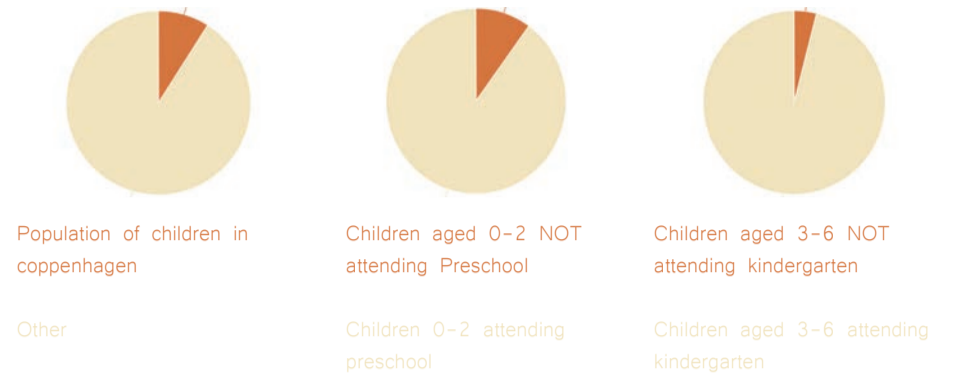


PROJECT BREIFING

“Yes, Denmark may have the laurel of the happiest country in the world, but that does not mean that, as in every capitalist economy, everybody is happy.”

Michael Roberts, 2022.

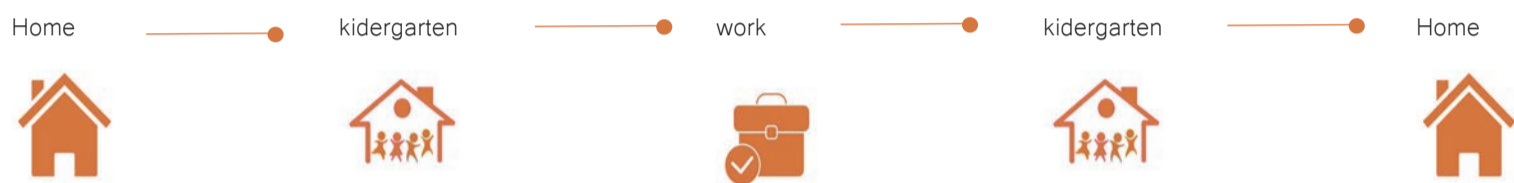
STATISTICS IN COPPENHAGEN.



PARENTS WHO RETURN TO WORK.

In Denmark maternity leave can last between 37-40 weeks after birth, 90% of mothers return to work stright after this period and enroll theyre child into nursery and kindergartens until aged 6.

EXISTING SITUATION

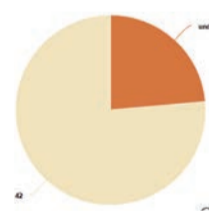


FUTURE POSSIBLE SOLUTION



Responding directly to the reality of familys in copenhagen,This project Alings social needs, cultural values and spatial design to create a single coherent system that will respond to the issues parents face traveling to and from work, home and kindergarten everyday.

TIME TAKEN TO TRAVEL TO AND FROM HOME, KINDERGARTEN AND WORK.



percentage of parents who want there journey to take no longer than 15mins each way

On average the time parents spend traveling from work to home (one way) is 20-25mins , excluding child drop off, including child drop off this can often take 35-40mins one way.

These statistics depend on factors such as location of parents work/home and how far out they travel as well as wether public transport is taken or cycling.

percentage of parents who want there journey to take no longer than 25mins each way

62% of parents in copenhagen bicycle to work from home and to school drop offs.



CONCEPT COLLAGE:



Combining ideas from Frederiksvej kindergarten , As a way of showing children are the main center of the building, sinks, toilets, windows and doors will be made at childrens height as a way of making them feel like they are the adults by having everything suited to them.

Alongside this Each block of my building (consisting of the baby zone, toddler zone and child zone) will have direct access to the outdoor play area presented as a courtyard, keeping children safe while allowing outdoor roaming. The shape of the building was also inspired by the 'house' shaped blocks that attach to eachother, the idea is that the building is like a giant doll house, opening up for children and adults , having seperate areas for each age group, suiting and 'housing' everyone.

PRECEDENTS:

Frederiksvej Kindergarten: Copenhagen:

Frederiksvej kindergarten by COBE aims to create a small village setting for children, breaking away from traditional kindergarten settings.

The Kindergarten is made from 11 small houses joined together.

ROOF:

The roofing is simple and pitched, varying in height to mirror local neighbourhood rooftops as well as creating a playful minimalistic child drawing effect.

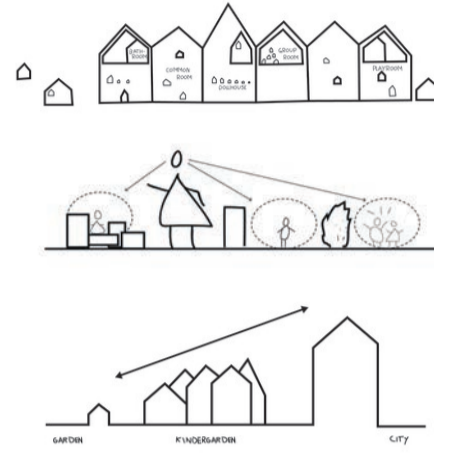
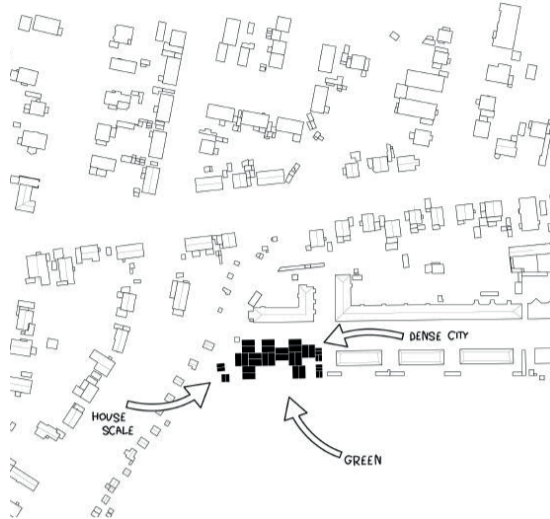
Dark uncluttered lines and hidden drain systems were also used in the roof design, connecting to the seamless look of the exterior.



WINDOWS:

The windows of the building appear frameless set within the metal facade, creating a simple and clean appearance that resembles the drawing of a house from a child perspective.

The large windows and skylights are designed to illuminate the white clutterfree interior. Large windows also allow for maximum daylight that connects the inside areas more with the outside through light.



Copenhagen center for cancer and health:

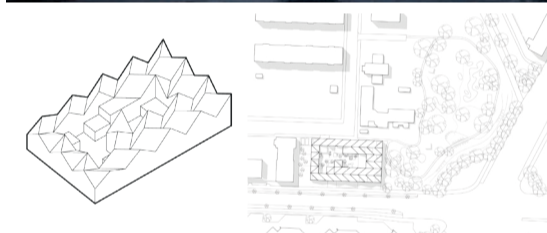


Copenhagens center for cancer and health by NORD architects uses 'healing architecture' to create a home like environment for patients.

It is made from connecting houses with slanted roofing, designed to look like a village, arranged around a courtyard.

The signature folded roof structure connects different sections of the building, often described as resembling origami.

The design made the building a landmark without losing the comforting scale for patients.

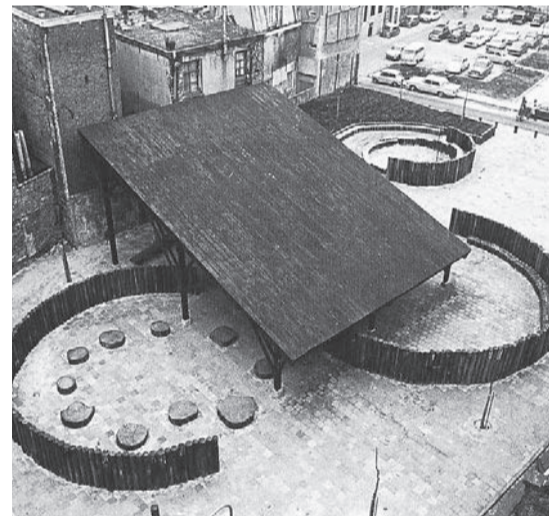


Aldo Van Eyke:

Aldo Van Eyke was a dutch architect, who was influential on the structuralism movement.

His playground design style was minimalist and geometric, designed to stimulate childrens imagination rather than dictate play.

He utilised cheap durable materials such as concrete and metal and made his playground open.



Forfatterhuset Kindergarten:



Forfatterhuset Kindergarten by COBE aims to inject young life with the elderly community. Designed as a kids village representing plantpots on a terrace.

The building is vertically organised around the common space (playground) creating a visual and physical connection throughout the institution.

Making it easier to move between the different rooms, playrooms and outdoor areas.



EXTERIOR:

- vertical brick lamellae

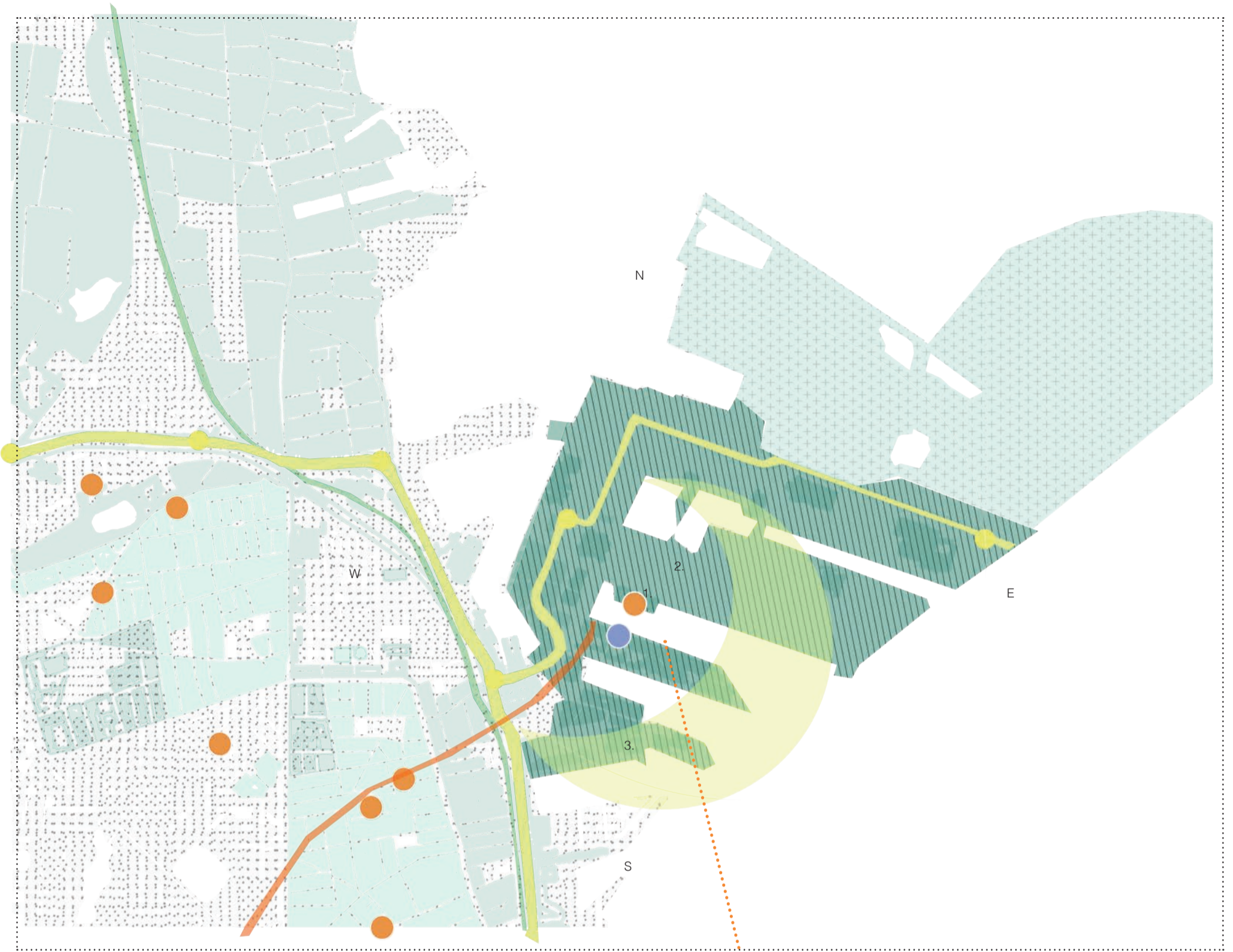
Creating a verticle facade pattern that acts as cladding for sun shading as well as a safety fence around the playground.

wrapping around the building as a screen that protects the building from overheating while allowing natural light to filter through.

