

05

Initial Development

05 Initial Development
Refurbishment Proposals

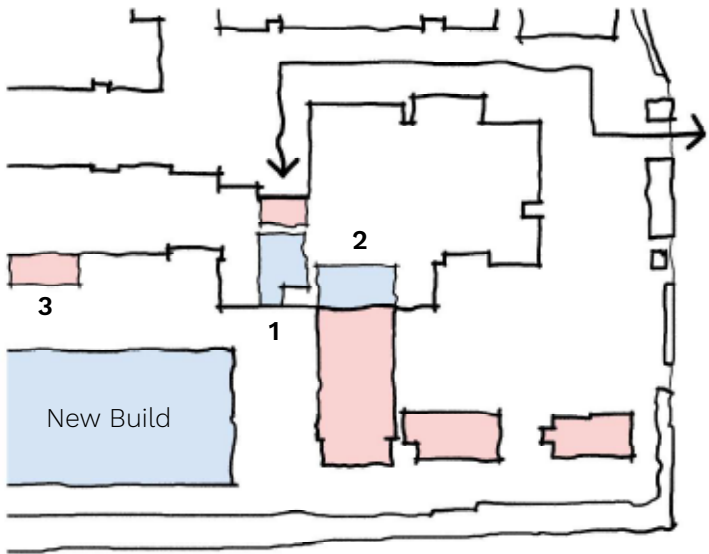
01 - Move Main Entrance

Advantages

- Entrance is directly off visitor car park, not hidden behind hall.
- Visitor area can be segregated from pupil access areas for security / safety.
- Main Visitor Entrance (school hours) and new building entrance (community use) are adjacent.

Disadvantages

- Additional cost compared to leaving entrance in existing location.



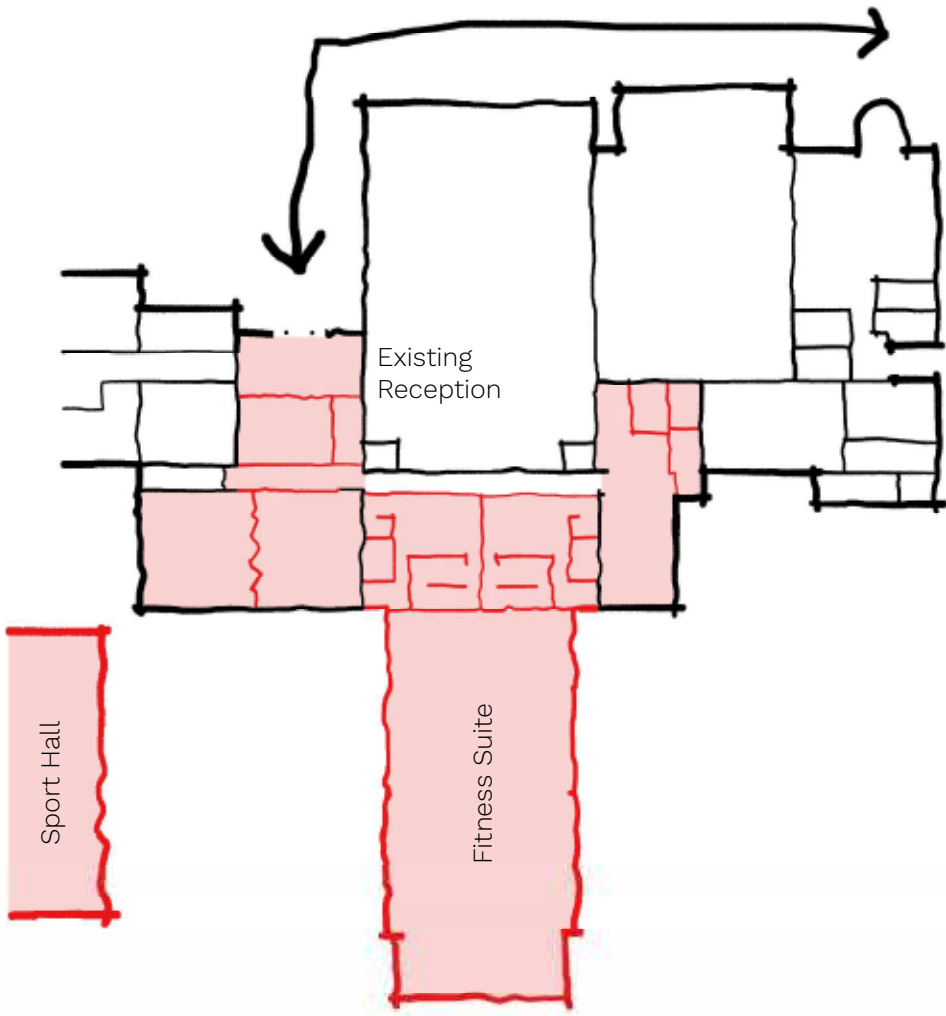
02 - Additional Dining Space

Advantages

- Provides additional dining space, closer to the total recommended by BB98.
- Space is close to main entrance, and can be used for breakout space outside lunchtimes, school functions, out of hours use.
- Dedicated store rooms for chairs, exam desks, staging. Avoids the fire risk of open storage areas in escape routes.

Disadvantages

- No dedicated changing rooms alongside main hall, for school productions etc, although the dining space could be used with privacy screens.



Existing

Structural Summary

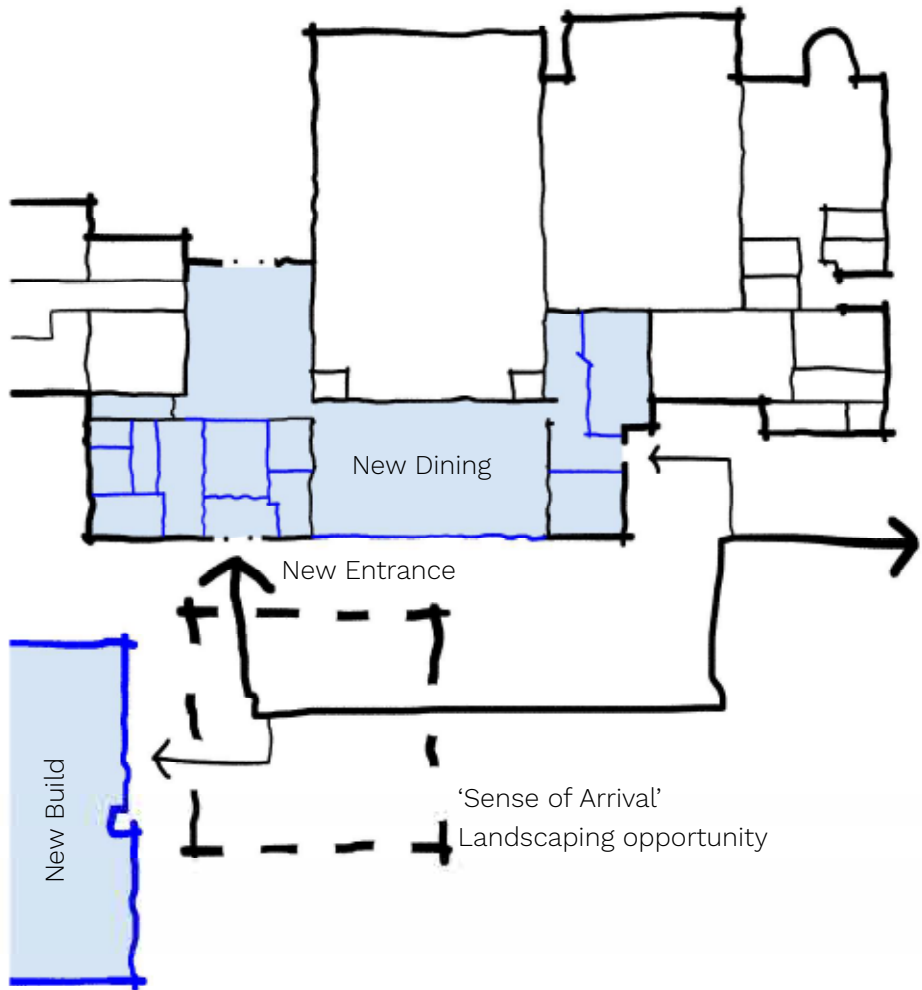
Cambria

Block A is to be re-purposed, incorporating a number of room reconfigurations. As part of these reconfigurations, demolition of elements which may be structural elements is required.

The current construction of the existing buildings at Caerleon School is unknown and therefore a site visit, with intrusive investigation, is required at the next RIBA stage to conclude whether structural intervention is required.

Further advice on the likely structural implications shall be provided following a site visit.

For further information, refer to the appendix:
Cambria,
Caerleon School Structural Engineering Stage 2 Report
CB2183-CAM-ZZ-XX-RP-S-0002
section 9 Existing School Reconfiguration



Proposed

03 - Removal of Staff Extension

Advantages

- Allows more space for construction access to new building.
- Removal does not take the total staff areas below the BB98 recommendations, even without replacement.
- Can be replaced by new staff provision in new build, for better supervision.

Disadvantages

- No central staff room for all staff together.
- Overall reduction in staff space, if not replaced elsewhere.

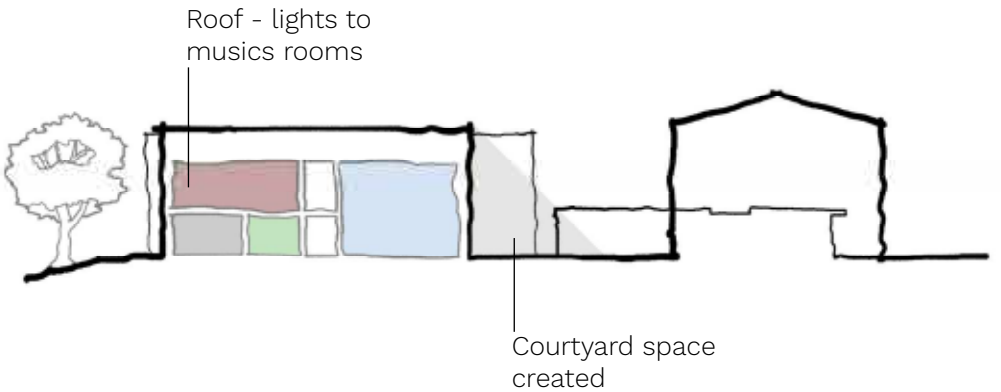
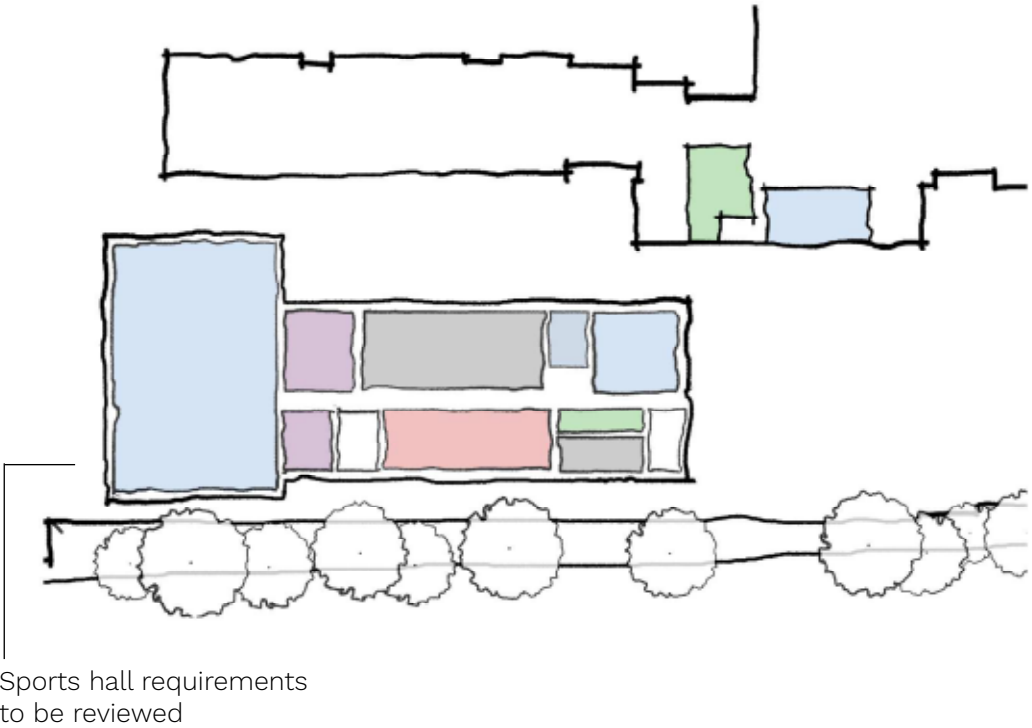
2-storey

Advantages

- Option for roof-lights to music practise rooms.
- The gross internal floor area (GIFA) is slightly smaller, as there is less vertical circulation.
- The shortest height option, means the bundling is less visible from the Roman Barracks ancient monument, and the conservation area.

Disadvantages

- Very close to the existing building.
- General teaching rooms are split over 2 floors.
- The larger footprint on the confined site leaves less external spaces.
- The exact site constraints are unknown at this stage, due to lack of detailed surveys, including an anticipated root protection zone for the adjacent tree lines.
- If the sports hall rotates to create a linear building, it is too long for the plot without major impact on either the sports pitch area, or the car parking and masking the existing building's new entrance.



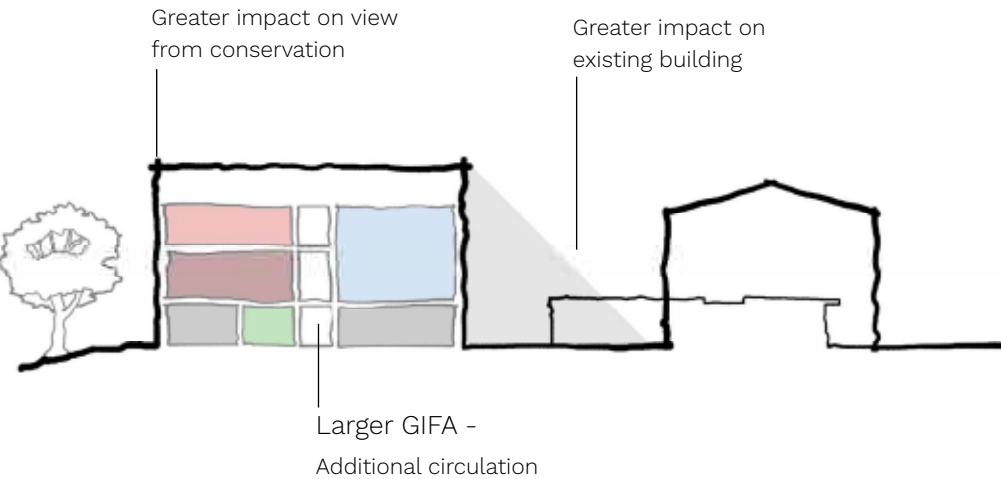
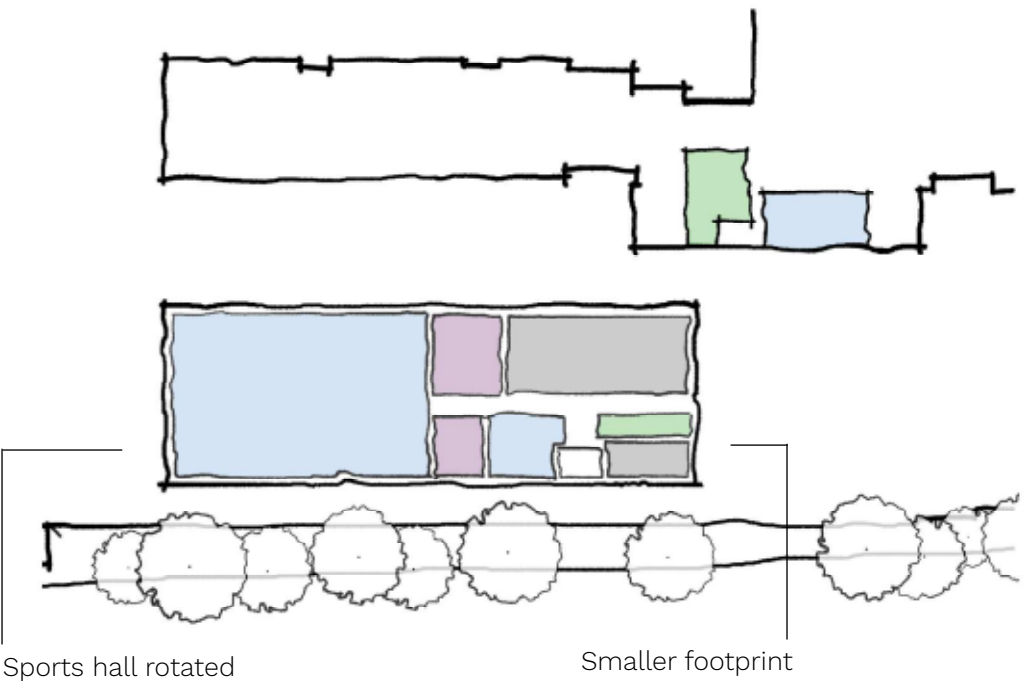
3-storey

Advantages

- Smaller footprint.
- Upper floor can be locked during OoH use.
- All general teaching rooms are clustered together.
- The sports hall element can be rotated either way, and still fit within the site constraints identified at the time.

Disadvantages

- GIFA is larger due to additional vertical circulation.
- No opportunity for roof-lights to music practise rooms.
- The building is the tallest option, and has the greatest impact on the view from the ancient monuments and conservation area.



