# Ideal Architecture Unit

Vacant Offices into Desirable Student Housing

Jenneke Kurtz

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Vacant Offices into Desirable Student Housing

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A 120-point thesis submitted to the Victoria University of Wellington in partial fulfilment of the requirements for the degree of Master of Architecture (Professional)

Victoria University of Wellington
School of Architecture

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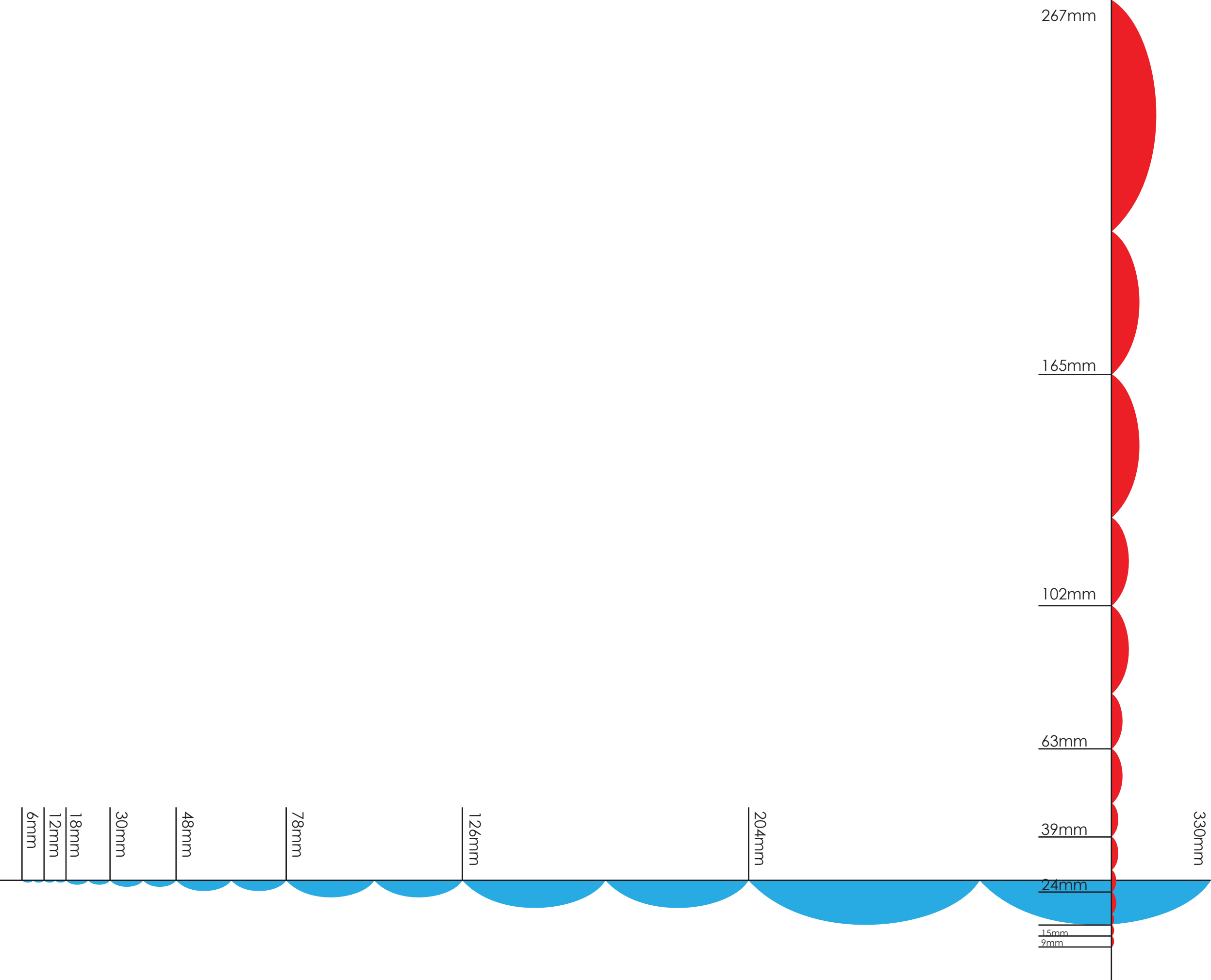
The page size of this text is the first application of the Modulor proportioning system by Le Corbusier to this research. The page measures 330mm x 267mm, the first measurement from the blue series and the second the red.

Fig 1.01. Right - Page Measurement Diagram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# ACKNOWLEDGEMENTS

I would like to firstly thank my family for their undivided support throughout everything. Thanks for always encouraging me to pursue my passion and for putting up with me. Secondly thanks to all my friends for dealing with my consistent absences and for being there when I wanted to re-enter the real world. I want to thank my classmates for their words of wisdom and support. Lastly I cannot express my gratitude to my supervisor Peter Wood for his guidance throughout my thesis. Without everyone's help I would not have finished.

# ABSTRACT

The architectural quality of student housing in New Zealand is a growing concern. Students often accept living in damp and mouldy flats as "a rite of passage[1]". *Student Housing* highlights that the environment students live in directly impacts how they think and feel, and ultimately how they succeed at university[2]. Those students fortunate enough to live in University Halls rather than private accommodation are only provided with basic facilities that cater to the 'typical student' rather than their individual field of study and personal differences. This research proposes that we exceed current expectations and practice, firstly through designing accommodation based on students area of study and, secondly, through prefabricated design of a single 'Ideal Unit' adapted to suit a specific site. Specific design for architecture students will be explored, due to higher housing demands than most students. Establishing what makes architecture students different from other students is essential in order to cater to these needs. These are both physical and intellectual needs, ranging from facilities such as workshop, pin up space and drawing boards to the need for architectural delight. Prefabrication allows faster construction and lower costs, however this design method has resulted in 'copy and paste' architecture that is monotonous and without excitement. An 'Ideal Unit' with a small number of variations allows no two users to have the exact same experience. The work of Le Corbusier is explored, in particular the Modulor. This thesis argues that the Modulor is applicable to modern design and should be used, to ensure we build for the human body rather than arbitrary measurements. The desired outcomes of this research is a site specific design located in Wellington. A prefabricated unit is modified for the site with the ability to be applied in another location. Overall this research will comment and critique on current institutional student housing practices, both locally and internationally. While advocating for a change not just to architecture student accommodation but to all student accommodation. What we study and how we live are so intertwined that we can no longer ignore the needs associated with what we study, we must design for it.

1 Council
2 Service (8)

This image cannot be displayed due to copyright

Fig 1.02. Architecture School Summary.

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Fig 1.03. Coffee is Not Water

# PREFACE

There is a cultural divide between students who study architecture, and those that don't (at least that is what architecture students believe). There are just some things that non-architecture students can't and most likely will never understand. *Changing Architectural Education* describes the studio as being "central to architectural education. However it is also frequently seen as the most expensive and least understood component of architectural education.[3]" I have tried many times to explain what 'the studio' is, with no avail.

What does it mean to be an architecture student? Yes we share a common goal and common experiences but we all have different motivations. I can only share what being an architecture student means to me. I cannot remember exactly what motivated me to study architecture, but I decided this when I was twelve and it clearly stuck. Every educational decision until this point has been working towards this goal (I still believe I am destined to be an architect or I would have quit a long time ago). I do question my sanity and decision often, as many of us do. Yet we come back year after year, quite simply you "do it because you love it.[4]" Despite this figure 1.02 sums up how I and most others feel about architecture school.

A sense of community has emerged as we progress through architecture school, it grows stronger with each impending deadline. I say impending because it is always looming overhead, creating anxiety and stress. There reaches a point where time swaps from going forward to counting down till hand in. Time swaps from days of the week to days till it is due. Coffee consumption increases as sleep decreases, the studio becomes home and leaving the studio turns into venturing into 'the real world'. The excessive amount of time spent in the studio results in weird events; odd late night chats, photographing students who sleep and existential crisis about our decisions are only a few. It is counterproductive to be sleep deprived but we often feel it is a 'rite of passage' to do all-nighters, and to have at least one good story of accidentally cutting yourself making a model. Rites of passage often become competitions, since we are all competing against each other in some way. We complain about lack of sleep but secretly are all proud of how far we can push ourselves. We are constantly searching, reaching for our breaking point, dreading finding it. Not reaching it, knowing we can push a little further next time. The social culture of the studio almost becomes cult like. Perhaps this is why it is so hard to explain, we have become indoctrinated by the studio as it simply "reinforces all these values[5]" despite being unhealthy. Other habits seem to just start during architecture school, such as becoming coffee

3 Nicol and Pilling (241)
4 ("10 Facts of Life They Don't Teach You in Architecture School")
5 Nicol and Pilling (244)

snobs, unknowingly obtaining a black wardrobe, talking with our hands and having the overwhelming urge to feel the texture of surfaces. Things that we never considered suddenly "become the most important thing ever[6]". Architecture becomes us, we give ourselves and our souls over to it and it becomes something we can't turn off. Architecture becomes the priority, we sacrifice everything for it, friends, relationships, sleep, money, and both our mental and physical health. I become the absent friend, who pops up again after my review and a 12 hour sleep to socialize for the precious few weeks between semesters. My priorities are confused and I am aware of it but can't change it. I don't care that I cut myself making a model, but I do care about getting blood on it, (I've spent too on it to have to restart). Architecture students are masochists, we love to complain about how hard architecture is yet we continue to do it. There is an unbreakable bond of shared experiences between architecture students that make us feel like we aren't alone in this torture. We have learnt to make sacrifices in order to achieve our goal because we are committed and passionate about what we do.

Much of my interest in student housing has stemmed from my own experiences, both good and bad. As I grew up in Wellington, Singapore was my first experience living away from home and in a student hall. Until my fourth year exchange I felt that I had neglected a vital university experience, a rite of passage. Moving into a hall was both everything I had hoped for and nothing I expected. It was great being surrounded by fellow students. However local Singaporeans living with me were unwelcoming, making me prefer to socialize with fellow exchange students. My hall was self-catered, which I feel removed a vital opportunity to interact with other residents. Upon my return home I found myself taking the next step on my accommodation journey, moving into a flat. I had low expectations for my first flat, it is simply accepted that you will live in one or more dreadful flats. My first flat made many of the issues I wish to address with this research apparent. While writing my thesis proposal I could hear my flatmates having a conversation in the next room under flickering florescent lights. My bedroom was large, but it overheated in the summer and was challenging to heat in winter. Two out of five rooms were internal. I often got sick during winter and found mould on my belongings. My reasons for living in this flat were primarily affordability and proximity to campus. Quality lost out, as it repeatedly does with students. I had accepted long ago that this quality was what to expect while studying. This is not something students should accept. It is not OK to simply say that students are "resilient, they can make do, hardship instils 'character'.[7]" My story is one shared by many, however compared to some, I got off lightly.

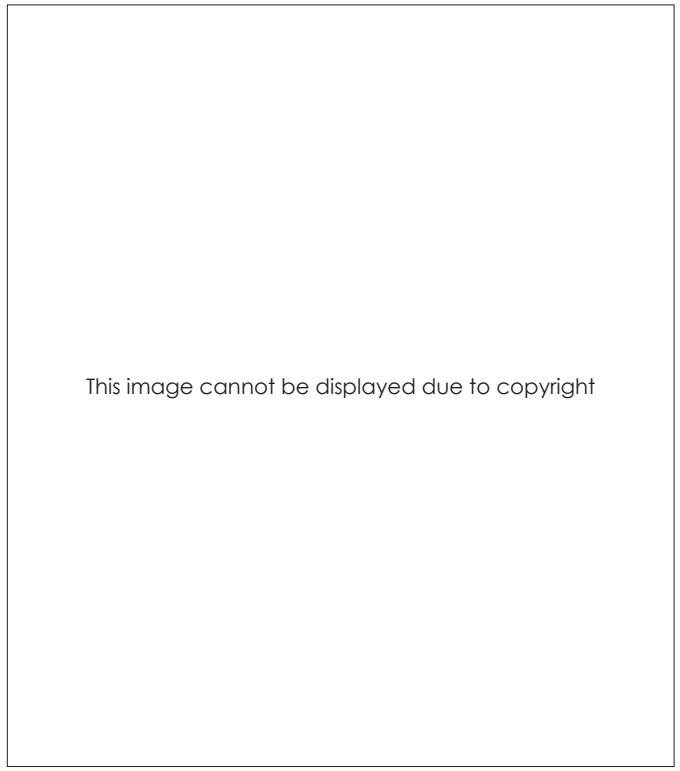



Fig 1.04. Architecture Model over Personal Safety.

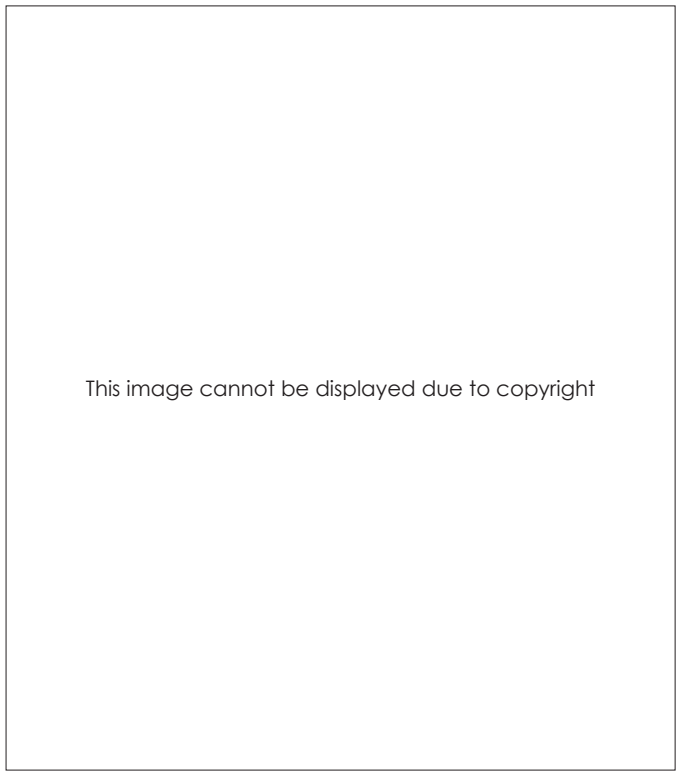



Fig 1.05. Architecture Students Stand Out

6 ("9 Things They Didn't Tell You About Dating an Architect")
7 Thorne (15)

# CONTENTS



Please note unless otherwise stated all images are authors own.

CHAPTER

# 01

# INTRODUCTION

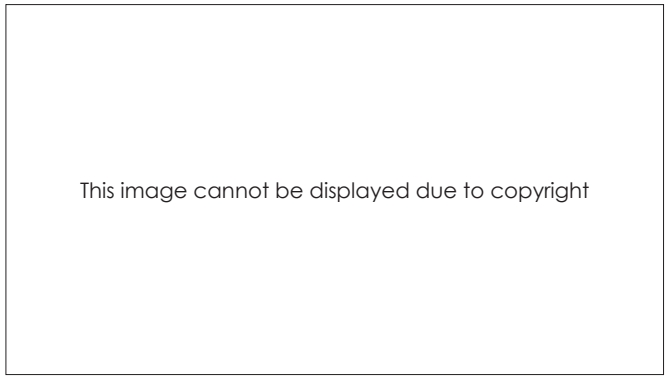



Fig 1.06. Architecture Student compared to Normal Student.

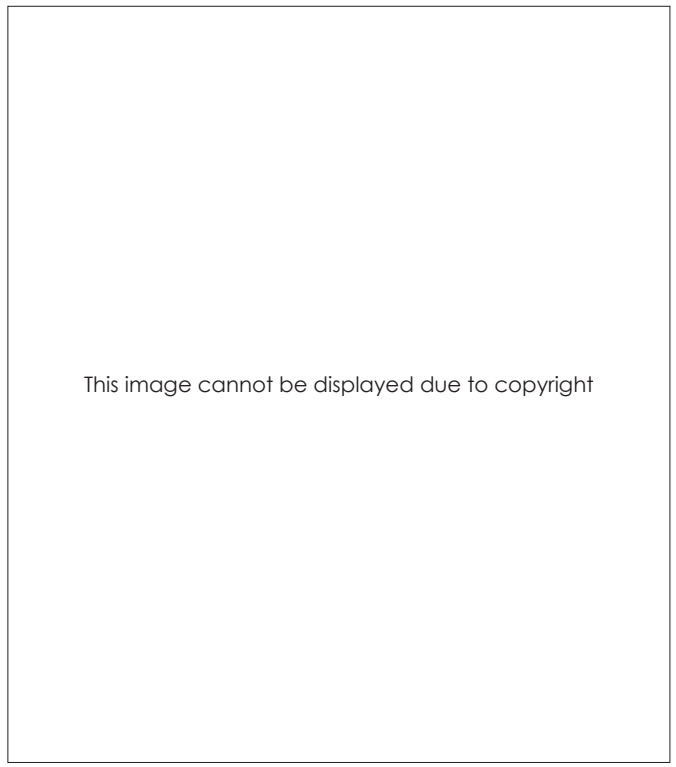



Fig 1.07. Eat, Drink, Sleep Architecture.

This research investigates not only what student accommodation can be, but it also asks what it *should* be. Students are usually faced with three housing options; live with parents (providing they can), go into a hall of residence or rent a private property. Students that choose to find a private rental property, whether an apartment or a flat are immediately faced with the harsh realities of adulthood. Cold, damp, breezy houses are the norm rather than the exception to student living. A recent survey of student housing in Dunedin showed 90% of flats fall below acceptable temperatures, 70% are damp and mouldy[8]. First year students repeatedly opt for accommodation provided by the University as an easier transition towards responsibility. The current model of institutional accommodation for students is typically a corridor lined with rooms, copied and pasted onto the next floor. It has become standard that a meek box with a window, door, bed, table and chair is an adequate environment for a student to live, study and flourish in. The idea of the 'typical student' has allowed designers to cater to almost all student needs, thus making it easier and cheaper to design. Despite the ease provided by halls students rarely stay past one year[9]. Negative impacts of unsuitable living environments on student's wellbeing are rarely discussed. Despite lack of discussion, students living arrangement directly impacts the way they think and feel.[10] Quality surroundings that cater to student needs and provides them with control over their environment makes them feel like a vital part of the university. Badly designed accommodation can result in students getting sick often, feeling isolated from peers and can result in students dropping out.

Not all students are the same, neither are their living needs. This is evident in the fact that not all students study the same thing. Yet regardless of this we rarely invest in architectural solutions that design for the individual, or the needs which go beyond personalization via a duvet cover and pin board. Architecture students are peculiar for many reasons, their appreciation for the built environment being only one way. Figure 1.06 jokingly highlights the contrast between architecture students and regular students. They "are passionate, dedicated people[11]" with a high attention to detail. This fundamental difference in thinking is but one of many reasons why a room devoid of character and often carefully crafted detail is unacceptable. The 'typical student' design offers nothing in the way of fostering this appreciation.

8 Shannon et al. (27)
9 Thorne (147)
10 Laboratories (8)
11 ("9 Things They Didn't Tell You About Dating an Architect")

# THESIS STRUCTURE

The complexity of this project is difficult to grapple with and for the purpose of this document the research has been presented in a linear format although was completed in a fluid and iterative process. Chapter one outlines the motivations behind this research and the desired outcomes, a site specific design located in Wellington and the ideal architecture unit to act as a framework for further schemes. Chapter two discusses the site, the existing building and the design potential created by the two. Chapter three outlines theories and concepts that have influenced the design. In particular it outlines current standards and trends. Chapter four discusses specific examples of both good and bad student housing design. Chapter five starts to grapple with understanding the project as a whole, integrating the theory, site and the unit. Following this chapter six delves into the detail of the individual unit and how the site influences key design decisions. Chapter seven presents the final design outcome through both physical model, architectural drawings and renders. Lastly chapter eight concludes and confers final learnings and further research potential.

# SCOPE

The context for this research will be New Zealand. A site specific design in Wellington's central business district (CBD) will be used to test research outcomes. The main architectural theories investigated are modernism and student accommodation. Topics investigated are from both a local and international perspective.

This thesis is primarily concerned with student accommodation provided by tertiary providers, tackling private accommodation extends beyond the scope of this research. This research advocates for a change in student accommodation from generic and uninventive designs to specific designs catering to each student's area of study with creativity and aesthetic. While architecture student accommodation has been explored in this research, it is envisioned that this process be applied to other subjects to create specifically designed accommodation.

The 'Ideal Architecture Unit' caters to a single architecture student's needs. It goes beyond the typical box to acknowledge architecture students appreciation of architecture. It will challenge students concept of buildings, while also making them question standard design. This user experience directly translates into how they both view the world and how they will design.

Alongside addressing how we design for a student's specific area of study, this thesis also addresses adapting existing buildings to utilize a new programme. This allows for both an extension and retrofit to be completed side by side.

CHAPTER

# 02

CHAPTER
02

# SITE

This thesis aims to complete a site specific design that can be adapted to suit alternative locations. As it caters to the specific design of architecture students it needs to be located within the vicinity of a school of architecture. Both Auckland and Wellington fit this criteria as highlighted in figure 2.01, however Wellington is the most appropriate due to familiarity and location of study. Preliminary site selection parameters are outlines in figure 2.02.
Victoria University has an uncommon layout with three campuses located within the capital. Traditionally universities are placed "on 'greenfield' sites away from the contamination of urban society.[12]" Thus creating the typical campus where halls of residence are hidden in the background behind landmark buildings.[13] In the case of Victoria University halls are buried between buildings in the heart of the city.

12 Thorne (6)
13 Laboratories (133)


Fig 2.01. Location of New Zealand Schools of Architecture.

# SITE SELECTION

Site selection has two key considerations, location and the existing building. The existing building has been broken into two key areas, its current use and the potential of the building to be successfully converted. Location is the priority, as students rarely own cars particularly in first year this typically makes walking student's primary mode of transport. Ensuring accommodation is a five to ten minute walk from campus is important for the desirability and subsequently projects success. Heritage listed buildings present a new set of issues to grapple with that extend beyond the scope of this research. The existing building must provide character without its architecture overwhelming the change in programme and the resultant architecture. A third consideration for site selection is the current use of the existing building, a commercial/light industrial building is optimal for ease of adaption.