Underneath this is a rendered vibrant orange to highlight the pattern of the brickwork cladding.



SITE ANALYSIS:



Nordhaven:



Transport routes :

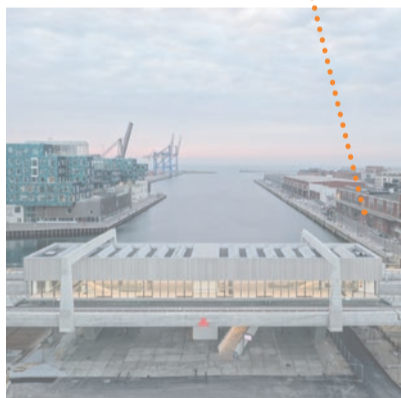


Kindergartens / Nurseries

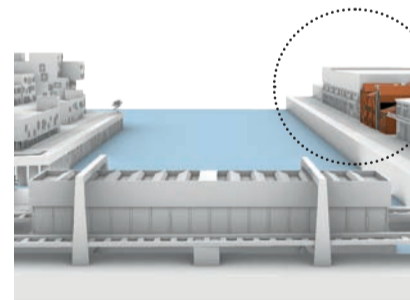
SITE



Sun



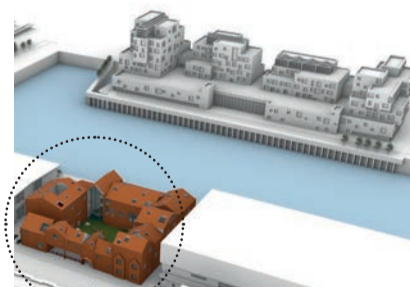
1. Orientkaj station and site



Having the main entrance visible from the orientkaj station makes it easy to get to and access.



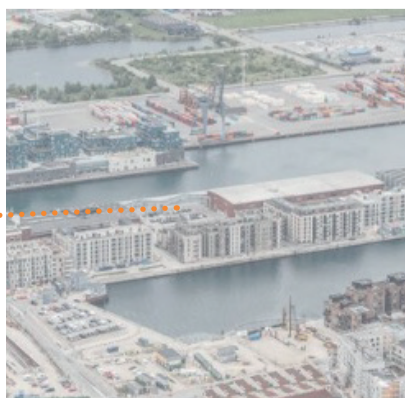
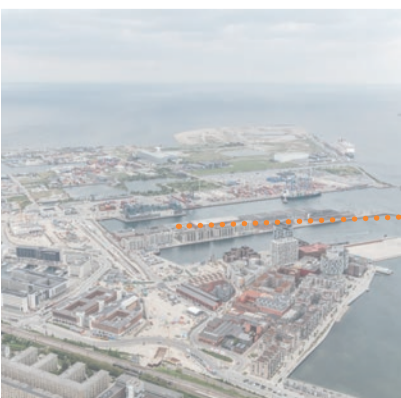
2. Copenhagen International School



The Building sits opposite Copenhagen International School.

Copenhagen international schools pre-K programme only accepts children ages 2yrs 10 months and up and is around a year waitlist.

Using this concept my Kindergarten will accept 0-6yrs and can hold alot more children at one time.



3. Konditaget Lunders



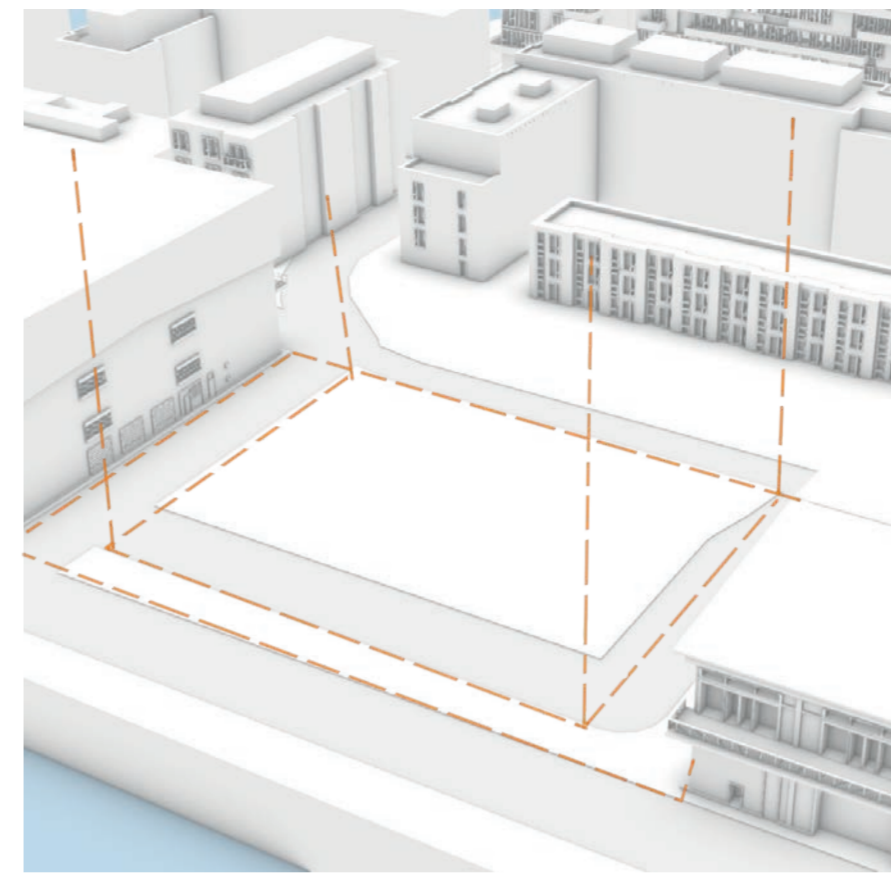
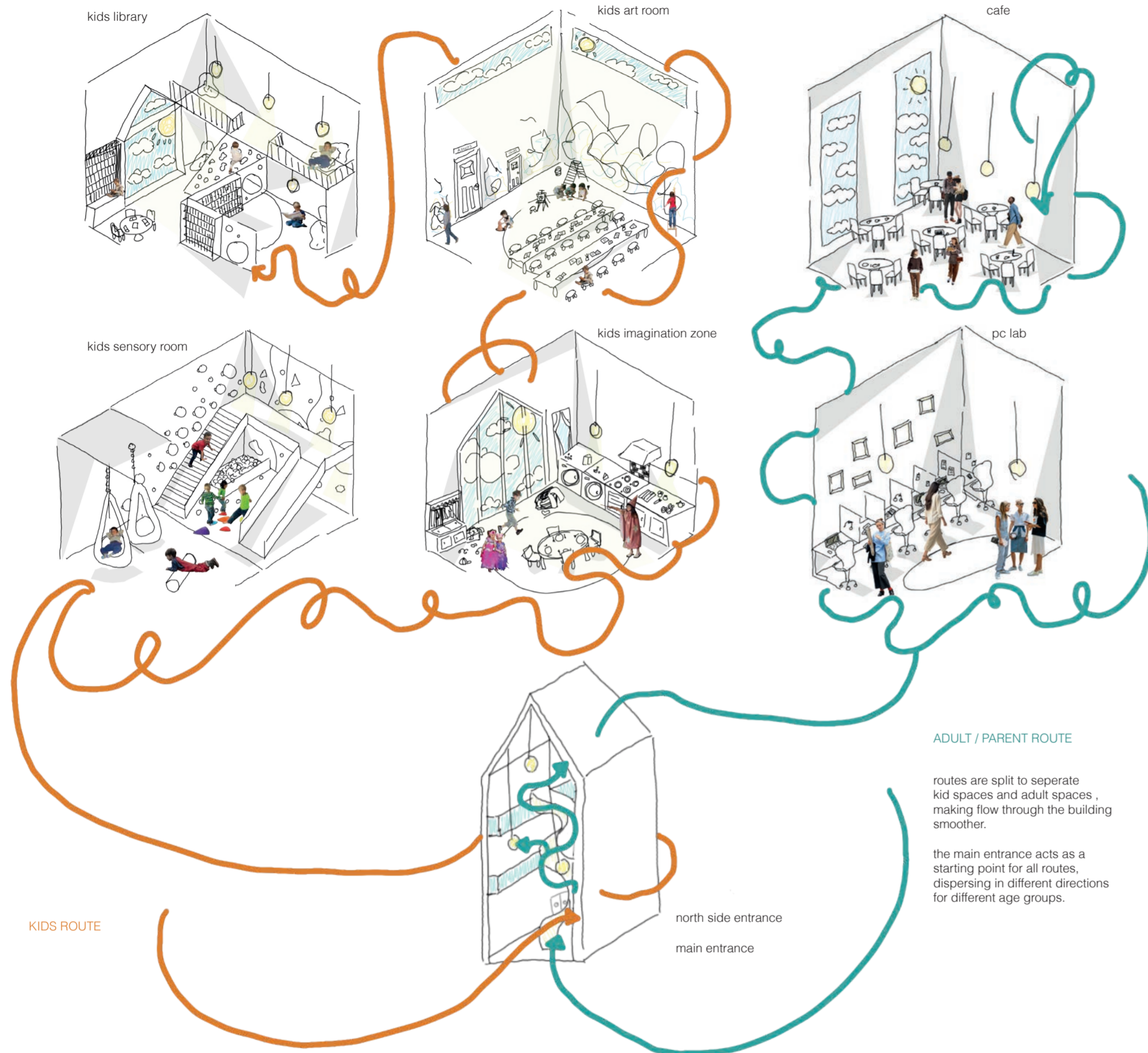
Looking into playgrounds in the area and making play fun without accessive equipment, linking to Aldo Van Eyke.

