

SELLERS WHEEL, SHEFFIELD

A COLLABORATIVE CO-WORKING SPACE



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SITE LOCATION

SELLERS WHEEL, SHEFFIELD



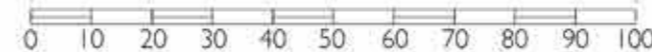
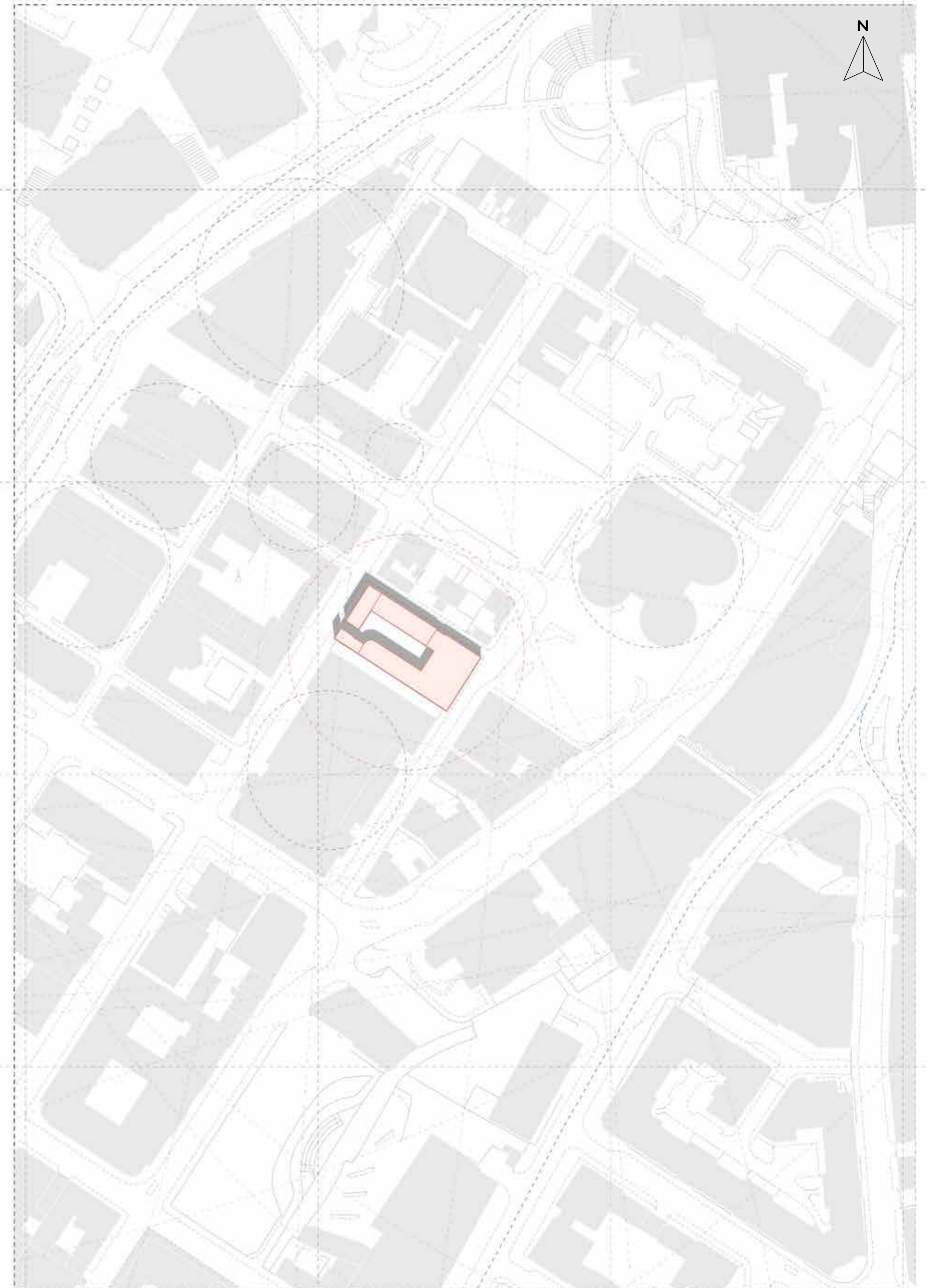
Sellers Wheel is a Grade II listed three-story industrial building, initially used as a place for tool manufacturing by John Sellers and Sons. It is comprised of two wings that form an L-Shape, with a communal courtyard in the centre.

Address:
149 Arundel Street, Sheffield City Centre,
Sheffield S1 2NU

A newly designed six story student accommodation closes in the other side of the courtyard, clearly distinguished from the older building as to not dilute the original built fabric. Cartwright and Pickard, the architectural firm who designed the student accommodation, were also tasked with refurbishing the industrial building, and they focused on celebrating its heritage by emphasising the raw industrial character of the existing building.

The complex is located off Arundel Street, Sheffield. The location is very central in Sheffield, situated around 7 minutes away from the train station, making the area a very accessible space. It lies a few streets below a main road, nestled in between Sheffield Hallam University's city centre campus buildings. Sellers Wheel is marked in red on the site map, and the main roads are indicated with a light grey dotted line.

- Other Buildings
- Chosen Site
- Main Roads
- University Buildings
- Chosen Site



SITE ANALYSIS

EXTERIOR PHOTOGRAPHS



View from Arundel Street



View from Arundel Street

Whilst I was in the process of choosing a site, I undertook a site visit to Sellers Wheel to better understand the existing exterior of the building. I was already familiar with the site as I had visited Tamper Coffee, the coffee shop located on the ground floor of Sellers Wheel, many times in the past, but I re-visited the site to view it in a more analytical way.

Although I was not able to access the building itself, I was able to enter the courtyard through the cart entrance. Here I was able to see all the access points to the building, as Tamper and Mow's Coffee are the only spaces accessible from Arundel Street and Brown Lane. As I thought about what space on the site I wanted my proposal to be set in, I began to think about retaining Tamper and using the two floors above which are existing office spaces. I could see the above spaces were currently only accessible through two doors on either end of the courtyard.

From the courtyard I was also able to understand the relationship between the older Sellers Wheel building and the newer student accommodation and how it affected the amount of natural light reaching the site, which is something I would analyse as part of my site analysis.

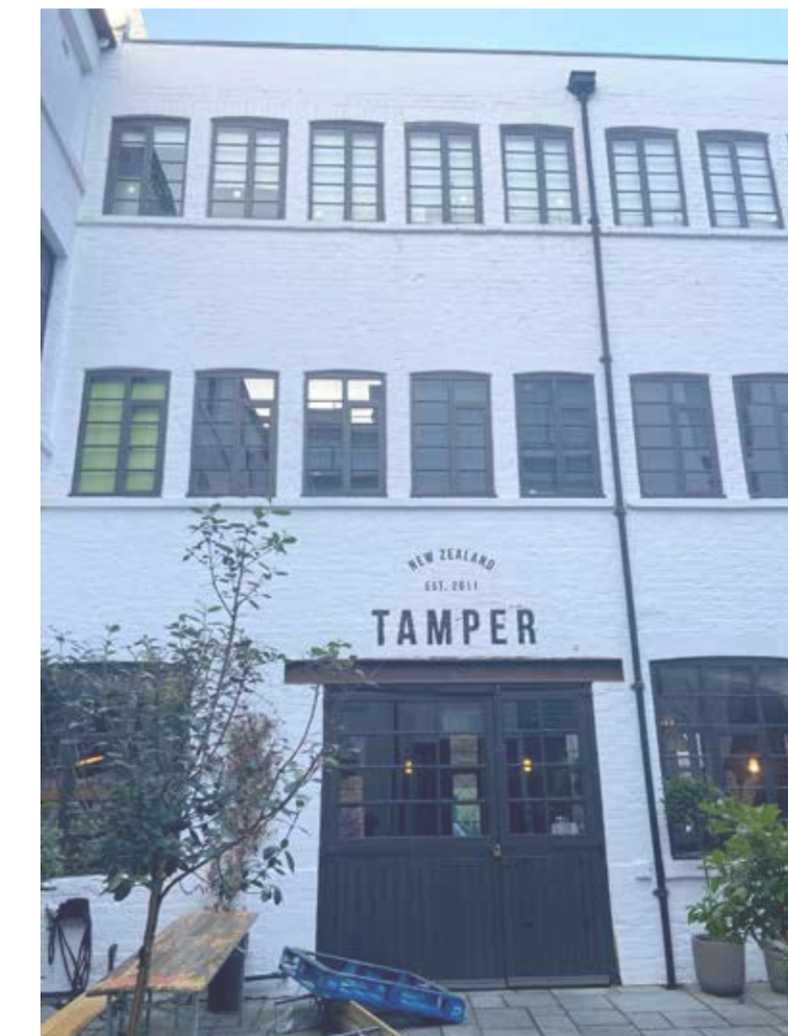
Visiting the site and taking pictures of every corner of the exterior, along with using the existing plans, allowed me to create a detailed 3D CAD model of the entire site, and to understand the complexity and variety of the different styles of windows that line the facades of the building to create convincing and accurate visualisations later down the line.



View from the courtyard facing Tamper Coffee



Cart entrance from the courtyard



Closer look at the windows



View of the student accommodation and Sellers Wheel

EXISTING GROUND FLOOR PLAN

SCALE 1:200 @ A2



This is the existing ground floor plan of Sellers Wheel and the adjoining student accommodation. The original industrial building houses two coffee shops, the first being Tamper which is accessible from Arundel Street and the courtyard. There is also Mow's Coffee, which connects onto laundry for hair, a hairdressers that sits under the newer student accommodation.

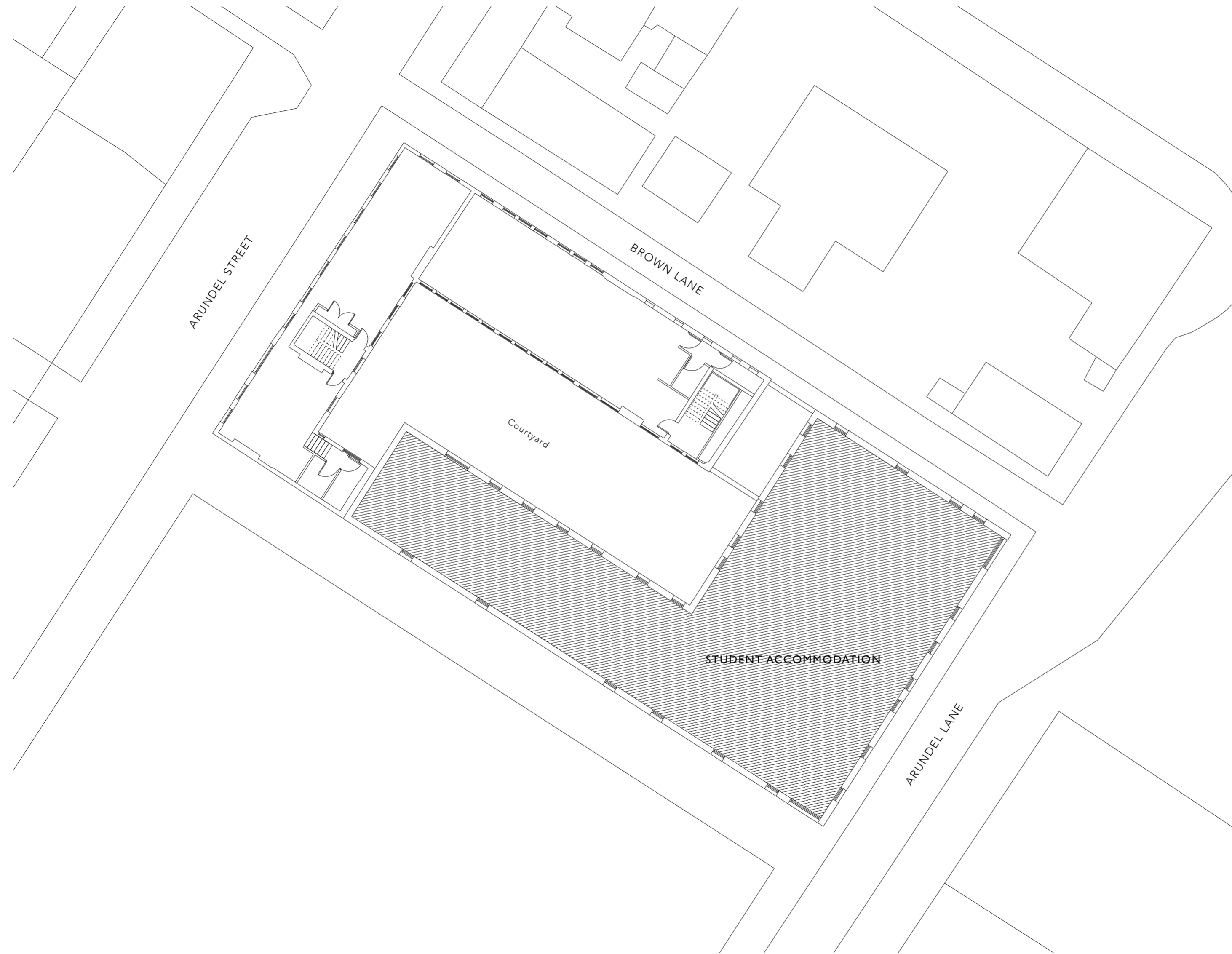
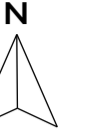
The student accommodation is located at the end of the courtyard, accessible by the courtyard and Arundel Lane. There is a shorter bin storage building that sits nestled in between Sellers Wheel and the student accommodation.

For my proposal, I am only using the original Sellers Wheel building and the bin store, which are highlighted on the plan.

The upper two floors of Sellers Wheel are accessible by the two U-shaped staircases that are located at either end of Tamper.

EXISTING 1ST FLOOR PLAN

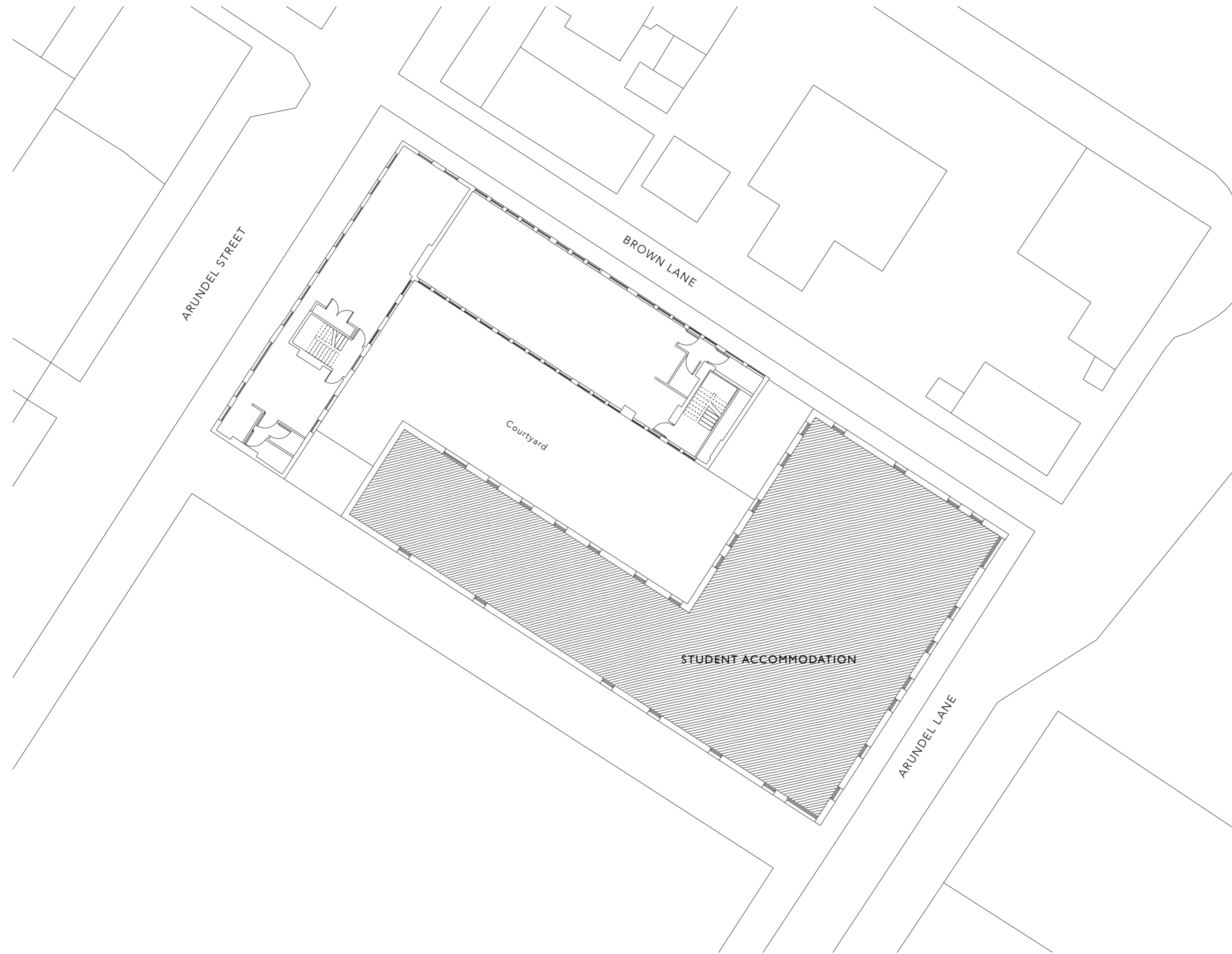
SCALE 1:200 @ A2



This is the first floor of Sellers Wheel. The space is currently in use as office space. The existing toilet facilities are located at either end of the building with a small kitchenette alongside them, and the two wings of the building are separated by a wall.

EXISTING 2ND FLOOR PLAN

SCALE 1:200 @ A2



The second floor is also currently used as office space with toilet and kitchenette facilities at each end, again with each side separated by a wall.

EXISTING ROOF PLAN

SCALE 1:200 @ A2



The left wing of Sellers Wheel that faces Arundel street has a pitched roof with two chimney stacks, and a flat roof on the right-side facing Brown Lane. Where the pitched roof meets the flat roof, there is Gable Wall with a door for access to the roof.

The student accommodation has five floors in total.

EXISTING FRONT FACADE

SCALE 1:100 @ A2



SELLERS WHEEL, SHEFFIELD

SITE ANALYSIS

HISTORY OF THE SITE

The building was originally occupied by John Sellers and Sons, which was established in Sheffield in 1820. The firm manufactured many tools such as pen-knives, surgeons instruments and engraving tools, the latter of which became an important specialty for the firm. In around 1862, Sellers moved to the three-storied cutlery 'wheel' which we now know as Seller's Wheel.

Throughout the 1860's and 70's, the company employed around 45 workers, however this increased to around 100 by the end of the century. The company was passed down through the family over the years until it ceased business in 1975.

As many industrial buildings have been lost due to the severe decline of the industry, Sellers Wheel is an important survivor. The building itself is organised around a central courtyard space, accessed by a cart entrance. The L-shaped building's walls are made up of white painted bricks, adorned with many large Victorian industrial-style windows, lining the entirety of the building to maximise the amount of natural light for the steel workers within.



WINDOW STUDY

9-2-21



SITE ANALYSIS

AREA CONTEXT



MAP SHOWING BUILDING USE



- University Buildings
- Pubs/ Cafes
- Chosen Site

MAP SHOWING PUBLIC TRANSPORT LINKS



- Bus Stops
- Train Station
- Bus Station
- Car Parks
- Chosen Site

To better understand the site, I decided to look at the buildings surrounding my site, particularly focusing on the university buildings, pub and cafes. I wanted to highlight how the site is nestled in between much of the Sheffield Hallam University city campus and began to think about the ways this could affect who the target audience for my design proposal are. I also looked at the pubs and cafes located in the immediate surrounding area, as I started to think about how people might spend an entire day at the site and ways in which they could have lunch in the area.

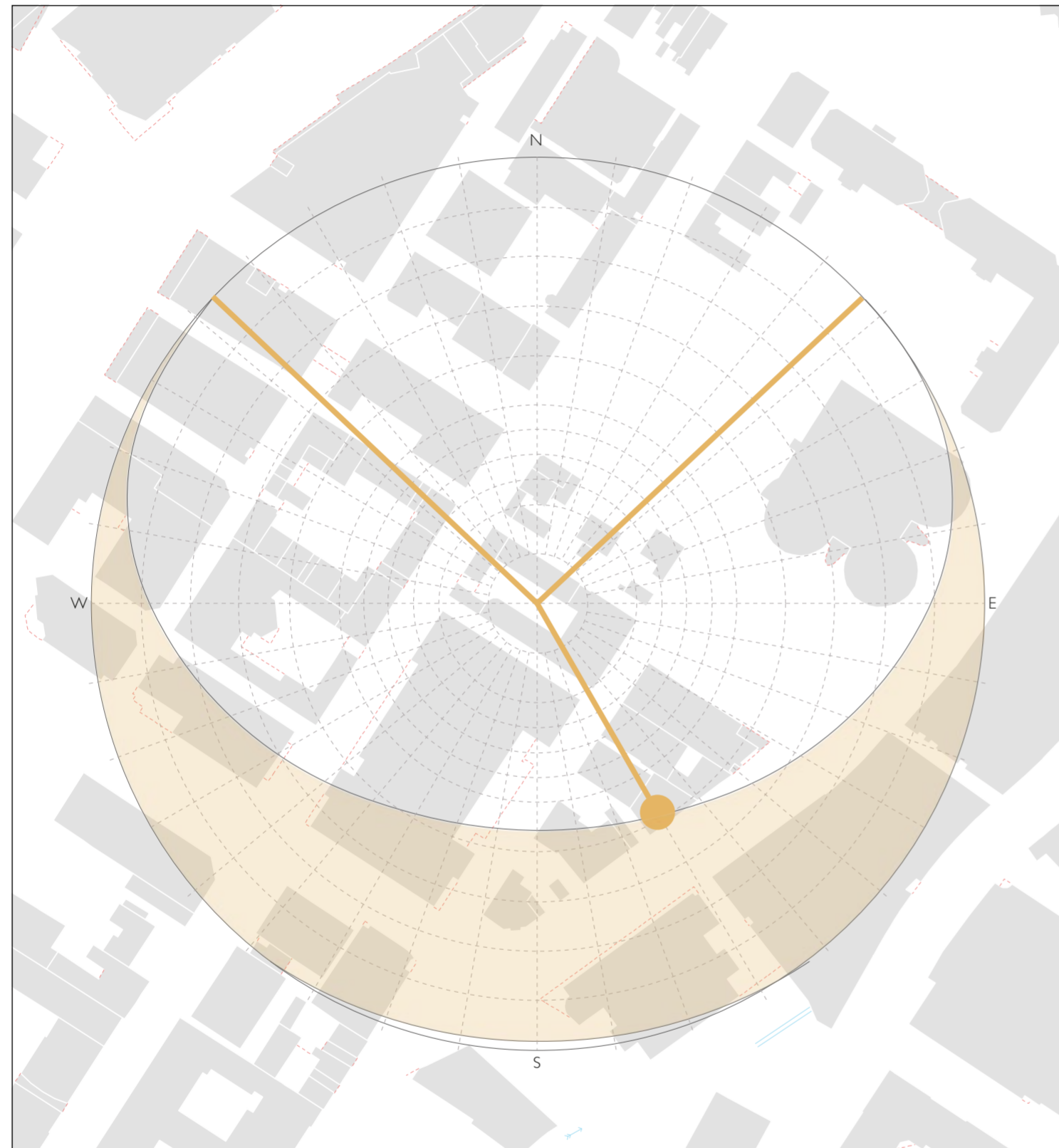
Furthermore, I looked at the transport links surrounding the site. The train station is located a short 7-minute walk from the site, and Sheffield Interchange is located around 10 minutes away, making the site very accessible through two main transport hubs. It is also within 2 minutes' walk of several bus stops, again highlighting the accessibility of this site via public transport. There are several car parks within minutes of Sellers Wheel, with parking available for a full day for £5, making this site also convenient for people who need to reach the site by car. Overall, I believe due to the central location of this site and its close proximity to public transport links and private parking, it will be highly accessible to the full scope of my audience.

SITE ANALYSIS

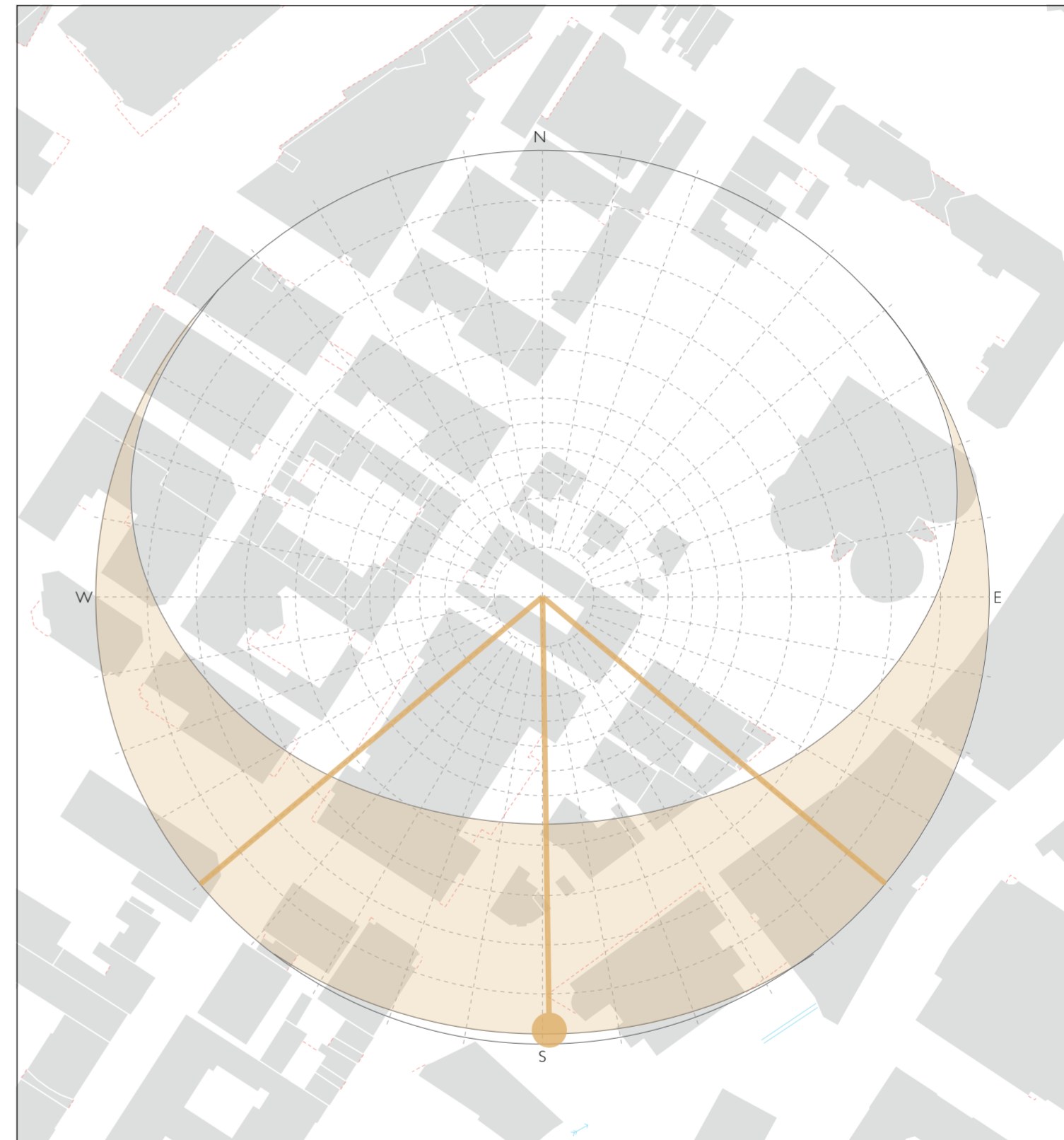
SUN PATH STUDY



SUN PATH 21ST JUNE - SUMMER SOLSTICE



SUN PATH 21ST DECEMBER - WINTER SOLSTICE



From previous research into the effects of natural light on the workforce in an office space that I undertook, I determined that natural light is one of the most important factors of my design. When researching for my dissertation, I found out that being positioned closed to a window meant office workers received 173% more white light exposure and slept an average of 46 minutes more per night, and in a study by the Department of Design and Environmental analysis at Cornell, it was reported that for employees seated within 3 meters of a window there was a reported 84% decrease in eyestrain, headaches, and blurred vision symptoms.

Therefore, I decided to look in-depth at the amount of light my site would receive, during different hours of the day and months of the year. I started by looking at the sun paths around my site in summer and winter. From these I determined that on the longer days in summer, the building would receive the most direct light on the South-West side of the building facing into the courtyard in the late morning/ early afternoon, and in winter it would receive a lot less light direct as the path of the sun is a lot shorter and stays a lot lower in the sky. With these diagrams, I was able to start thinking about how to maximise the amount of natural light coming into the building, whilst being mindful of the potential glare during peak summer months.

SITE ANALYSIS

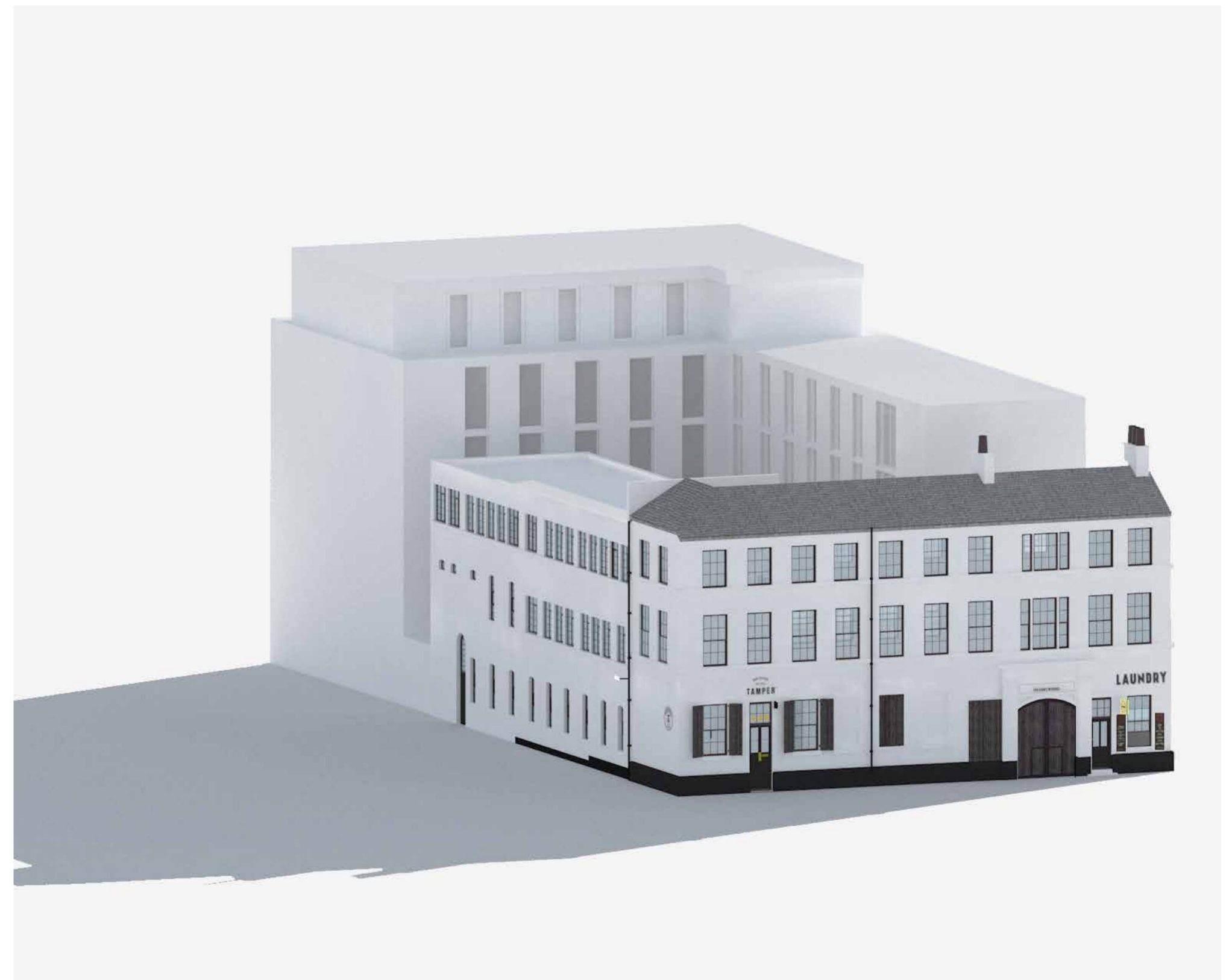
SHADOW STUDY



SHADOW STUDY - SOLAR NOON 1:02PM JUNE 21ST



SHADOW STUDY - SOLAR NOON 11:58 AM DECEMBER 21ST



To further understand the amount of light that the building receives, I created this 3D shadow study in Vectorworks, using a detailed 3D model I created of Sellers Wheel and the student accommodation in simple form. I created two studies, each at solar noon on the longest summer day and the shortest winter day, to understand the amount of light that would reach the site. In summer, there is a lot more light able to reach the site, as in winter, due to Sellers Wheel being blocked by the taller student accommodation, the sun isn't high enough to reach the lower industrial building. This is something I took into consideration throughout my design process.