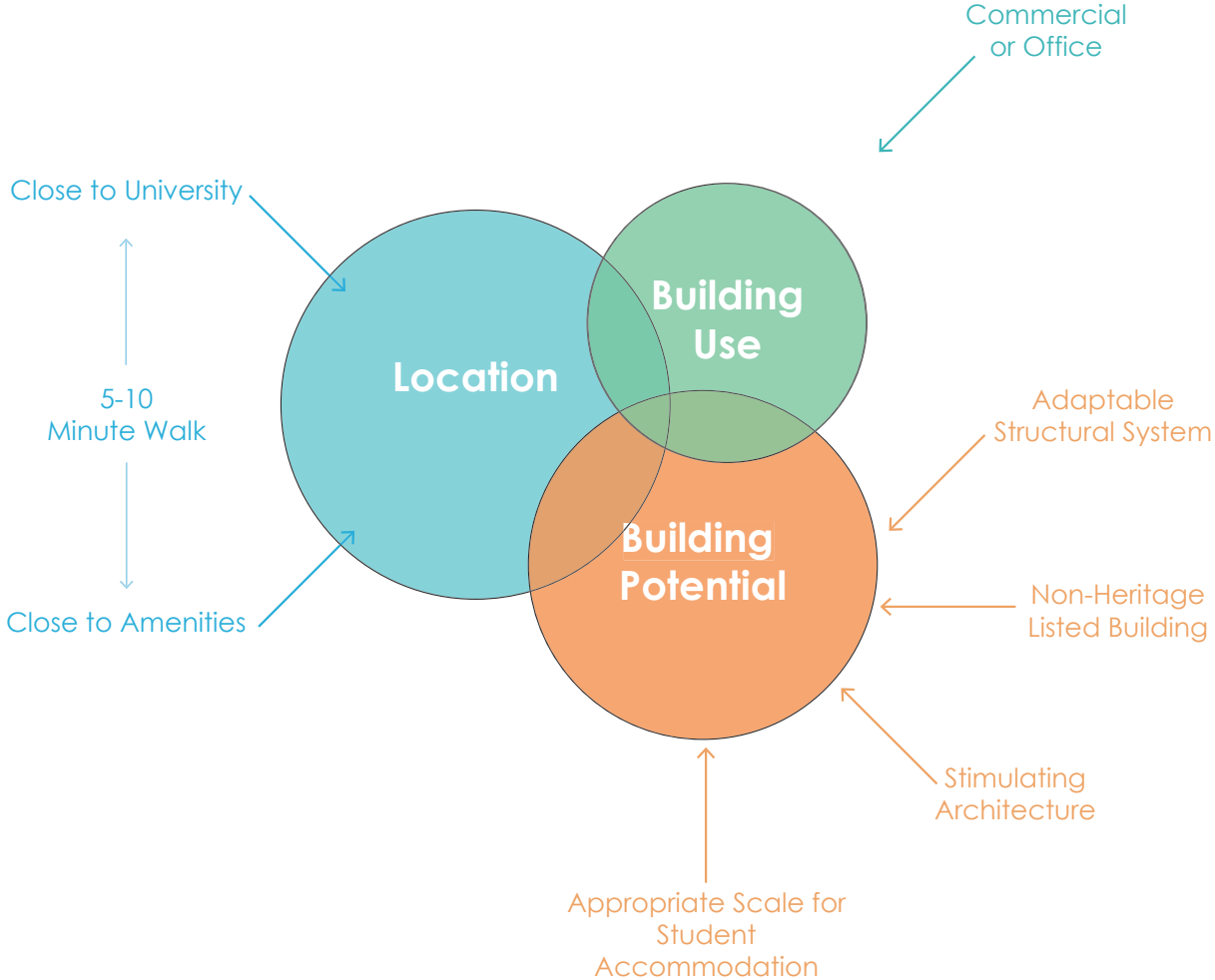



Fig 2.02. Site Selection Influences

# WELLINGTON'S PRESENT STUDENT ACCOMMODATION SITUATION

To identify local trends in current student accommodation options locations of halls provided by both Victoria University, Massey University and private providers were mapped against all tertiary providers in the CBD. Accommodation tended to be provided on the north/west fringes as shown in figure 2.03. In contrast to this the majority of tertiary providers are located in the east/south areas. These opposing areas is likely due to differences in land prices and availability. Accommodation location is of lesser importance than centrally situated campus' as it is utilized by all rather than a select few.


Fig 2.03. Current Student Accommodation Proximity to Campus Analysis

# POSSIBLE SITE SELECTION

Possible buildings were identified by the following criteria; building character, non-heritage listed and ideally currently commercial or light industry of an appropriate size and scale. Buildings identified are shown in figure 2.04.
11 Frederick Street matched all of the criteria outlined above, it is within a five minute walk of the Architecture and Design campus, located close to shops, gyms and entertainment. The adjacent carpark provides an opportunity to expand the hall with and extension, creating a larger hall and increasing it to an appropriate size for a hall without losing any amenities.

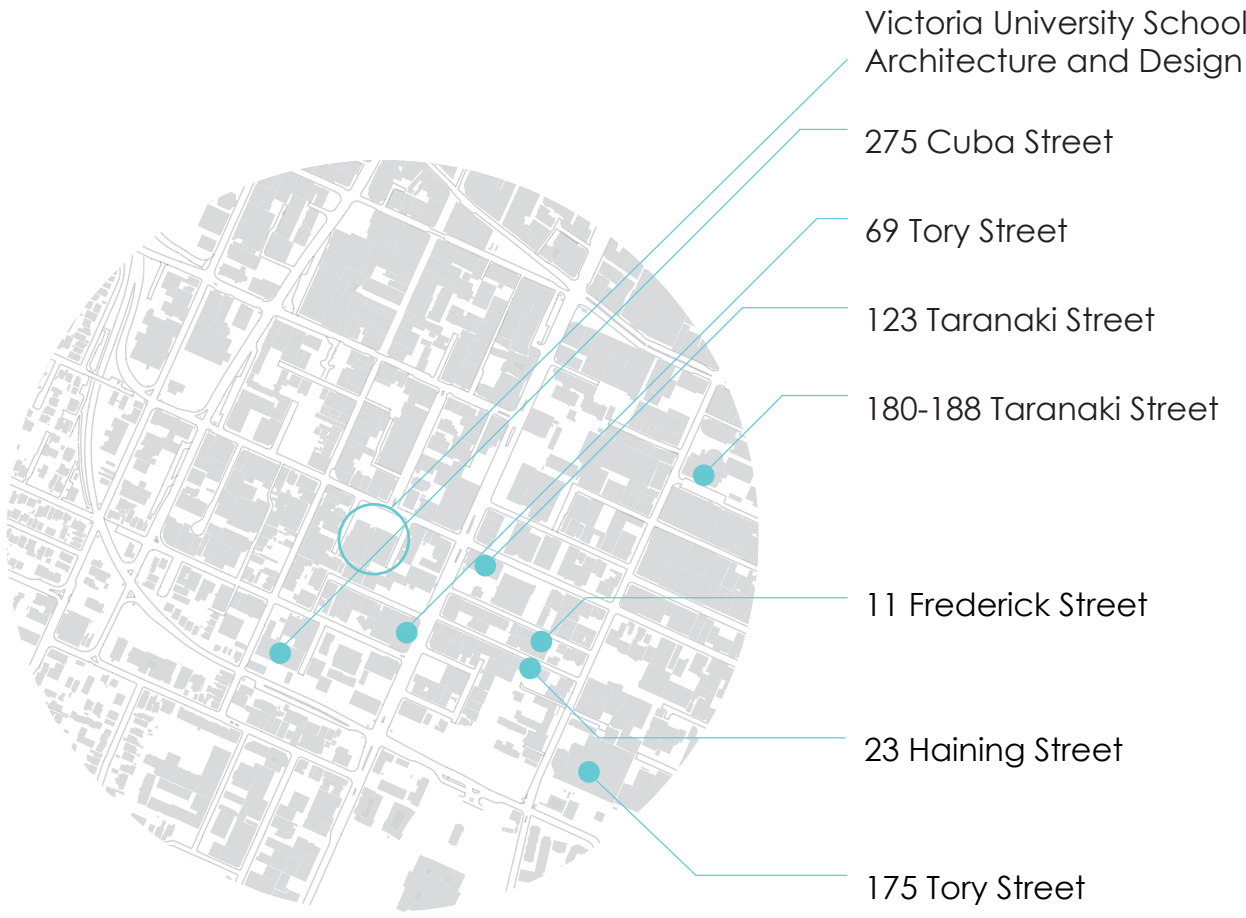



Fig 2.04. Possible Site Locations Map

25 CUBA STREET

Moderate location, slightly further from amenities. Currently used as office space.


69 TORY STREET

Excellent location to amenities, slightly further from campus. Currently unused and in a state of disrepair.


123 TARANAKI STREET

Large size, same street at Te Aro Campus however also main highway. Currently offices with some vacancies. Vacant site adjacent.


180-188 TARANAKI STREET

Good location, slightly quieter than 123 Taranaki Street. Strong undesirable aesthetic of building.

11 FREDERICK STREET

Close to amenities, quiet street. Moderate size with empty site adjacent. Desirable aesthetic without overwhelming.

23 HAINING STREET

Good location, nice aesthetic. Too small to effectively accommodate student accommodation.

175 TORY STREET

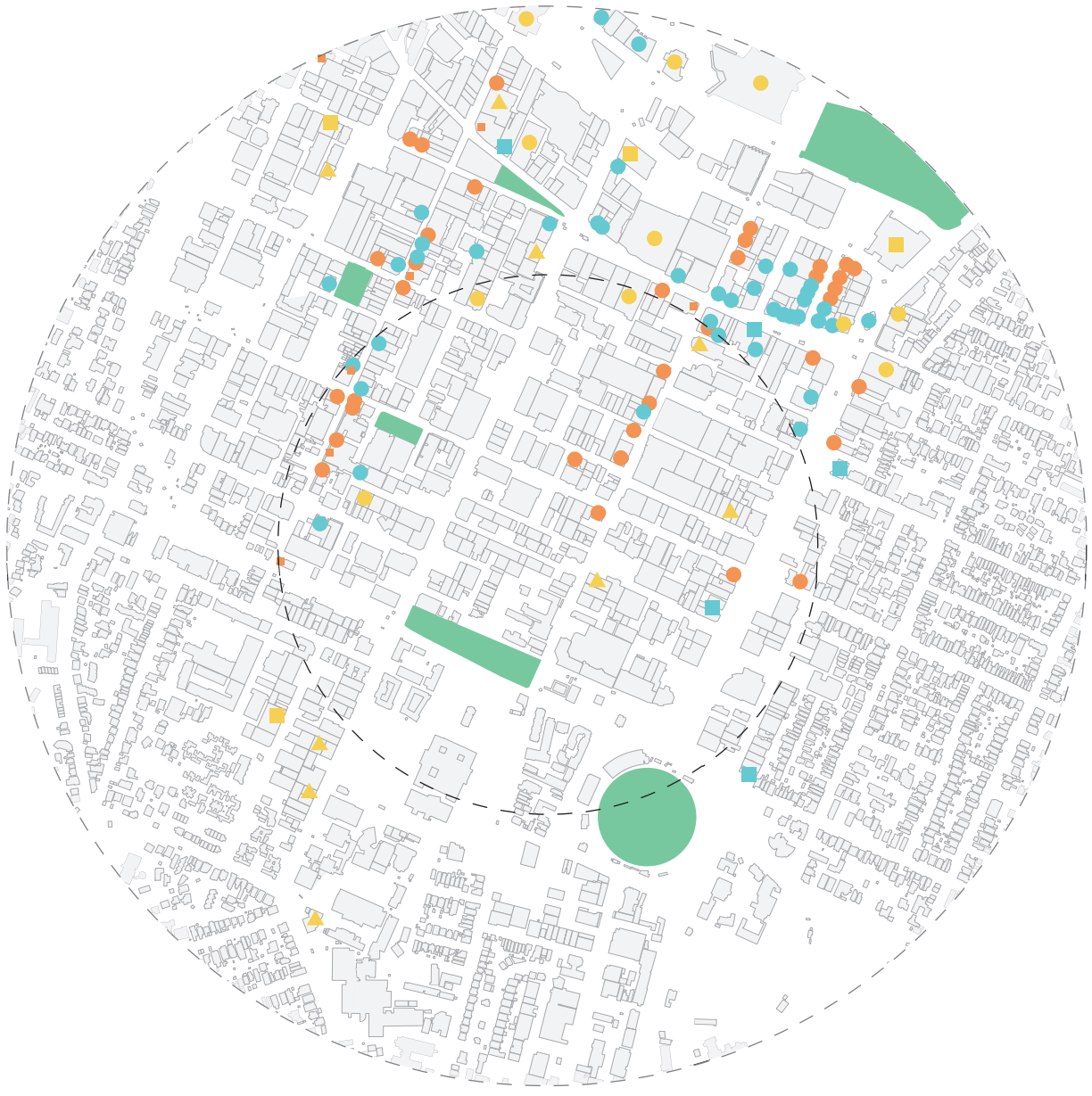
Decent location, large complex with majority placed underground for museum storage. Strong aesthetic that would be difficult to work with.

# MACRO ANALYSIS

Macro site analysis has been divided into four categories; proximity, environmental risks, transport and amenities. Analysis focuses on amenities within a five to ten minute walk. Few students have cars, consequently amenities within a close proximity are alluring to potential residents. Wellington is typically hilly, however the CBD is moderately flat in comparison. Allowing a large area to be accessible by foot quickly as shown in figure 2.05. The flat topography generates some environmental risks, in particular tsunamis, partly due to reclaimed land. Frederick Street is low risk as shown in figure 2.06. Despite Wellington's walkability, public transport will be required occasionally. Major bus routes are located nearby (shown in figure 2.07) allowing accessibility without increased noise and traffic. Pedestrian only walkways are clustered towards Courtenay Place and Cuba Street as shown in figure 2.07. Cuba Street is a successful pedestrian malls due to the high concentration of diverse stores and cafes. All other general amenities are shown in figure 2.08. For clarity they have been separated into three types; nightlife, shopping and mind/body. Nightlife attractions are predominantly clustered towards Courtney place and Cuba Street to create a diverse and vibrant nightlife. All analysis reiterates the site as suitable to create a successful student residence.


Fig 2.05. Site Location and Walking Radius
SCALE 1:10,000


Fig 2.06. Environmental Risks
SCALE 1:10,000



KEY

- Clubs & Bars
- Restaurants
- Theatre & Museums
- Liquor Stores
- Convenience Stores
- Supermarkets
- Gyms
- Green Spaces

Fig 2.08. Amenities
SCALE 1:10,000

Please note list is not exhaustive

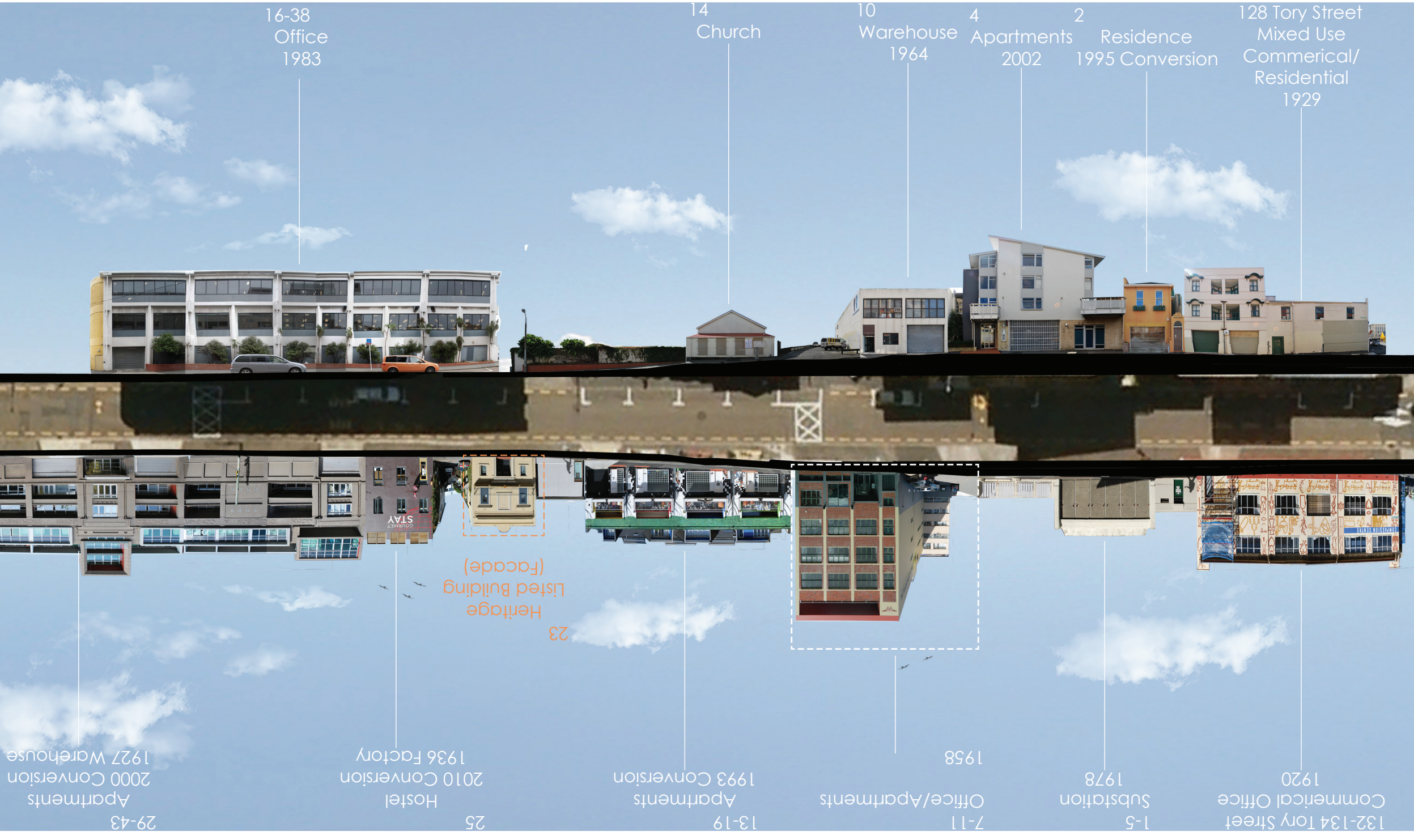



Fig 2.09. Frederick Street Facade and Function Study
SCALE 1:500


# MICRO ANALYSIS

Micro analysis focuses on the site at a street scale. Street elevation reveals the overall scale of the building within its immediate context (fig. 2.069 and 2.10). It also gives a sense of the overall street aesthetic, there is no coherent architectural style and a mix of commercial and residential buildings both modern and heritage listed. The apartments at number 13 is of a particularly unusual aesthetic with the mosaic contrasting surrounding buildings. Overall the street mainly consists of small to medium scale buildings making 135 Taranaki Street noticeably out of place in terms of scale.

# SITE HISTORY

A brief investigation into the history of the street reveals that most building on the street were originally factories and warehouses and most have been converted into accommodation. Number 23 and 46 are listed as heritage buildings however only the façade is protected. Both buildings were built by Chinese settlers in the area in the early 1900's. Number 2 retains the original façade and gateway of the Tung Jung Association, but is not heritage listed. During the early 1900's this area of Te Aro was the Chinatown of Wellington, with Haining Street at its heart and Frederick Street as the slightly classier neighbour due to better quality buildings.

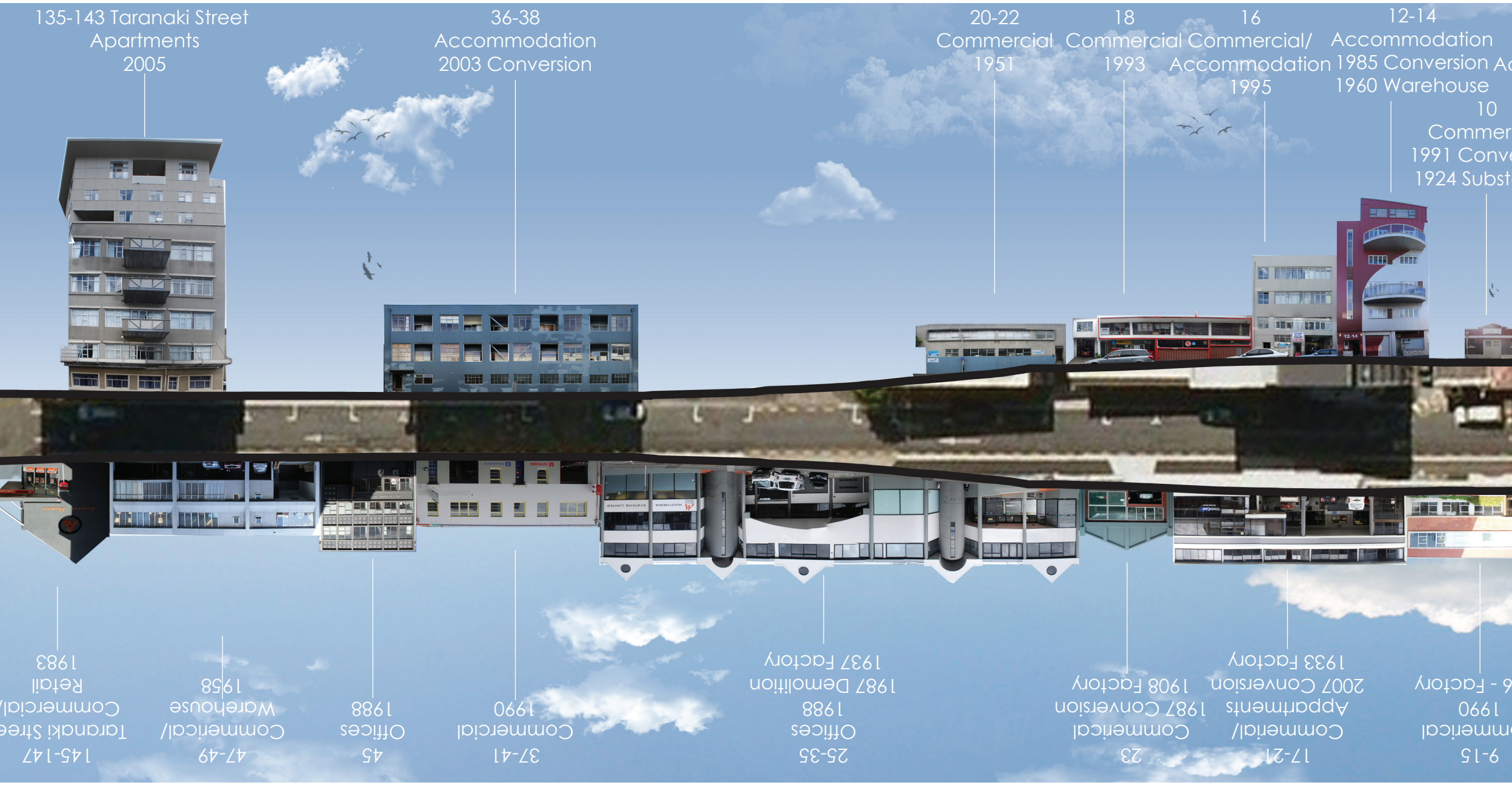


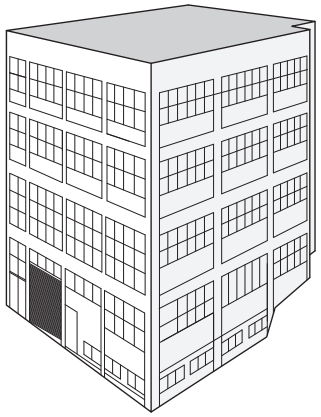

Fig 2.10. Haining Street Facade and Function Study
SCALE 1:500


## HAINING STREET ANALYSIS

An elevational study of Haining Street was conducted due to its proximity to Frederick Street. It shares a similar scale to Frederick Street with buildings at the western end being visible from both streets as revealed in figure 2.10. Interestingly both street have carparks located on the northern side despite the single direction roads facing opposite directions. Building heights are either single to double storey or over four, there appears to be no in-between. Haining Street has a steeper change in elevation located towards the middle.

