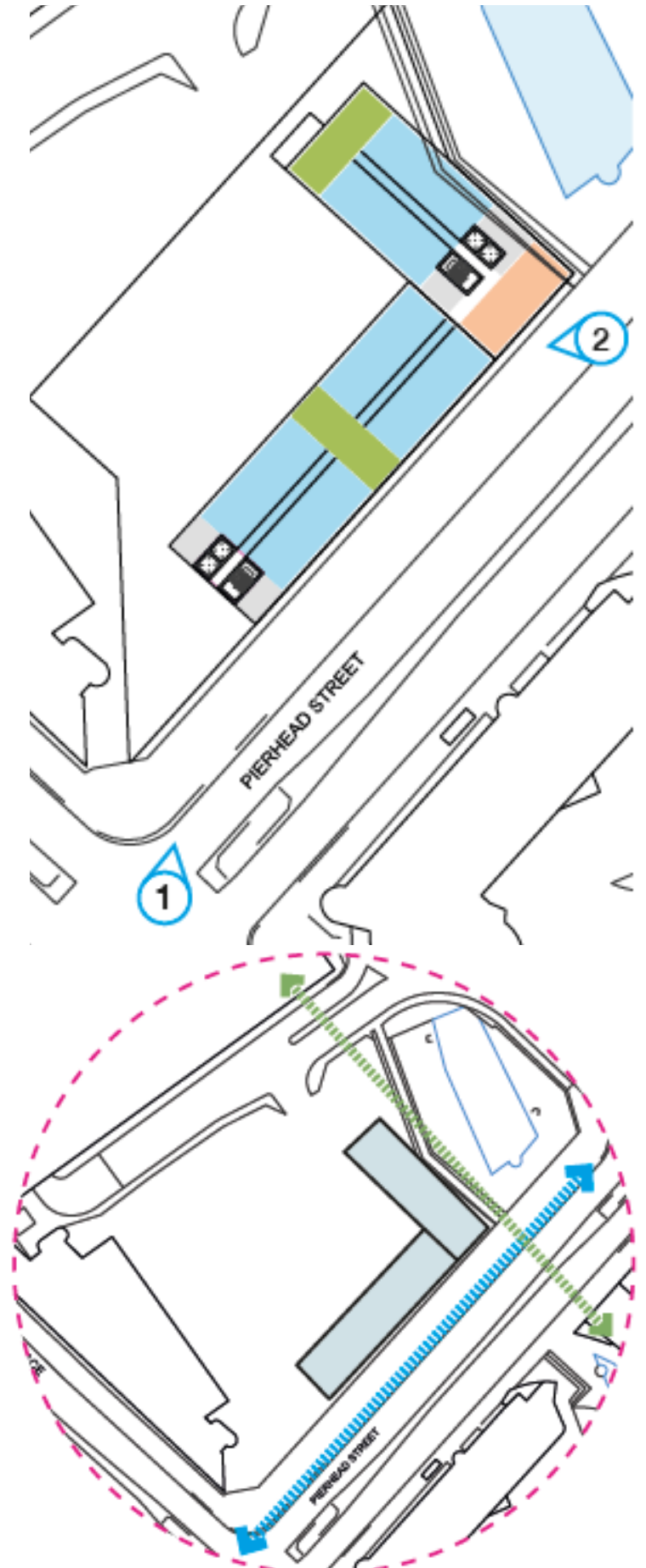
### Defining the Mass - Concept 1:



### Defining the Mass - Concept 2:



### Defining the Mass - Concept 3:





## Delivering the Brief

- The massing composition of the building responds to the heights in the local context. It also is a by-product of the brief.
- The brief is to deliver 400 student places: 200 GCSE students and 200 A Level students. The rooms are to be 50 twin rooms (100 students) and 300 single rooms (300 students).
- The proposed building design is an L-shaped building which creates strong frontages both along Pierhead Street and the dock feeder.
- The L-shape has two main buildings, each of them delivering 200 student places:
- Lower building - 10 storeys, delivering two clusters of bedrooms (6 twin rooms + 12 single rooms) and communal rooms.
- Tall building - 18 storeys, delivering 12 single rooms, communal rooms and house parents flats.

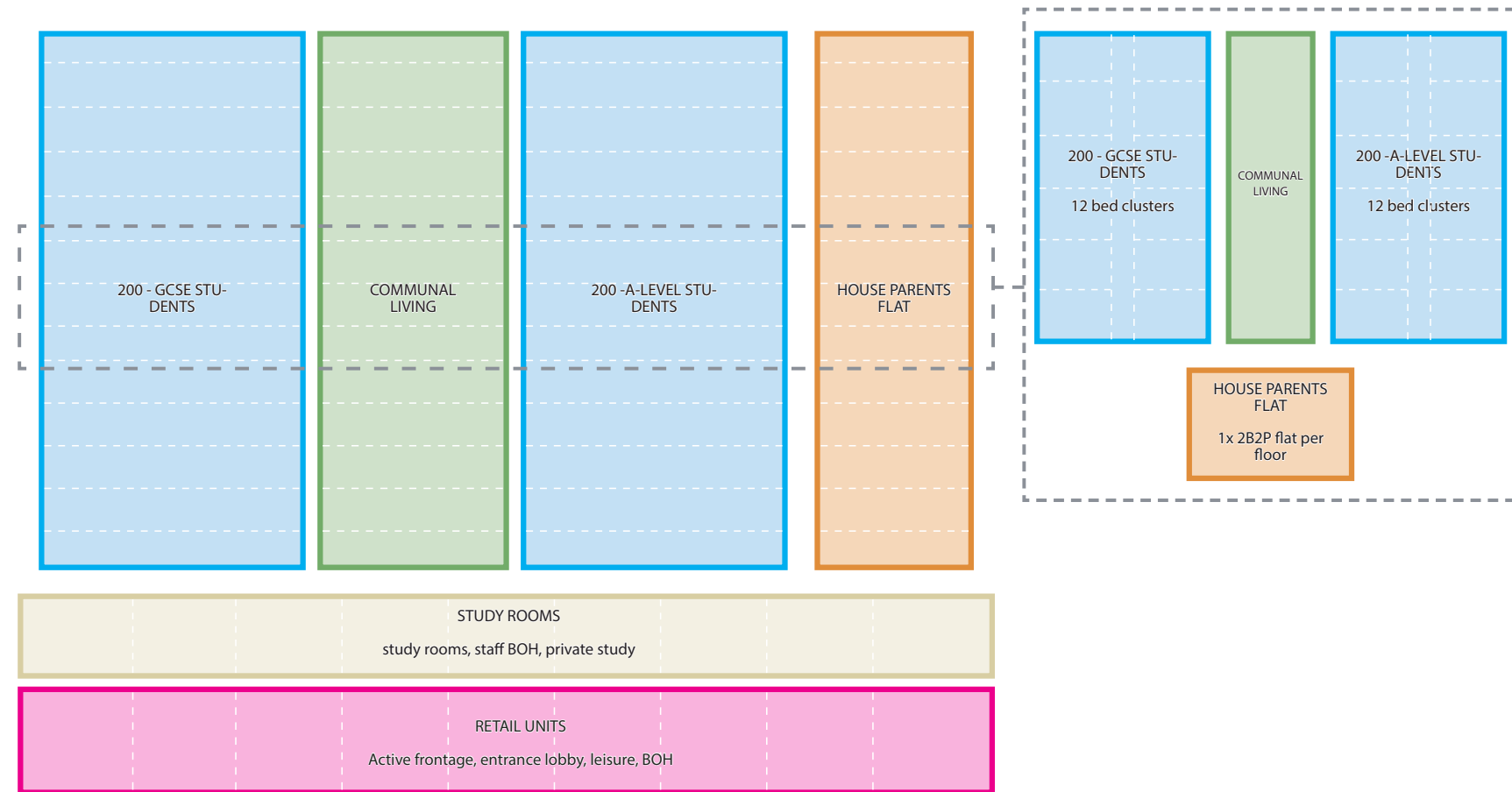


Figure 1.21: Brief



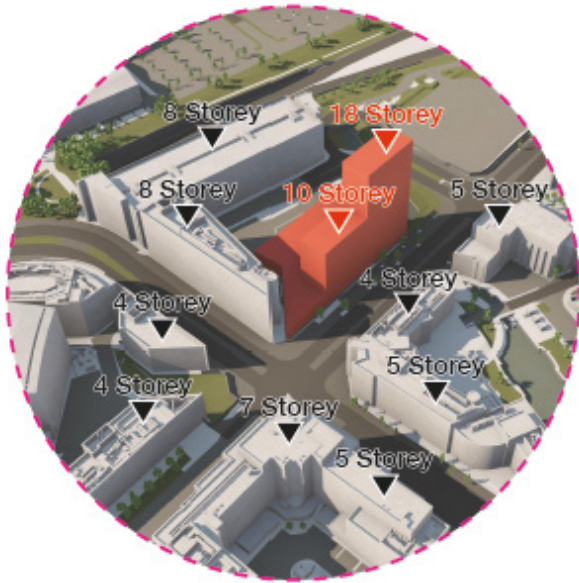
Figure 1.22: Massing arrangement to deliver the brief



Figure 1.23: Massing arrangement to deliver the brief



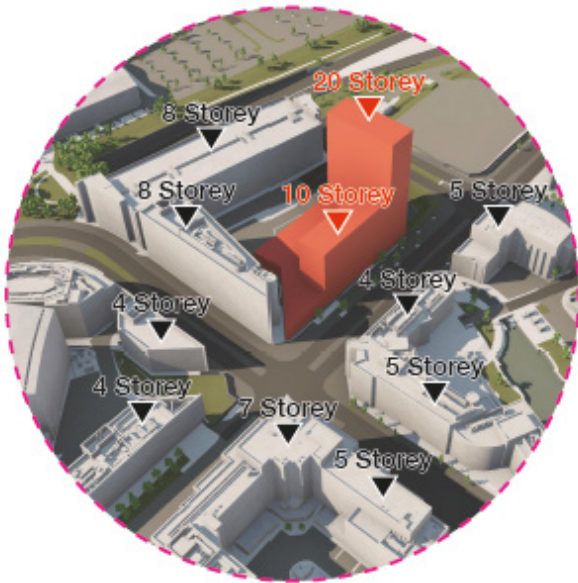
Defining the Mass - Concept 1:



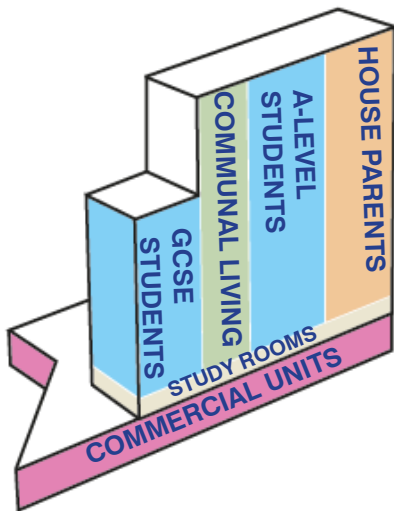
Defining the Mass - Concept 2:



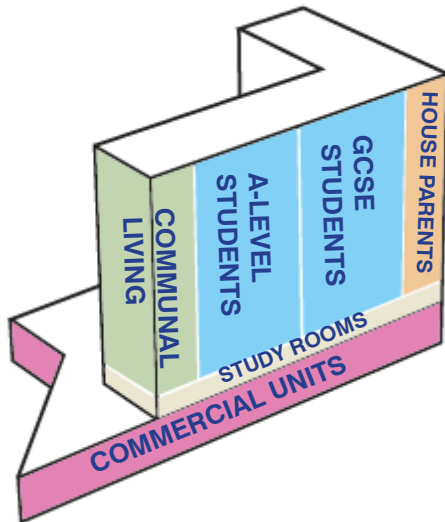
Defining the Mass - Concept 3:



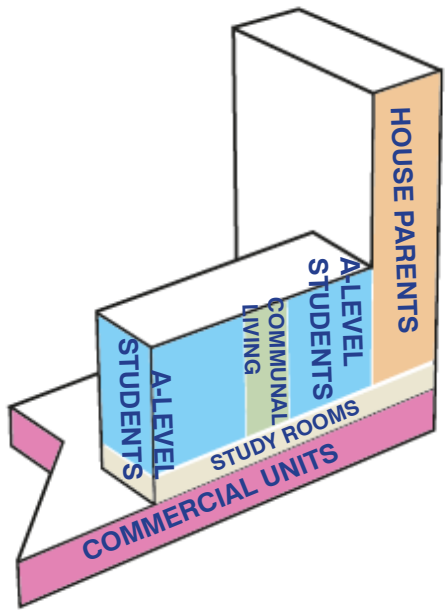
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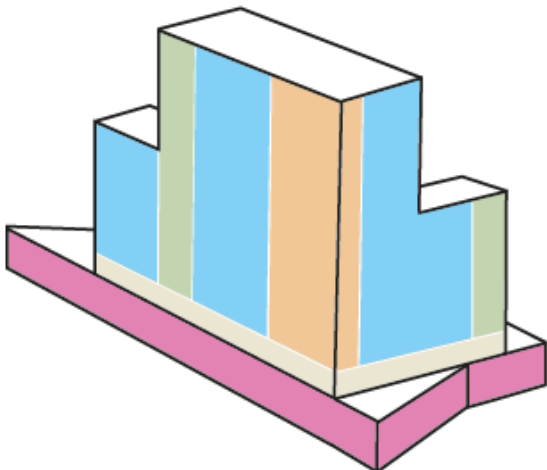
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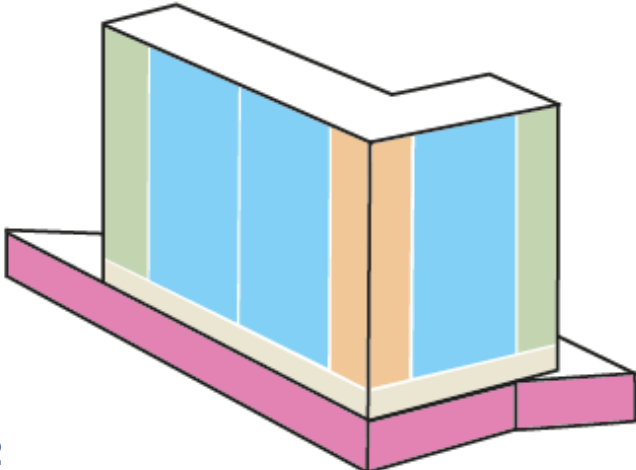
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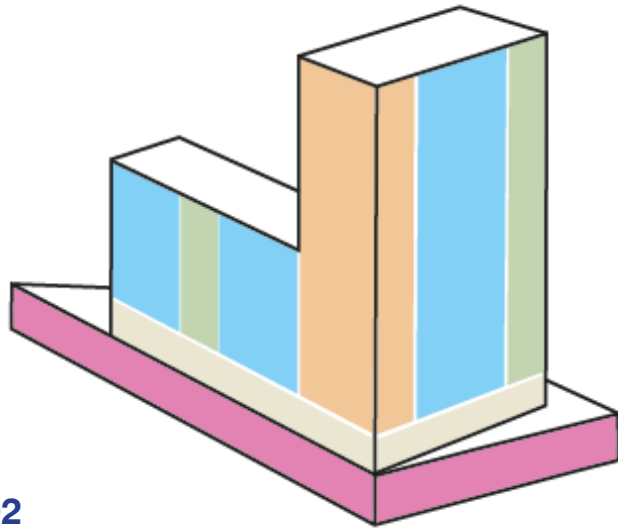
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02