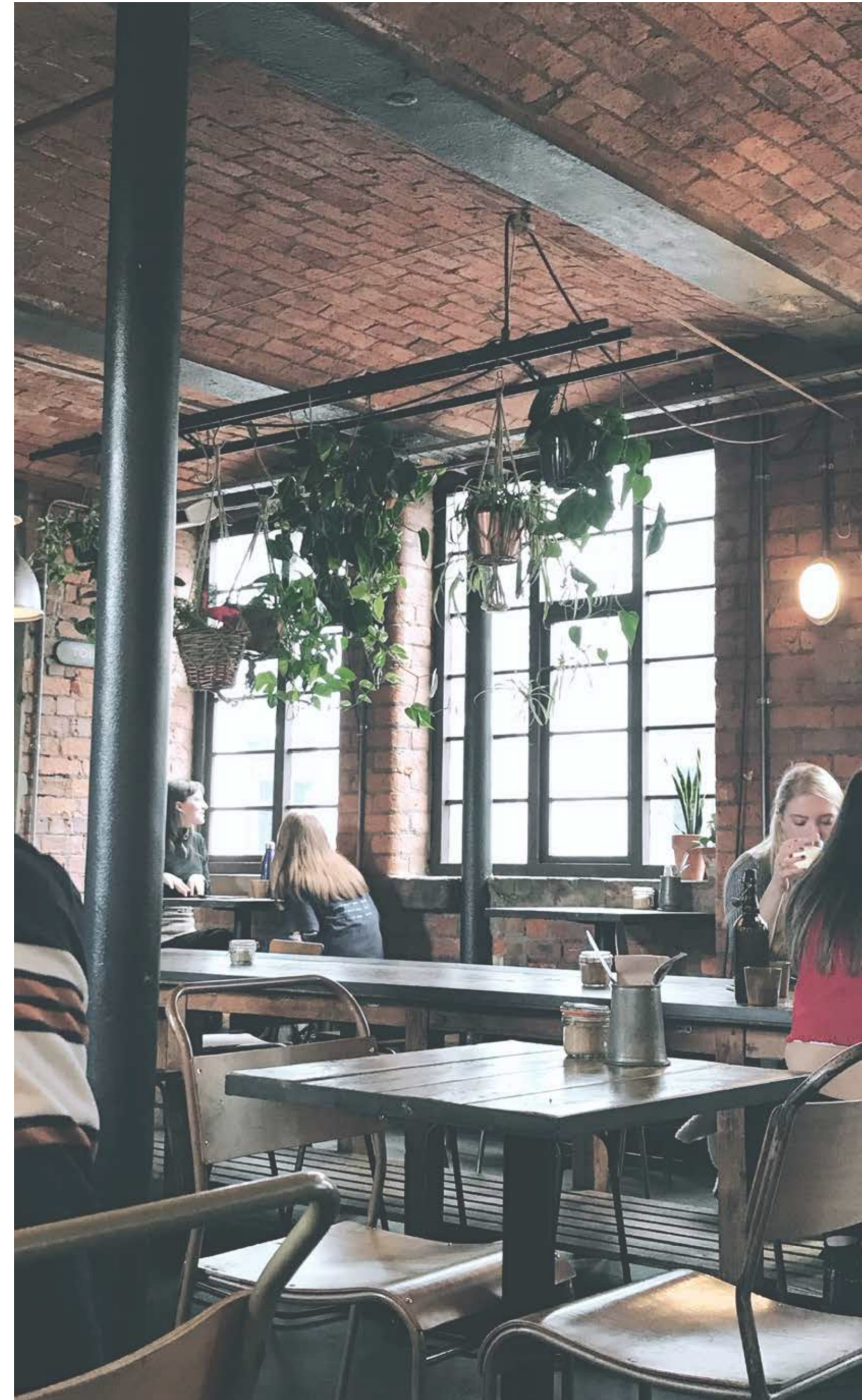
SITE ANALYSIS

TAMPER COFFEE

An important part of the existing site is Tamper, a New Zealand style coffee shop located on the ground floor of Sellers Wheel, which is something I wanted to keep as part of my proposal. It is a great precedent of how to style an industrial building, keeping the exposed brick walls and using raw industrial materials to pay tribute to the industrial roots of the building. Already popular amongst young adults and professionals, it demonstrates the location is already known to the target audience I was considering for my concept and having the perfect coffee and lunch spot right on the doorstep of a workspace is an ideal situation.

Furthermore, because I was keeping Tamper as part of my proposal, I wanted to create a proposal that felt like it flowed with the design of the space below. It also provided me with a glimpse of what the floors above looked and felt like as I wasn't able to access them and there aren't many photos that explore the spaces.

I was inspired by the exposed brick walls that are a huge part of Tamper's charm and appeal, and I knew this was something I wanted to mimic. I also liked the choice of industrial ceiling lights and wall lights used in Tamper, and wanted to use similar ones in my design.



THE BRIEF

SUSTAINABLE STUDIO CO-WORKING SPACE

The brief is to create a co-working studio space that is designed with sustainability at the forefront of every decision, and more importantly how this will impact the people working within the space.

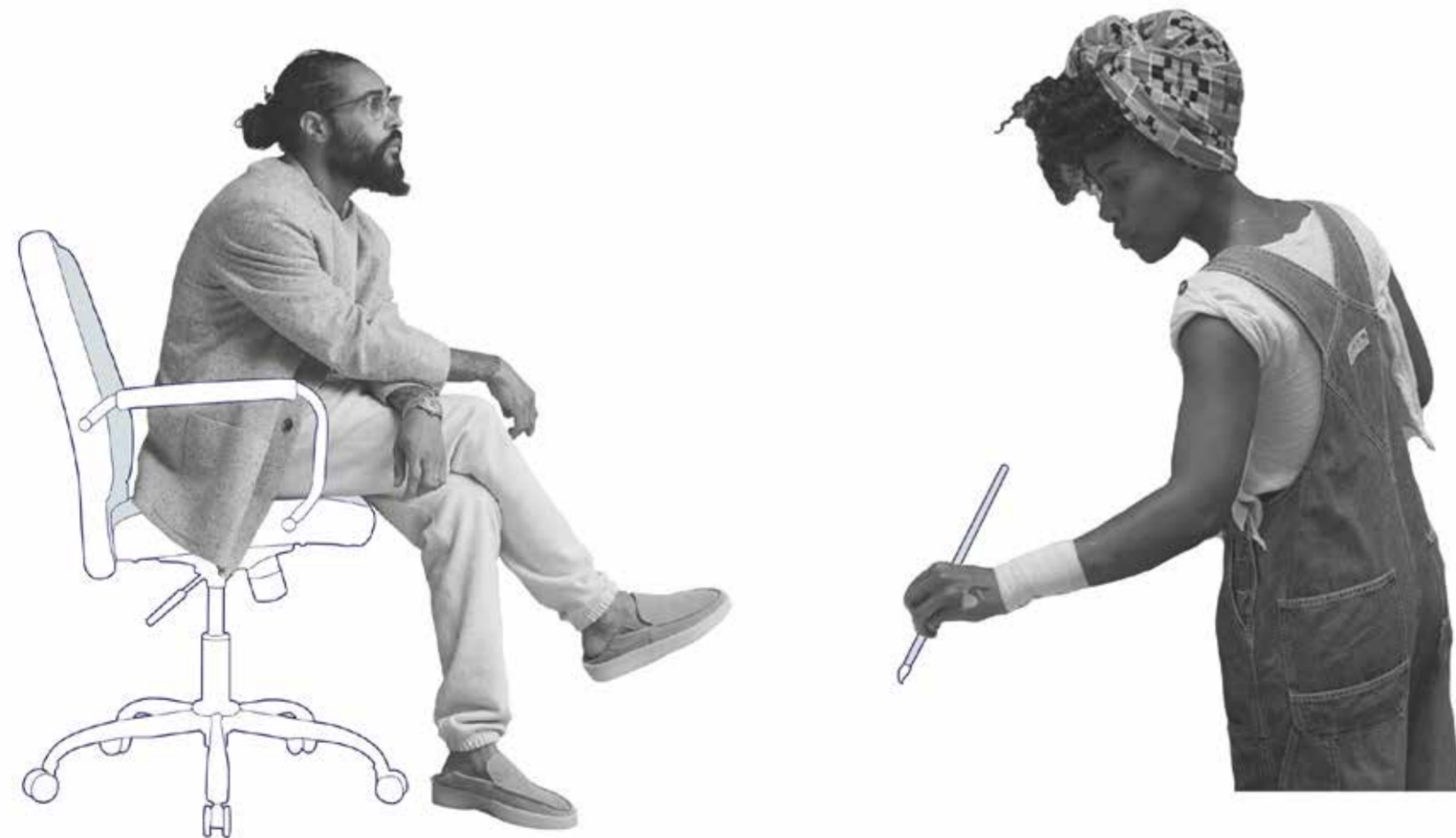
The space will be designed for graduates and young professionals, offering bookable workshop, studio, and desk spaces to house a variety of creative individuals. It will be designed as a steppingstone for graduates and young professionals into the creative industry, offering space and equipment to explore and develop ideas.

It is designed to be a space that encourages collaboration between creatives, based off of research from a paper on the effects of a sustainable office space and my own personal experience through the lockdown due to Covid-19, with a lack of access to facilities and a place like-minded people can meet being two things I really missed.

I will focus specifically on utilising natural light, creating thermal comfort, increasing air quality, and biophilic design, which I found from my research paper on sustainable office design are the areas where sustainability and creating a healthy office environment for workers overlap the greatest.

PROJECT OBJECTIVES

- Create a hub for creative collaboration
- Provide more specialist facilities than existing spaces
- Reduce the impact of eye strain by focusing on the use of natural light
- Reduce the negative health effects caused by poor air quality
- Improve productivity by controlling the temperature of the office environment and improve overall thermal comfort
- Improve concentration and reduce stress by implementing biophilia



SITE ANALYSIS

EXISTING CO-WORKING SPACES

CLARENCE WORKS

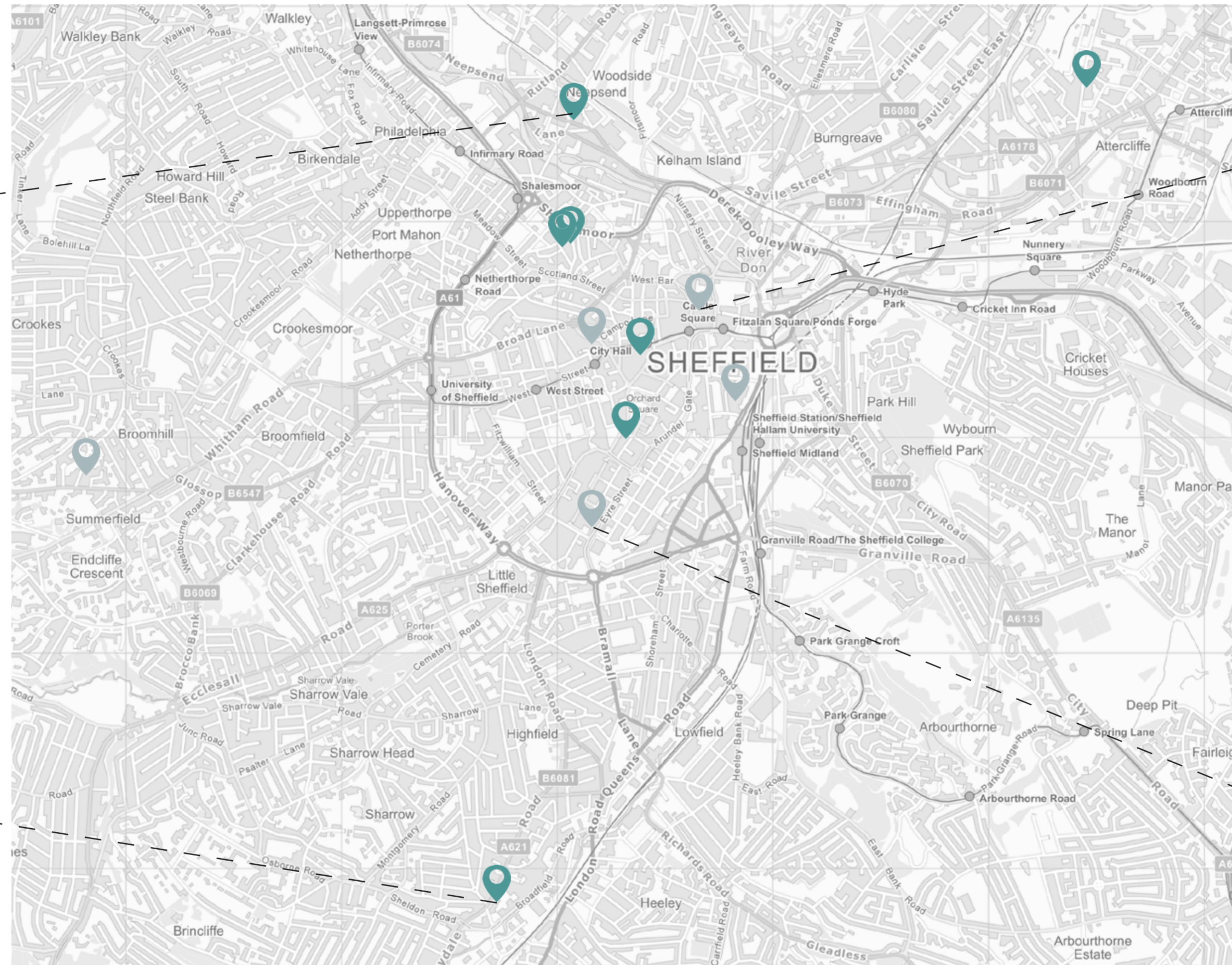


Location: Effingham Road, Sheffield S4
 Price: N/A
 Facilities: 3 studios housing a diverse range of creativity from photography to music production
 Opening Hours: N/A

ABBEYDALE PICTURE HOUSE



Location: Nether Edge, Sheffield, S7 1FS
 Price: N/A
 Facilities: 10 desks, free tea and coffee
 Opening Hours: Mon-Fri 12-6pm



Co-working Studios
 Co-working Offices

To better understand what facilities I wanted to include in my co-working space, I looked at the existing co-working office and studio spaces around Sheffield city centre. By looking at these spaces I would be able to focus on facilities that these didn't already offer. The studio spaces mostly just offer desk spaces to sit at, with Abbeydale Picture House standing out because it is an old picture house from the 1920's, and the interior has a lot of character. The facilities are very stripped back, focusing more on creating a space where people are encouraged to work and collaborate.

I also looked at the co-working office spaces that are comprised of mostly desk spaces, as this was going to make up a portion of my design. In general, they offered individual desk spaces, private areas for meeting and lounge/kitchen areas with soft seating.

By looking at these existing spaces I was able to see that there were more facilities I could offer within my design, especially in the studio side of the space, such as more specialist facilities like workshops with machinery.

KOLLIDER, CASTLE HOUSE



Location: Castle St, Sheffield City Centre, Sheffield S3 8LS
 Price: £149p/m+
 Facilities: Private offices, meeting rooms, break-out rooms and lounge space
 Opening Hours: Mon-Fri 8am-8pm

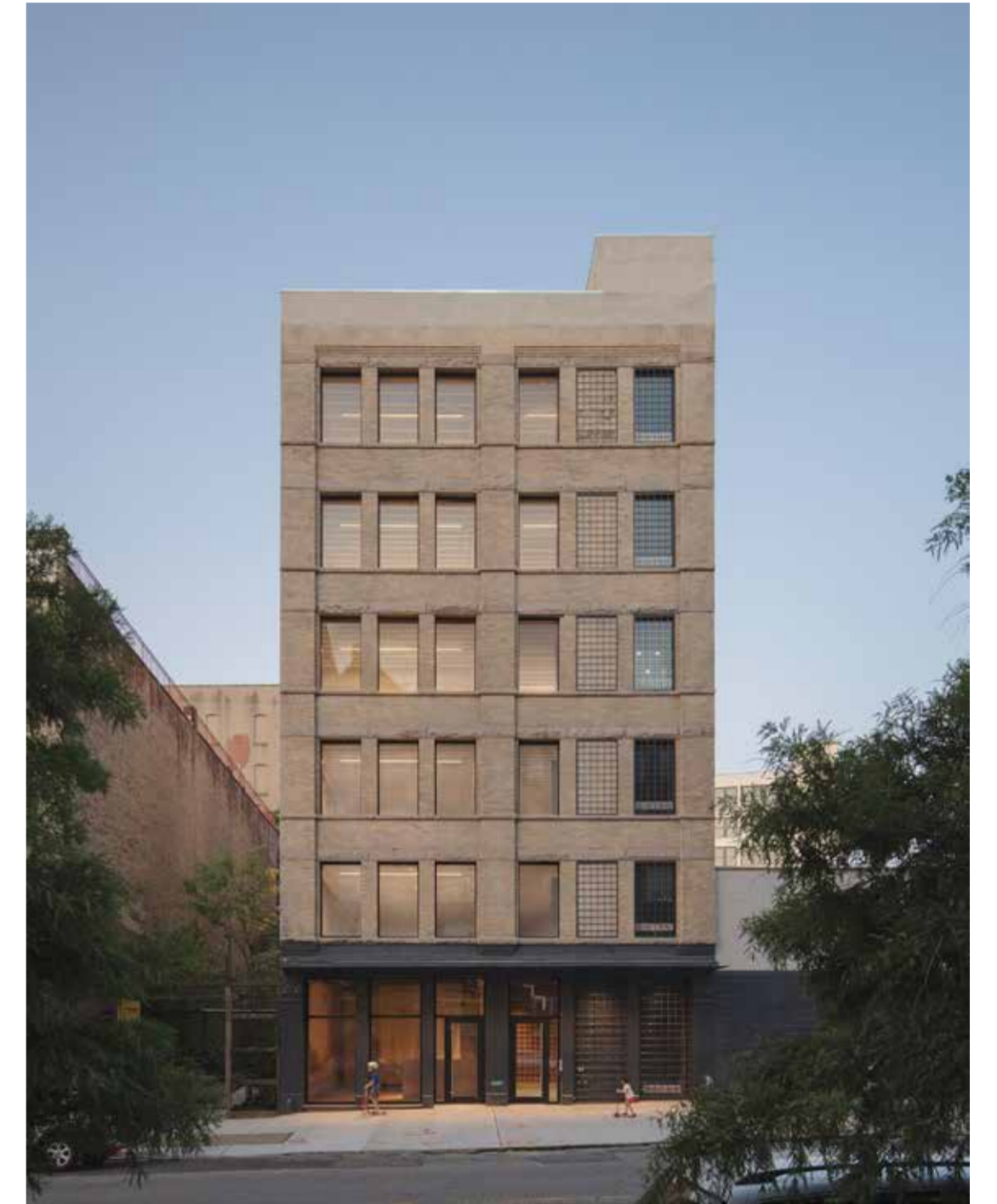
WIZU



Location: 32 Eyre St, Sheffield City Centre, Sheffield S1 4QZ
 Price: From £25p/m hotdesking, £175p/m+ fixed desk
 Facilities: Private offices, co-working space, meeting rooms
 Opening Hours: Mon-Fri 9am-5:30pm

PRECEDENT STUDY

WORRELL YEUNG

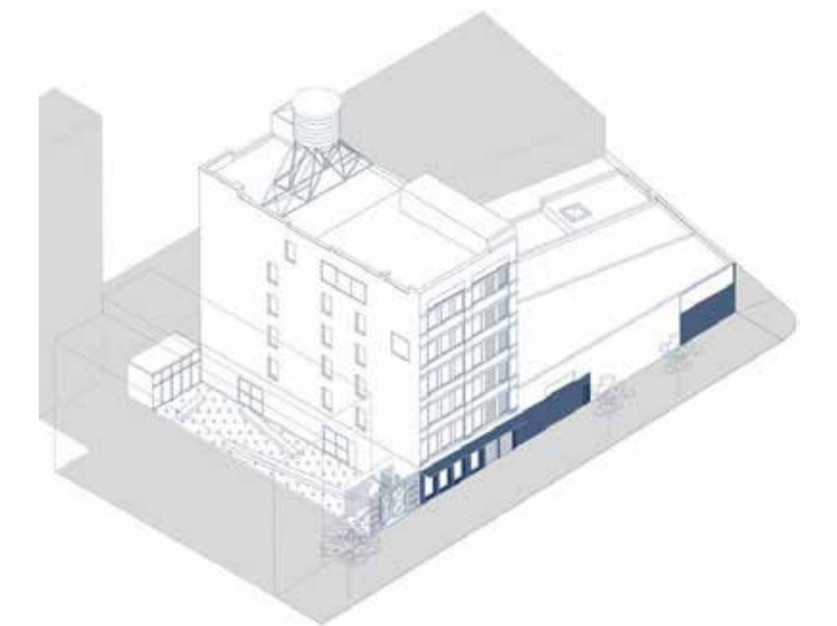


77 WASHINGTON

Worrell Yeung, a New York based architecture studio, has transformed this historic factory building near Brooklyn Navy Yard into multi-use workspaces and artist studios.

The building, 77 Washington, was built in the 1920's as a masonry factory and is part of a cluster of five adjacent buildings.

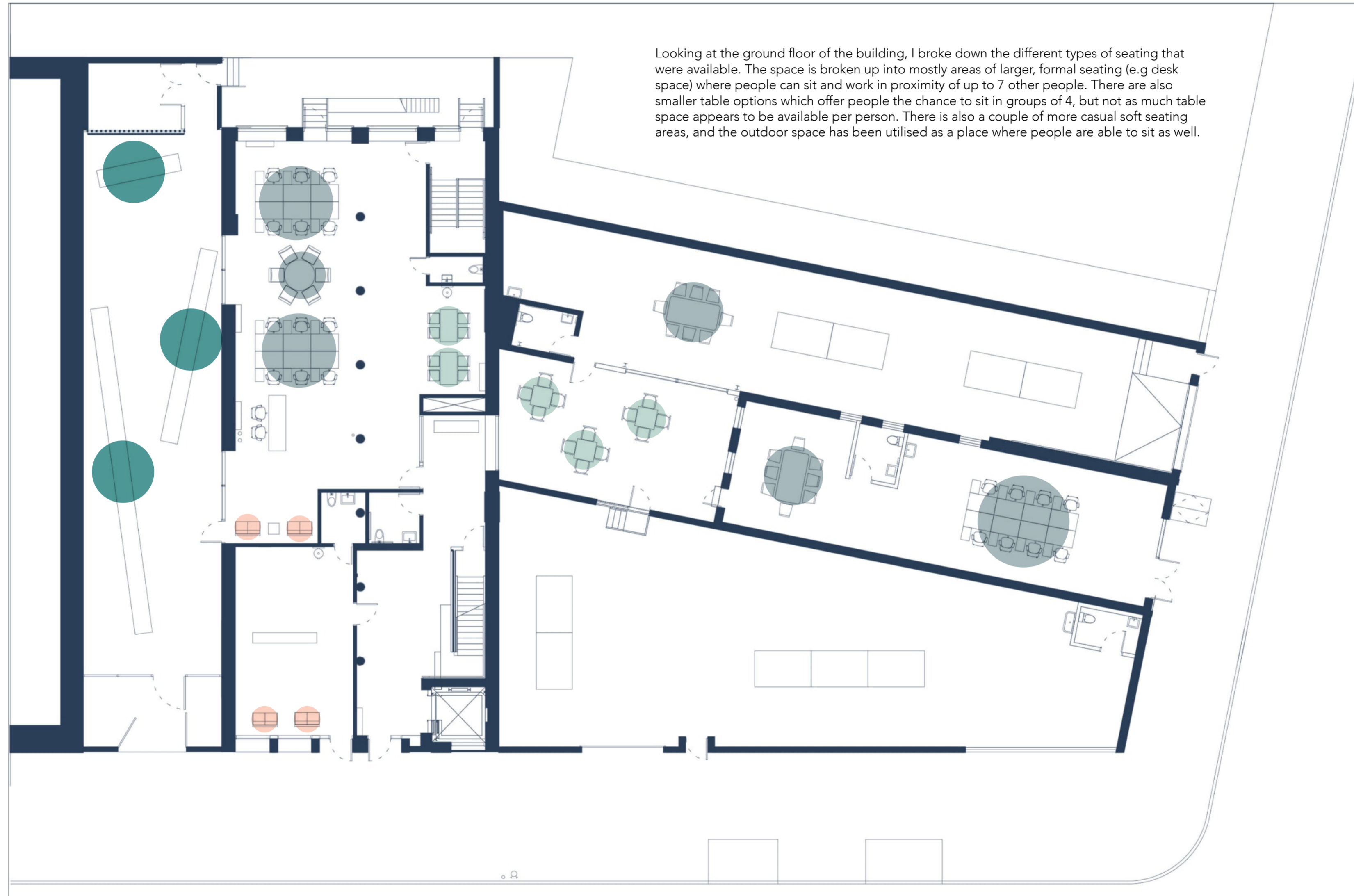
The design of the interior was made to contrast with the conditions of the existing buildings and create a juxtaposition using crisp and distinct new elements. The materials were chosen to be evocative of old Brooklyn factories and warehouses, with exposed brick walls painted with a layer of thin, old white paint, and concrete floors with metal diamond plates. Even the elevator shaft pays homage to the history of the building, with steel grids used as a tribute to the historical sash windows found in storied factory buildings.



PRECEDENT STUDY

WORRELL YEUNG

- Outdoor Seating
- Larger Formal Seating
- Smaller Formal Seating
- Smaller Soft Seating



Looking at the ground floor of the building, I broke down the different types of seating that were available. The space is broken up into mostly areas of larger, formal seating (e.g desk space) where people can sit and work in proximity of up to 7 other people. There are also smaller table options which offer people the chance to sit in groups of 4, but not as much table space appears to be available per person. There is also a couple of more casual soft seating areas, and the outdoor space has been utilised as a place where people are able to sit as well.

CONCEPT MOODBOARD

NATURAL LIGHT



PIN-UP SPACES



MEETING SPACE



OLD INDUSTRIAL



WORK ON DISPLAY



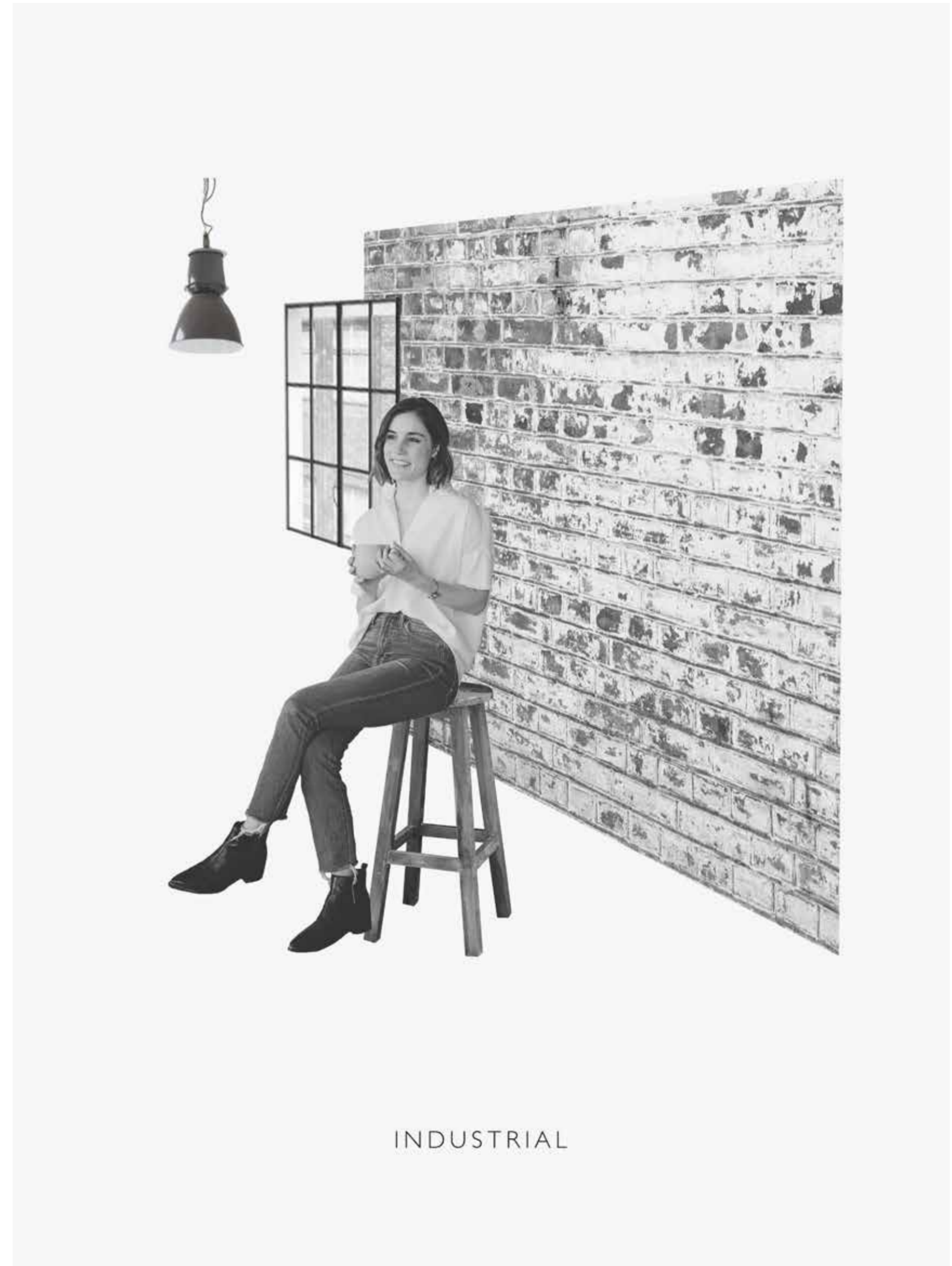
WOODEN FURNISHINGS

CONCEPT EXPLORATION

THE FEEL OF THE SPACE



As I began to think about the design of my space, I created a couple of collages that represented and expressed some of these ideas. I wanted the essence of the space to be more relaxed and casual, where individuals would be creating but also interacting with other creatives.



I also wanted the space to celebrate the industrial heritage of the site, so I began to think about an interior that followed that industrial style.

TARGET AUDIENCE

WHO IS THIS SPACE DESIGNED FOR

ARTISTS



JEWELLERY MAKERS



PHOTOGRAPHERS



DESIGNERS



SCULPTORS

In order to understand what facilities I could include in my space, I looked at which creatives would benefit from a studio space, especially if they were freelancing or not working within a large company. Due to the location of the site, being nestled within a university campus, I established my target audience would be graduates and young professionals who are just starting out in their careers, who don't have access to the facilities that they may have had at university.

I decided to target the group of creatives shown in this illustration, as I believed each of these types of individuals would benefit from experiencing chance interactions with each other and the space would be able to encourage collaboration between them.

The photographer is central within the group as photography is crucial to almost any line of creative work to demonstrate and share the final outcome, therefore I believe the most collaboration could happen with these individuals.

USE OF SPACE

STANDING AND SEATING OPTIONS

STANDING



Standing - Workbench



Standing - Presenting

To inform what kind of spaces I would include in my space, I looked at how people could be stood and sat around the space. For the standing options, there would be a space to stand and present ideas in a meeting space, perhaps with a pin up space available, and spaces around workbenches where people can move around and use tools.

For the seating options, I knew I wanted to include office style seating for the desk spaces where people might be working on a computer, stools for more casual style desks and workshop spaces where people could easily move them around and stand up and sit down, and softer seating such as armchairs in the lounge/kitchen area.

SEATING



Seating - Computer



Seating - Stool



Seating - Soft

NATURAL LIGHT

SKYLIGHTS

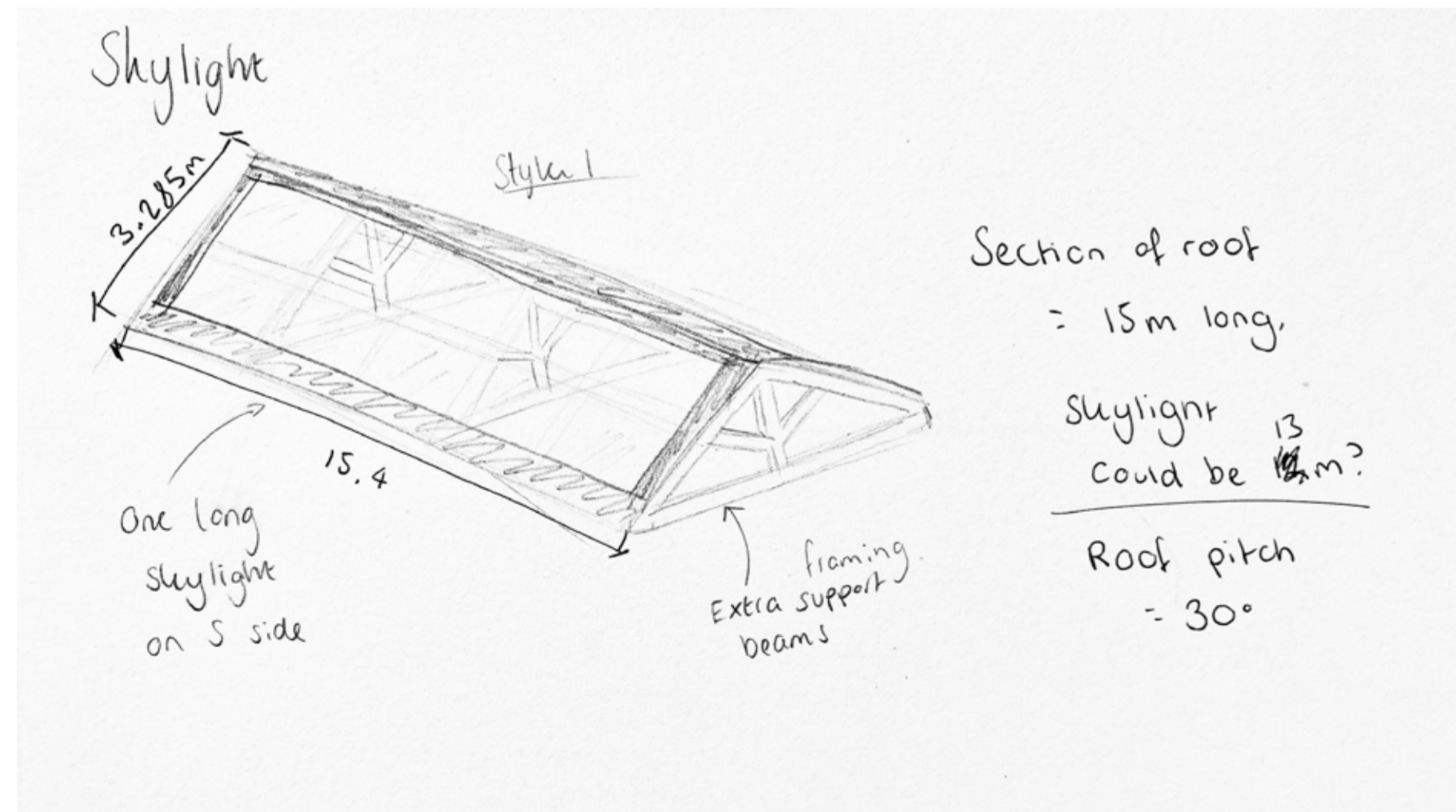
RESEARCH

Throughout my design research portfolio, I have been researching the impact of creating a sustainable commercial office space on the building's occupants. Many features that make a building more sustainable, such as reducing the amount of energy used by increasing the amount of natural light, also have a positive impact on the people working within the space. This is why I have chosen to focus on using features that will make my proposal more environmentally sustainable, whilst also making design decisions with the users at the forefront of my mind.