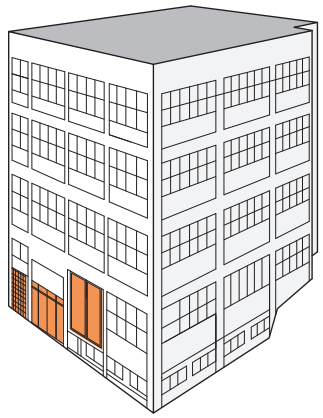
# BUILDING CHANGES TIMELINE

1958



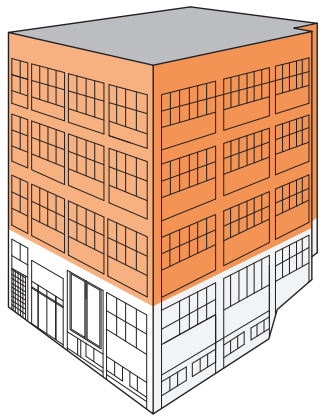
EXISTING BUILDING CONSTRUCTED AS A WAREHOUSE FOR MESSR'S O.T. EVANS & CO LTD.

1989



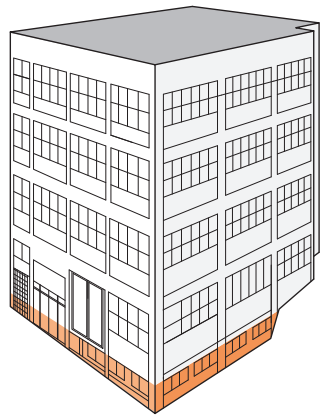
ROLLER DOOR AND VEHICLE RAMP REMOVED. GLASS BLOCK WALL INSERTED IN STAIRWELL.

2001



LEVELS 1,2,3 CONVERTED INTO 3 BEDROOM APARTMENTS

2006

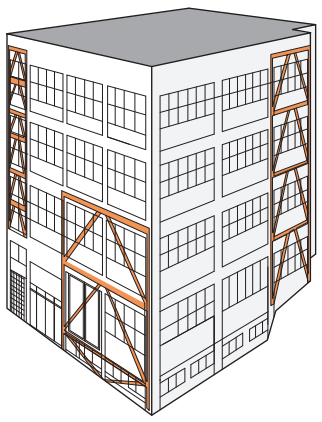


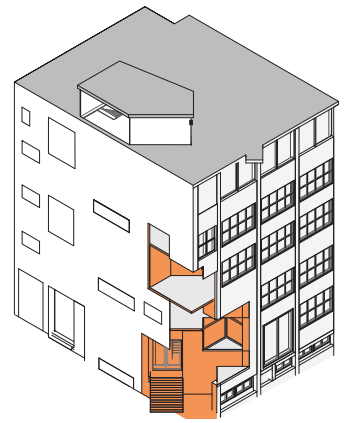
BASEMENT CONVERTED INTO A 3 BEDROOM APARTMENT.

2007

Current

Proposed





SEISMIC STRENGTHENING

Fig 2.11. Building Alteration Timeline

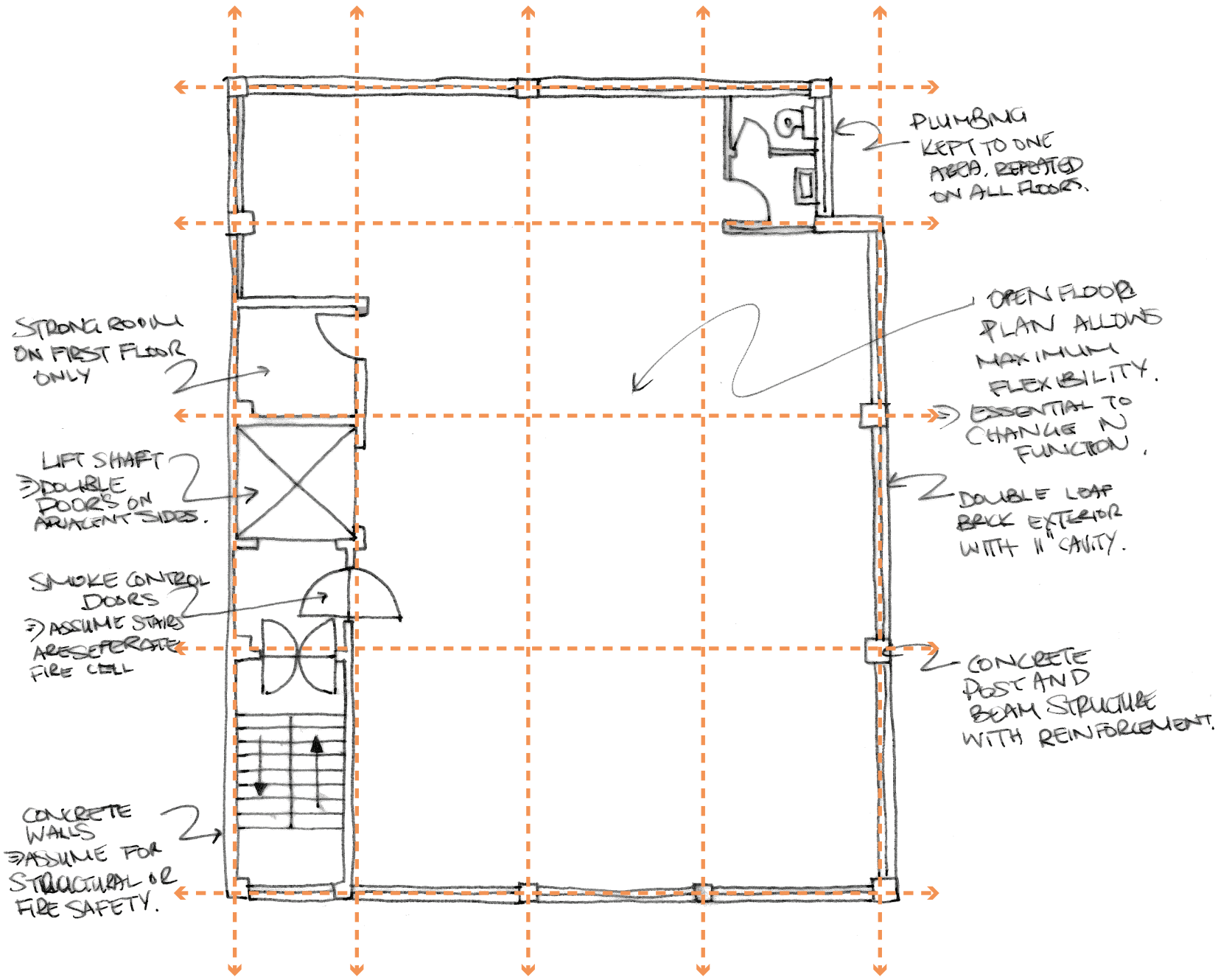
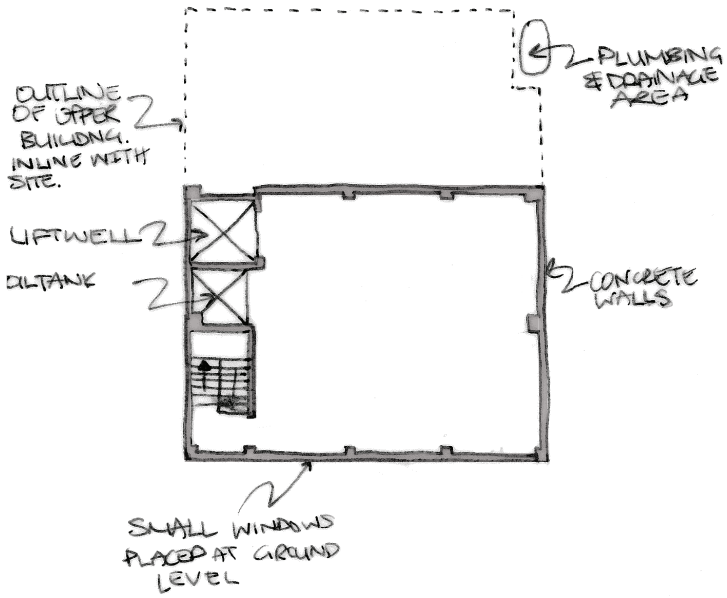


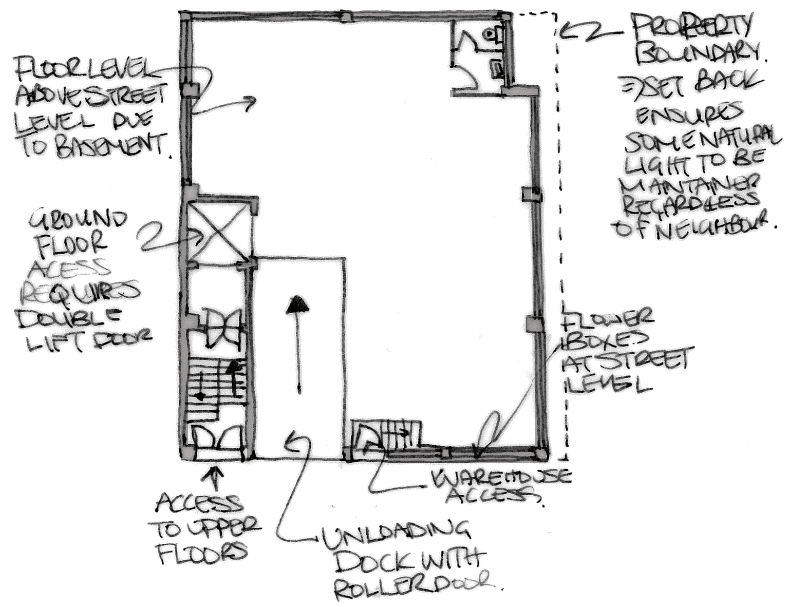

Fig 2.12. Typical Floor Analysis of 1958 Building Plans
SCALE 1:100

# EXISTING BUILDING ANALYSIS

11 Frederick Street has undergone a variety of alterations since its construction in 1958 as illustrated in figure 2.11. Initial site selection specified that the existing building must be of a different program however as the original 1958 building was a warehouse this is acceptable. The building has been converted into accommodation, proving accommodation in this area is lucrative and viable. The change in programme also proves the alteration in function is structurally obtainable. Current occupation will be analysed as a test case of a possible solution. However for the purpose of this research the original building plans will be used for all design and subsequent alterations. Internal partitions will be ignored as they will be removed to accommodate the change in programme.
Council archive documents show that the building uses a post and beam structural system with no internal columns as shown in figure 2.12. Columns and floors are constructed from concrete with steel reinforcing. Walls are a combination of concrete and double leaf brick. From photographs it is clear that either another story has been added or the roof has been enclosed, however further details cannot be obtained from Council archives. It is assumed that the additional floor follows the same structural layout as the floors below. Structural strengthening was completed in 2003 and as the building is not listed on the Wellington Earthquake Prone buildings list, it is assumed to be of sound structural strength. Testing this further is beyond the scope of this research.




BASEMENT ANALYSIS




GROUND FLOOR ANALYSIS

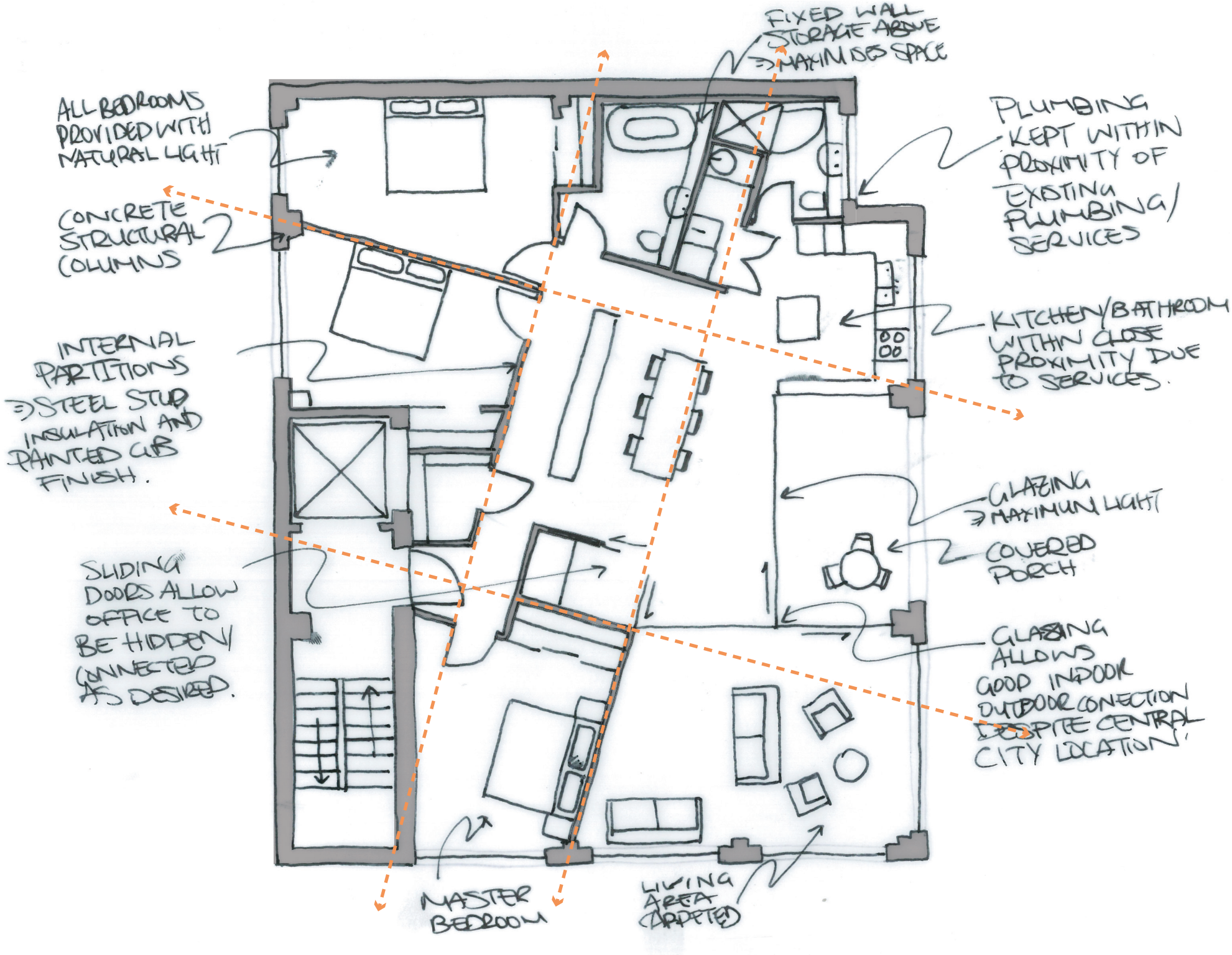



Fig 2.13. Floor Plan Analysis of Current Apartment Layout and Structure
SCALE 1:50

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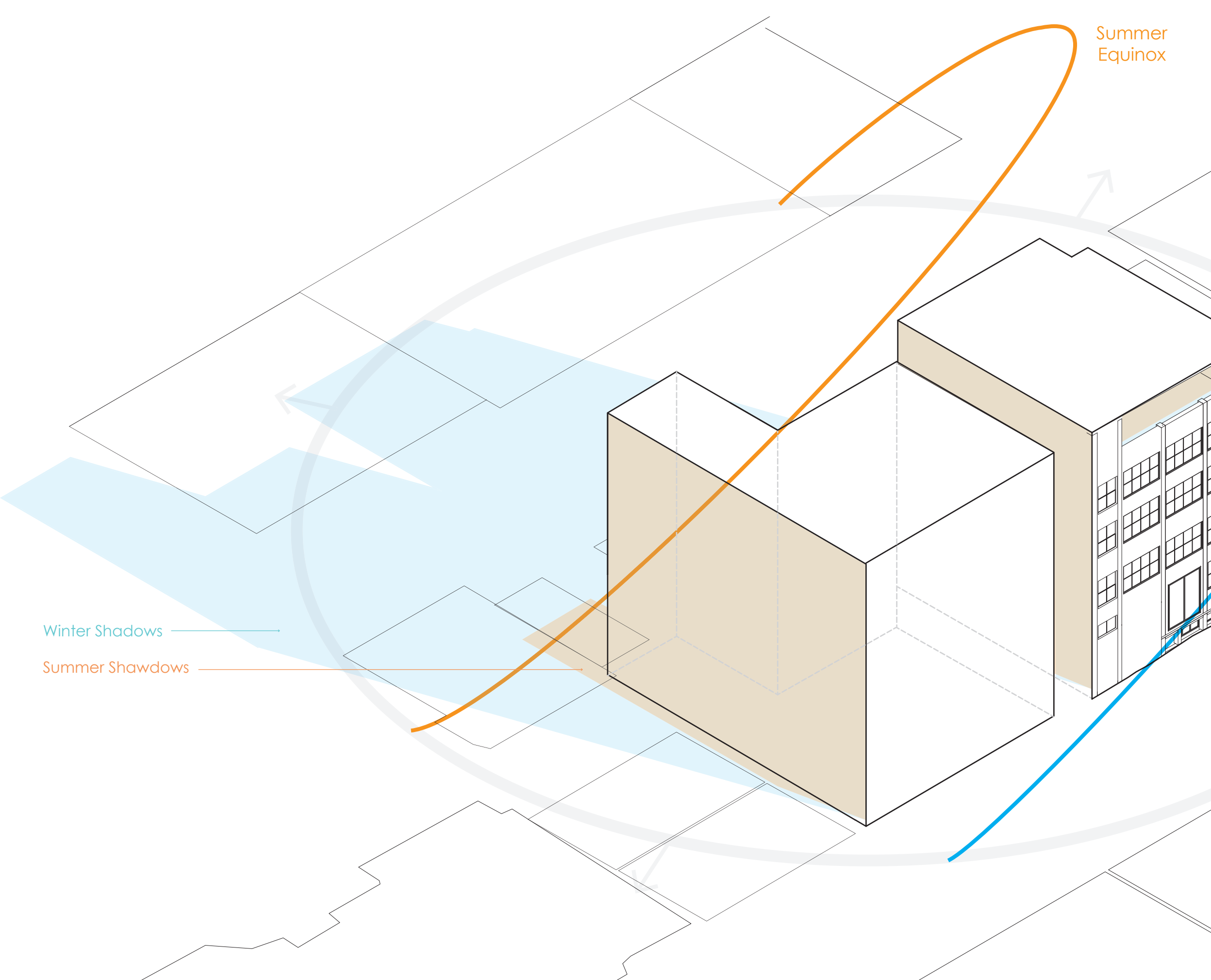
Fig 2.14. Interior Photographs of Current Accommodation.

## EXISTING ACCOMMODATION ANALYSIS

The building was converted into private accommodation in a series of alterations between 2001 and 2006. Floors one through three are identical three bedroom two bath apartments with a small outdoor area facing north-west. A non-traditional approach has been taken in the conversion. A regular grid has been applied to the floor at an angle creating difficult spaces to use at the edges of the building. Despite the asymmetrical nature of each room the conversion appears to be quite successful. However it does lack any hint at the existing character of the interior before refurbishment. The basement has been converted into a three bedroom apartment with one bathroom and no direct sunlight access in two out of three bedrooms. This is a typical issue in conversions from office or light industrial into accommodation that the floors above have mitigated successfully.


Summer
Equinox
Winter Shadows
Summer Shawdows

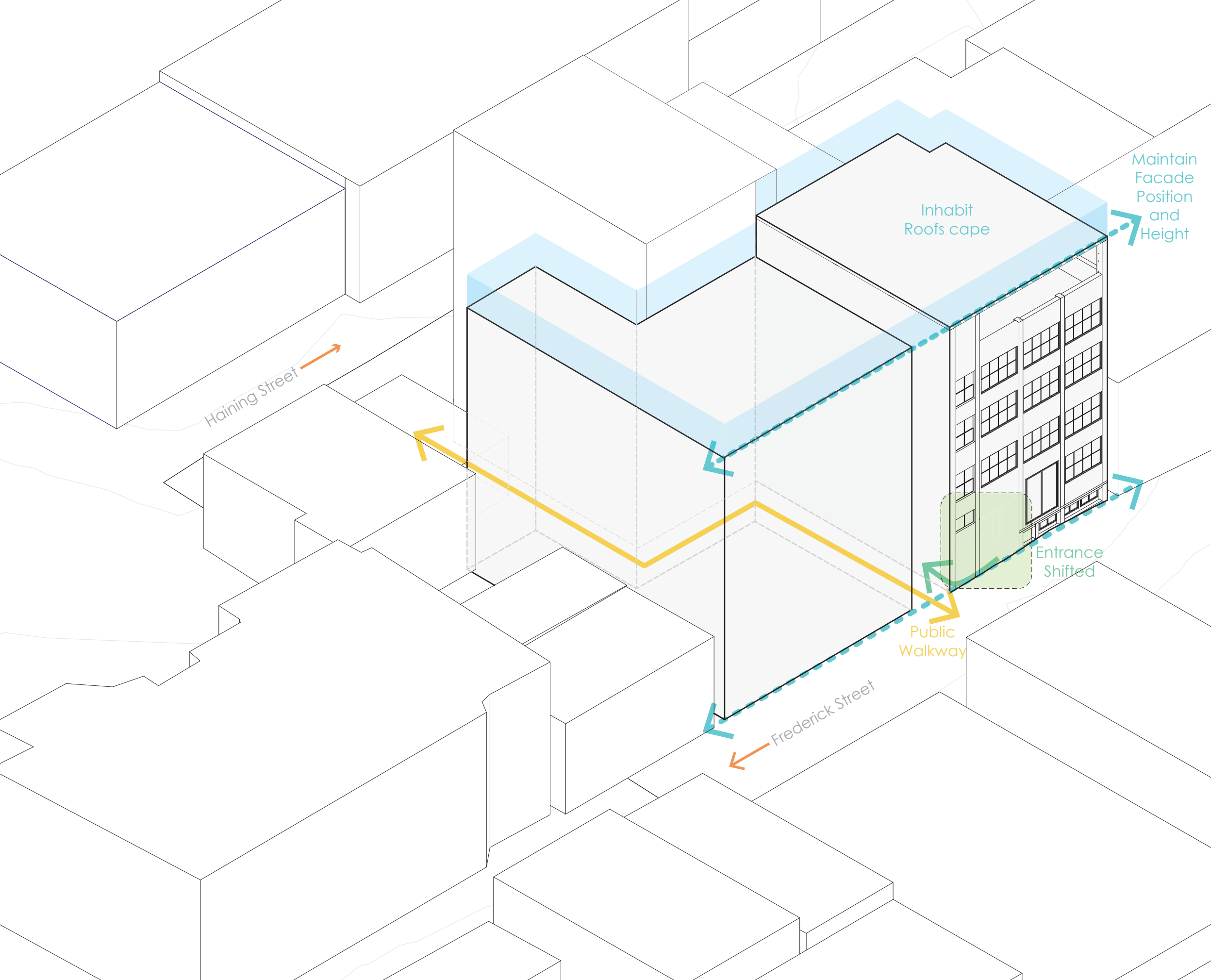

## SITE OPPORTUNITIES

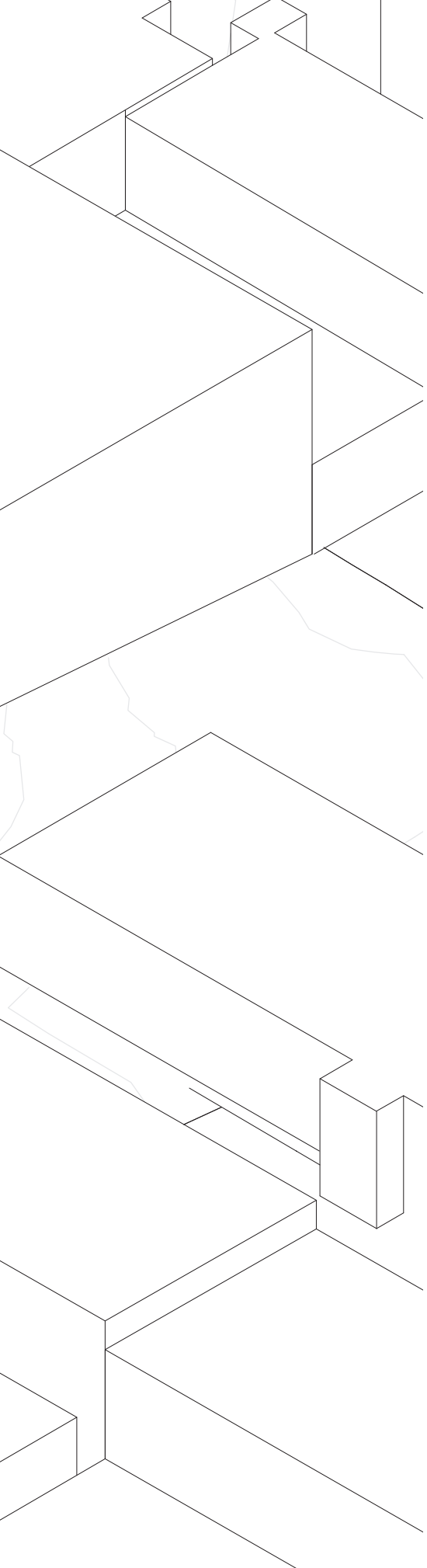
Moving into the adjacent carpark provides many opportunities to the site. Firstly an addition to the existing building increasing the scale of the project and secondly allowing for the inclusion of a pedestrian walkway between Frederick Street and Haining Street. Benefits of this are twofold, firstly allowing the extension to be fragmented slightly allowing improved sunlight access to the units in the centre and secondly the addition of public amenity provided. Traffic on both streets is quite low due to both roads being one way making both streets pedestrian friendly. The success of the public walkway is reliant on being able to draw more users into the area to benefit from the break in the urban grid. For this reason public amenities will be integrated into the scheme at street level.