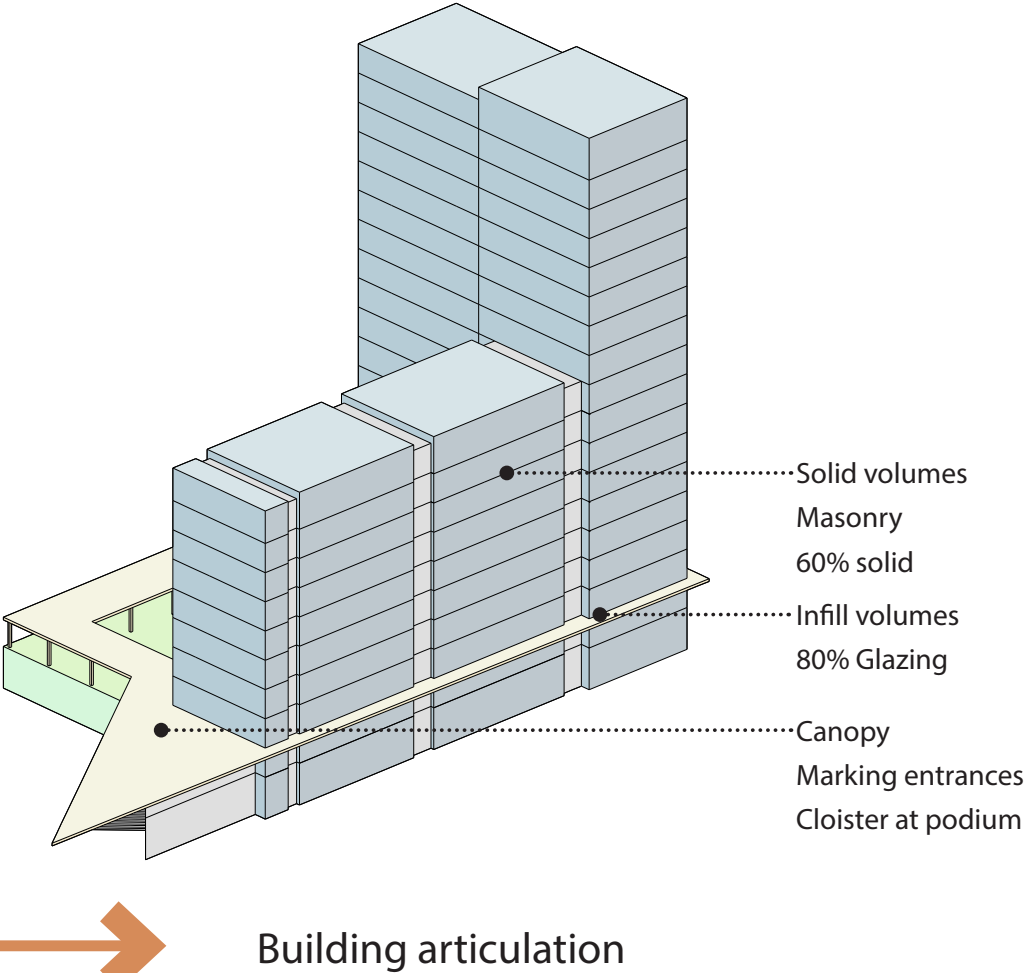
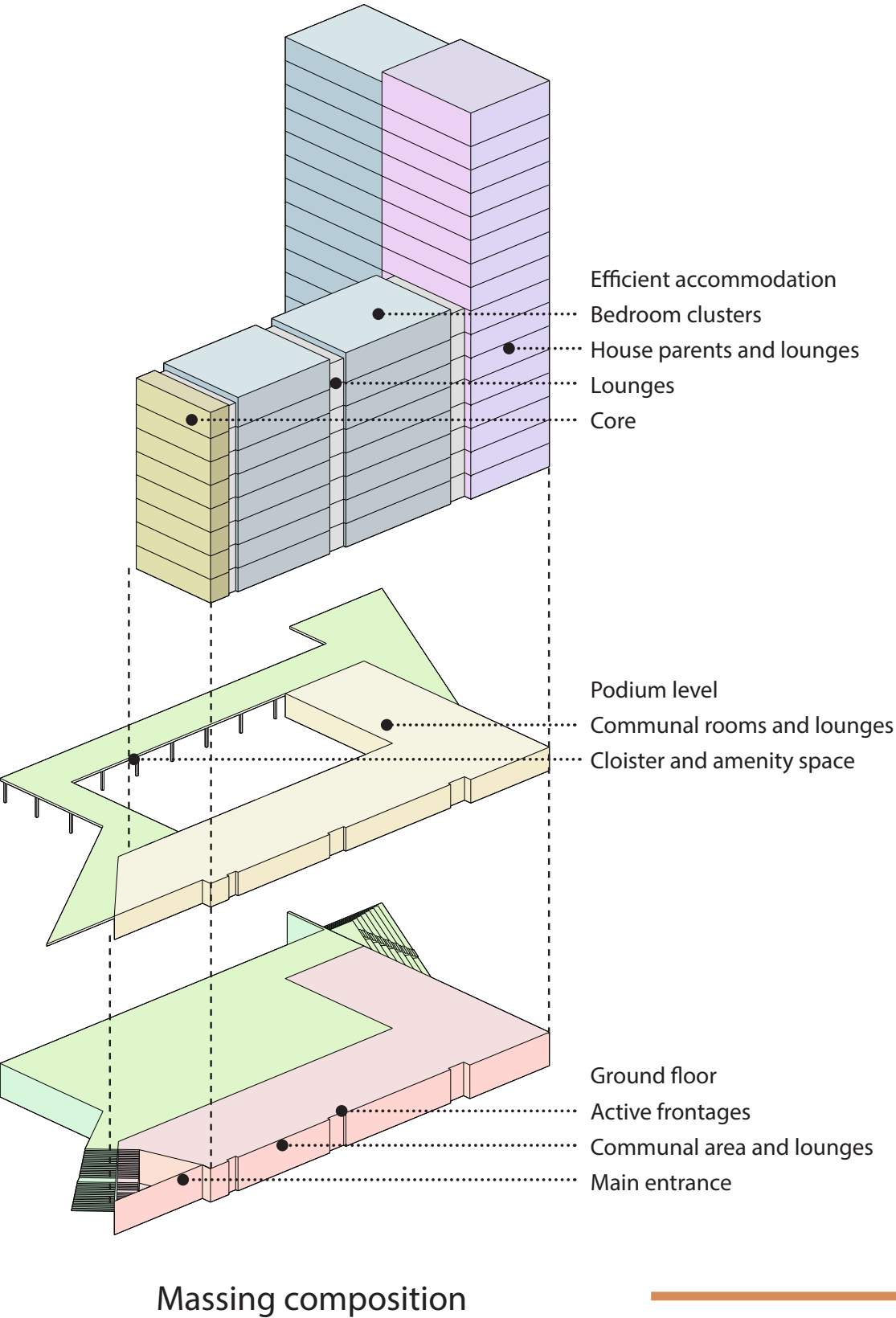


02





Proposed Massing Arrangement and Building Articulation



- The massing is articulated in a series of masonry buildings separated by a series of highly glazed infill volumes.

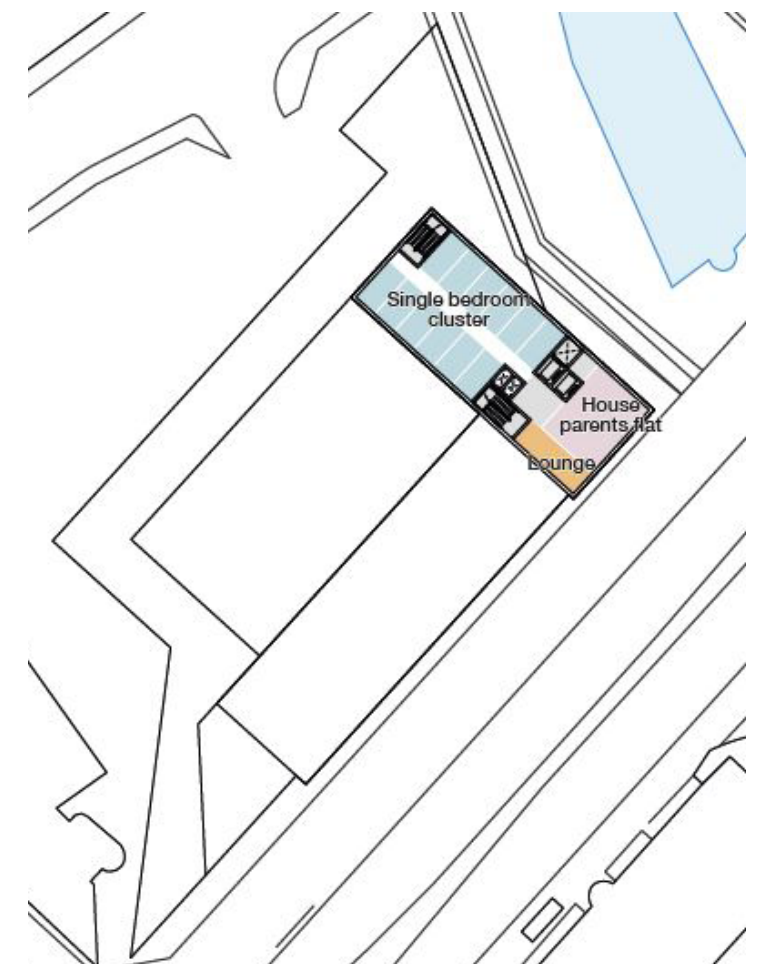
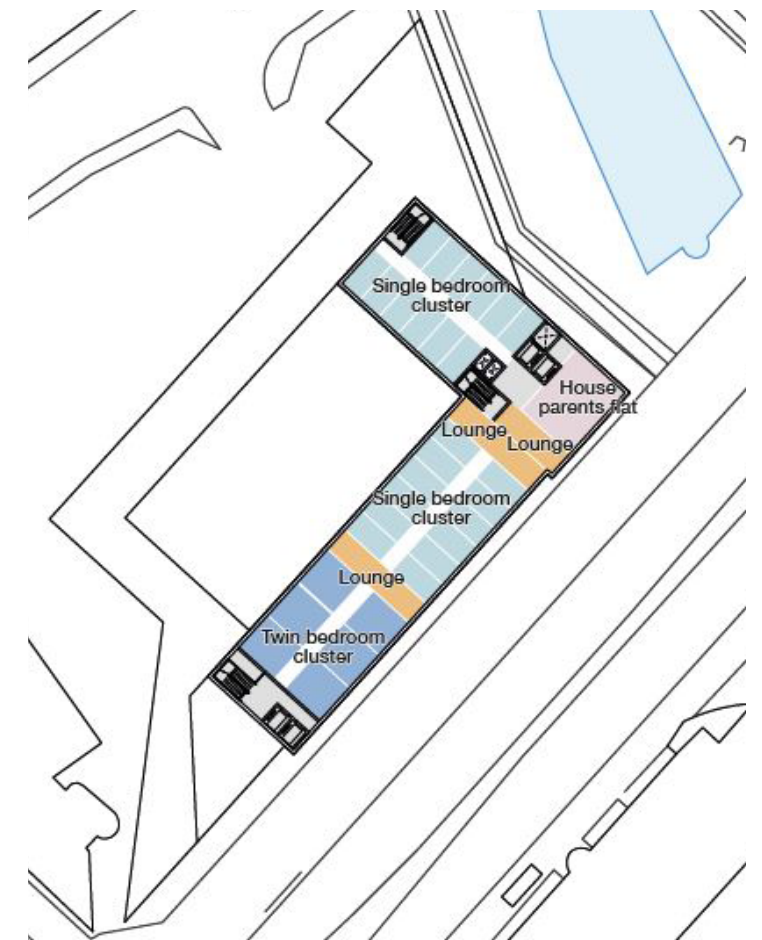


## Arrangement of Functions

Client specific needs and requirements:

- A level Trunk room(s) on each floor (in each cluster?)
- Music practice rooms (4no.)
- Music performance room
- Hall/meeting room large enough for 160no. students
- Gym and fitness suite
- 3 on 3 indoor basketball court
- Karaoke room
- Demonstration kitchen with 4no. ovens/hobs/sinks/preparation surfaces for group food preparation
- Outdoor social space – picnic tables/BBQ space
- Bicycle store
- Refuse/recycling store
- Post/parcel room with student post collection facility/pigeon holes.
- Outdoor garden/social space (not overlooked/sheltered from student view) for all staff to use
- Large/single reception/access point for whole house with staff office/reception desk
- Visitor waiting/reception room
- Staff office behind reception desk

- Staff lounge/meeting room with kitchen and storage facility
- 2no. 1:1 meeting rooms
- Café/coffee shop/convenience store
- Medical centre with nurses office/consultation room, examination room, single ensuite isolation bedrooms 4no., waiting area with seating, kitchen for food preparation and secure cold storage for drugs/medicines, toilets, staff shower.
- Wellbeing Officer meeting room
- Cleaning cupboards
- Car parking for house staff
- Maintenance room and storage area
- Visitor toilet
- Storage room for house materials (Christmas/Halloween/Easter decorations/Spare uniform)





## Precedents



- The architectural development of the façades has been inspired by well known and successful student accommodation buildings across the UK.

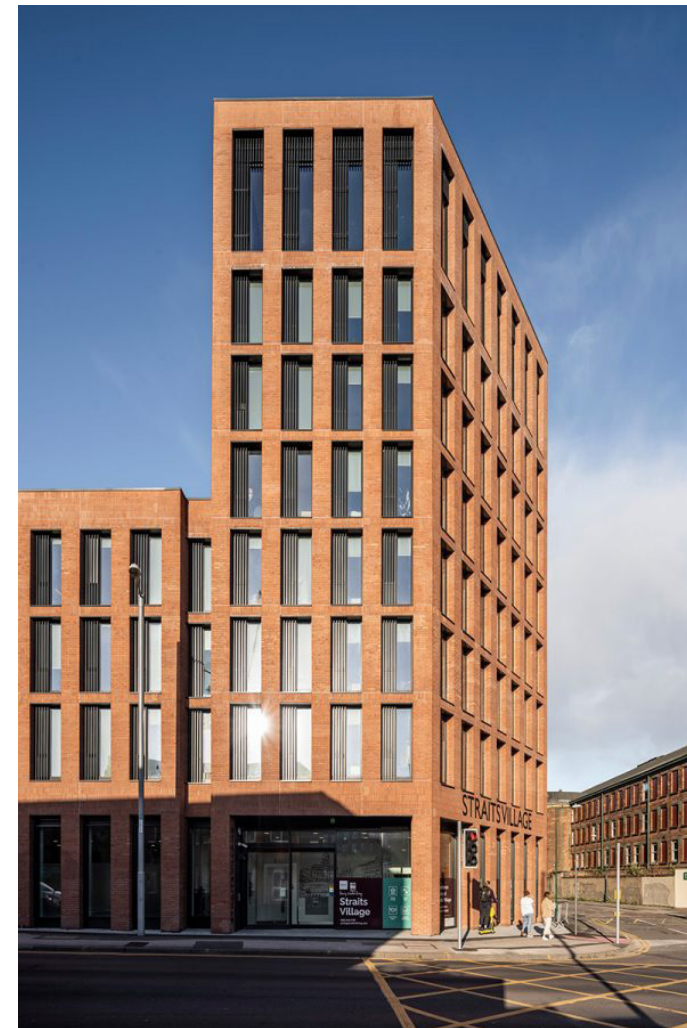
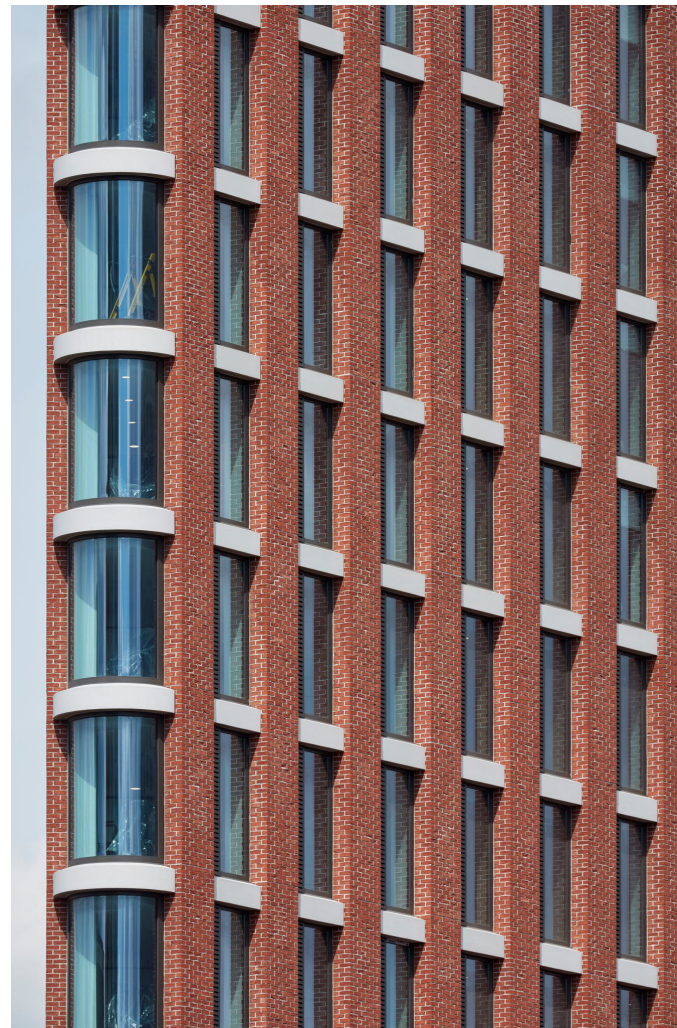