Halls / Sport

General Teaching

Changing / Plant

Staff

Music

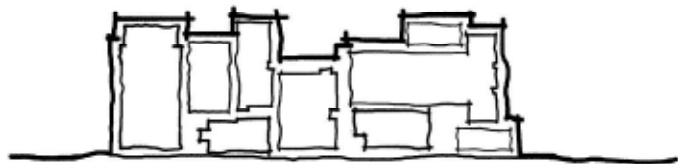
Store

06

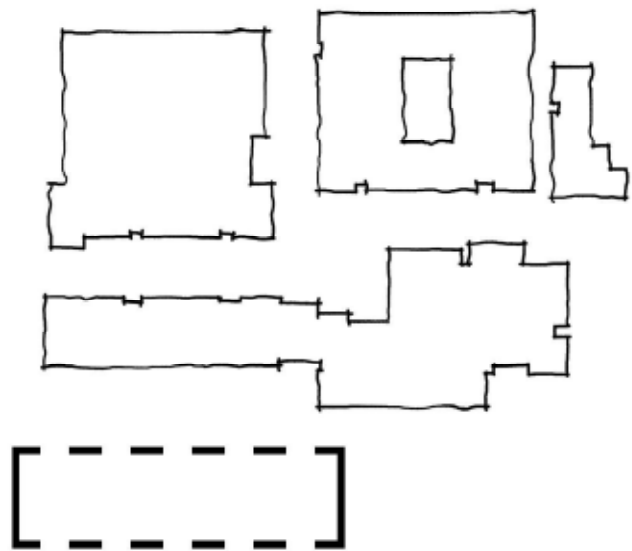
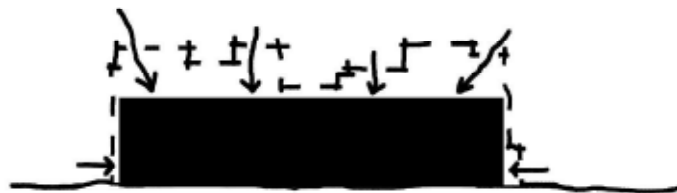
Design Proposal



ORDER

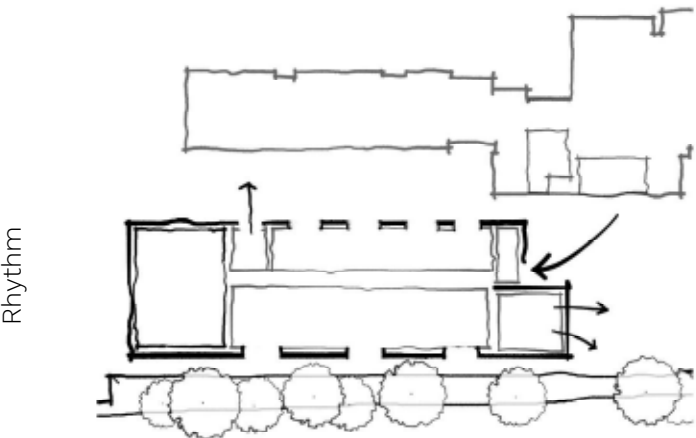
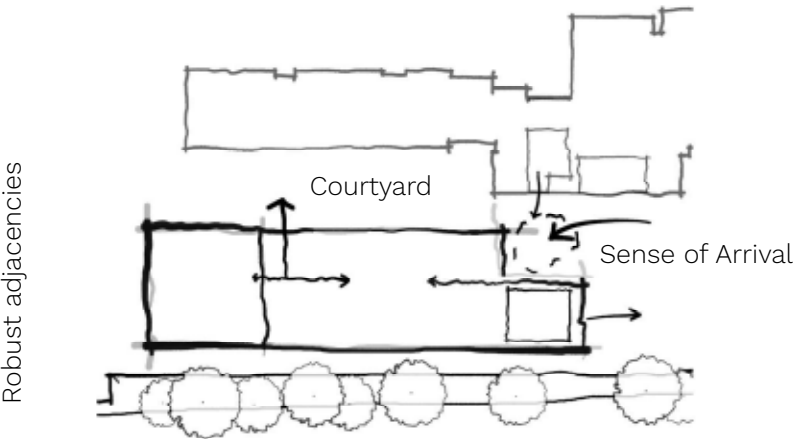
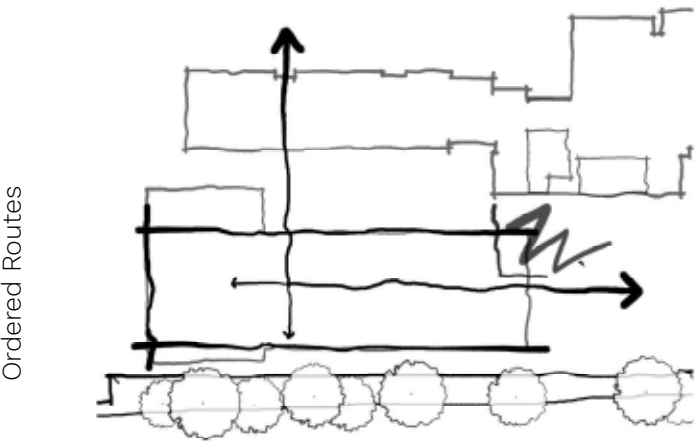


ROBUST

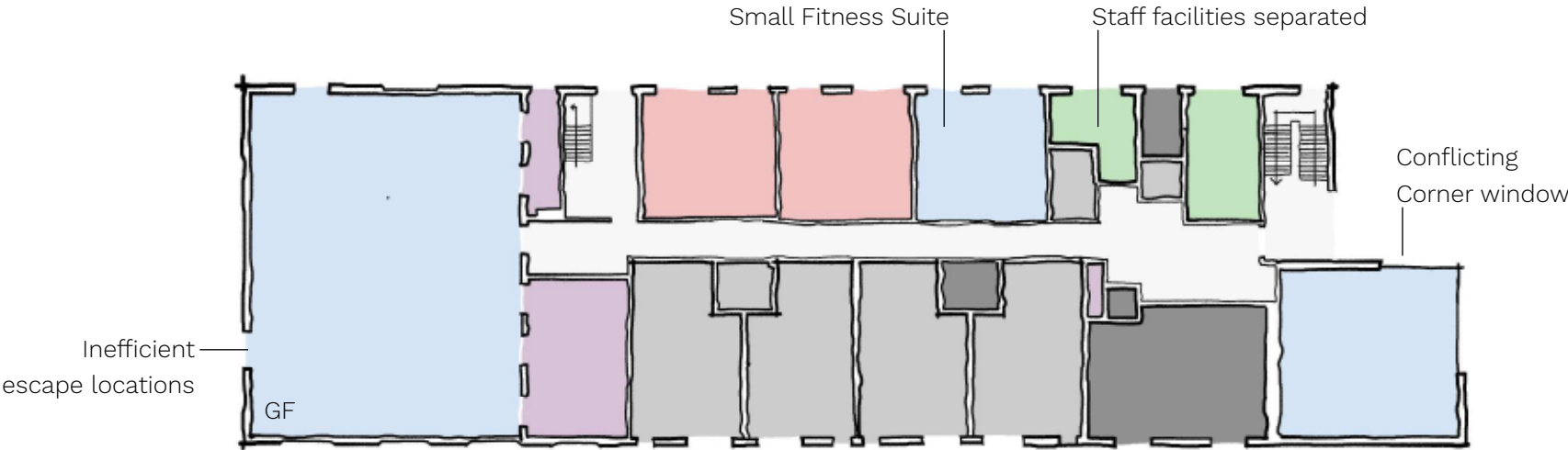


RHYTHM

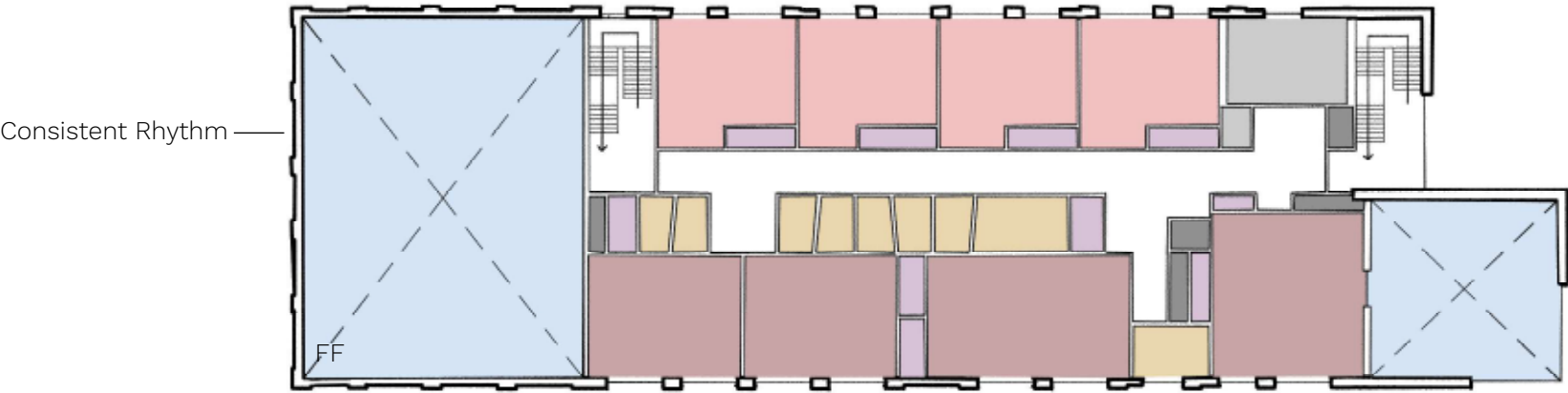




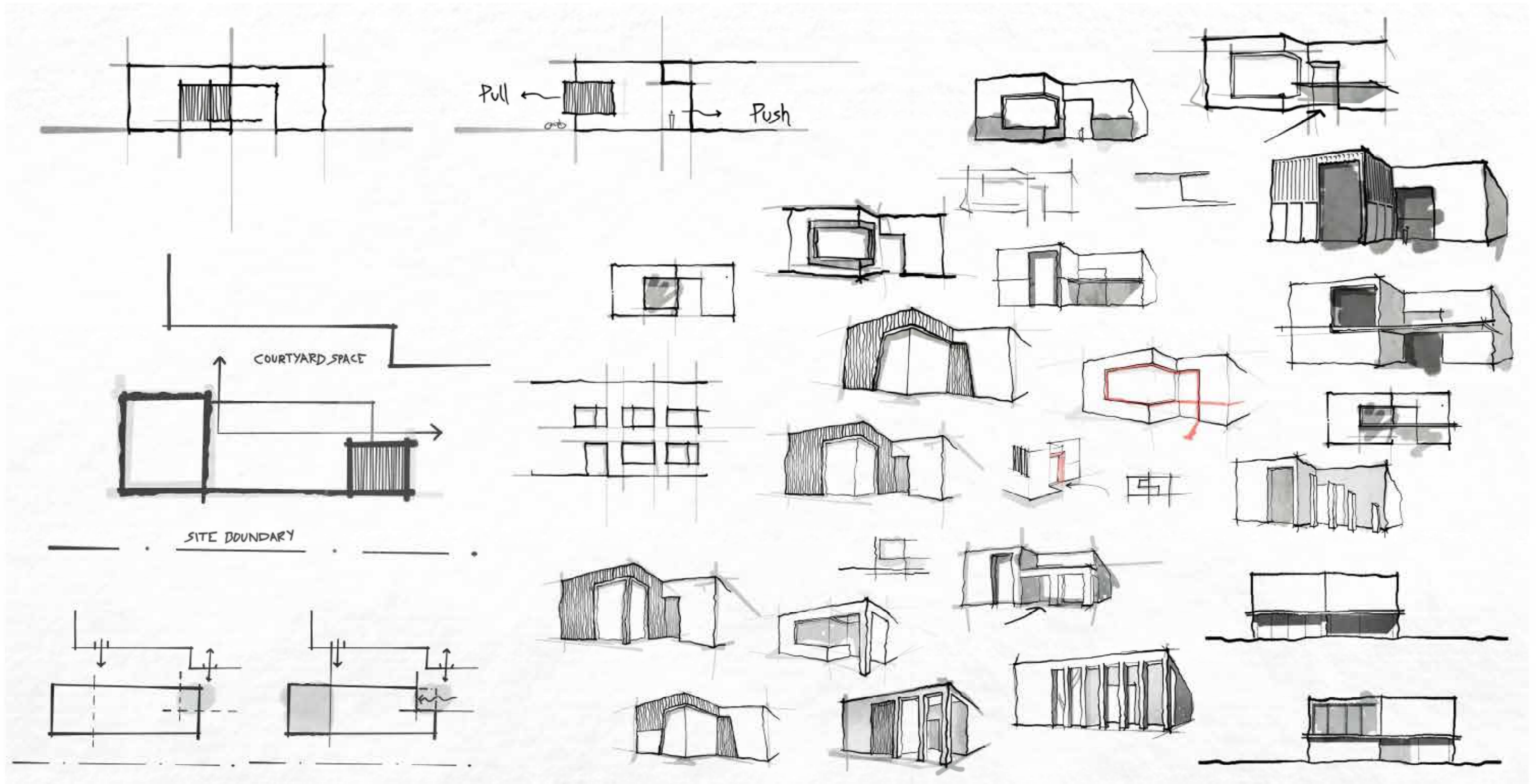
Development Sketches



Stage 2



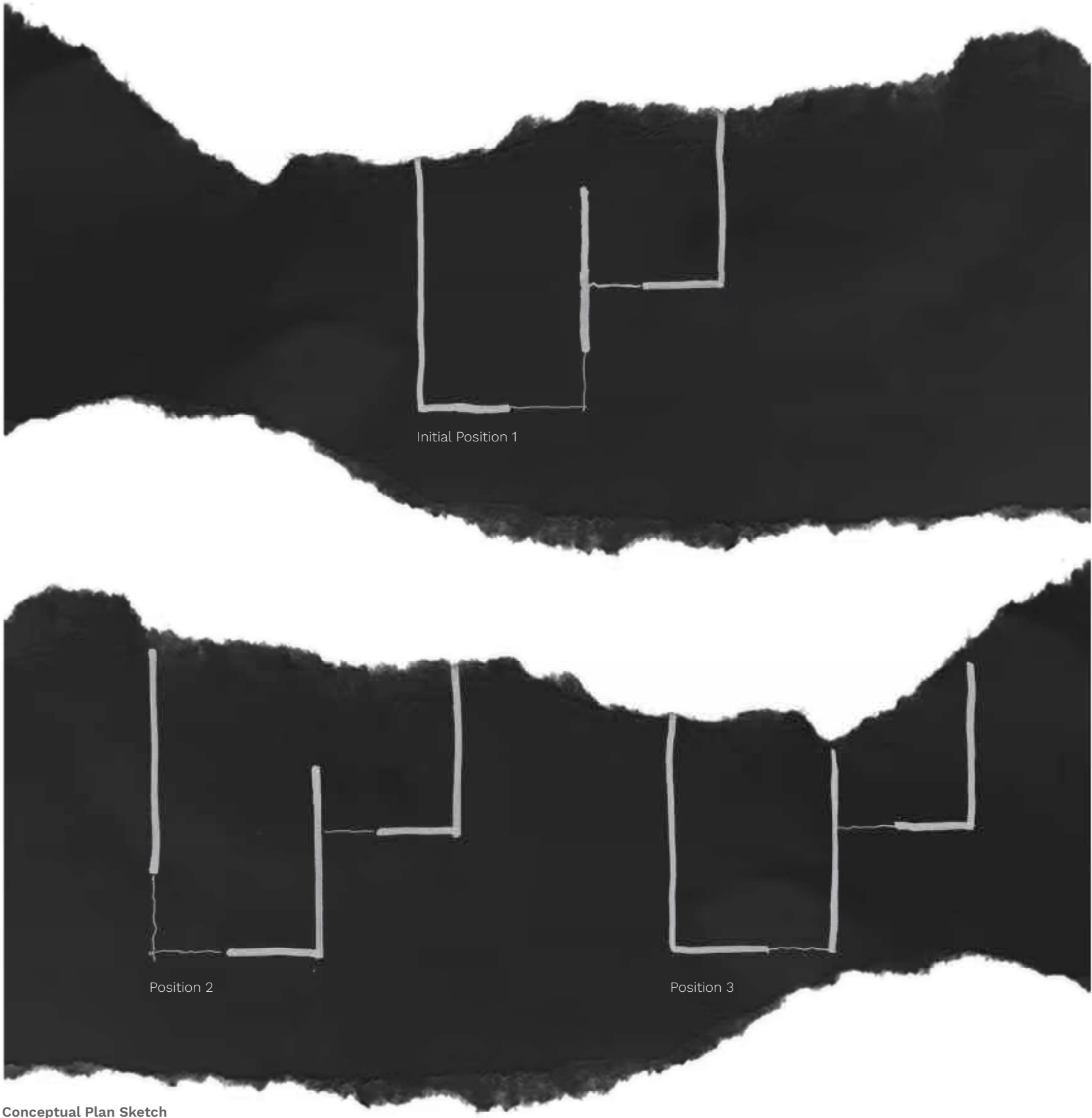
Stage 3



Creating Balance

The initial position of the front facade corner window clashed with the main entrance and canopy.

To create visual balance, the corner window has been relocated to position 2. This allows the activity studio to maintain its need for strong daylighting, provides a better view for the students approaching site from the bus drop off and aligns with the building's rhythm.



Ground Floor

The ground floor houses the main sports facilities, and staff areas.

The double height sports hall and studio act as ‘bookends’ to the smaller spaces between.

A fitness suite/weights room, and 1 general classrooms face the courtyard, while a strip of built in storage and ventilation stacks above sit between them and the corridor.

For further information on ventilation, refer to the appendix: McCann and Partners, 6868-MCP-V1-ZZ-RP-ME-2015 Stage 2 Report - Section 7 Ventilation Strategy

Changing rooms, plant, and the larger sports hall storage are housed on the wider side, facing the off-site pitches.

There are 4 main changing rooms, which can be allocated to individual classes, teams, age groups, or designated as required. Alongside these are a hygiene room, which is required in all schools, but doubles as a large assisted change or ‘changing places’ for school or community use. A second smaller accessible change/shower room is located near the entrance. These accessible rooms double as staff / referee / coach changing, separate from pupils or community teams for safeguarding.

The first aid room with en-suite accessible WC is suitable as a school ‘sick bay / nurse base’ but is also large enough for stretcher/trolley use for school and sports emergencies.

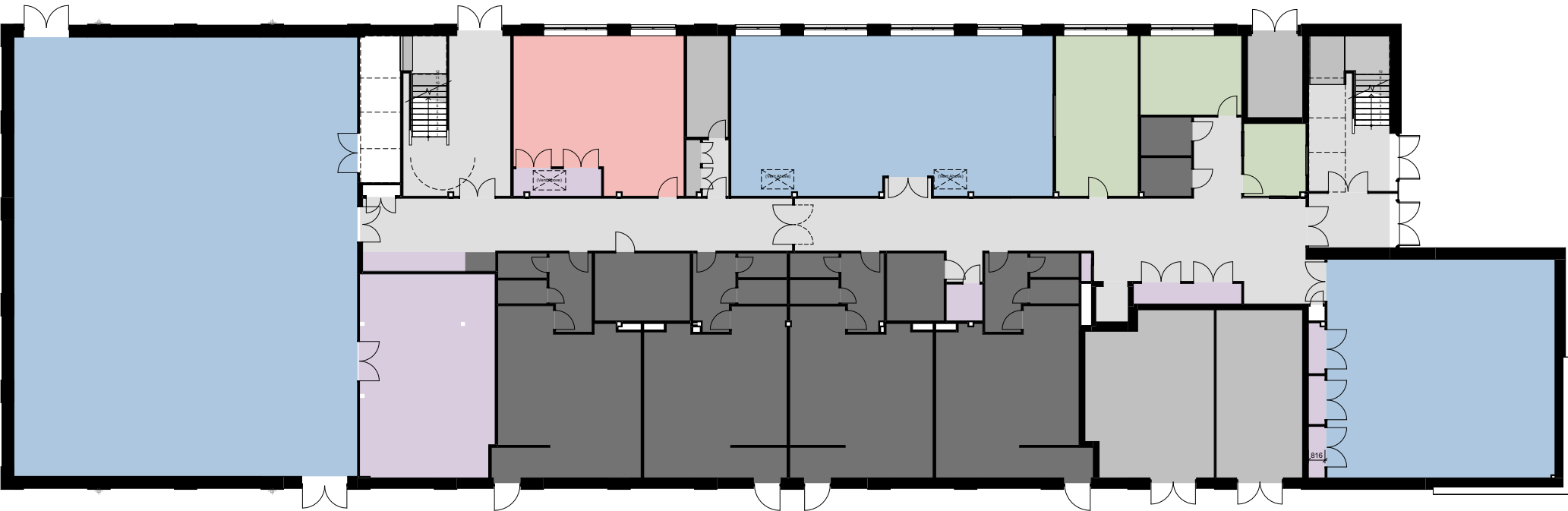
Access Points

The eastern entrance (far right of plan), forms part of the ‘secure line’ across the site, so is anticipated to be closed to pupils during the school day, but may be opened at the start and end of day for pupil and staff access. The staircase would be in use throughout the day.

The staff base is located next to this entrance, allowing it to double up as a reception area outside of school hours.

During lesson times, the northern staircase and entrance (top left of plan) becomes the main pupil access and egress, to the rest of the school via the newly formed courtyard.

Each of the changing rooms has an external door, allowing access directly to the pitches on site, and also through the existing pedestrian gate onto the public pitches if required.



*Note: following initial cost analysis, the brief was amended to reduce the size of the sports hall to a 2-court size, with potential for a future expansion.

First Floor

The first floor houses general classrooms, and a suite of specialist performing arts spaces.

As with the ground floor classrooms, a strip of storage and ventilation sits between them and the corridor.

The drama studio overlooks the top of the activity studio, offering opportunity to use this as a control room for larger performances.

The recording room sits between the larger music and drama rooms, allowing it to be used for both subject to acoustics, and offering good supervision.

The music classrooms are all shown has having 1 practise room accessed directly off each, with the rest of the practise spaces accessed via the corridor for flexibility. The exact arrangements can be amended at a later stage, following consultation with school and department staff. Multiple small rooms can also be combined if this suits the school’s teaching methods.

Partitions

Walls between performing arts rooms are slightly thicker than other partitions, to allow for their higher acoustic requirements.