## SITE THREATS

Due to the height of both the addition and the existing building sunlight access into centre of the scheme will be somewhat limited and have a huge impact on both the atmosphere and safety within the walkway. Methods to mitigate this will be investigated through the design process to ensure public safety and desirability is maintained.
Privacy of ground floor units will need to be carefully considered due to the prominent street frontage. Drawing more users into the area will further increase the risk to student's privacy. Possible solutions will be explored through the design process.

Fig 2.15. Environmental Impacts on Site


Haining Street
Inhabit
Roofs cape
Maintain
Facade
Position
and
Height
Entrance
Shifted
Public
Walkway
Frederick Street



## SITE DECISIONS FROM ANALYSIS

Due to the density of the site there is minimal outdoor space for residents to enjoy. This makes the roof the perfect alterative, allowing privacy and a view with minimal negative implications. The current façade will act as a guide to the extension, allowing both parts of the design to be cohesive without being intrusive on pedestrians. Any overhang must have adequate clearance from pedestrian movement. Connecting Frederick Street and Haining Street via pedestrian thoroughfare will only be successful with high public interaction. Placing cafes and public amenities in this space will help draw users in creating a dynamic and useful walkway. Shifting the entrance into the walkway will help draw residents into the area increasing use. This shift will also create a more integrated design with less distinction between new and existing.

Fig 2.16. Site Conclusions Diagram scale 1:200

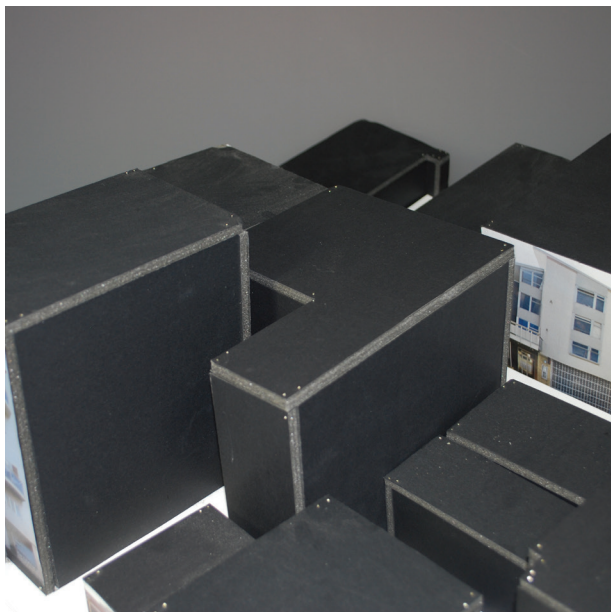
# INITIAL SITE MASSING STUDIES

Initially the site model was used to gauge the overall scale of the street. The majority of buildings directly adjacent to the selected site are low. 11 Frederick Street and 12-14 Haining Street are the tallest buildings in the immediate area. The same model was then used to explore site massing. In particular the insertion of the walkway connecting Frederick Street and Haining Street and the maximum height in relation to the existing building and its overall impact on the surrounding context. Massing was intentionally kept very basic to give no indication of possible design outcomes.

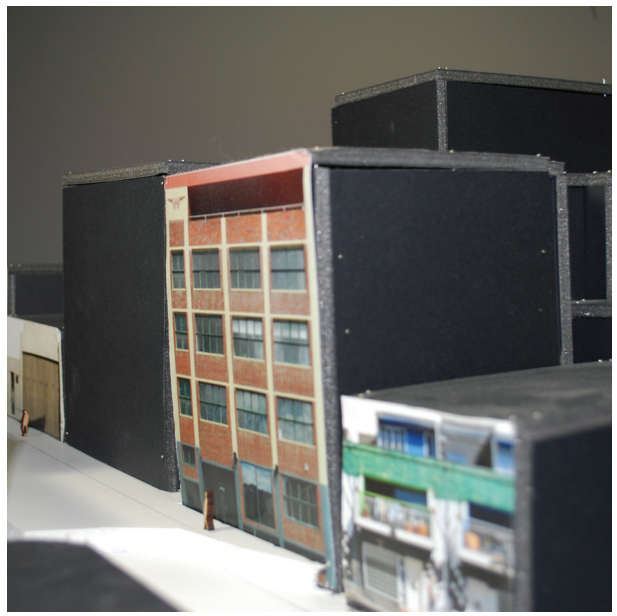
The first test maintained the same height as the existing building. This maintained an equal balance between old and new. The second test raised the height to match the building directly behind. This shifted the focus to the new building quite substantially. Another outcome of the increased height is further decreasing sunlight access to the alleyway. Both tests remained in line with the current façade, as previously determined this line should remain unchanged to ensure it remains unobtrusive on pedestrians.

Maintaining a neutral stance on height helps to engage a connection between the existing building and the new addition. However the wide gap created for the walkway carves a large divide that needs to be addressed to ensure cohesion between opposing areas of the project.

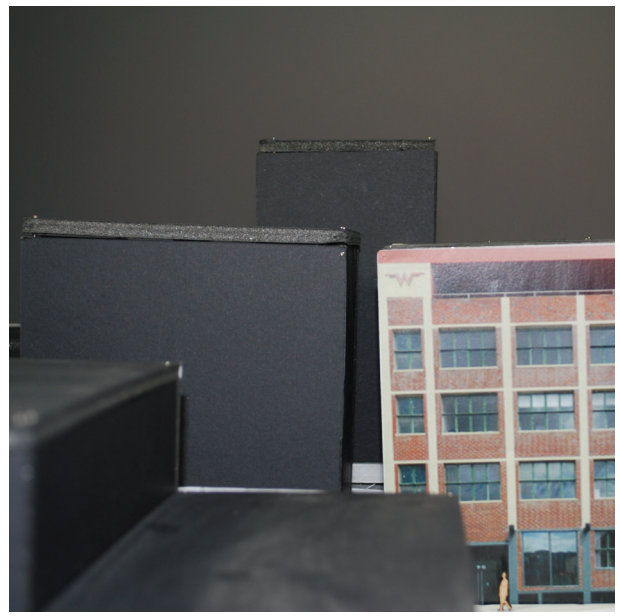
MAINTAINING CURRENT HEIGHT



AERIAL VIEW

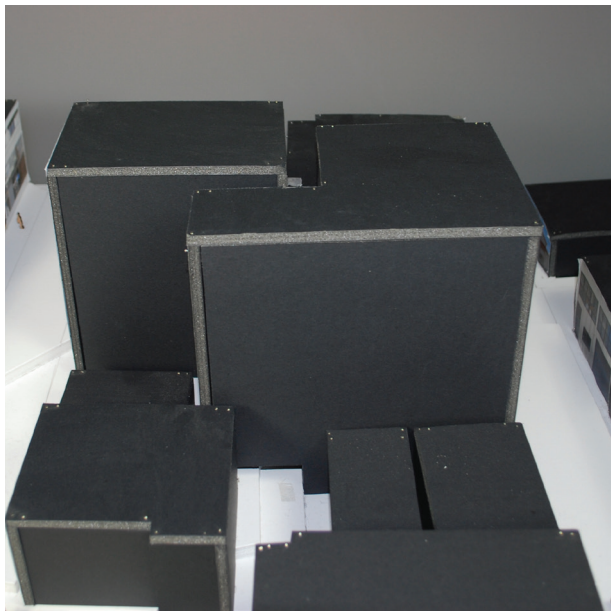


VIEW FROM STREET LEVEL



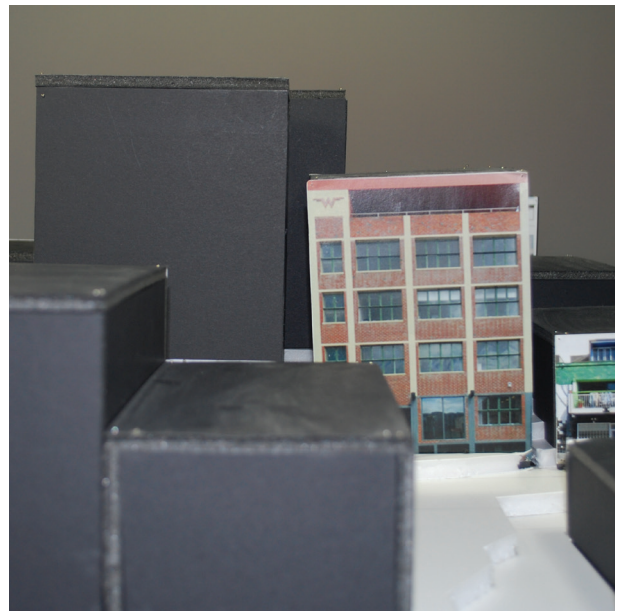
HEIGHT IN RELATION TO EXISTING BUILDING

INCREASED HEIGHT MIMICKING 12-14 HAINING STREET

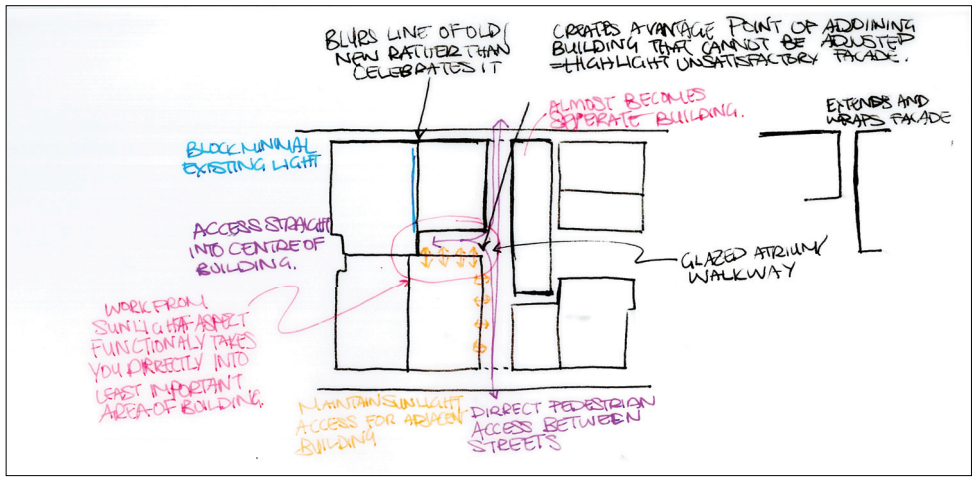


AERIAL VIEW

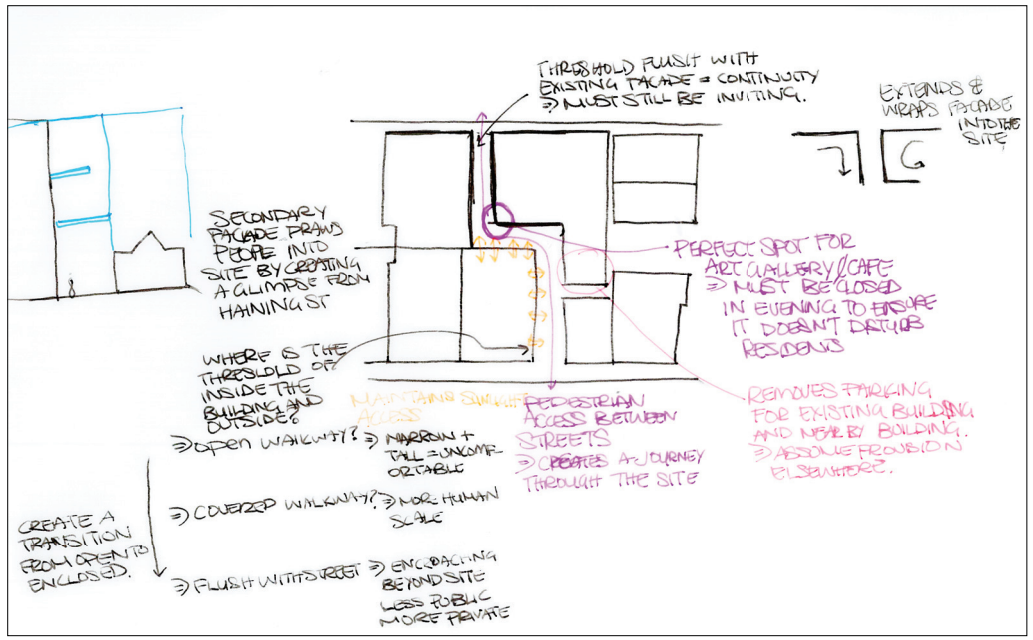
VIEW FROM STREET LEVEL



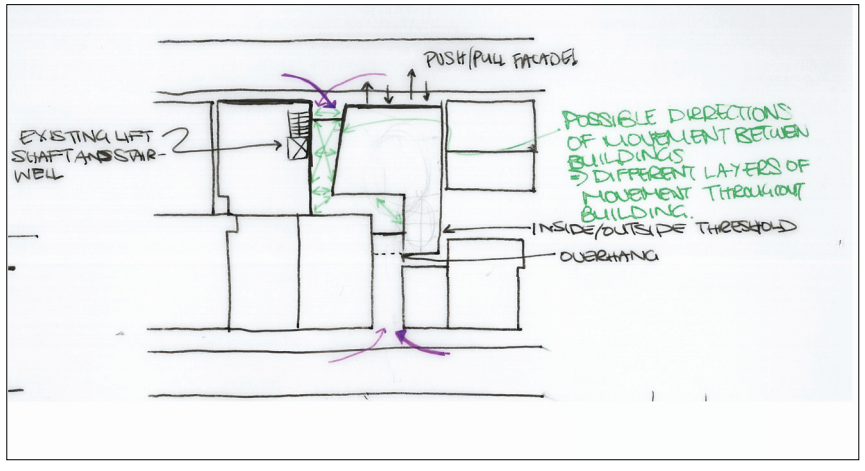
HEIGHT IN RELATION TO EXISTING BUILDING



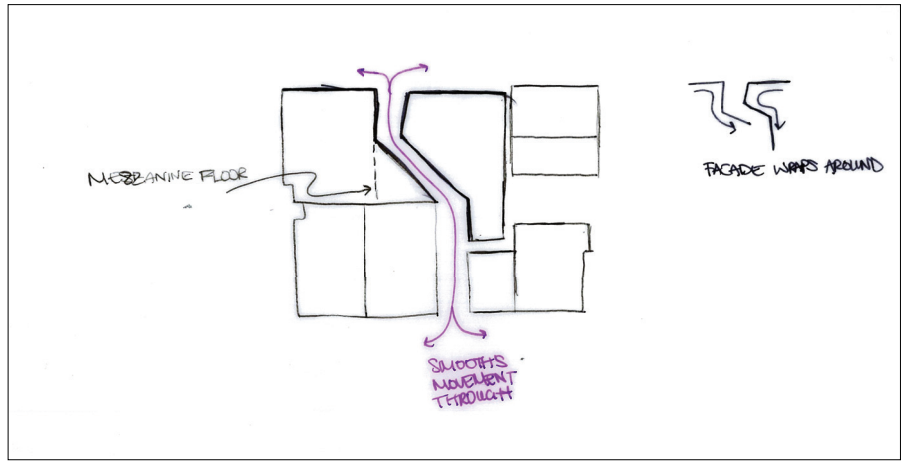

EXPLORATION 1



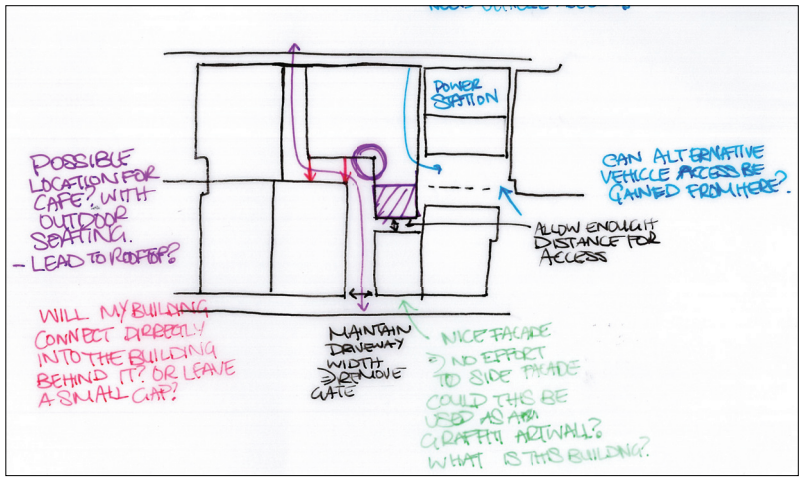

EXPLORATION 2



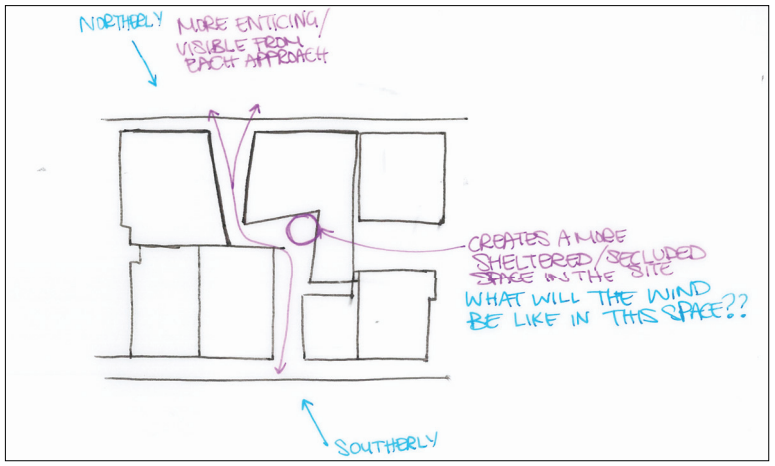

EXPLORATION 3




EXPLORATION 4




EXPLORATION 2.1




EXPLORATION 5

# WALKWAY FORMATION EXPLORATIONS

The first diagram explores the direct linear link between Frederick and Haining Street. It creates a direct route with a good visual connection between both streets, however it creates a disjoint between buildings. Sunlight access to adjacent building is preserved. The second iteration creates a basic walkway following line of existing buildings. A clear distinction is made between old and new. This formation allows a larger addition. This is further explored to establish maximum site usage for maximum freedom in the addition. Focus is shifted from overall form in the third test to create an engaging entrance at Frederick Street. The angled entrance is an easier transition into the walkway however buildings remain fragmented. Movement through the site is improved in the fourth study through translating the angled entrance into the walkway creating an intriguing building form with some discussion between structures. The last exploration combines the angled entrance and walkway to entice users from both directions to the centre of the site. Reversing the angle of the walkway creates a perfect location for public amenities allowing the walkway to be used as a transitory space and a destination in itself.

## LOCATION

Close to amenities, public transport and campus
Appropriate building located on site
Empty site adjacent allows for expansion of building

## BUILDING

Adequate building history adds to design rather than restricting it
Viable adapted program due to current programme (apartments)
Meets current seismic standards

## DESIGN DECISIONS

Walkway provides public amenity
Public interaction on site vital to walkway success
Move ground level private functions to rooftop
Maximum density possible but provides light restrictions

CHAPTER

# 03

CHAPTER

03

# BACKGROUND

Current tertiary student accommodation standards are analysed through literature and secondly through case studies in chapter four. Modernist theory is introduced with the work of Le Corbusier. The Modulor proportioning system is examined and applied to the proportion of the individual unit. Le Corbusier's housing techniques are also investigated principally, the Unite d' Habitation.

"Accused of building in human, monotonous buildings, an administrator only has to explain that monotony was cheaper. Such explanation no longer satisfies students who insist that the buildings they live in effect the way they think and feel.[14]"

14 Laboratories (8)

# TACKLING THE INCREASED DEMAND FOR STUDENT HOUSING

*Student Housing* notes that Universities are faced with three options as to how to tackle the increase of student numbers and decrease of private housing. They "build new dormitories, remodel existing buildings or get out of the housing business.[15]" Over recent years Victoria University of Wellington has selected the first option with an increasing number of office conversions. This is due to the scarcity of undeveloped land in optimal locations. Massey University of Wellington has taken the opposing route by simply opting to reduce the number of halls from four[16] to two in 2011[17] and further to one hall in 2013[18]. This contrast is highlighted by Victoria University having thirteen halls, catering from first years all the way through to post-graduates. The latest hall to be opened is Kathryn Jermyn Hall, a converted office building on Boulcott Street.

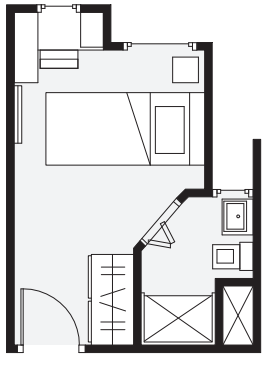
There are many benefits to living in university provided accommodation. Phyllis Allen notes the principle benefit of first year halls as it is a good "introduction to adult social life, requiring little or no effort from the student."[19] Thus creating a smooth transition into responsibility. Meanwhile easing parents' concerns for safety by ensuring children are fed, warm and safe. "Living away from home is seen by many as part of the 'university experience'.[20]" Part of the university experience is also the social aspect of meeting other people sharing the same experiences as you. It can often be hard for students to meet people during lectures and tutorials, however the living environment of a hall offers more social interactions.