Figure 1.26: Building and facade precedents

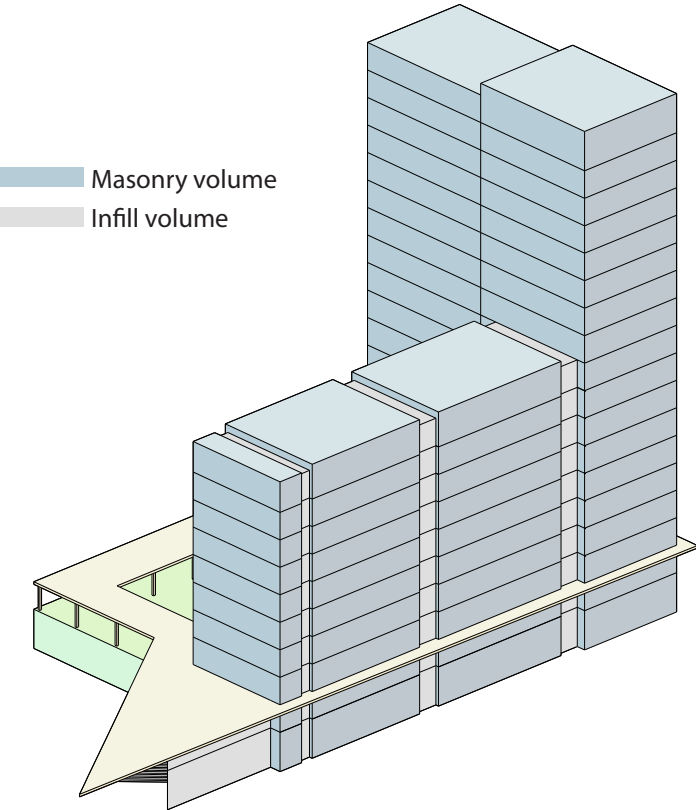


Overall Massing Composition and Facade Order.

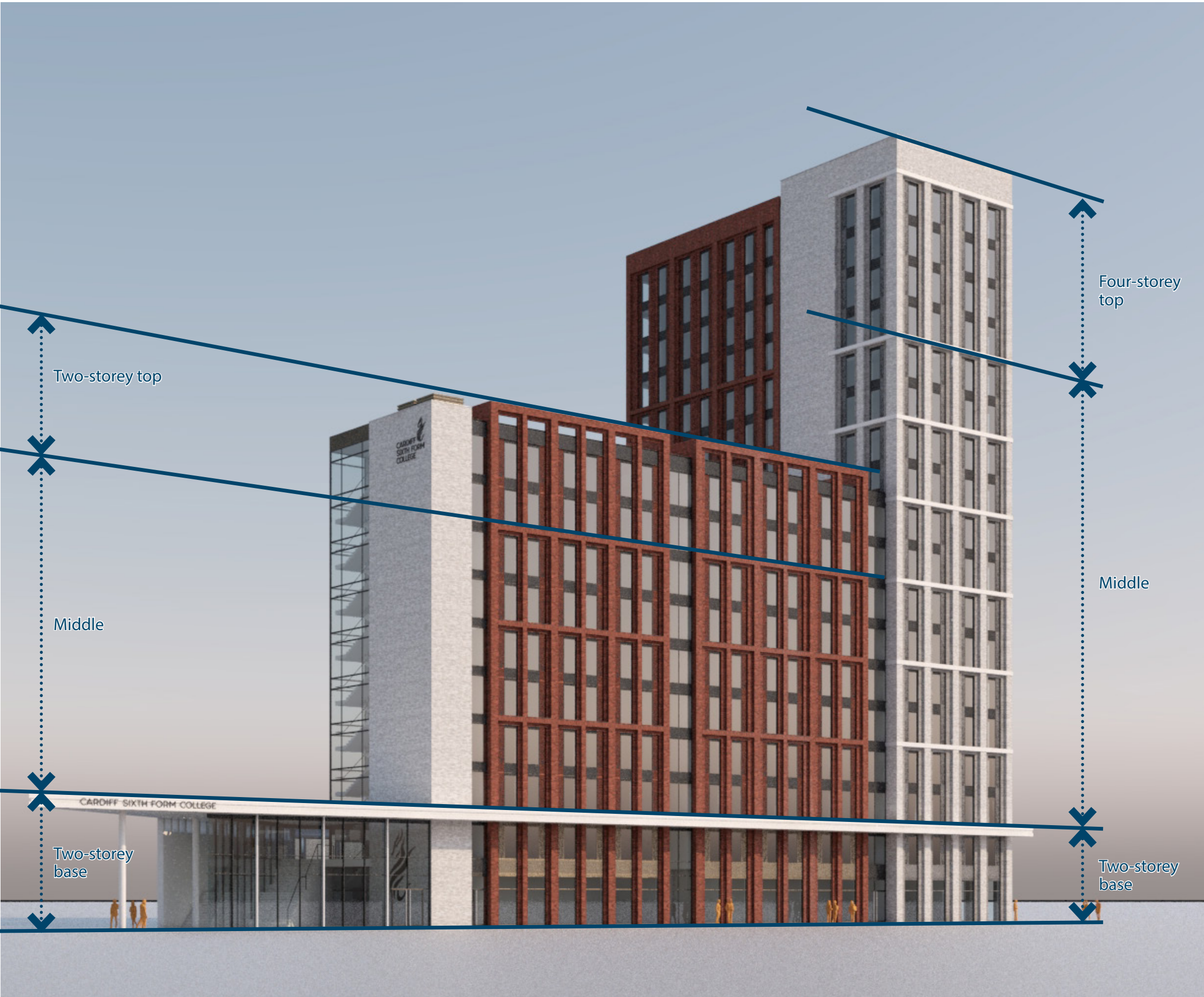
The massing is articulated in a series of masonry buildings separated by a series of highly glazed infill volumes.

Furthermore, all volumes will have an architectural order with a two-storey base, a middle part and a two-storey / four-storey top. This approach helps create a balanced order and well articulated facade.

The division and separation of the base is created by a precast concrete canopy which runs along the building, creates covered entrances and cloister on the podium.



Building articulation diagram



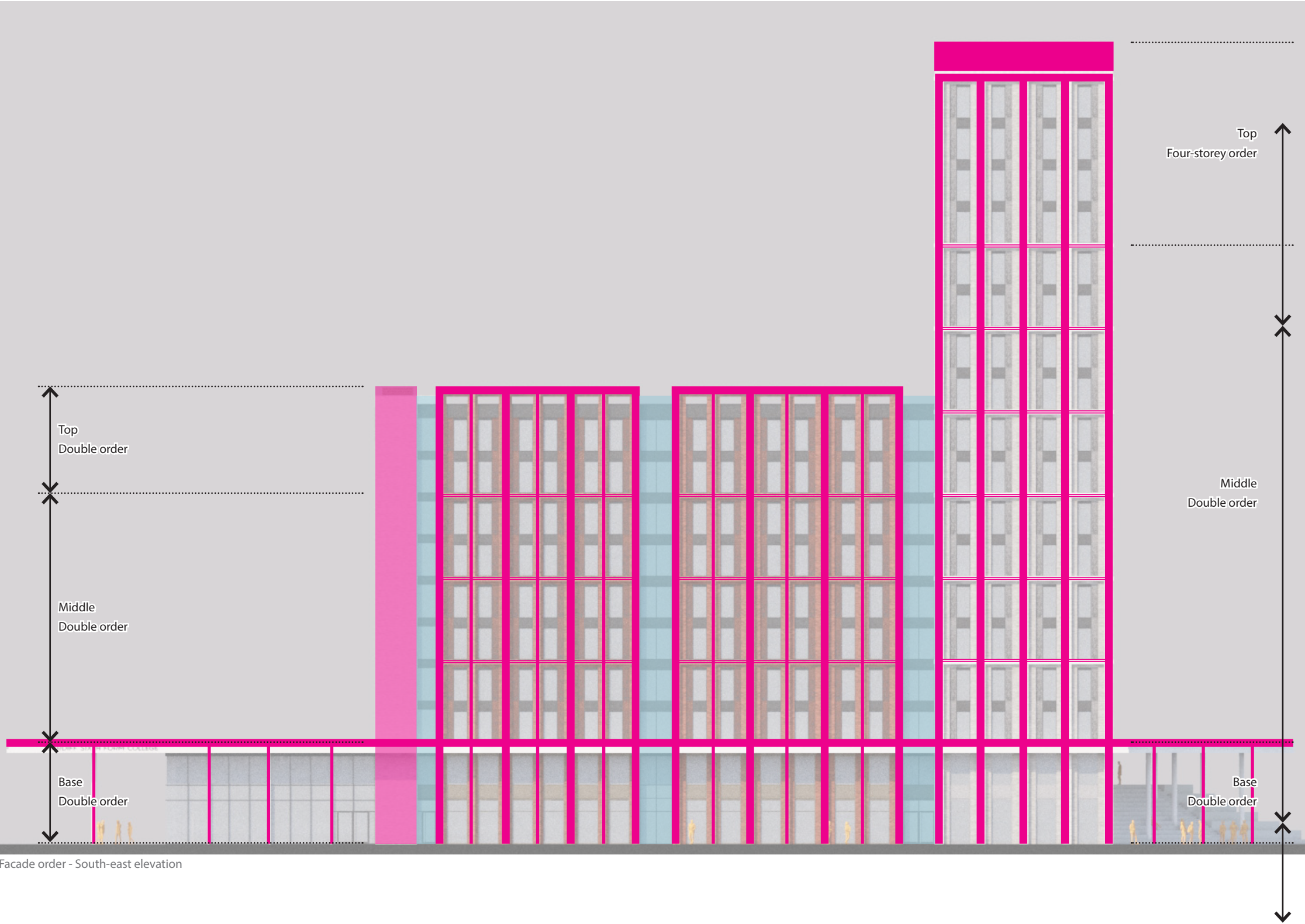
Facade articulation principles



The facade has been developed based in an architectural order with a two-storey base, a middle part and a two-storey / four-storey top. This approach helps create a balanced order and well articulated facade.

The facade is articulated and the order is established through a series of vertical and horizontal brick and/or precast concrete / GRC piers:

- Primary horizontal piers helping define and separate base, middle and top.
- Secondary horizontal piers creating a double order of windows.
- Primary vertical articulation creates a double order of openings.
- Secondary vertical articulation to further articulate and emphasize verticality.

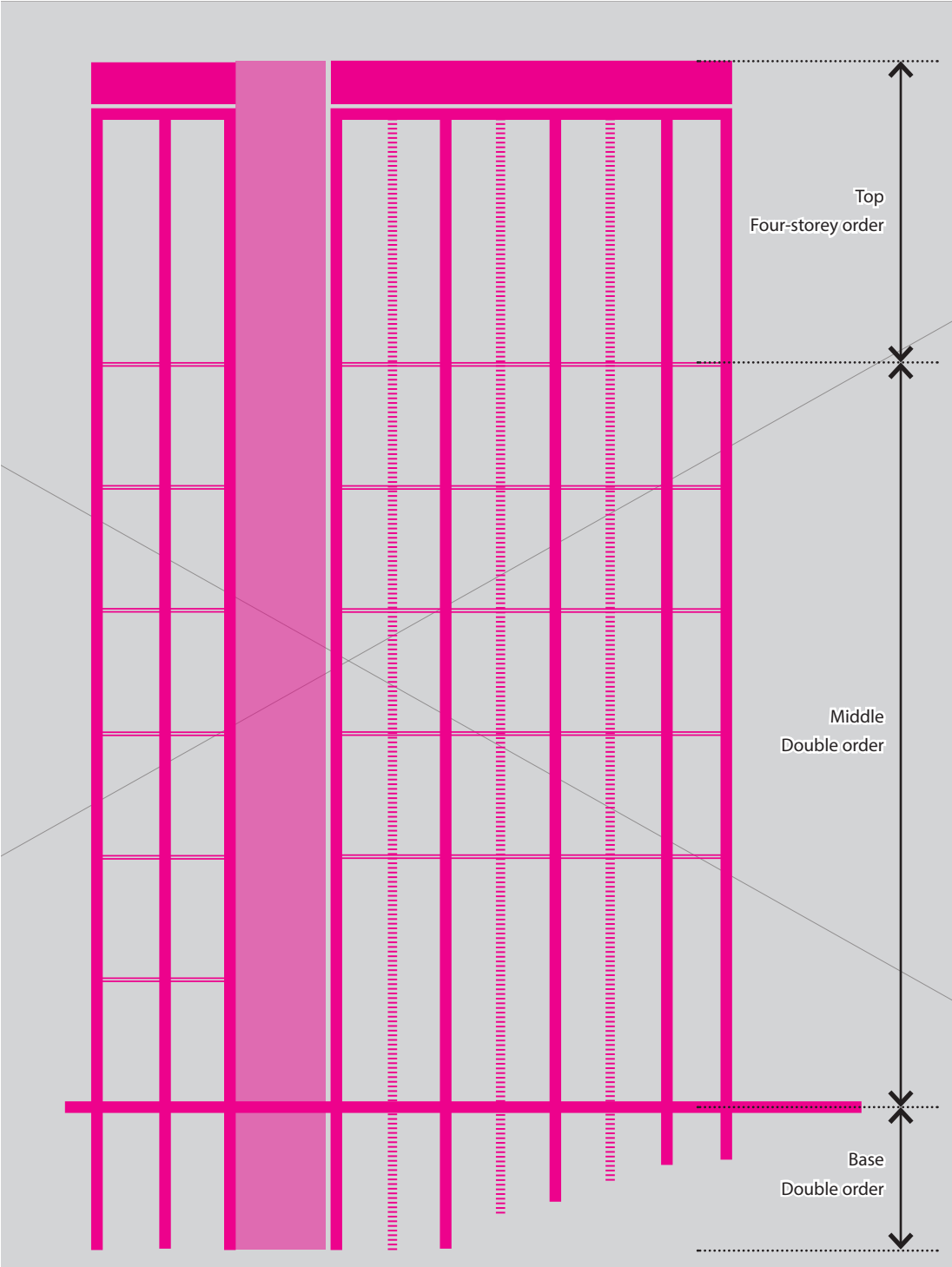


- Key
- Horizontal primary articulation
  - Horizontal secondary articulation
  - Vertical primary articulation
  - Vertical secondary articulation



The side facade of the tall building is articulated and through a series of vertical and horizontal brick and/or precast concrete / GRC piers:

- Primary horizontal piers helping define and separate base, middle and top.
- Secondary horizontal piers creating a double order of windows.
- Primary vertical articulation creates a double order of openings.
- Secondary vertical articulation to further articulate and emphasize verticality through articulated brick piers.