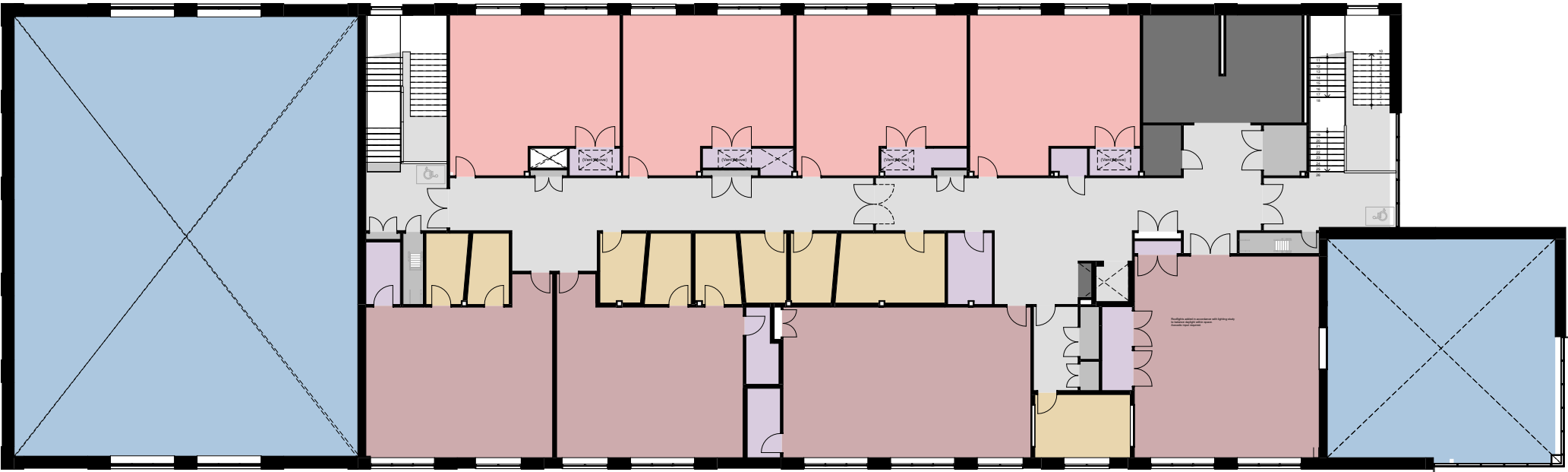
The irregular wall orientation between the practise rooms increases acoustic performance, as non-parallel walls help reduce reverberation.

Walls and partitions between the sports hall, studios, and stair also have a higher thickness to make allowance for structure, ensuring walls are flush on both sides with no protruding columns.

Additional consideration will need to be given to the wall between the sports hall and music room to account for impact sound.

Toilets

A block of pupil toilets, alongside an accessible / staff toilet, and drinking fountains, are also housed on the first floor as this is where the majority of pupils would be. Refer to WC layout options “” on page 89 for more details.



10m

Access

The roof is designed as a flat roof for lowest overall height, and to reflect the majority of buildings on the site. A parapet maximises safety for any maintenance work, reducing the need for fall protection systems on certain maintenance jobs.

Two roof hatch, opposite ends of the proposal, provide primary access and secondary means of escape in emergency.

As an alternative option, the northeast staircase can continue up to the roof, with a secure door at first floor to prevent unauthorised access.

An area has been reserved for roof mounted plant, if required. This is located so it doesn't sit above the drama or activity studios, which have wider clear spans and therefore would need deeper beams to support the plant's additional weight.

Carbon Reduction

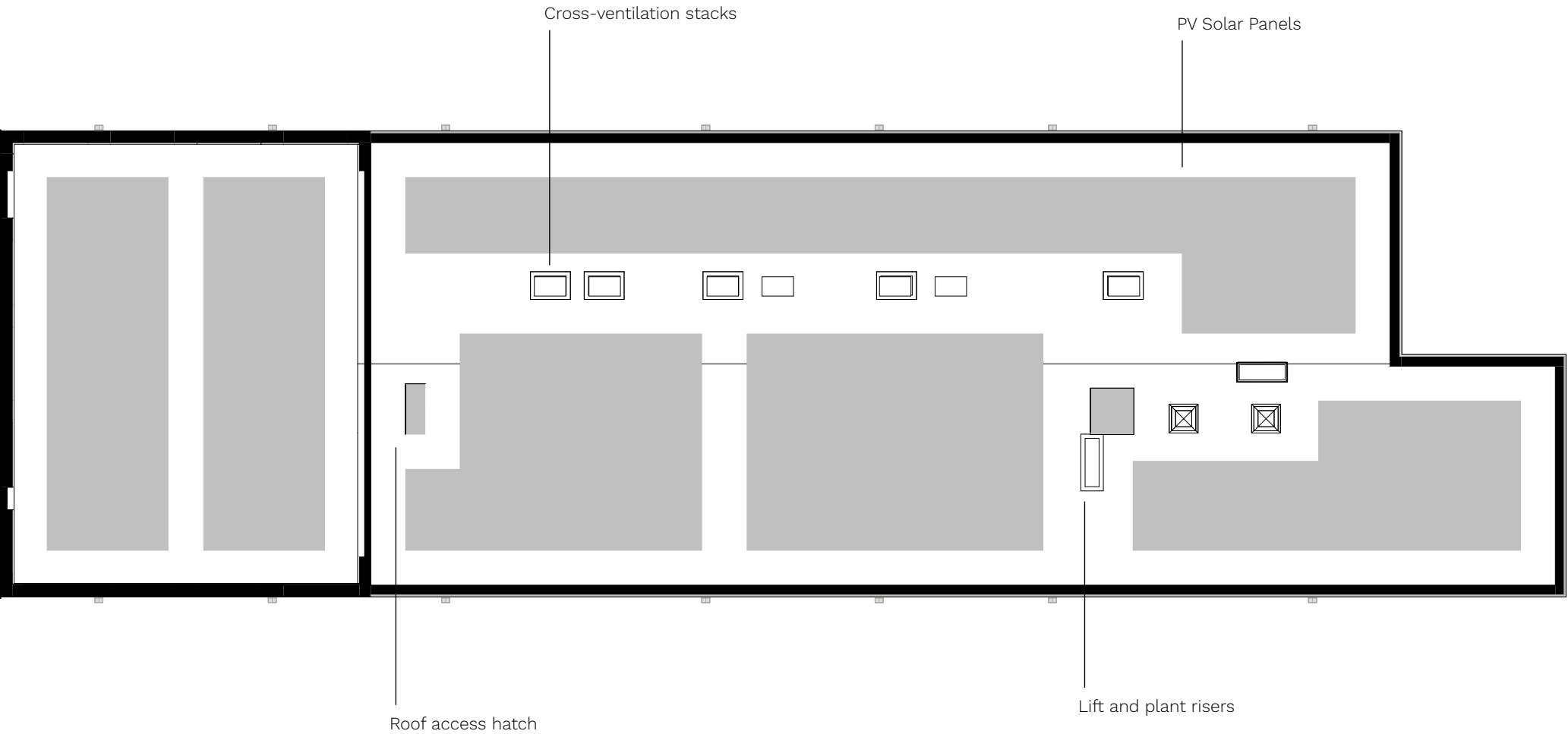
The natural cross-ventilation stacks from the classrooms below, terminate above the roof.

Roof lights have also been included, to provide natural light to the inner practise rooms at first floor.

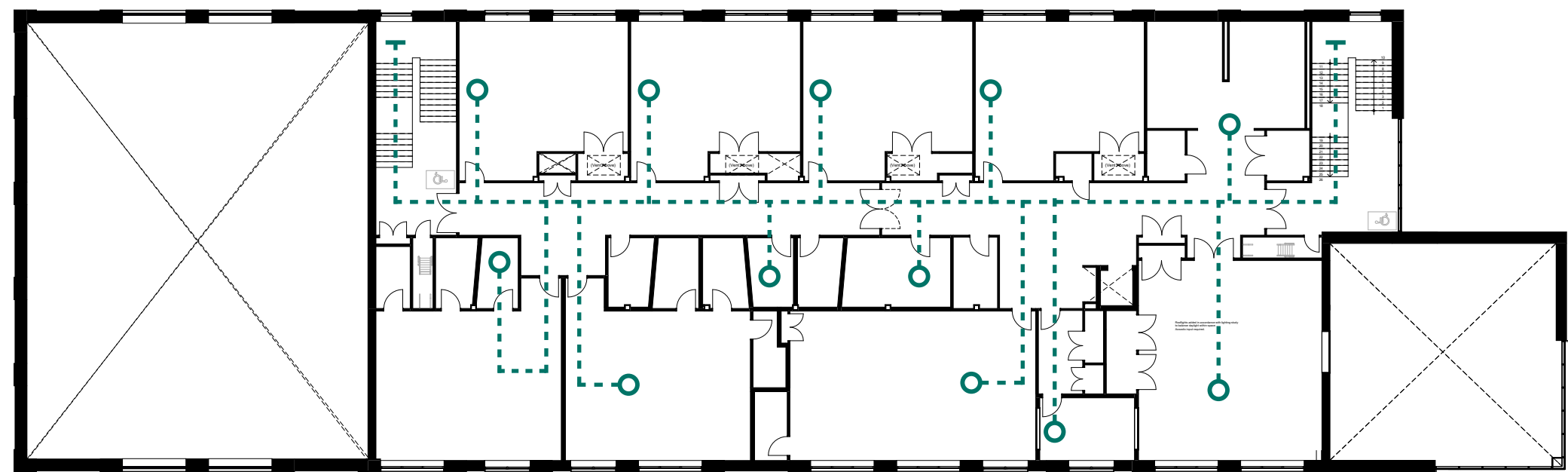
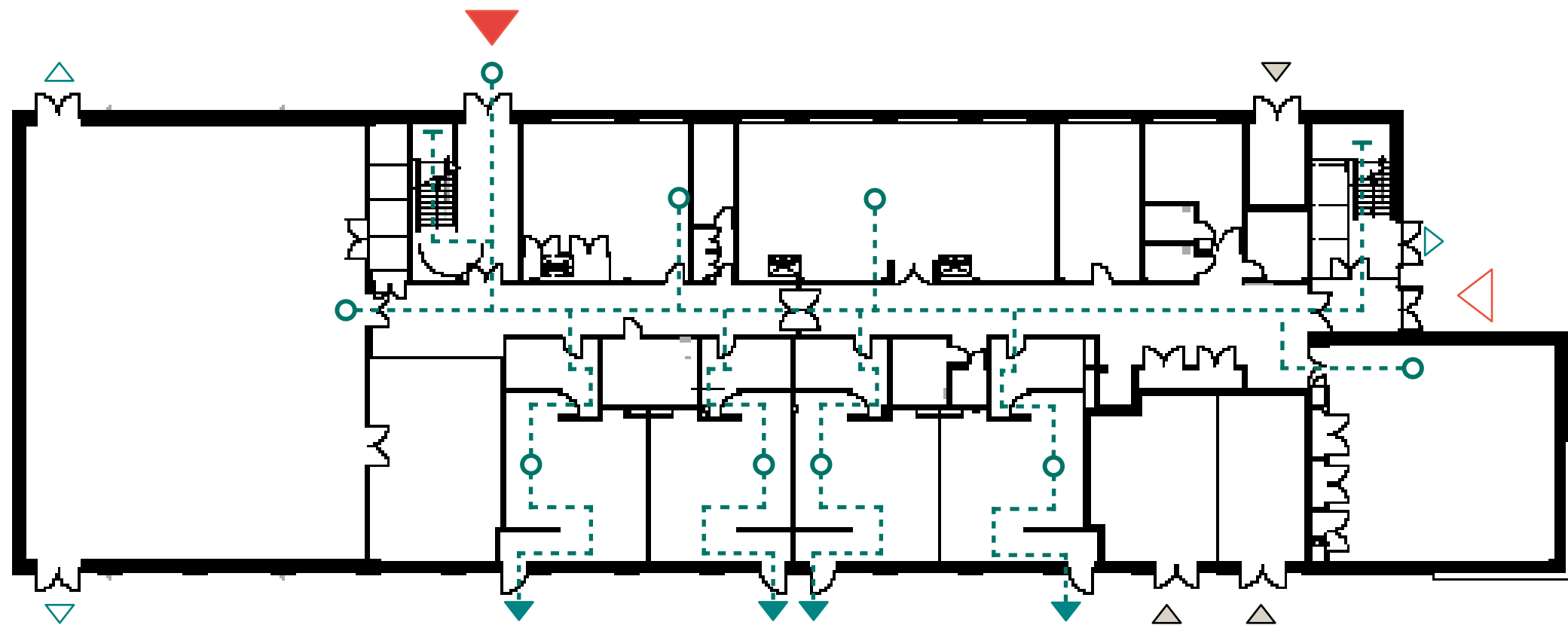
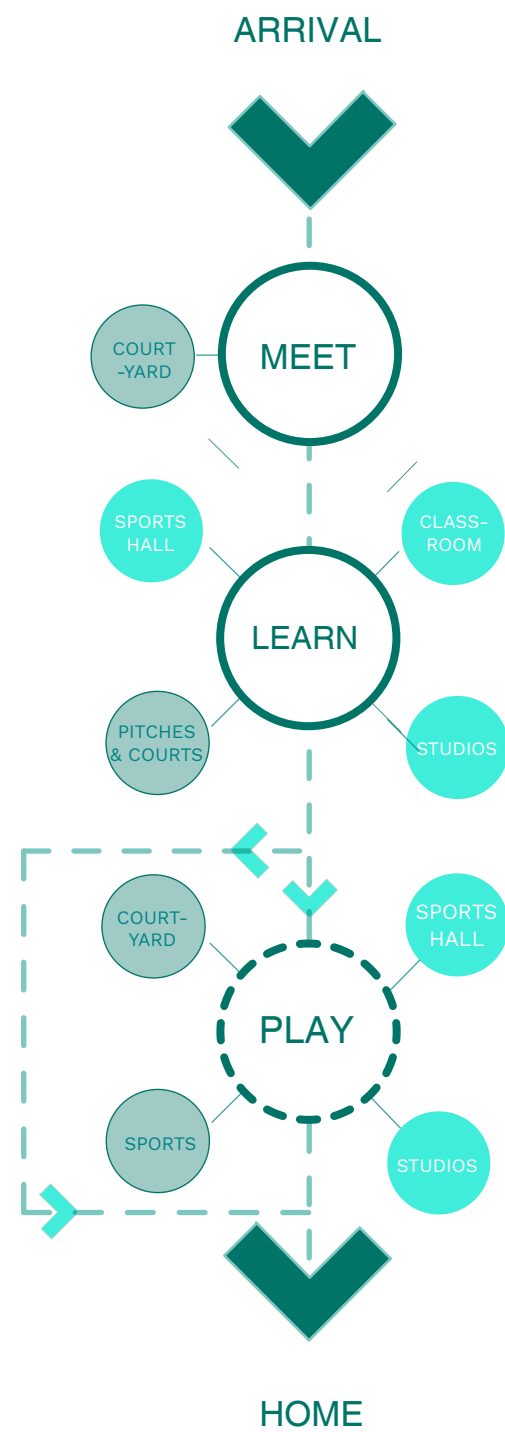
A green roof

Indicative solar photovoltaic panels have also been shown, although exact requirements and configuration will be developed at later stages.

For further information, refer to McCann and Partners' Caerleon Comprehensive School Stage 3 Report 6868-MCP-V1-ZZ-RP-ME-2015 section 4.03 Photovoltaics

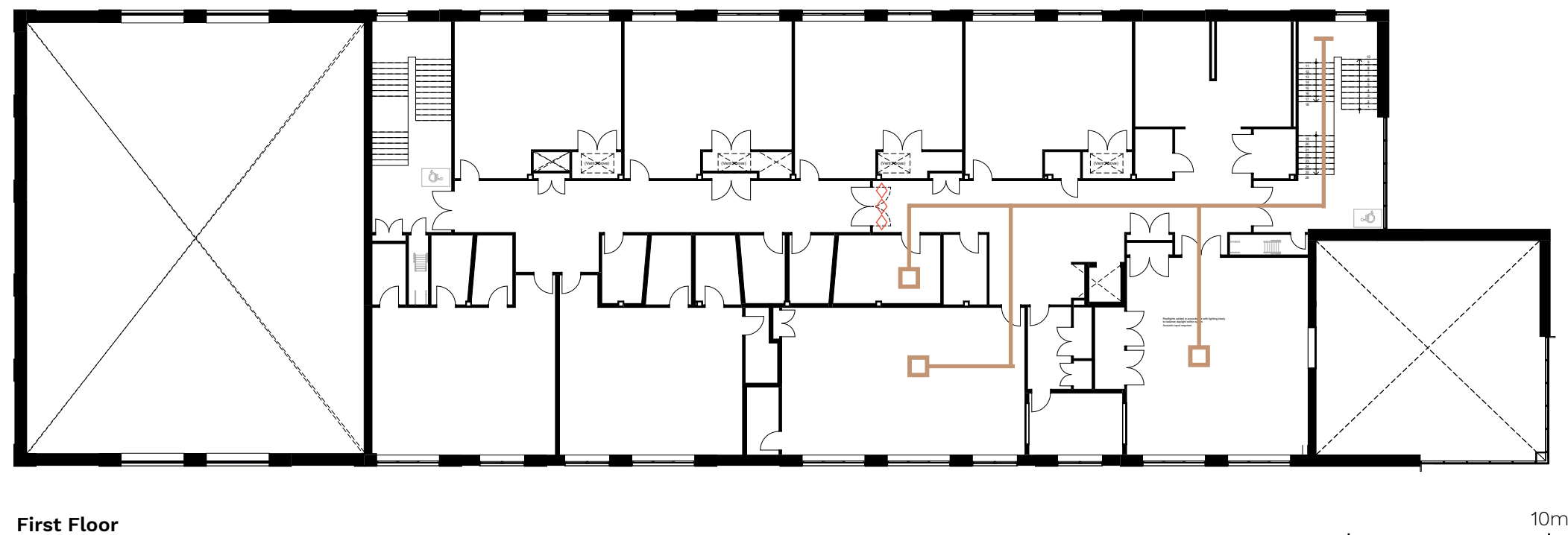
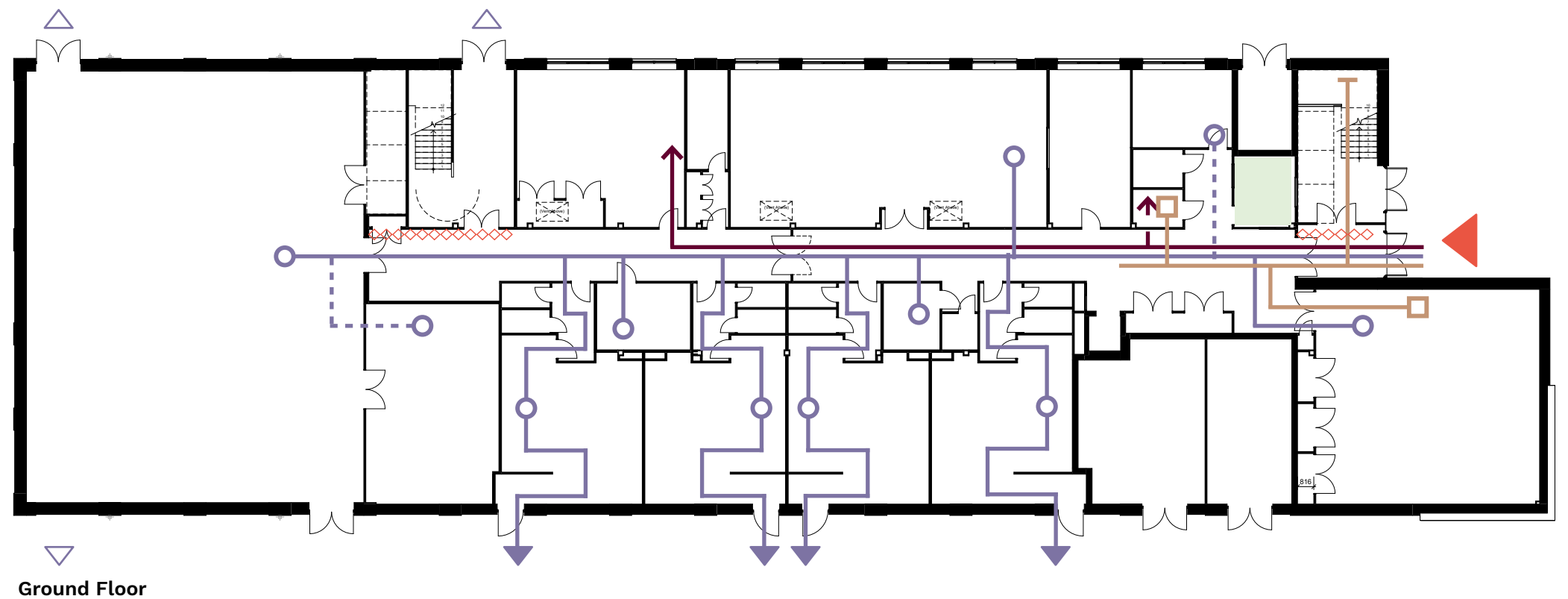
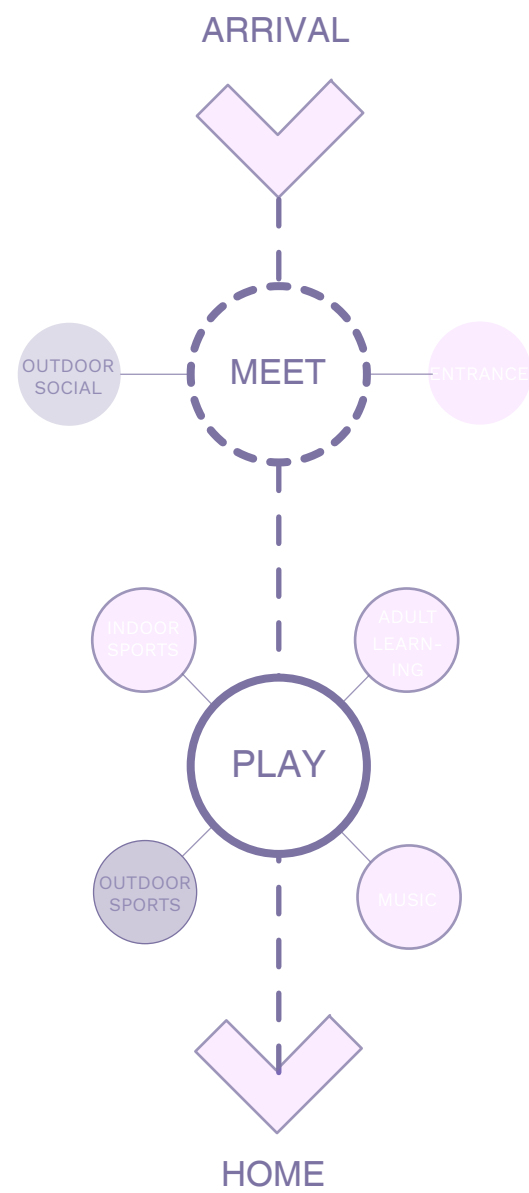