15 Laboratories (9)
16 University "Accommodation Guide and Student Life 2009" (30)
17 University "Accommodation Guide 2011" (28)
18 University "Wellington Campus Map 2013" (1)
19 (Phyllis Allen (18))
20 Edwards (133)

# CURRENT STUDENT HOUSING MODEL INADEQUATE

Traditionally student housing is monotonous and uninventive, providing necessary facilities without much consideration beyond meeting minimum standards. Entirely overlooking the social and cultural experience that goes alongside learning. Students are no longer satisfied with "inhumane, monotonous buildings[21]". *Student Housing* highlights that buildings have a significant effect on how students think and feel, ultimately effecting their studies[22]. Housing should be pleasant to live in while also allowing and enabling "privacy, individual control over daily schedules, personal space, group space and places to entertain.[23]" Thorne reiterates this by stating "the importance of a private bedroom/workplace should not be overlooked[24]", yet often is. Housing impact is emphasised in a survey at the University of Tasmania, with a quarter of students feeling that "the unsatisfactory nature of their present accommodation would probably lead to their leaving university before graduation.[25]"

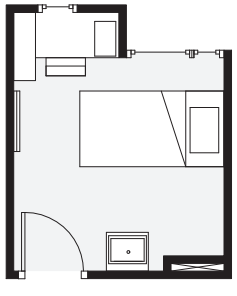
21 Laboratories (8)
22 Laboratories (39)
23 Laboratories (39)
24 Thorne (7)
25 Thorne (11)



PRINCE GEORGE PARK

TYPE A - ENSUITE + AIR CONDITIONING

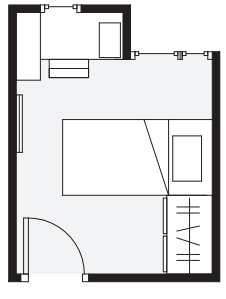
13M$^2$



PRINCE GEORGE PARK

TYPE B - BASIN

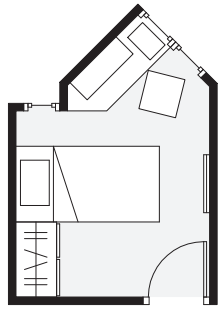
9.5M$^2$



PRINCE GEORGE PARK

TYPE C

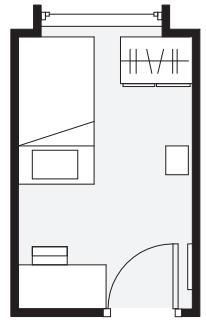
9M$^2$



PRINCE GEORGE PARK

TYPE C

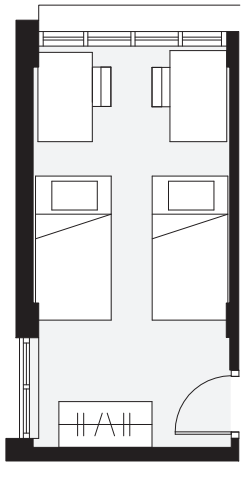
9M$^2$



UTOWN

PART OF 6 BED UNIT

8M$^2$



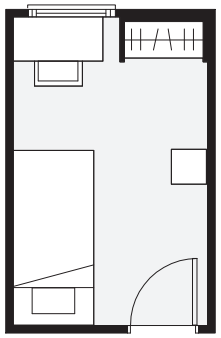
RIDGE VIEW RESIDENCE

DOUBLE ROOM

15M$^2$

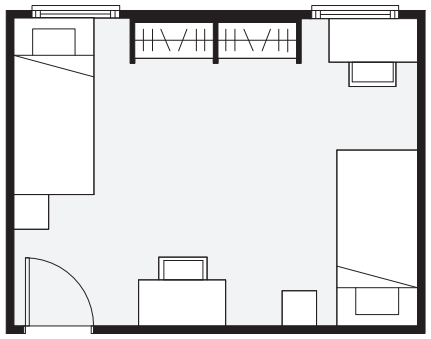
Fig 3.01. Comparison of Typical Room Types at National University of Singapore.

SCALE 1:100



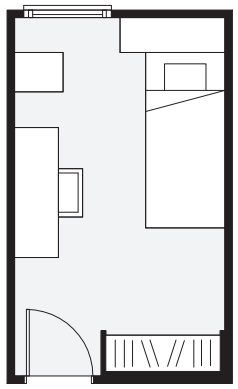
GRAFTON HALL

SINGLE ROOM



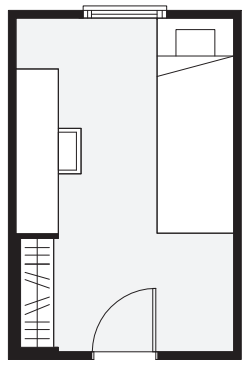
GRAFTON HALL

TWIN SHARE ROOM



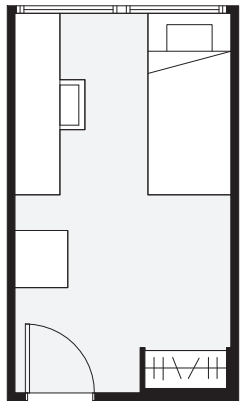
HUIA RESIDENCE

STANDARD SINGLE ROOM



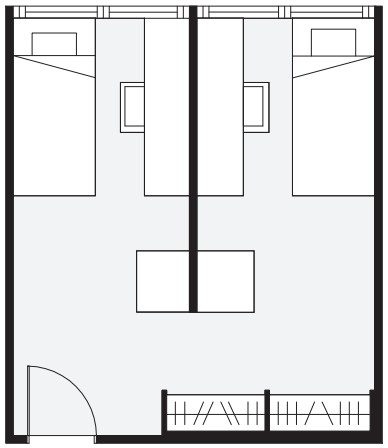
UNIVERSITY HALL

SINGLE ROOM



WHITAKER HALL

STANDARD SINGLE ROOM



WHITAKER HALL

STANDARD TWIN-SHARE ROOM

Fig 3.02. Comparison of room types at The University of Auckland

SCALE 1:100

# BEDROOM TYPOLOGY ANALYSIS AND CRITIQUE

Room types vary with each residency. They can be arranged around a corridor, an apartment style with a number of rooms arranged in a cluster with shared space, studio with private amenities, or twin share with two beds per room. Corridor type accommodation is generally arranged into floors or wings arranged around a common space. *Student Housing* suggests that "a workable cluster includes about 12 bedrooms, whereas apartments are most manageable with under 6 bedrooms.[26]" Edwards suggests that undergraduate's rooms should be approximately 12m$^2$ and that post-graduates should be allocated 14m$^2$.[27] Victoria does not state room sizes. However other Universities state approximate room sizes and some also provide typical floor plans. National University of Singapore provides both floor area and plans as illustrated in figure 3.01. Bedroom sizes range from 8m$^2$ to 13m$^2$ depending on what residence it is in and what room type has been selected. Floor plans of Auckland University are shown in figure 3.02 with similar layouts across most halls. Figure 3.02 highlight the common room formation is a rectangle.

26 Laboratories (39)
27 Edwards

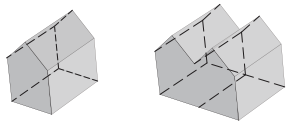
Purpose Built Building

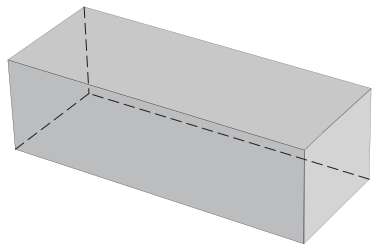
Conversion of Existing Building

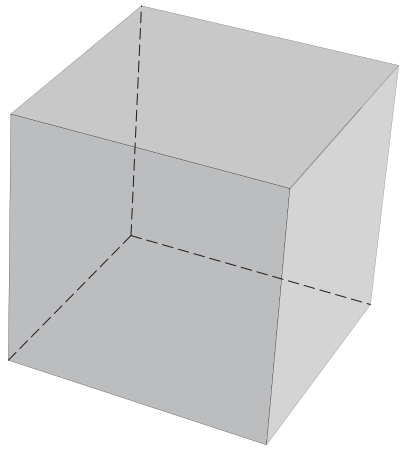
Stand Alone House or Terrace House

Low Rise Building

High Rise



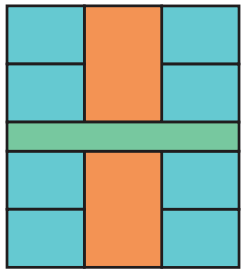


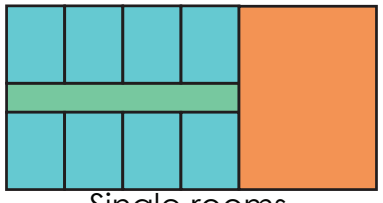


Cluster/Apartment private communnal spaces

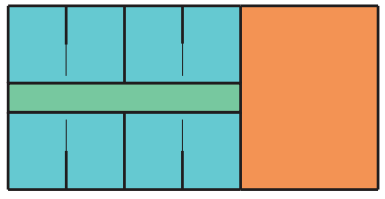
Corridor with communal facilites

Studio Room with or without shared facilties

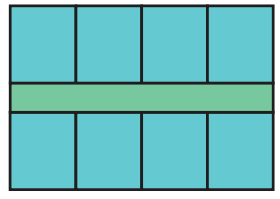




Single rooms



Twinshare rooms



KEY

- Bedroom
- Communal Facilities
- Corridor

Fig 3.03. Student Housing Typical Typologies.

Note: Indicative Scale Only

# STUDENT HOUSING TOPOLOGIES

Three typical accommodation typologies are outlined in *Student Housing*, stand alone, low rise and high rise buildings are diagrammed in figure 3.03. This highlights that stand alone housing typically only includes cluster type accommodation, whereas low and high rise buildings are more inclined to any of the three typologies, often containing a mix of two or more. All types of accommodation styles can be purpose built or converted from an existing building, however standalone housing often requires few changes. Low rise and high rise typically have communal dining facilities due to higher capacities. Standalone houses are often more suited to older students due to being closer to private rental accommodation.

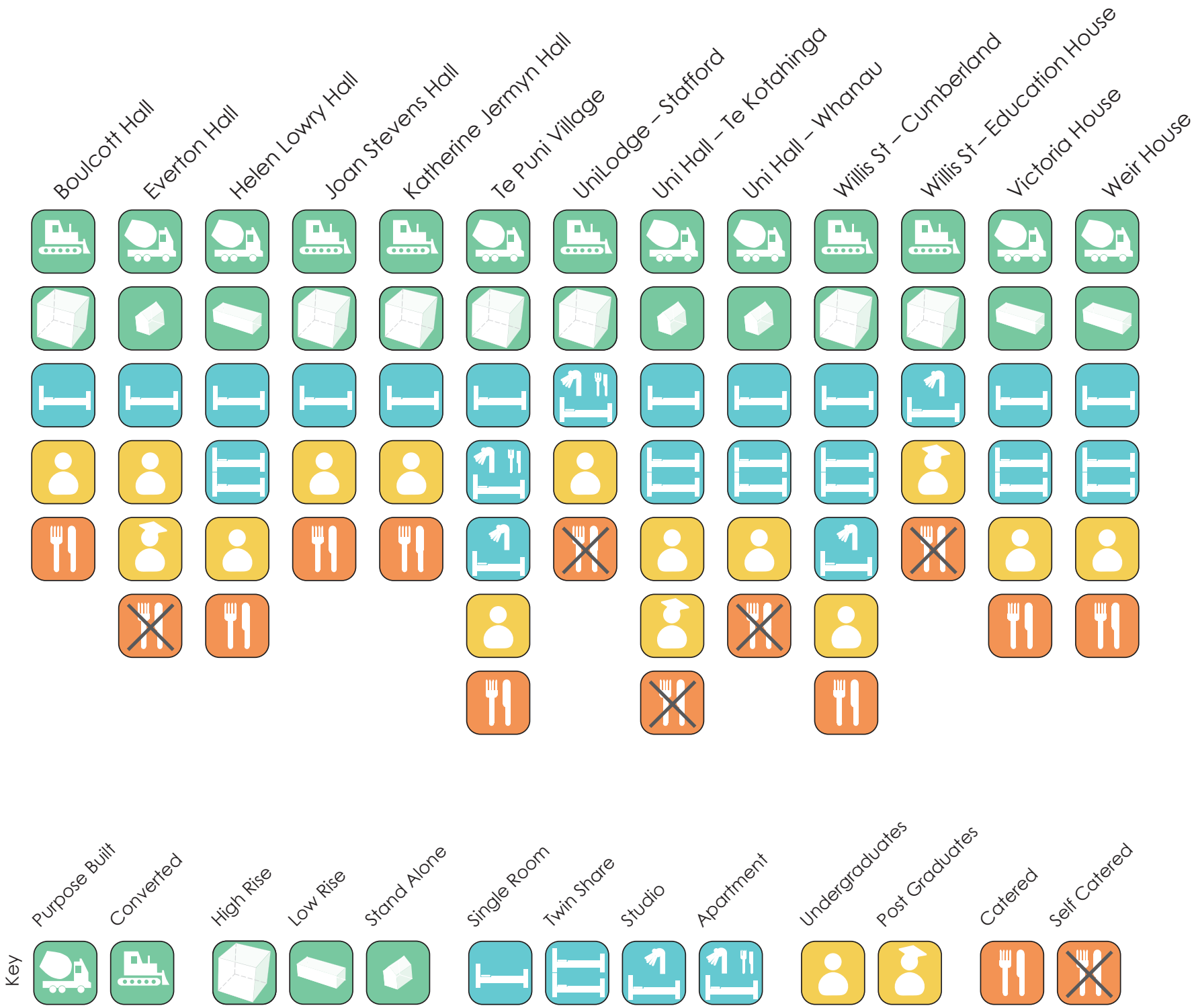



Fig 3.04. Victoria University Analysis. Authors Own. 2015.

# CATEGORIZING AND ANALYSING VICTORIA UNIVERSITY STUDENT HOUSING OPTIONS

Student housing typologies outlines in figure 3.03 have been used to categorize Victoria University student housing as shown in figure 3.04.[28]. This analysis has shown Victoria has five main accommodation typologies. Boulcott Hall, Joan Stevens Hall and Katherine Jermyn Hall are all recent conversions from office buildings completed by McKee Fhel. All three halls provide single bedrooms with catering to first year students. Te Puni Village was purpose built but shares many qualities of Willis Street – Cumberland, both provide three room types. Victoria House, Weir House and Helen Lowry Hall are all low rise, purpose built faculties that provide single or twin share rooms with a meal plan. It is interesting to note the use of house rather than hall in the name, making low rise buildings appear less institutional and more homely. Uni-Lodge – Stafford and Willis Street – Education House cater to senior students, offering self-catered studio and apartment accommodation. Everton Hall, Uni Hall – Te Kotahinga and Uni Hall - Whanau are all standalone houses that offer single or twin share rooms with no meal plan. This type of accommodation is the closest to typical private rental properties. However it is assumed that as it is operated by the university that the standard of quality will be much higher than other rentals.

Unlike halls provided by Victoria University this project cannot be categorized so easily. It is both purpose built and a conversion. It is a high rise but medium density. It is designed for both undergrads and postgrads. Catering to a specific type of student removes the ambiguity of generic design, allowing it the flexibility to simply be, rather than forcing it into a known and understood typology. Successful learning starts with a healthy and inspired home environment that is home rather than an extension of the University. Most halls are the latter with focus being placed on efficiency rather than desirability. Creating a focus on quantity rather than quantity, and disregarding the impact it has on student's wellbeing and learning.

28 Service

"The house is a machine for living in[29]"

Le Corbusier

29 Corbusier *Towards a New Architecture*


This image cannot be displayed due to copyright

## MODERNISM AND LE CORBUSIER

Le Corbusier research focuses on the Unité d'Habitation in Marseilles and the Modulor. The Unité is an example of high density high rise housing that focuses on quality of living, connection to the environment and prefabrication. These principles are present in architecture today however diluted and distorted. The Modulor is a proportion system that brings the human body back as the determining measurements and focuses on creating visual harmony.

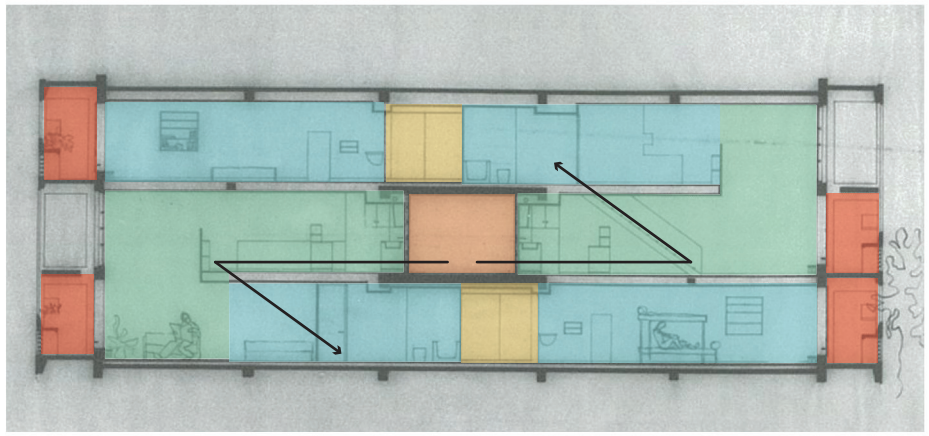
## HOUSING THEORY TESTED THROUGH THE UNITÉ D'HABITATION, MARSEILLES

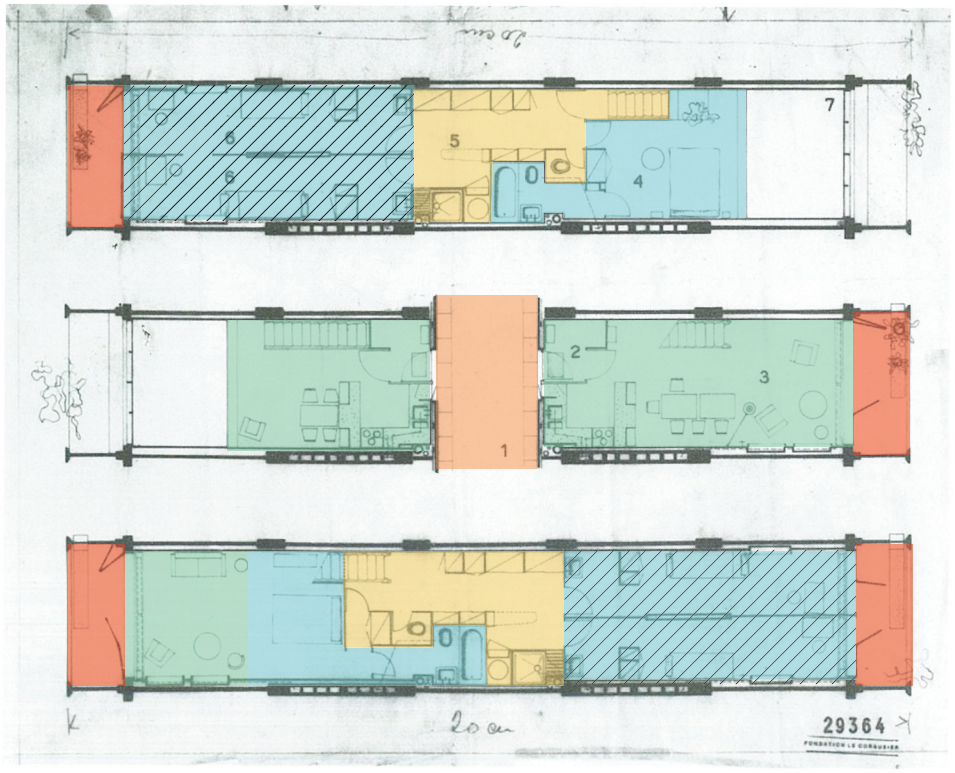
The Unité d'Habitation (Unité) in Marseilles was the first high density housing projects completed by Le Corbusier in post-war France[30]. The Unité was completed in 1952 despite delays due to inadequate technology to complete prefabrication[31]. The design of the Unité was radical and was essentially a method of testing Le Corbusier's housing theories. He made no attempts to hide his fears that the "apartment would be uninhabitable[32]". These theories included in his 'five points on architecture' with the addition of the brise-sole's (sun shades). Intertwined with his five points is the domino structural system as shown in figure 3.07. The Modulor proportion system was also applied to the Unité, with only fifteen measurements used throughout[33].

Despite the large site, Le Corbusier chose to build up rather than sprawl across the site. This is likely attributed to belief that "open space is of the essence[34]". The first principle of Le Corbusier's five points is to raise the building above ground level. High rise buildings often create natural light issues that go unaddressed. A key principle implemented in the Unité was ensuring that "not one inhabitant occupies a room without sunlight; everyone looks out on trees and sky[35]". This has been lost in many apartments.

30 Sbriglio (134)
31 Sbriglio (152)
32 Sbriglio (170)
33 Sbriglio (148)
34 Sbriglio (44)
35 Sbriglio (9)

Fig 3.05. Left: Unite d'Habitation Marseilles






UNITE FLOOR PLAN AND SECTION ANALYSIS

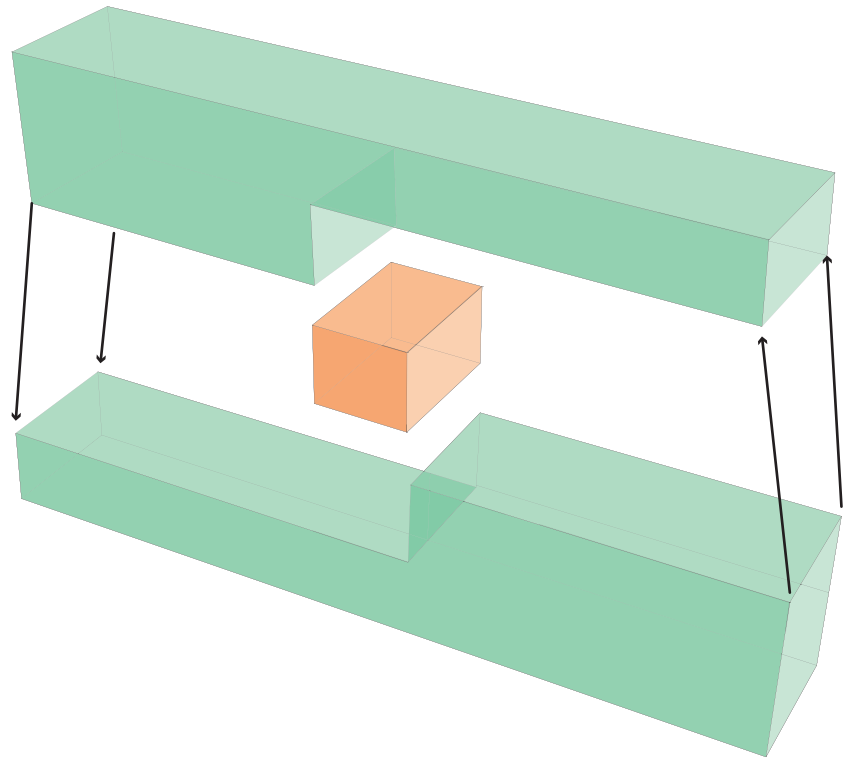


Fig 3.06. Interlocking Apartment Diagram

KEY

- Streetscape
- Master Bedroom
- Childrens Bedroom
- Lounge/Kitchen/Living
- Bathroom
- Balcony

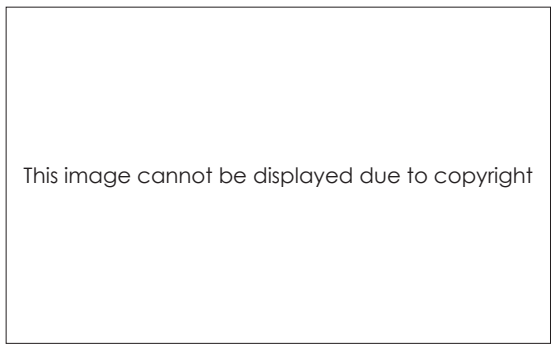



Fig 3.07. Dom-Ino System. Le Corbusier.