Facade order - North-east elevation

- Key
- Horizontal primary articulation
  - Horizontal secondary articulation
  - Vertical primary articulation
  - Vertical secondary articulation (articulated brick piers)





Precedents - Main building entrance

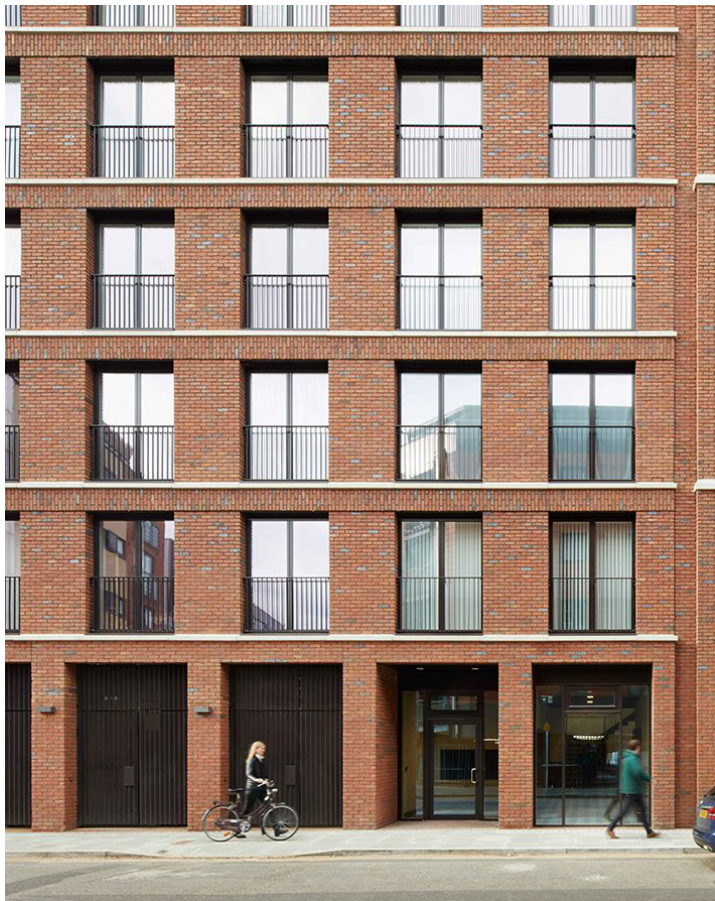


Facade composition - Main building entrance

## Main building entrance

The main entrance to the building, located in the southern corner of the site along Pierhead Street, is expressed as a two-storey glass corner. It presents a transparent frontage to the street which will create very high animation to the public realm given the large number of students coming in and out of the building and the 24h concierge service.

The entrance is featured by a signature staircase in white precast concrete which runs partly inside the building and partly outside climbing from ground to the first podium floor.



Precedents - Low rise buildings



Facade composition - Low rise buildings

## Low rise buildings

Two low rise buildings deliver a stack of twelve student places each in the form of a ten-storey red brick volume. A series of red brick piers create primary vertical articulation, with narrower brick piers delivering secondary articulation. Horizontal articulation is created by red brick soldier course horizontal banding.



Building core

The core of the lower block, which sits on the southern end of building, is articulated as a juxtaposition of a solid brick volume around the lifts and a fully glazed volume around the stairs.

The solid brick volume presents an opportunity for signage for Cardiff Sixth Form College.



Facade composition - Building core

Infill volumes

A series of fully glazed volumes, with metal horizontal spandrels, articulate the light infill volumes that sit between the brick blocks.



Facade composition - Infill volume



Precedents - Building core



Precedents - Infill volumes





Precedents - A highly articulated facade



Precedents - Townscape marker



Facade composition - A highly articulated facade



Facade composition - Townscape marker

## A highly articulated facade

The taller 18-storey element is articulated in two separate volumes. The first volume is a highly articulated red brick facade. This is slightly lower than the other volume to emphasise differentiation. A series of red brick piers create primary vertical articulation, with narrower brick piers delivering secondary articulation. Horizontal articulation is created by red brick soldier course horizontal banding.

## A townscape marker

The second volume of the 18-storey taller element is a white brick volume separated. A series of white brick piers create primary vertical articulation. Horizontal articulation is created by white precast/GRC horizontal banding.



Active Frontage

The building presents a highly activated and animated ground floor along Pierhead Street across the ground floor of the building. The animation will require balance between the most public areas at entrances and commercial units and the requirement of privacy along students' amenity frontages.

**1. Main primary entrance**  
The main primary entrance to the building is located in the southern corner of the building and articulated as a double height fully glazed volume. A white concrete stair runs both internally and externally as an access from the ground to the podium gardens.

**2. Students' amenity**  
A series of openings will semi-activate the ground floor along Pierhead Street within the two lower blocks. These will open into the students' amenity rooms. Due to safeguarding requirements, these openings will include translucent glass.

**3. Commercial unit**  
A commercial unit is introduced in the northern corner along Pierhead Street to activate the corner with the Dock Feeder. A fully glazed corner will create visual surveillance over the street from within the commercial unit.



Precedent of main entrance



Precedent of active frontages



Precedent of employment use within ground floor



Precedent of entrance and communal lobby at ground



View of the ground floor



# 6. SCHEME PROPOSAL





Scheme Features



Modern tiered building design



Podium landscaping

Layered facade

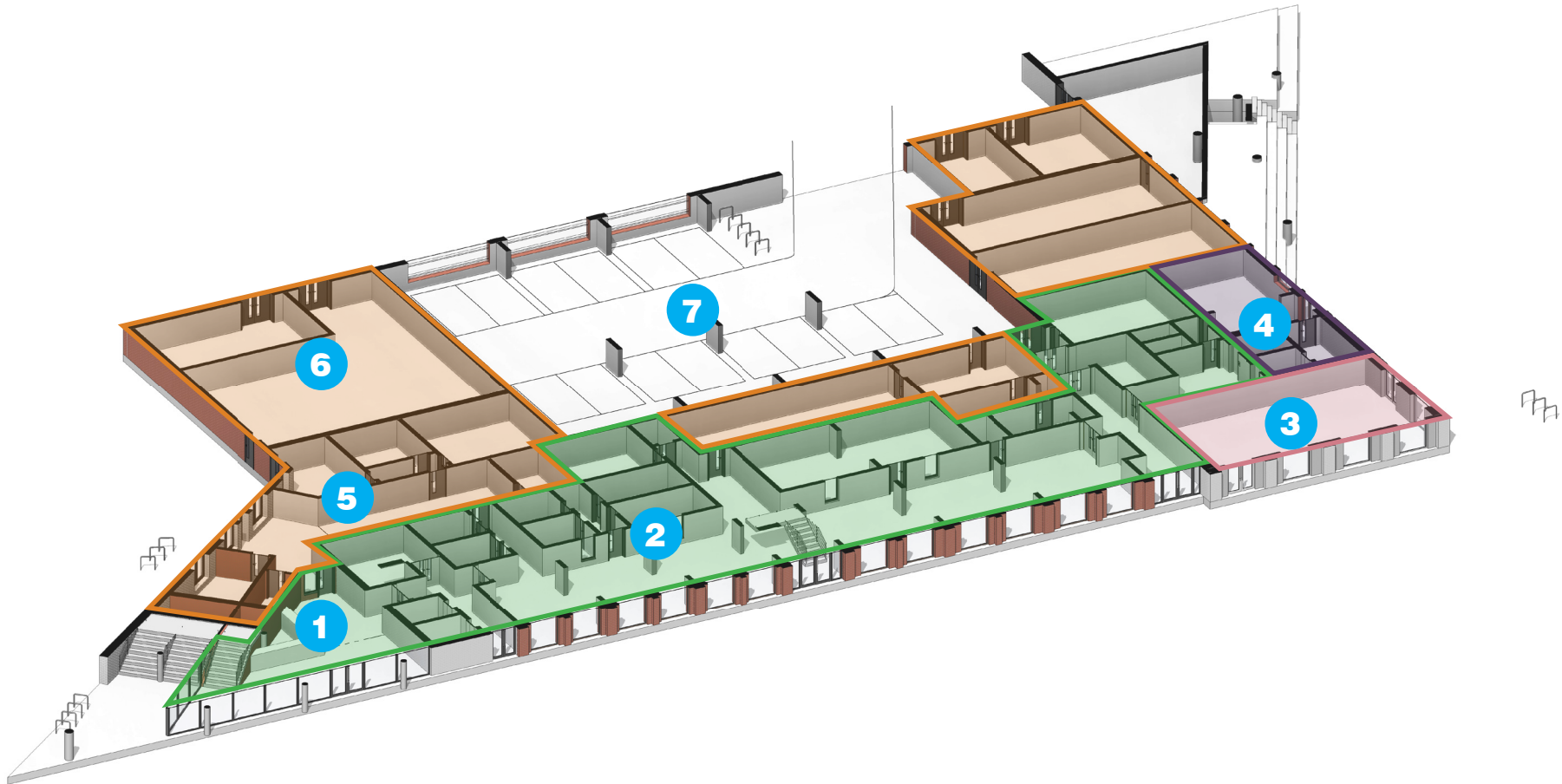


Interesting spaces



Proposed Overview - Ground Floor

- 1 Main entrance
- 2 Communal social space
- 3 Commercial unit
- 4 House parent entrance
- 5 Administration zone
- 6 Plant space
- 7 Undercroft car and cycle parking



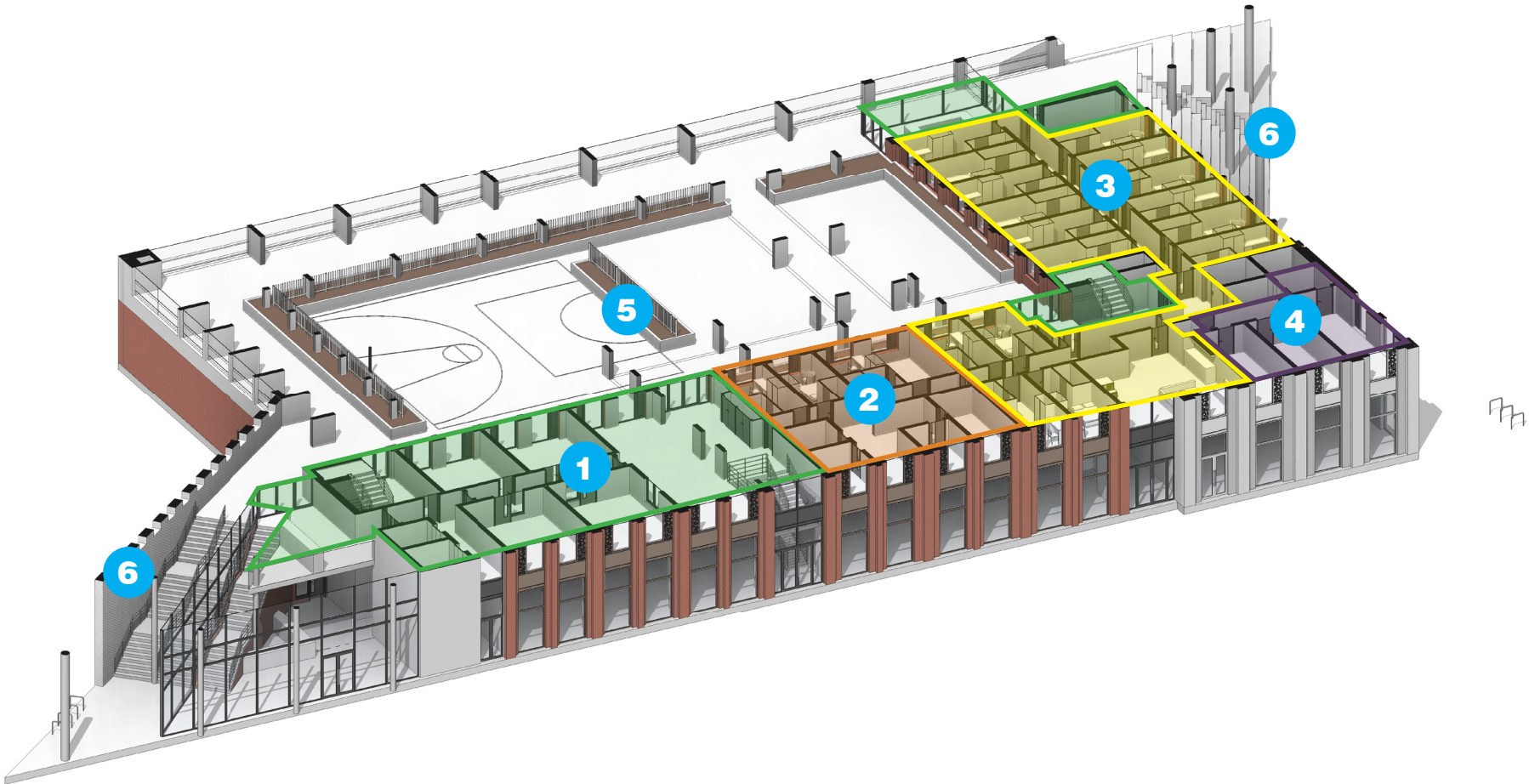


Proposed Overview - First Floor

- 1 Communal study space
- 2 Medical centre
- 3 A-Level
- 4 House parent accommodation
- 5 Landscaped podium deck
- 6 Podium access steps