DESIGN DEVELOPMENT:

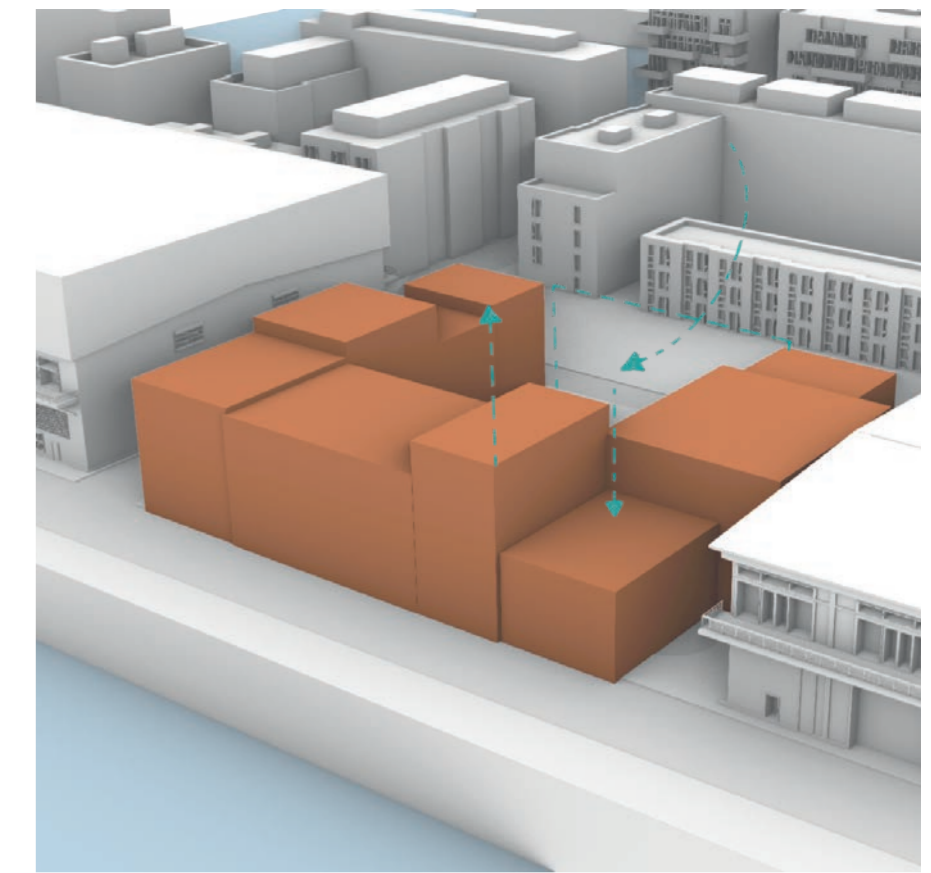
KID ZONES:

ROOM SCHEDULES:

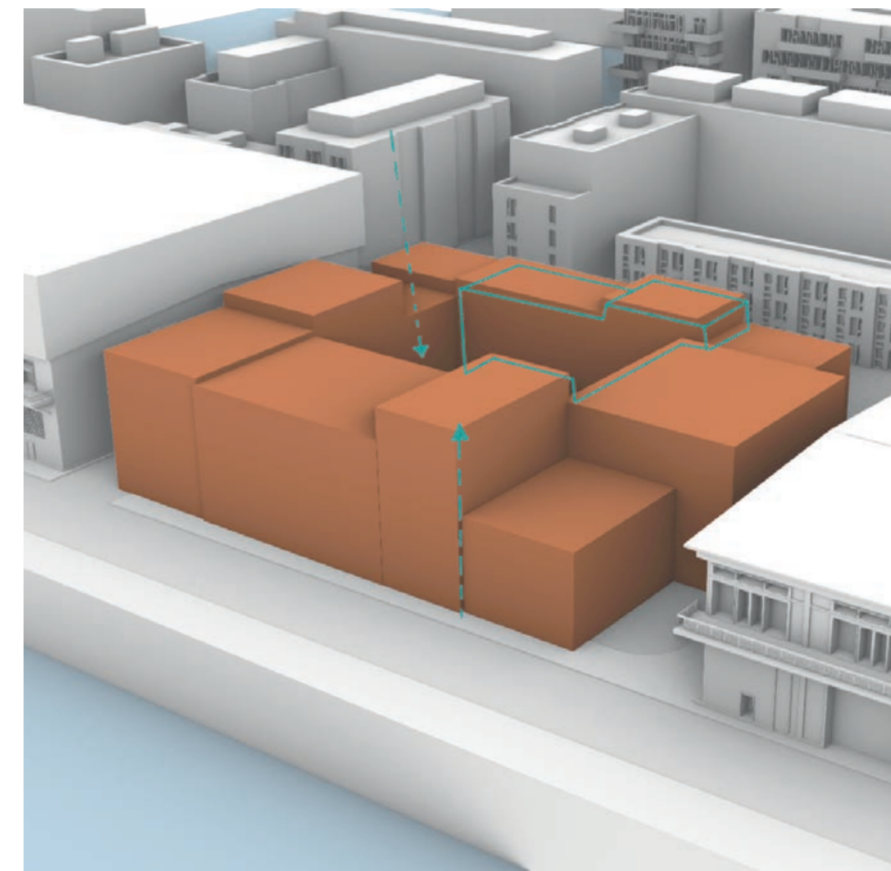
ADULT / PARENT ZONES:



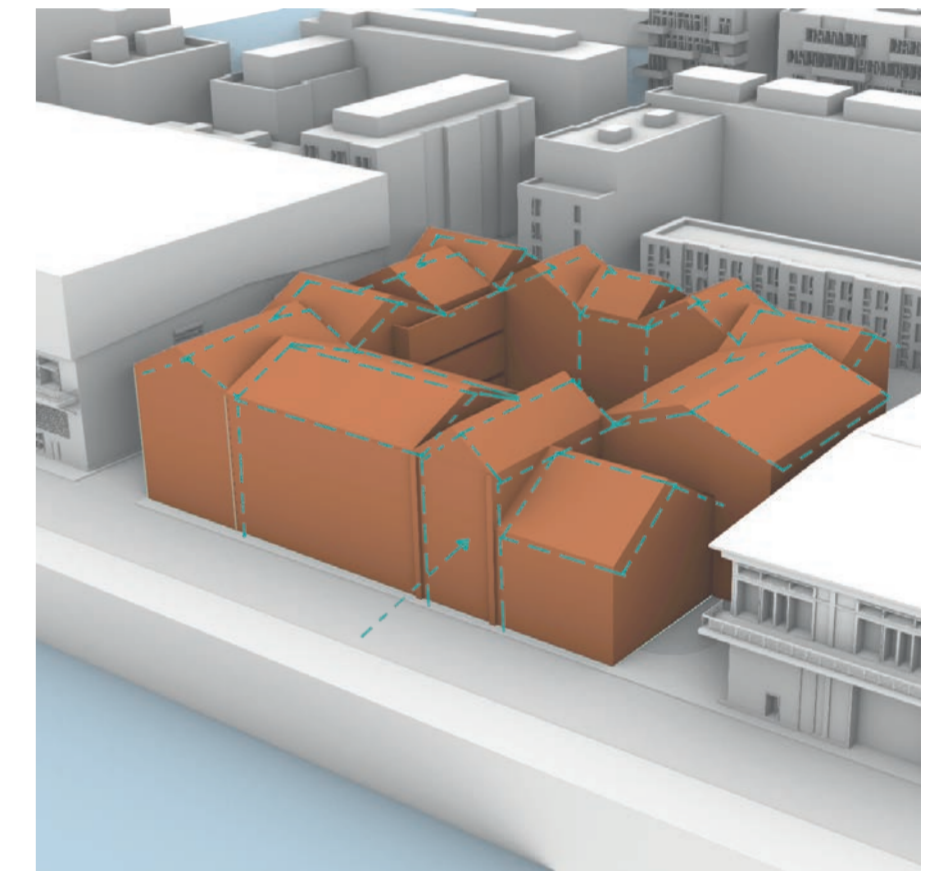
Flat site, North facing the harbour and south facing residential buildings.



Massing iteration one, extruding different building : U shaped



Massing iteration two, Extruding buildings: Enclosed courtyard.



Defining building shapes and roof pitches.



massing iteration 1.



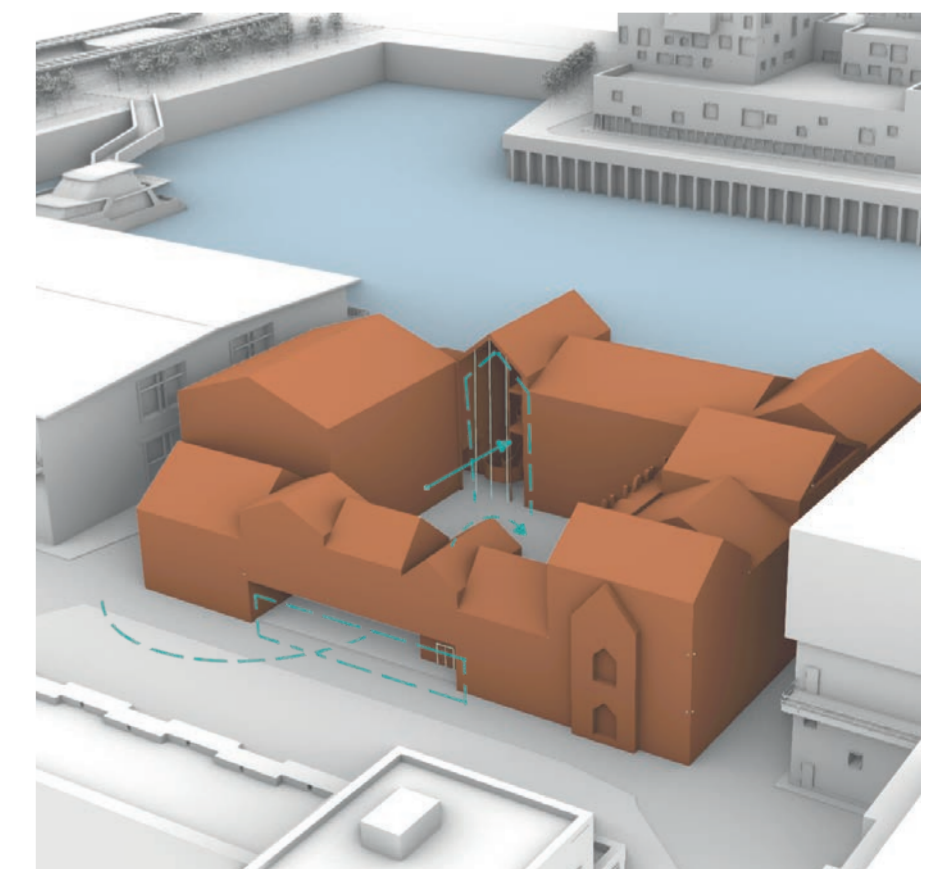
massing iteration 2.



massing iteration 3.