The new structural system implemented allowed revolutionary apartments typology to be created. What we now call a post and beam structure, allowed an open plan configuration and a free façade resulting in long horizontal windows[36]. This resulted in long thin dual aspect apartments that despite extending the width of the building received ample nature light. Bathroom facilities are placed at the centre of the unit for two reasons, firstly as they intermediately inhabited they require less natural light and secondly to ensure all services are grouped together. The long thin nature of the apartments created interlocking L shaped apartments with a shared circulation space as shown in figure 3.06. The brise sole created a deeper facade allowing each unit a small balcony to compliment the large roofscape[37] while also helping to mitigate the temperature issues of the free facade. The dual aspect and L shaped houses allows each unit to have a balcony/private outdoor space.

Apartment design typically minimises shared space as it is not leasable and therefore not profitable. Le Corbusier contrasts this by creating a "generous amount of circulation space, which takes on the form of a genuine streetscape.[38]" Streetscapes are created on every third floor in the space created between interlocking apartments. The intention of this was to create the Unite as a community.

Modern apartments may share a similar structural system however regularly fail to create a place to live that is both affordable and desirable. The unimaginative and monotonous designs are entirely concerned with maximum units in the smallest area for maximum profit. This is the downfall of modern high density living. The Unité shared similar goals around density, however rather than only focusing on cost Le Corbusier concentrated achieving quality living at a reasonably priced cost. Designing with this intention creates an extremely different outcome.

36 Points two through four of Le Corbusier's five points.
37 Last point of Le Corbusier's five points.
38 Sbriglio (69)

"It is a scale of proportions which makes the bad difficult and the good easy.[39]"

Albert Einstein

39 Corbusier *Modulor 2, 1955 (Let the User Speak Next)*

# THE MODULOR PROPORTION SYSTEM; ITS CREATION, APPLICATION AND WHY WE SHOULD USE IT.

The Modulor proportioning system was developed over many years and published as a text during the early 1950's at the height of post-war modernism. Modulor confers how the scale was conceived and developed to be understood by architects, engineers and mathematicians alike[40]. Modulor 2 published a few years later discusses how it was received, criticism it faced and further explanation of selected points[41].

Le Corbusier describes why the Modulor proportion system was required

> "A scale of visual measures has its place because the first effect of this new tool would be to unite, co-ordinate, bring into harmony the work of which is at present divided and disjointed by reason of the existence of two virtually incompatible systems; the foot-and-inch system of the Anglo-Saxon world, and the metric system on the other side.[42]"

Le Corbusier developed the Modulor to remove the need for conflicting systems and to create a universal scale based around the body rather than arbitrary measurements. Metric system utilizes the decimal, achieving effortless calculations but is an arbitrary measurement with no relationship to the body[43]. Imperial measurement is somewhat attached to the body, but difficult to work with[44].

Figures 3.08 shows how the Modulor is constructed, a 5ft 7inch French man was initially used as the basis however this scale did not work with both the metric and imperial system[45]. The second iteration of the scale used a 6ft Englishman, which worked in both existing measurement systems thus creating the red and blue series as shown in figure 3.09. It is argued that this is not a true representation of the average height of the global population, however this has been ignored for the purpose of this research. Corbusier felt that "Architecture must be a thing of the body, a thing of substance as well as of the spirit and of the brain.[46]"

40 Corbusier *The Modulor*
41 Corbusier *Modulor 2, 1955 (Let the User Speak Next)*
42 Corbusier *The Modulor* (17)
43 Corbusier *Modulor 2, 1955 (Let the User Speak Next)* (51)
44 Corbusier *Modulor 2, 1955 (Let the User Speak Next)* (51)
45 Corbusier *The Modulor*
46 Corbusier *The Modulor* (60-61)



Fig 3.08. Construction Method of the Modulor.

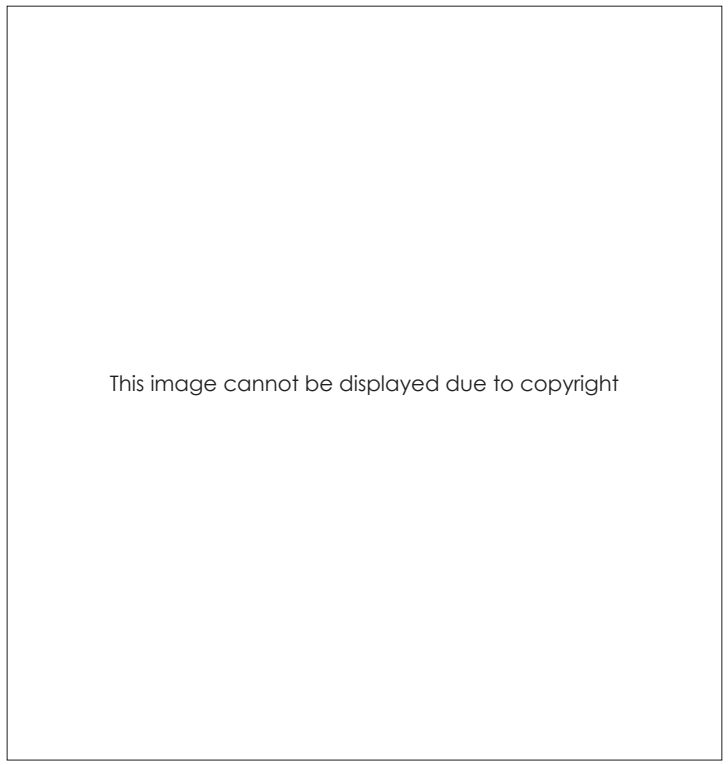



Fig 3.09. Diagram of the Modulor Man against the Red and Blue Series.

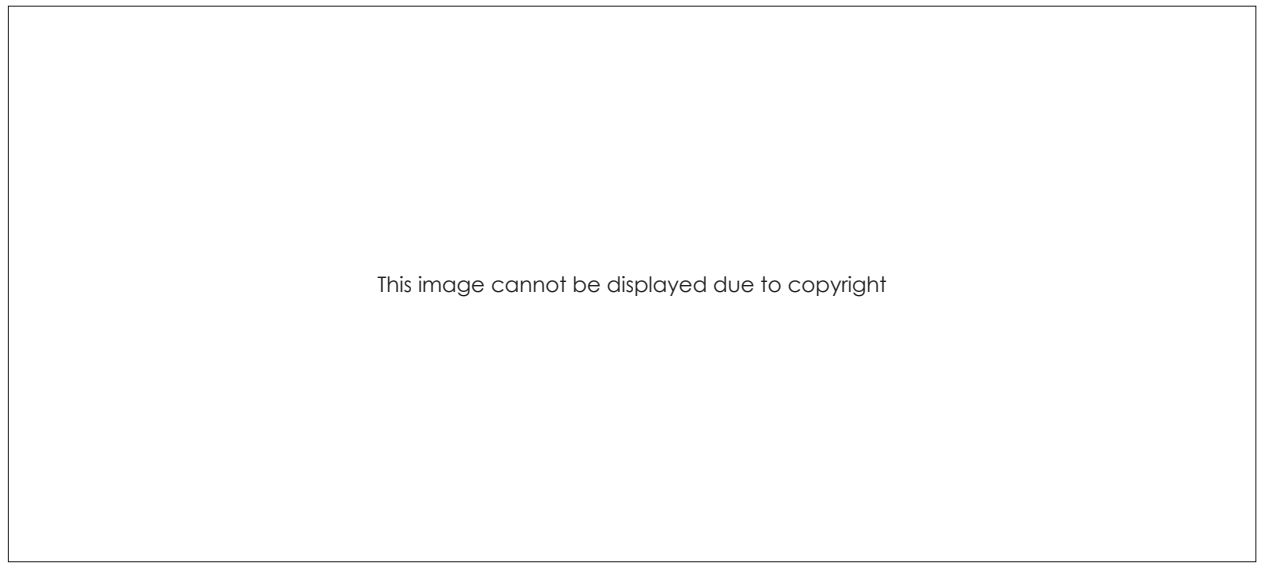



Fig 3.10. Application of the Modulor. Le Corbusier.

Figure 3.10 demonstrated how the Modulor is related to the human body and how it can easily be applied to the heights of items within a building. One significant change the Le Corbusier argues for with the Modulor is changing traditional ceiling height from 2.4m to 2.26m. His main argument for this is that 2.26m is the height of a man with arm raised, this permits "the work inside the building can be done without scaffolding.[47]" A standard ceiling height is currently at 2.4m, this height is the size of a standard piece of GIB board, with no link to the body only an arbitrary measurement dictated by material manufactures. These standard measurements decrease cost and improve ease of construction, but a medium needs to be reached of standard measurements based around the scale of the human body.

47 Corbusier *The Modulor* (124)

# SUMMARY OF BACKGROUND INFORMATION

## STANDARD ROOM AMENITIES

FURNITURE
- Single Bed
- Built-in Desk
- Wardrobe
- Pin board

ARCHITECTURE
- Lockable Door
- Openable Window
- Four Walls
- Floor
- Ceiling

## LIVING ENVIRONMENT IMPACTS

- Emotions, outlook and general mood
- Well being (physical and mental)
- Creativity

## LE CORBUSIER PRINCIPLES

- Buildings must be based on the human body
- Prefabricated design, reduces cost without sacrificing quality
- Integrate buildings with nature
- Interlocking apartments, ease of construction, decrease under used space

CHAPTER

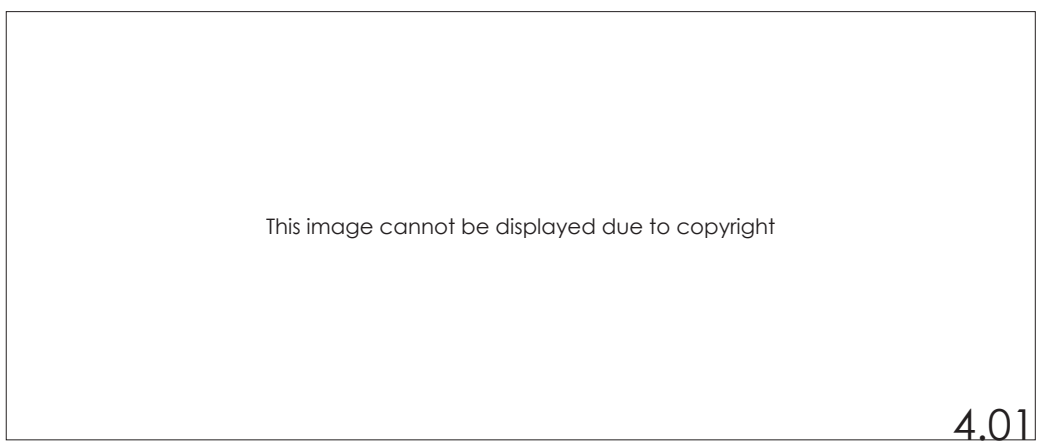
# 04

# CASE STUDIES

CHAPTER

04

A series of design case studies have been used to investigate possible solutions to the current problems commonly present in student accommodation. The first case study is a model solution from the Polytechnic University of Catalonia in Barcelona, Spain. Designed for architecture students to design the space themselves. The second example is the Micro-Compact House developed by Richard Borden, it is investigated for its efficiency. Lastly Victoria University's Kathryn Jermyn Hall is examined to identify major issues in converting office buildings into accommodation.

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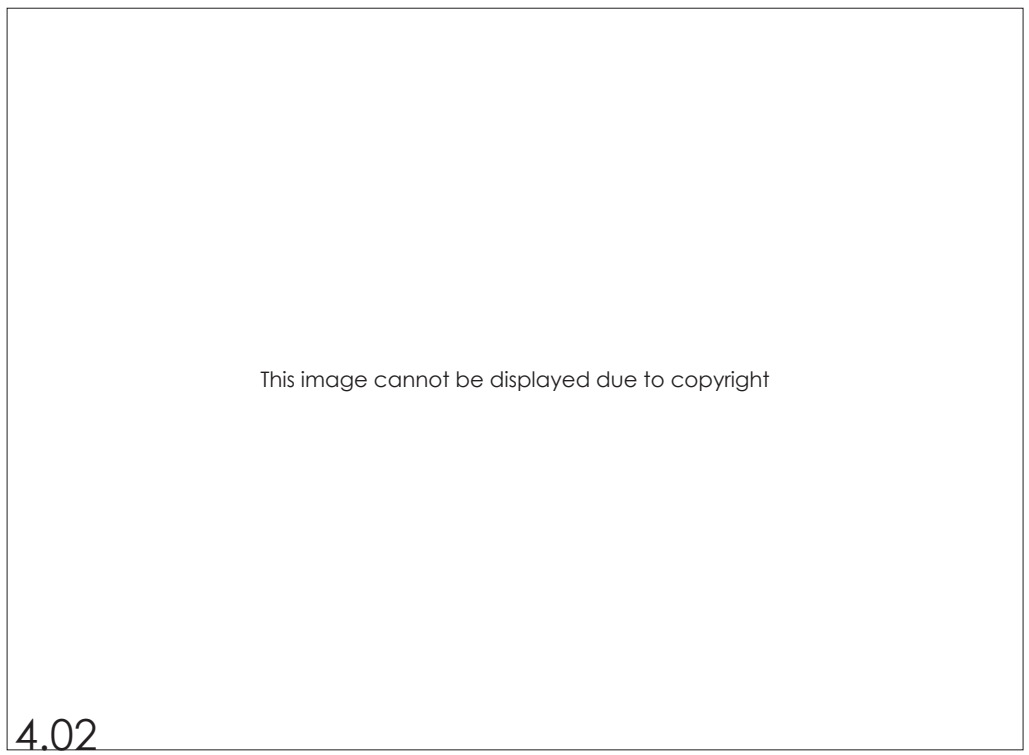


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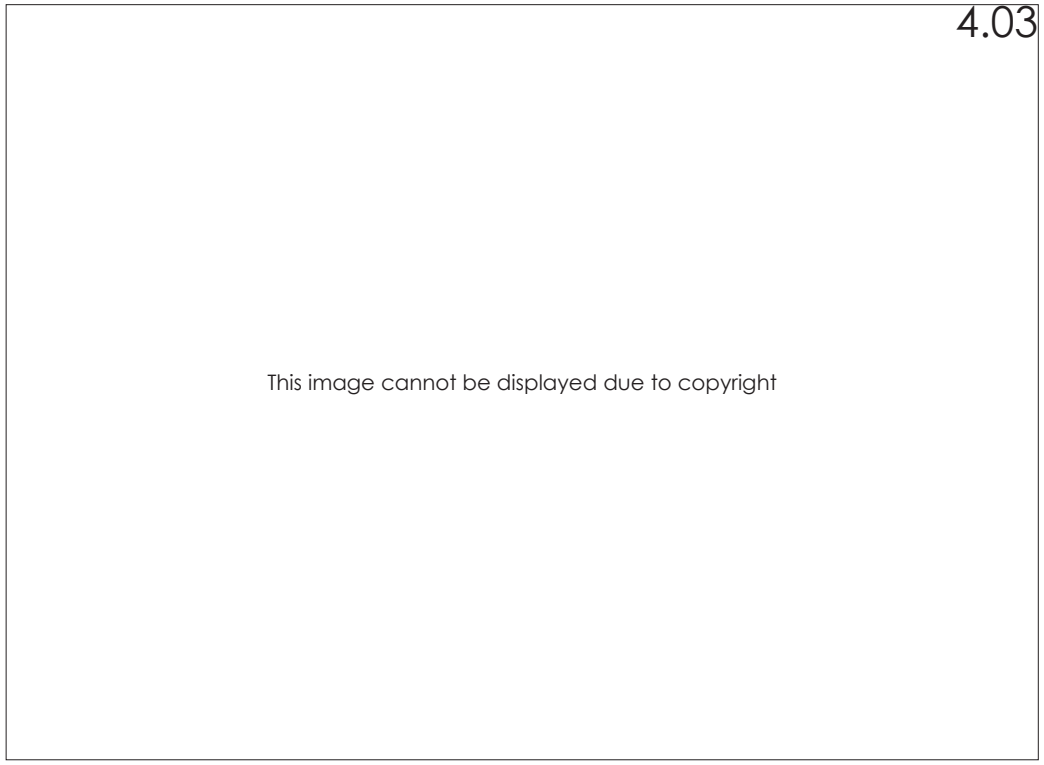


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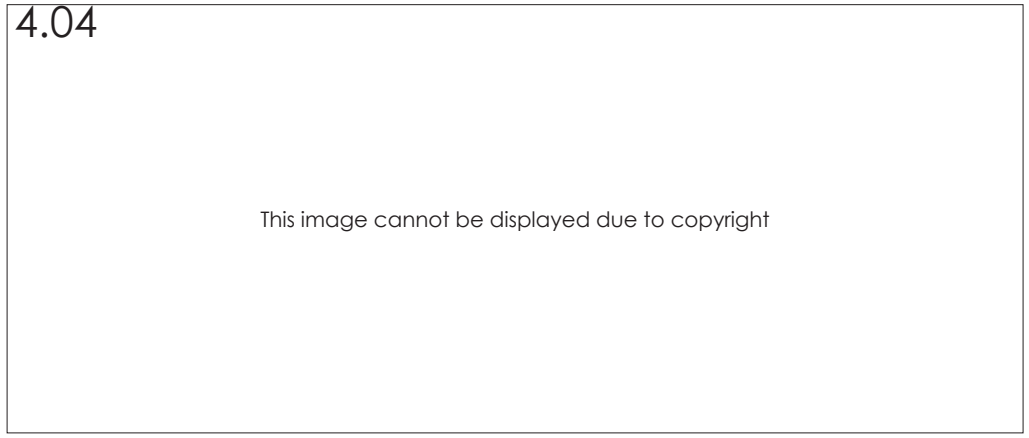


4.04

Fig 4.01. Interior Outdoor Space
Fig 4.02. Fixed Bathroom and Kitchen
Fig 4.03. Possible Room Layout
Fig 4.04. Circulation

# CASE STUDY 1

## Polytechnic University of Catalonia Student Accommodation

## H Arquitectes and DataAE

## 2013

The Polytechnic University of Catalonia has taken an unusual approach to student housing, rather than dictating what students need and how they should live, they have simply let the students decide for themselves. Built in 2011 and designed by H Arquitectes and dataAE this dorm is at the forefront of specific student design. It is intended for architecture students but not exclusively[48]. Its method of specific design is creating a flexible space where student have "endless opportunities to make their space their own[49]". Only the kitchen and bathroom are fixed in place. This gives students the opportunity to translate techniques and ideas studied into their own living environment, the ultimate test of applicability.

Xavier Ros Majo of H Arquitectes said "from the beginning we decided to give the students an empty home[50]". H Arquitecte recognizes that each student is an individual with their own specific needs and their own personal aesthetic preferences. This blank canvas idea extended beyond removal of interior fixtures to the finish itself in which they "…simply left the surfaces raw.[51]" This contradicts standard practice which assumes all students needs and inclinations are the same. In particular they have acknowledged the need for architecture students to have the "opportunity of designing their home, inside at least[52]."