Bed Spaces on this floor

GCSE Single	0
GCSE Twin	0
A-Level	16
House Parent	2





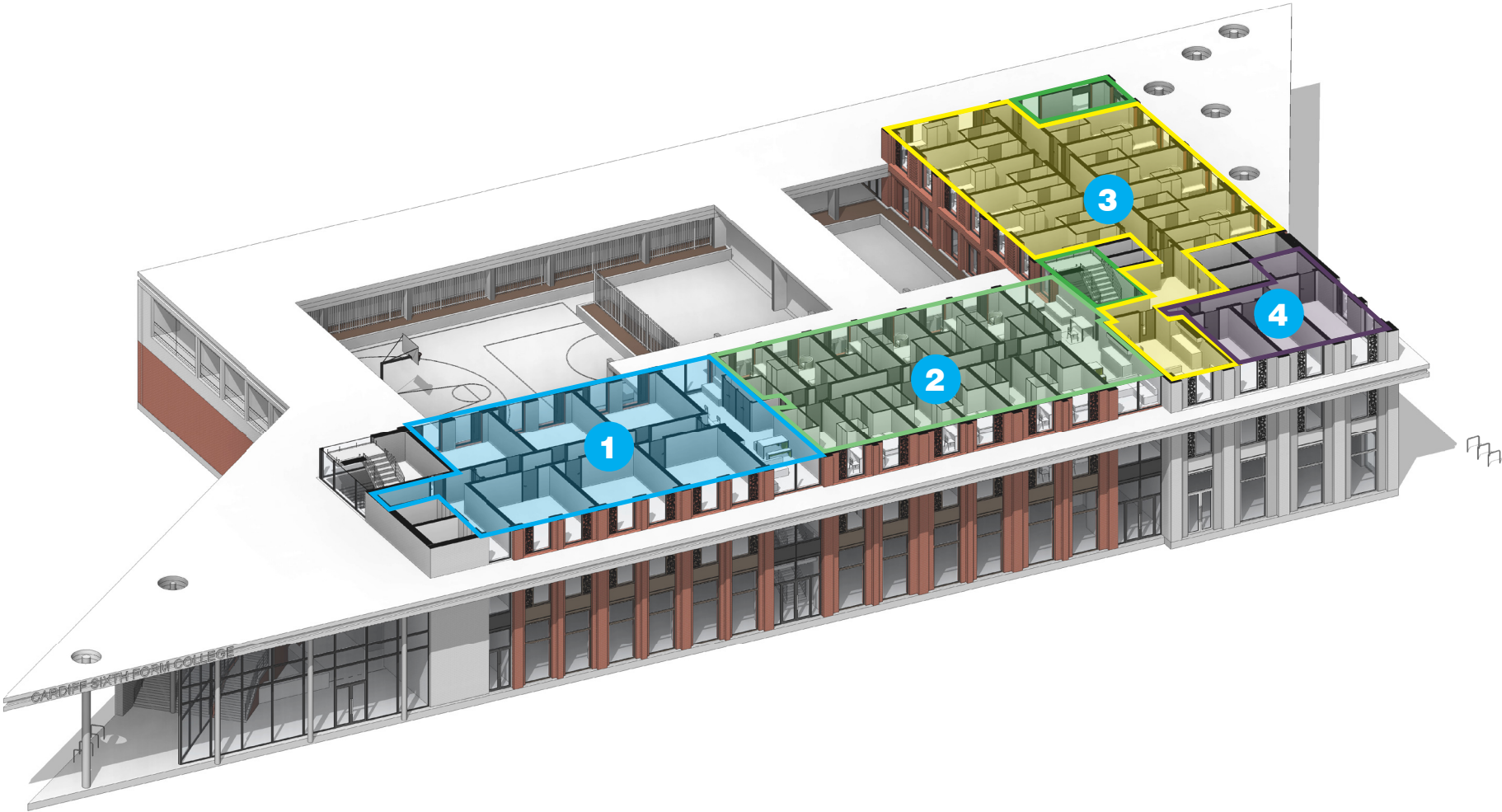
Proposed Overview - Second Floor

- 1 GCSE Twins
- 2 GCSE Singles
- 3 A-Level
- 4 House parent accommodation

Bed spaces

GCSE Single	12
GCSE Twin	12
A-Level	12
House Parent	2

Repeats floors 2-19





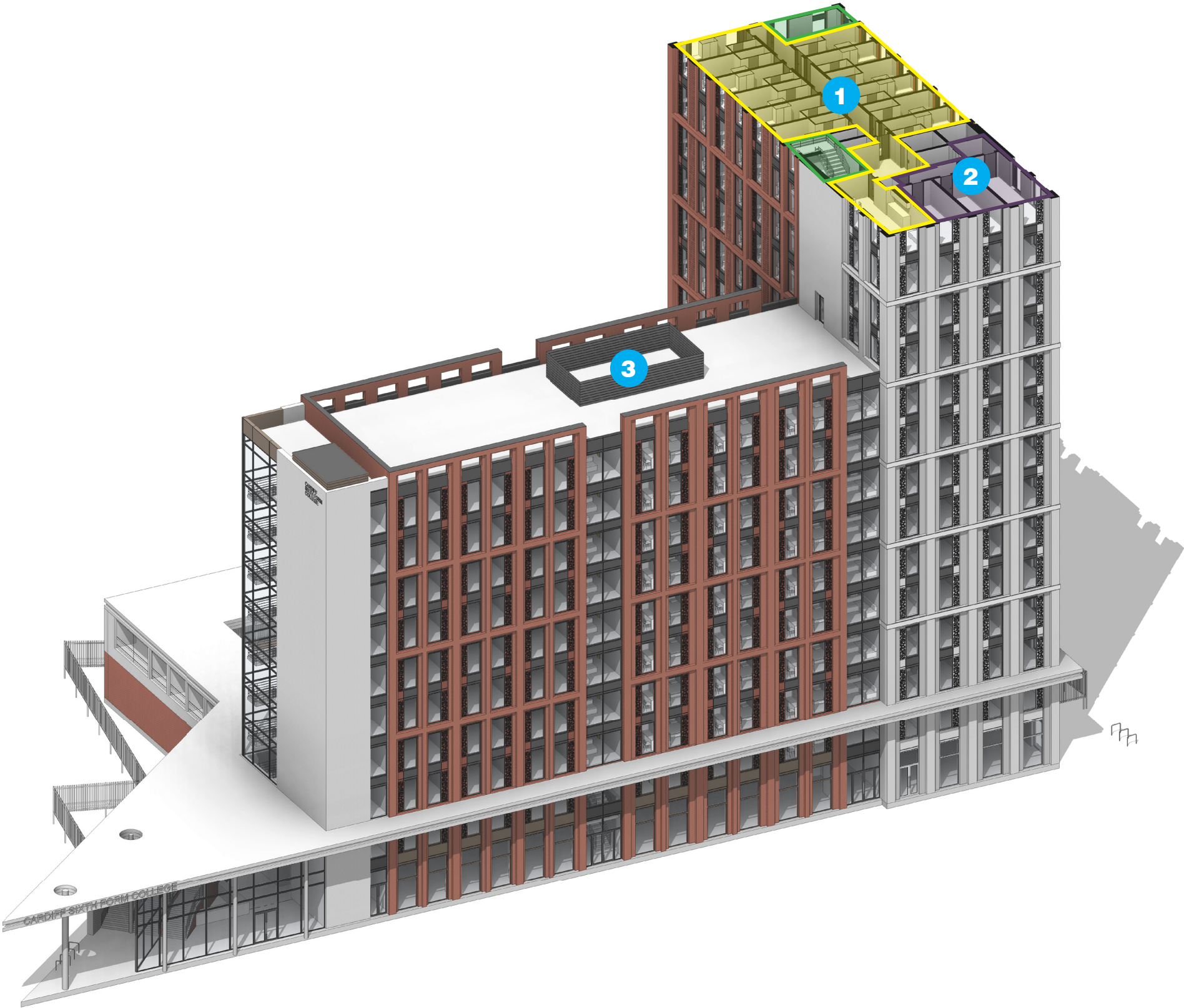
Proposed Overview - Thirteenth Floor

- 1 A-Level
- 2 House parent accommodation
- 3 Rooftop plant

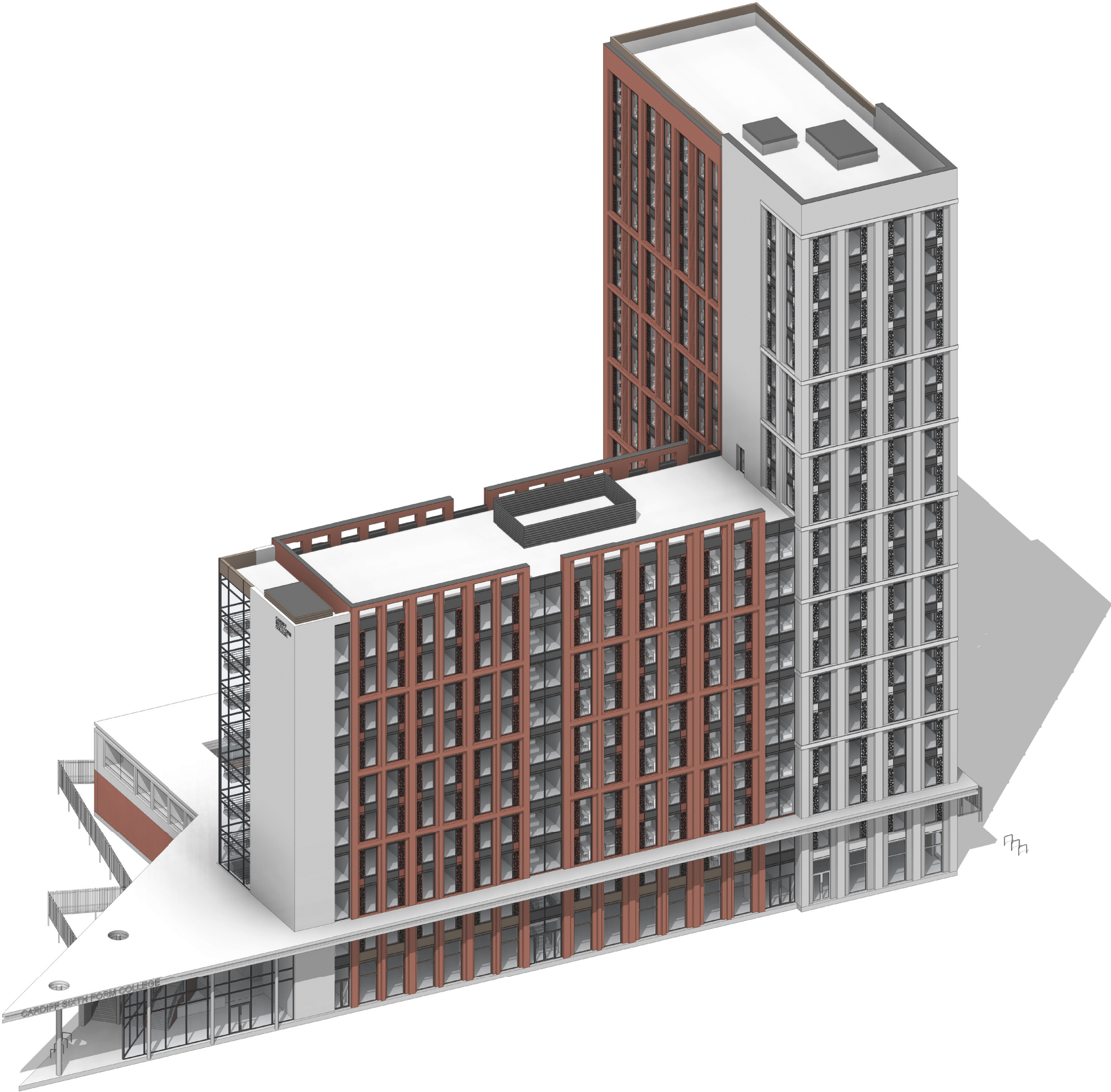
Bed Spaces

GCSE Single	0
GCSE Twin	0
A-Level	12
House Parent	2

Repeats floors 10-17



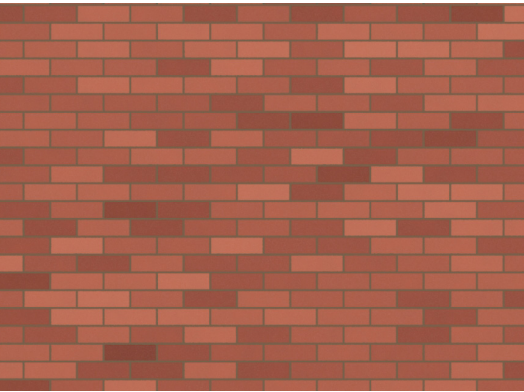




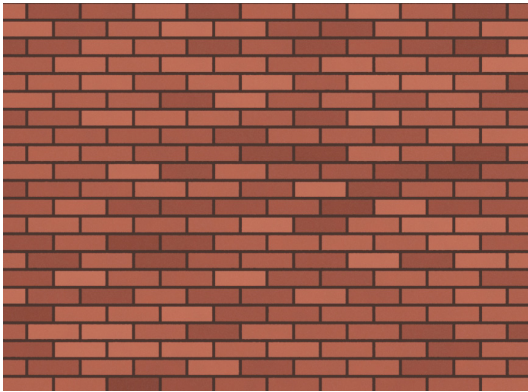


Material Palette

Brick



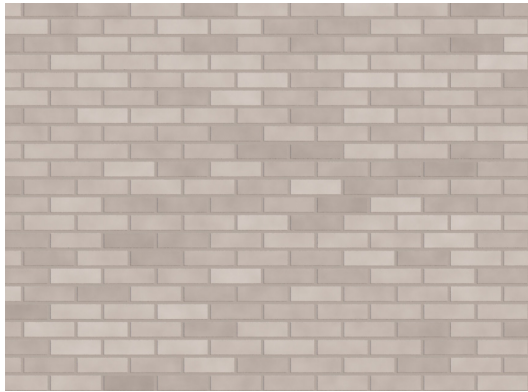
Type B1:  
Red brick / Light grey mortar



Type B2:  
Red brick / Dark grey mortar



Type B3:  
White brick



Type B4:  
Light grey brick

Concrete



Type C1:  
White fair faced precast concrete / GRC

Metal



Type M1:  
Anodized aluminium Dark grey



Type M2:  
Anodized aluminium Red



Type M3:  
Anodized aluminium Bronze



Type M4:  
Anodized aluminium Light grey

- The material palette has been carefully considered to create a visually-cohesive cluster of buildings. The primary material of all buildings is brick.
- Brick is a contextual material which draws inspiration in architecture from historic buildings in the bay, such as Cory’s, Bute Place and Pierhead Building. The building will be constructed in brick predominantly in red and white colours.
- A selection of powder coated aluminium elements in a range of bronze tones are used across all buildings for window frames.
- This approach will help create a building that sits well in its context and does not loudly try to create a new landmark.



Bay Elevation Details

Bay detail type 1

- A. Red precast coping.
- B. Metal spandrel panel - Type M1: anodized aluminium dark grey colour.
- C. Fixed side ventilation metal panel - Type M2: anodized aluminium red colour.
- D. Framed window system; Metal frame - Type M1: anodized aluminium dark grey colour.
- E. Brickwork - Type B1: red brick with light grey mortar.
- F. Brickwork - Type B2: red brick with dark grey mortar.
- G. Metal spandrel panel - Type M1: anodized aluminium dark grey colour.
- H. Window top ventilation panel: Metal Type M1: anodized aluminium dark grey colour.
- I. Soldier course - Type B1: red brick with light grey mortar.