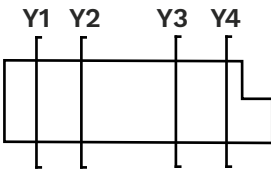
10m



First Floor

10m





Section Y1 Coloured



Section Y2 Coloured

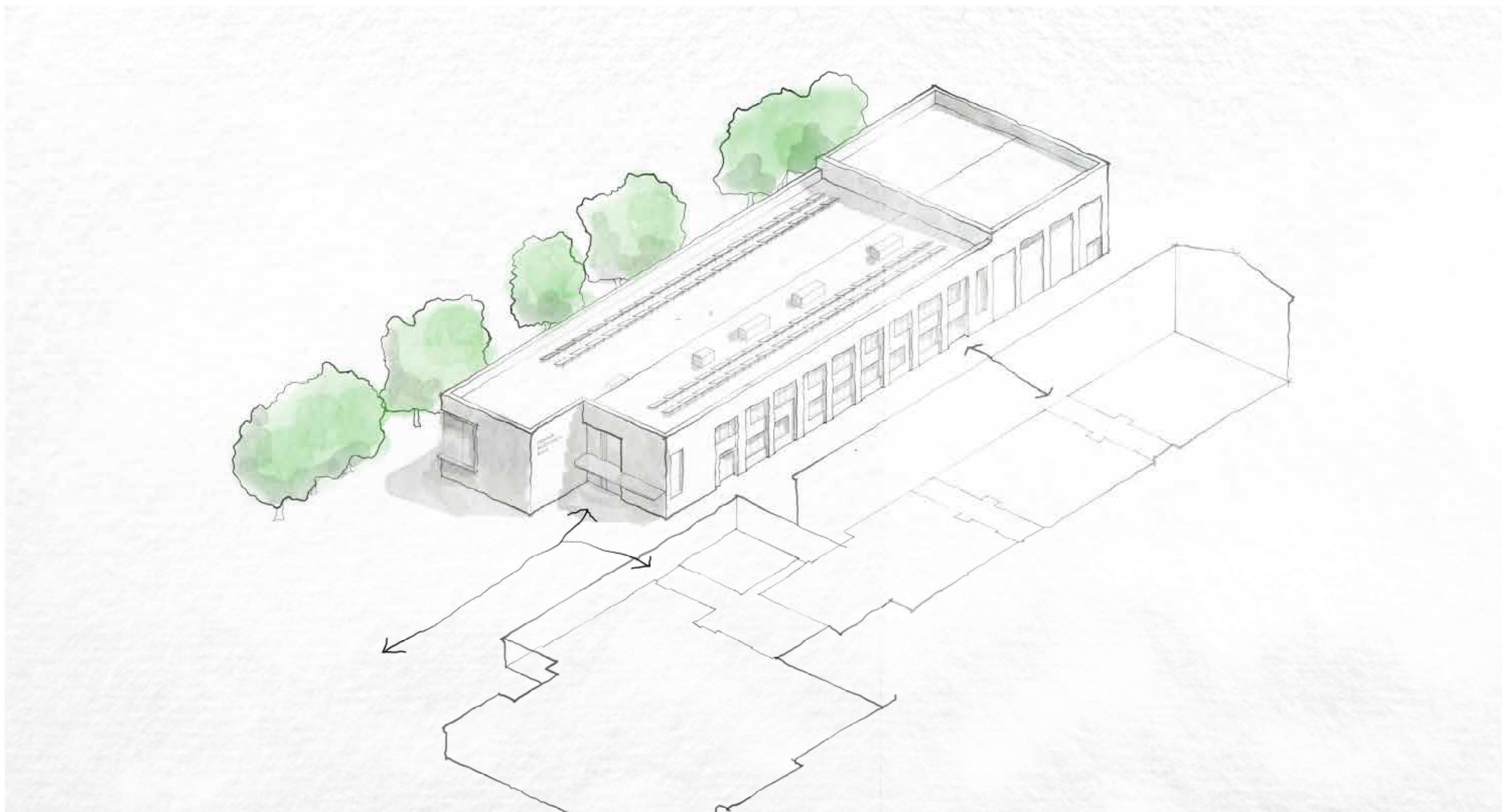


Section Y3 Coloured



Section Y4 Coloured





07

Facade and Materiality



External Materials

The design proposal features one primary volume, with large areas of repeating classroom windows allowing natural daylight and ventilation.

To prevent the facade looking arbitrary, the material chosen will need to provide a strong rhythm and consistency.

The design intention is to visually differentiate the entrance, activity studio from the remainder of the facade with large feature translucent and glazed wall. To ensure the proposal looks balanced, the material chosen will need to be versatile in multiple forms and orders.

Taking into account the programme, the material chosen will need to be suitable durable and robust to withstand a school environment.

Brick was chosen as the most suitable material choice for its versatility, durability and reflection within the surrounding context.

Brick
Main Facade Component

To link the new school block with the existing school infrastructure, brick was chosen as the main external material.

Brick is a versatile material that works well within educational settings as it is robust and durable. It also has low associated maintenance costs, therefore, could provide future cost savings, as the material is not susceptible to extreme damage from weathering.

Aesthetically brick works well in conjunction with contrasting materials.

The image below is from Ysgol Pen Rhos, HLM Architects

Charred Timber
Sports Hall Option

To visually differentiate the sports hall from the rest of the new block, contrasting external materials are to be investigated.

Timber is not commonly found as a facade material in the locality. However, it has been suggested that the Roman’s used charred timber frequently to combat decay, weather and age, linking back to the Roman origins of Caerleon.

A few of the advantages of charred timber include: increased durability, improved weatherproofing, enhanced fire resistance, added strength and aesthetic appeal when compared to alternative timber solutions.

Alternatively a vertical curtain walling panelling system could be used in a similar arrangement. The decision is dependant on the desired aesthetic finish and material qualities.

The image below are sourced from: Dezeen - VVKH Architecten (<https://www.dezeen.com/2016/12/06/vvkh-architecten-villa-meijndel-the-hague-netherlands-charred-timber/>)

Stone
Sports Hall Option

Similarly to charred timber, stone was suggested to visually differentiate the sports hall.

Unlike, charred timber stone has a strong presence within Caerleon and is even used briefly on the existing school site. The use of stone panels would link the history of Caerleon in a contemporary way. Stone is commonly used in conservation areas as it has a natural finish that complements and harmonises with its surroundings.

If a stone cladding system is used, panels can easily be interchanged for coloured ones, increasing the facade possibilities and avoiding difficult and expensive connecting details. The flexibility of form also promotes the use of grid or random pattern design.

A disadvantage is the comparative increased cost of the material.

The image below are sourced from: Architizer - Carehotel Middelpunt (<https://architizer.com/projects/carehotel-middelpunt-3/>)

	BRICK	TIMBER	STONE
ORDER	✓	✓	
ROBUST	✓		✓
RHYTHM	✓	✓	



Translucent Cladding

Activity Studio Option

Translucent cladding adds a prominent visual feature to the facade drawing attention to the activity studio and building entrance, creating a welcoming gesture. It also provides diffused light for internal environments which is good for activity spaces.

The colours and tones can be specifically designed to match the suggested colour palette.

The image below are sourced from:
Steven Holl Architects, Nelson-Atkins Museum of Art
(<https://www.architonic.com/en/story/sascha-peters-translucent-insulated-glass/7000122>)



Curtain Walling or Large Glazing

Classroom Option

The use of curtain walling or large glazing elements splits up the building mass and has the potential to make the building more visually appealing.

As previously mentioned, a lot of the existing school buildings utilise a combination of curtain walling and glazing. The elevation facing the courtyard and existing school infrastructure could benefit from a strategy that utilises curtain walling to provide pops of colour, encouraging visual links between the new and the existing.

The image below are sourced from:
Barjane - Aeroliansparis Logistics Park (<https://www.barjane.com/aerolians-paris-logistics-park/?lang=en>)



Solar Shading

Music Rooms

To split the horizontal mass of the new building, solar shading which projects slightly from the facade could be utilised to create a more dynamic and engaging elevation.

The south-east elevation borders the public fields. There is merit to explore a more engaging facade on the fourth elevation as this is one of the key public views. The addition of solar shading may also be a more sustainable option that reduces future operational costs and the need for artificial lighting.

The images below are sourced from:
Baunetz Wissen - Grundschule in Neubiberg
(<https://www.baunetzwissen.de/sonnenschutz/objekte/bildung---forschung/grundschule-in-neubiberg-781197?img=6&layout=galerie>) Buildcorp Commercial - Dandenong High School (<http://www.buildcorpcommercial.com.au/blog/project/dandenong-education-precinct/>)



07 Facade and Materiality
Stage 2 - Material Combinations

Early stage material investigations showed how the proposal could be visually broken down into fragments.

Full brick was selected as preferred for its coherency and practicality in design.



Full Timber



Split Stone

Complex cladding to brick detail



Incoherent split



Split Timber



Low level timber lacks robustness



Box Shading



Vertical vs horizontal order clash



Vertical Shading

Full control of order and rhythm



Robust material suitable for school site

Full Brick

Visual Interest

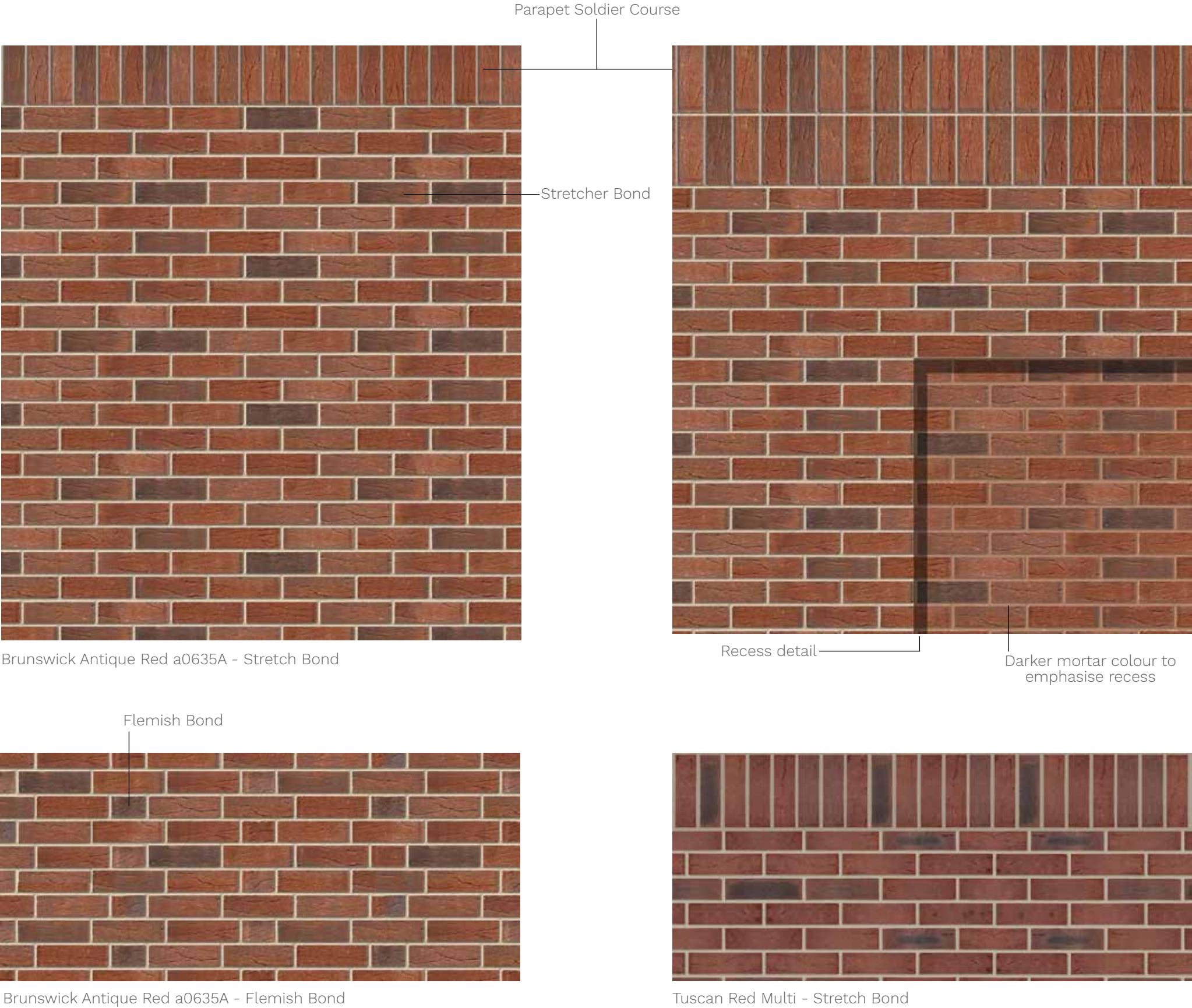
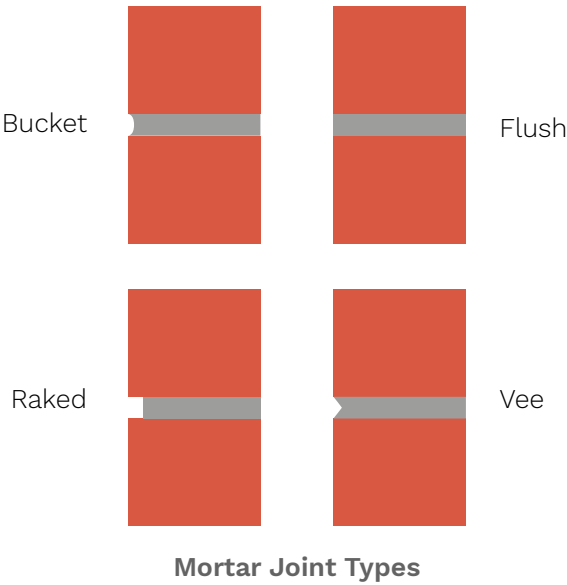
After analysis of material combinations, a full brick option has been developed further as the preferred option.

Whilst initially chosen as the most suitable material choice for its versatility, durability and reflection within the surrounding context, brick also provides greater cost effectiveness, efficiency in detailing and it meets all 3 of the driving principles.

(Order, Robust, Rhythm)

Options to create visual interest in the facade include experimenting with the brick colour or texture, using different brick bond types or joints and adding soldier courses at lintel or parapet height.

The following precedent studies provide a catalogue of the possibilities for the application of brick in similar school buildings.

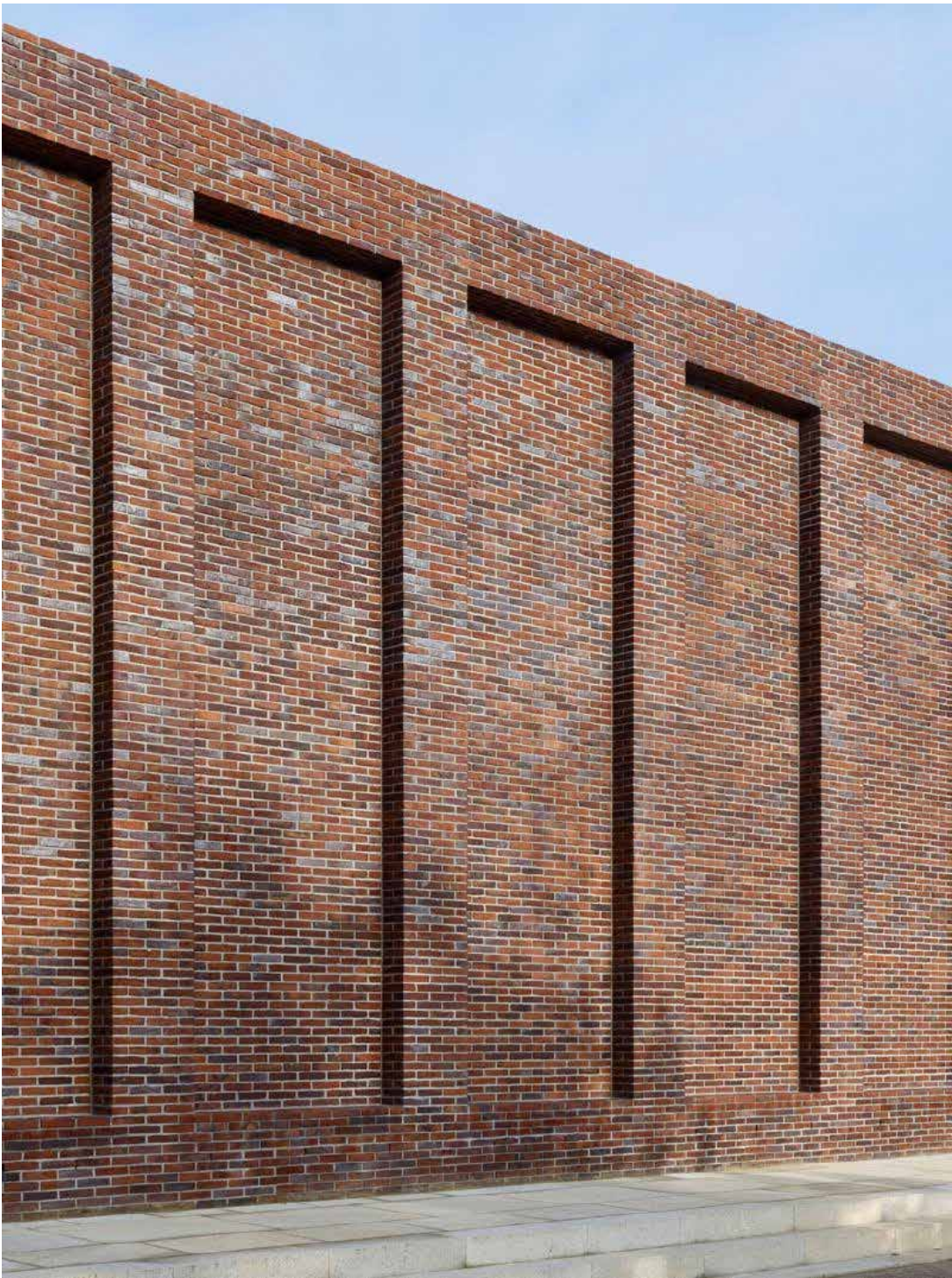




Window reveals and integrated shading surround
Montreal Duplex
Naturehumaine



Brick details



Brick with consistent Rhythm
Jacobs University Sports Centre
Dietrich Architects + Ingenieure, Max Dudler