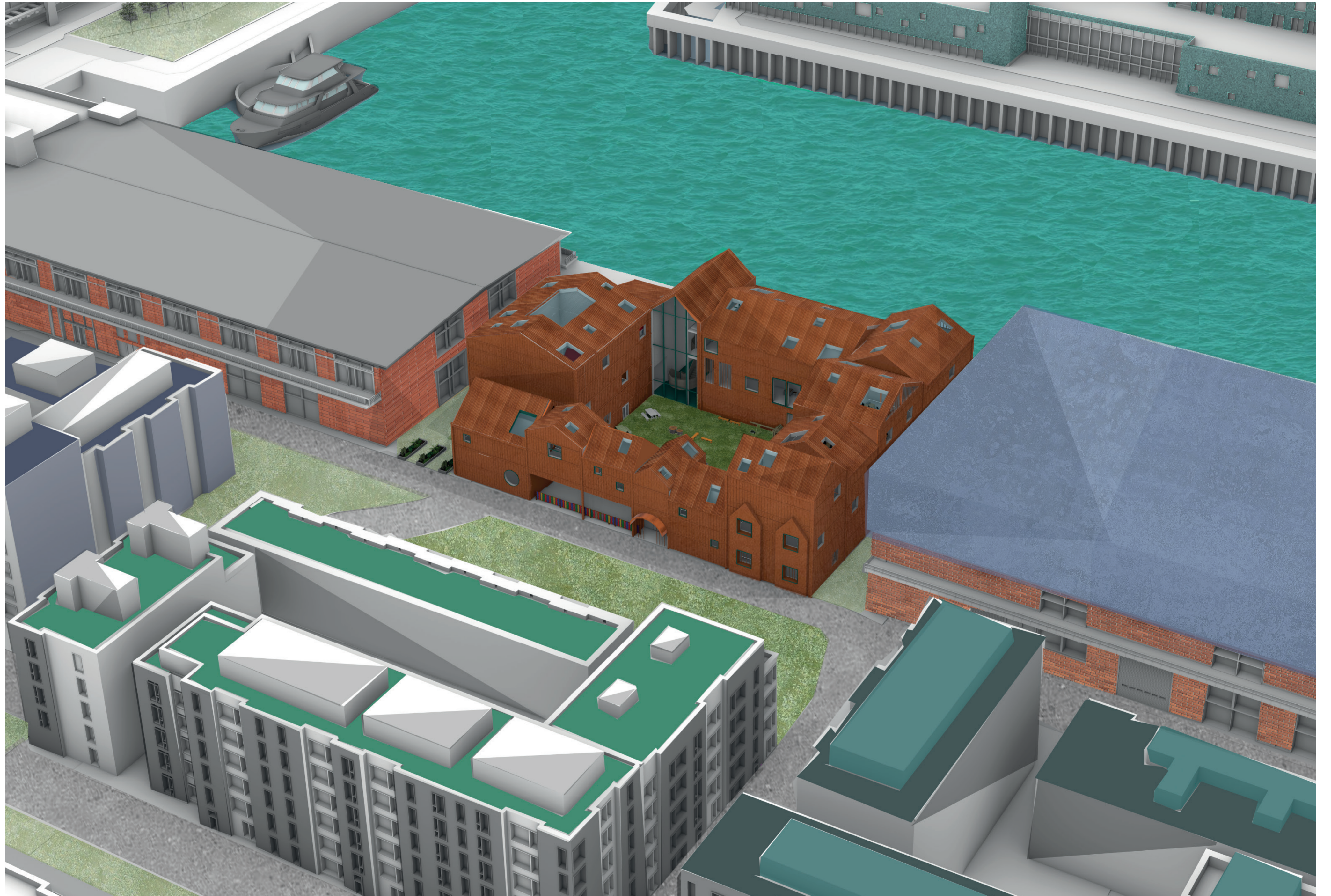


Reworking roof pitches to different height and adding Key entrance.



Cutting south elevations to optimise sunlight.

AERIAL VEIW :





EXTERNAL VEIW : FRONT STREET VEIIV



COURTYARD VIEW:



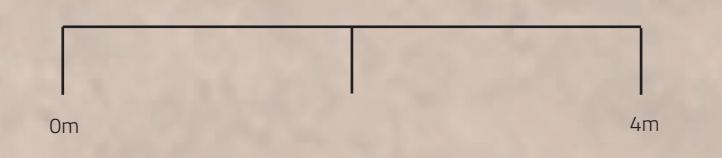
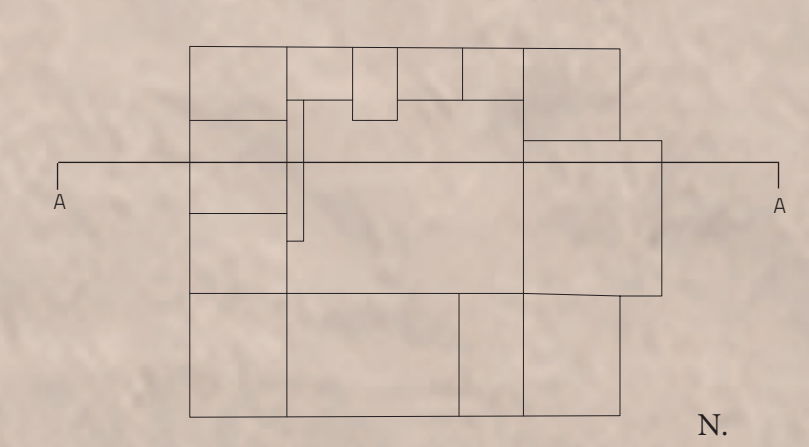


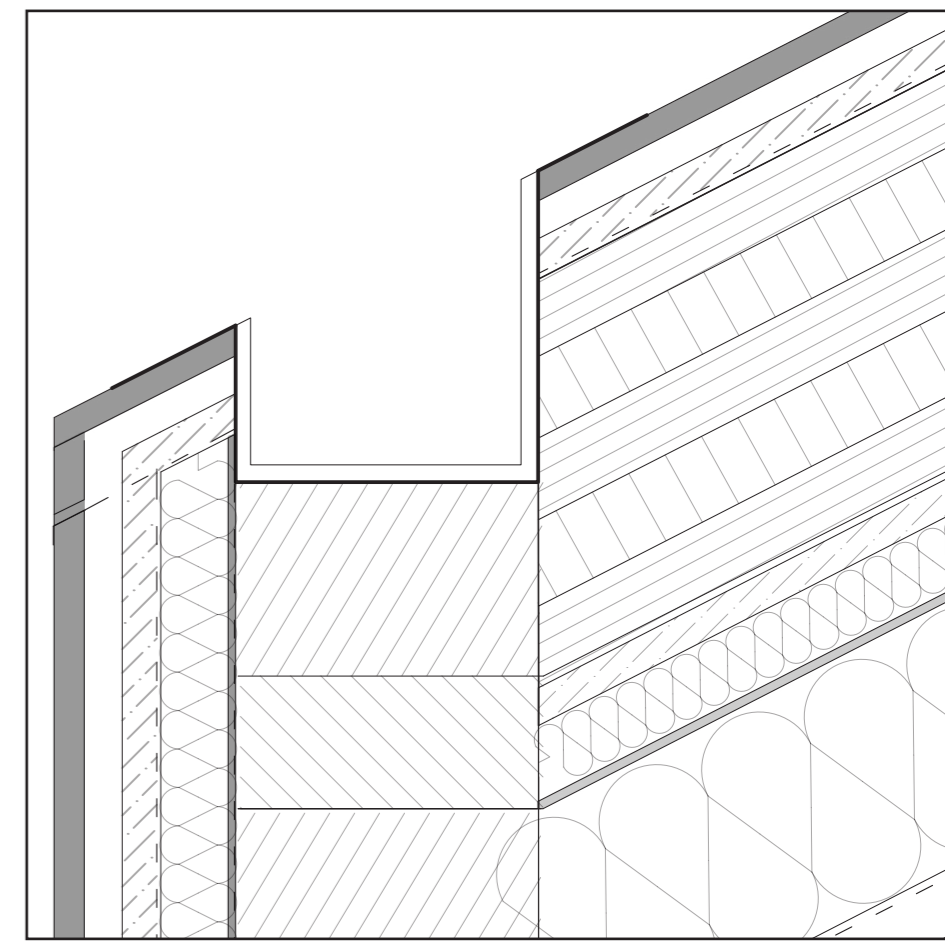
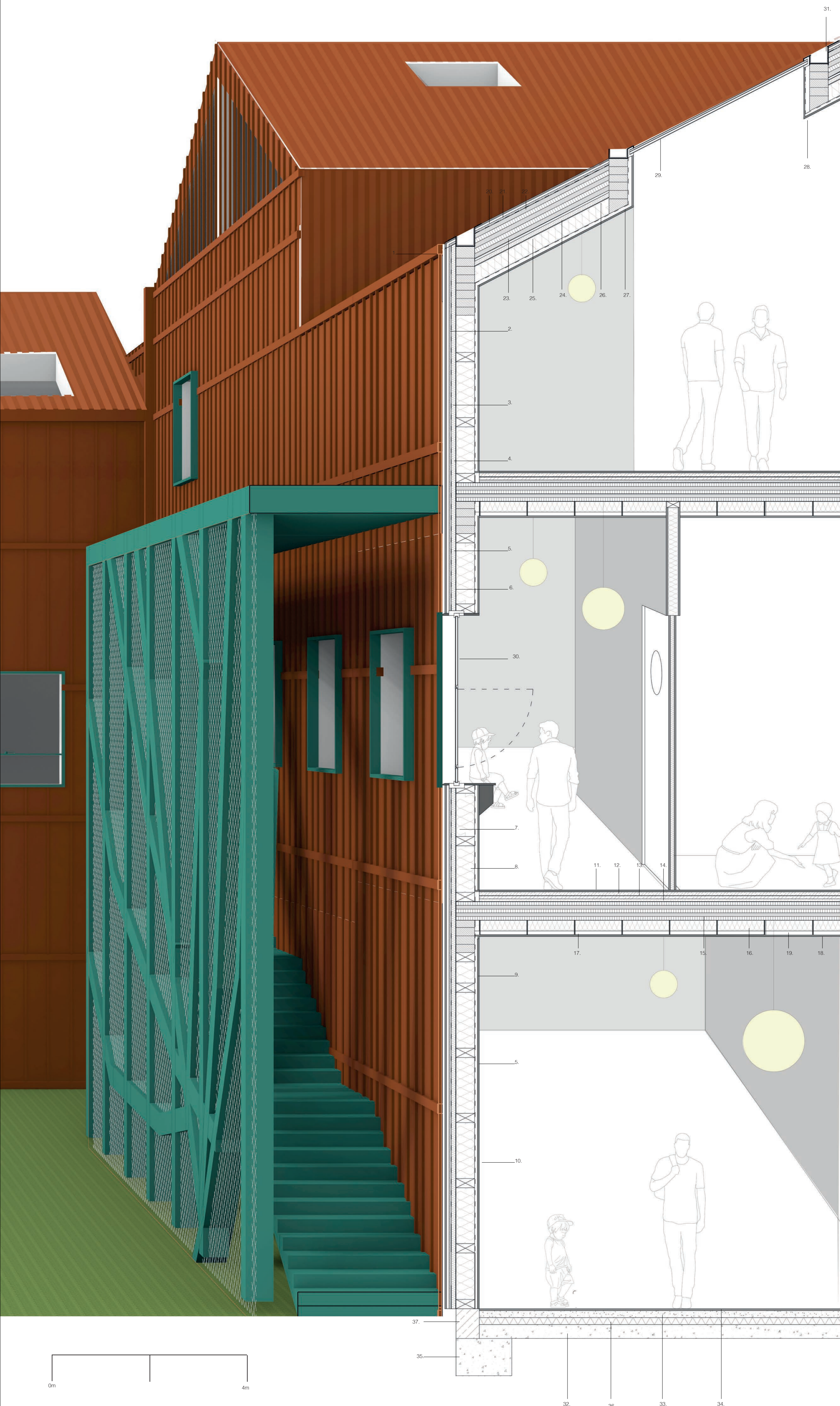
INTERNAL VIEW: RECEPTION AREA