Bay 1 Top - Detail



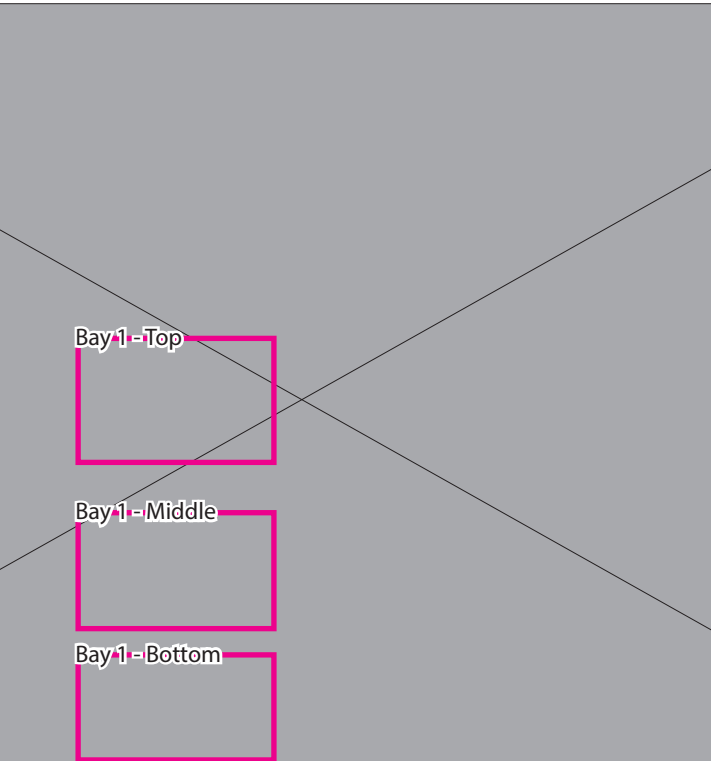
Bay 1 - Top section



Bay 1 - Middle section



Bay 1 - Bottom section

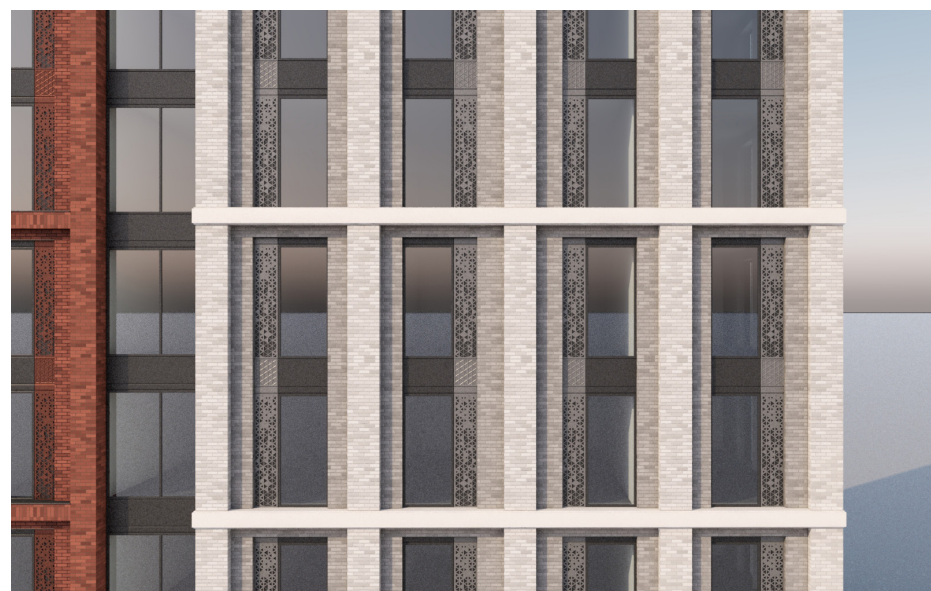


Location of Bay 1 details





Bay 2 - Top section



Bay 2 - Middle section



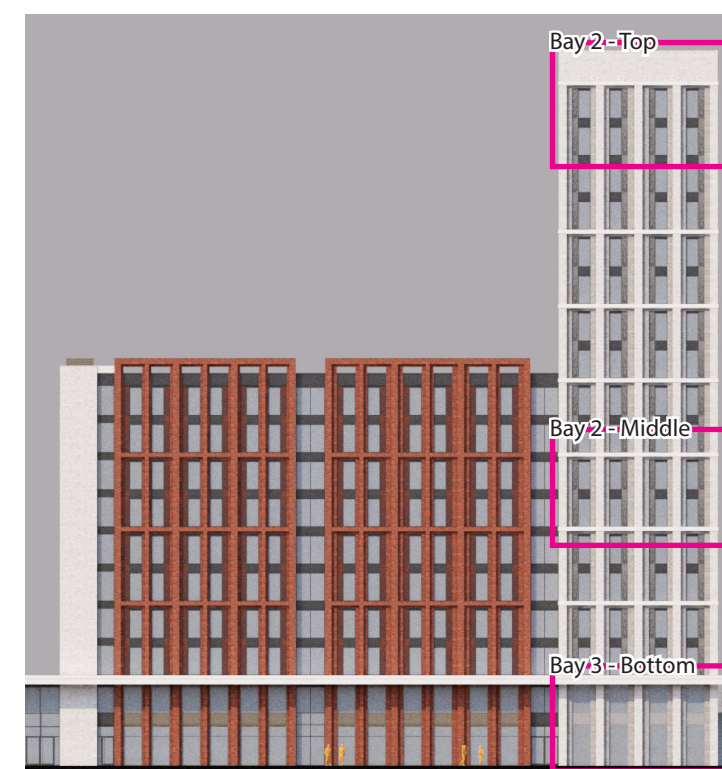
Bay 2 - Bottom section



Bay 2 Top - Detail

### Bay detail type 2

- A. White precast coping
- B. Brickwork - Type B3: white brick.
- C. Precast pier - Type C1: white fair face precast concrete / GRC.
- D. Brickwork - Type B4: light grey brick.
- E. Framed window system; Metal frame - Type M1: anodized aluminium dark grey colour.
- F. Fixed side ventilation metal panel - Type M4: anodized aluminium light grey colour.
- G. Metal spandrel panel - Type M1: anodized aluminium dark grey colour.
- H. Window top ventilation panel: Metal Type M1: anodized aluminium dark grey colour.

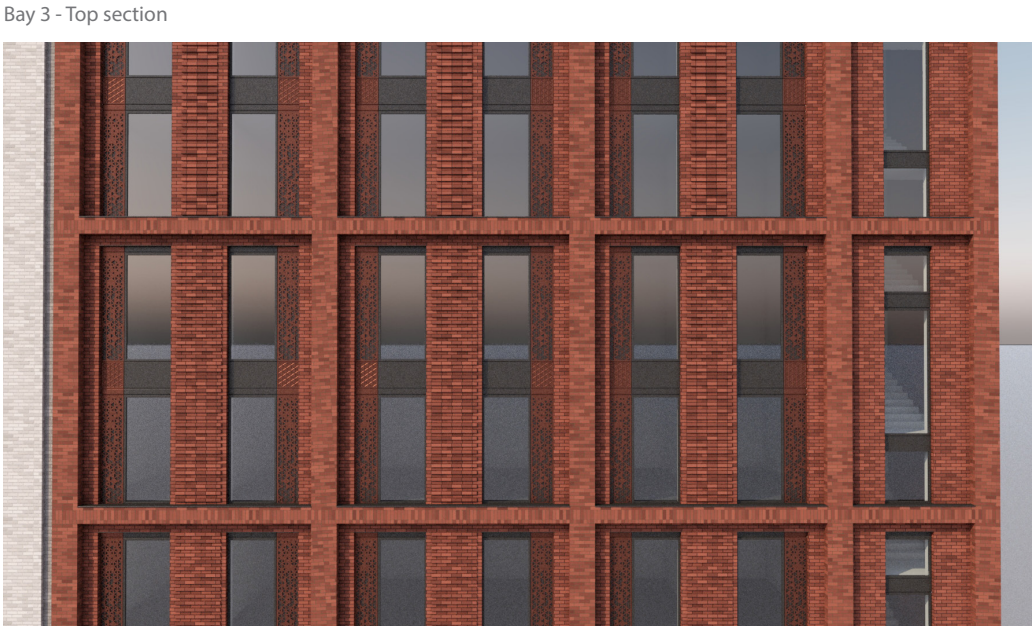
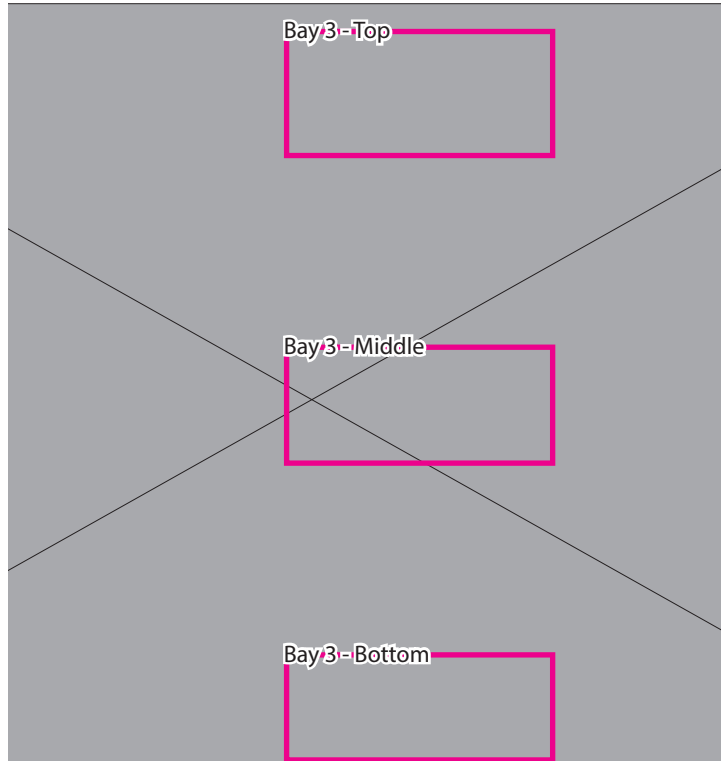
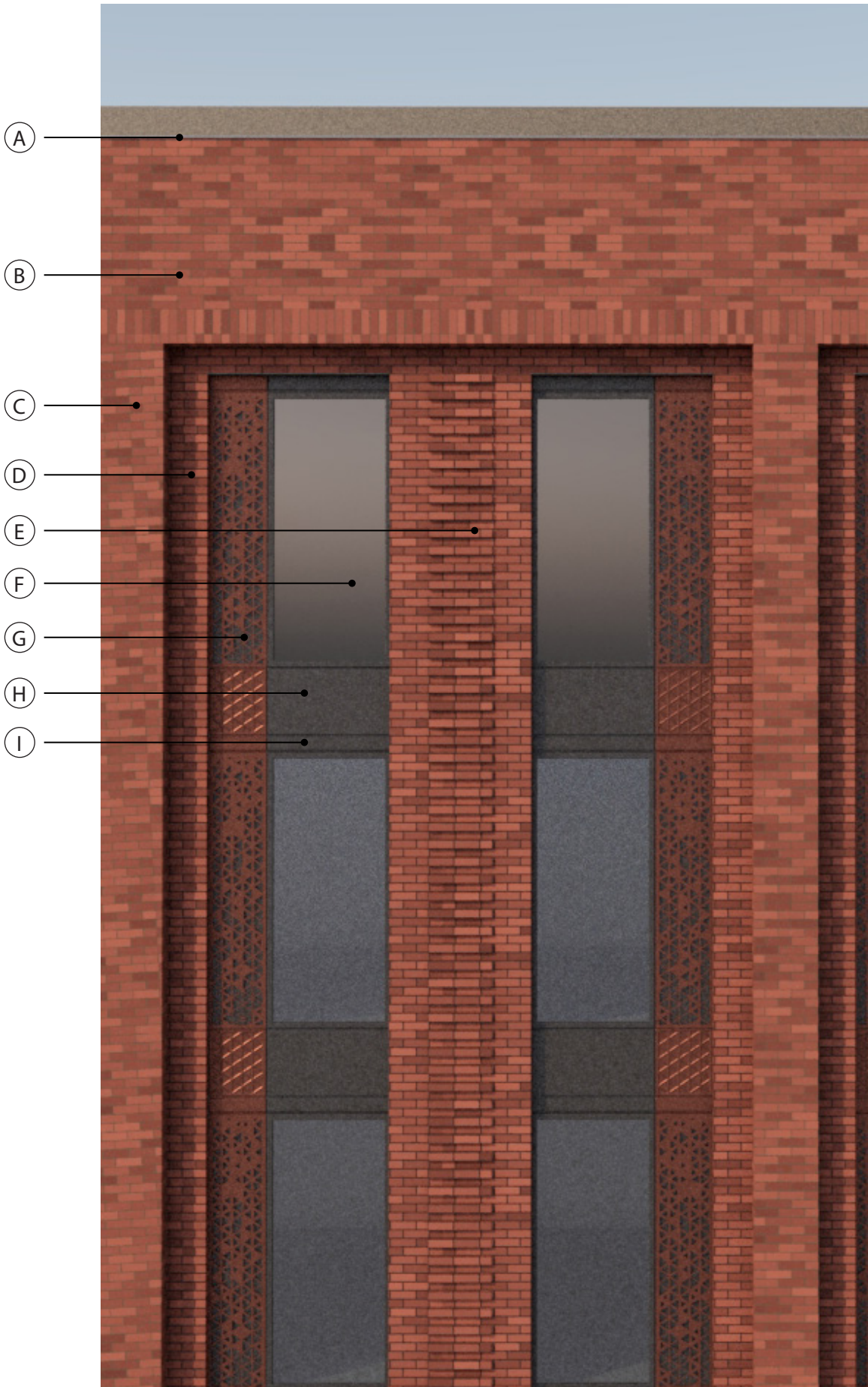


Location of Bay 2 details



Bay detail type 3

- A. Red precast coping
- B. Brickwork - Type B1: red brick.
- C. Brickwork - Type B1: red brick with light grey mortar.
- D. Brickwork - Type B2: red brick with dark grey mortar.
- E. Projecting brickwork - Type B2: red brick with dark grey mortar.
- F. Framed window system; Metal frame - Type M1: anodized aluminium dark grey colour .
- G. Fixed side ventilation metal panel - Type M2: anodized aluminium red colour.
- H. Metal spandrel panel - Type M1: anodized aluminium dark grey colour.
- I. Window top ventilation panel: Metal Type M1: anodized aluminium dark gr colour.







View of south-east facade



View of south-east and north-east façades







View of south-east and north-east façades



View of north-east and north-west façades







View of north-west and south-east façades



Site Access Overview

The boarding house will accommodate up to 400 students and 34 houseparents, along with support staff who will be responsible for the day to day running of the building.

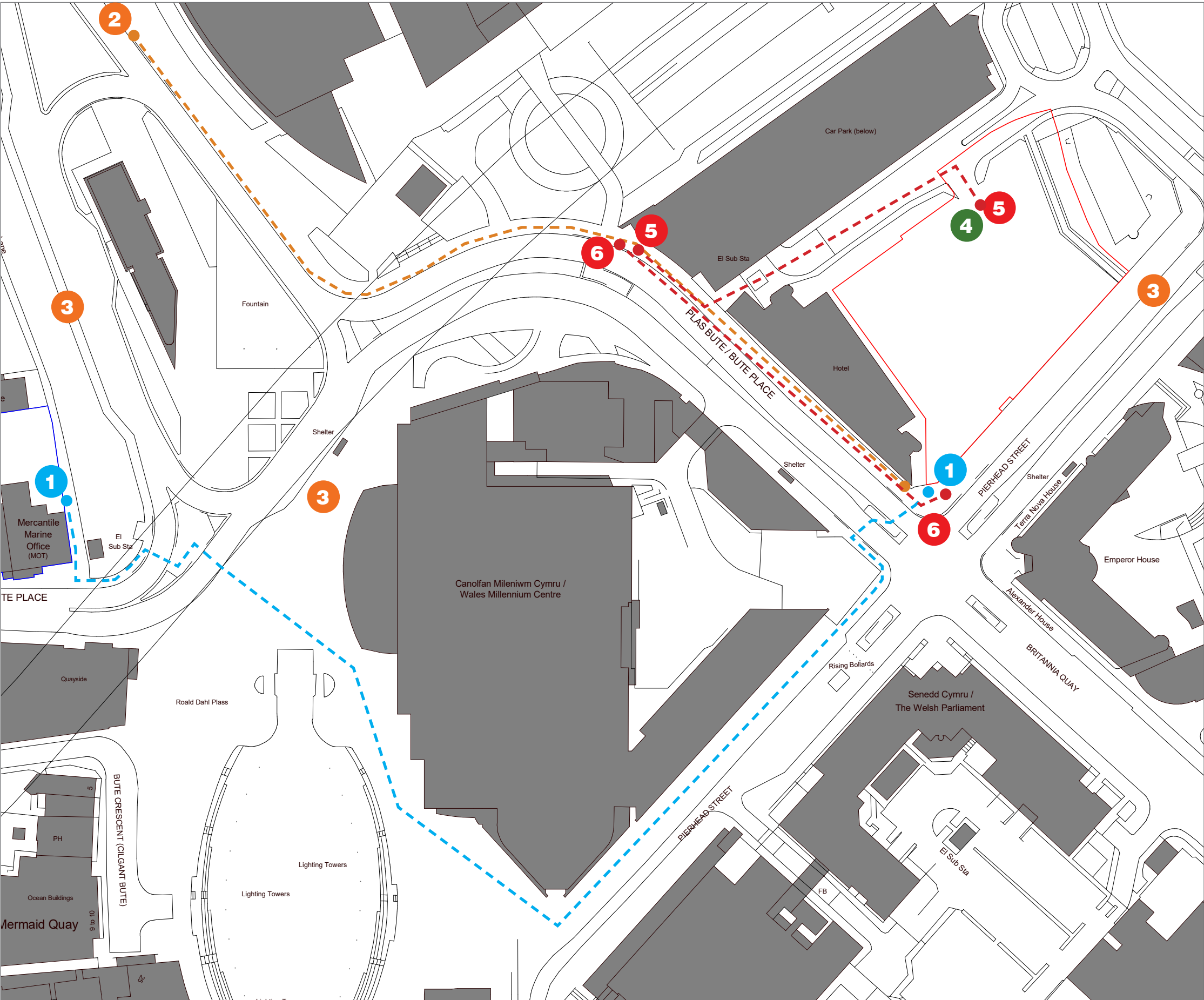
All students from the boarding house will be educated at the academic hub at Merchant Place and Cory's Building.