07 Facade and Materiality

Precedent - Brick with vertical recesses - Godolphin & Latymer Sports Building - Walters & Cohen



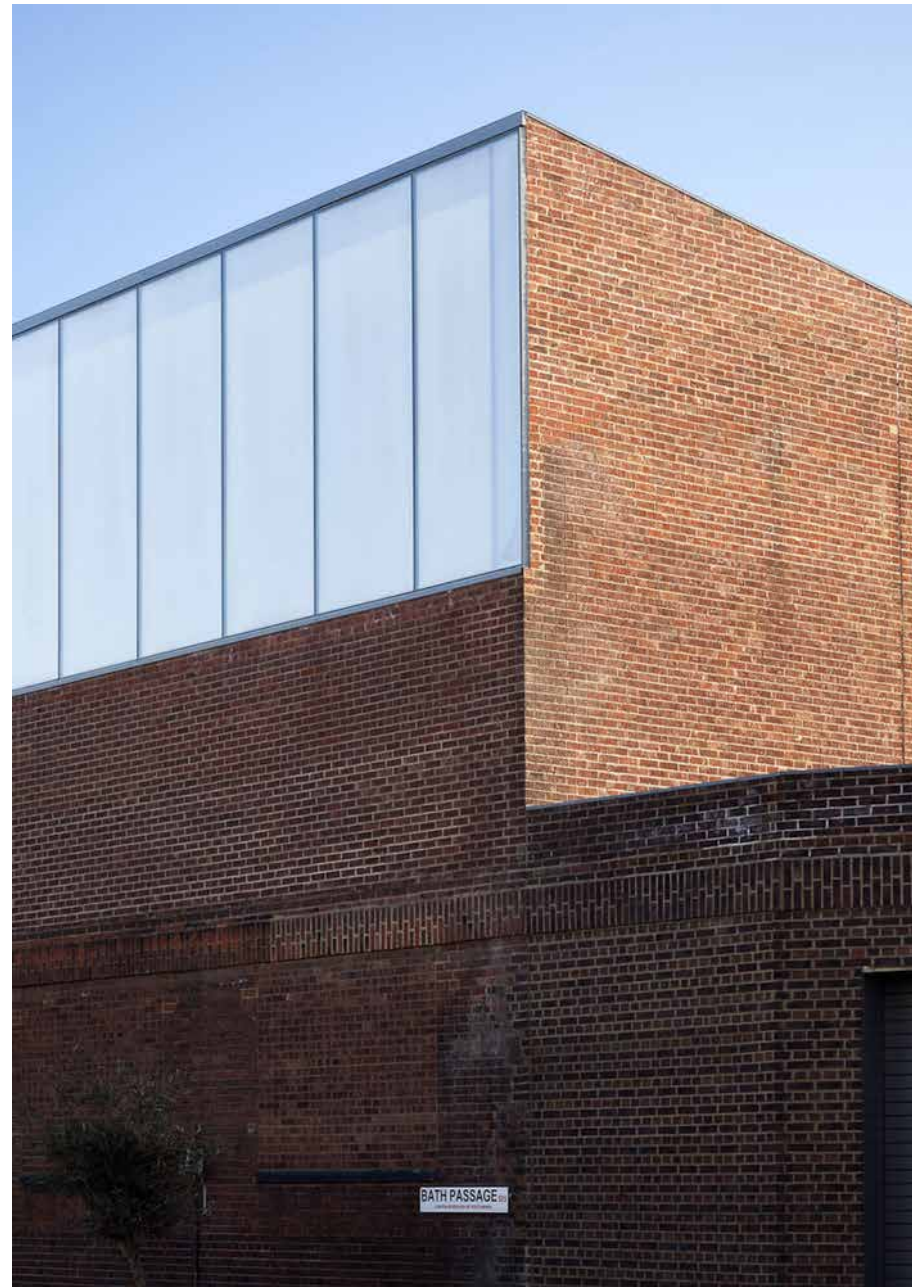
07 Facade and Materiality

Precedent - Brick with consistent Rhythm - Jacobs University Sports Centre - Dietrich Architects + Ingenieure, Max Dudler



07 Facade and Materiality

Precedent - Statement Window - Kapoor Studio - Caseyfiero Architects



07 Facade and Materiality

Precedent - Soldier Course Banding & Repeated Vertical Rhythm - Queen's University Belfast Student Hub - Todd Architects





Window Recess

The Design proposals programme includes departments which require a variety of different room shapes and sizes. This initial differentiation prevents external openings from aligning naturally.

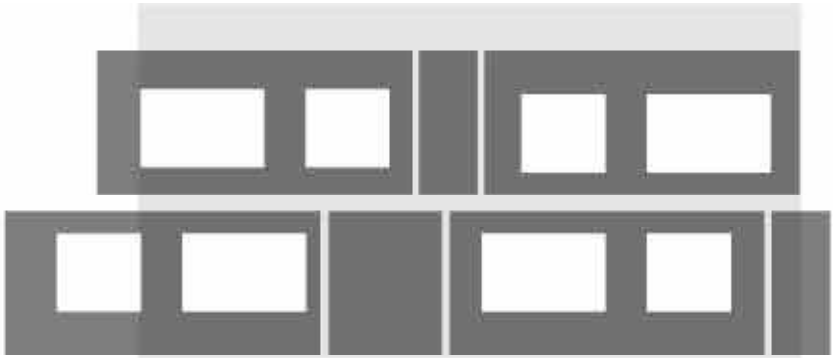
In response to this, all windows and doors have been aligned through a grid system, preventing the window positions seeming arbitrary and creating a consistent Rhythm throughout the whole facade.

This early concept has been experimented and expanded upon, being used as a design driver to coordinate and order a robust rhythm through the full design proposal.

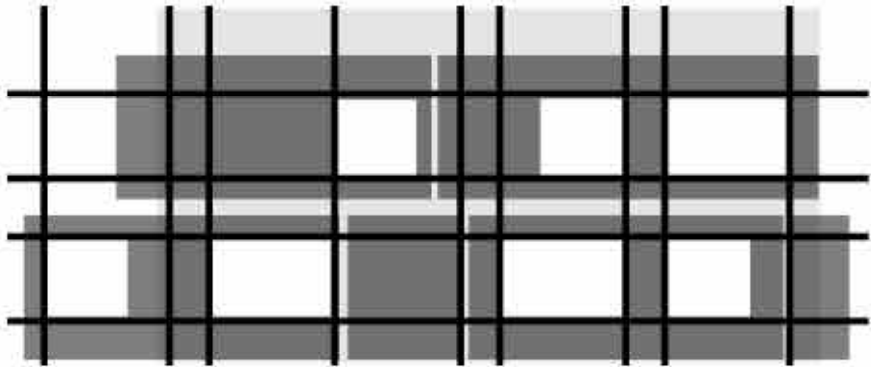
Window Recess



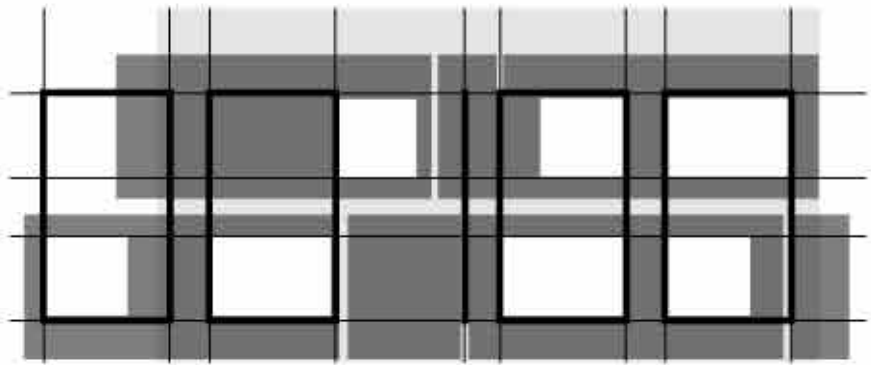
Context Recap
(p.18)



Floor variation



Rhythm grid



Vertical Emphasis



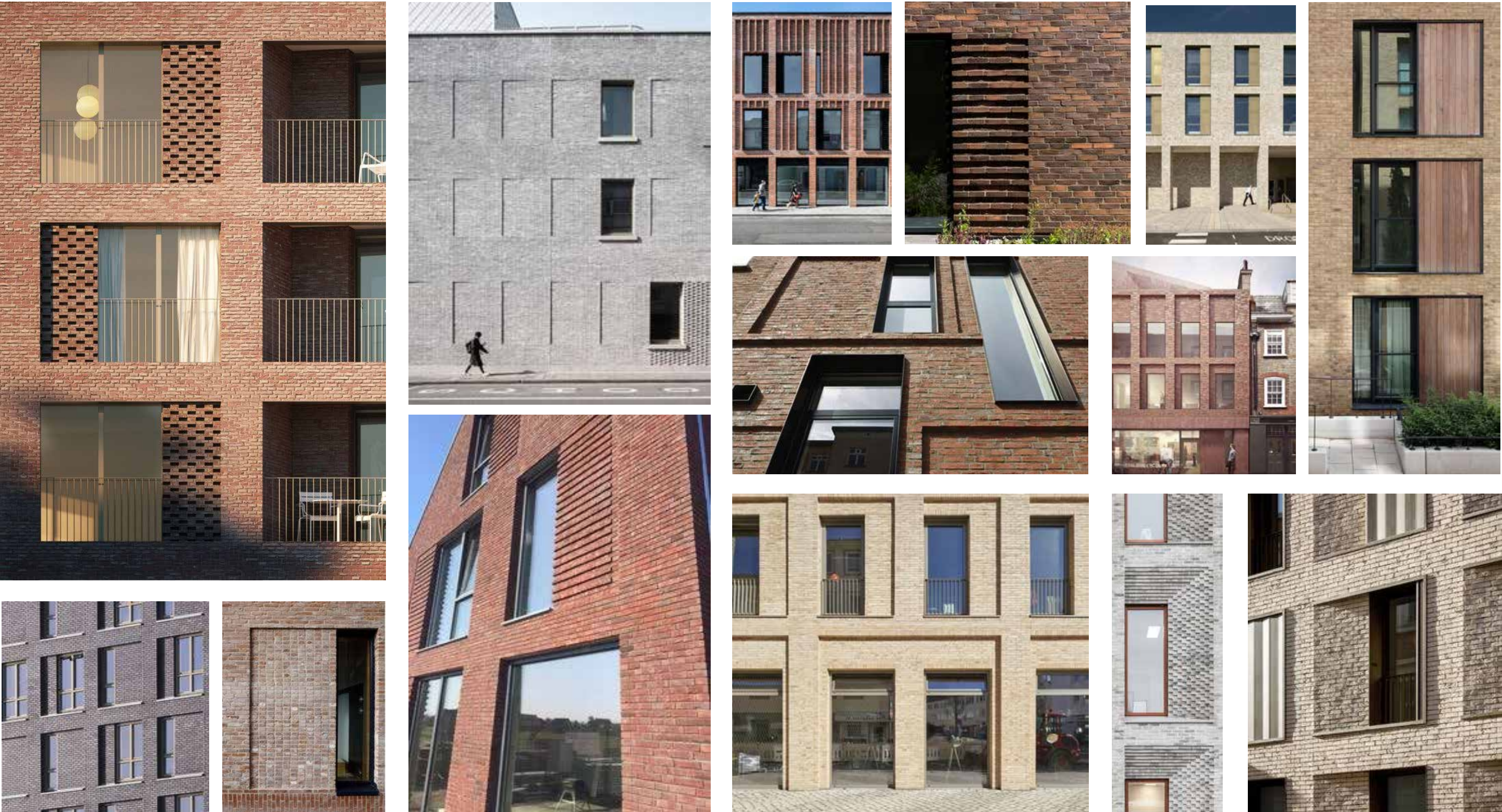
Initial

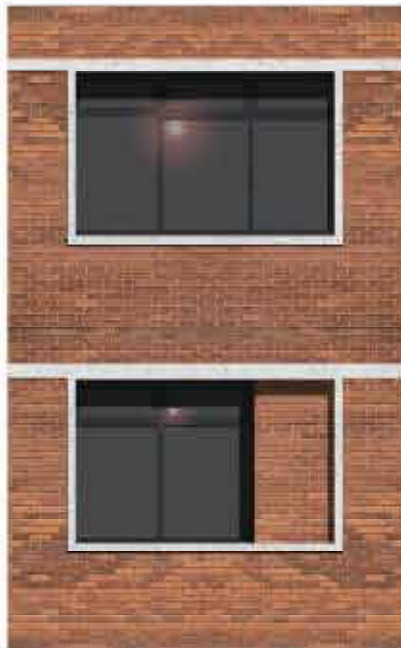
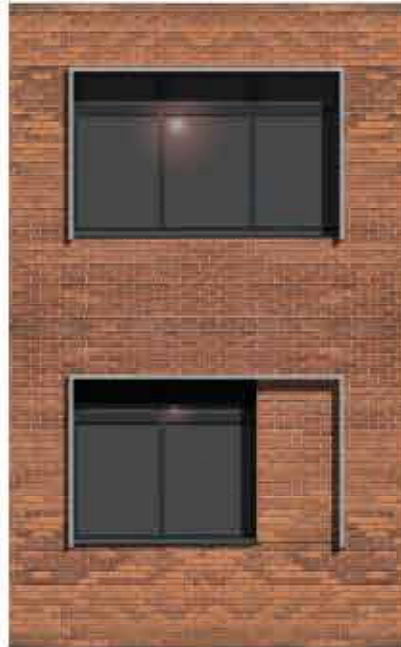