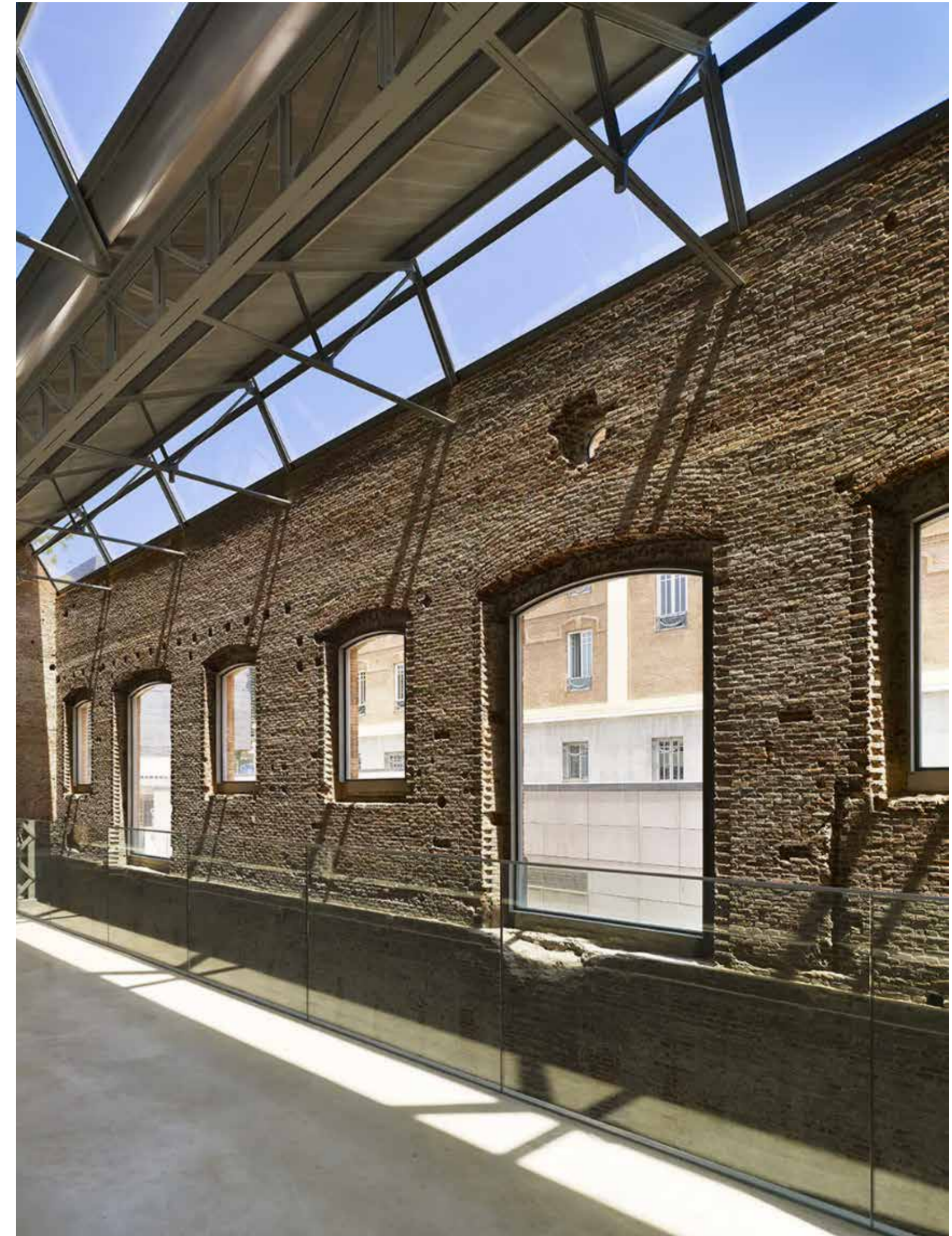
The first of the factors I have looked at is Natural light. Creating a building with more natural light not only reduces the amount of electricity consumed through lighting, furthermore it can reduce the number of employees suffering from eyestrain. In a study by the Department of Design and Environmental analysis at Cornell, it was reported that employees seated within 3 meters of a window there was a reported 84% decrease in eyestrain, headaches, and blurred vision symptoms. Increasing the amount of natural light not only provides a better support for the wellbeing of employees but will also lead to increased productivity if the occupants are able to concentrate for longer periods of time.

Through my analysis of the site I saw that Sellers Wheel already received a fair amount of sunlight, especially due to the number of windows that line every facade of the building, but I wanted to allow even more natural light to reach the space, especially in the studio space where users would need ample light to be able to complete their work. This is why I have proposed the installation of a large skylight above the studio space on the pitched roof, on the South- East facing side.

INITIAL DESIGN DEVELOPMENT

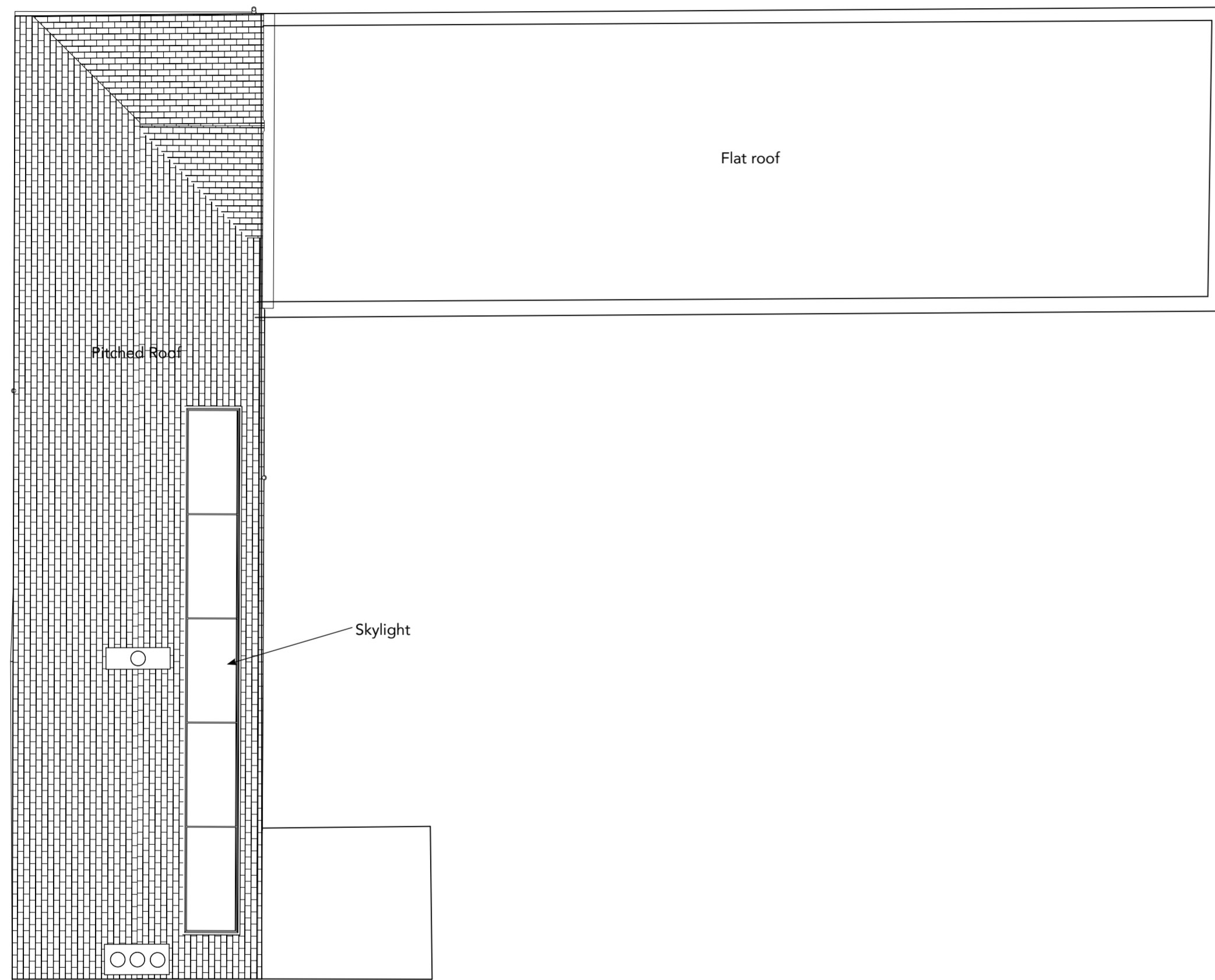


INSPIRATION IMAGE



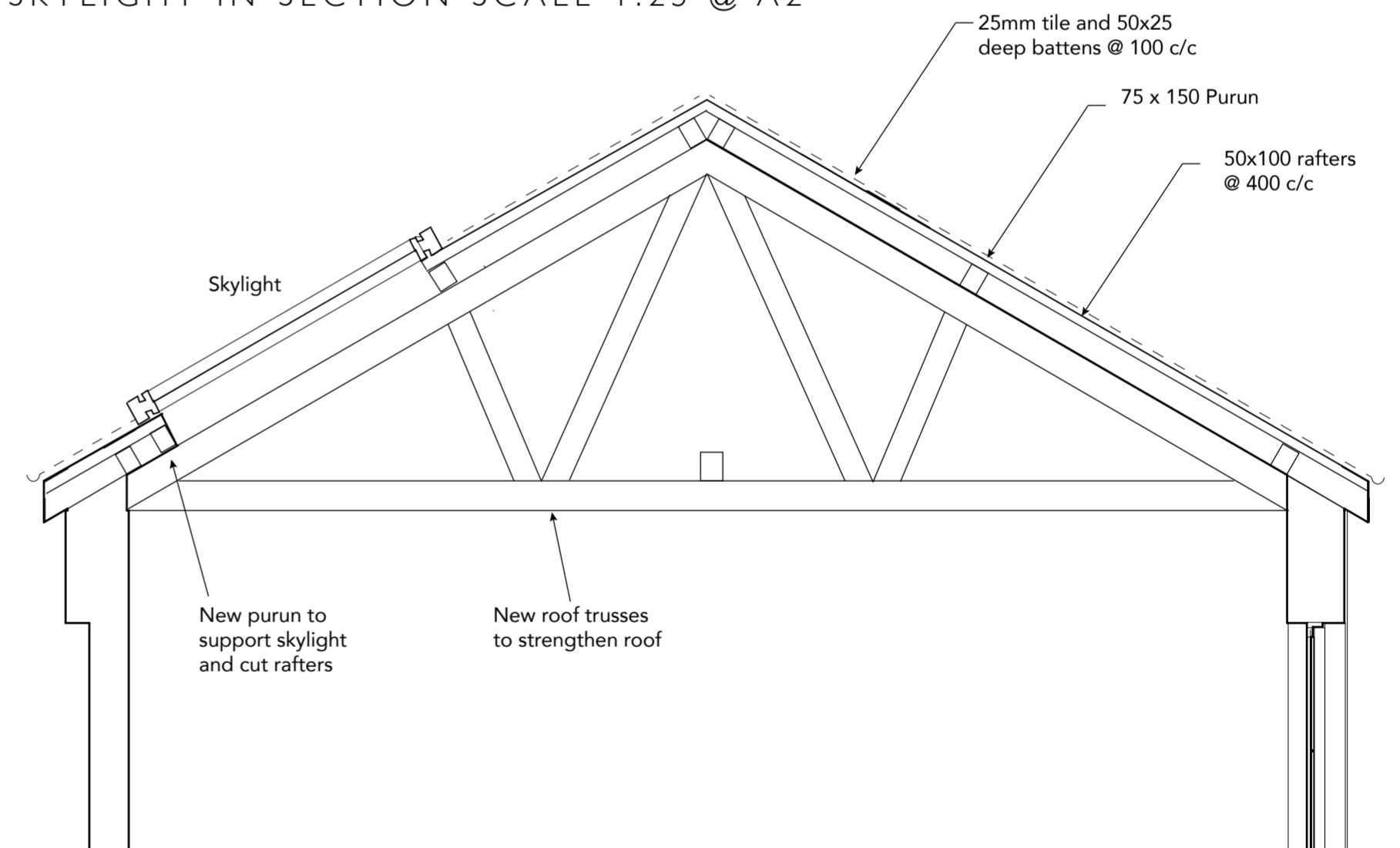
NATURAL LIGHT SKYLIGHTS

SKYLIGHT IN PLAN SCALE 1:100 @ A2



This is the plan of my proposed skylight on the south facing section of the pitched roof. After talks with an engineer we created additional roof trusses to help support the roof due to the length of skylight.

SKYLIGHT IN SECTION SCALE 1:25 @ A2



THERMAL COMFORT AND AIR QUALITY

VENTILATION

RESEARCH

The next feature that I have consider in my design is thermal comfort and air quality. Thermal comfort is described by the temperature, humidity and air speed within an environment.

A recent study showed that performance at cooler temperatures was reduced by 4%, meanwhile at warmer temperatures there was a reduction of 6% showing that a well-ventilated space can improve productivity.

In offices well ventilated by outside air by an outdoor supply rate of 24 l/s as opposed to a building with rates of 12l/s, there was 35% less reported short term sick leave, demonstrating the positive impact of air quality on the building occupants health.

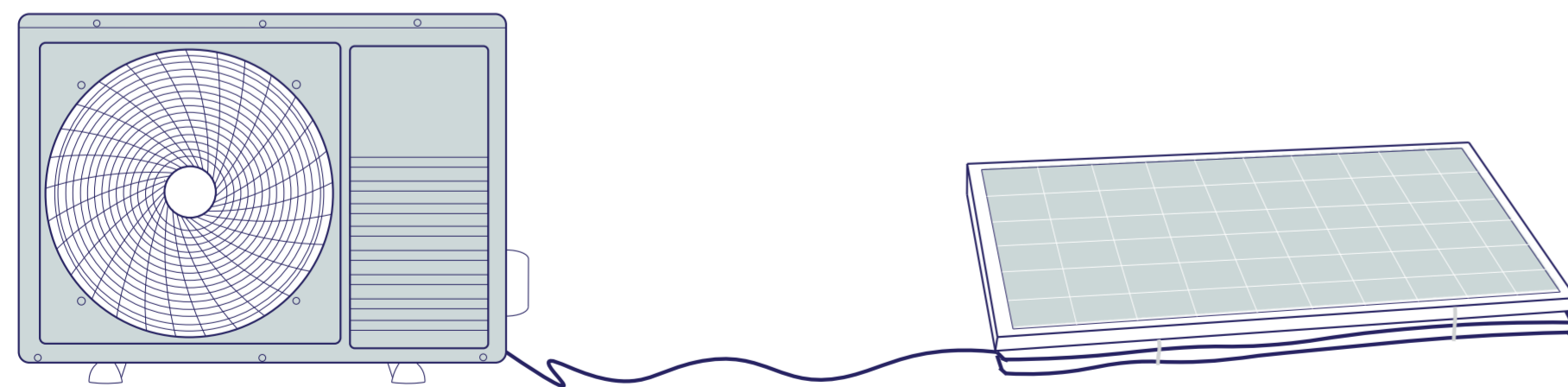
I considered both the heating and the ventilation of the space to maintain good air quality and thermal comfort throughout the building. For the ventilation, I created a galvanised steel ductwork system that ran throughout the building, complimenting the industrial style, and heating through radiators, both powered by air source heat pumps.

Through talking with an engineer, I established that this would be the most efficient way to heat this building. To further reduce the emissions produced from heating and cooling the building, I incorporated solar panels onto the flat roof that would power the air source heat pump.

AIR SOURCE HEAT PUMP POWERED BY SOLAR ENERGY

Air-Source Heat Pump

Solar Panels

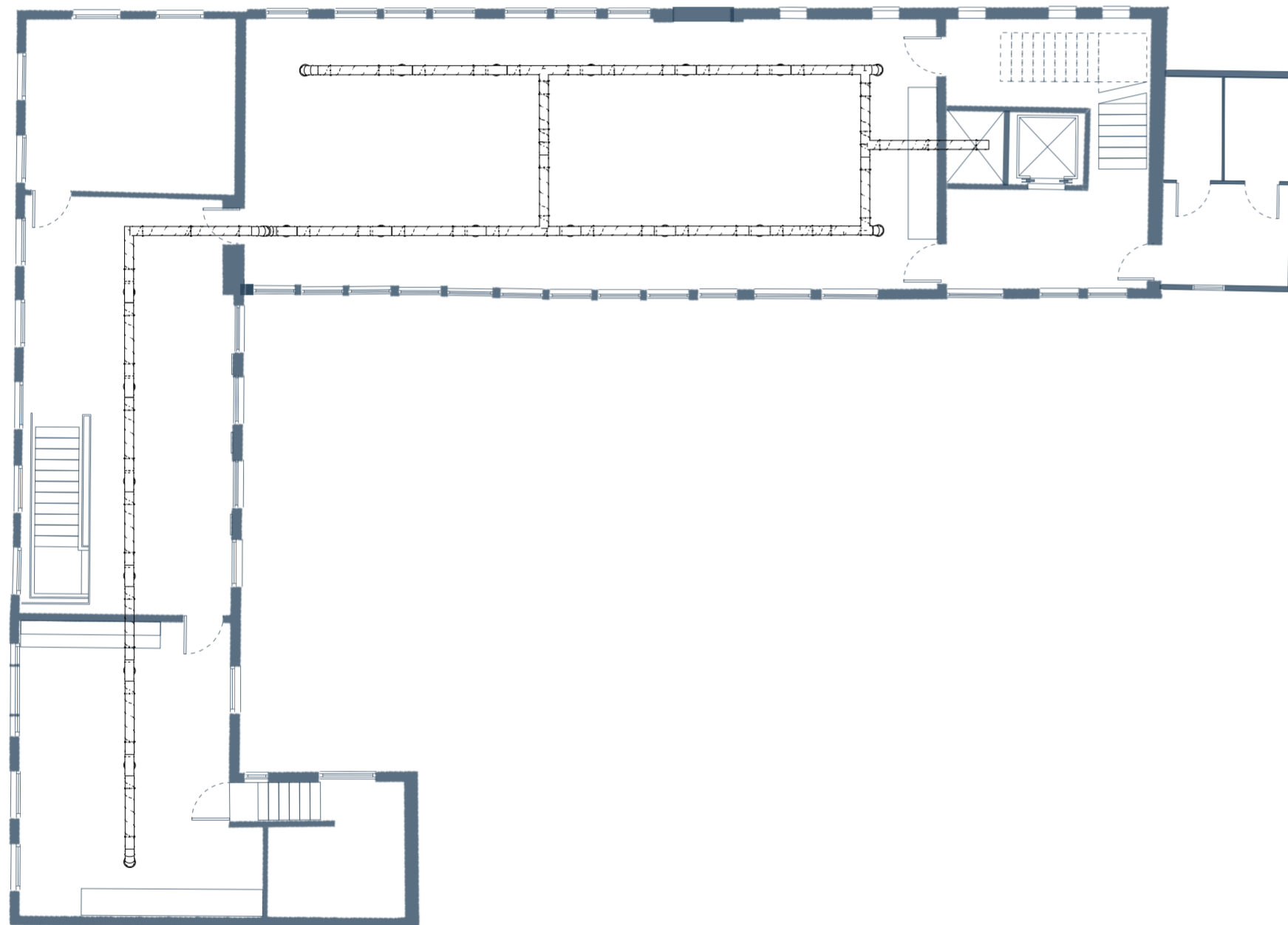


DUCTWORK INSPIRATION

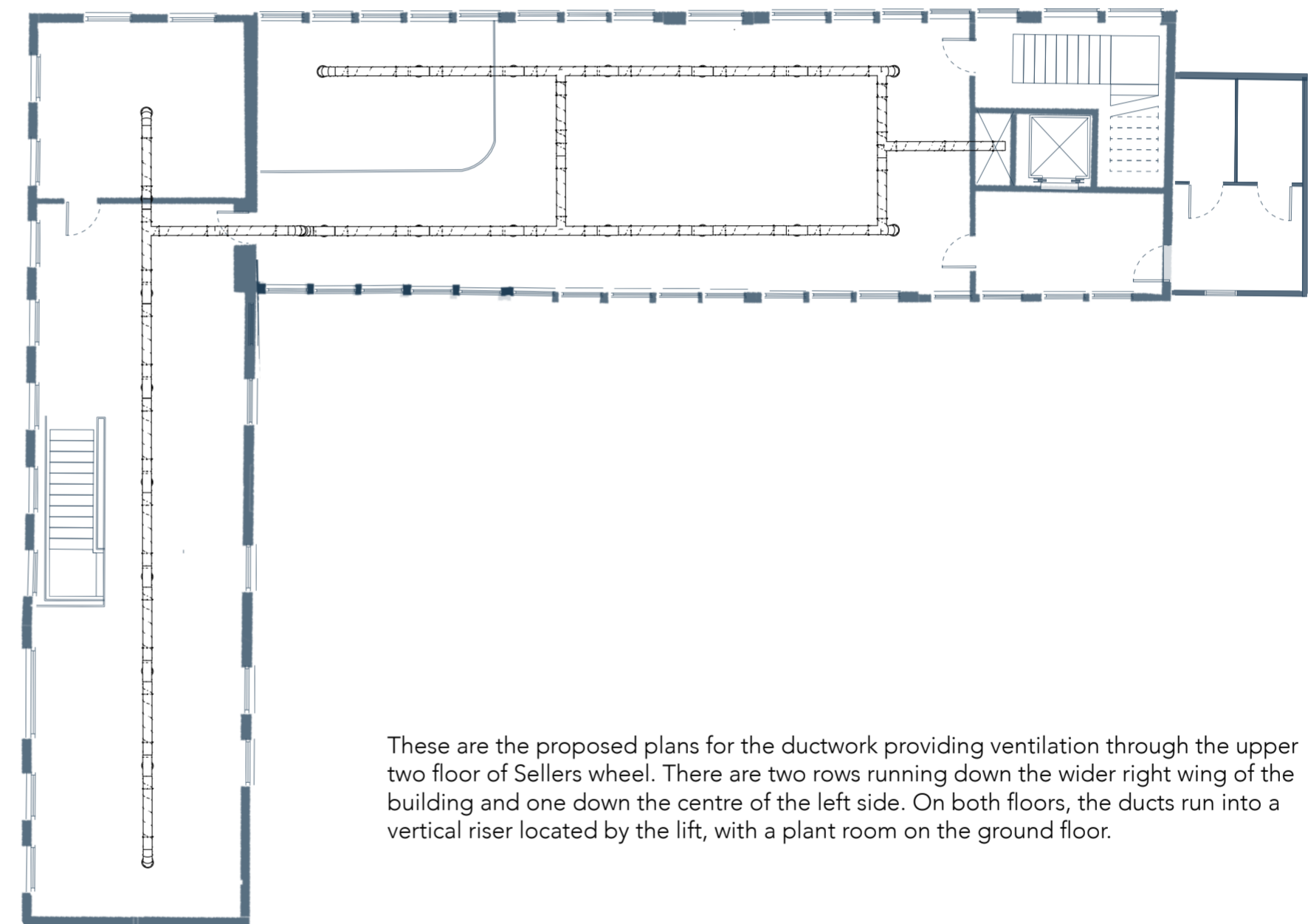


THERMAL COMFORT AND AIR QUALITY VENTILATION PLANS

1ST FLOOR VENTILATION PLAN



2ND FLOOR VENTILATION PLAN



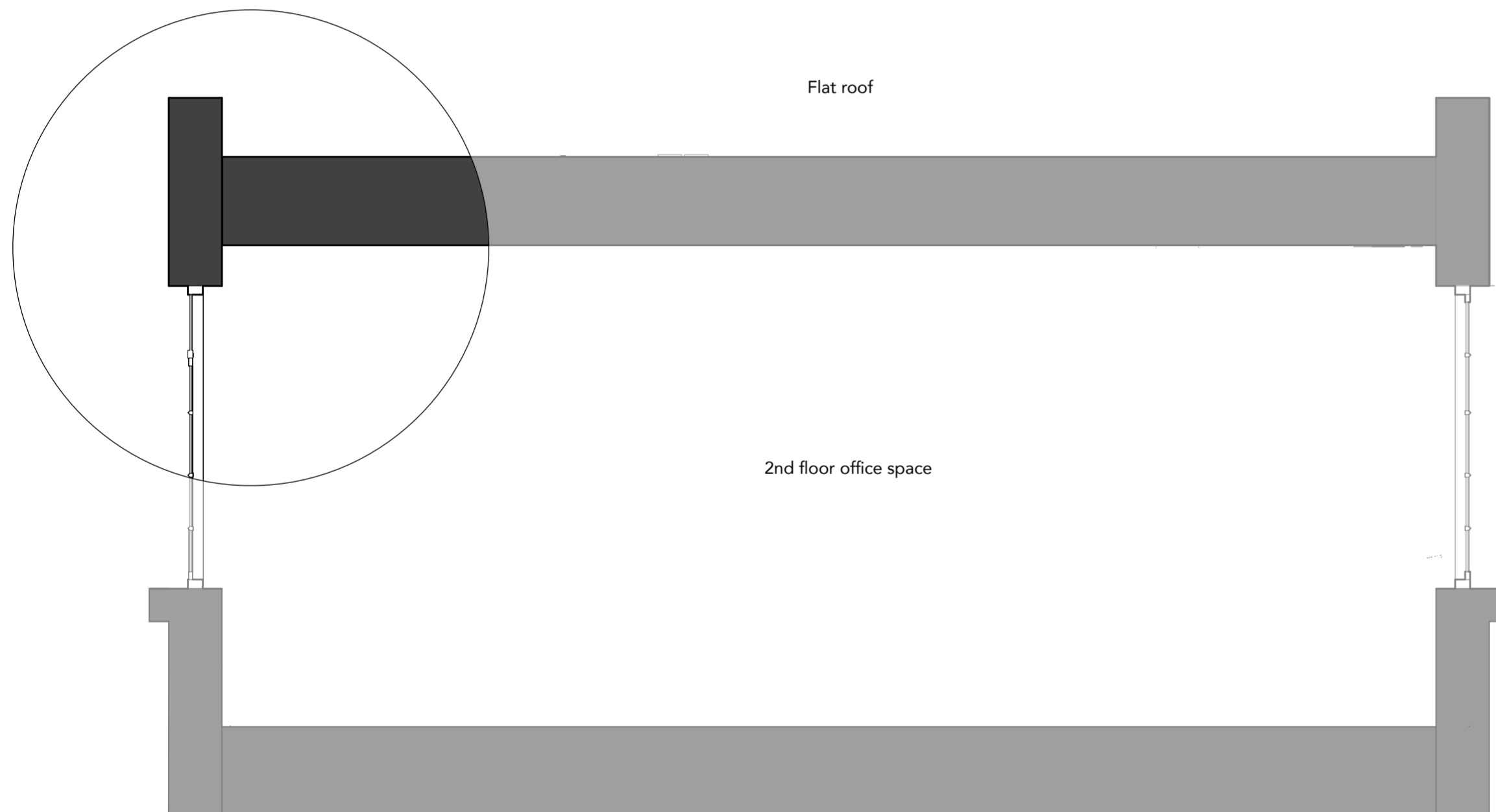
These are the proposed plans for the ductwork providing ventilation through the upper two floor of Sellers wheel. There are two rows running down the wider right wing of the building and one down the centre of the left side. On both floors, the ducts run into a vertical riser located by the lift, with a plant room on the ground floor.

THERMAL COMFORT AND AIR QUALITY INSULATION

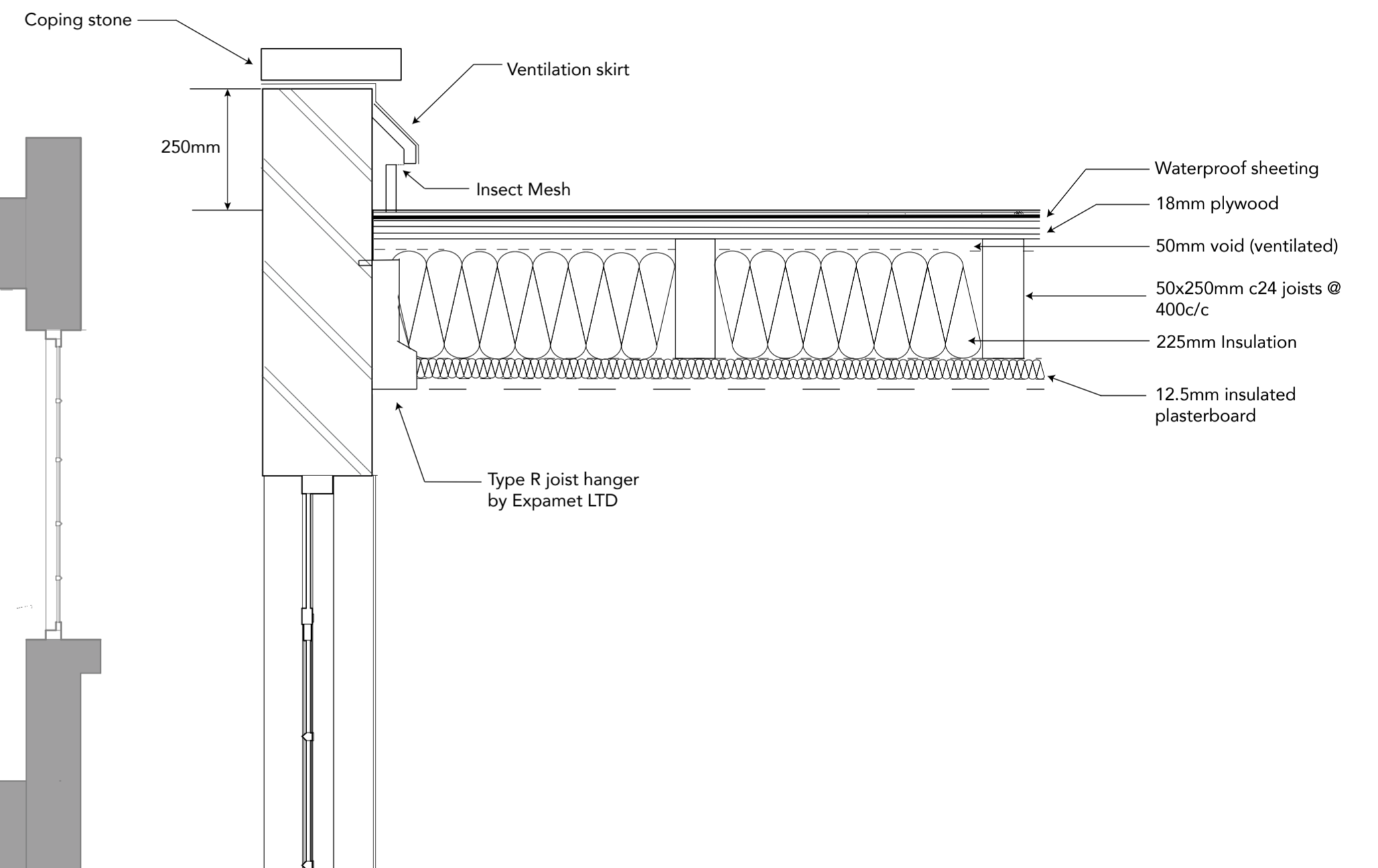
To help retain the heat within the building, I looked at insulation options. Because I wanted to keep the exposed brick walls as part of my design, I looked at super insulating the roof instead of the walls.

After talking with an engineer, we established that the best type of insulation for this building in particular would be 'cold' roof insulation. This was the most appropriate choice as people would need to access the flat roof to carry out maintenance on the solar panels and units.

SECTION (FLAT ROOF) SCALE 1:25 @ A2



COLD ROOF INSULATION DETAIL (FLAT ROOF)



AIR QUALITY

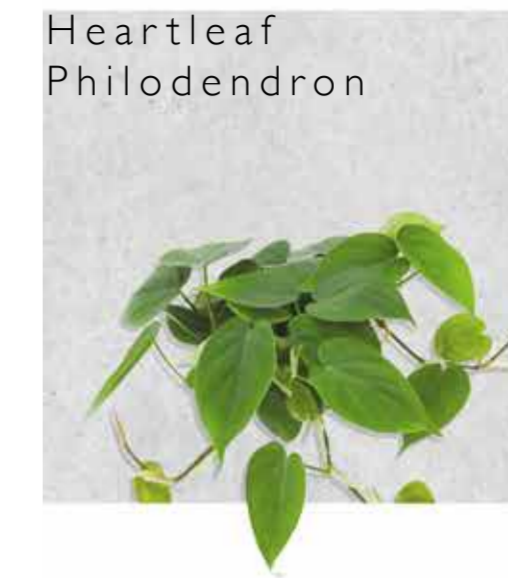
BIOPHILLIC DESIGN

RESEARCH

The NASA Clean Air Study was a project led by the National Aeronautics and Space Administration (NASA) in association with the Associated Landscape Contractors of America (ALCA) to research ways to clean the air in space stations. They looked at the indoor plants that were the best at removing benzene, formaldehyde, trichloroethylene, xylene, and ammonia from the air around us, as these are the chemicals that have negative effects on our health such as headaches, dizziness, eye irritation and much more. To be effective, the study recommended having at least one plant per 10 square meters.

The illustration on the right demonstrates some of the top air purifying plants from this study that I will include as part of my design to increase the air quality within my space.

As well as cleaning the air, having plants in an office space produces a plethora of other benefits on the occupants. It can increase people's overall mood and productivity, as being closer to nature is a stress reliever. They also replenish our capacity for attention and focus as they are a stimulus that grabs our attention but don't overwhelm us, like a lot of things that you might find in an urban environment. People also tend to spend longer in spaces with biophilic designs.



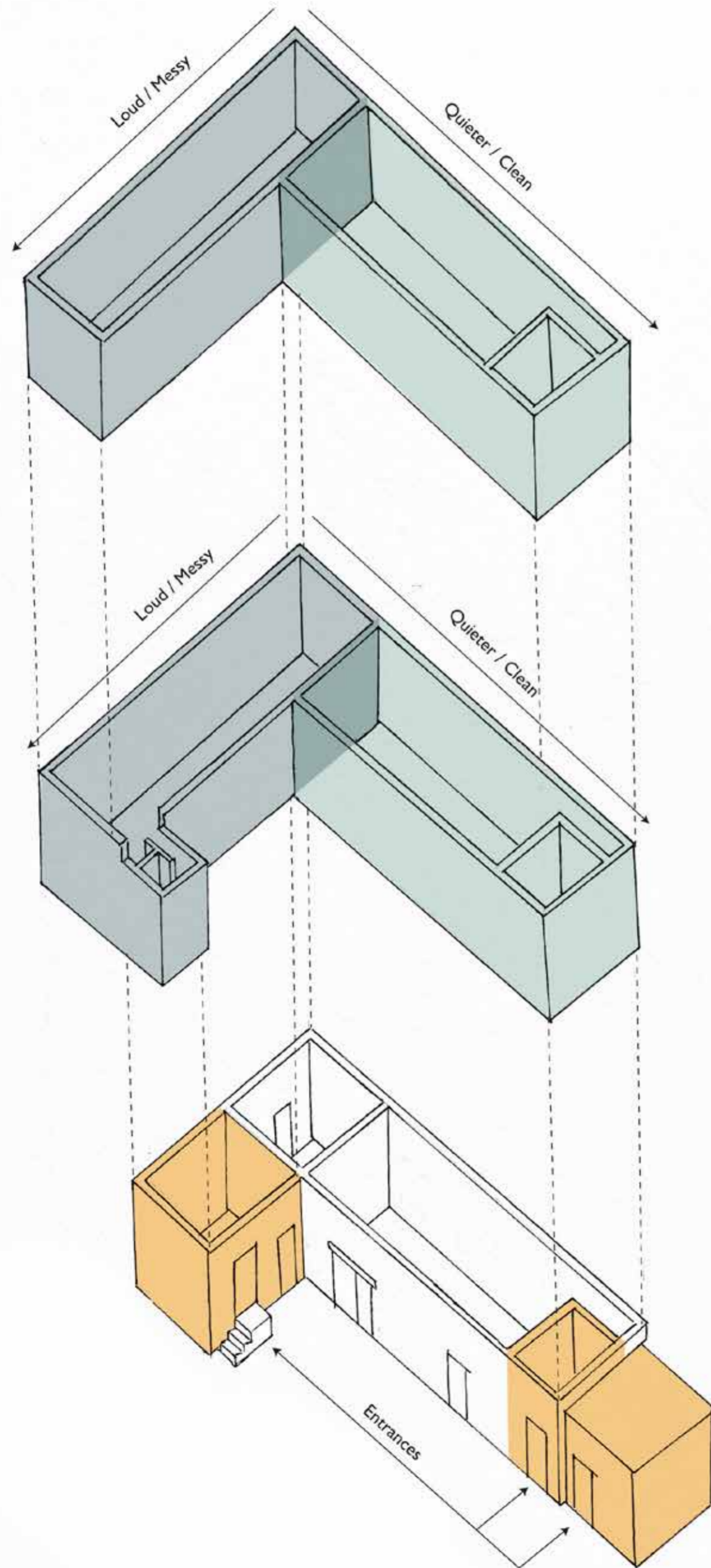
NASA CLEAN AIR STUDY
AIR PURIFYING PLANTS



Biophilic design is said to unburden our cognitive system, supporting it in collecting and recognizing information in the quickest and most efficient way, as well as generally supporting wellbeing. —Alisa Ahmadian

STRATEGY

MESSY/ CLEAN SPACES



2ND FLOOR

The second floor will be used as a studio space and office desk spaces. Connected to the space below, the studio space will be on the left above the workshop and the office space will be above the soft seating.