For staff and visitors there are a number of transport options. The Bay area is served by the Cardiff Bay train station, a number of bus routes and in the future a metro line will run in close proximity to the two sites.

There will be a limited number of 14 parking spaces on site that will be allocated to the houseparents. Staff arriving by car will need to park in the adjacent public car park. There will be cycle provision for students and staff.

The proposed wider masterplan for the area will see improvements in the public realm. The safety of walking routes will be improved as part of Bute Place is proposed to be pedestrianised.

- 1 Primary route between sites
- 2 Route from Cardiff Bay train station
- 3 Route from nearest bus stops
- 4 Route from road to internal cycle store
- 5 Route from public car park for staff
- 6 Route from public car park for visitors





## Proposed Servicing Strategy

The college students and house parents are full board in terms of accommodations and therefore there will need to be an access strategy for the delivery of the food for meals, access for the delivery and collection of the laundry, as well as the bins and the recycling.

The proposed access for the services will be via the Caspian Way entrance to the rear of the building, in via the car park. This will be a security checked access with gates and the appropriate check in and out where needed.

It is proposed that waste will be collected on a fortnightly basis via Cardiff City Council services.

The following size bins will be provided with individual bins designated for food waste, mixed recycling and non-recyclables

It should be noted that all students have three meals a day provided for them at the college site and so there is very limited food cooking at this site. Meal cooking will be limited to the 17 house parent apartments. On this basis we have provided waste storage at 75% of the levels required for a typical university student accommodation building.

### Proposed

Mixed recycling =  $20 \times 1100 = 22,000$  litres

Food waste =  $2 \times 1100 = 2,200$  litres

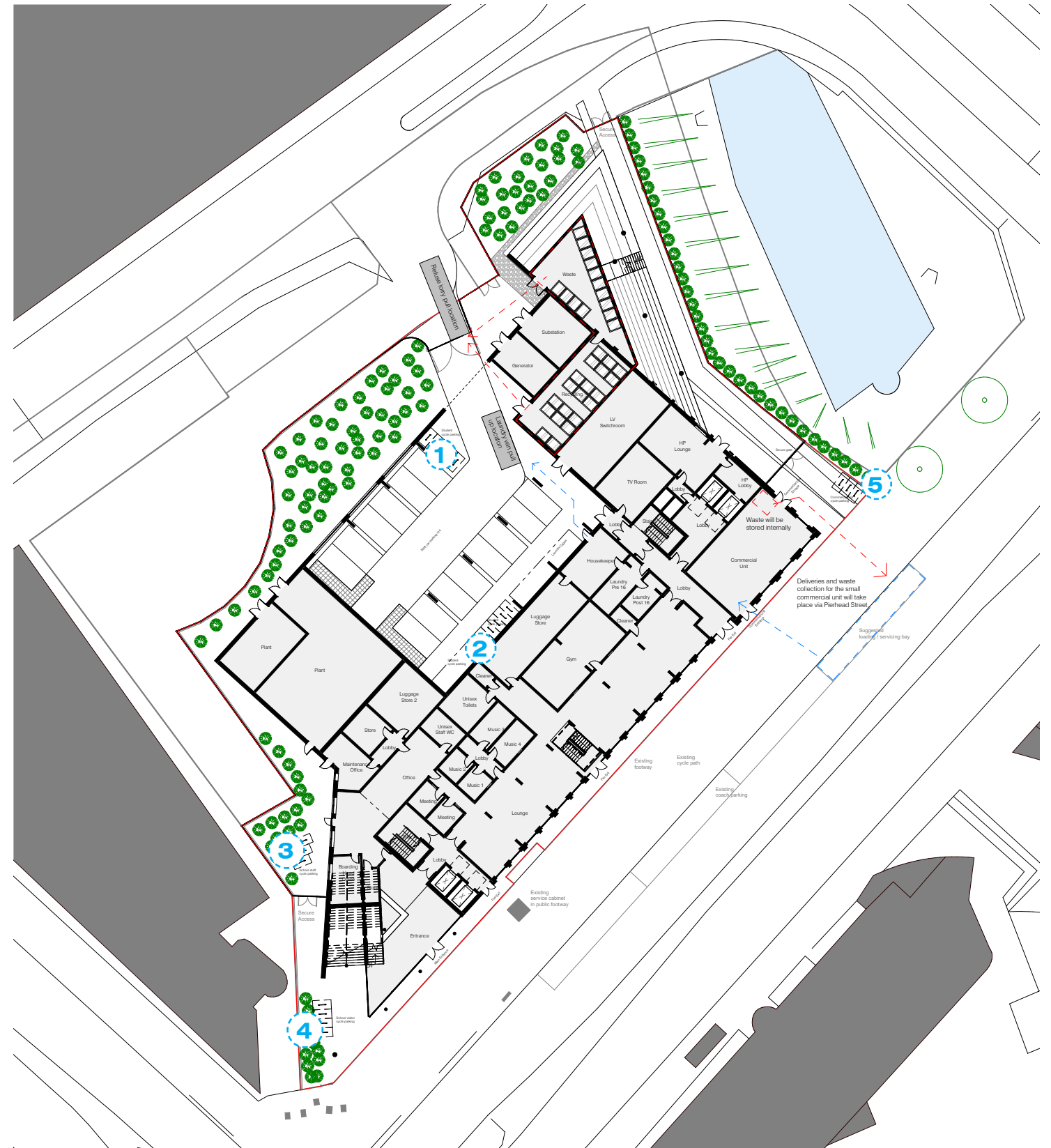
Non-recyclable =  $14 \times 1100 = 15,400$  litres

We have increased provision in order to allow for future growth. Bins will only be emptied when full which means that the non-recyclables will only need to be emptied twice monthly, reducing the total number of bin movements required.

### Cycle Provision

There will be cycling provision for students, staff and visitors split over 5 locations on the site.

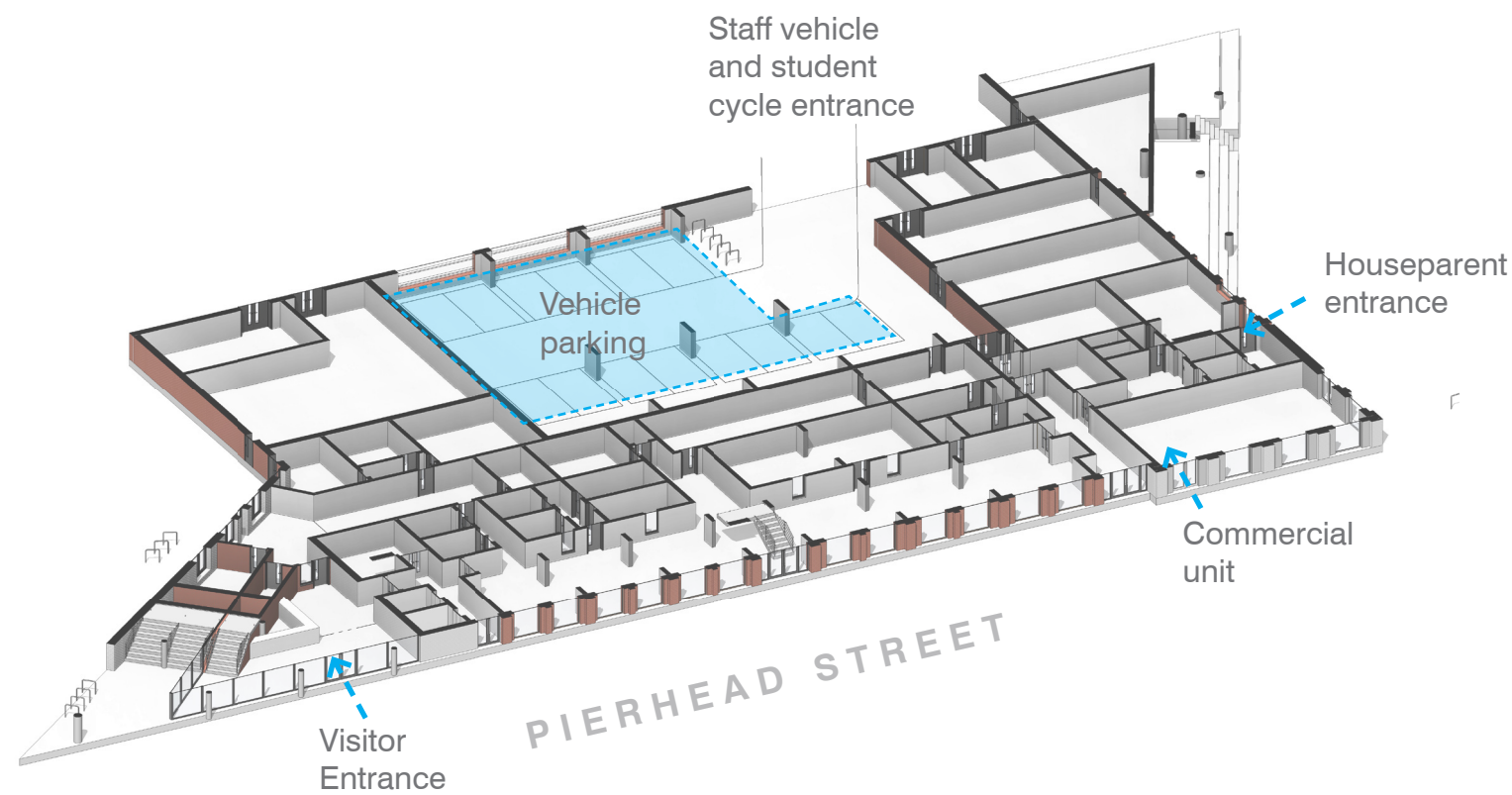
1. Students, 10 spaces via floor based hoops
2. Students, 10 spaces via floor based hoops and 22 number double tier racks
3. Staff, 6 floor based hoops for daily staff
4. College visitors, 8 spaces via floor based hoops for visitors
5. Commercial unit users, 6 spaces via floor based hoops



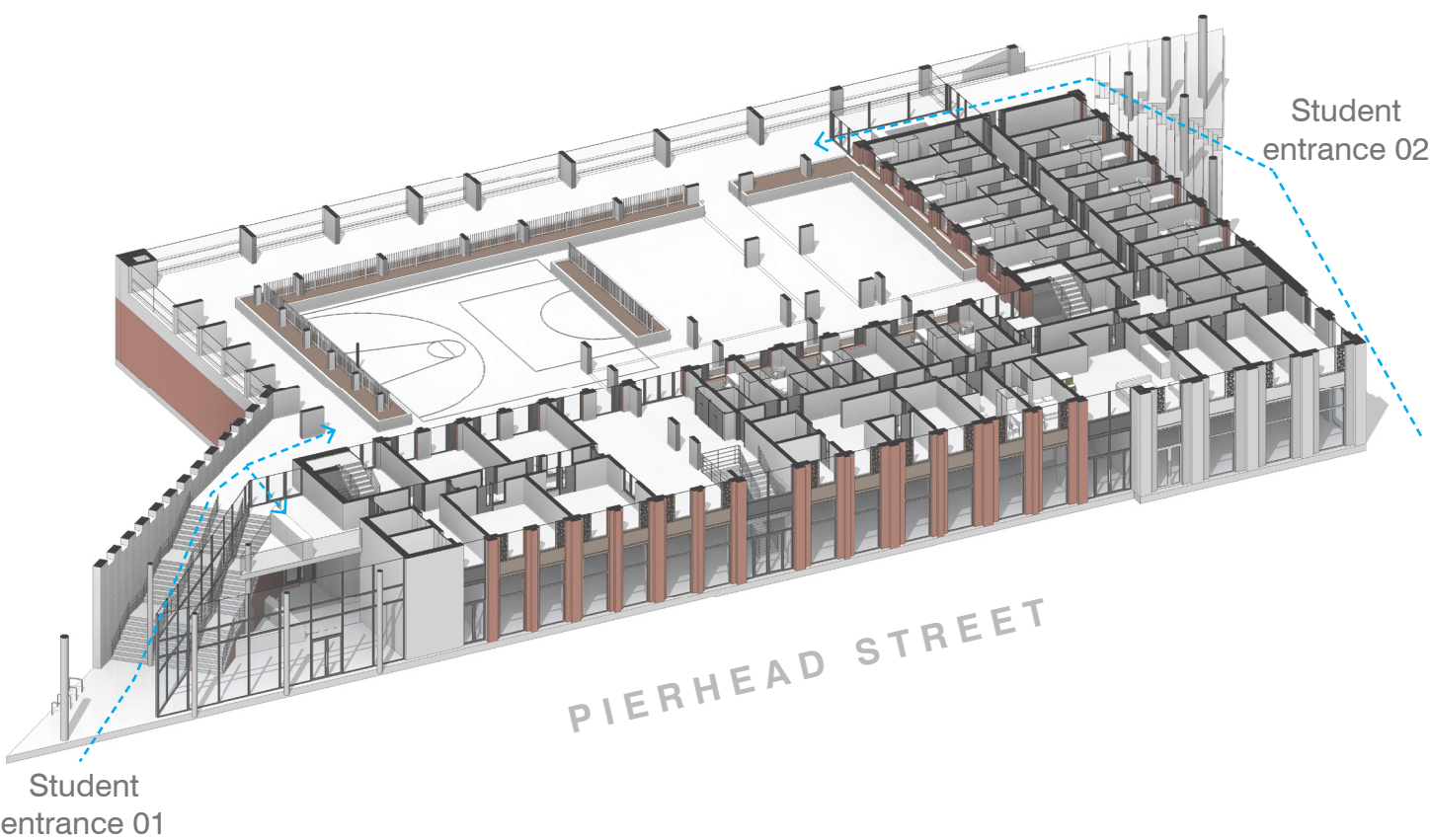


User Group Access

Ground Floor



First Floor



General access into the building is quite restricted due to the safeguarding requirements of the pupils.

Visitors will be directed to the main entrance at the corner of Pierhead Street and Bute Place. Students will be able to enter here but will generally be directed up onto the podium level before entering the building and proceeding to their bedroom.