48 Fearson (25)
49 O'Malley
50 Fearson
51 Liese
52 Fearson

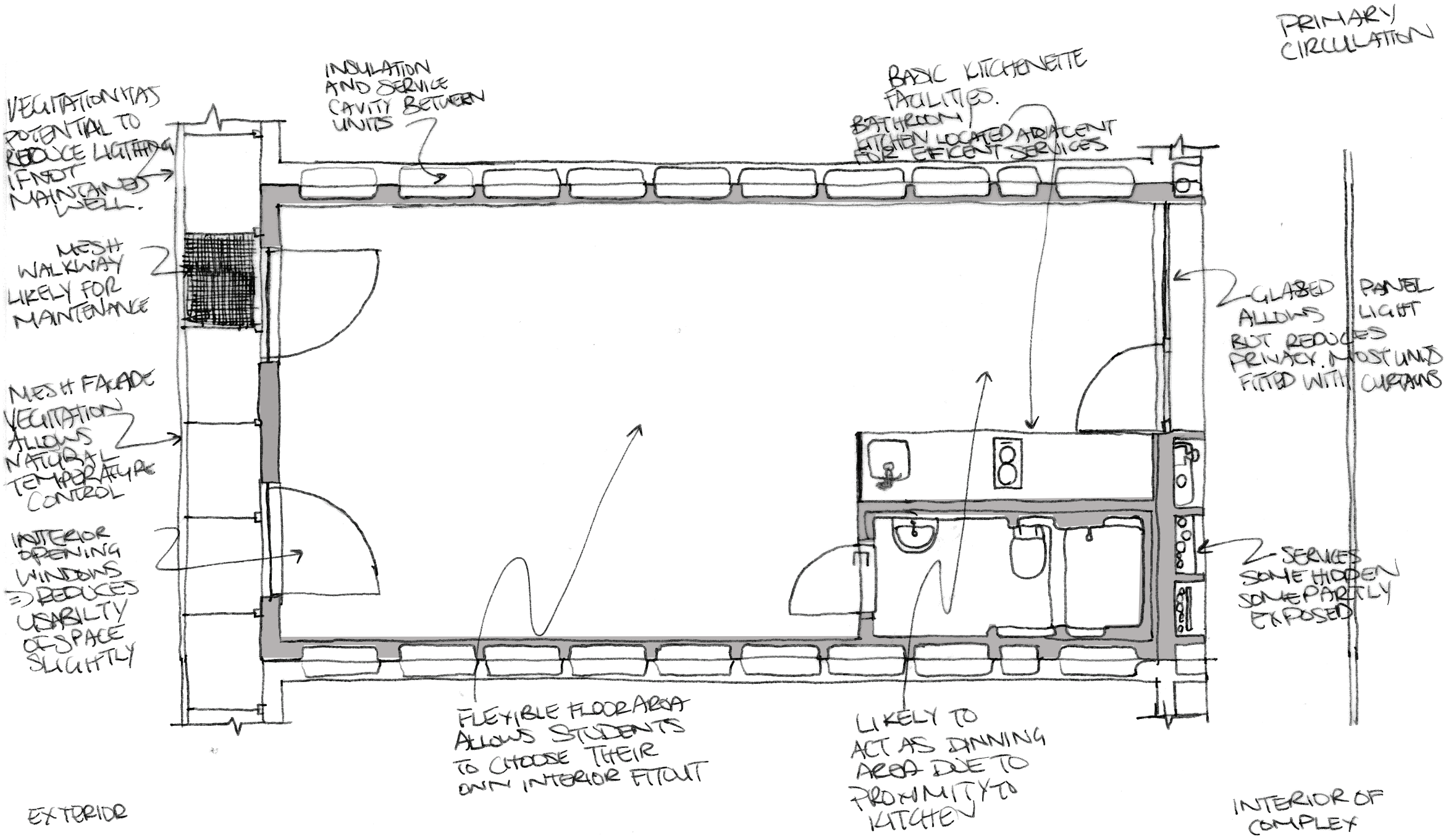


Fig 4.05. Floor Plan Analysis of Single Unit

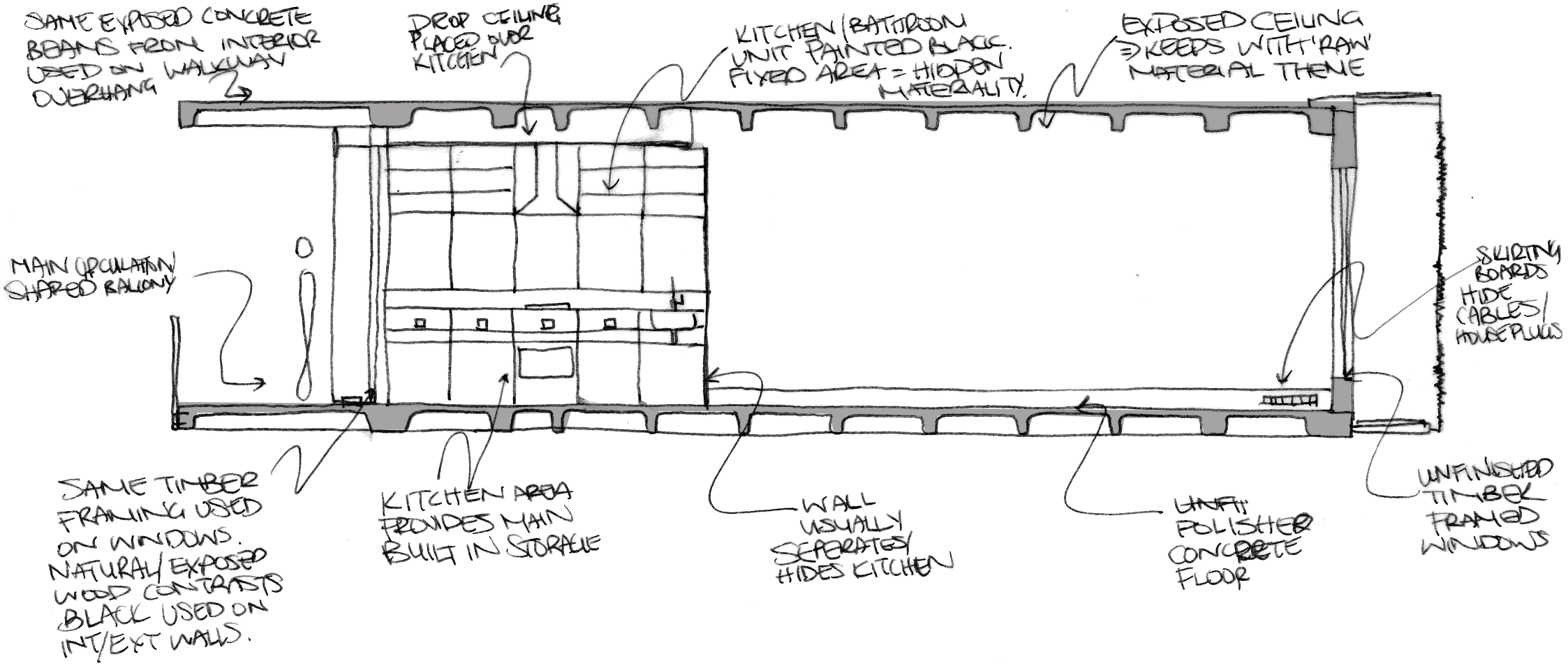


Fig 4.06. Sectional Analysis of Single Unit

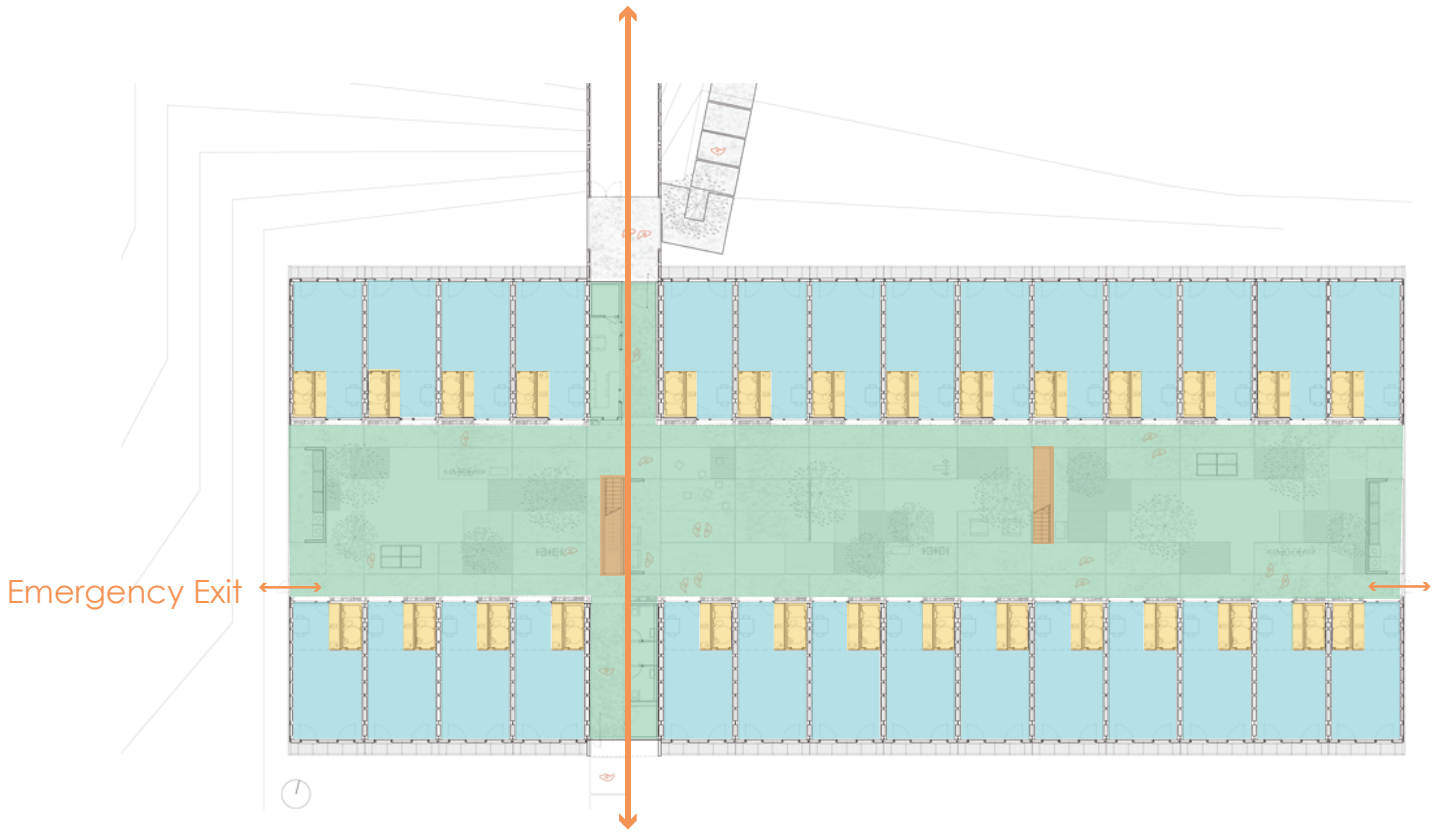


Fig 4.07. Schematic Plan of Whole Complex

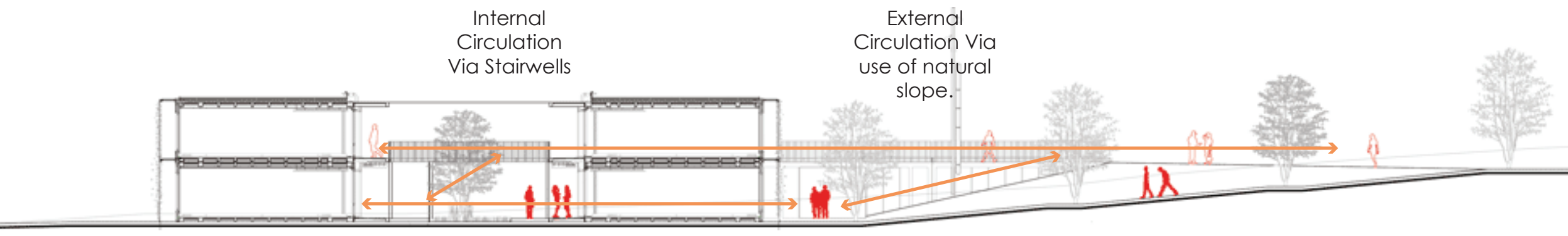


Fig 4.08. Sectional Diagram of Circulation

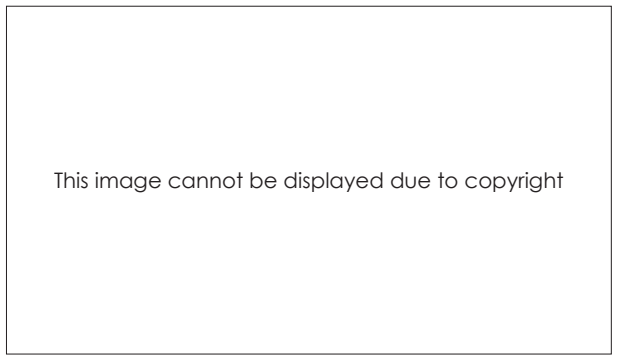


Fig 4.09. Left: Facade immediately after construction. Right: Vines growing along facade to create natural temperature control.

Not only are the units fast to assemble, cost effective to run, "the individual components can easily be removed and reused elsewhere.[53] This strong sustainability and life cycle focus has allowed the project to use 50% less construction materials with 70% lower energy consumption than a standard building[54]. Vegetation is used on the exterior to both break up the repetitive façade and to shelter the units from the sun reducing heating and cooling costs.[55]

The design utilizes the largest modular transportable by truck at 5m x 11.2m[56] to create a generous studio apartment that can easily accommodate one or two students comfortably. The 40m$^2$ floor area is over double the floor area of 12-14m2 as recommended by University Architecture[57]. Although the design is radical in its interior design and its size it still conforms to a traditional corridor arrangement bordering a central courtyard that acts as the "heart of the complex[58]". Design focus is clearly on quality rather than quantity with a total of only 57 units, making them both desirable and exclusive. Circulation is well crafted with a 50% reduction in transition space through using the surrounding typography to their advantage. The scheme backs into a slope allowing the upper level to be accessed via a platform extending from the ridge. As the whole scheme is only two floors no elevator is needed greatly reducing costs and possibly attributing to the generous floor area. Emergency stairs are located in two areas as shown in figure 4.07.

53 Liese
54 Meinhold
55 Liese
56 Liese
57 B. Edwards
58 Liese

4.10

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4.11

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Fig 4.10. Bathroom and Entry
Fig 4.11. Upper Bed Folded Down
Fig 4.12. Living Space / Second Bed
Fig 4.13. Exterior of M-CH
Fig 4.14. M-Ch Complex

# CASE STUDY 2

## Micro Compact House (M-CH)

Richard Horden

2005

The Micro Compact House (M-Ch) offers an affordable student housing solution that does not compromise on quality of construction or design but focus on "efficiency and simplicity.[59]" Developed at Technical University of Munich the M-Ch is a prefabricated micro house, designed to house 1.5 people in only a 2.4m interior cube[60].

"The M-Ch is intended to be a real house[61]" and as such houses all the same functions, including two beds. It succeeds in housing so many functions in such a miniscule space by looking beyond architecture and into the realm of transportation design[62]. Streamlining techniques were inspired by automotive, airplane and yacht design[63]. Overlapping zones rather than dedicated rooms was crucial in achieving the 2.66m$^2$ footprint. Human functions were categorized into sleep, hygiene, food prep and work.[64] With each function transforming as needed as illustrated in figure 4.17. The dining room becomes the study, the study becomes a second bed.

59 Kronenburg (107)
60 Richardson (320)
61 Kronenburg (109)
62 Kronenburg (108)
63 Kronenburg (108)
64 Richardson (320)

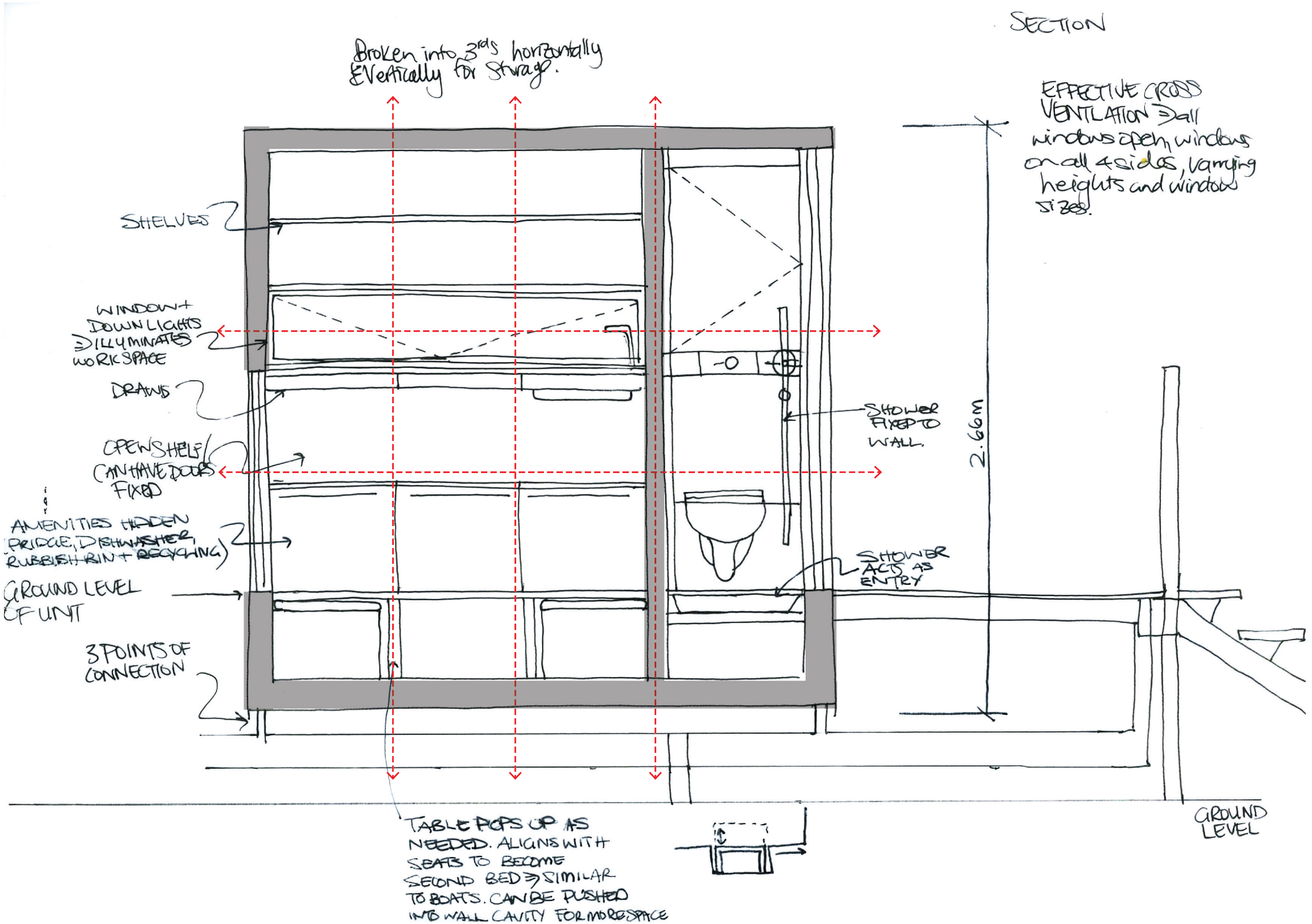



Fig 4.15. Sectional Analysis of M-CH

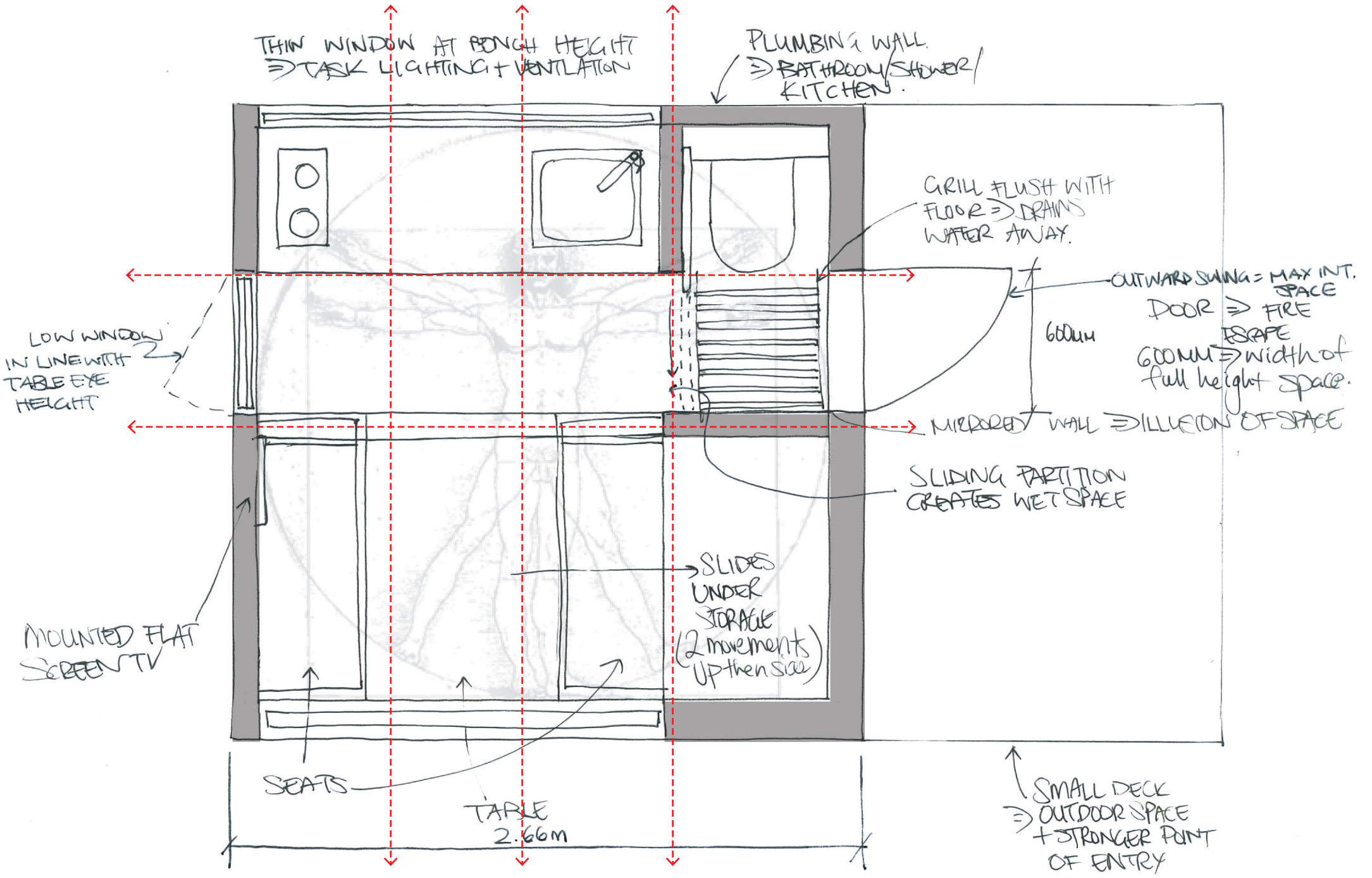



Fig 4.16. Plan Analysis of M-CH

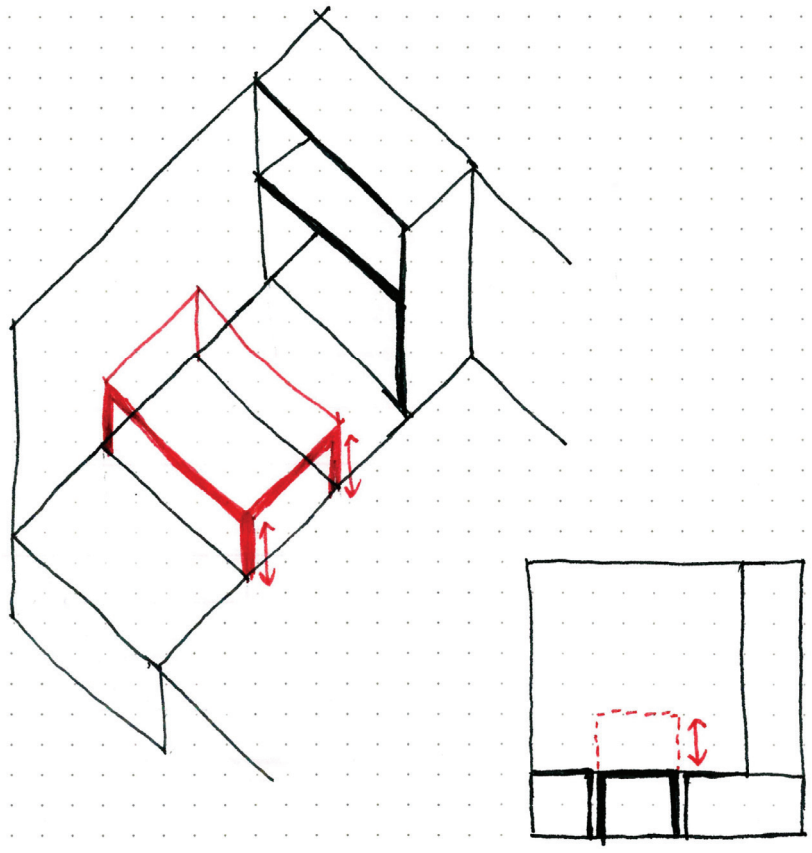
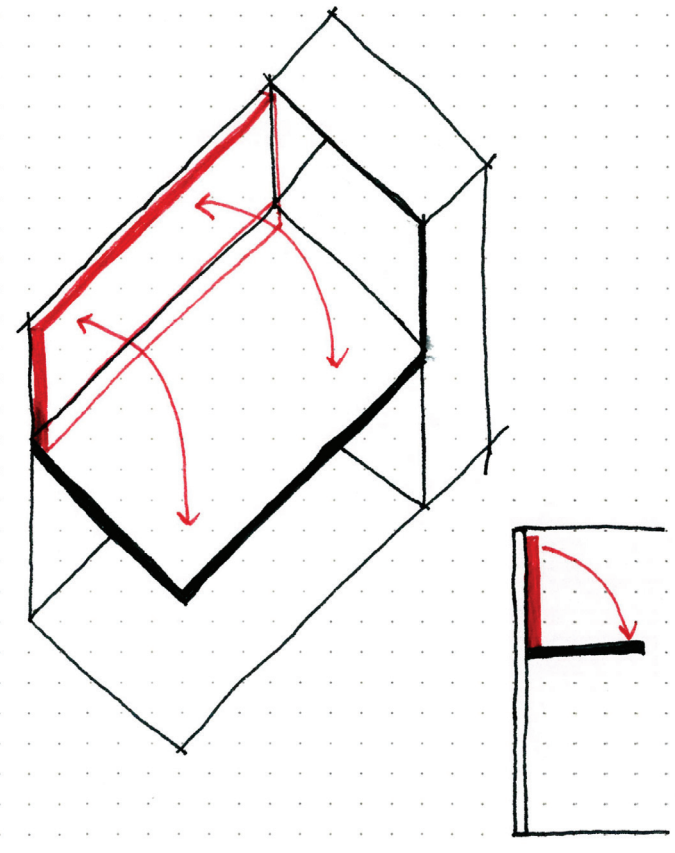


TABLE TRANSITION INTO SECOND BED



FOLDING DOWN OF MAIN BED

Fig 4.17. Transformative Furniture Functional Diagrams

Modernism is a common influence on micro-architecture and the M-Ch is no different. Focus is placed on meeting essential human needs while really bringing to life the idea of 'Less is more'. Horden takes this notion one step further to establish what he means by less is more, "Less material. More Nature.[65]" This has developed into a common theme of micro architecture to "touch the earth lightly[66]" as clearly evident by the three pronged foundations that make the M-Ch appear to float above rather than being permanently embedded (figure 4.13).