1ST FLOOR

The first floor is going to be made up of a workshop space on the left side and an office-style area with soft seating and a canteen on the right side. The left wing of the building will be reserved for messier and louder activities, such as painting and wood working, and the right wing will be quieter and cleaner, where computers will be used and meetings will be able to take place without the disruption of loud machinery.

GROUND FLOOR

The current usage of this floor is Tamper and access to the space above. I am going to retain Tamper as a place for the studio occupants to grab a coffee or lunch as they work in the spaces above. I am going to alter both the stair cases and add a lift, and turn the building on the end into a reception/ material store.

STYLE BOARD

'MESSY' SPACE INSPIRATION



This is some of the inspiration for the 'messy' side of the proposal, which includes the workshops and the studio space. The main theme for both the spaces is to have work being created in every spot, with lots of work being pinned-up and on display for people to see and collaborate on. There will be a lot of open shelving so even finished work can still be seen and talked about.

The furniture will be mostly wooden and there will be industrial-style fixtures throughout the spaces.



STYLE BOARD

OFFICE SPACE INSPIRATION



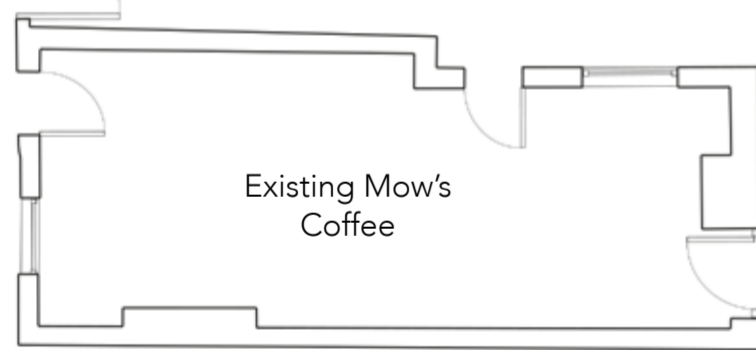
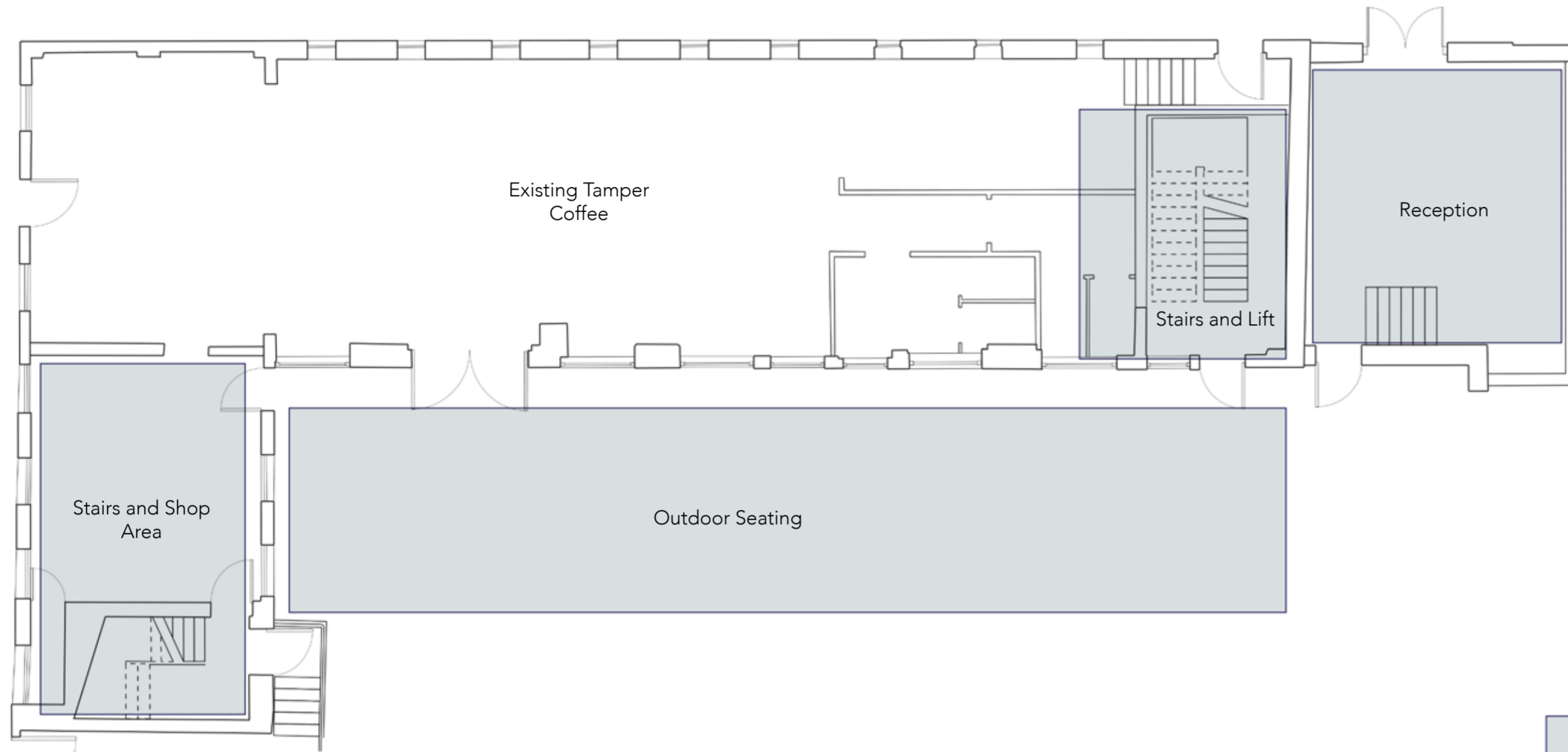
For the space where the office desk spaces would be, or the 'cleaner side', I wanted to create a few different groups of seating options similar to what I had seen within my precedents. There will be options to sit on tables of larger groups, spaces to sit more individually, and a softer seating section for more casual work and conversations. This space is designed for more computer work and projects that require sketching, as there will be more space per person.

There will be lots of open storage options again, as well as large drawers that could be allocated to individuals to store project work on site without the risk of it being moved.



PLANNING THE SPACE

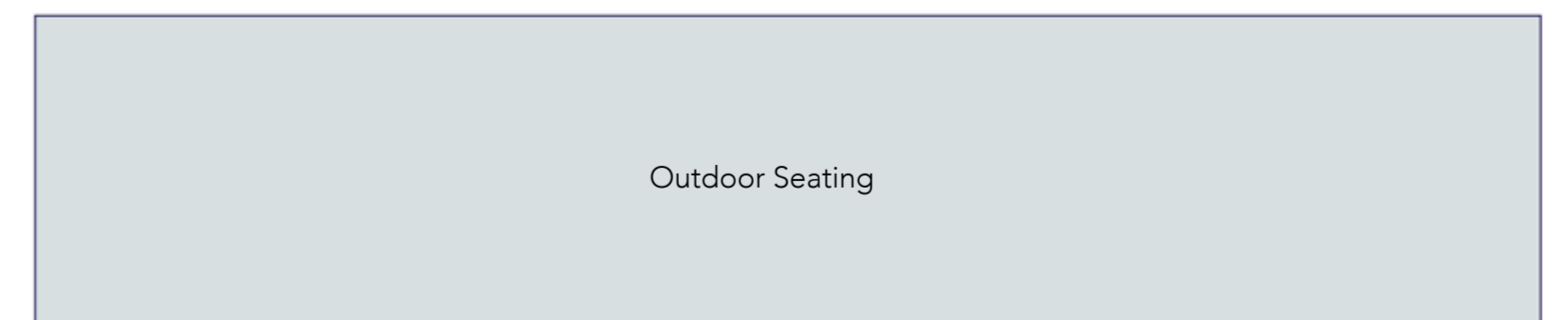
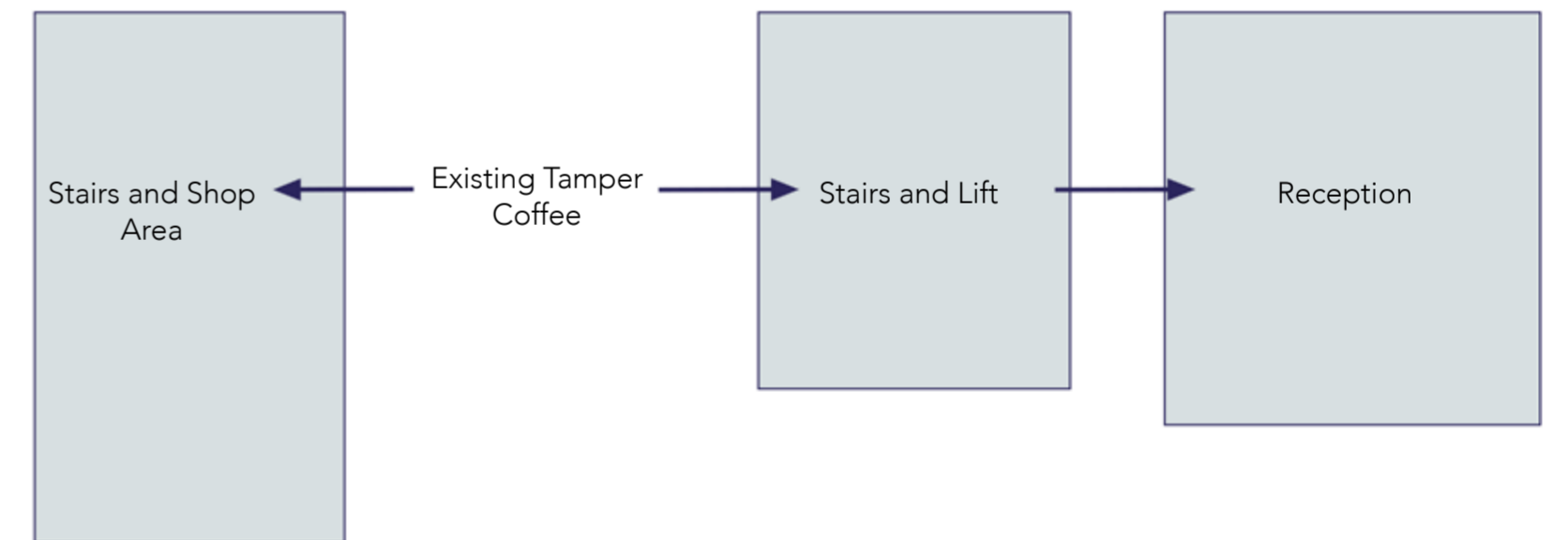
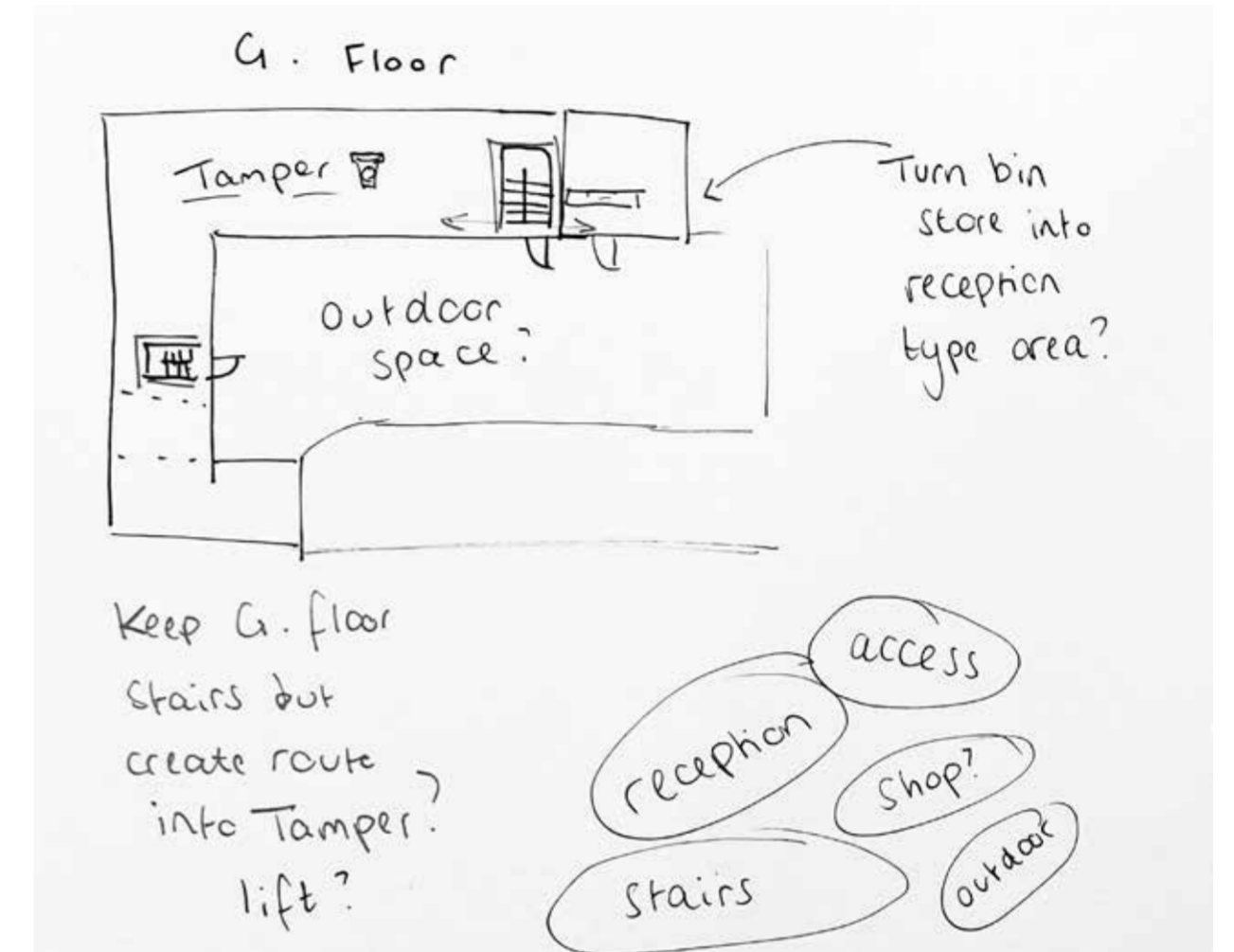
GROUND FLOOR SPACE ALLOCATION



Starting at the ground floor, I wanted to create a reception which contained a small store area for the creatives to purchase some materials for projects. I placed this area in the existing bin store. This connects onto the stairs which sit at the back of Tamper, which I will replace with a lift and a flight of stairs that wraps around it.

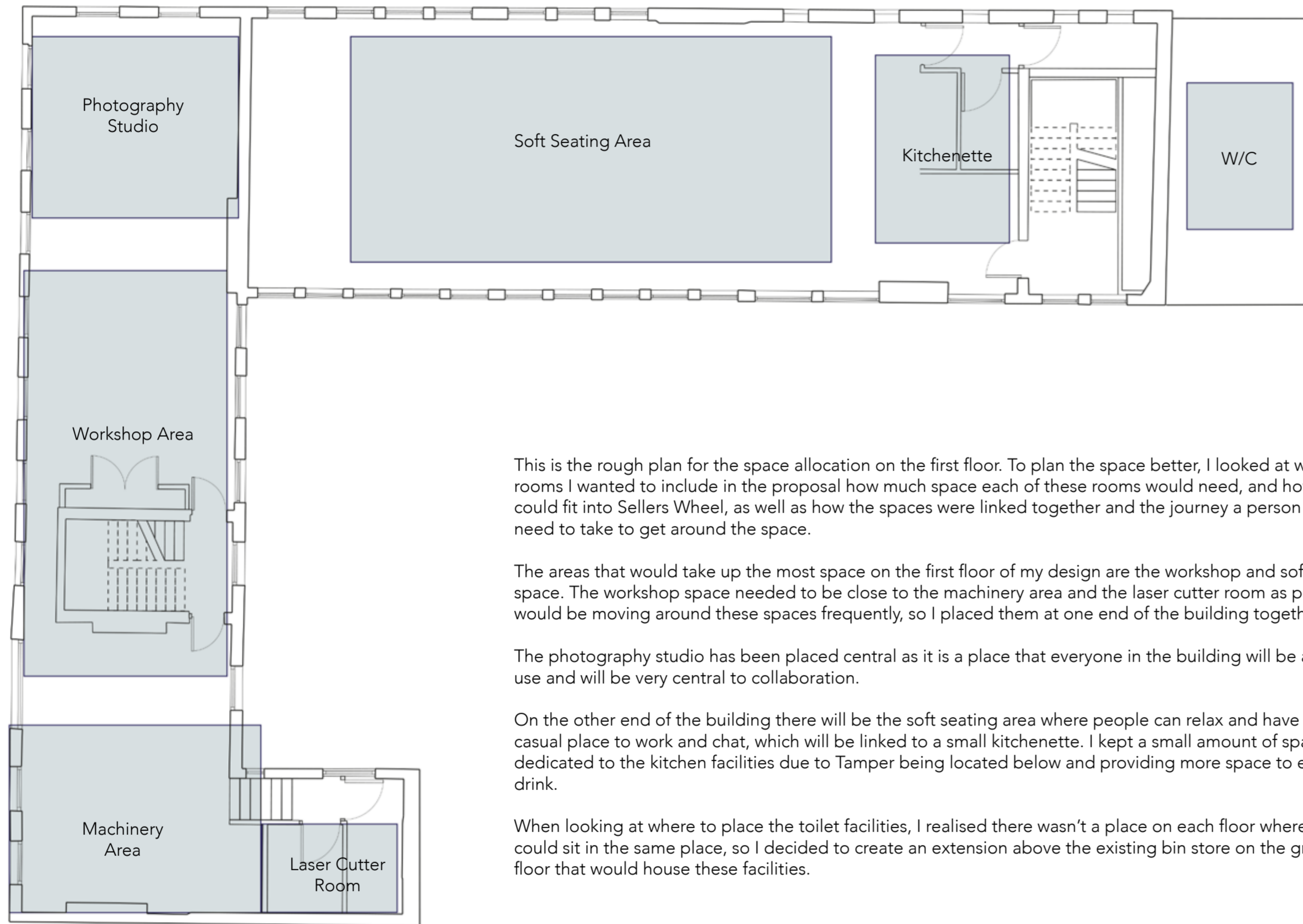
I wanted to create a space where people could display some of the items they have created to sell which is accessible by customers coming into Tamper, which also has a flight of stairs leading up to the floors above.

In the courtyard, I wanted to create a space where customers from Tamper, people working in the studio space and students from the accommodation could sit together.



PLANNING THE SPACE

FIRST FLOOR SPACE ALLOCATION



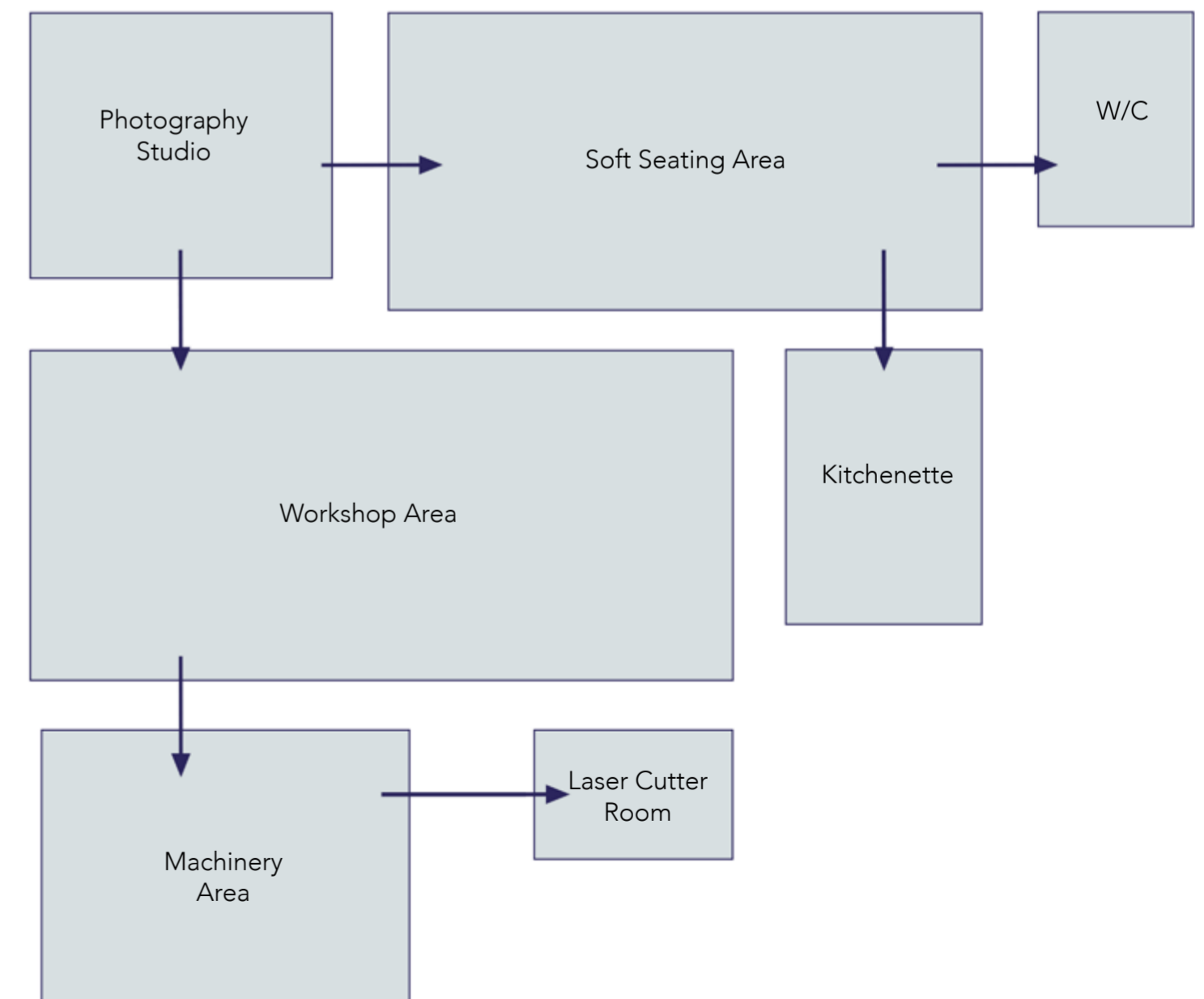
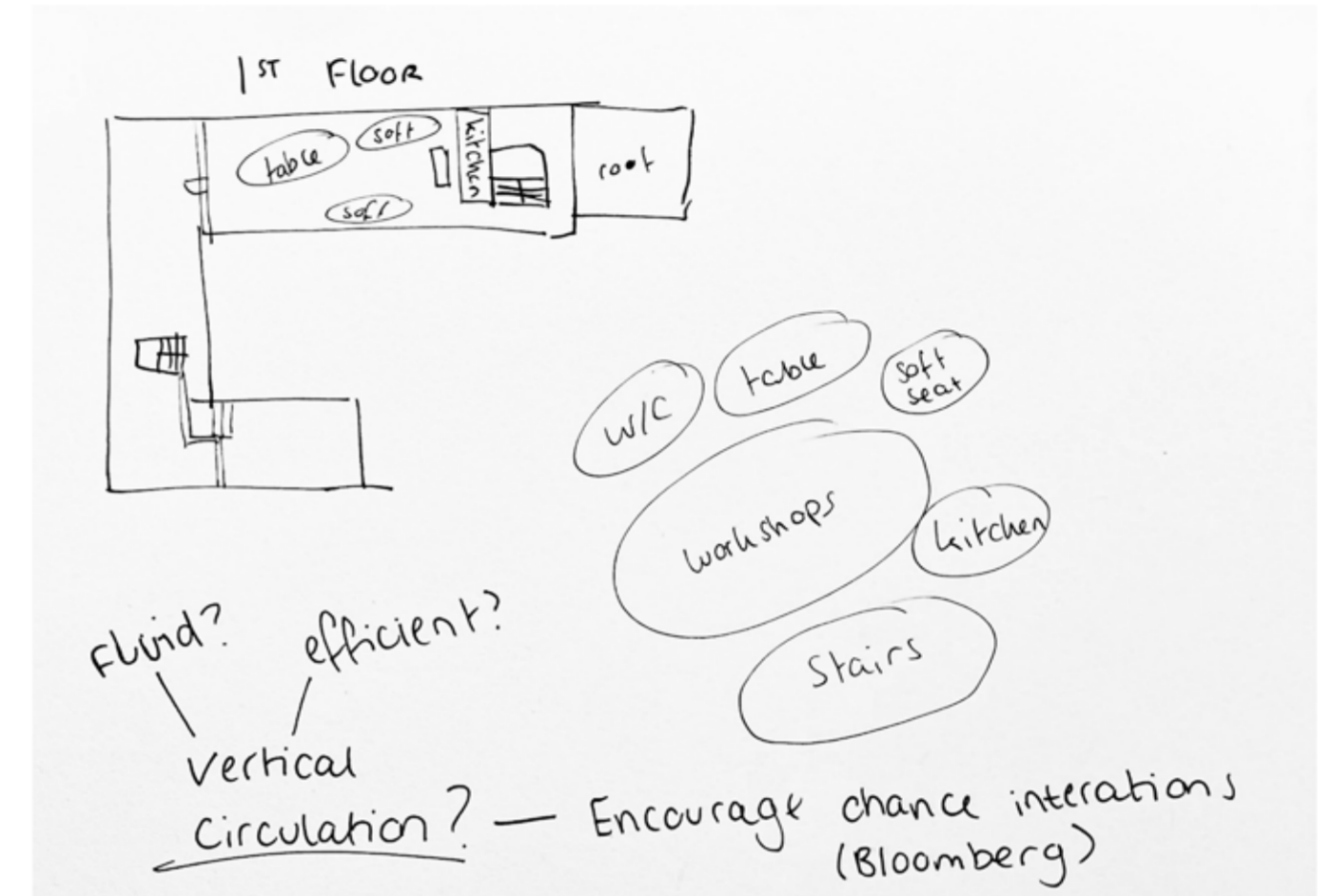
This is the rough plan for the space allocation on the first floor. To plan the space better, I looked at what rooms I wanted to include in the proposal how much space each of these rooms would need, and how they could fit into Sellers Wheel, as well as how the spaces were linked together and the journey a person would need to take to get around the space.

The areas that would take up the most space on the first floor of my design are the workshop and soft seating space. The workshop space needed to be close to the machinery area and the laser cutter room as people would be moving around these spaces frequently, so I placed them at one end of the building together.

The photography studio has been placed central as it is a place that everyone in the building will be able to use and will be very central to collaboration.

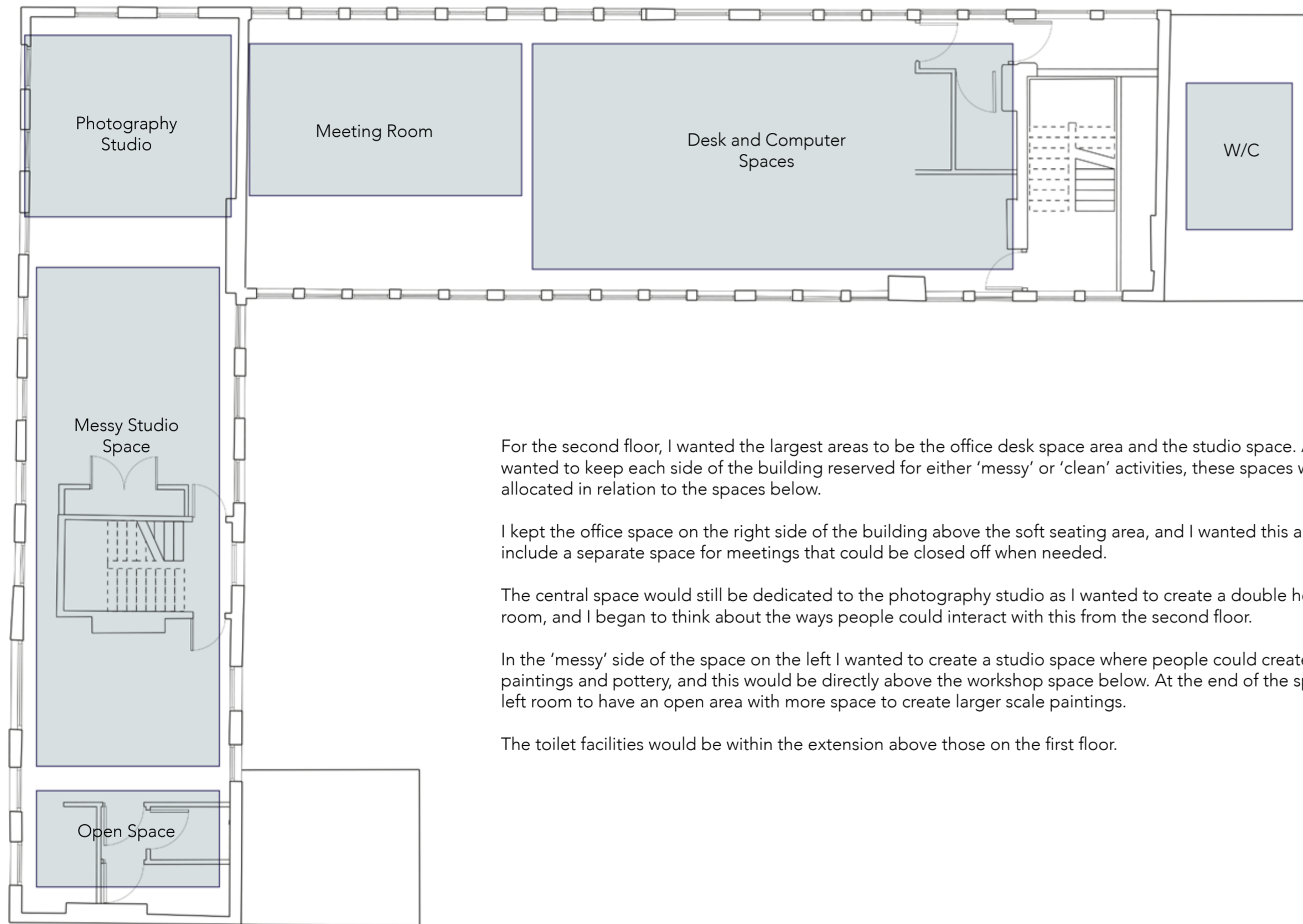
On the other end of the building there will be the soft seating area where people can relax and have a more casual place to work and chat, which will be linked to a small kitchenette. I kept a small amount of space dedicated to the kitchen facilities due to Tamper being located below and providing more space to eat and drink.

When looking at where to place the toilet facilities, I realised there wasn't a place on each floor where they could sit in the same place, so I decided to create an extension above the existing bin store on the ground floor that would house these facilities.



PLANNING THE SPACE

SECOND FLOOR SPACE ALLOCATION



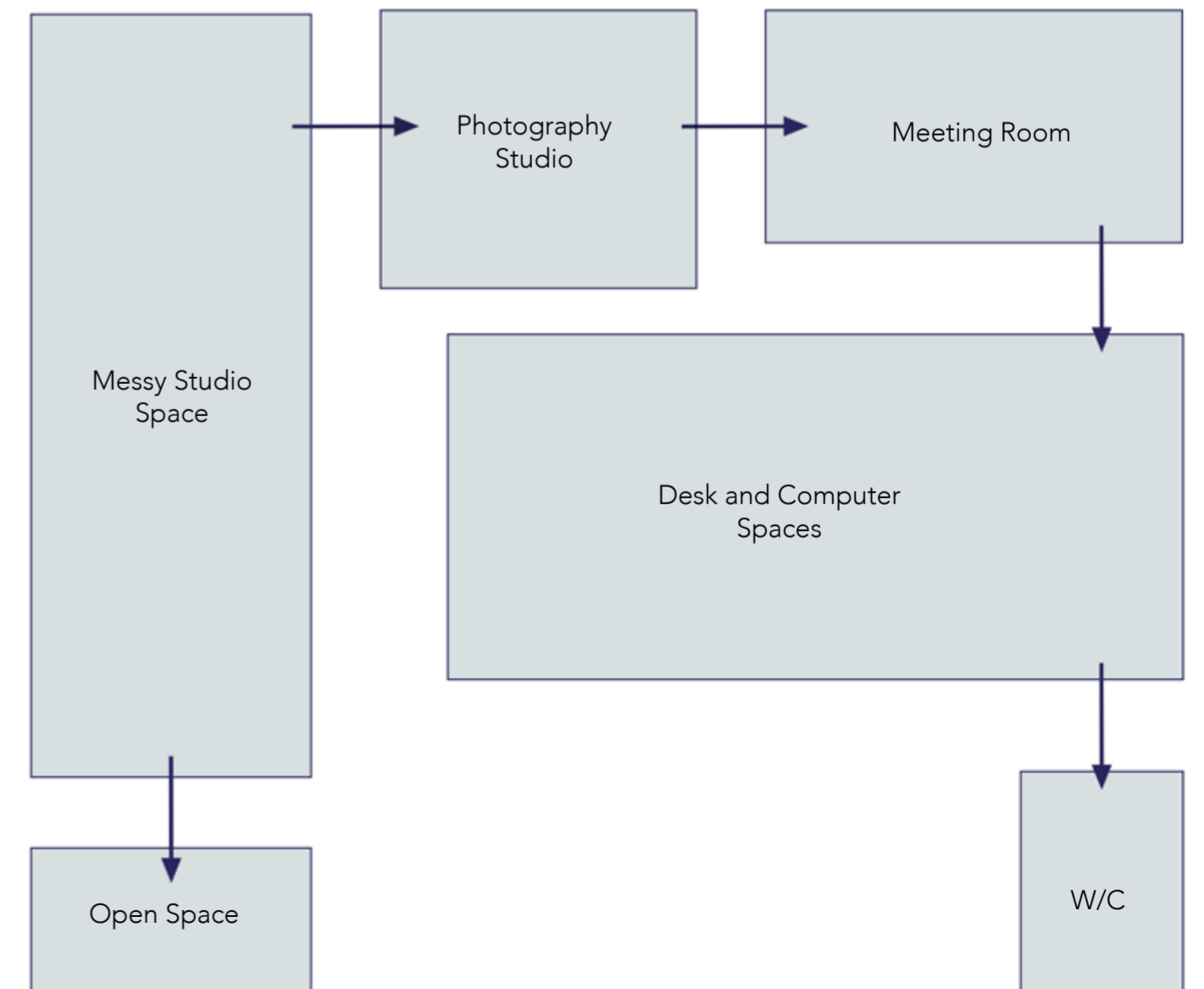
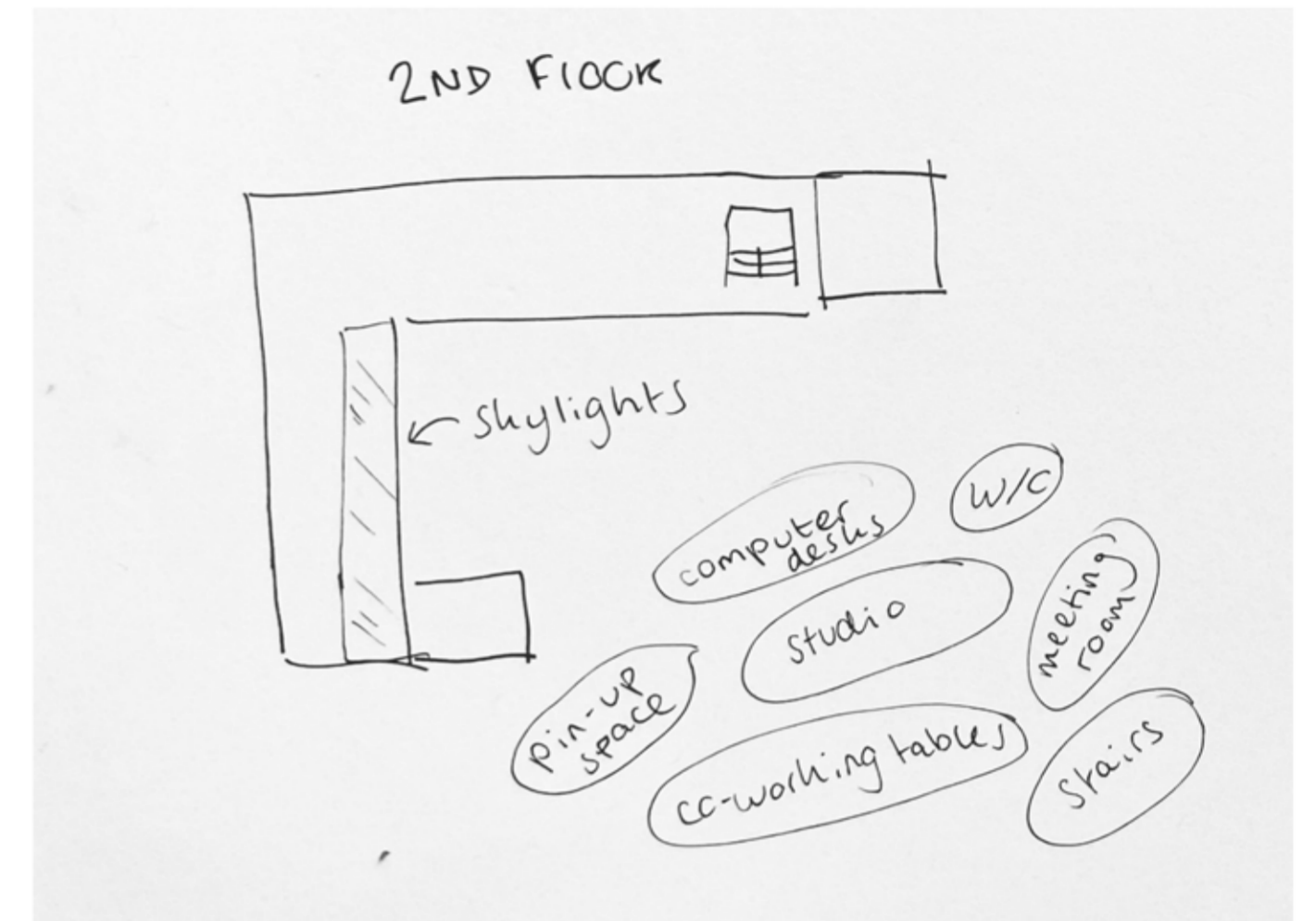
For the second floor, I wanted the largest areas to be the office desk space area and the studio space. As I wanted to keep each side of the building reserved for either 'messy' or 'clean' activities, these spaces were allocated in relation to the spaces below.