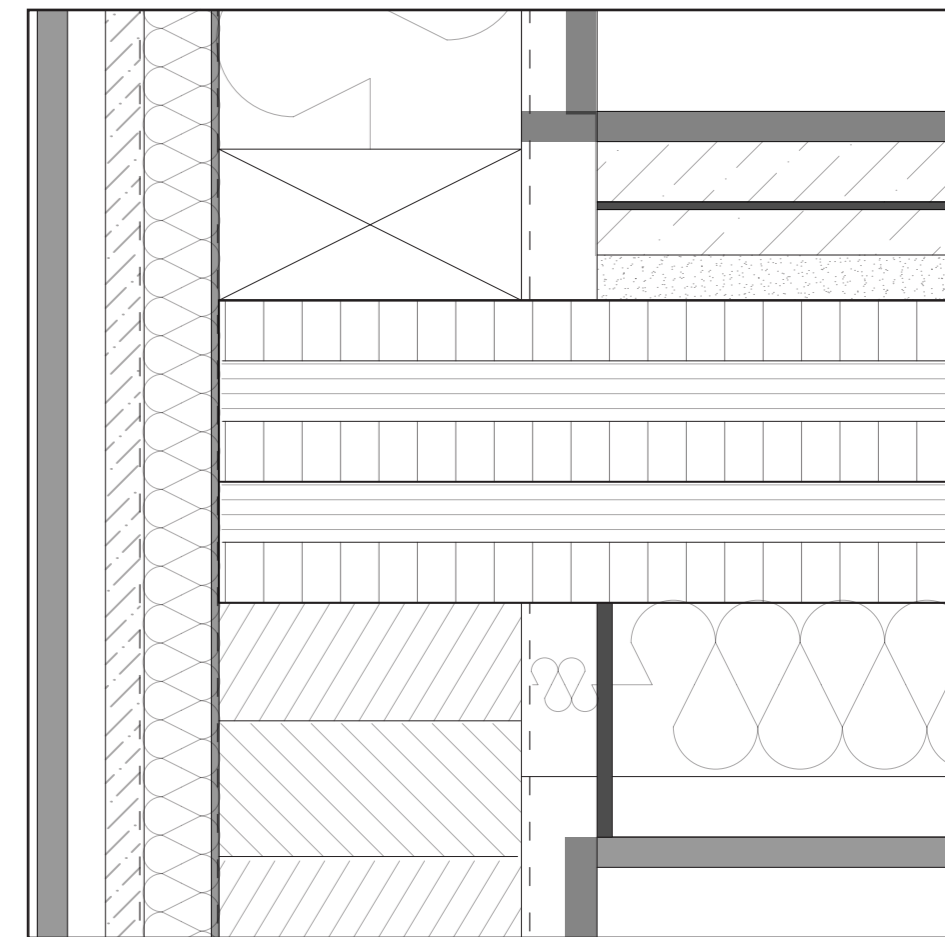


- Key:
- 1. Outdoor courtyard/ play area
 - 2. Kids playroom
 - 3. Kids playroom
 - 4. Music room entrance
 - 5. Side and stairs
 - 6. Kids imaginary play zone
- Adult:
- 7. Entrance / reception
 - 8. Parent social room
 - 9. Bulbroom offices
- Toddler side:
- 10. Toddler wc
 - 11. Toddler art room
 - 12. Toddler play room

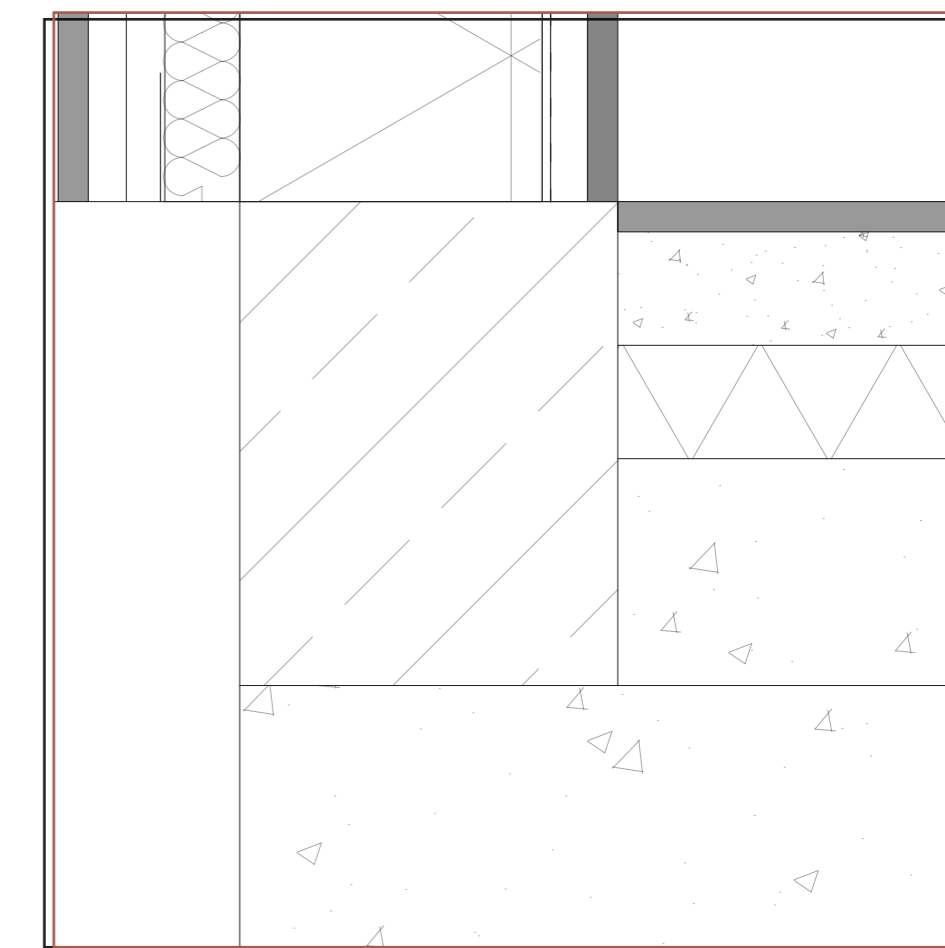




1:5 hidden gutters in roof detail



1:5 floor to wall connection

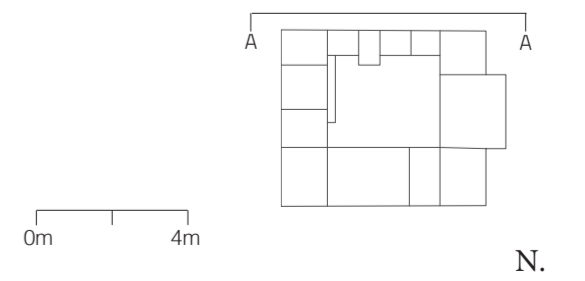


1:5 wall to foundation connection

- Key:**
- WALLS:**
- 1. 20mm zinc cladding solar shading
 - 2. 1mm zinc cladding sheets
 - 3. 25mm Ventilated cavity
 - 4. 25mm plywood sheeting
 - 5. Waterproof Membrane
 - 6. 50mm insulation horizontal
 - 7. Thin 3mm plywood
 - 8. 200mm insulation vertical, inbetween glulam beams
 - 9. 25mm service cavity for wires
 - 10. 20mm plasterboard finish
- FLOORS:**
- 11. 20mm floorboard finish
 - 12. 40mm chipboard for load distribution
 - 13. 10mm mass loaded vinyl
 - 14. 20mm acoustic matt to reduce noise
 - 15. 5 layer CLT (200mm)
 - 16. 150mm insulation
 - 17. suspension hangers
 - 18. 20mm plasterboard ceiling finish
 - 19. Cavity gap for wires
- ROOF:**
- 20. 1mm zinc cladding
 - 21. 25mm ventilated cavity
 - 22. 25mm plywood sheeting
 - 23. 5 layer CLT
 - 24. 50mm insulation horizontal
 - 25. 200mm insulation vertical
 - 26. thin 3mm plywood
 - 27. 25mm service cavity
 - 28. 20mm plasterboard finish
- SKYLIGHT:**
- 29. - 4mm panel double glazed glass with 25mm cavity between, held in a frame and connected to glulam beams
- WINDOW:**
- 30. - 4mm panel double glazed glass with 25mm cavity between, held in a frame
 - waterproof sealant and overhang windowseal
 - internal windowseal with incorporated seat.
 - painted Wooden finish
31. Hidden gutter system either side of skylights and bottom of pitched roof
- FOUNDATIONS:**
- 32. Reinforced concrete footing
 - 33. screed
 - 34. floor finish
 - 35. concrete block
 - 36. insulation
 - 37. engineering brick

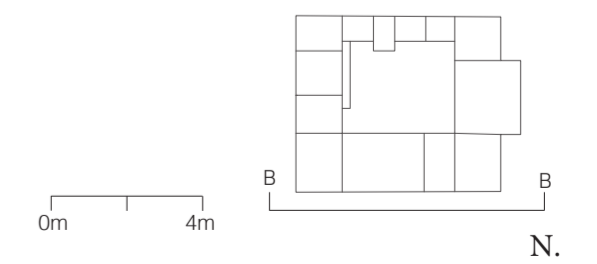
ELEVATIONS : 1:200

BACK: A:A



ELEVATIONS : 1:200

FRONT: B:B

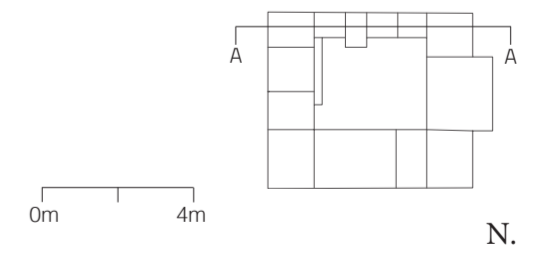


SECTIONS : 1:200

BACK SECTION : A:A

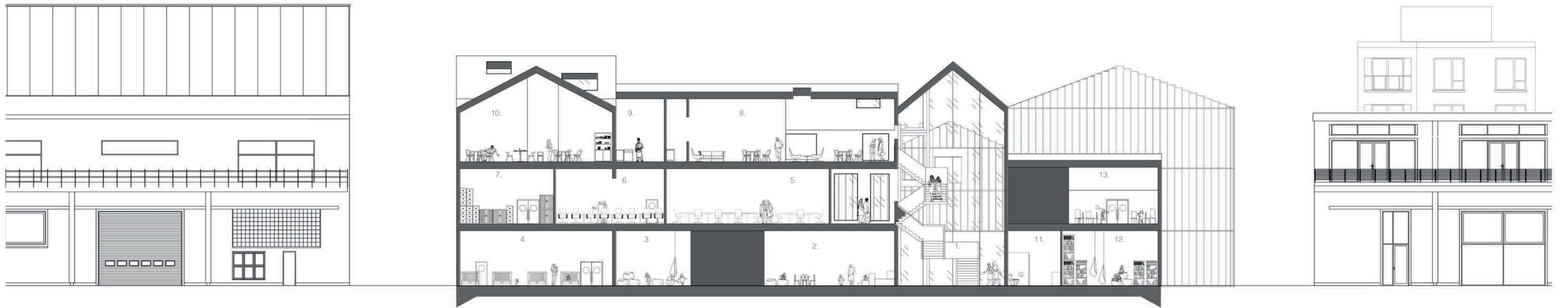


- Key:
- 1. Kids sensory room
 - 2. Kids classroom
 - 3. kids lunch-hall
 - 4. Fire escape stairs
 - 5. courtyard
 - 6. kitchen
 - 7. Toddler nap room
 - 8. Toddler sensory room
 - 9. Toddler lunch-hall
 - 10. Library



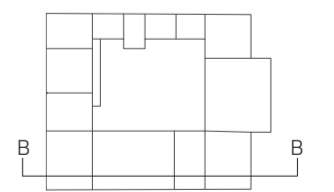
SECTIONS : 1:200

FRONT SECTION : B:B



- Key:
- 1. Entrance/Reception
 - 2. Baby play room
 - 3. Baby sensory room
 - 4. Baby nap room
 - 5. Conference room
 - 6. PC lab
 - 7. Staff storage
 - 8. Cafe/Seating area
 - 9. kitchen
 - 10. Staff room
 - 11. WC
 - 12. Kids library
 - 13. Kids art room