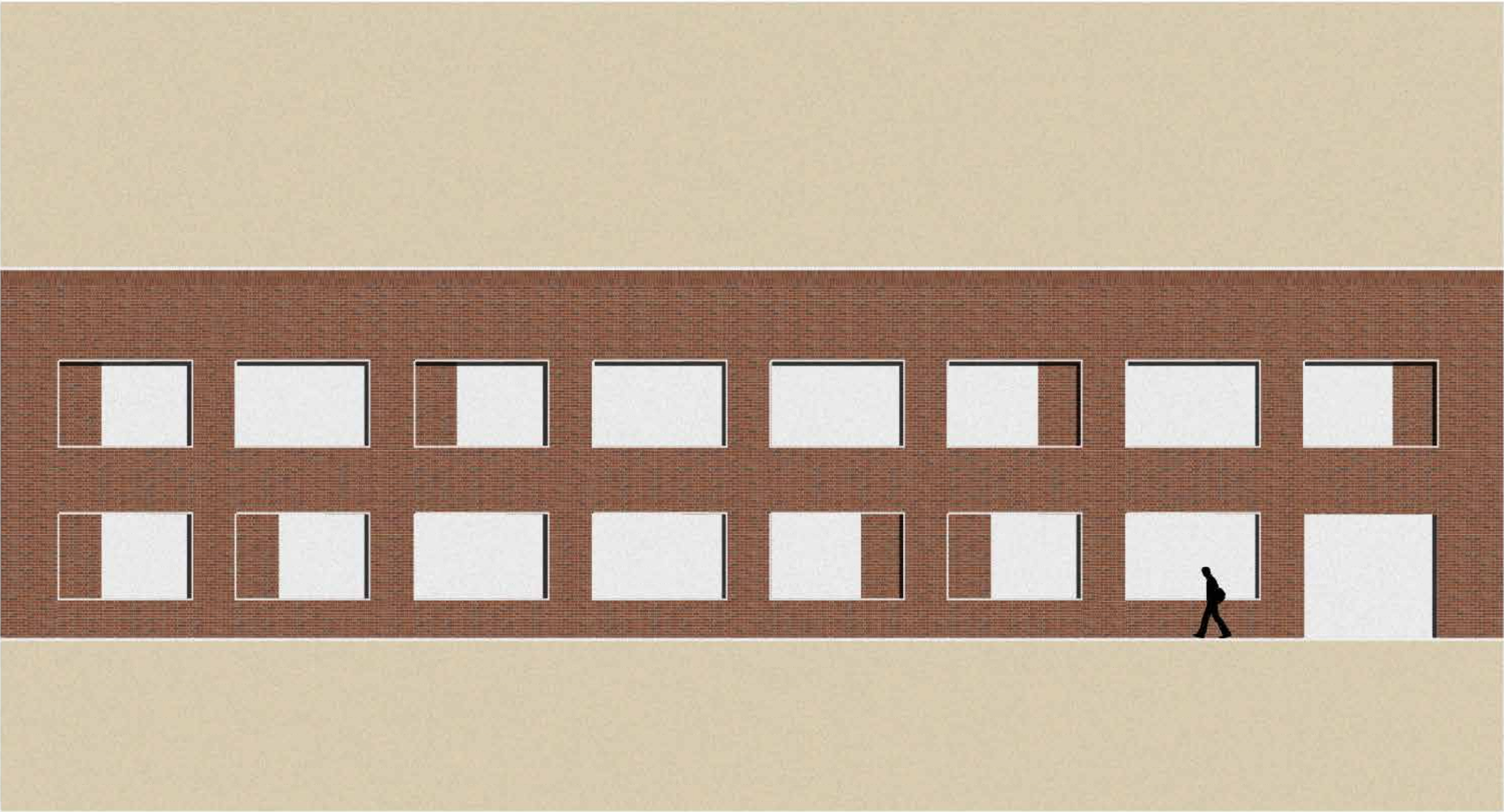
Recess

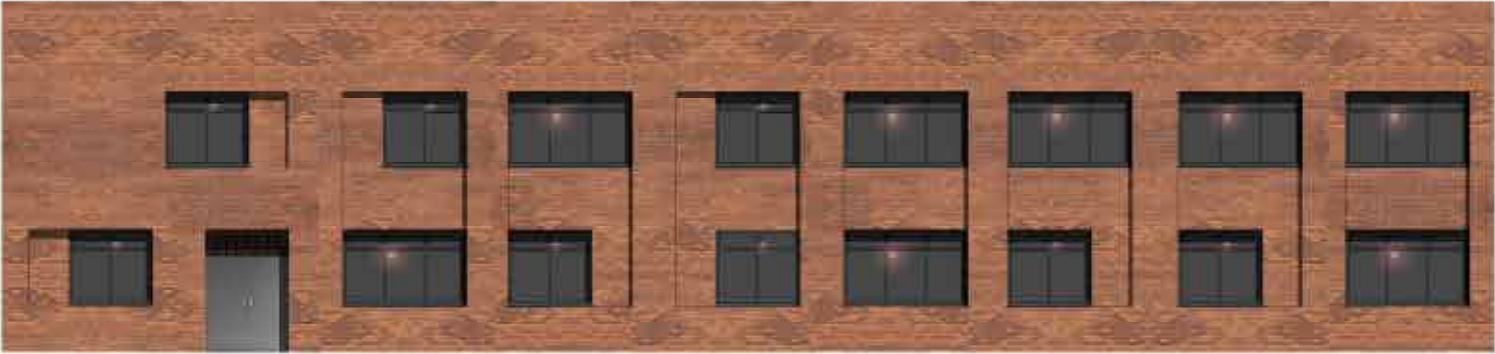


Grouped Recess









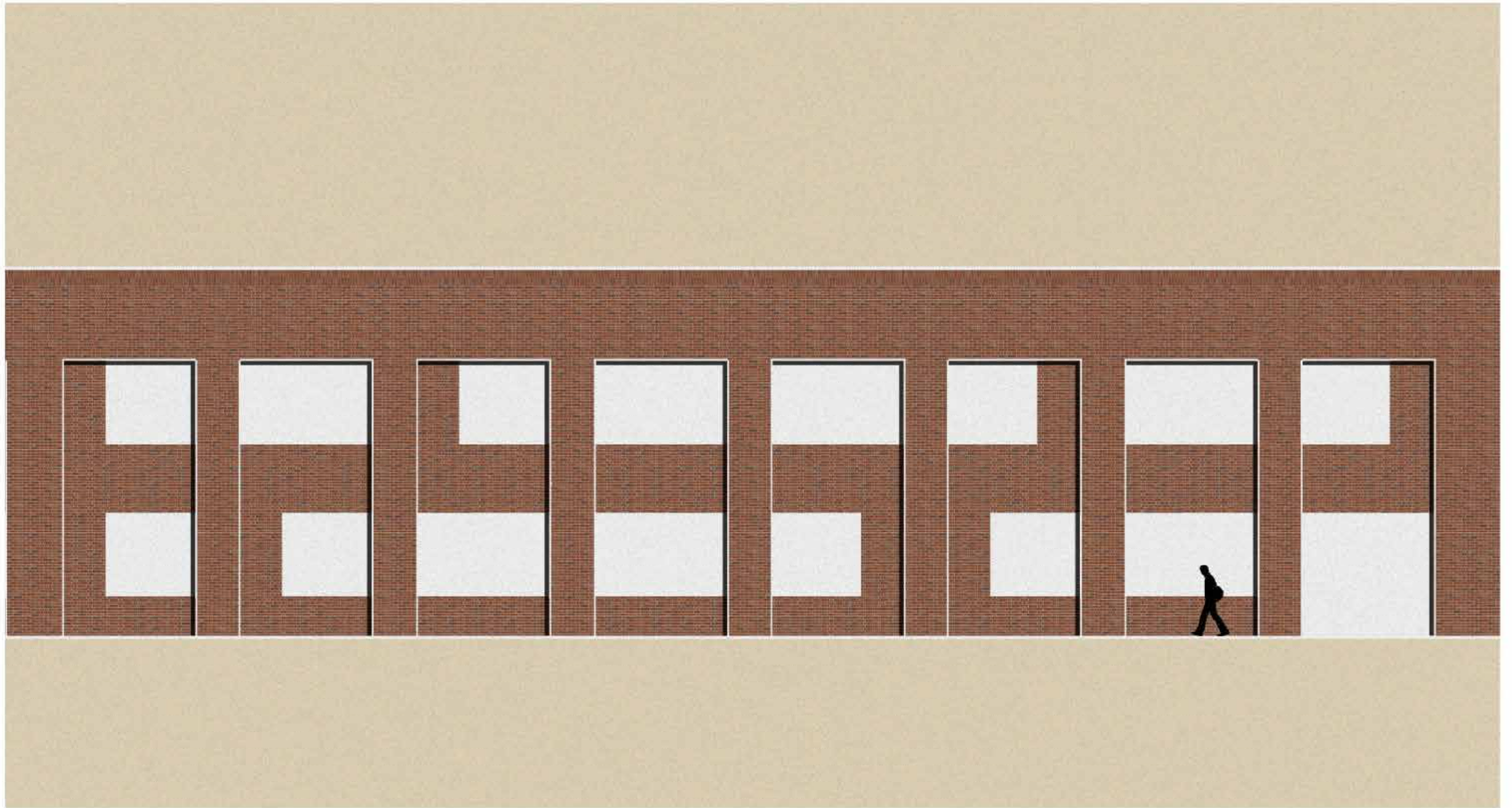
Sill to Lintel



Ground to Lintel

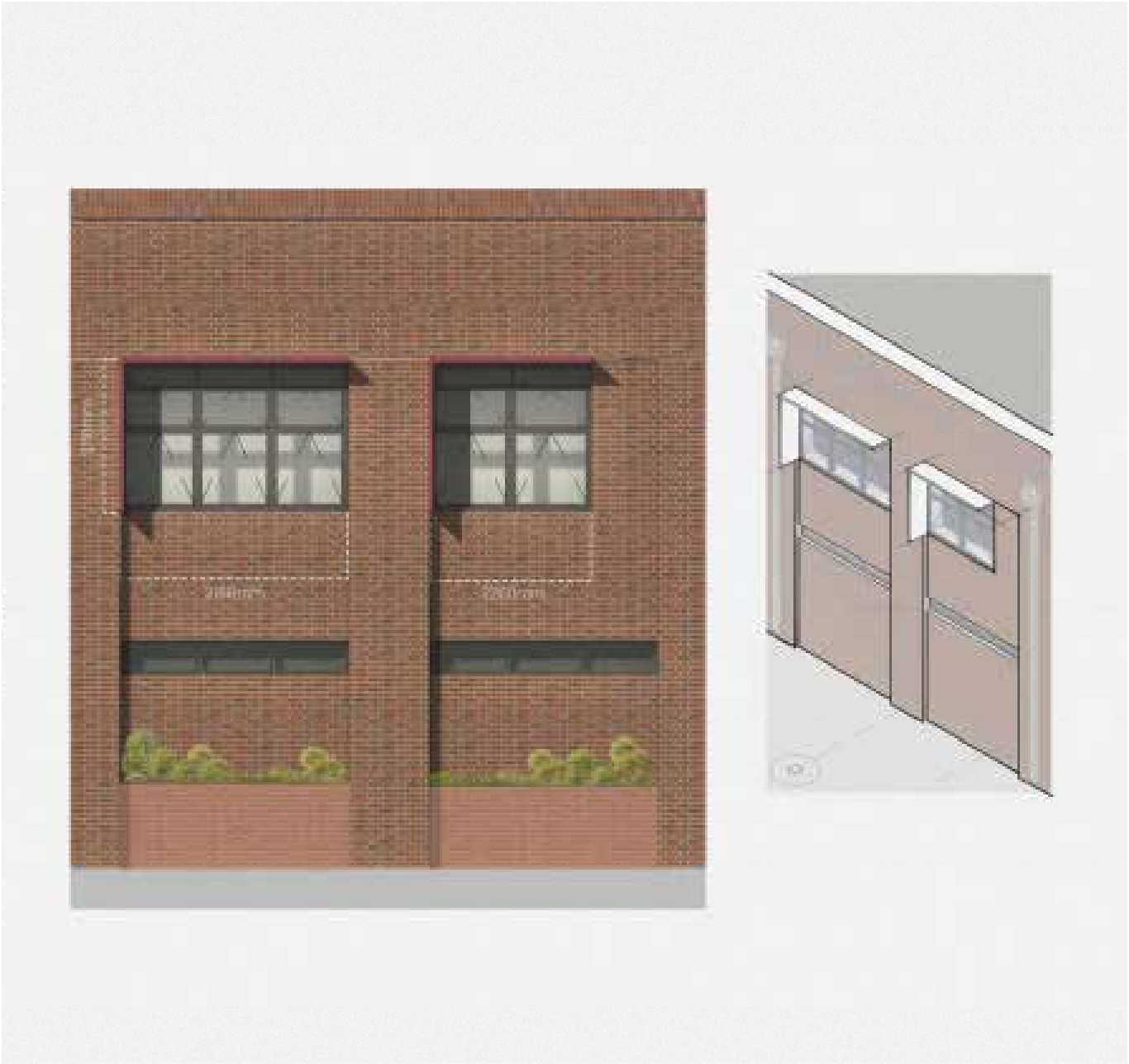


Ground to Parapet





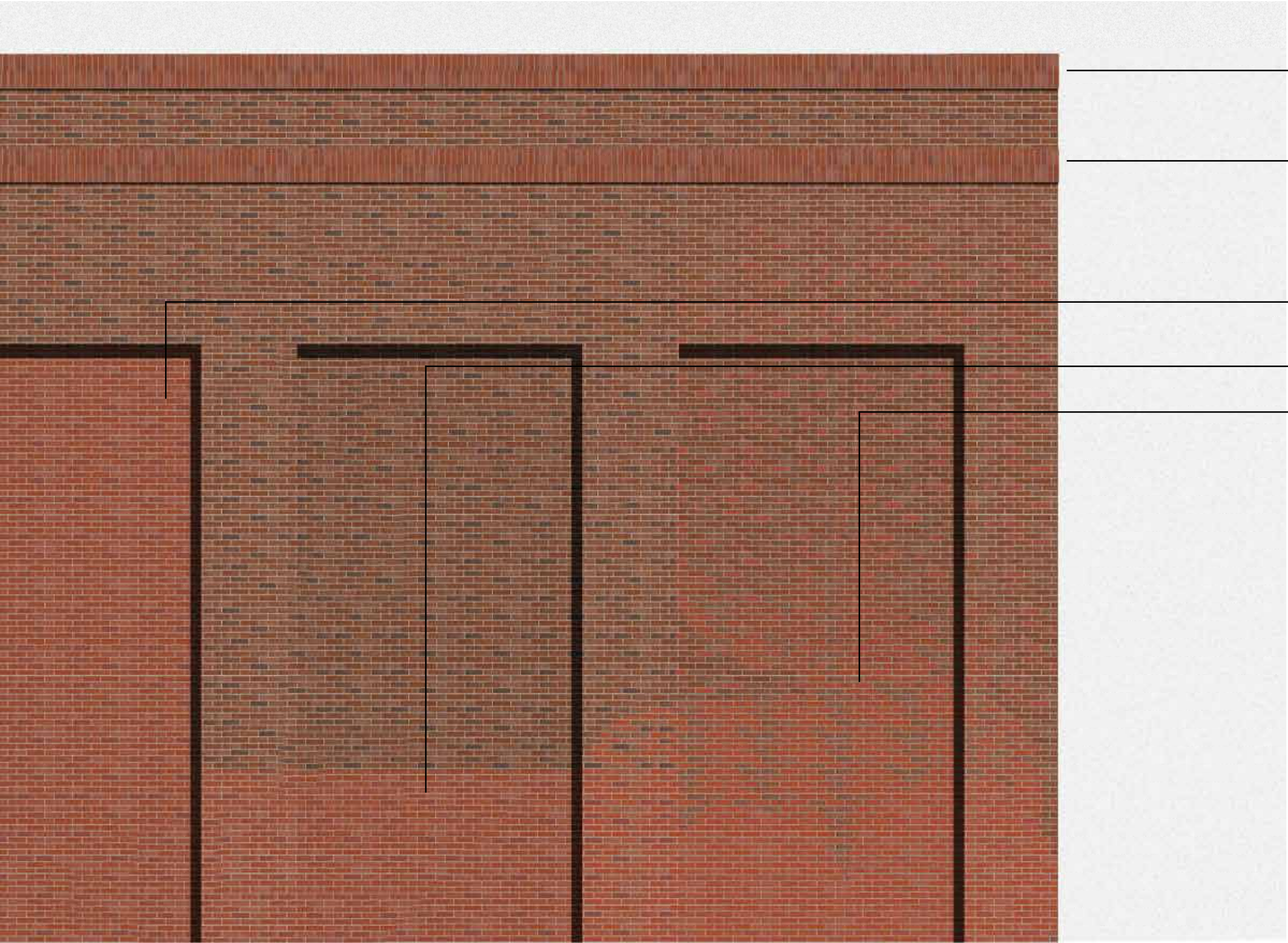
EXTENDED WINDOW FRAME REVEALS
Reduces use of brick in reveals, keeping material palette simple.



SHADING DESIGNS
Integrated shading on south elevation can be installed to meet future weather demands. This will break up and activate the facade further.







SOLIDER COURSE CAPPING
Solider course detailing for the sport hall parapet

SECOND SOLIDER COURSE
Solider course detailing continued from the main building parapet to provide articulation required by planning

SECONDARY BRICK COLOUR OPTIONS

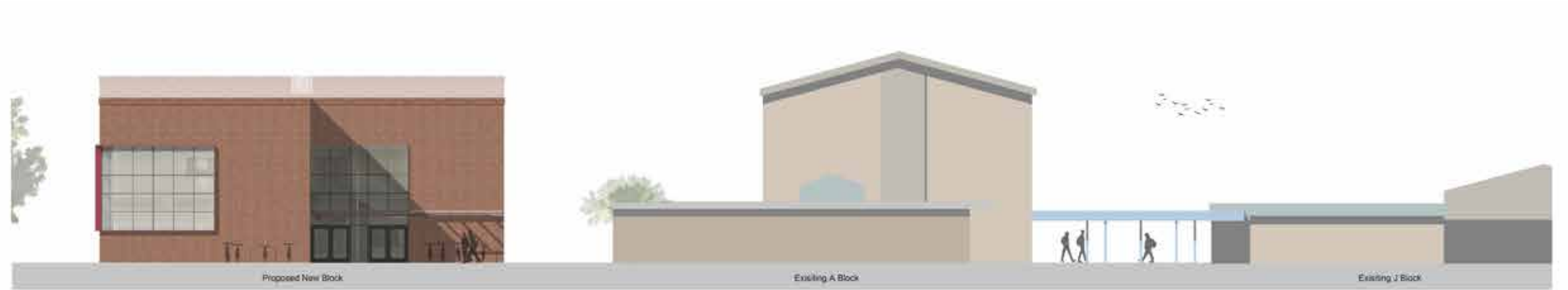
REVEAL EMPHASIS
Secondary brick or mortar colour to emphasis the consistent recesses throughout the façades

SOLID PLINTH
Secondary brick or mortar colour to divide facade.

FADED MIXED COURSES
Subtle mix of secondary brick colour to provide more interest required by planning



Initial Brick colour variation studies



Elevation 1



Elevation 2



07 Facade and Materiality
Initial Visualisation

It is expected that the proposed two storey building would have a minimum impact on views from the north-west, and would make a positive contribution to CCA views from Cold Bath Road and the Broadway, particularly during winter. It is not anticipated that the proposal would have any negative impact on private views, both within and outside of the CCA.

1. Entrance

The proposals entrance is to be used as a new school and community out of school hours entrance. To comply with Building regulations M, accessible entrances must be easily recognisable, therefore suitable attention drawing strategies need to be implemented such as a dominate leading wall, canopy and bicycle hoops. The implemented landscape and paving strategies could be utilised to advantageously direct user flow to the building.

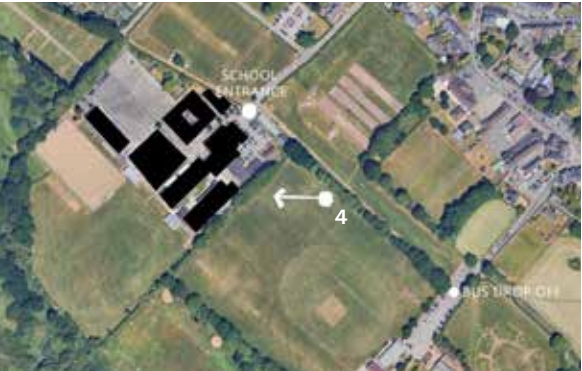
2. Courtyard

The courtyard acts as external circulation and social space throughout the school day. The primary entrance used by pupils is located off the stairwell, highlighted by the building's vertical window.

The strong rhythm created from the brick recess breaks down the length of the building, creating depth and visual interest to the proposal's facade.









08

Landscape Opportunities

08 Landscape Opportunities
Opportunities through Demolition

The proposed demolition and development works provide the opportunity to create a more coherent, accessible, and pleasant site overall.

Building Demolition

Block A's Fitness Suite:

Demolition of this hall will improve the clarity of approach and access the new entrance, creating a cohesive 'Sense of arrival'. Furthermore, this provides the opportunity for accessible parking within the required distances, and additional cycle spaces for staff, visitors, and community users.

Block A staffroom extension:

Removal of this will allow space to safely construct the new building. Furthermore, this will provide a large open courtyard between block A and the new building, for teaching and break-time use.

Buildings D1, G & H Sports Hall:

Their removal provides space to construct the new building, replacing the old and temporary buildings with one meeting the latest educational, environmental, and accessibility standards.

D2 Drama:

While proposed to be removed, this is likely to be retained only during construction to minimise school disruption. Once the drama provision in the new building is completed, its removal will provide additional grassed informal space, on a bank overlooking the sports pitches.

Caretakers House & Block K, Conference Building:

Removal of the caretaker's house and former village library opens up the approach to the new main entrance, allows construction access and further landscaping opportunities.



Strategy

The existing secondary school site will undergo a range of changes involving the introduction of new built form and sports facilities, and improved access points. Areas of soft and hard landscape specifically for secondary pupils will integrate with the new building and existing site, to create a coherent site plan. The landscape strategy will address a number of aspects essential to the development of a high quality and well functioning facility with the needs and care of children and young adults at its core.

These include:

- General Landscape Principles
- Access and Movement
- Security and Safety
- Hard Informal and Social Areas
- Soft Informal, Social and Habitat Areas
- Hard and Soft Outdoor PE Areas

Construction work will inevitably reduce the Secondary school’s external spaces temporarily. Therefore, careful consideration must be given to phasing to provide access to as much of the external environment as is deemed safe during construction.

Access and Movement

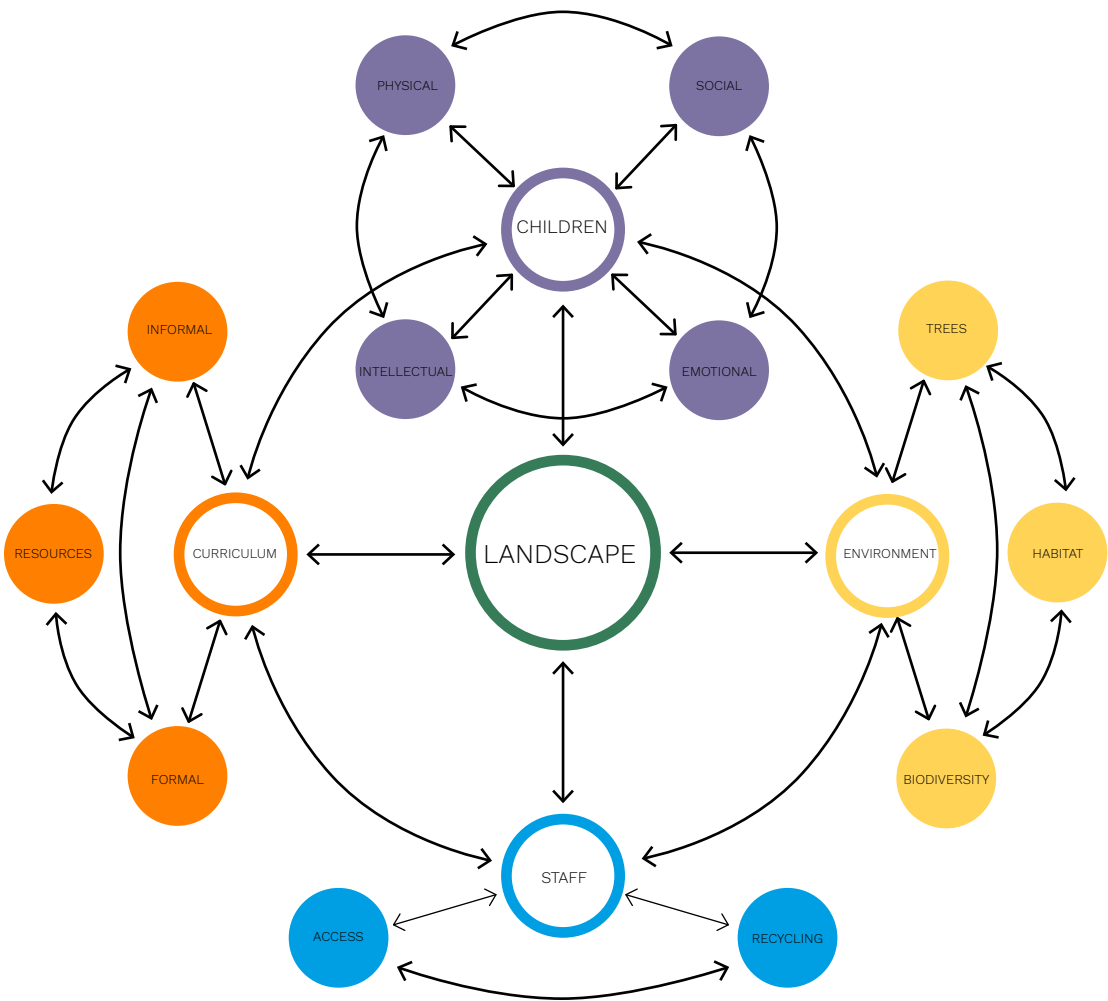
All abilities should be able to easily enter into and move through the landscape and each space within it via level or where necessary ramped entry points. Existing footpaths and roads may be re-aligned to suit new desire lines and entry points. The hard landscape materials used combined with a sensitive design will encourage users to take advantage of the opportunities to experience the landscape first-hand, not simply observing it from a distance.