I kept the office space on the right side of the building above the soft seating area, and I wanted this area to include a separate space for meetings that could be closed off when needed.

The central space would still be dedicated to the photography studio as I wanted to create a double height room, and I began to think about the ways people could interact with this from the second floor.

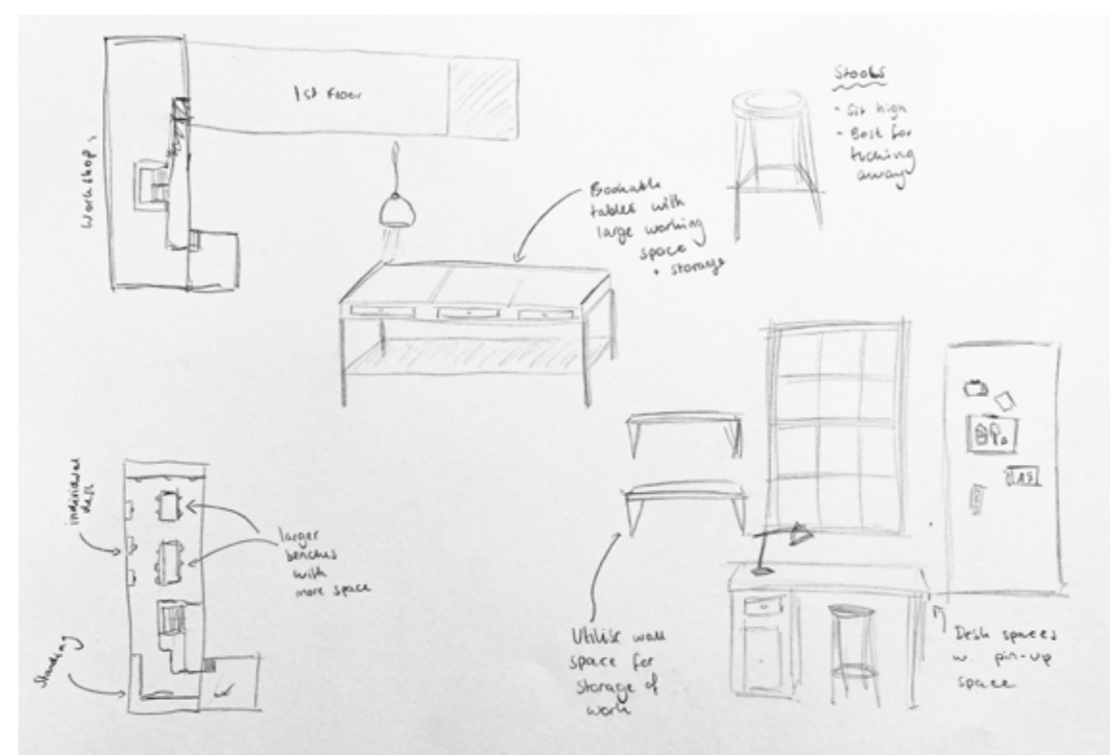
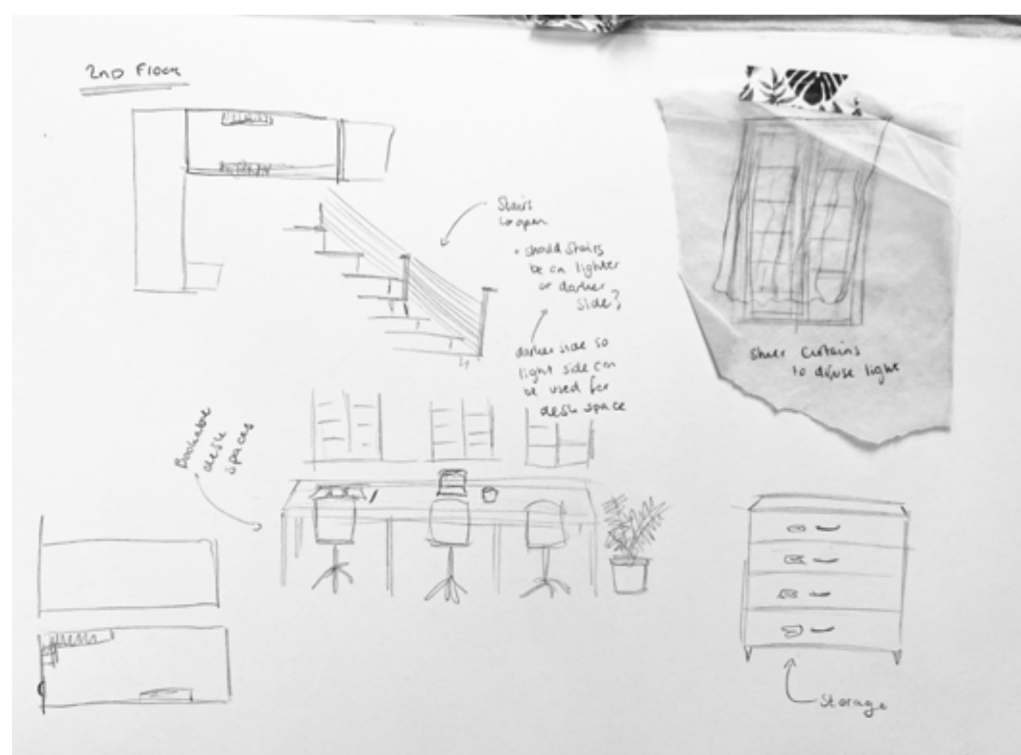
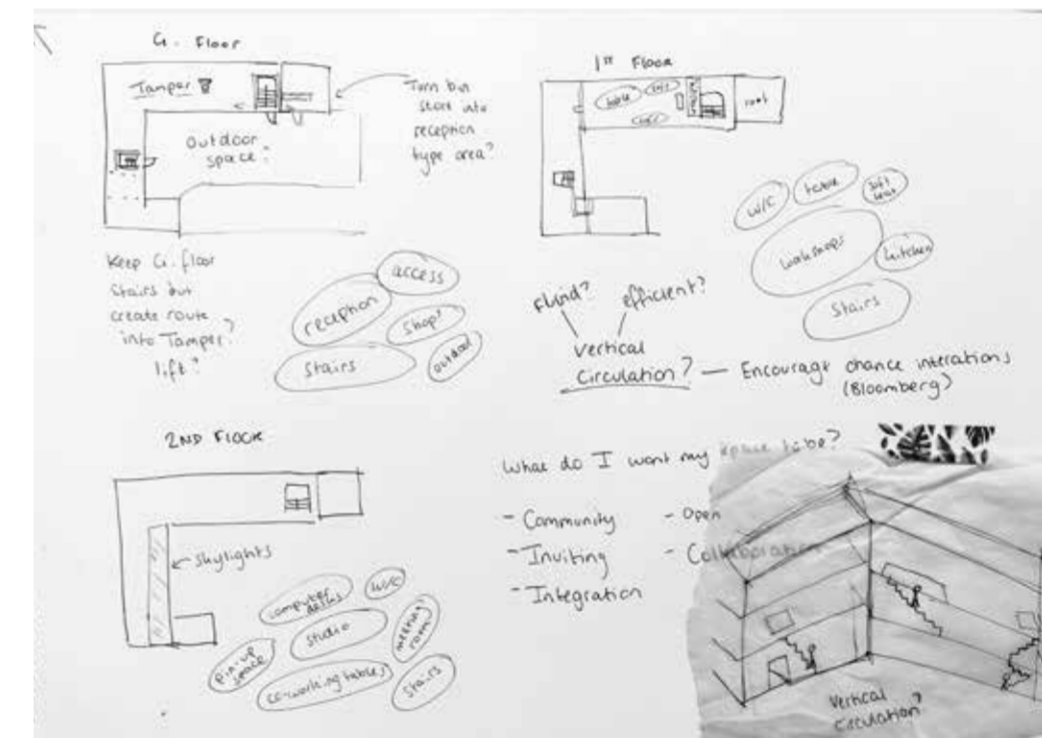
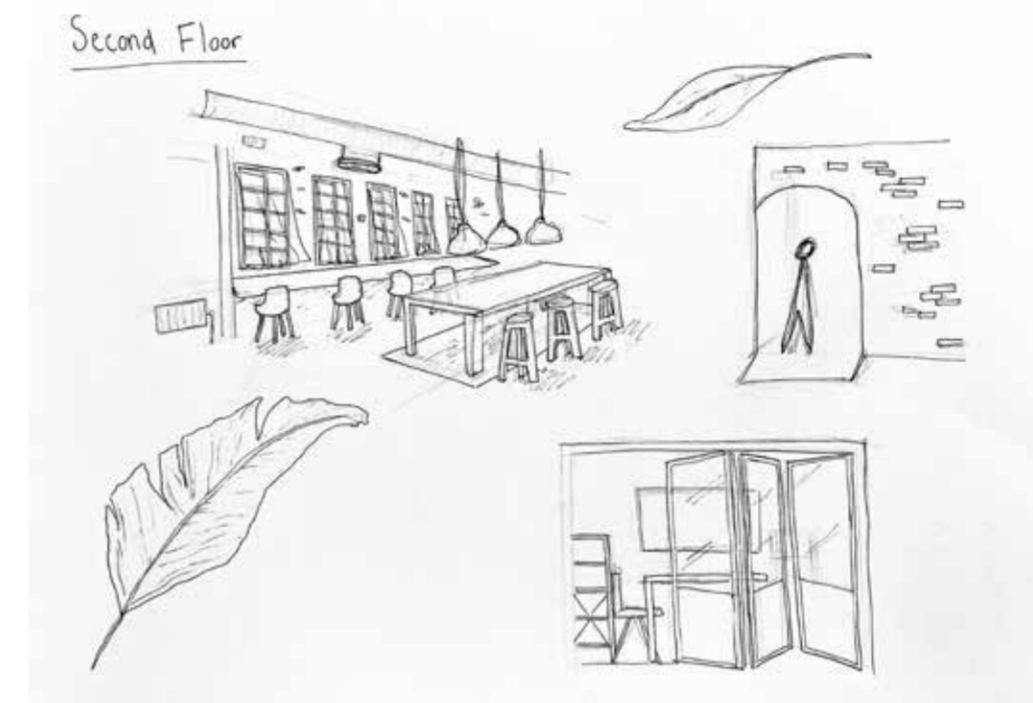
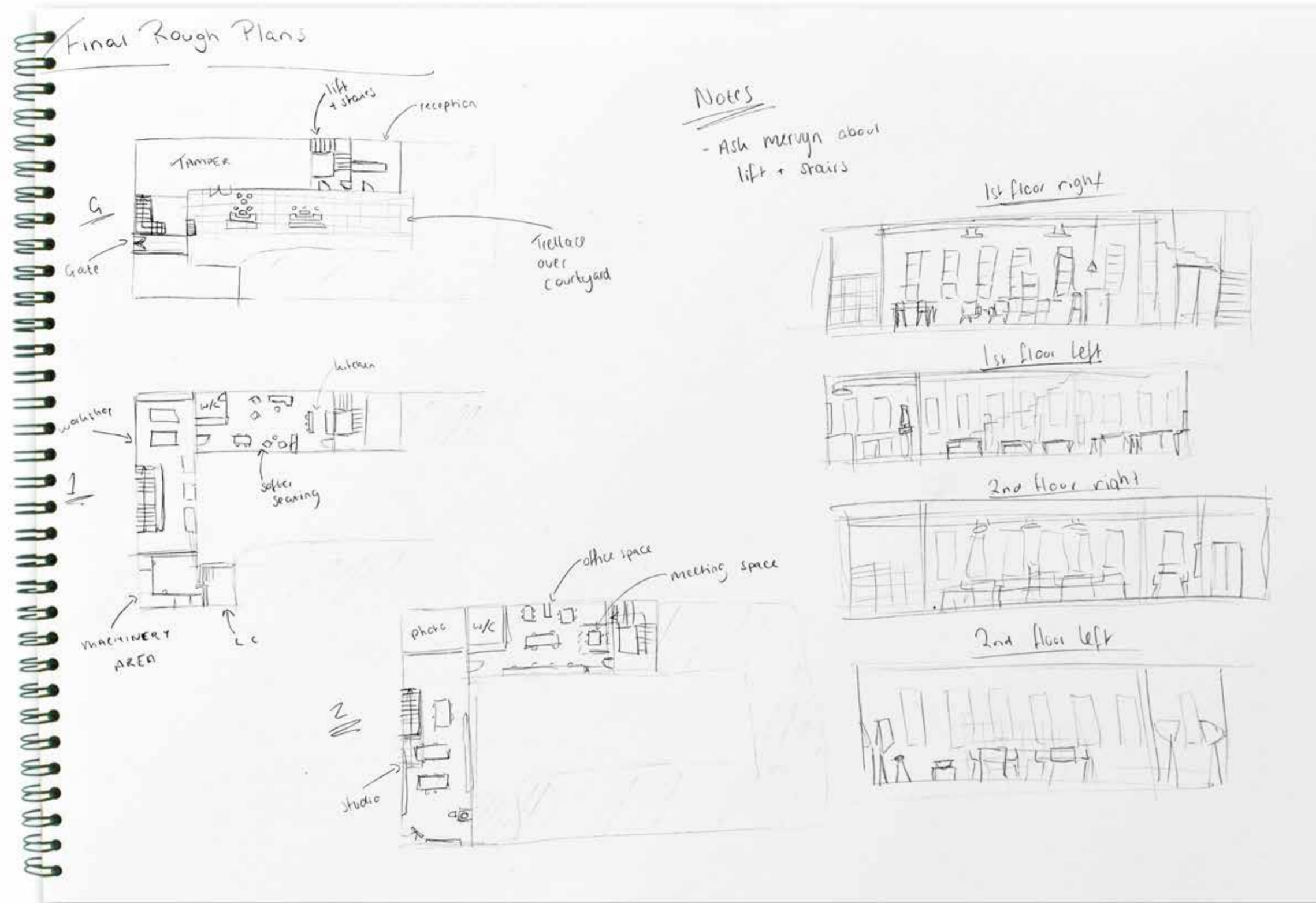
In the 'messy' side of the space on the left I wanted to create a studio space where people could create paintings and pottery, and this would be directly above the workshop space below. At the end of the space, I left room to have an open area with more space to create larger scale paintings.

The toilet facilities would be within the extension above those on the first floor.



DEVELOPMENT

SKETCHES SHOWING EXPLORATION OF IDEAS



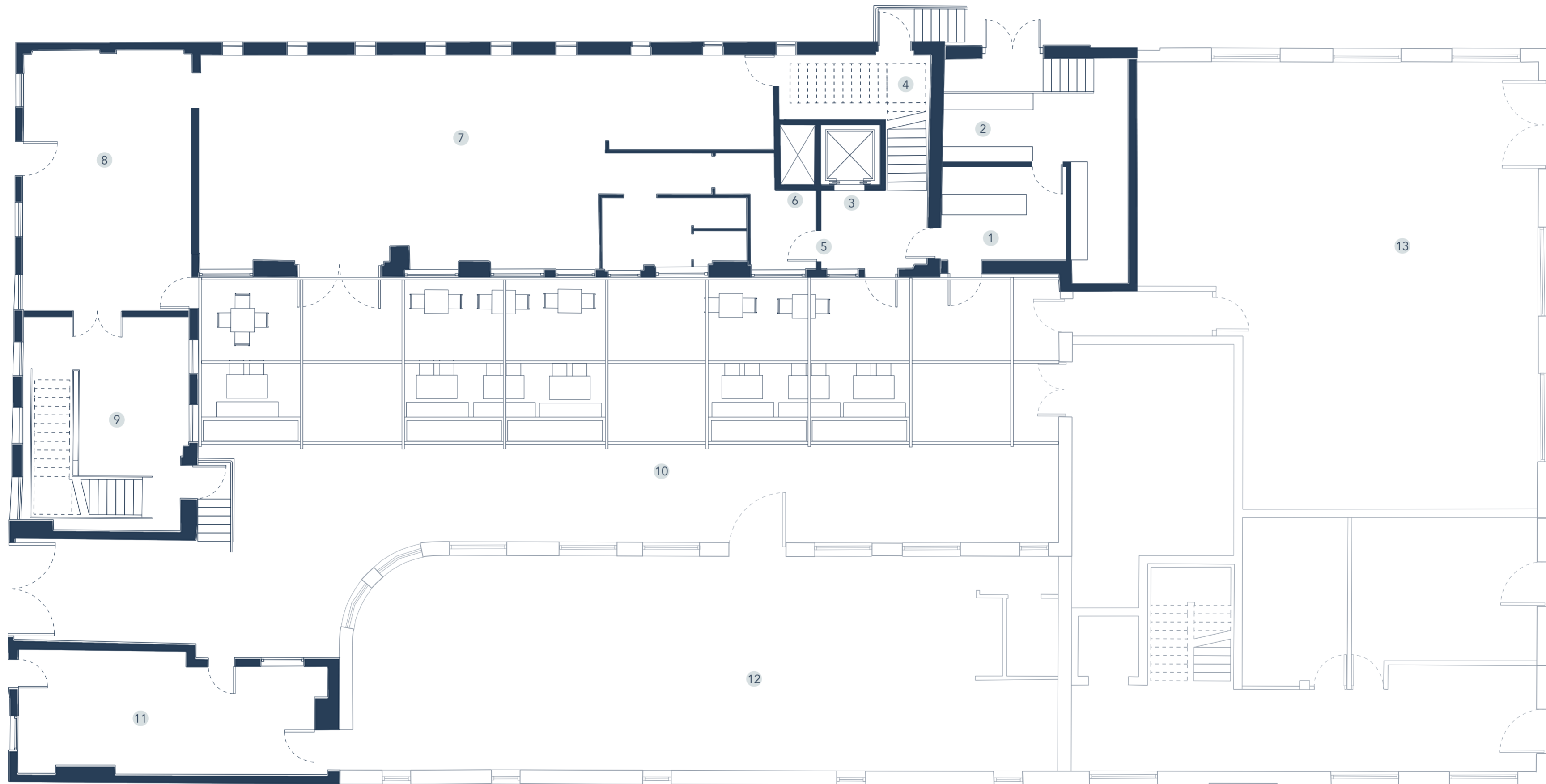
These are some of the rough sketches showing the development of some of my key design ideas and how they've changed to get to the final outcome.

They show the development of the areas I wanted to include in my space and how I imagined they would look in 3D, focusing on table spaces, pin-up spaces and the closable meeting room, which during the initial stage of design was going to be closed off with bi-folding doors.

FINAL DESIGN

GROUND FLOOR PLAN SCALE 1:100 @ A2

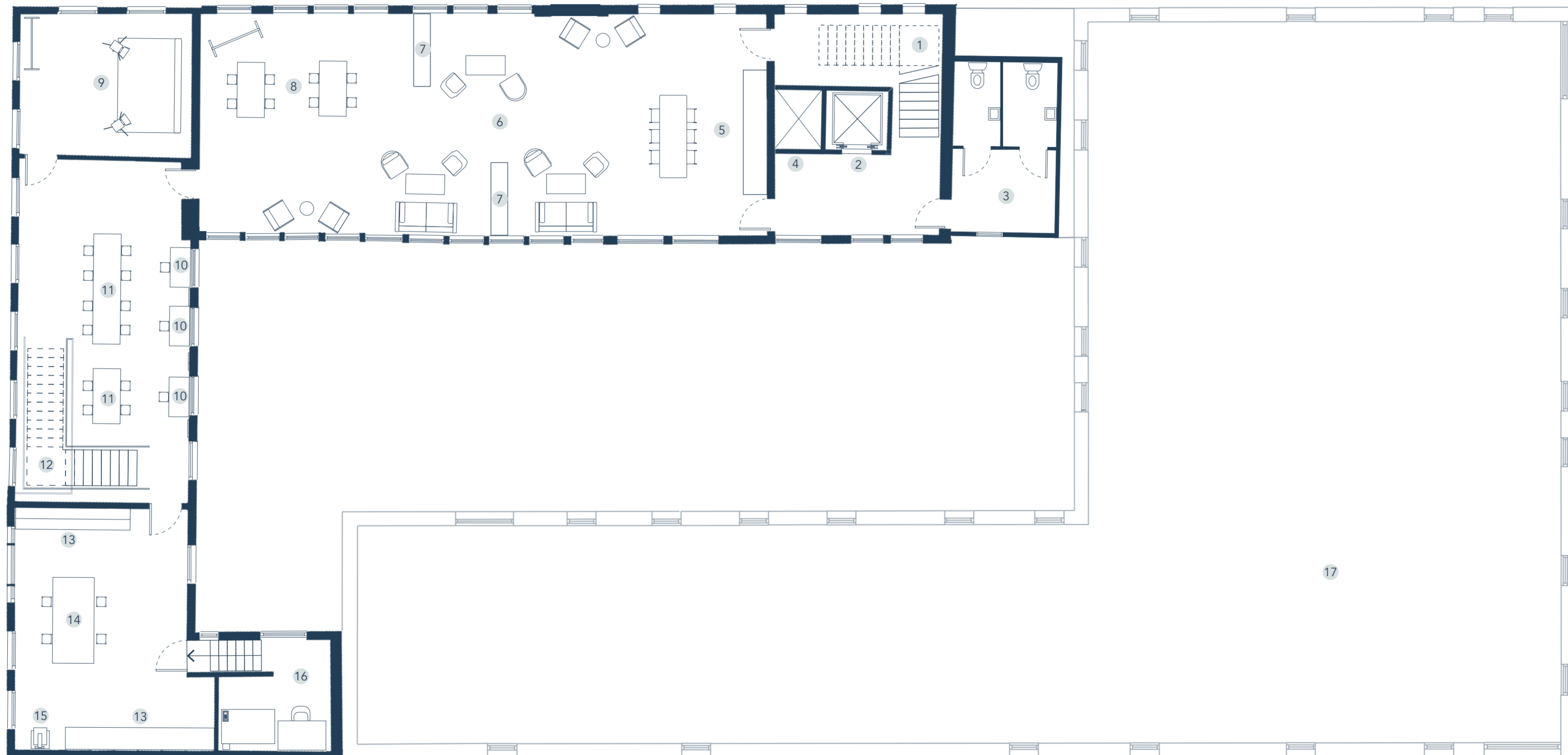
- 1 Reception desk/ main entrance
- 2 Materials store
- 3 Lift
- 4 Stairs to 1st floor
- 5 Route into Tamper
- 6 Vertical riser (plant room)
- 7 Tamper seating area
- 8 Tamper serving counter/ entrance
- 9 Store area and stairs to workshop
- 10 Courtyard seating area
- 11 Mow's Coffee
- 12 Laundry For Hair
- 13 Student accommodation office



FINAL DESIGN

FIRST FLOOR PLAN SCALE 1:100 @ A2

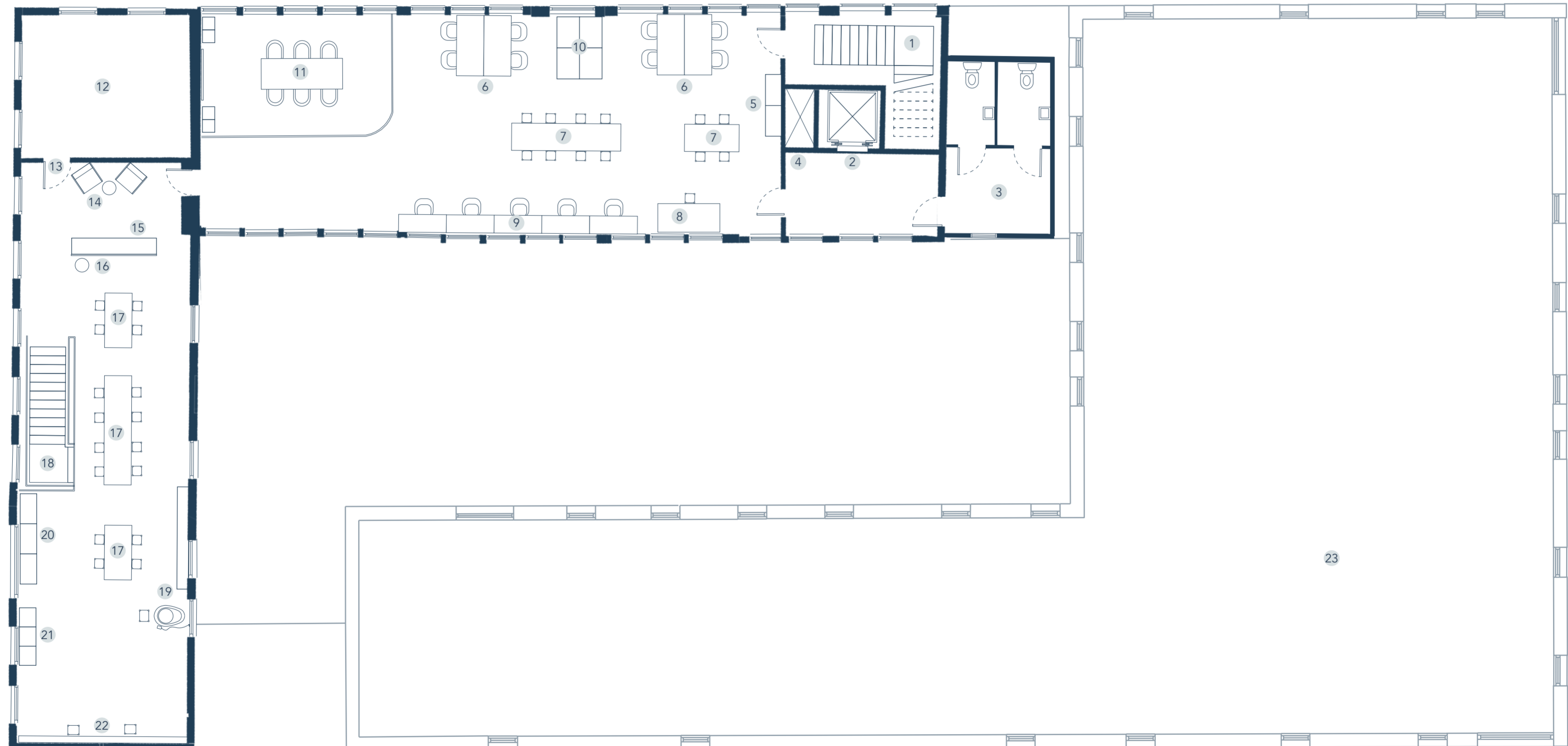
- 1 Stairs to 2nd floor
- 2 Lift
- 3 Extension with toilets
- 4 Vertical riser
- 5 Kitchenette with seating
- 6 Soft seating area
- 7 Open storage
- 8 Casual work area
- 9 Double height photography studio
- 10 Individual desk space with pin up board
- 11 Workshop seating space
- 12 Stairs up to studio space
- 13 Workbench space and storage
- 14 Workbench with clamps
- 15 Bandsaw
- 16 Laser cutter room
- 17 Student accommodation



FINAL DESIGN

SECOND FLOOR PLAN SCALE 1:100 @ A2

- 1 Stairs from 1st floor
- 2 Lift
- 3 Extension with toilets
- 4 Vertical riser
- 5 Shelving
- 6 Computer desk space
- 7 Desk with stools
- 8 Drafting desk
- 9 Individual desk space
- 10 Flat file cabinet
- 11 Meeting space with curtain
- 12 2nd floor of photography studio
- 13 Balcony
- 14 Soft seating
- 15 Flat lay space
- 16 Pin-up space
- 17 Table space
- 18 Stairs down to workshop
- 19 Potters wheel and shelving
- 20 Shelving
- 21 Canvas storage
- 22 Open space for painting
- 23 Student accommodation