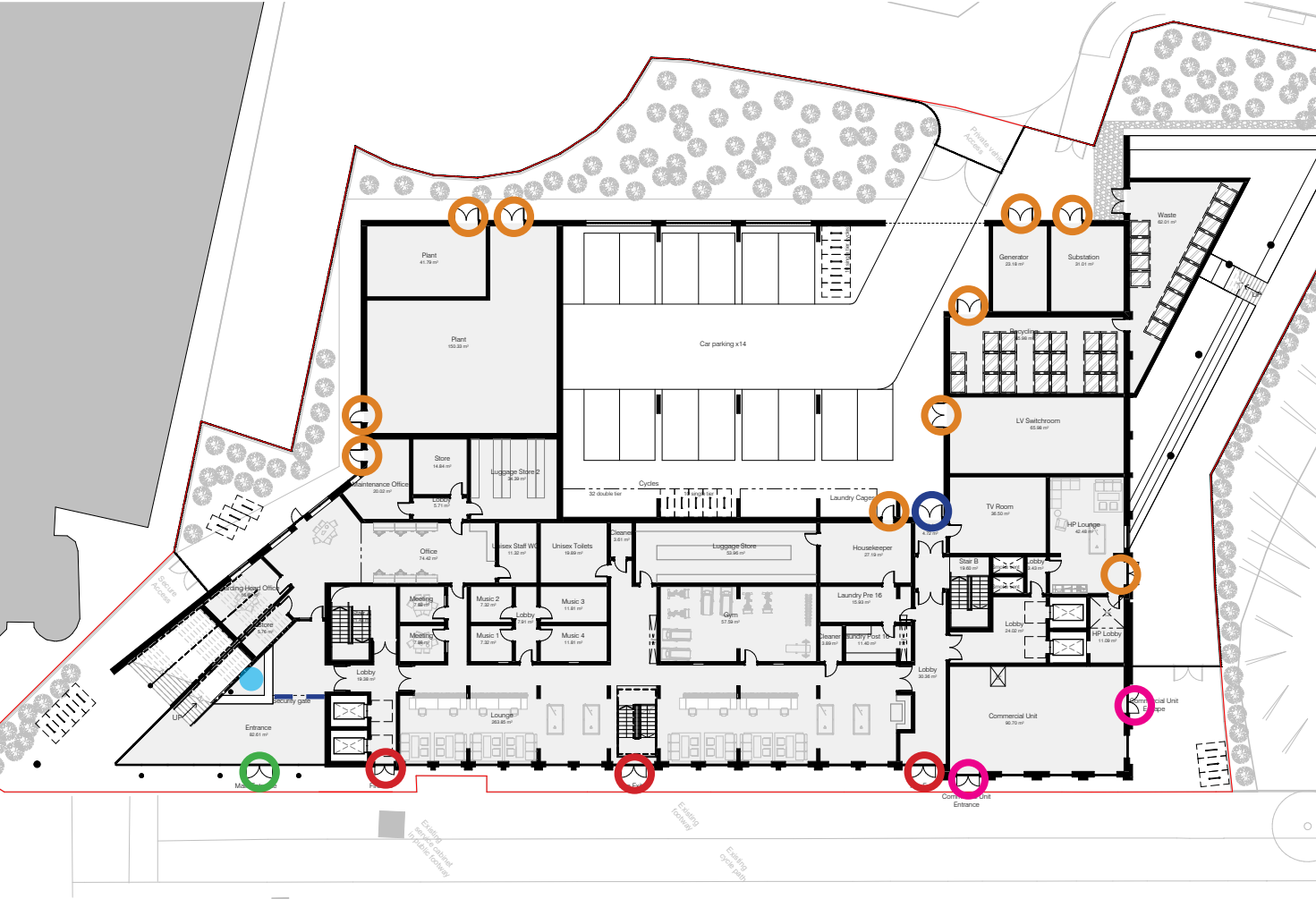
View of corner boarding school entrance



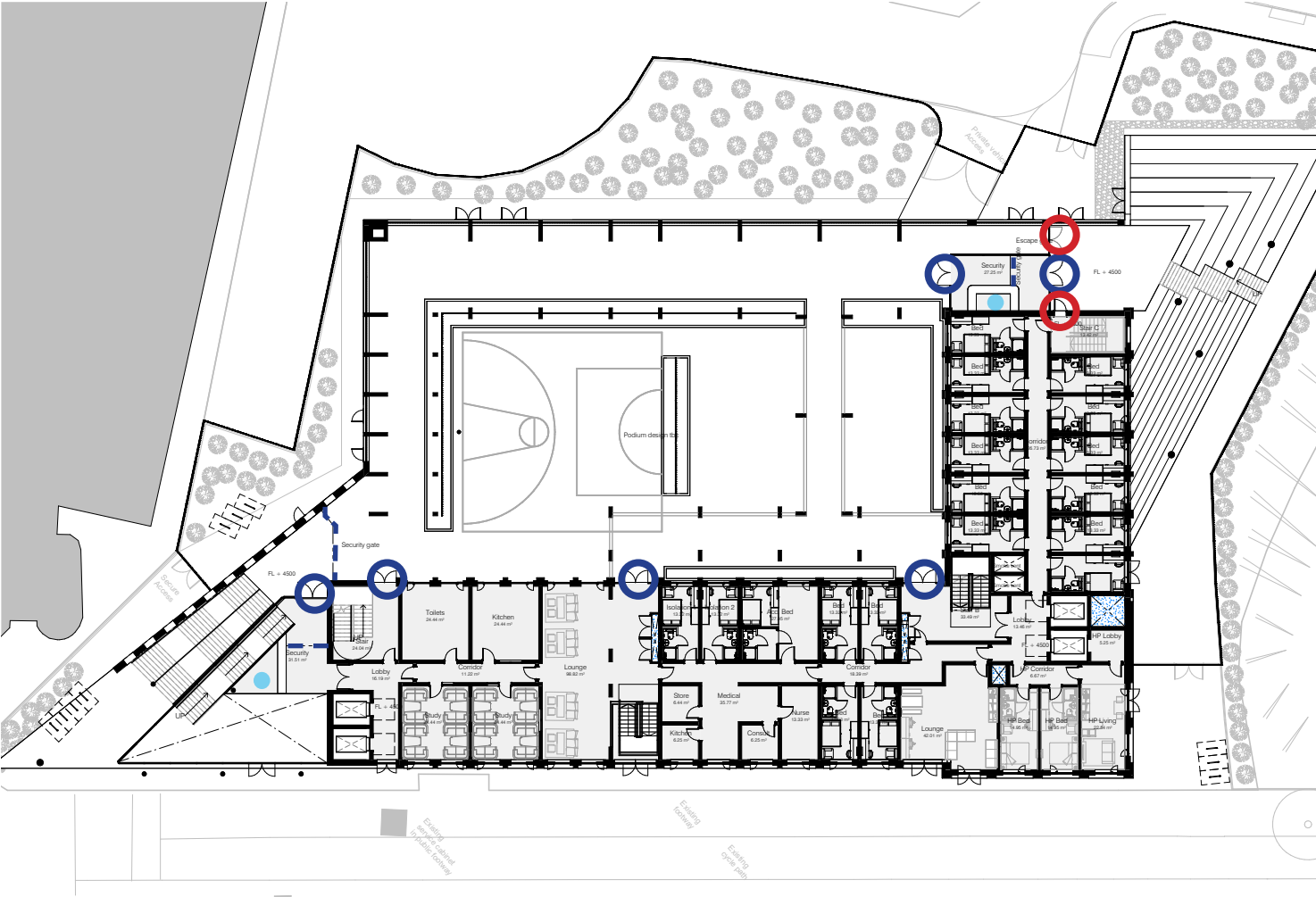
View of corner commercial unit and secure gate for student access



Ground Floor



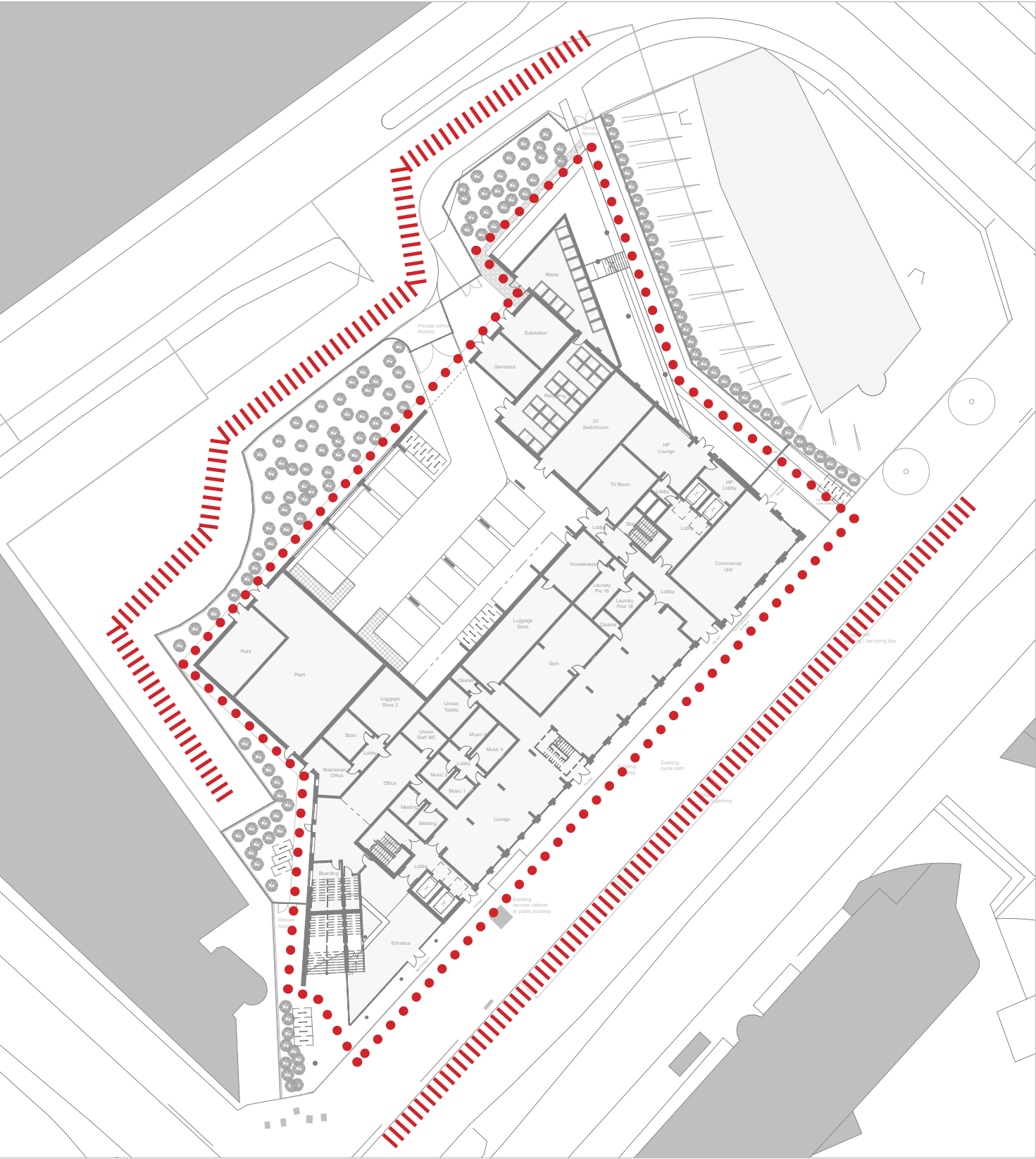
First Floor



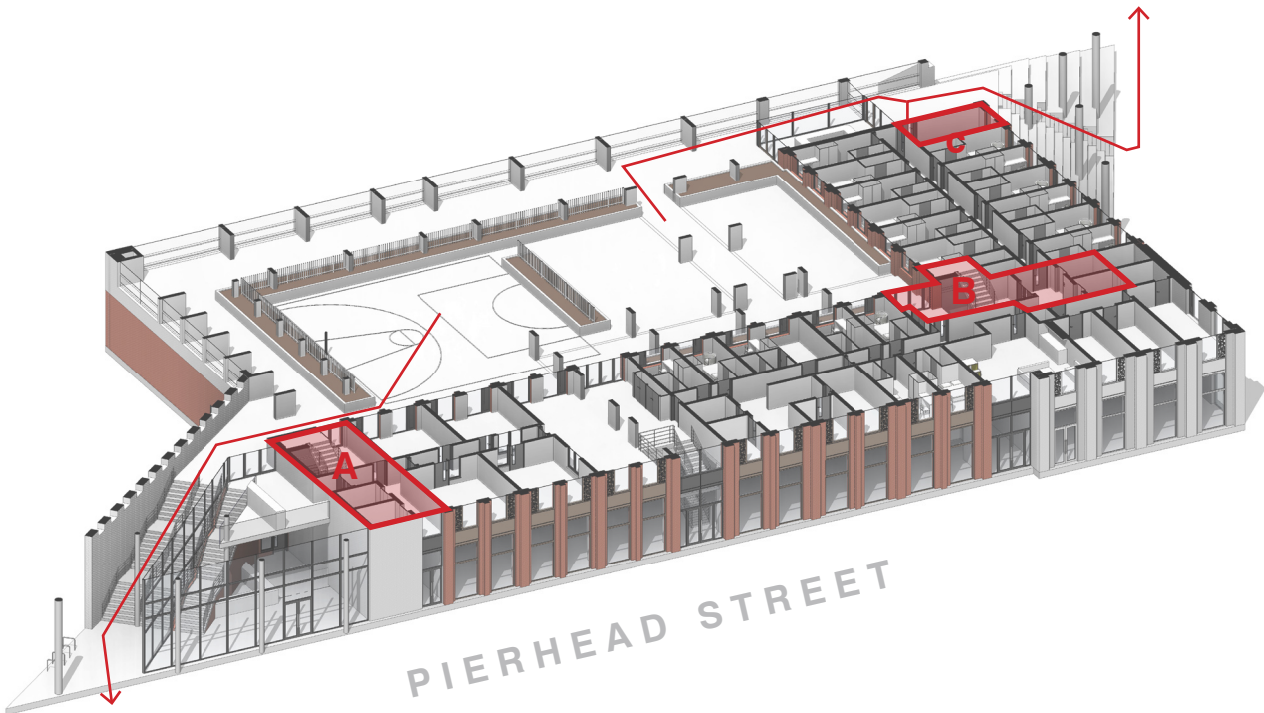
- General access
- Secure staff access
- No entry - escape only
- General access after security
- Reception Desk
- - - Security barrier - college access only
- Commercial unit - public access



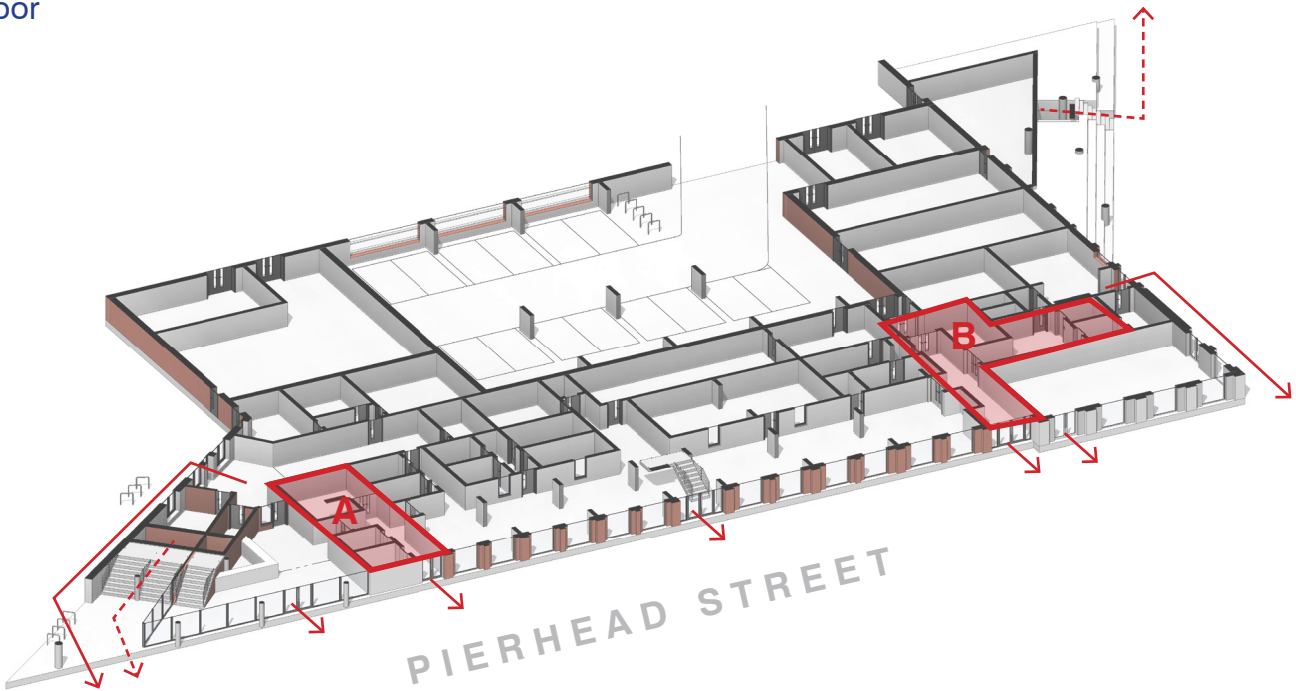
Emergency Egress



- ● ● ● ● Access for fire brigade on foot
- ||||| Access for fire brigade vehicle



First Floor



Ground Floor

On sounding of the fire alarm there will be a simultaneous evacuation. Cores A and B will exit onto Pierhead Street and will be designated as firefighting cores with firefighting lifts.

Core C will exit at first floor level onto the podium with students then descending the external stairs and exiting to the rear of the site. Escape from the podium will be via either of the external staircases.