0m 4m



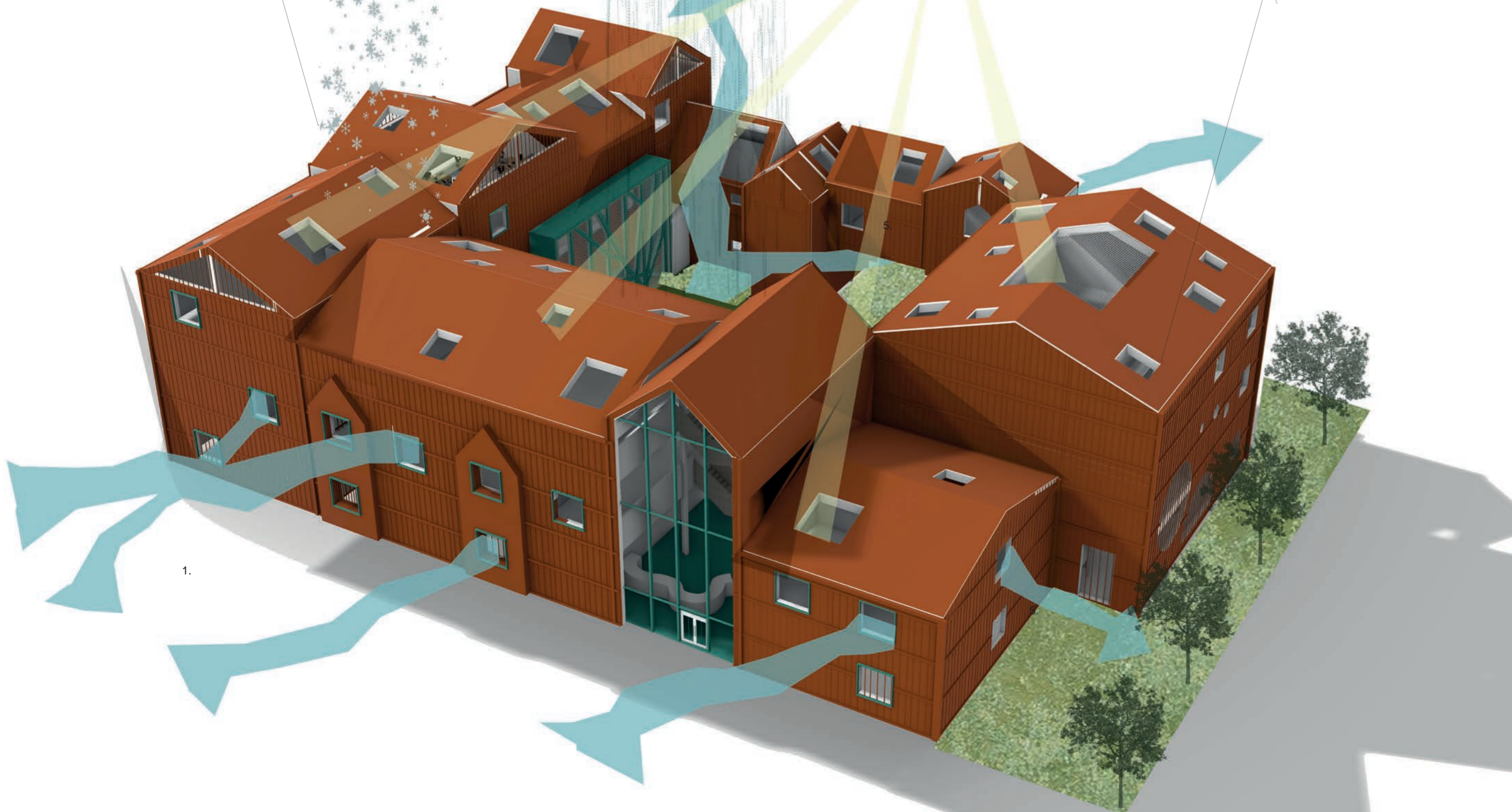
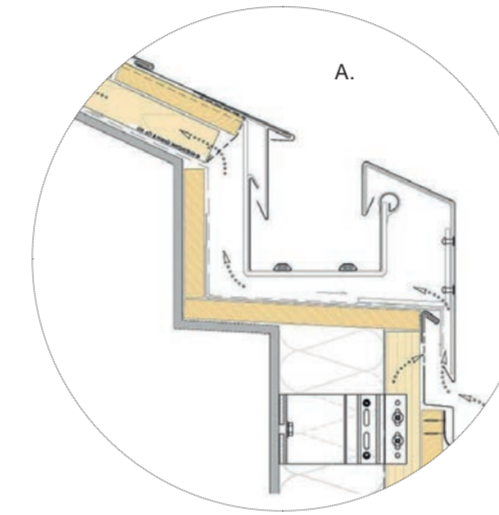
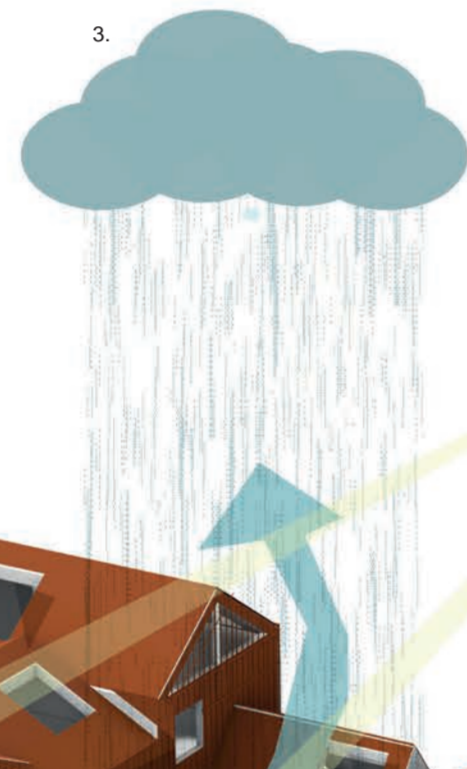
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ENVIRONMENTAL STRATEGIES:

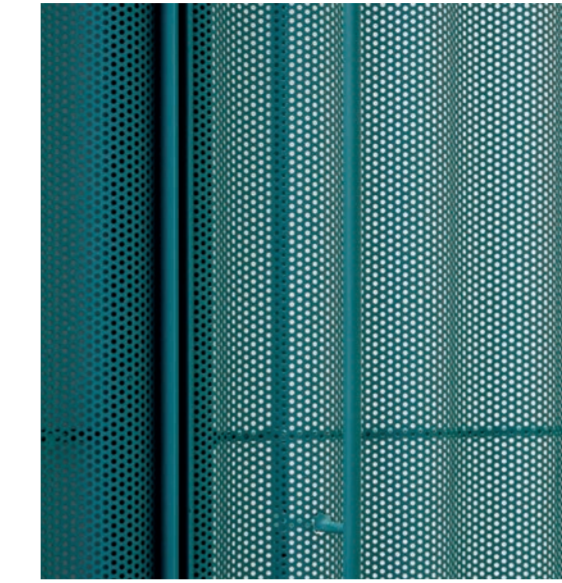
key:

1. Ventilation / airflow
2. Sunlight
3. Rain
4. Snow
5. Green space

1. Many windows on all facades of the building allow for airflow through the building
2. The suns culmination comes from the south , hitting the back of the building, the south side of the building has been lowered to allow as much natural light as possible into the courtyard and south facing facades.
3. The roofs are slanted to allow rain to fall down them and into hidden gutters within as shown in A. Hidden gutters are also placed either side of the skylights to ensure water does not get stuck.
4. Using Zinc cladding and thick external walls with insulations keeps the building at optimal temperatures during snow storms and cold seasons.
5. Green spaces allow for nature learning and CO2.



MATERIAL STRATEGIES:



Powder-Coated Perforated Galvanised steel:
Used on the exterior stairs as a way of creating 'fun and functional' stairs.

- Long-Term Durability
- Complements zinc facade
- Stable in harsh climates



laminated insulated glass:
Glass is a primary material in the building due to many windows.

- Double and tripple glazed
- Toughened
- Snow load resistant



VMZINC PIGMENTO Red/Orange:
Both the Facade and Roof are clad in this to establish a cohesive look.

- Low maintenance
- Weathering performance
- Strong life-span/Sustainable

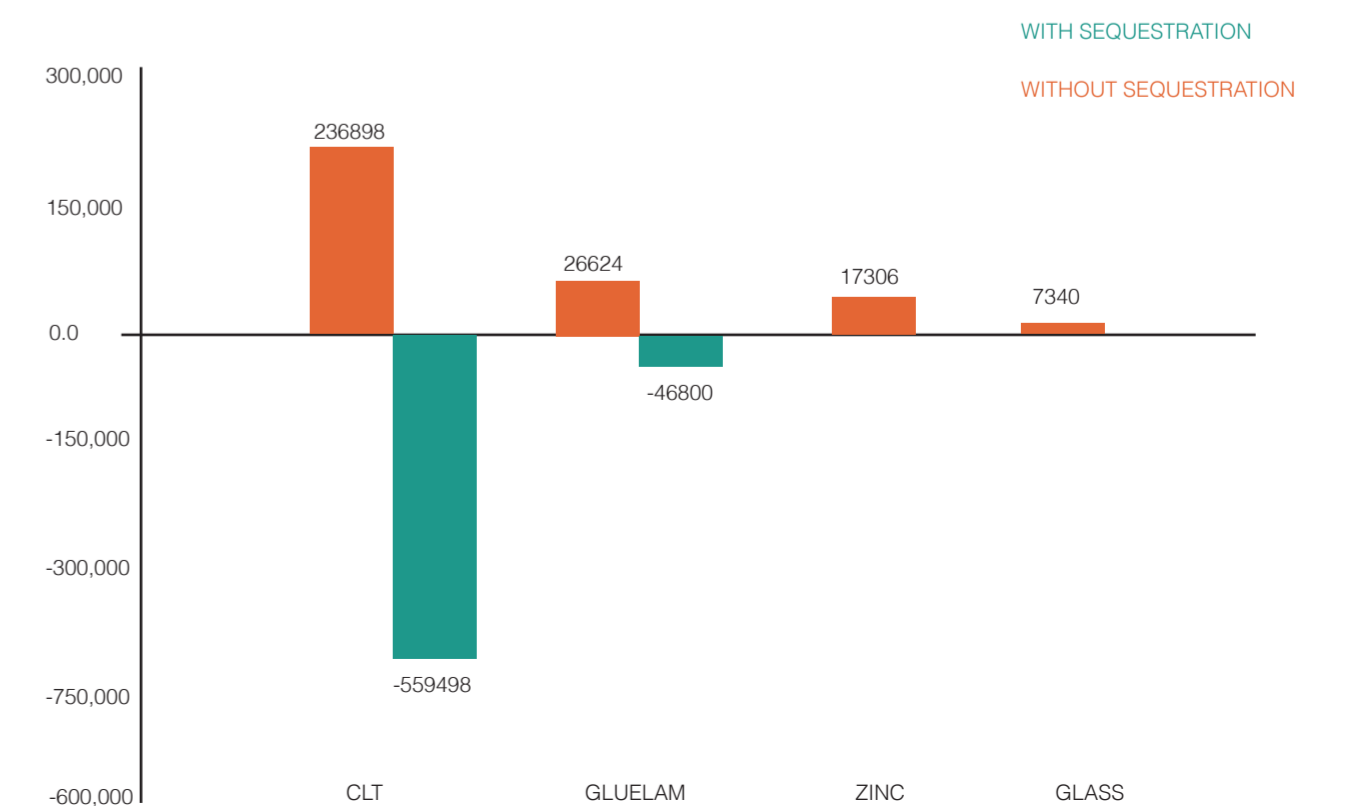


Zinc Solar Shading Cladding:
Secondary screen cladding acts as solar shading while also privacy screens for ground floor windows.