FINAL DESIGN

SECTION SCALE 1:50 @ A2



FINAL DESIGN

SECTION SCALE 1:50 @ A2



FINAL DESIGN

STUDIO AND WORKSHOP ISOMETRICS SCALE 1:75 @ A2

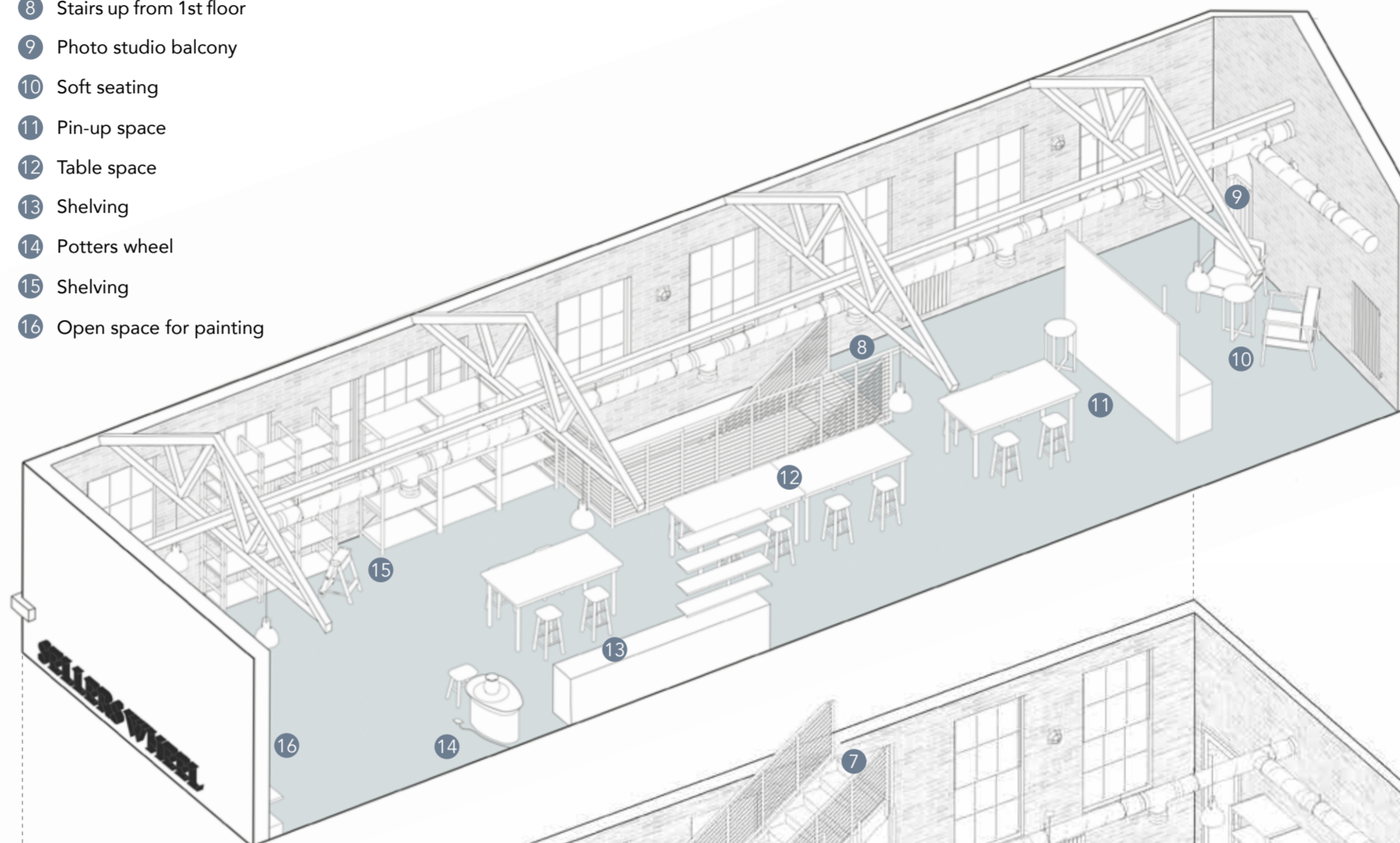
NOTE

For photo studio
please refer to pg 64

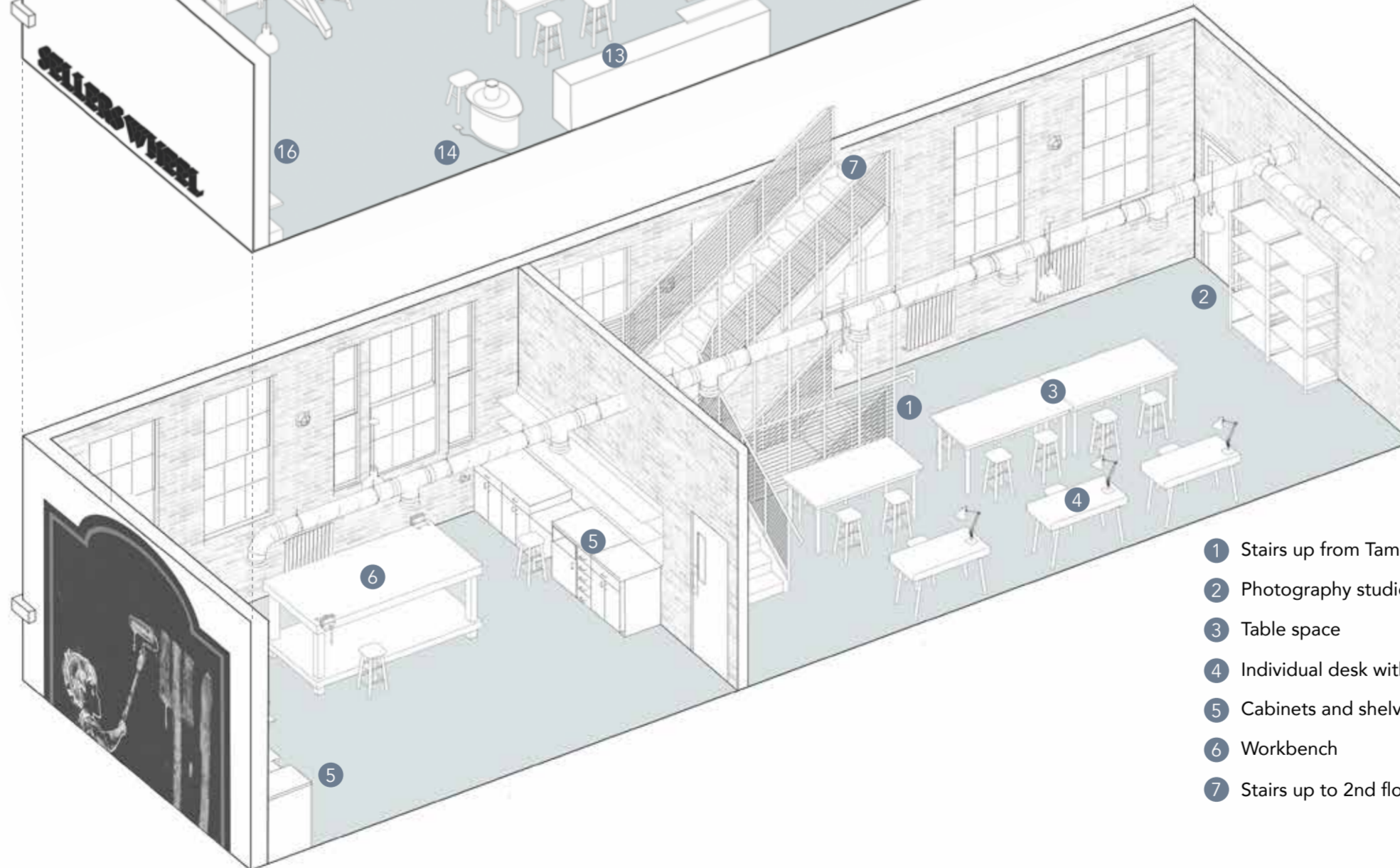


- 8 Stairs up from 1st floor
- 9 Photo studio balcony
- 10 Soft seating
- 11 Pin-up space
- 12 Table space
- 13 Shelving
- 14 Potters wheel
- 15 Shelving
- 16 Open space for painting

2



1



- 1 Stairs up from Tamper
- 2 Photography studio
- 3 Table space
- 4 Individual desk with pin-up space
- 5 Cabinets and shelving
- 6 Workbench
- 7 Stairs up to 2nd floor



FINAL DESIGN

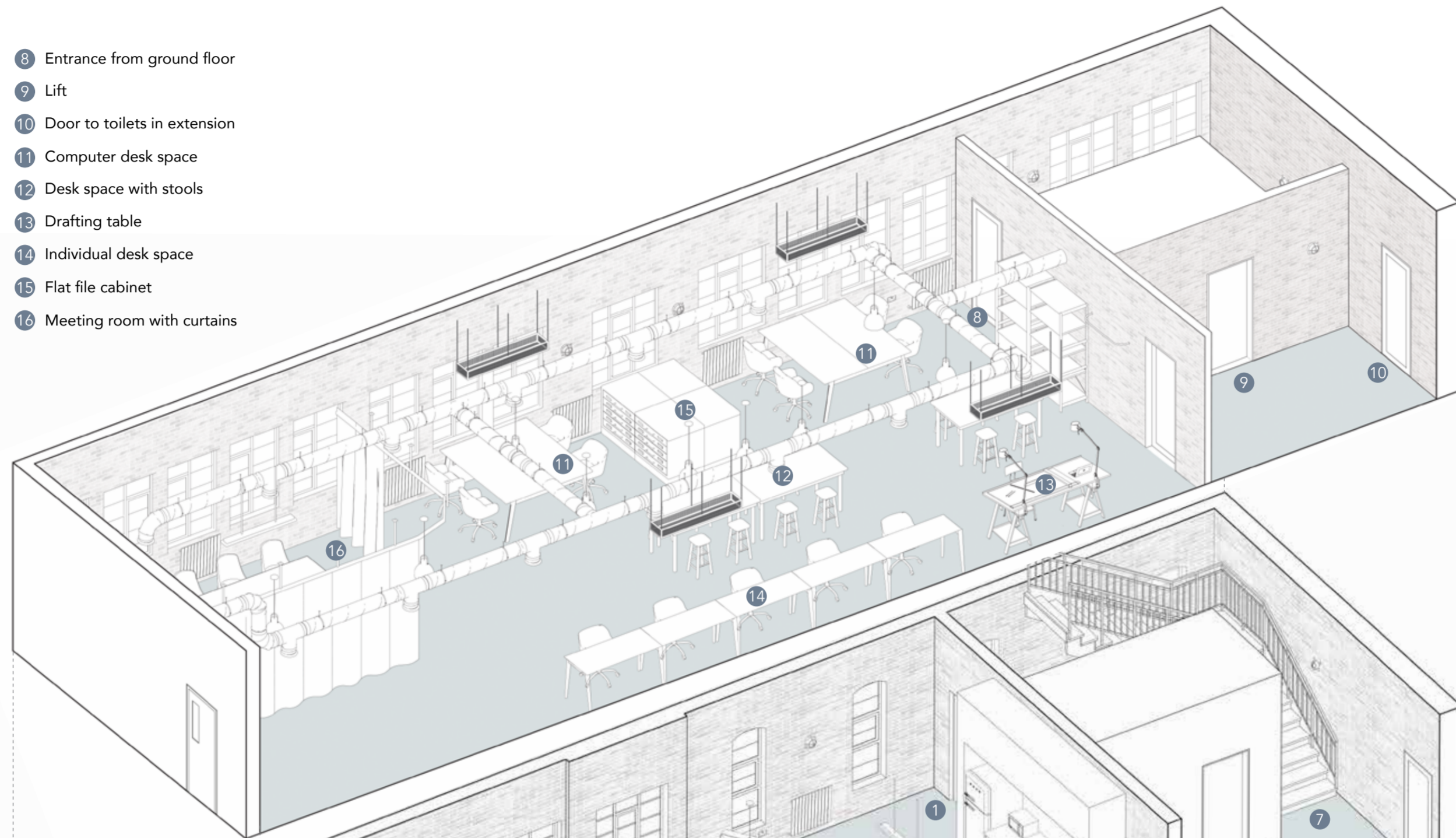
SOFT SEATING AND OFFICE SPACE ISOMETRICS SCALE 1:75 @ A2



- 8 Entrance from ground floor
- 9 Lift
- 10 Door to toilets in extension
- 11 Computer desk space
- 12 Desk space with stools
- 13 Drafting table
- 14 Individual desk space
- 15 Flat file cabinet
- 16 Meeting room with curtains



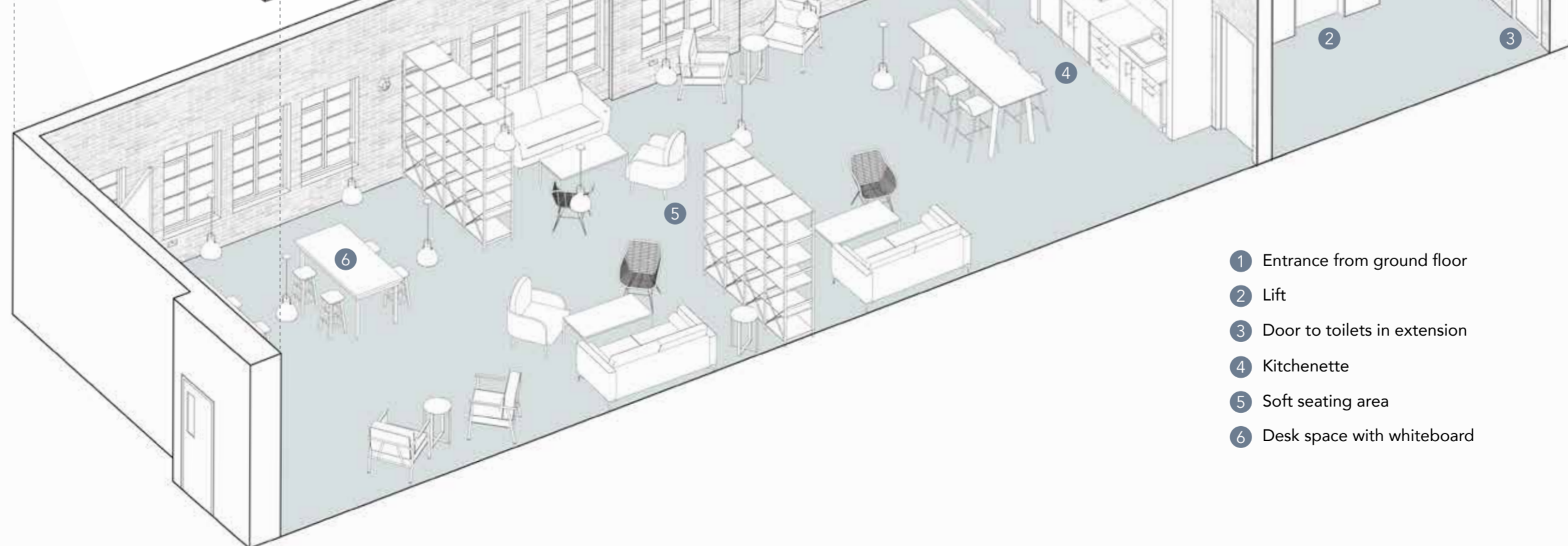
2



14



1



- 1 Entrance from ground floor
- 2 Lift
- 3 Door to toilets in extension
- 4 Kitchenette
- 5 Soft seating area
- 6 Desk space with whiteboard



4

Roof

- 20. Access to roof via photo studio
- 21. Solar panels and air source heat pump
- 22. Cold roof insulation
- 23. Skylights

2

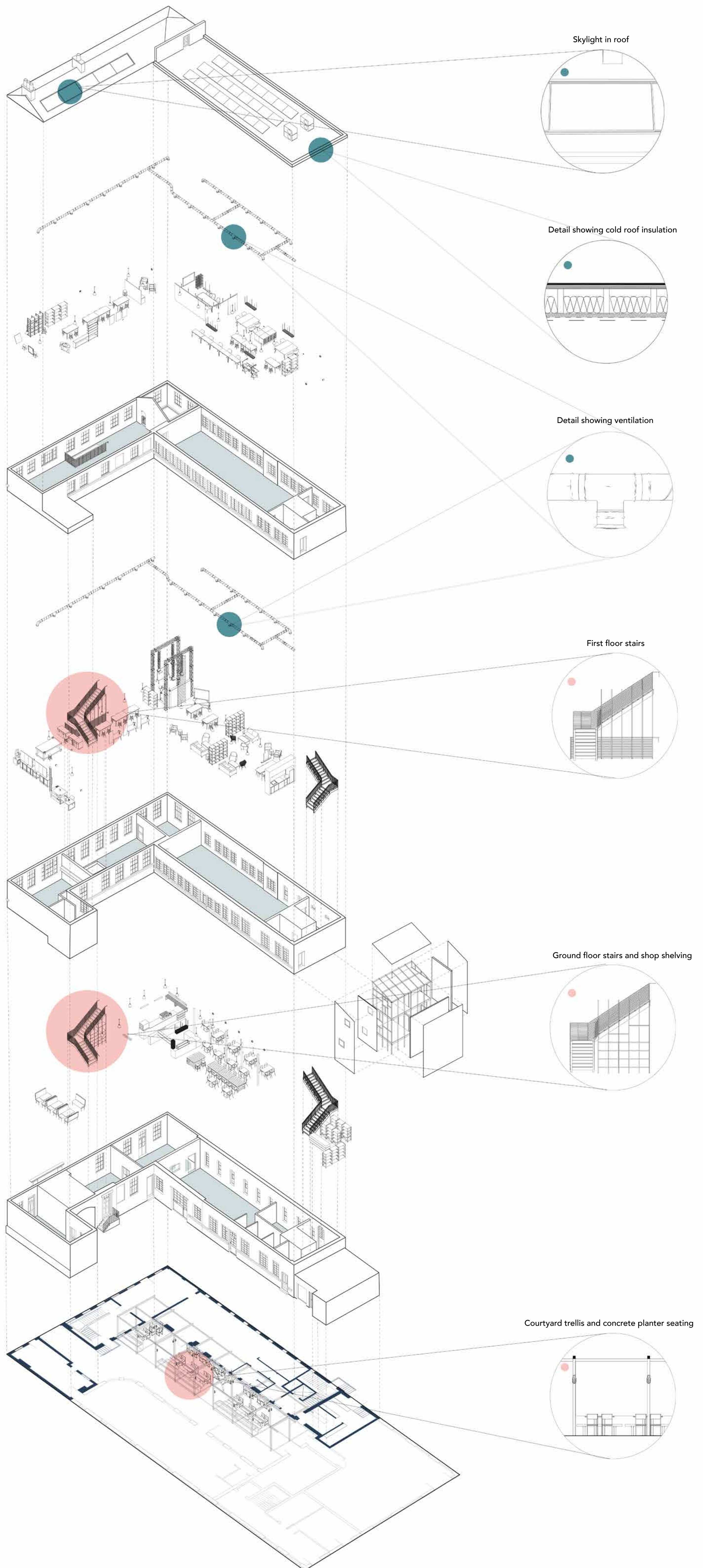
- 15. Studio Space
 - Painting area
 - Potters wheel
 - Desks
 - Pin up space
 - Soft seating
- 16. Photo Studio
- 17. Office Space
 - Meeting room
 - Desk space
 - Desks
 - Pin up space
 - Soft seating
- 18. Lift
- 19. Toilets

1

- 8. Laser-cutter Room
- 9. Workshop
- 10. Work Space
 - Meeting room
 - Desk space
 - Desks
 - Pin up space
 - Soft seating
- 11. Soft Seating Area
- 12. Kitchenette
- 13. Lift
- 14. Toilets

G

- 1. Mow's Coffee
- 2. Laundry For Hair
- 3. Courtyard
 - Trellis
 - Outdoor Seating
 - Concrete Planters
- 4. Tamper
- 5. Shop
- 6. Lift
- 7. Reception Area



DETAIL DRAWING

STAIRS MATERIALITY

As part of my proposal, one aspect that I focused on constructing is this staircase. Located in the left wing of the building, the staircase covers three floors, connecting Tamper on the ground floor to the workshop space on the middle floor and the studio space on the top floor.

I purposely chose to have the staircase running through the workshop and studio, perhaps an untypical position, as I wanted to encourage people to pass through the space where people were being the most creative. As people walk through the space there is designed to be the opportunity for more chance interactions between creatives.

I kept the design very open as I want to allow people to be able to see people crafting and making when moving, even vertically, through the space.

The staircase is also in that location to provide a suitable distance between the workshop, where machinery is housed, and an escape route, as the secondary staircase is located at the other end of the building.

The treads of the stairs will be constructed out of black checker plate, and the rest of structure, including the stringer and the railings. The light aluminium structure complements the industrial setting of the site, but the structural bars have been kept light to prevent the structure from looking heavy, similar to the precedents below which I used as inspiration for my design.

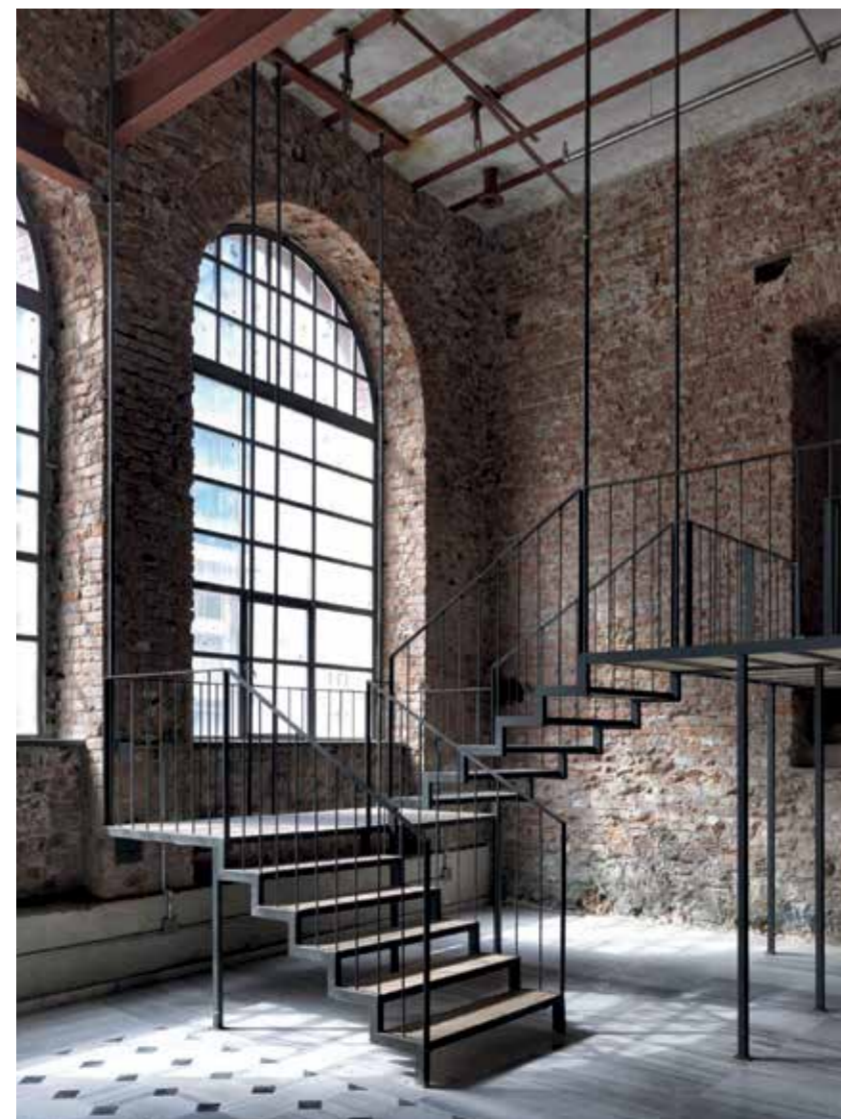
ALUMINIUM



CHECKERPLATE



INSPIRATION IMAGES



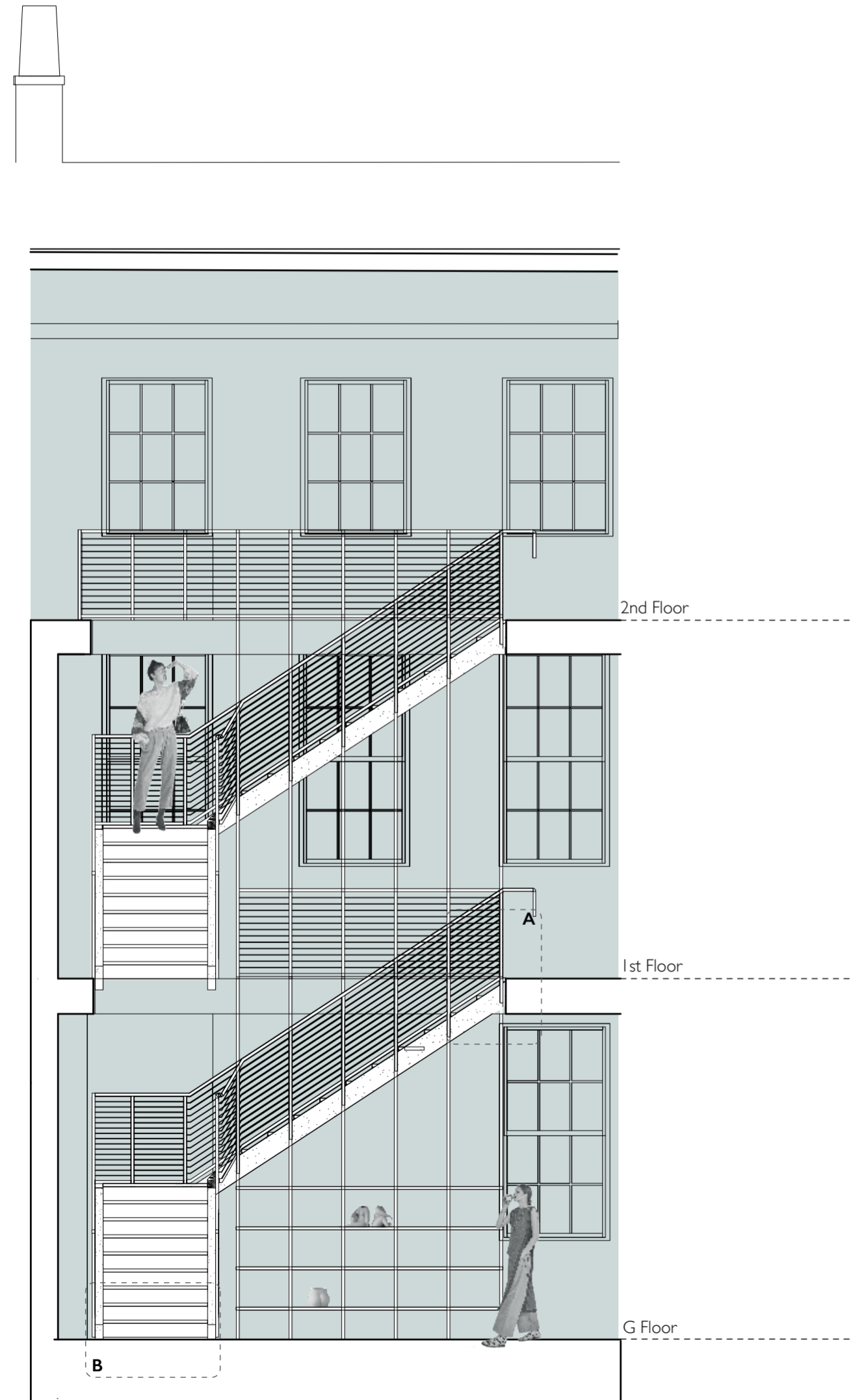
RENDERED SECTION SCALE 1:25 @ A2



DETAIL DRAWING

STAIRS MATERIALITY

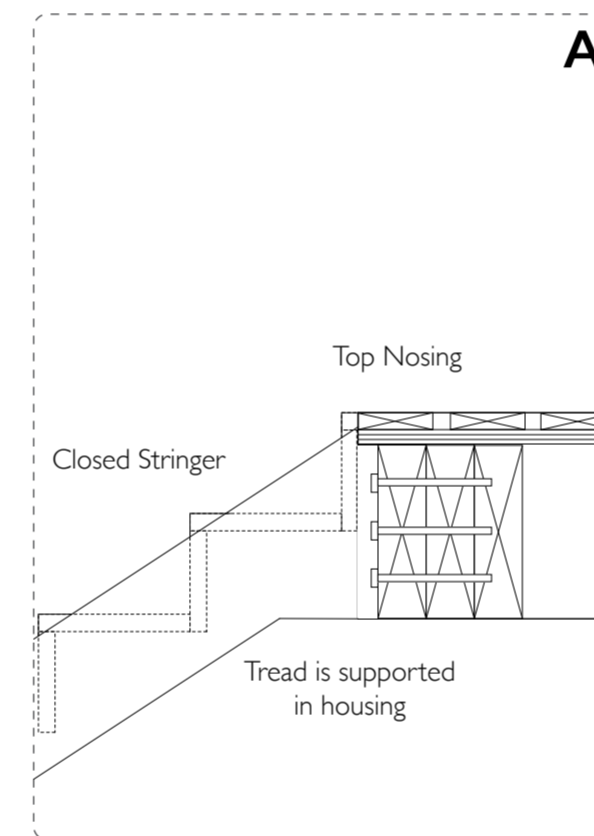
STAIRS SECTION 1:50 @ A2



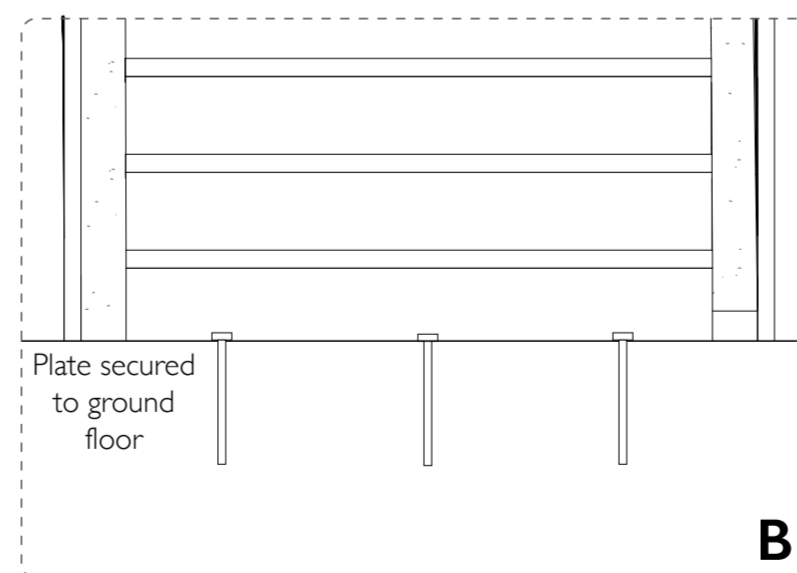
This is a closer look at the technical details of the stairs, detailing how the stairs are attached to the floors and also the measurements of the stairs, including the tread depth and height, as well as the angle of the stairs, which is appropriate for a public staircase.

The overall structure is comprised of two separate L-shaped staircases, which vary slightly in tread height as the height between the ground floor and 1st floor and 1st floor and second floor are slightly different. There is 2m headroom above both flights of stairs.