Security and Safety

Where the construction works impact the existing secure boundary, bollards and gates will be used at entrance points in combination with perimeter fencing to create a consistent and secure boundary whilst not creating an oppressive atmosphere. Boundaries will be softened where possible using planting. Natural surveillance from surrounding walkways and windows should be used where possible to create a sense of supervision and safety. This should be balanced against the need for more enclosed areas that provide an element of privacy for study, relaxation and reflection.

Sustainability

Sustainability should be a priority in design and in the choice of materials along with their adaptability and future-proofing.



Historic Principles

The local landscape character is home to some notable features which have informed the landscape design, such as:

- The Amphitheatre
- The Roman Barracks
- The Roman Baths
- Local native species



08 Landscape Opportunities
Landscape Strategies

Hard Landscape

The external landscape will aim to function as an extension to the school buildings by offering teaching and study spaces as well as areas for sport, play, socialising, relaxation and reflection. These external spaces will incorporate entrance points providing access to the buildings' circulatory spaces across the site and areas for congregation during break times. The areas will have to cater for large numbers of children whilst providing a variety of scales of space and types of activity.

Soft Landscape

The soft landscape strategy will create a framework to connect the new school building with the external context of the existing school, and to create a cohesive landscape character within the site.

Planting provides seasonal and sensory diversity with chosen species providing visual interest, through form, colour, texture and movement. Tree and shrub planting could provide shelter from the weather and create a sense of enclosure. Planting areas can be used to subdivide areas of surfacing and tree planting may be sited in planting beds to enable access to adequate air and water and reduce reliance on artificial irrigation. Existing trees will be retained where possible, and new planting species will be selected to diversify existing species on-site and encourage wildlife such as birds, bees and other insects.

Green Infrastructure

The key GI features on site include the grassland area, four individual trees, line of trees along the southeastern boundary and ornamental hedgerows along the southwestern boundary separating the development site from the playing pitches associated with the school.

The main GI loss on site relates the four trees, grassland and ornamental hedgerows. The loss of these GI features has been mitigated, compensated and enhanced by the following features:

The external school environment has the potential to include:

- A safe, secure and inclusive environment
- A range of scales of space allowing for informal activity and/or social areas including seating for varying sizes of group
- Opportunities for children to be calm and quiet and also where they may be able to interact with others
- Areas of hard surfacing subdivided by planting to provide interest, shelter and seasonal change
- Proposed Multi-Use Games Areas to ensure playable surfaces for sport throughout the year.

The soft landscape for the school will provide opportunities for play, exploration and study, increase the biodiversity of the site and provide:

- Area in which to socialise & dine
- Place for relaxation and calm with seating and shelter from the elements
- Areas of tree and shrub planting for shelter, seasonal interest and biodiversity
- A safe, accessible and stimulating environment with fencing where appropriate
- A high-quality attention to design and materials choice.
- New grassland and shrub areas
- Proposed trees
- Boundary hedgerows
- Integrated bird, bat boxes and insect hotels
- Targeted lighting to avoid light spill into protected areas



BREEAM Tra 02 Sustainable Transport Measures.

Private Transport Measures

The following private transport measures will be provided:

- Car sharing spaces for at least 5% of the total car parking capacity.

Active Travel Measures

At least 1 cycle storage space will be provided per 10 staff and pupils/students in total, subject to the sliding scale of compliance for larger capacities.

- Cycles will be secured within spaces in racks;
- Racks will be covered overhead and set in or fixed to a permanent structure (hard standing);
- The distance between each cycle rack, and cycle racks and other obstructions will allow for appropriate access to the cycle storage space to enable bikes to be easily stored and accessed;
- The storage facility or entrance to the facility is in a predominant site location that is viewable/ overlooked from either an occupied building or main access to a building.

Cycle Facilities will be compliant with the following:

At least 1 locker will be provided per every cycle storage space;

The current design indicates 1 areas for lockers, in proximity to the sportshall and changing rooms. These can be used within school hours for pupils and staff who cycle, plus by the community for secure possessions storage during out-of-hours use.

Lockers are not located inside changing rooms, to allow more flexibility in use.

At least 1 shower will be provided for every 100 staff, subject to minimum of one shower being provided.

Appropriately sized changing facilities will be provided for staff.

Although the 2 staff shower rooms satisfy BREEAM, Some of the 4 main changing rooms could also be made available for staff at peak staff-arrival time, to ease queueing.

Number of Pupils	Total	1,506
	Years 7-11	1,250
	6th Form	256

Number of Staff (FTE)	Total	134
	Teaching	78
	Ancillary - School	45
	Ancillary - Catering	10

Existing		Newport City Council		BREEAM 2018		Proposed
Notes	Total	Requirement	Total	Requirement	Total	Highest of NCC & BREEAM
Car Parking		Parking Standards SPG August 2015 (Zone 2-4)				
Staff fulltime equivalent		1 per teaching staff	79			
Pupils fulltime equivalent		1 per 2 ancillary staff	28			
Visitor		1 per 20 age 17+	13			
		3 total	3			
Total	Counted from topo survey. Approx. usable spaces 90		123			123
Of the above:						
Standard bays		6%	8			2.4 x 4.8 m 95
Accessible (Blue Badge)		10%	13	10%	13	6 x 3.6 m 8
Electric Charging		n/a		5% (nearest entrance)	7	13
Car Share						7
Short fall against NCC standards	33					plus:
Commercial Vehicle	unknown		1			2.65 X 12 (allows for refrigerated rigid vehicle) 1
Motorcycle	unknown	5%	7			2.8 x 1.3 7
Minibus	2 on topo survey 2					2
Cycle Parking		Sustainable Travel SPG July 2020		Sliding Scale of Compliance (all users)		Proposed on-site
		1 per 10 students	151	1 per 10 for first 200	20	Existing - near I-block 54
		1 per 4 staff	34	1 per 15 for 201-300	7	
		Visitor / Short Stay: 1 per 10 students	151	1 per 20 for 301-400	5	New - locations tbc 28
Total	54		336	1 per 25 for 401+	50	82
		Some may be provided off-site		potential for additional off-site		

Indicative HLM Calculations. See Transport Statement for details:

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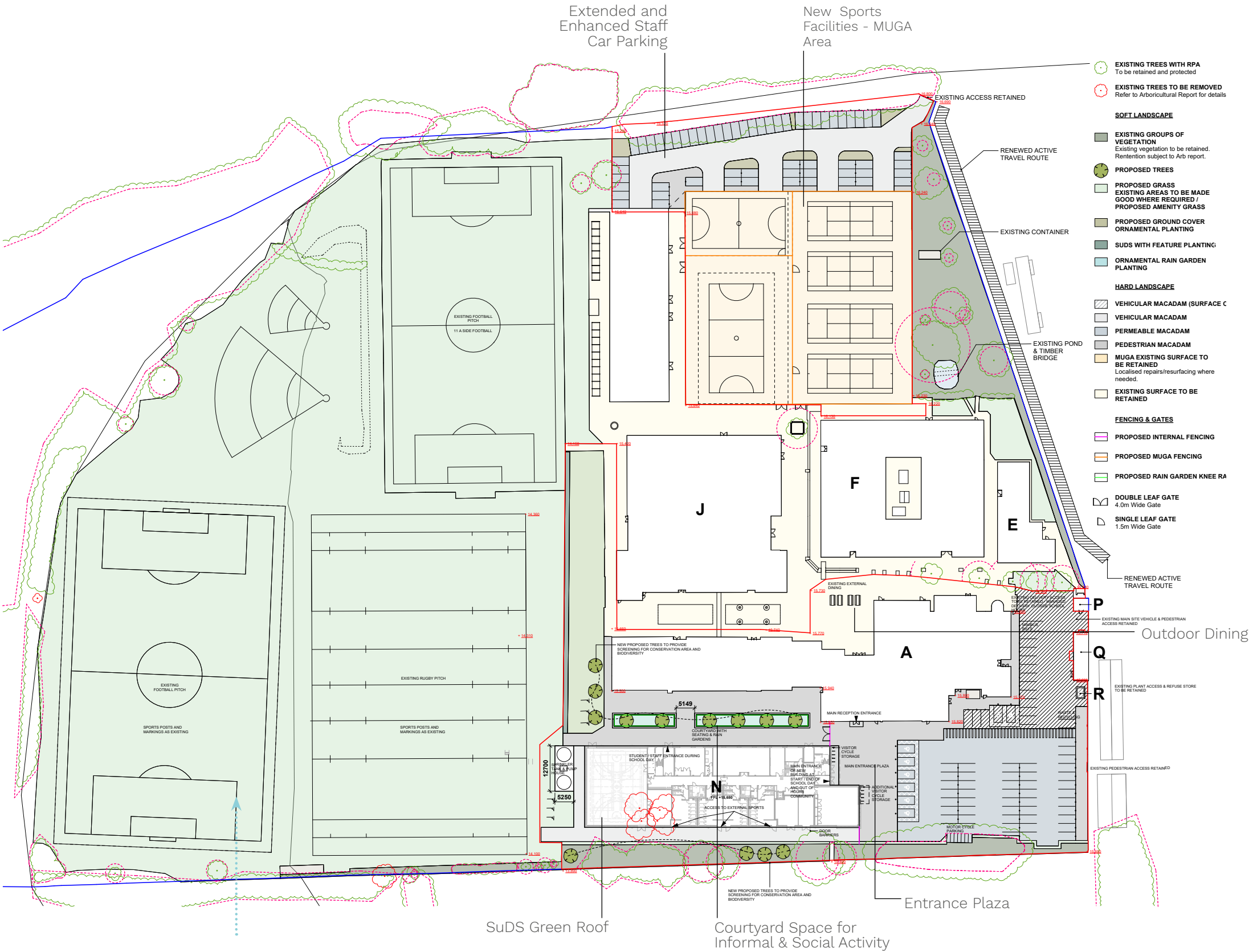
08 Landscape Opportunities
Landscape Master plan



The landscape will connect with and respond to the new school building creating a cohesive and positive environment. The design will introduce new areas for outdoor teaching, sport, play, socialising, and relaxation. The overall site plan will also connect the new school building to existing facilities. New landscape areas and features will sit sensitively within the site and will be robust in nature and of a high aesthetic quality. Careful consideration of maintenance and material longevity will influence the choice of hard and soft landscape materials.

Key Areas

- New Entrance Plaza
- Outdoor Dining
- Courtyard Space for Informal and Social Activity
- New Sports Facilities



09

Interior Design
Opportunities

09 Interior Design Opportunities

Interior Design Principles

A coherent design approach that provides continuity for visitors and users from the moment they arrive on the premises should be striven for. The strategy for Caerleon Comprehensive School should aim to meet the needs of both pupils and staff alike in a cohesive manner. The objective; to create an environment that will allow users to feel at ease within their day to day surroundings but that will also provide a functional and stimulating environment for teaching and learning. This will be achieved through the careful consideration and use of light, colour, texture and materials for each space, and the application of innovative design solutions to improve people's experience where possible.

Lighting

Correct lighting levels are vital within learning environments and research has proven that peoples attention capacity is improved when they have increased natural light and views into nature. As well as improving well-being and the overall experience, maximising views and maintaining good visual connections with the environment orientates pupils and connects them with the landscape. Natural daylight should be utilised throughout the building and be complimented with the intelligent use of artificial lighting where required. When used correctly, this combination of light sources can subtly increase the impact of variation in colour and contrast, and can provide visual clues to help pupils orientate within the spaces.

Application of Colour

A base palette of neutral tones, textures and materials that can be enhanced in key areas through the use of departmental or level based colour, textures and graphics creates a scheme that is not only engaging but also lends itself to the practicalities of an education environment and adds longevity to the overall Interior Design.

Way-finding

The way-finding strategy should be more than just applied signage to the building. Key navigation indicators can be included within the fabric of the building through the use of colours, shapes, symbols, text and graphics to create an overall strategy that caters for all ages and abilities.



Furniture Fixtures and Equipment (FF&E)

The FF&E should form part of the design strategy and a focus needs to be put on ensuring items are functional and fit for purpose, while also enhancing the internal environment and daily life for staff and pupils alike. Furniture that is flexible and assists in the teaching of the curriculum should be explored for each age group, and the individual needs of each space dependent on the activities that will take place within them need to be taken into account.

Acoustics

The overall acoustic performance of a space can have a large impact on a member of staff’s ability to teach effectively and a pupil’s ability to learn. In the next stage it would be advised that relevant parties are worked with closely, such as acoustic engineers, to ensure that measures are taken to address any potential acoustic issues by specifying the appropriate finishes materials, including any additional absorption/deflection that is required. These elements can often be worked into the Interior Design of a space to bring aesthetic enhancement, rather than being purely functional.

Sanitary Facilities

The design of WC and changing areas should aim to provide facilities and levels of privacy that are appropriate to each user group, and ensure pupils and out of hours sports visitors are comfortable using them. In order to discourage anti-social behaviour within the toilet facility, free space needs to be kept to a minimum, and hand-washing facilities should be made visible and potentially unisex by being moved out of the cubicle area as a direct extension to the circulation or classroom space. This also allows for passive supervision of the common areas from the circulation space, so that pupils can feel safe when using the toilets.

Materials and Finishes

The performance, sustainability and maintenance regimes for the internal materials and finishes must be considered to ensure that all proposals are practical, can be easily managed over their lifespan and tie in with the schools operational policies.



09 Interior Design Opportunities
Typical General Teaching Classroom Layout

Flexible Layout

The general classroom layout must be suitable for teaching multiple subjects.

The fixed elements of the room include built-in storage cupboards below the ventilation stacks, a teaching wall with space for a projector and/or interactive whiteboard alongside standard whiteboards, and teacher's desk with wired power and data connection to the teaching wall.

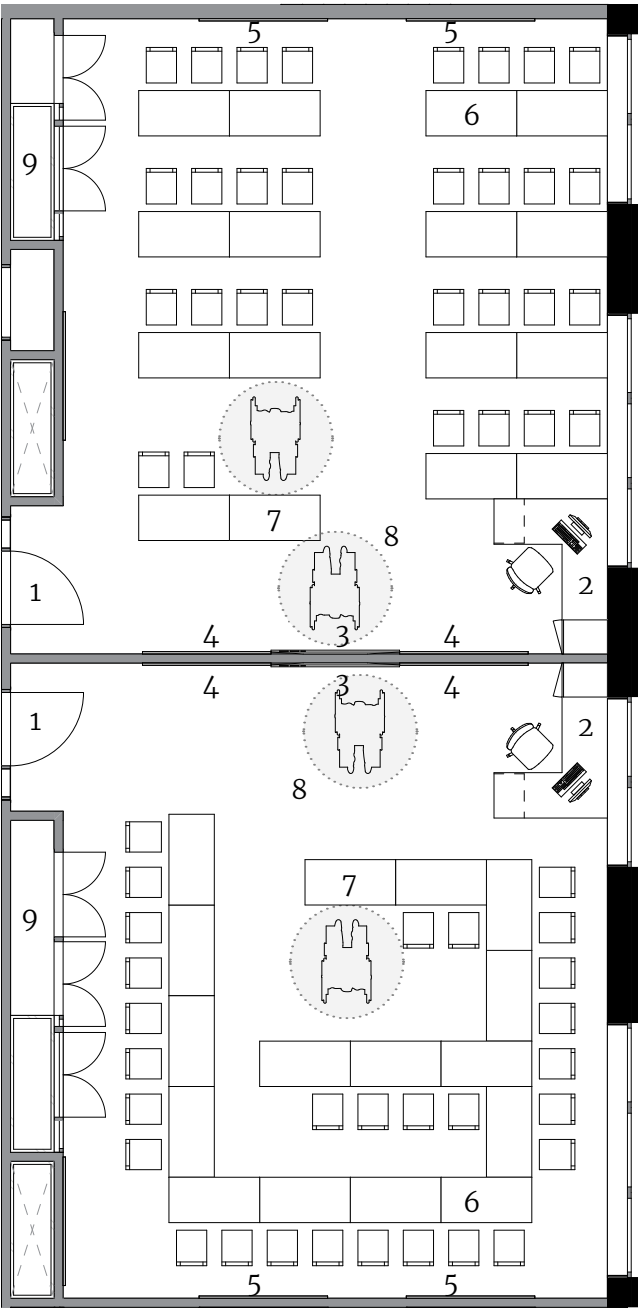
The teaching wall is at one end of the classroom, rather than opposite the windows, to reduce glare. It is also at the same end as the door, so the teacher has control of any entering and existing the classroom.

The floor plans here demonstrate 2 possible layouts of the loose pupil desks and chairs, which can be adjusted to suit varying teaching styles.

Both layouts allow space for a pupil or teacher who uses a wheelchair, or with other mobility difficulties, to manoeuvre around the entrance, whiteboard, their own desk, and to the teacher's desk.

Some loose FF&E layouts are more suitable than others for a wheelchair user to access the whole classroom, therefore consideration should be given to the FF&E layouts when this is required, for example in the case of a staff member with mobility issues.

Although most 'sitting' desks in secondary schools are suitable for the majority of wheelchairs, it is best practice to include 1 adjustable height desk per classroom, to allow for a multitude of disabilities, including use by people of short stature, or those with larger wheelchairs.



- 1 - Classroom entrance door
- 2 - Teacher's desk with fixed trunking for power/data
- 3 - Whiteboard and projector/interactive whiteboard
- 4 - Whiteboard
- 5 - Display board
- 6 - Loose pupil desk and chairs. Indicative arrangements
- 7 - Indicative desk space for wheelchair user
- 8 - Manoeuvring space for wheelchair user
- 9 - Built in storage, with ventilation outlet above



09 Interior Design Opportunities
Typical Music Classroom Layout

Music Classroom

The music classroom must accommodate additional equipment, such as large or multiple musical instruments and often computers.

As with the general classrooms, the teaching wall is at one end of the classroom, rather than opposite the windows, to reduce glare. It is also at the same end as the door, so the teacher has control of any entering and existing the classroom.

The layout allows space for a pupil or teacher who uses a wheelchair, or with other mobility difficulties, to manoeuvre around the entrance, whiteboard, their own desk, to the teacher's desk, and to a practise room.