- Creates Depth
- Privacy
- Solar Shading

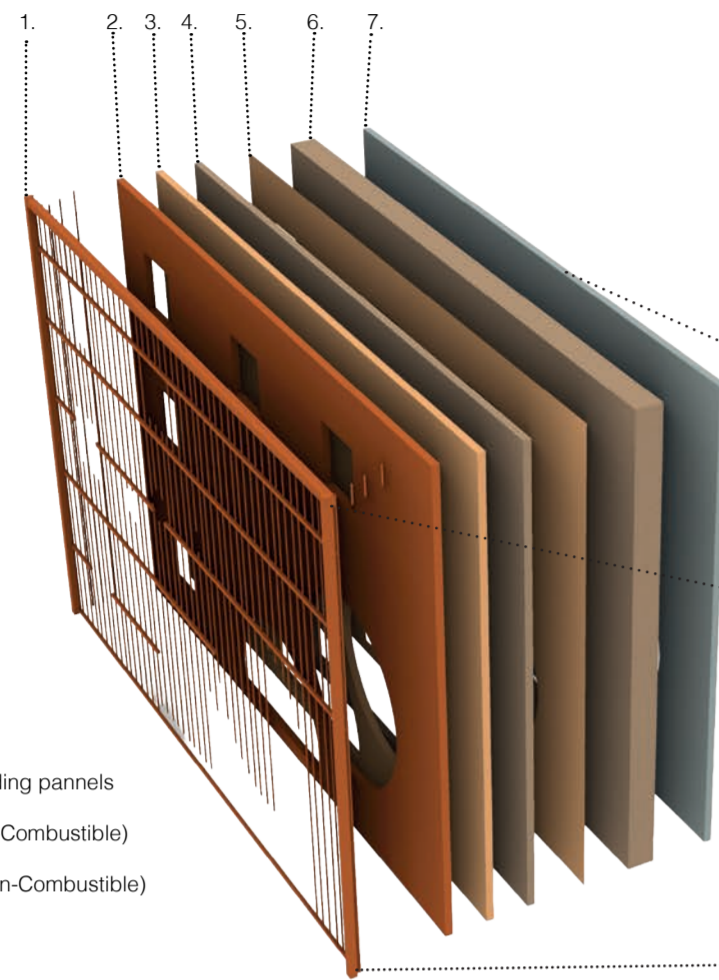
Material choices on a building are important and account for the amount of embodied carbon that building will produce, contributing to climate change. Picking materials that are low in carbon and low impact can enhance a buildings environmental footprint. For example Aluminium is one of the highest mainstream embodied carbon materials due to a extreme energy intensive electorolysis process.

Understanding carbon calculations , helps visualise the footprint my building has. Below is the carbon calculations of a zinc clad building anf gluelam and Clt frame:



Structural strategies:

Gluelam Timber Beam structure with CLT floors...



- Key:
1. ZINC solar cladding
 2. Non-Combustible zinc cladding panels
 3. plywood board
 4. 50mm wool insulation (Non-Combustible)
 5. plywood board
 6. 200mm wool insulation (Non-Combustible) within gluelam structure
 7. plasterboard

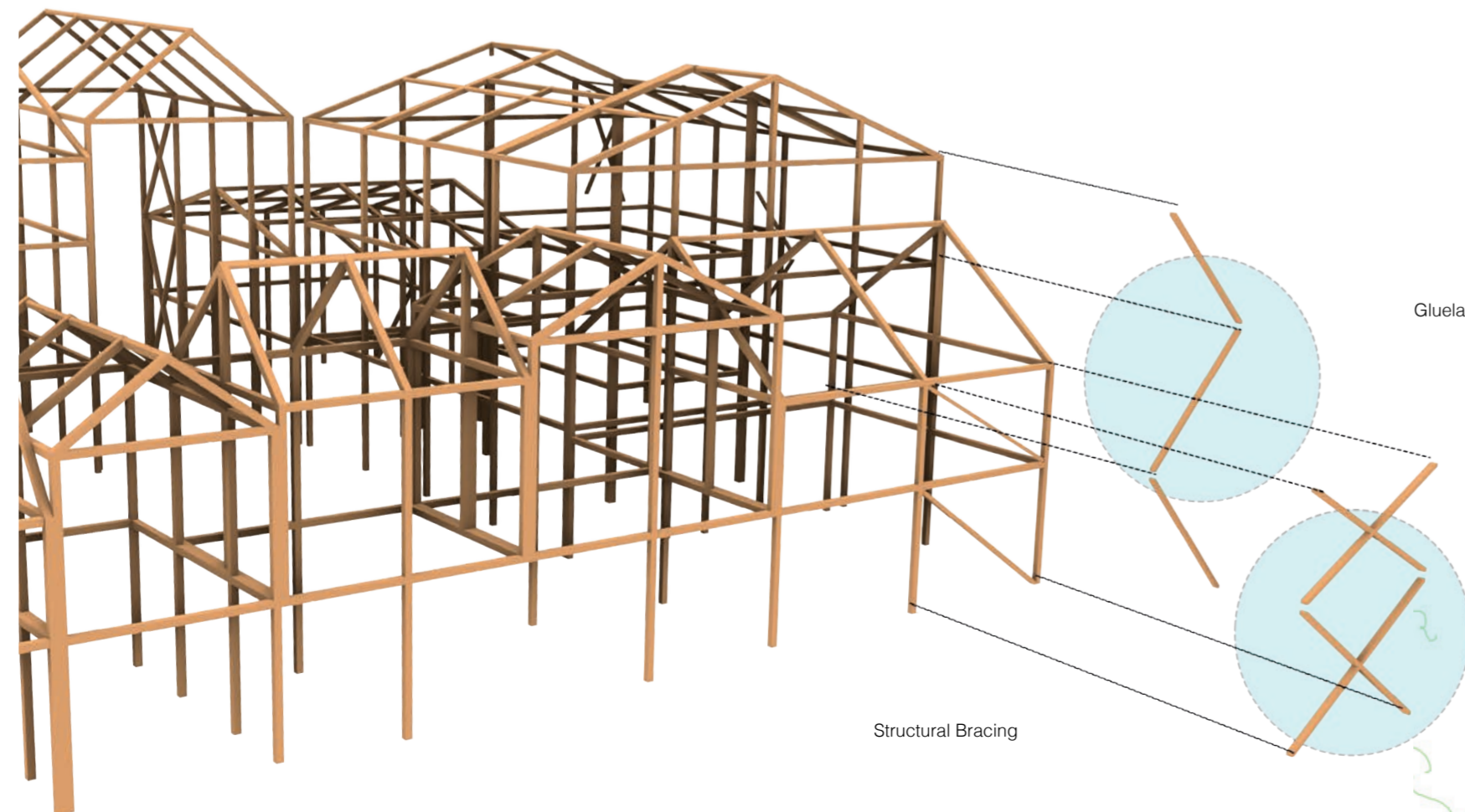
- Cavities restrict fire spread

Gluelam structure with CLT floors:

- 200mm gluelam structure
- 5 layer CLT floors sit above a gluelam floor beam spanning the area
- 300mm thick external walls
- 500mm thick floors

Structural Bracing:

- Cross Bracing is incorporated in the corners of the structure to help resist wind loads and increase structural stability overall.
- transfers wind forces to foundations

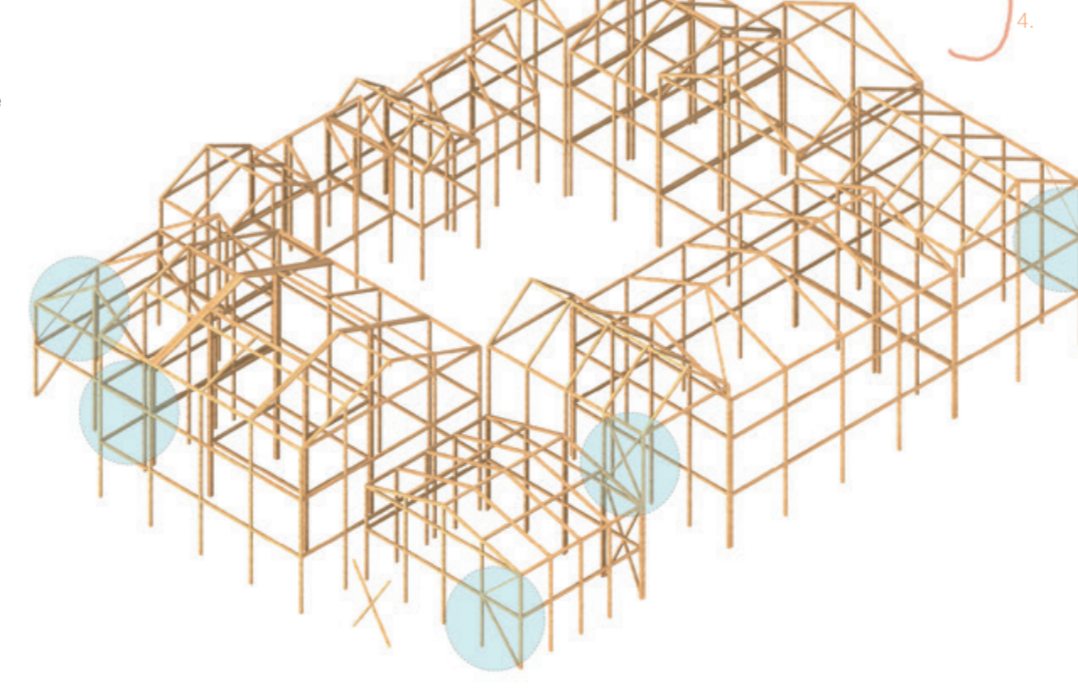
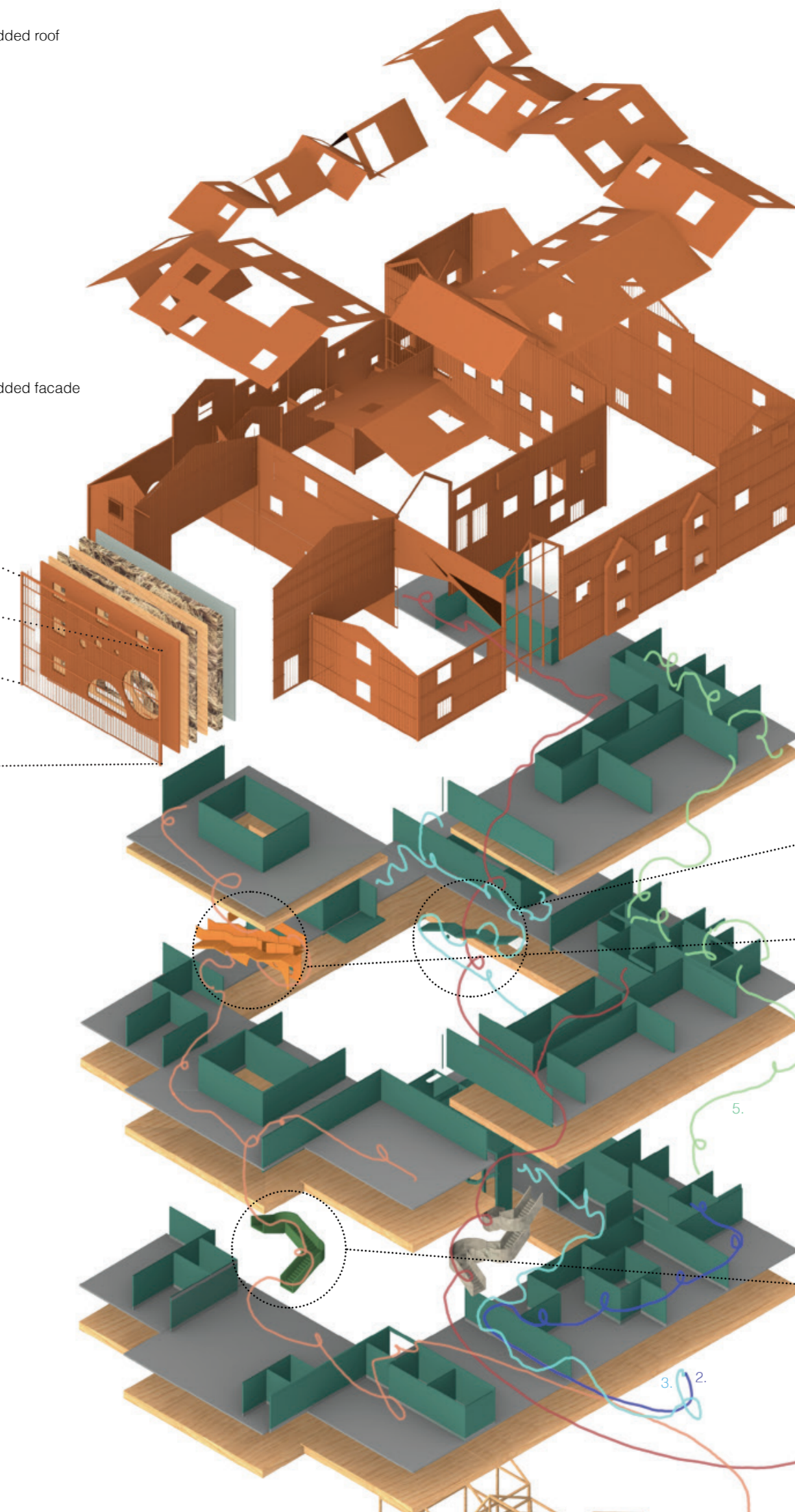


Structural Bracing

Zinc Cladded roof

Zinc Cladded facade

Gluelam structure



Access and Fire strategies:

Main access to the building is through the front reception facing the harbour towards the North side.