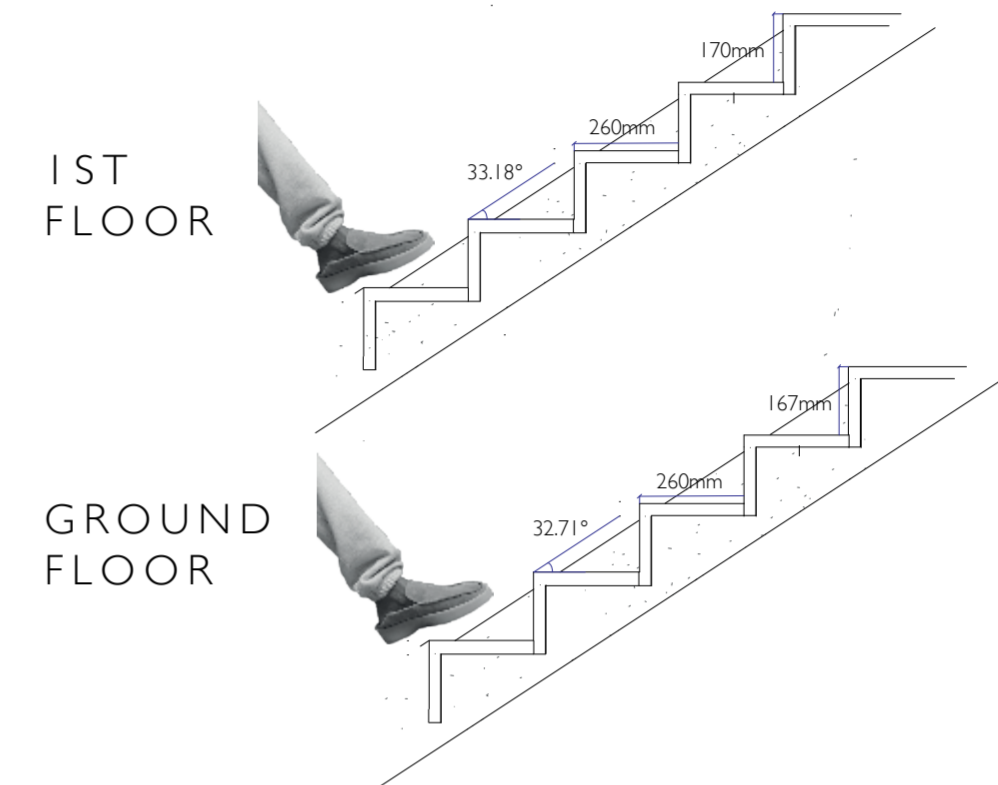
UPPER FLOOR CONNECTION DETAIL



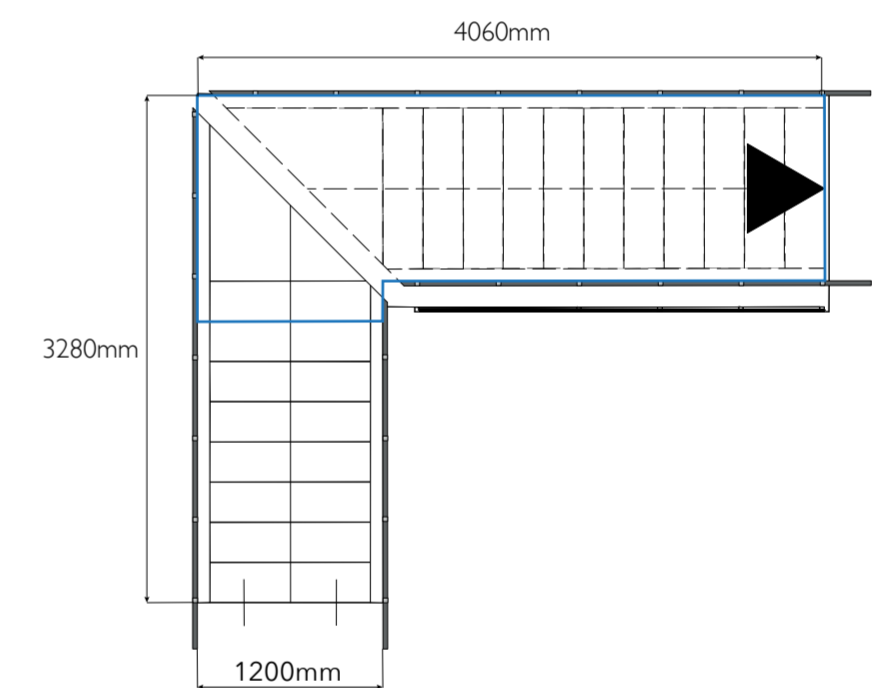
LOWER FLOOR CONNECTION DETAIL



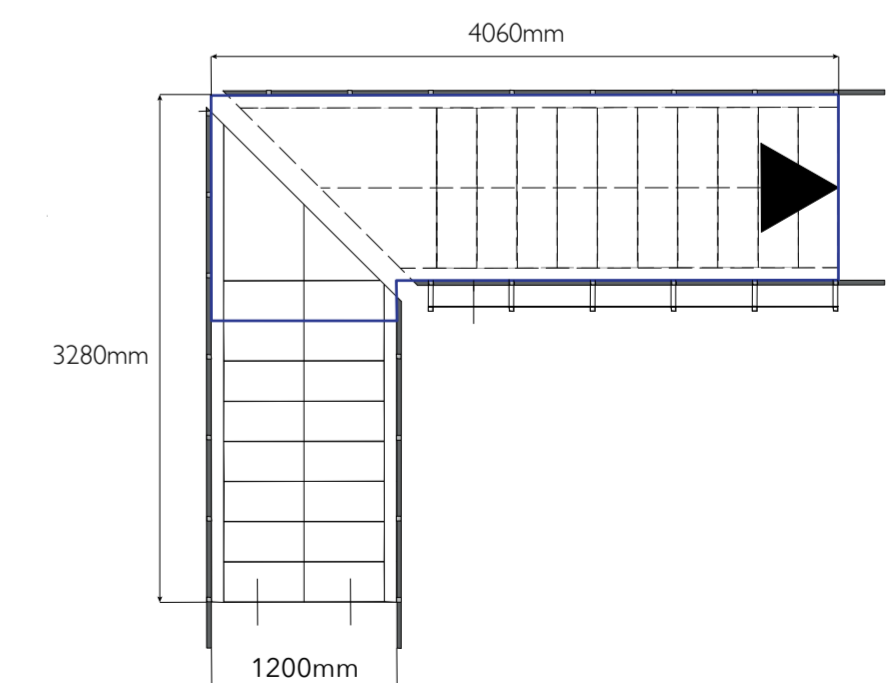
STAIRS TREADS DETAIL



1ST FLOOR PLAN



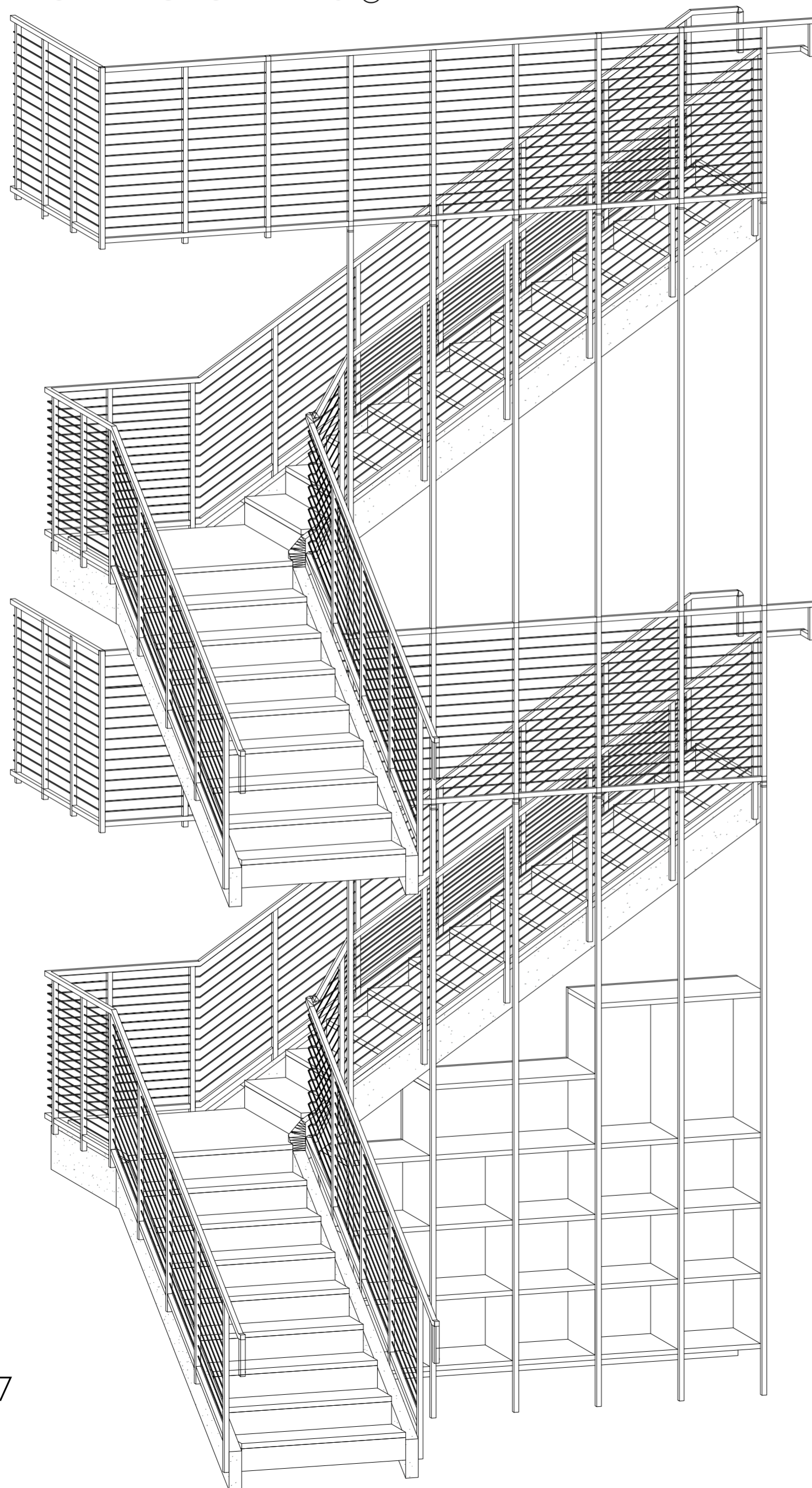
GROUND FLOOR PLAN



DETAIL DRAWING

RAILING AND SHELVES

ISOMETRIC SCALE 1:25 @ A2



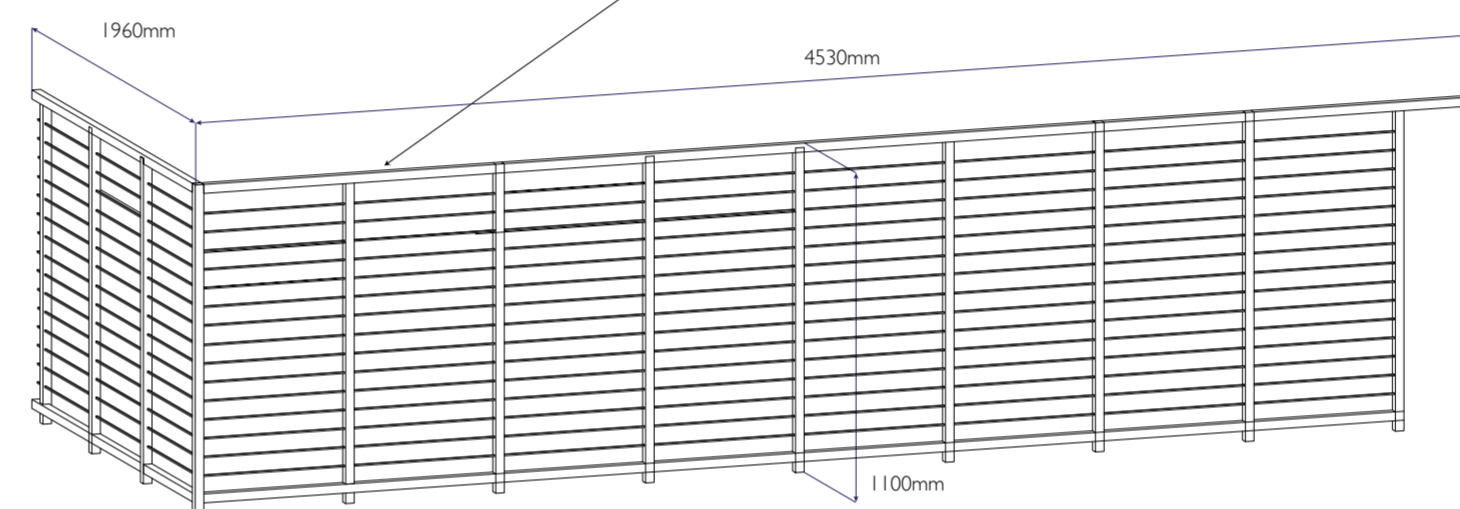
RAILING 1:25 @ A2



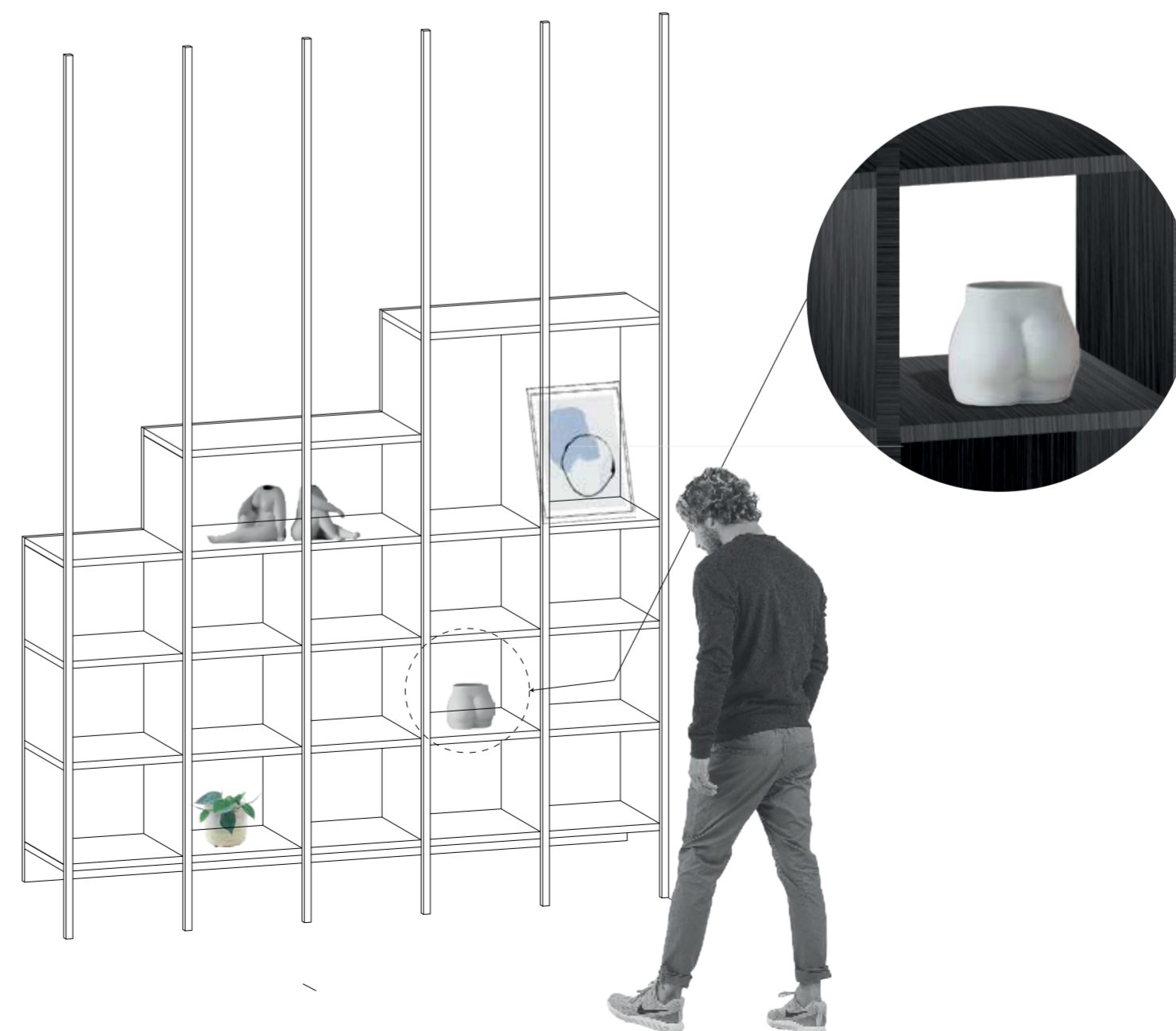
This is an isometric that I have pulled out from my model showing the entire structure of the staircase.

Around the perimeter of the staircase, I have created railings which are connected throughout all the floors by descending aluminium posts to create one cohesive structure. The railings are 1100mm tall to comply with UK building regulations for railings in a public building.

At the bottom of the staircase there is a shelving unit which I have created to allow people working in the workshop and studio spaces above to bring down and display handcrafted items to sell. This area will be accessible from the counter area of Tamper, so customers of Tamper can easily walk into this area whilst waiting for their coffee to be brewed.

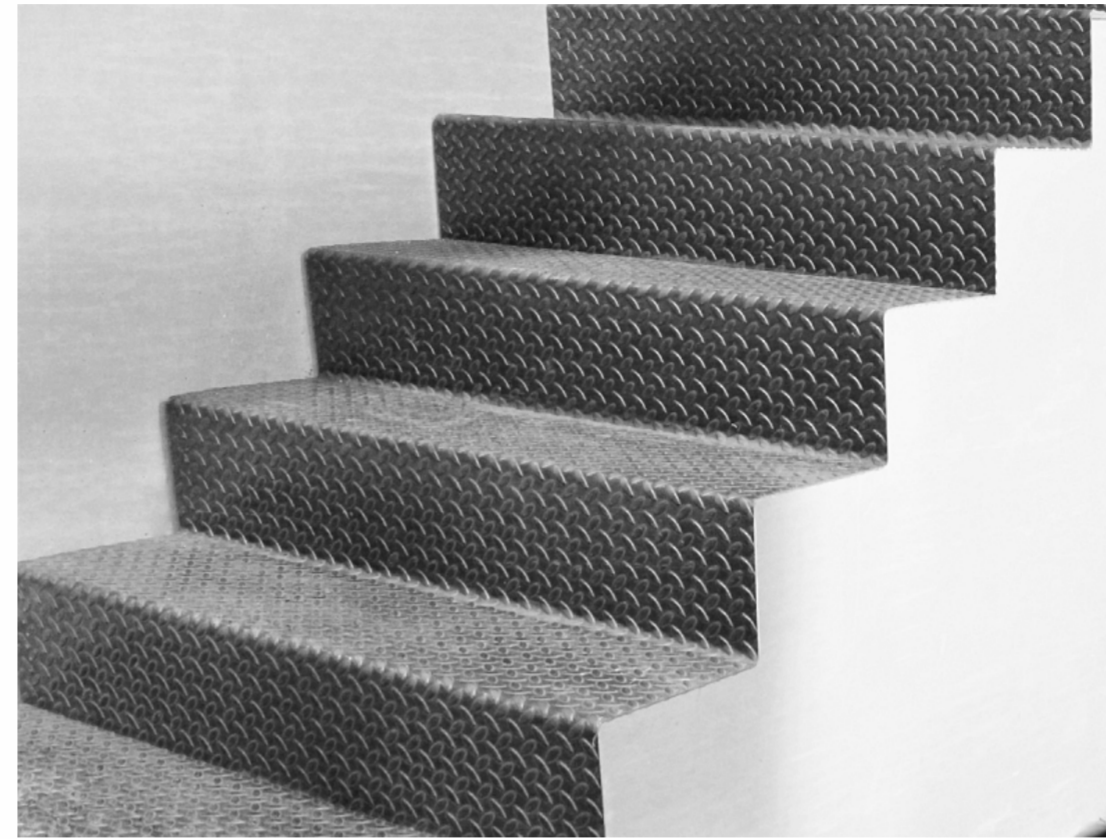
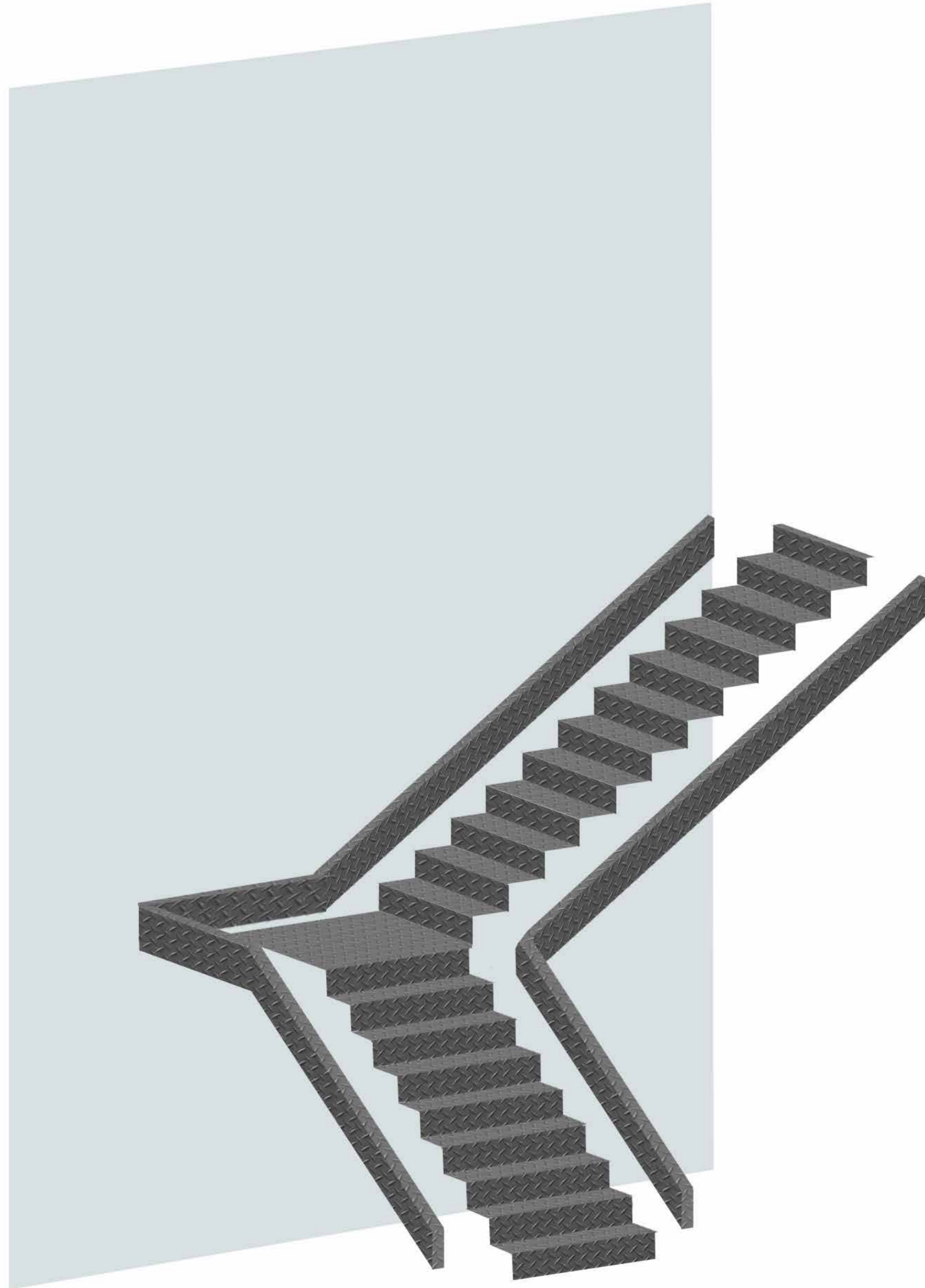


SHELVING UNIT SCALE 1:25 @ A2



DETAIL DRAWING

STAIRS WELDING



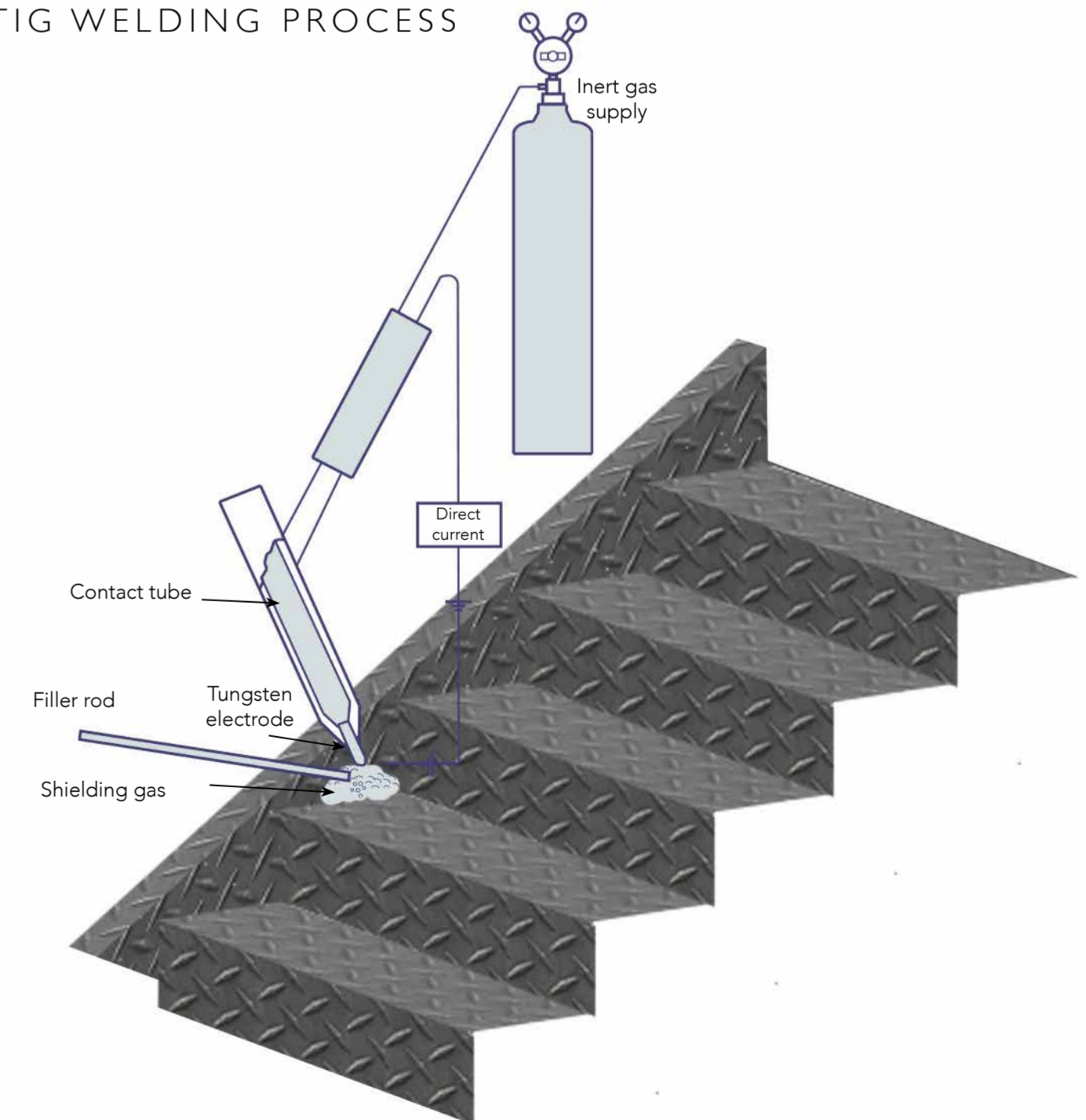
To understand the construction of my staircase, I looked at the ways in which I could create the steel structure. The easiest and cleanest construction method would be to use Tungsten Inert Gas (TIG) Welding. TIG Welding is an arc welding process used for high quality welding with aluminium.

I chose to create a structure that could be welded using TIG welding because its suitable for thinner materials, such as the checker plate stair treads. It can also be finished to create a very clean and neat join between metals, and the welds are extremely strong.

It uses a non-consumable tungsten electrode shielded by a flow of inert gas (such as Argon) in a short circuit to weld the metal together, which is demonstrated in the simple diagram below.

The checker plate treads will be created in two parts that connect at the landing, with each part created out of a straight bent checker plate which will then be welded to a stringer on either side.

TIG WELDING PROCESS



DESIGN EXTENSION

Because of the limited space within the two floors of Sellers Wheel that I am working with, I looked at creating an extension that sits atop the bin store, where there is a large gap between Sellers Wheel and the block of student accommodation. The purpose of the extension would be to create a space for the toilet facilities, enabling them to be placed in the same position on each floor.

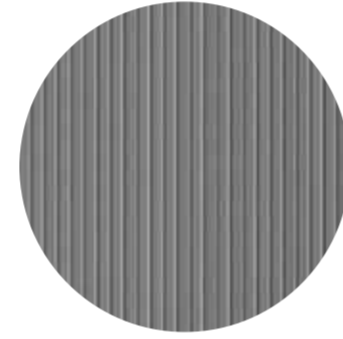
For the style of the extension, I wanted to keep it an industrial style to complement the existing site whilst still making a feature out of it.

The precedents I looked at demonstrate a light weight corrugated cladding. A particular precedent I found is the project at 192 Shoreham Street, Sheffield, created by Project Orange. It sits on the edge of the Cultural Industries Quarter Conservation Area of Sheffield, which Sellers Wheel is also a part of. The extension is intended to enhance the existing building and create a striking landmark as a symbol for both of the area's past and its aspirations for the future. I wanted to follow this approach for my extension.

TIMBER FRAME



CORRUGATED
METAL



INSPIRATION IMAGES



192 Shoreham Street, Project Orange



SECTION SCALE 1:50 @ A2



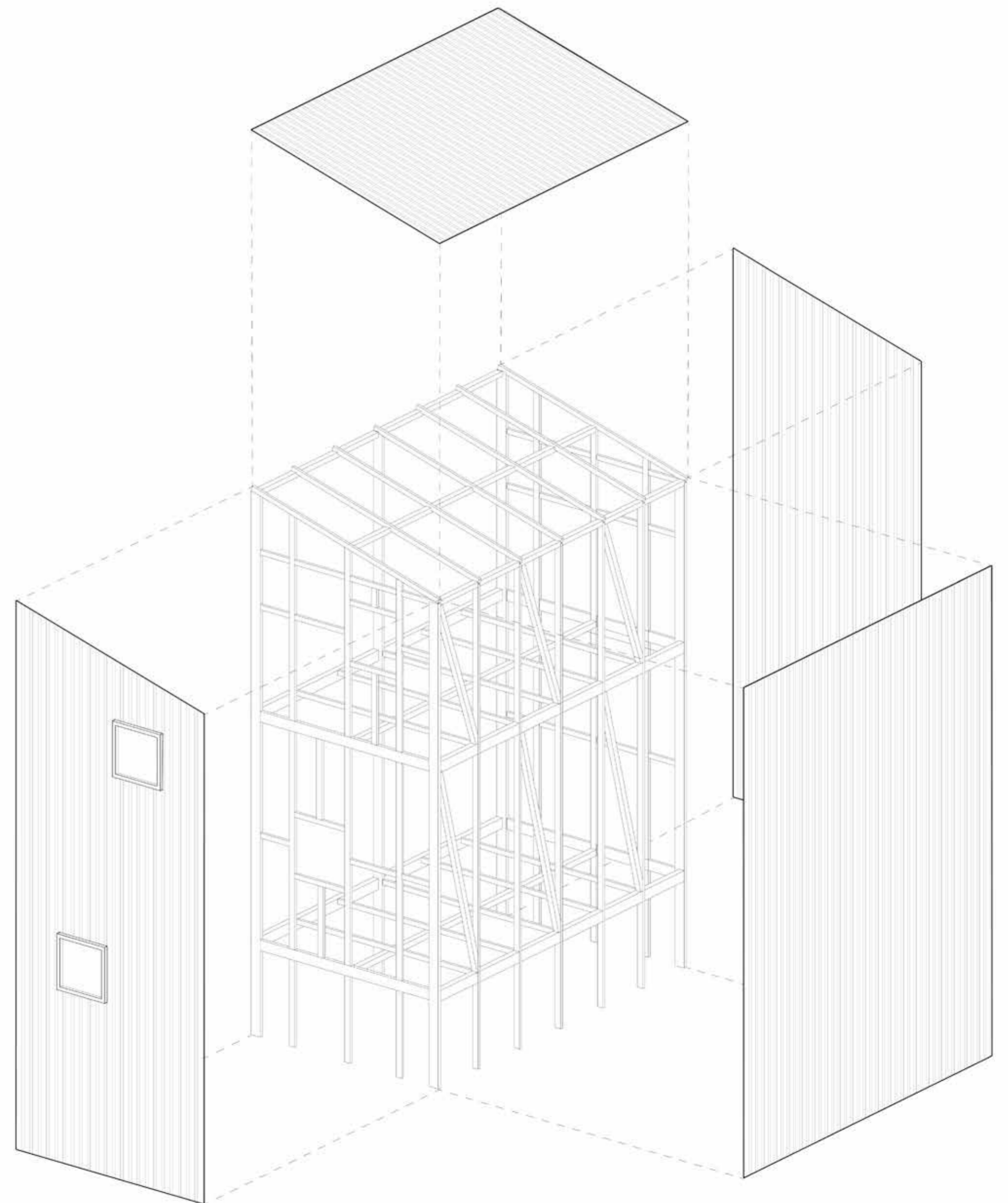
DESIGN

EXTENSION DETAILS

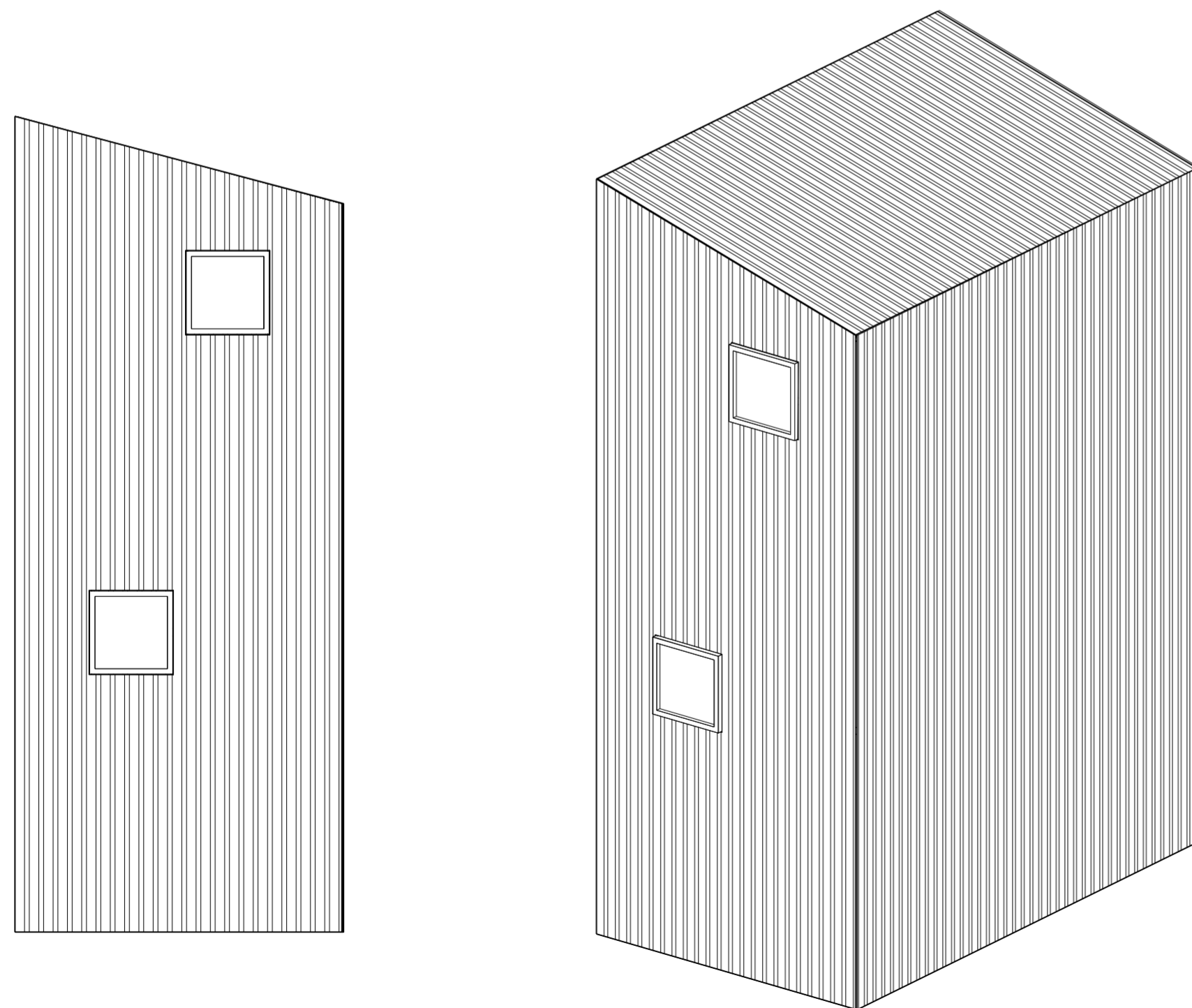
This is the proposed structure for my extension. The corrugated steel sheets would wrap around a timber frame structure. There is a window on each floor on the front of the extension that overlooks the courtyard space.

The structure has a slanted roof to allow rain to run off, and the potential for a rainwater capturing system could be explored to flush the toilets, as there is a room above the 2nd floor of the extension to house a water tank.

EXPLODED AXONOMETRIC - SCALE 1:50 @ A2



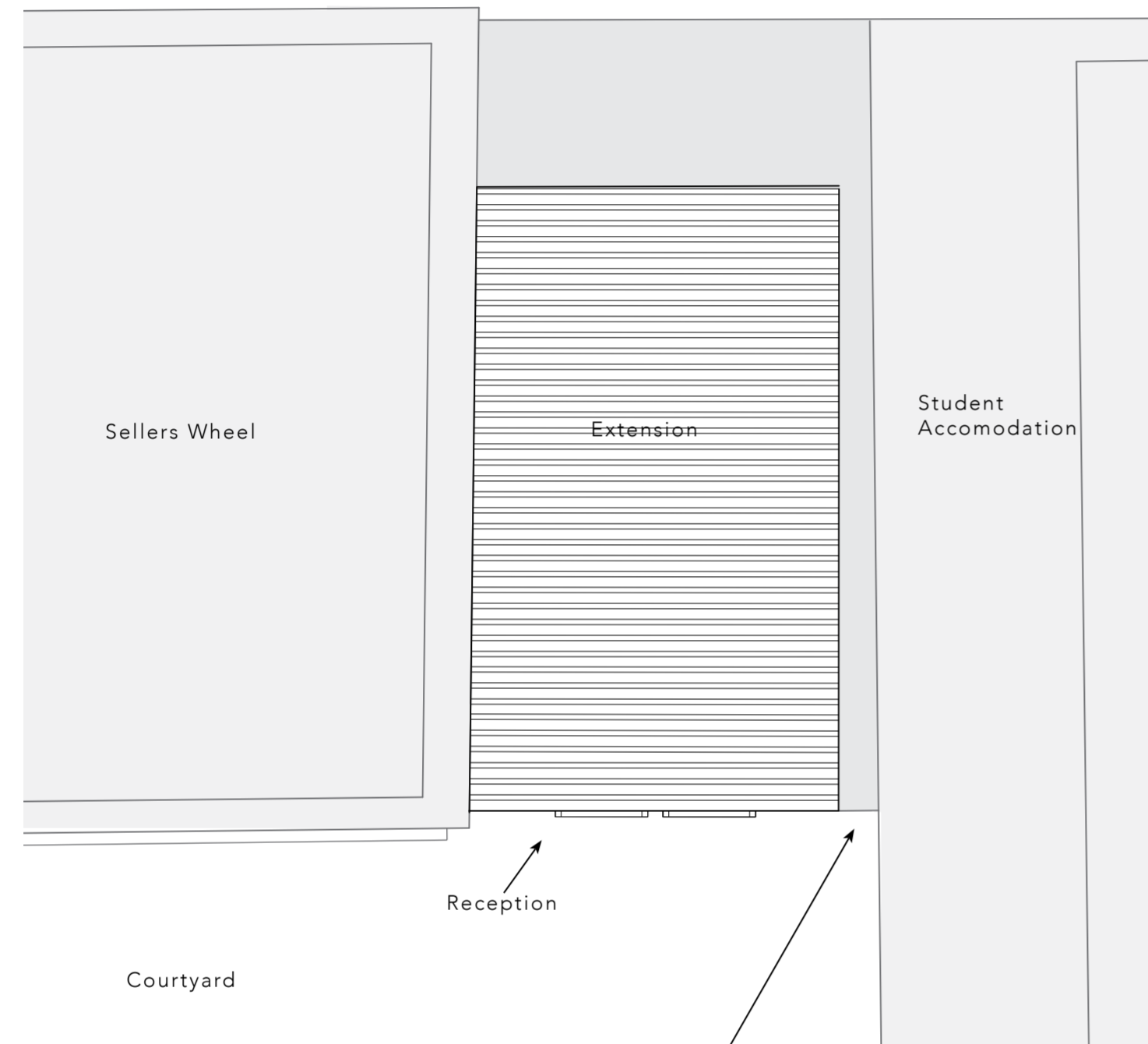
FRONT VIEW - SCALE 1:50 @ A2 ISOMETRIC VIEW - SCALE 1:50 @ A2



DESIGN

EXTENSION DETAILS

PLAN VIEW - SCALE 1:50 @ A2

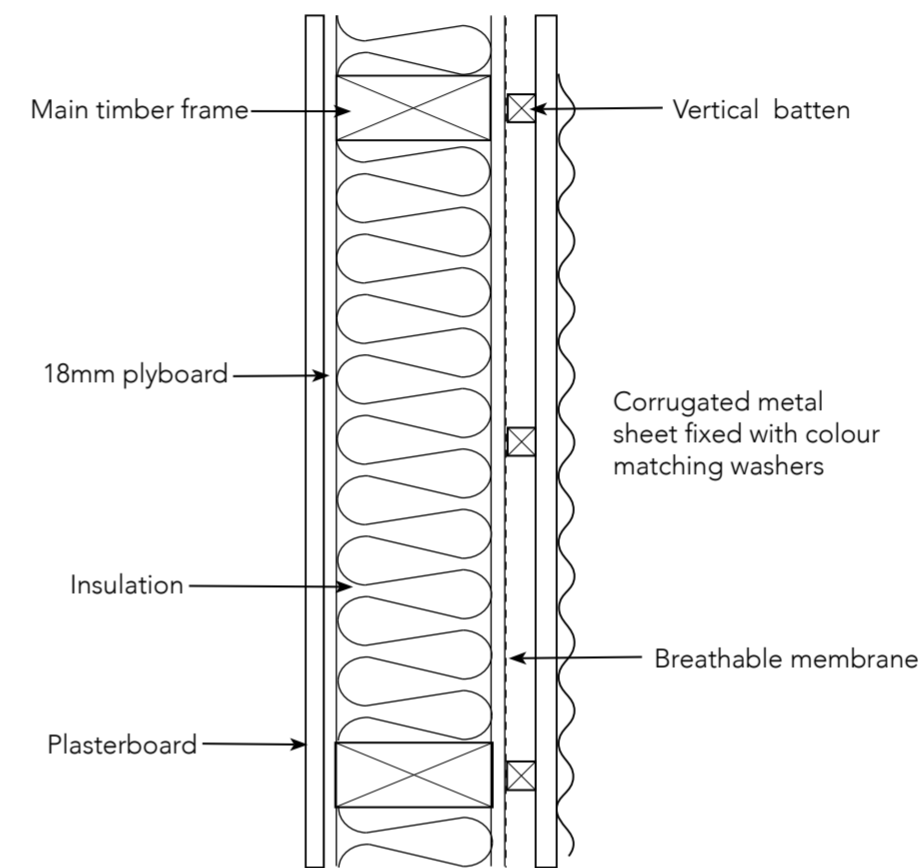


Note

Gap left between extension and student accommodation due to accommodation windows

The plan shows the location of the extension which is nestled in between Sellers Wheel and the student accommodation block. It sits on top of the proposed reception space.