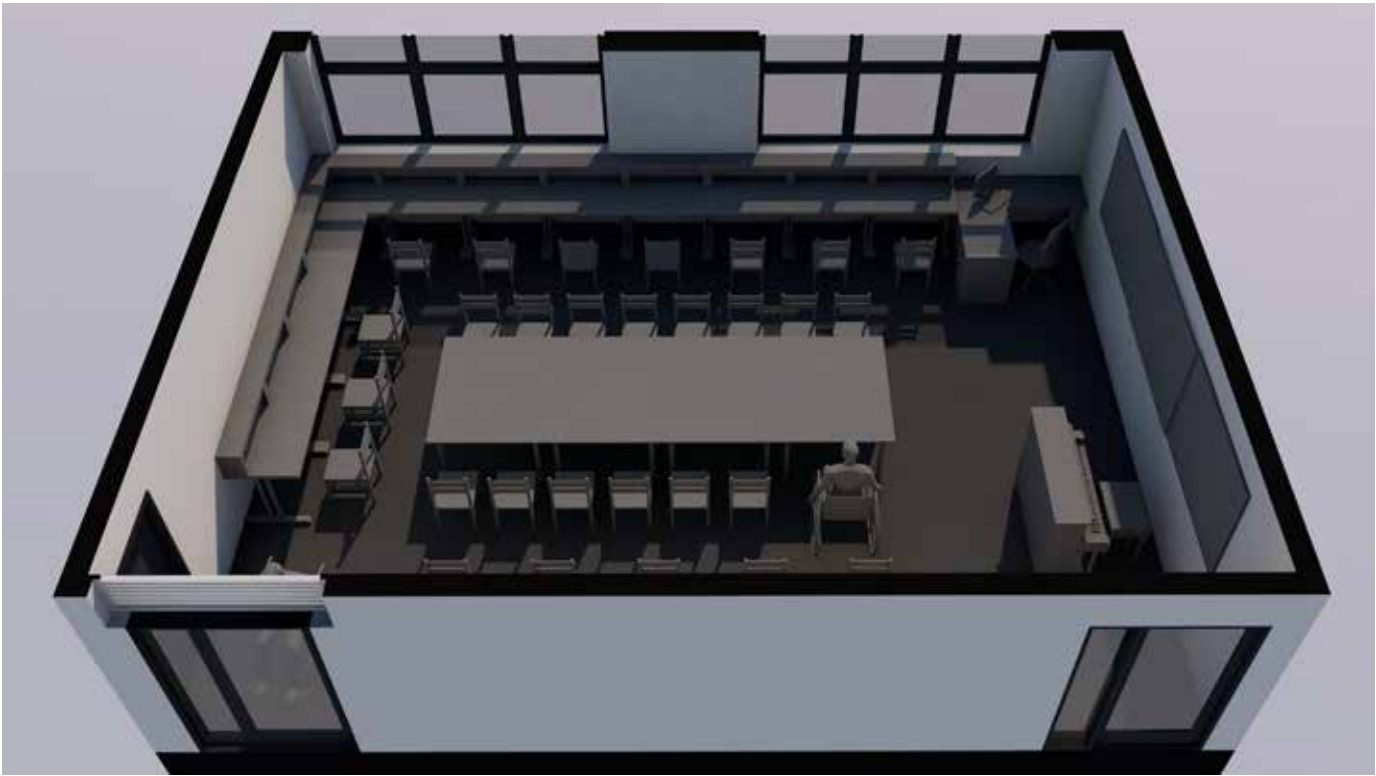
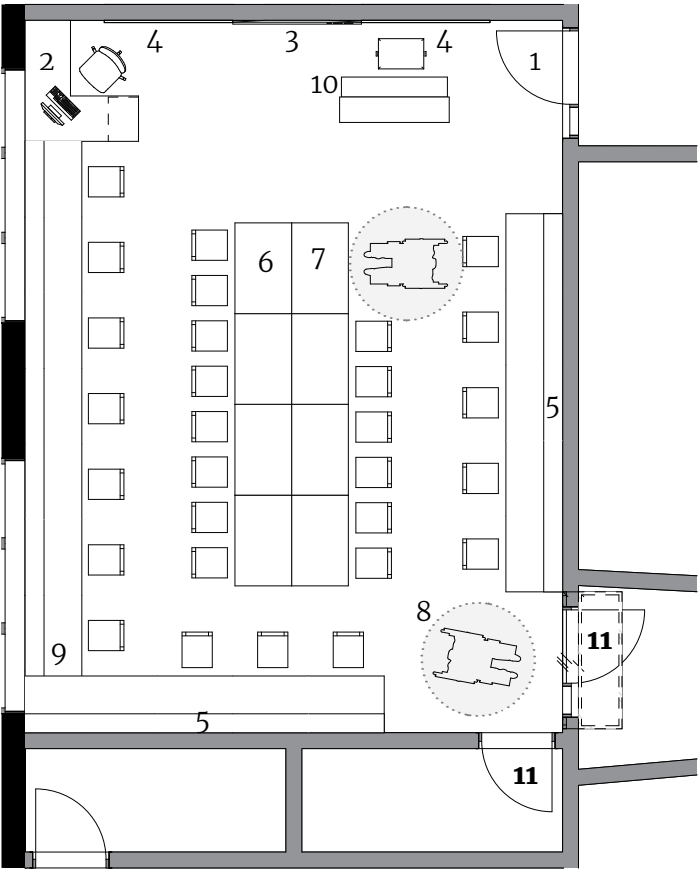
The perimeter of the room shows fixed benching to accommodate keyboards, with a narrow raised shelf at the back for a monitor or computer keyboard. Alternatives include lift-up desks or slide-out shelves. These would all have fixed power/data.

The exact perimeter configuration varies depending on the exact location of store and practice room doors.

The centre of the classroom shows loose desks and chairs to match a standard classroom, as this offers the most flexible layout for all teaching methods.

Consideration should be given to whether power is required to the centre tables – this could be in the form of drop-down power, floor boxes, or fixed poles. Further discussion should take place at stage 3, to ensure all strategies align.

As with the general classrooms, it is best practice to include 1 adjustable height desk of each type per classroom.



- 1 - Classroom entrance door
- 2 - Teacher's desk with fixed trunking for power/data
- 3 - Whiteboard and projector/interactive whiteboard
- 4 - Whiteboard
- 5 - Display board
- 6 - Loose pupil desk and chairs. Indicative arrangements
- 7 - Indicative desk space for wheelchair user
- 8 - Manoeuvring space for wheelchair user
- 9 - Fixed perimeter benching for music keyboards and computers
- 10 - Space for piano or equivalent
- 11 - Door to store or practice room - location varies

09 Interior Design Opportunities

Typical Changing Room Layout

Class/Team Changing

Each of the 4 main changing rooms are sized for a class of 30+ or a sports squad. They all have WC cubicles, not urinals, so can be designated as male/female, or per team/age group as required for each session.

They feature fixed benching, individual showers, and toilets. The enlarged shower cubicle is suitable for someone with an injury, anyone with a disability who needs extra space or privacy but not necessarily a separate room, a carer, or a parent and child.

Accessible Changing

In addition to the full size hygiene room/changing places room shown here, there is also a second unisex accessible shower/ changing room near the entrance.

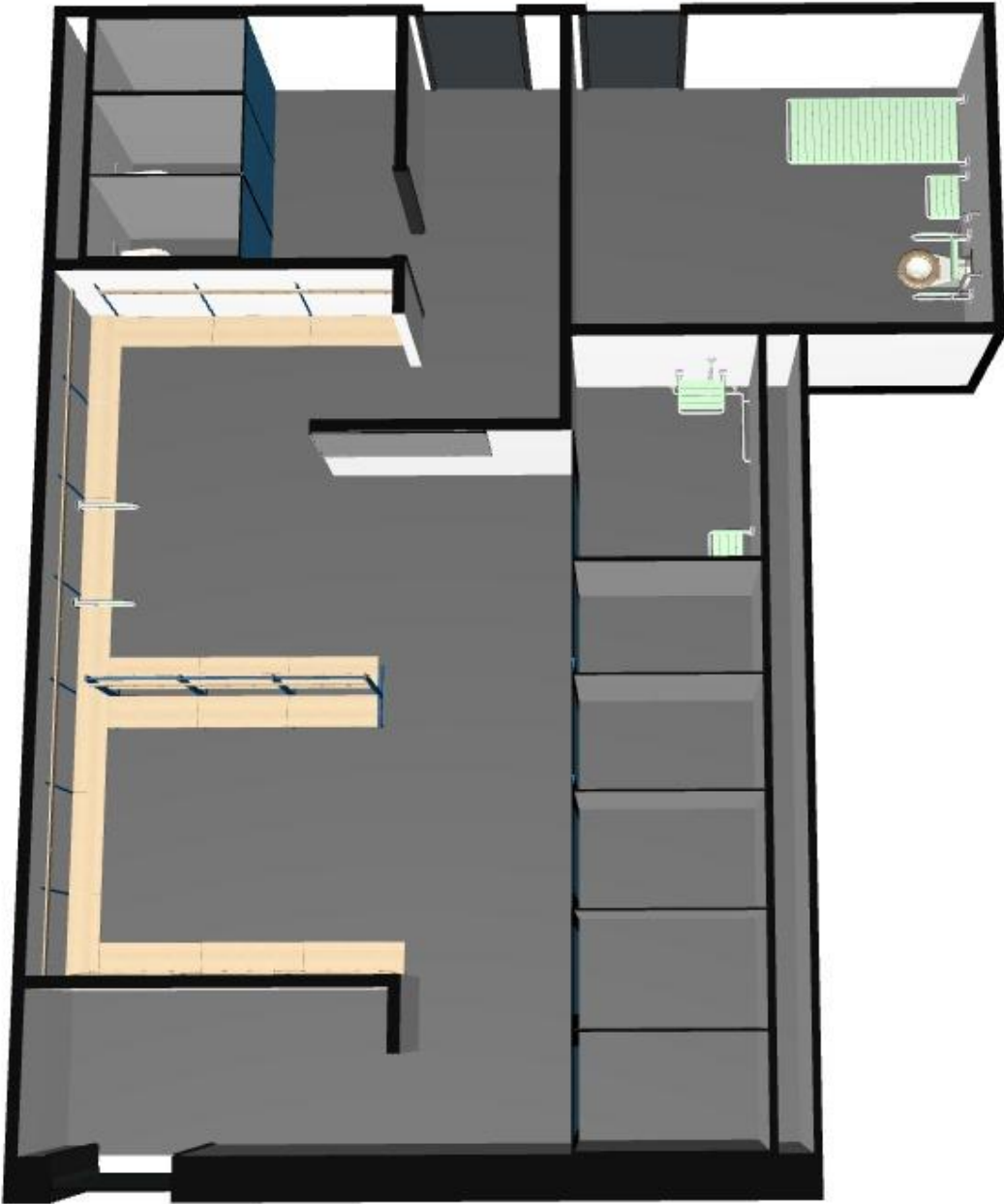
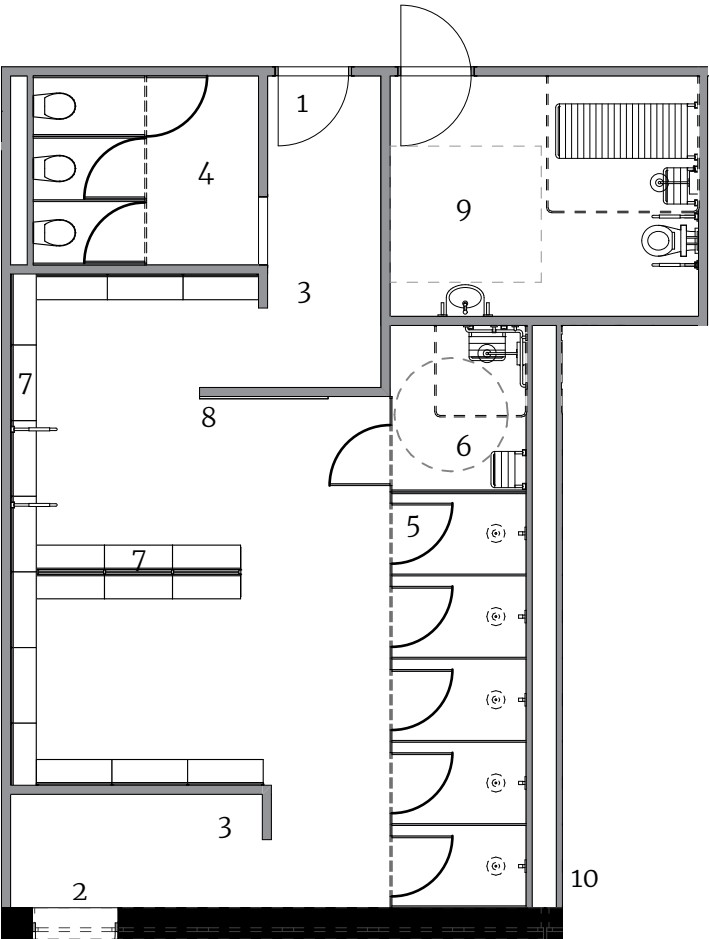
During school time, these can be used by staff, cyclists, and any pupils with disabilities which prevent them using the main changing rooms.

During community use, these can be used by people with disabilities, referees, coaches and the like, who need to change separately from teams.

Lockers

To allow maximum flexibility, lockers are positioned in the shared corridor, not within the changing rooms.

- 1 - Door from corridor
- 2 - External door to pitches
- 3 - Privacy lobby
- 4 - WC & sink area
- 5 - Full-height shower cubicles
- 6 - Full-height enlarged shower cubicle with shower seat & drying seat
- 7 - Changing benches with hooks above
- 8 - Wall-mounted whiteboard for theory/tactics
- 9 - Self-enclosed unisex hygiene room/changing places, accessed directly from corridor
- 10 - IPS (Integrated Plumbing System)



09 Interior Design Opportunities WC Layout Options



The block of Pupil WCs on the first floor has been sized to accommodate several potential configurations of the hand-washing area, with some examples shown here.

All options use full-height cubicles for privacy, which would require individual lighting and ventilation.

The final layout should be chosen after consultation with staff and pupils, and taking into account existing provision elsewhere on site.

Example A - Left

All cubicles can be used by all pupils, reducing queueing for one side while the other is empty.

Unisex cubicles cater for all pupils, reducing difficulties for those who may be transgender or non-binary.

Maximum supervision of the hand-washing area from the corridor.

Example B - Centre

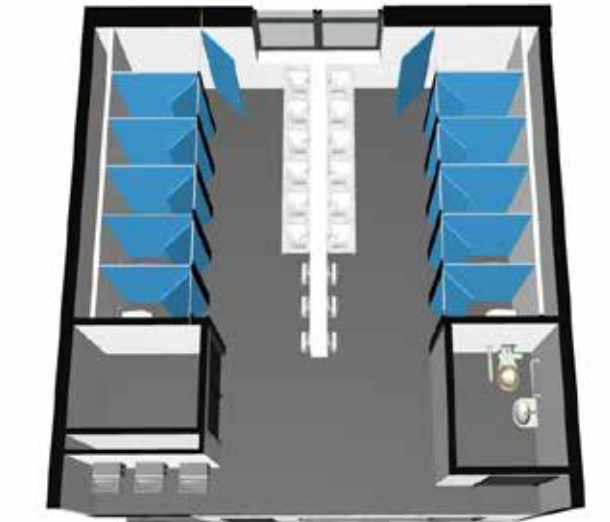
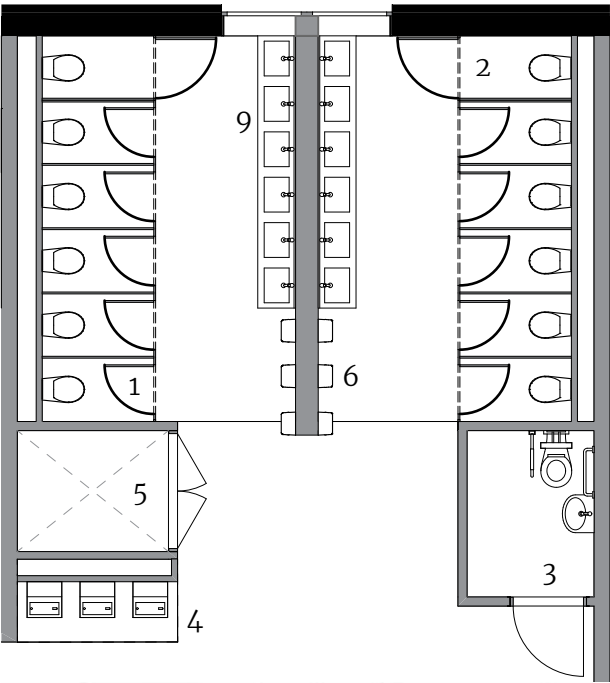
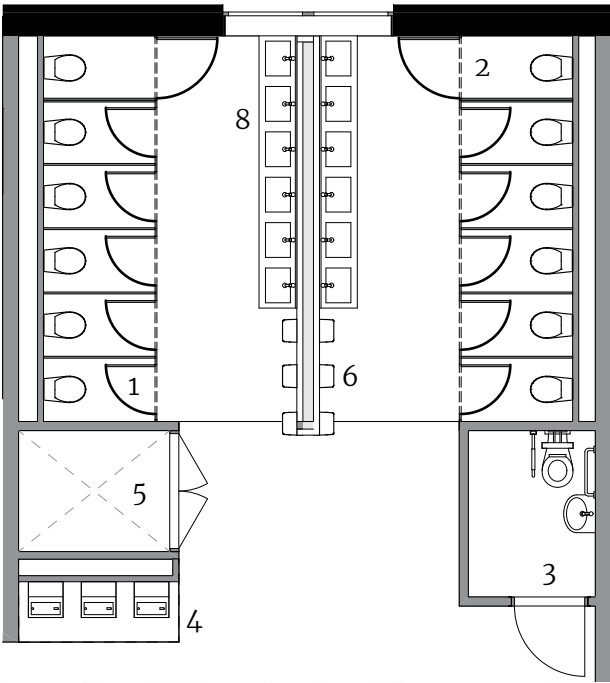
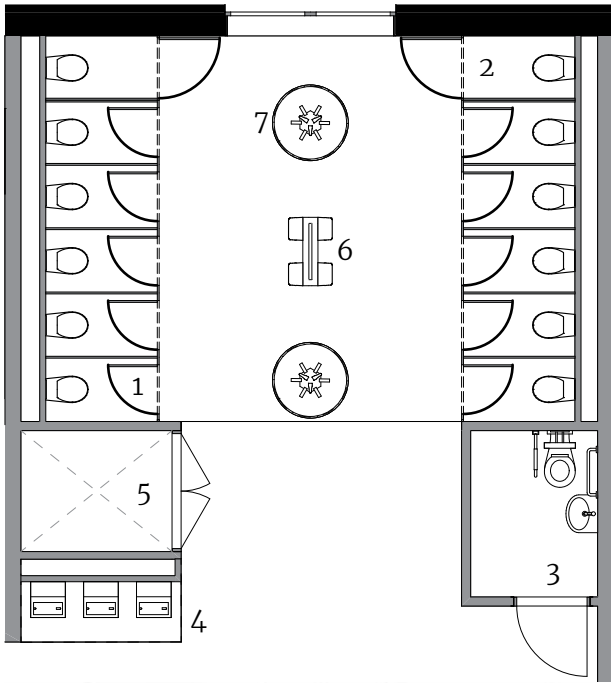
Cubicles could be unisex, and provide the advantages of option 1, or they could be designated male / female through use of signage. This could be changed easily in future without major modifications.

The half-height wall still allows supervision from the corridor as it doesn't block views.

Example C - Right

The full-height wall separates the area into 2 distinct sides, although both can still be viewed from the corridor.

- 1 - WC in full-height cubicle, for pupil use
- 2 - Ambulant WC in full-height cubicle, for pupil use
- 3 - Unisex accessible WC in separate room - for all staff, and any pupils who require it
- 4 - Drinking fountains/water bottle refill points
- 5 - MEP riser - locked shut
- 6 - Hand driers
- 7 - Open plan hand-wash area, with shared through sinks
WC cubicles can all be used by any pupil, or they can be designated male/female through signage.
- 8 - Visibly open hand-wash area, with half-height wall between sinks for notional separation
WC cubicles can all be used by any pupil, or they can be designated male/female through signage.
- 9 - Full-height wall, visibly divides both sides. View into both sides of the hand-wash area from the corridor is still maintained for supervision.



10 Appendices

HLM
Architecture, Landscape Architecture

Document Number	Title	Revision
Site & Landscape		
CCS-HLM-00-00-DR-L-00007	LANDSCAPE GA PLAN	P14
CCS-HLM-00-00-DR-L-00007	EXISTING SITE PLAN	PO8
CCS-HLM-AA-00-DR-A-00101	Block A - Ground Floor Plan - Existing	PO9
CCS-HLM-AA-XX-DR-A-00301	Block A - Main Building - Elevations - Existing	PO1
New Building		
CCS-HLM-NN-00-DR-A-00111	New Block - Ground Floor Plan	PO3
CCS-HLM-NN-01-DR-A-00121	New Block - First Floor Plan	PO3
CCS-HLM-NN-R1-DR-A-00131	New Block - Roof Plan	PO3
CCS-HLM-NN-XX-DR-A-00201	New Block - Sections - Sheet 1	PO3
CCS-HLM-NN-XX-DR-A-00202	New Block - Sections - Sheet 2	PO3
CCS-HLM-NN-ZZ-DR-A-00300	New Block - Elevations	PO3