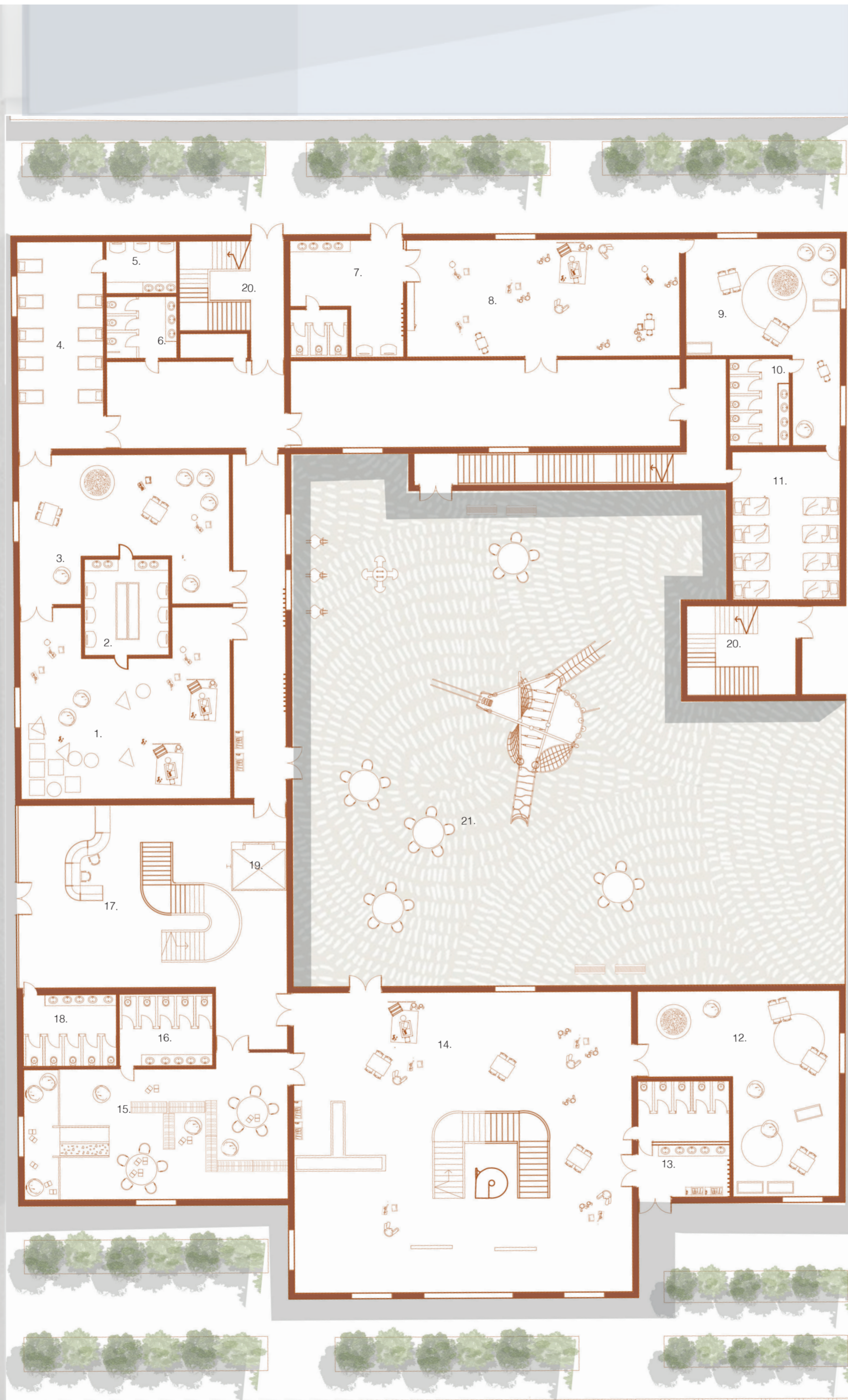


- Key:
1. parent/adult route
 2. Route to baby zone
 3. Route to toddler zone
 4. Route to child zones
 5. Staff route
- Fire stairs / escapes
 - Fire alarms
 - Carbon monoxide alarms

- Stairs to access child zones and playrooms and lowered to child height steps of 150mm by 300mm , with longer treads and shorter rises

- Playful but useable stairs make a more interesting look and use for children , acting as play equipment , this is achieved by bright colors , built in slides and curves.

- Adult accessible stairs and fire exits measure 180mm by 250mm



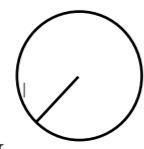
- Key: Baby:
- 1. Baby playroom
 - 2. Baby changing room
 - 3. Baby sensory room
 - 4. Baby nap room
 - 5. Changing room
 - 6. WC

- Key: Toddler
- 7. Toddler changing room
 - 8. Toddler playroom
 - 9. Toddler sensory room
 - 10. Toddler WC
 - 11. Toddler nap room

- Key: Kids;
- 12. Kids sensory room
 - 13. Kids changing room/WC
 - 14. Kids playroom
 - 15. Kids library
 - 16. Kids Wc

- Key:
- 17. Entrance/Reception
 - 18. WC
 - 19. Lift
 - 20. Fire stairs
 - 21. outdoor courtyard/playground

0m 4m



N.

UPPER PLANS : 1:200

FIRST FLOOR :



- key:
- 1. Entrance/reception
 - 2. Confrence room
 - 3. Mens wc
 - 4. Womens wc
 - 5. Social room
 - 6.PC room
 - 7. Storage
 - 8. Staff office
 - 9. Staff area
 - 10. Toddler library

- 11. Toddler art room
- 12. Staff wc
- 13. Toddler wc
- 14. Toddler lunch hall
- 15. Kitchen
- 16. Child lunch hall
- 17. Classroom
- 18. Music room
- 19. Child art room
- 20. Child WC

- key:
- A. Fire stairs
 - B. Child height stairs
 - C. Lift

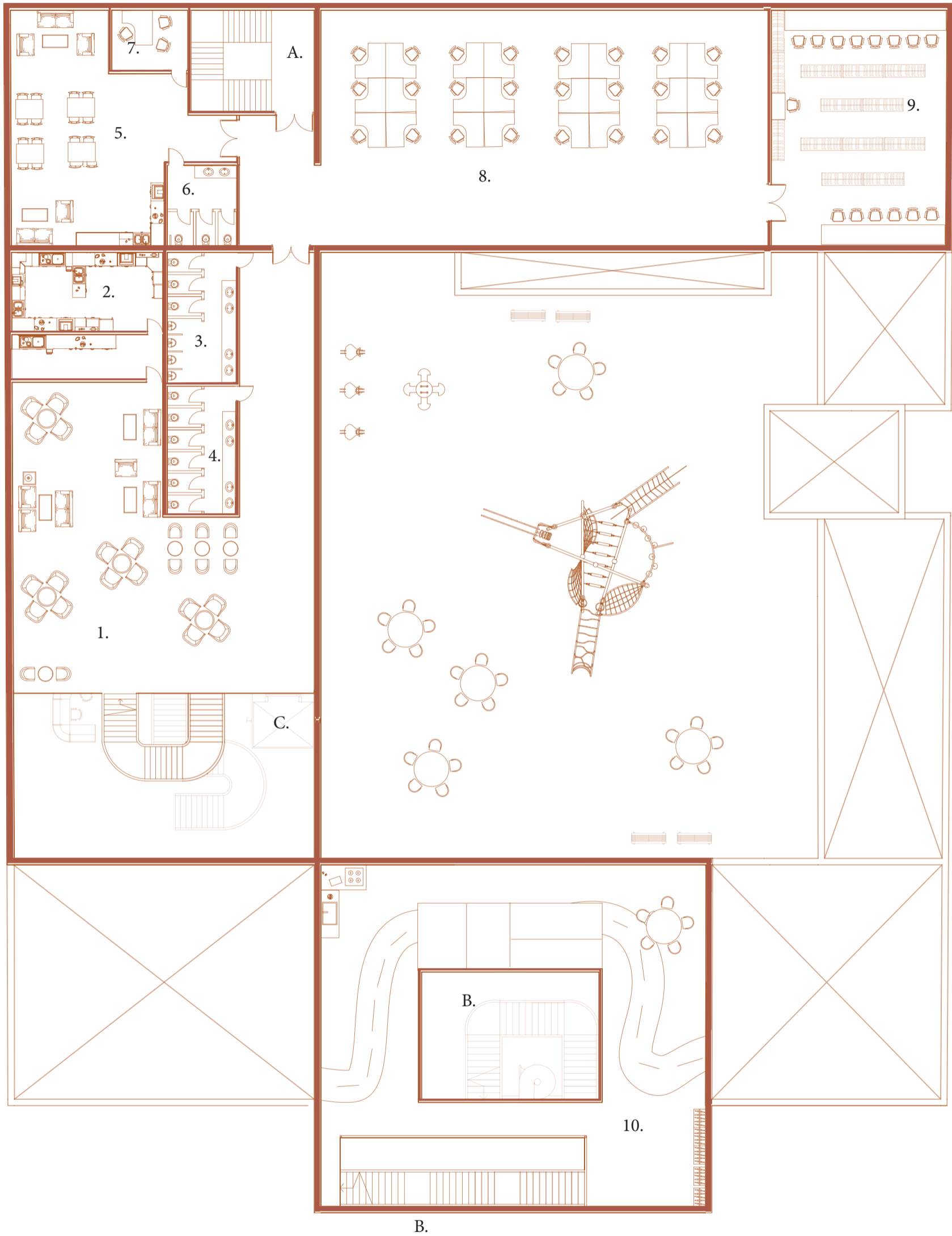
0m 4m



N.

UPPER PLANS : 1:200

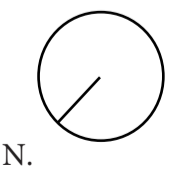
SECOND FLOOR :



- Key:
- 1. Cafe
 - 2. Kitchen
 - 3. Mens wc
 - 4. Womens wc
 - 5. Staff room
 - 6. Staff wc
 - 7. Staff office
 - 8. Bullpen offices
 - 9. Library
 - 10. Child imagination zone

- key:
- A. Fire stairs
 - B. Child height stairs
 - C. Lift

0m 4m





MODEL PHOTOS : 1:200