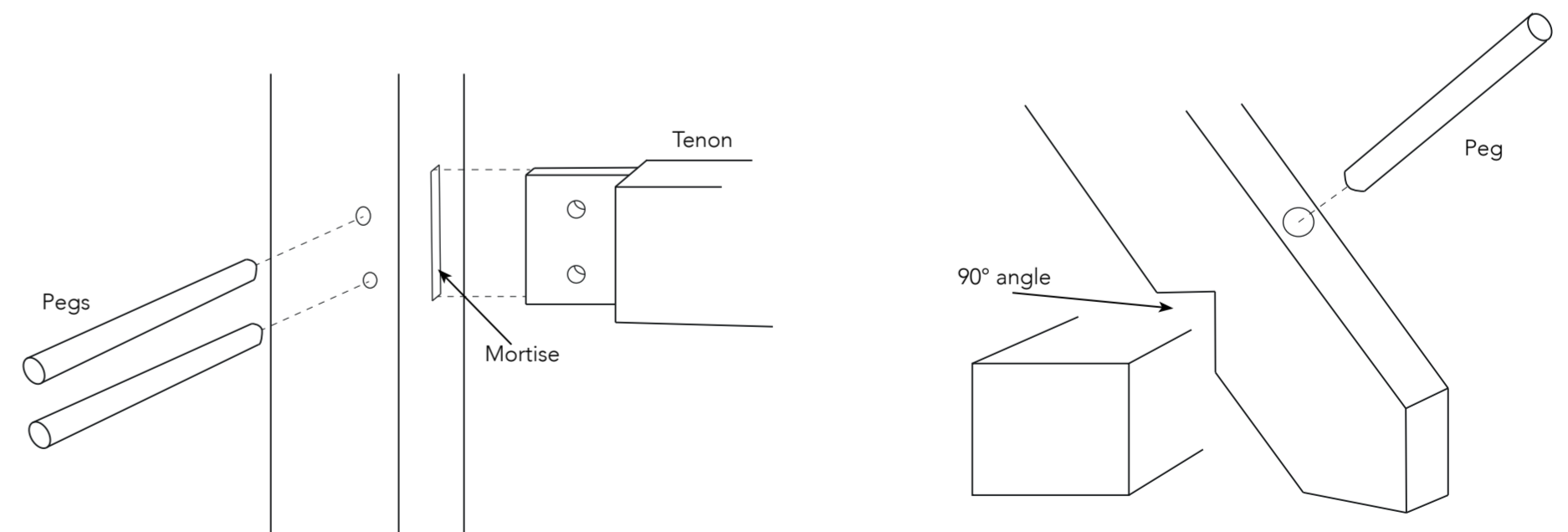
DETAIL 1 - EXTENSION INSULATION AND STRUCTURE



These detail drawings show the considerations for the structure of the extension. The structure will be insulated with full cavity insulation.

Below are details of how some of the timber frame will be constructed.

DETAIL 2 - TIMBER JOINERY



BIOPHILLIA

OUTDOOR SPACE

For the courtyard space, I wanted to create some seating the incorporated a concrete planter filled with lush tropical plants brighten up the space outside.

I wanted to use tropical plants that would be suitable for the outdoors in the UK, so I researched plants that would be suitable for the environment here, and these are the ones I found.

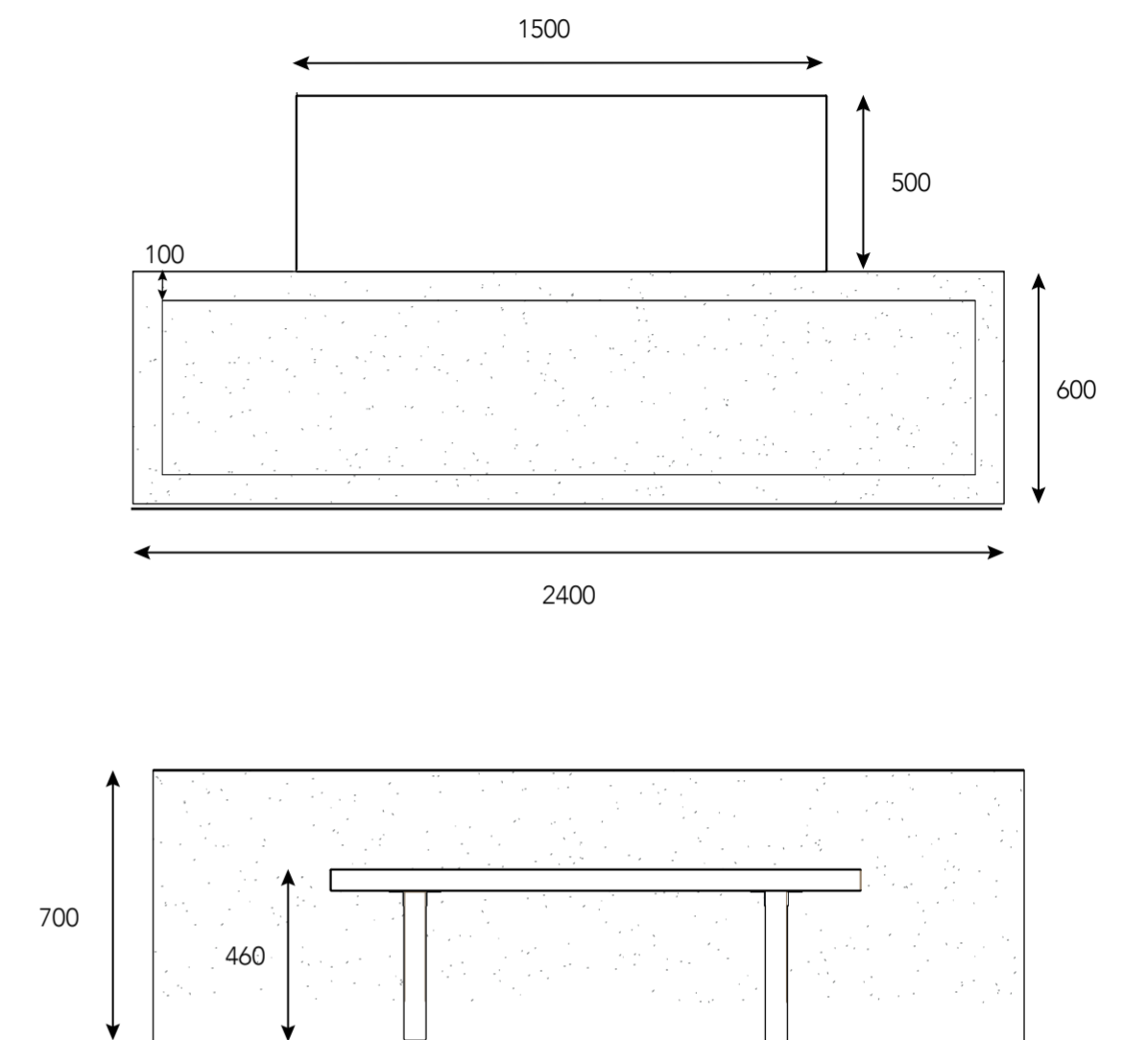


I created these illustrations to demonstrate how the concrete planter will be combined with a bench to create seating in the courtyard.

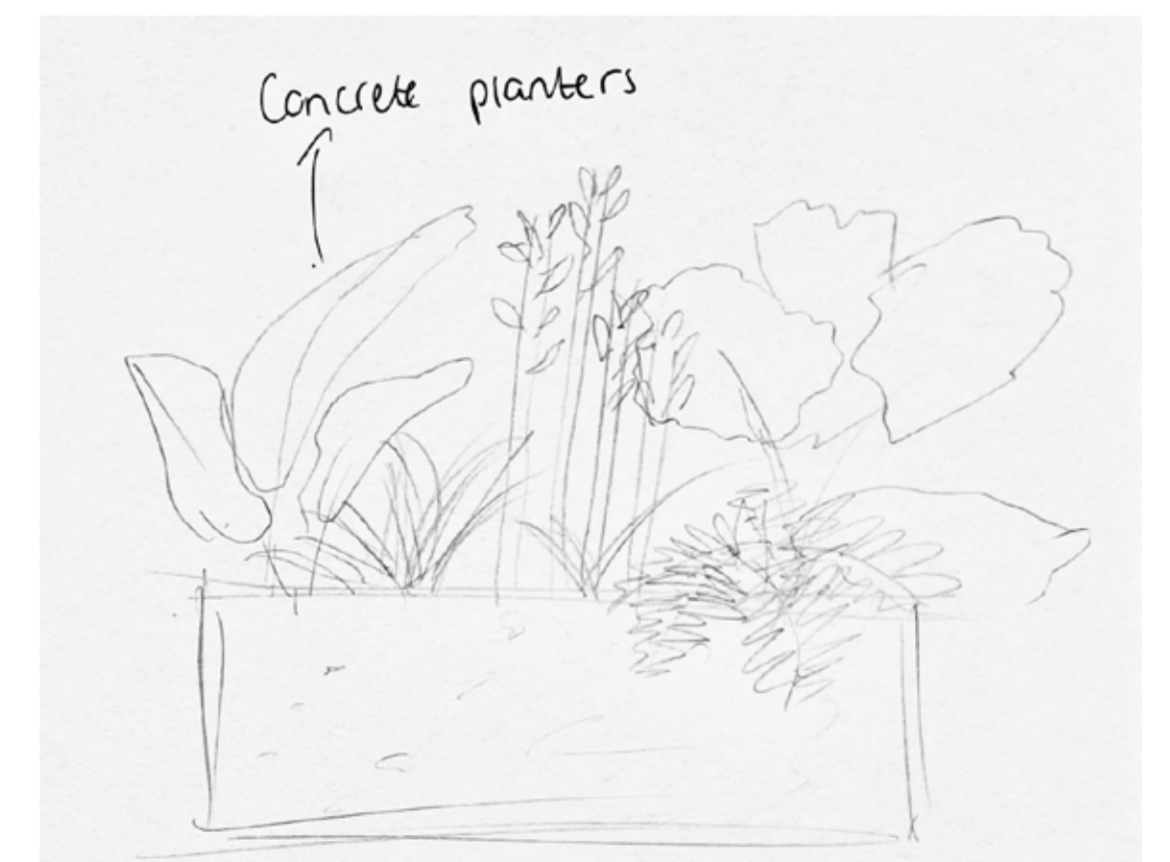
CONCRETE PLANTER INITIAL EXPLORATION



PLANTER AND BENCH



DEVELOPMENT SKETCH



FINAL DESIGN

PHOTOGRAPHY STUDIO

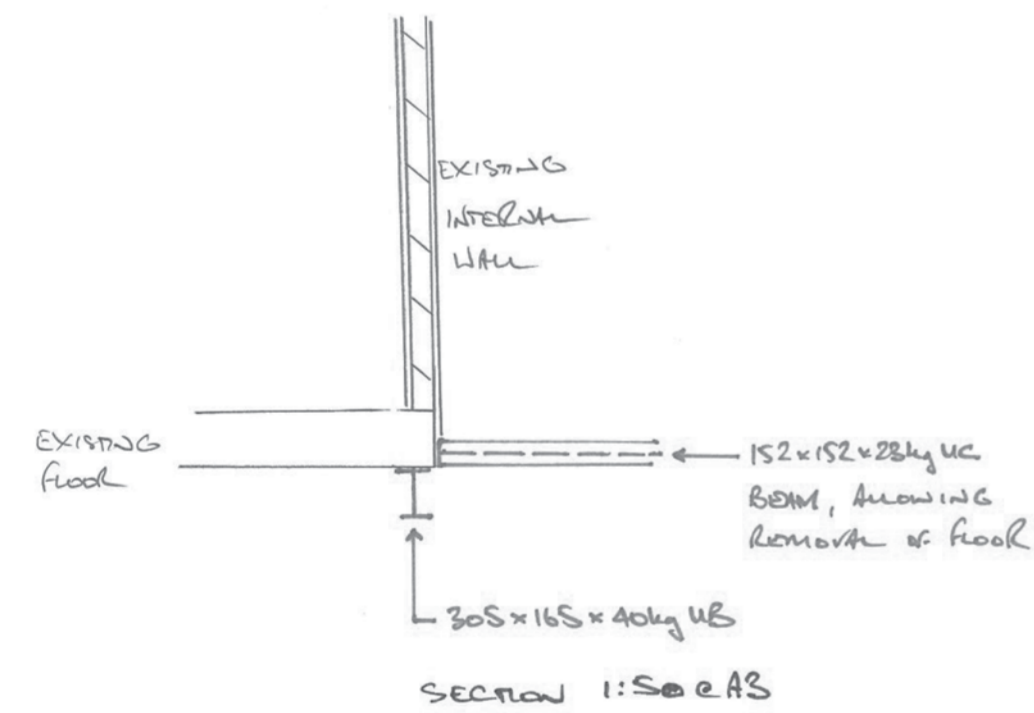
This is the final section of my proposed double height photography studio.

The photo studio will contain a roll down backdrop, a railing to hold any clothes or items that need to be hung up, and some studio lights. There are two floor lights and four suspended lights on pantographs that can be moved and dimmed by remotes. There will also be blackout blinds on all the windows in the space to allow for full control over the lighting.

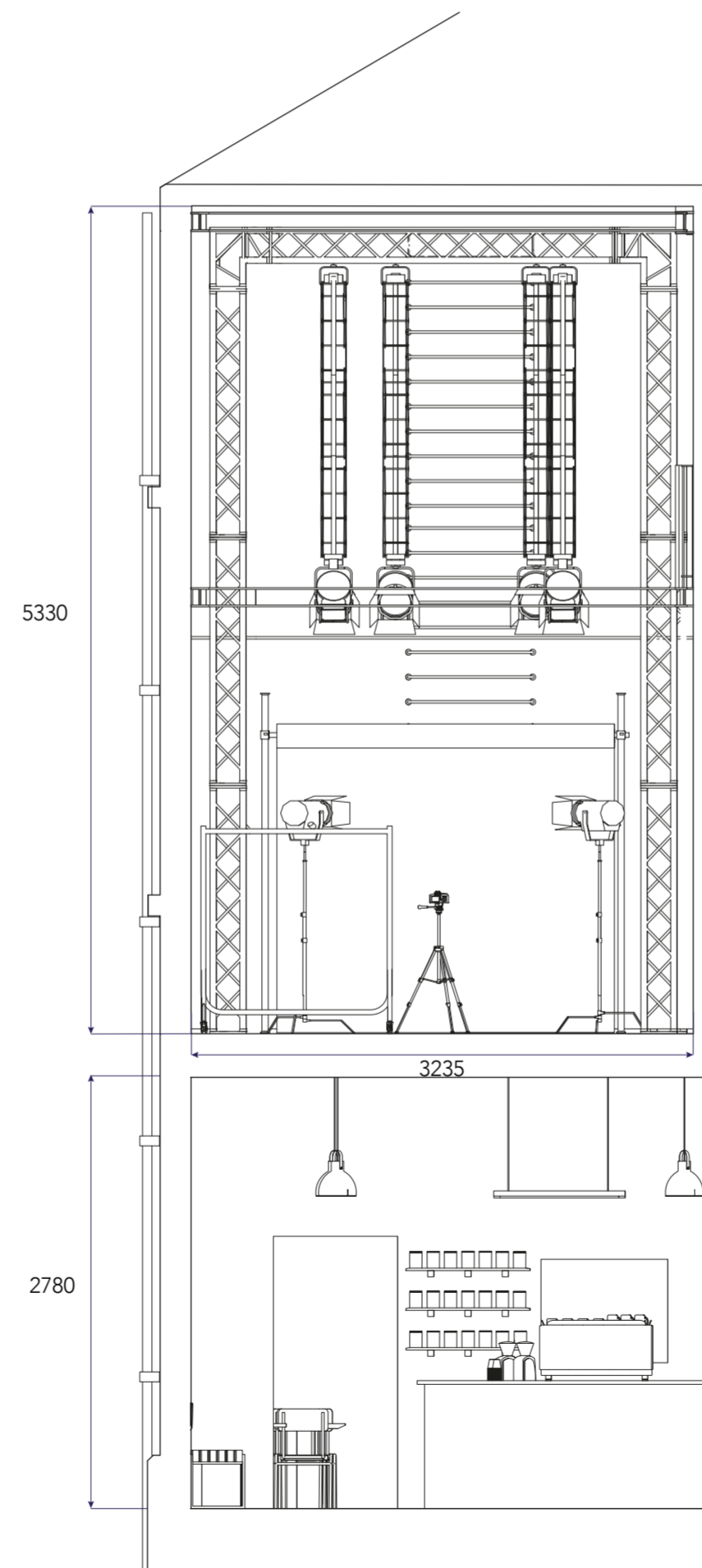
At the back of the space there is a fixed access Swedish Ladder that will allow maintenance to be carried out on the flat roof, with an access door in the gable wall at the top.

Through talks with an engineer, I was able to create a steel I-beam support that would allow the removal of the floor to create a double height room.

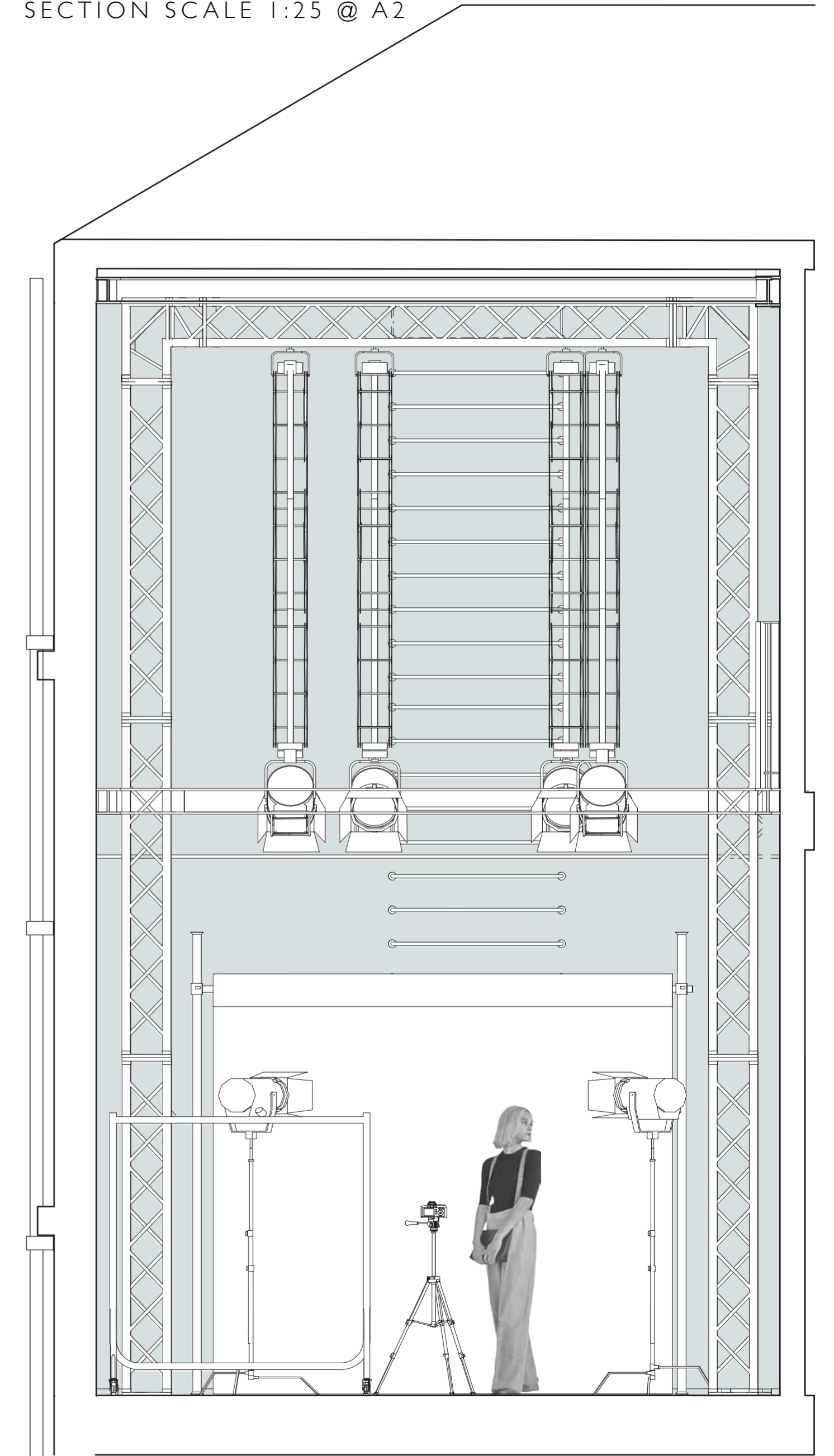
ENGINEER'S DRAWING



SECTION SCALE 1:50 @ A2



SECTION SCALE 1:25 @ A2



FINAL DESIGN

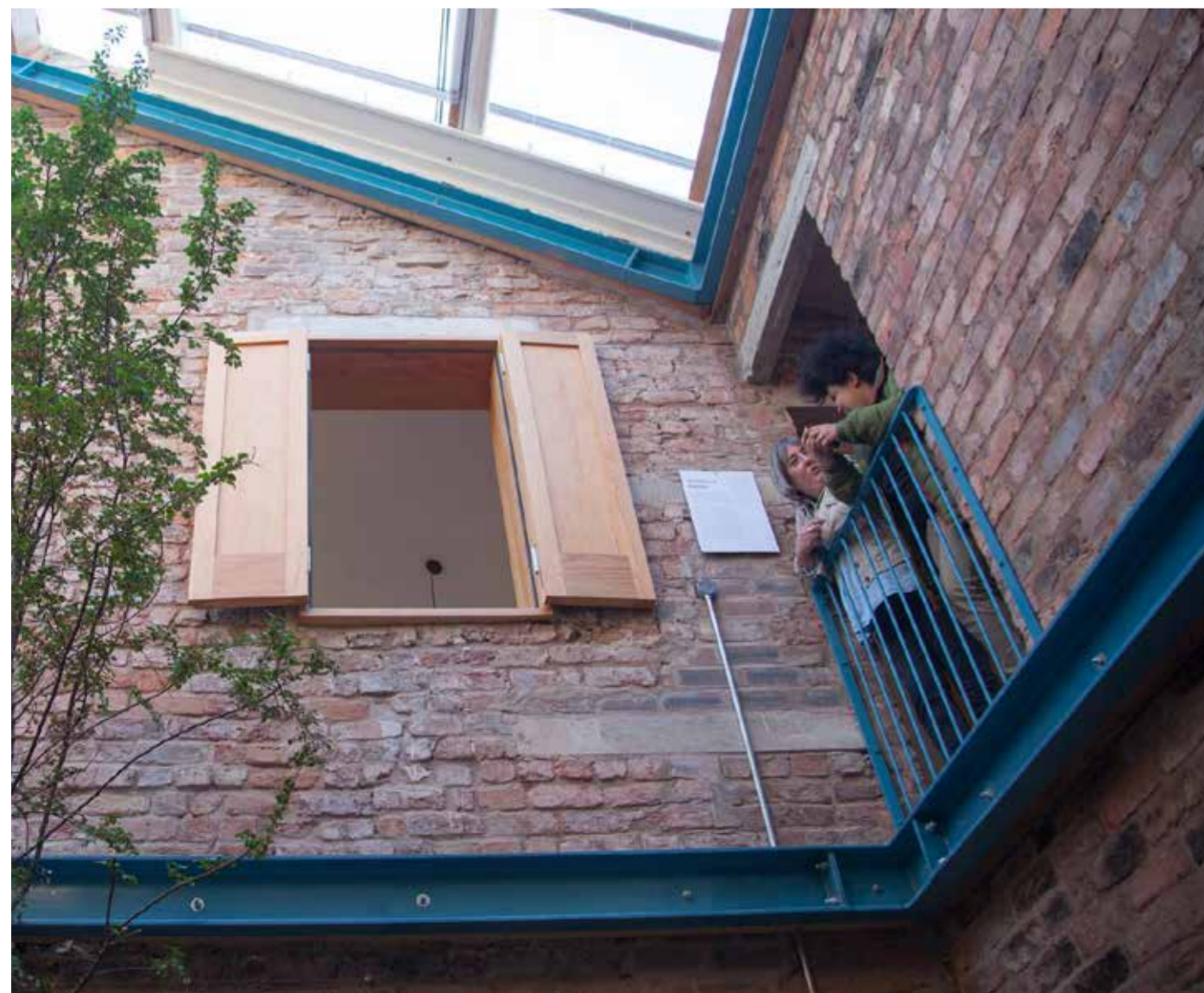
PHOTOGRAPHY STUDIO RENDERS

The idea for a double height room was inspired by a project on Granby Street by Assemble, a Turner prize-winning collective.

The project turns two dilapidated Victorian terrace houses into a communal seasonal garden, events space and artists residence that is intended to nurture creative practice, creating a double height space in one of the houses.

An aspect of this design that I took inspiration from was the balcony that looks into the double height greenhouse space from the second of floor of one of the houses, allowing visitors to view the space below. I chose to replicate this idea within my design, creating a balcony that looks down into the space from the second-floor studio space.

THE BALCONY IN GRANBY STREET



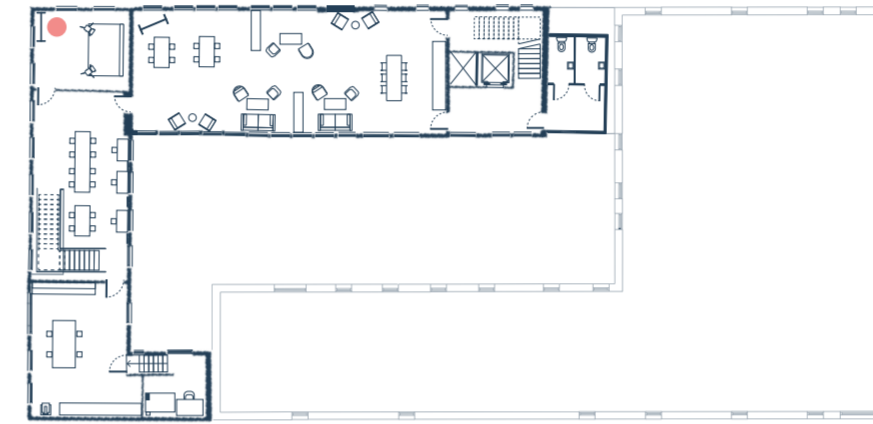
BALCONY VISUALISATION





FINAL DESIGN

THE PHOTOGRAPHY STUDIO

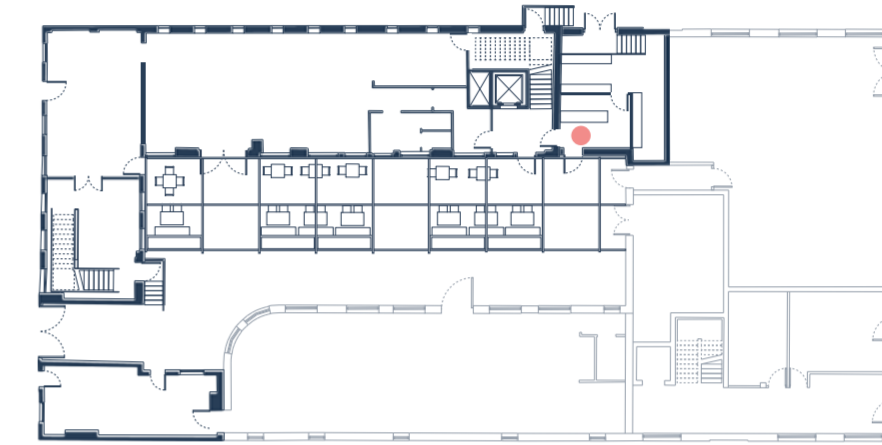


This render shows the full height of the photography studio with the balcony that looks down. I incorporated some trailing vines that run from the second floor into the space.



SELLERS WHEEL 

FINAL DESIGN THE RECEPTION



This is the proposed reception space. It is located at the far end of the courtyard where the existing bin store was located. In the space behind the reception there is a materiality store where people can purchase materials, such as plywood, for their projects. The reception is very minimal, with a wooden reception desk adorned with a few plants and the Sellers Wheel branding on the back wall.



FINAL DESIGN THE COURTYARD



PROJECT OBJECTIVES

Improve concentration and reduce stress by implementing biophilia.

SOLUTION

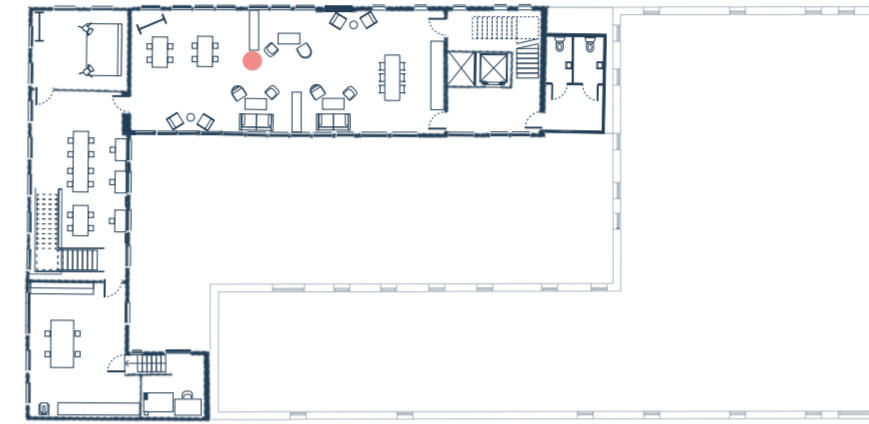
Plant tropical plants in the courtyard in concrete planters that double as seating for customers at Tamper, creatives working in the co-working space and student residents at the accommodation.





FINAL DESIGN

THE SOFT SEATING AREA



PROJECT OBJECTIVES

- Reduce the negative health effects caused by poor air quality
- Improve productivity by controlling the temperature of the office environment and improve overall thermal comfort

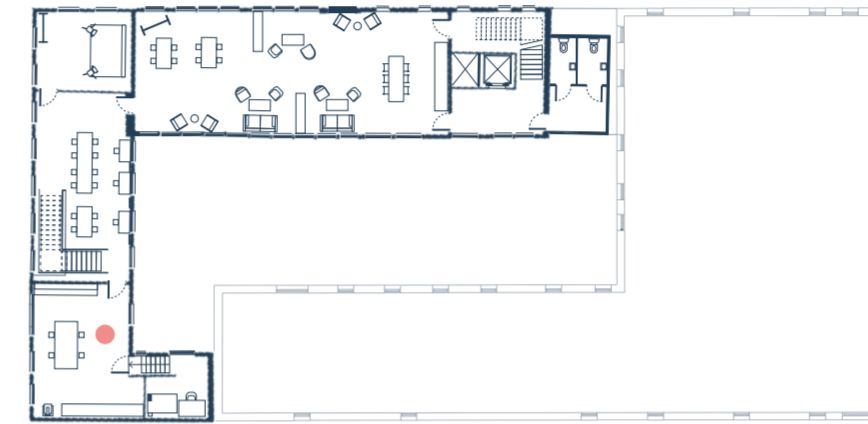
SOLUTION

Create a galvanised steel ductwork system that runs through both floors of the proposal providing a fresh air supply to the building and maintain a good thermal comfort throughout the space.





FINAL DESIGN THE WORKSHOP



PROJECT OBJECTIVES

Provide more specialist facilities than existing spaces.

SOLUTION

Create a workshop space that contains machinery and tools for projects such as woodworking and jewellery making.



NO DUMPING
VIOLATORS
PROSECUTED
CITY ENGINEER

JOHN SELLERS & SONS
MUSTYLLER, MILLER
KNIVES, RAZORS,
PENCILS, STAMPS,
SAFETY KNIVES, STAMPS,
SAFETY KNIVES, STAMPS,
SAFETY KNIVES, STAMPS

FREEDOM ASSOCIATES
ROOFING
57-715-DK15

Handwritten notes on a clipboard held by the woman.



FINAL DESIGN

THE OFFICE SPACE



PROJECT OBJECTIVES

Improve concentration and reduce stress by implementing biophilia

SOLUTION

Incorporate plenty of biophilia within the spaces, including species of plants that studies show improve air quality by filtering out harmful chemicals such as the Heartleaf Philodendron.





FINAL DESIGN THE MEETING ROOM



PROJECT OBJECTIVES

Create a hub for creative collaboration.

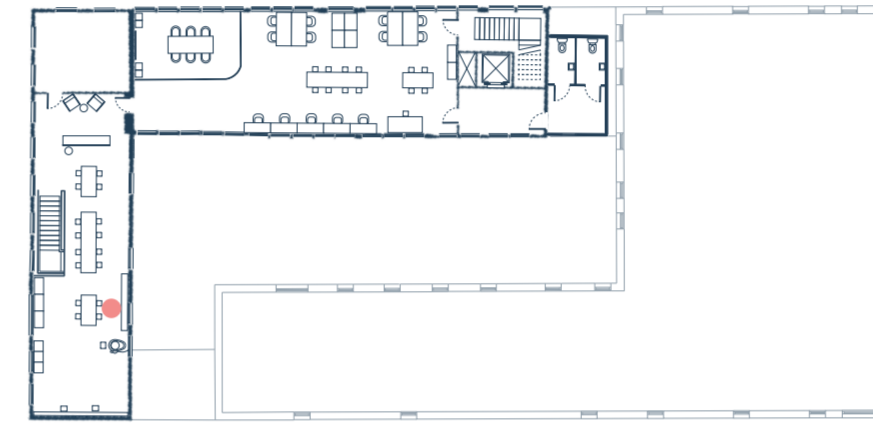
SOLUTION

Encourage collaboration throughout the space and provide places where creatives can work together, such as the meeting room.



FINAL DESIGN

THE STUDIO SPACE



PROJECT OBJECTIVES

Reduce the impact of eye strain by focusing on the use of natural light.

SOLUTION

Install a skylight above the studio space that increases the amount of natural light within the space.