The $O_2$ Village in Munich (figure 4.12) is a prime example of accommodation designed by students for students. This significant difference plays an important role as to why it is so successful despite its small size. Students understand their needs and what they want and are relentless in pursing it. It is rare that such a high-tech and high quality house is aimed at the student market. The student market is a transient one that is rarely acknowledged and designed for.

"Life in a Box" investigates what it is like living in the Micro-Compact House. Horden says it is "difficult to explain, it is something you need to experience[67]" and that you need to "think small and get into the mind-set[68]" in order to enjoy it. We live in a world of excess. Excess space, excess waste and excess damage to the environment. This is what has become an acceptable way to live. Changing our mind-set will significantly impact the amount of space we think we need. A student in the $O_2$ village in Munich said that "living in the 'M-Ch' takes something away from you 'capacity' and gives you something in return'.[69]" This begs the question of what does it give you? Does it give you a greater appreciation for space, or a deeper understanding of architecture and product design? Horden proposes that what it might give is variety, with the ability to exchange owning one house in one location for several in many locations.[70]

65 Horden
66 Horden (12)
67 Cawthorn. "Life in a Box"
68 Cawthorn. "Life in a Box"
69 Richardson (326)
70 Kronenburg (109)

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Fig 4.18. Exterior of Katherine Jerymn Hall. Victoria University.

# CASE STUDY 3

## Katherine Jermyn Hall

### Interact Architects

### 2014

Katherine Jermyn Hall (KJ) is the latest addition to Victoria University of Wellington's latest existing twelve halls. Victoria now has 13 halls in total with a variety of accommodation types ranging as discussed in chapter two. This is not the first instance of adaptive re-use by Victoria, with a total of three conversions of offices into student accommodation. Only Katherine Jermyn Hall is being analysed as it is the most relevant and the most costly to date.

KJ houses 390 first year students across thirteen floors with an additional two floors for the dining hall, gym and management, located at the base of the building. Interior fit out has been undertaken by Interact Architects and Designers. It is assumed that Victoria University has strict design parameters as it is clear that similar aesthetics are used throughout all recent conversions as indicated in figures 4.21, 4.22 and 4.23.

Victoria's latest hall has sparked much controversy, with nearby residents claiming the "noise coming from the residence is unbearable[71]". Liquor bans have been in place at various stages throughout the year due to excessive drinking often resulting in property damage[72]. The height of partying at KJ resulted in one arrest and an entire floor being evacuated due to damages deeming it unsafe for students to occupy[73]. KJ is not the only hall with alcohol related issues as illustrated by figure 4.20, however they have the highest number of hospital admissions per resident.

Original floor plans presented in figure 4.24 show a regular structural grid of concrete columns, indicating post and beam construction with a central core and larger columns at the exterior of the building. This is likely to allow a more flexible interior with reduced column numbers and thickness. Temporary partitions maximise flexibility allowing a variety of configurations to suit tenant requirements. McKee Fehl note that seismic strengthening, extra services and additional service lift were completed to accommodate the change in use[74]. Toilets have been removed on most floors to allow for insertion of showers. Exterior remains unchanged, although all windows have been retrofitted with double glazing and openable windows.

71 Livingston
72 (Hunt)
73 (J. Edwards)
74 (Fehl)

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Fig 4.19. Boulcott Hall interior Photographs of Interior.

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Fig 4.21. Joan Stevens Hall Photographs of Interior.

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Fig 4.22. Katherine Jerymn Hall Photographs of Interior.

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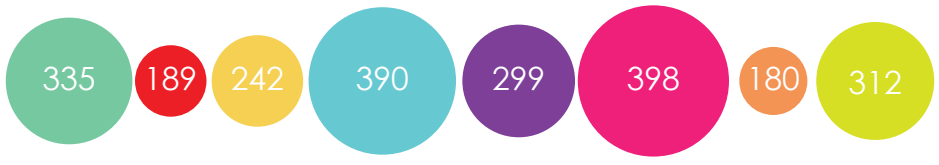



Fig 4.20. Resident Numbers by Hall

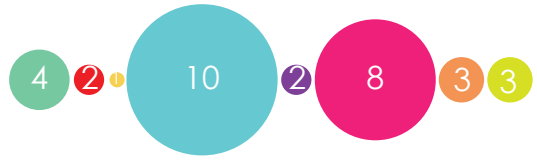



Fig 4.23. Emergency Department Admissions by Hall

Cumberland + Education House Everton Hall Joan Stevens Hall Katherine Jermyn Hall Stafford House Te Puni Vic House Weir House

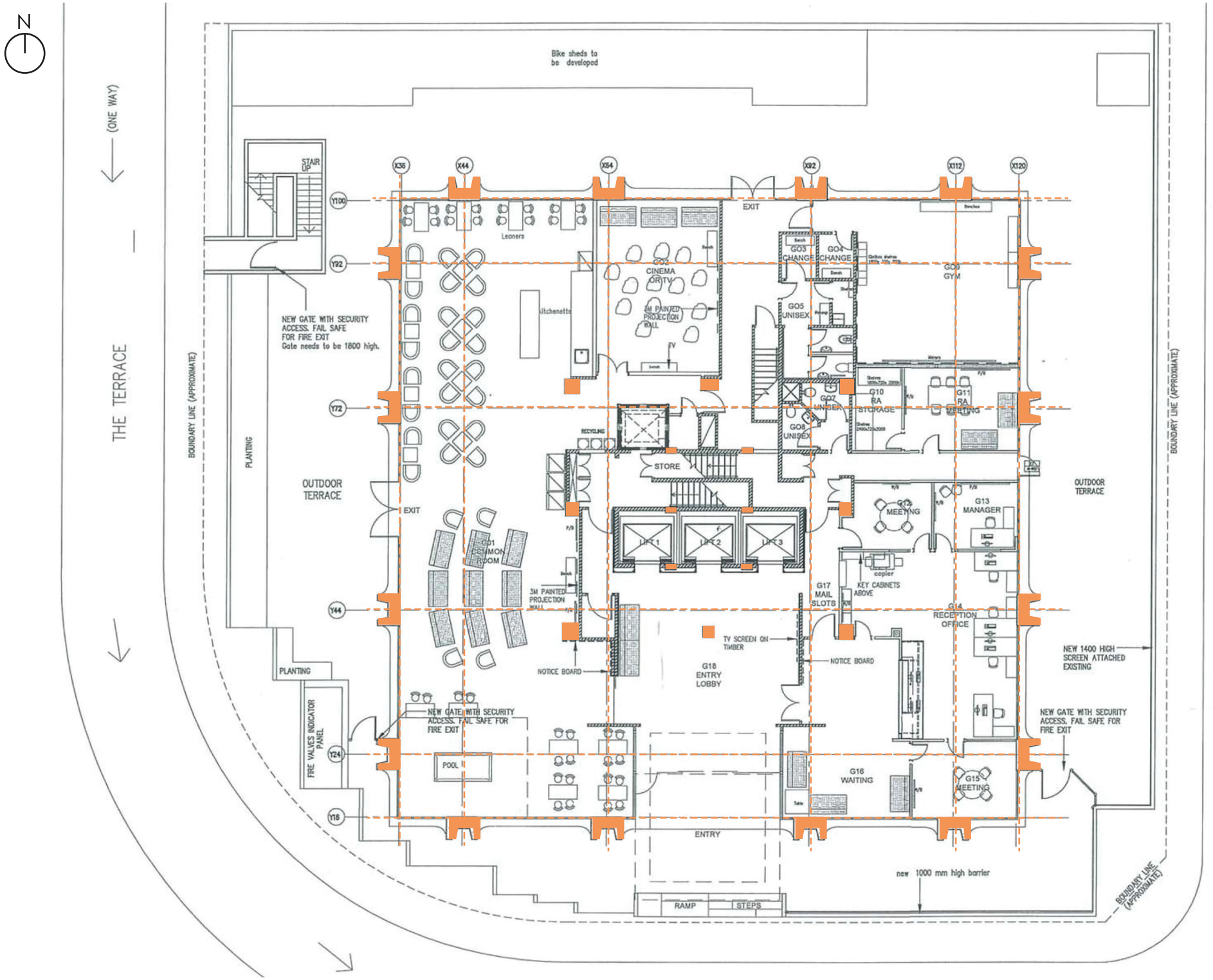



Fig 4.24. Ground Floor Analysis of Katherine Jermyn Hall

SCALE 1:100

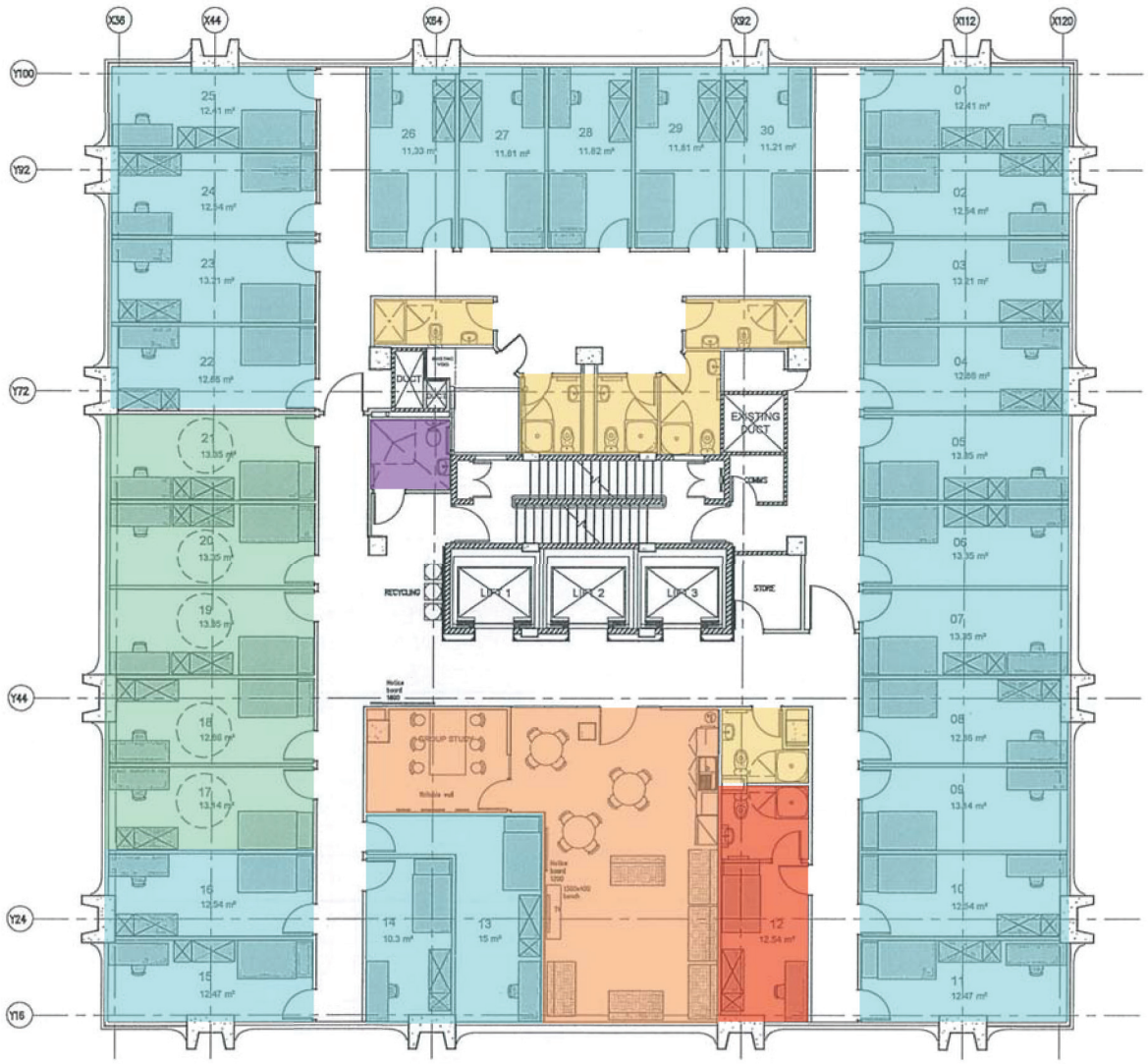



Fig 4.25. Typical Floor Analysis

SCALE 1:100

KEY

- Study Room
- Accessible Bedrooms
- Accessible Bathroom
- Bathroom
- Bedroom
- RA Suite

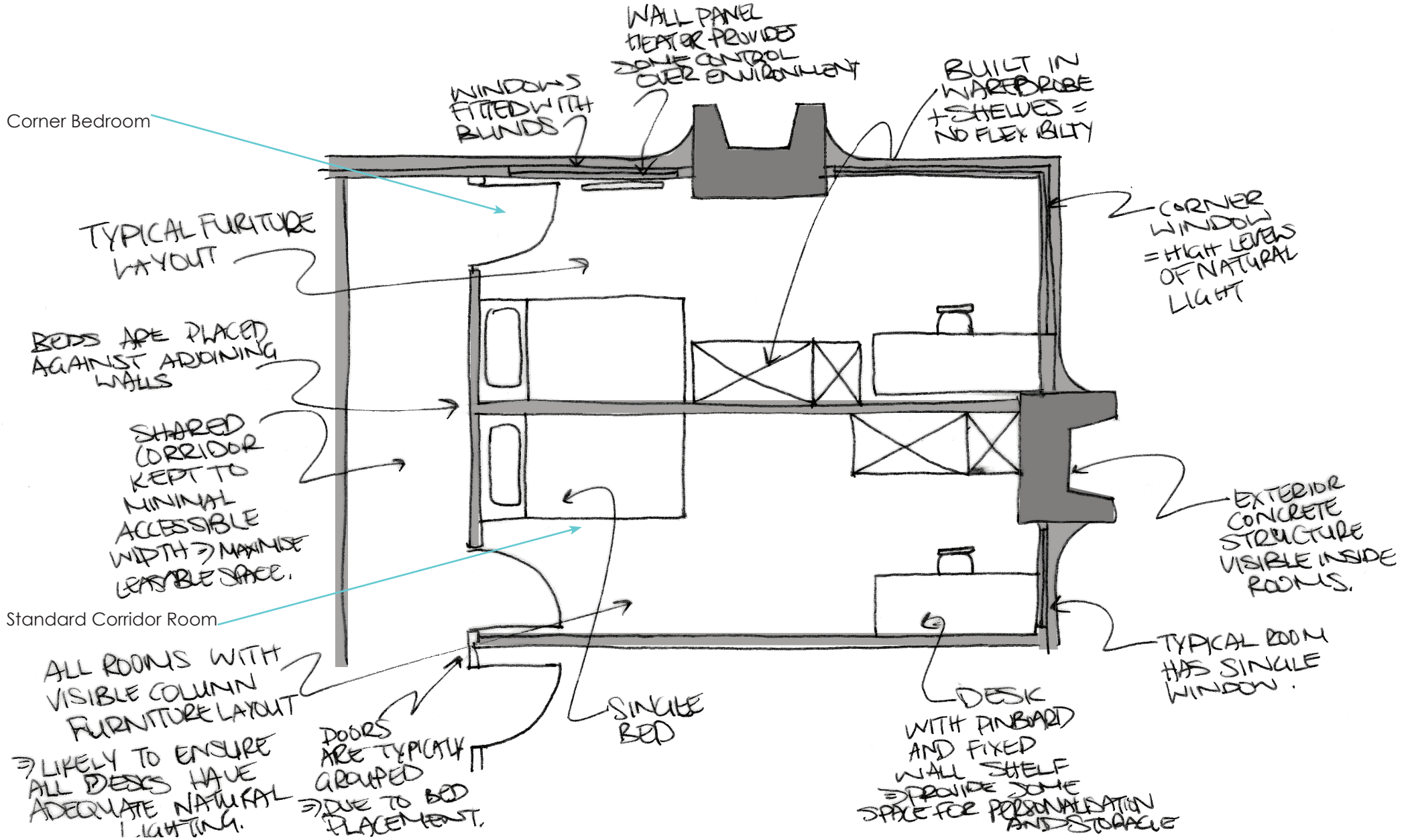



Fig 4.26. Typical Bedroom Ana;lysis

Interact architects have clearly considered cost and structural implications. The overall building layout is logical with the ground and first floor housing all communal spaces and admin. These floors display creativity and flexibility however still follow a similar aesthetic to other recent conversions. In terms of student rooms this design leaves much to be desired, with thirty rooms per floor and thirteen floors in total it is clear to see the repetition of plans. Thus being cost effective in design and construction. Most rooms have the exact same layout making it difficult to distinguish between rooms and floors (figure 4.25). Rooms located at the corner of the building have a different interior layout to account for the increased amount of windows (figure 4.26).

Floor areas range from 10.3$m^2$ to 15$m^2$. The largest room has a significant amount of wasted space simply providing access, in an effort to squeeze one more room onto each floor. Every room receives direct natural light, this is one major issue in office to residential conversions that has been successfully mitigated. This is in part due to the central core forcing bedrooms to the exterior. Bathrooms receive no natural light due to being located in the centre of the building, however the transitory nature of these spaces make it insignificant. It is assumed that there is one Resident Assistant room per floor fitted with an ensuite, however minimal extra amenities are included beyond this. Interestingly the room is also one of the smaller rooms on the floor, however it is placed away from residents rooms allowing slightly more privacy. Common rooms and a small study space are placed on each floor, allowing a place for residents to interact and study. Each is also fitted with a kitchenette allowing residents some freedom and flexibility.

This is a clear example of cookie cutter/copy and paste design attempting to maximise profits. Minimum facilities required by the typical student are successfully provided to each student however are completely inadequate for an architecture student. The design does not cater to any specific students needs and creates a lack lustre and monotonous environment that does nothing to inspire students. It is clearly evident by the amount of damage done to the hall this year that students take no pride or personal responsibility in their accommodation.

CHAPTER

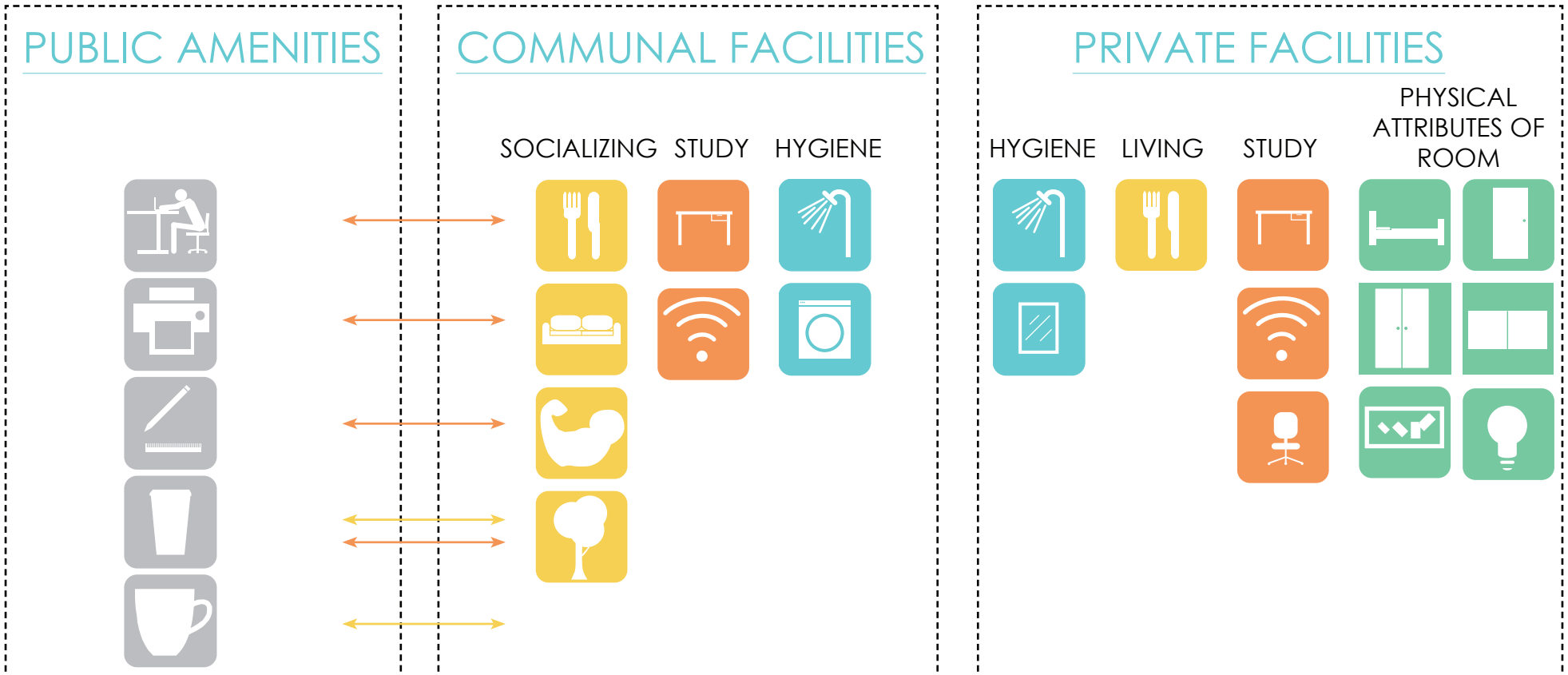
# 05

# SCHEME METHODOLOGY

Overall there are three parts to this design, the adaption of the existing building to accommodate a change in programme, the walkway and accompanying ancillary functions and lastly the addition which houses the prefabricated ideal architecture units.
Ancillary functions added to the project to improve public interaction will cater towards the need of architecture students. These include a café/gallery, collaborative architecture studio, printing shop, stationary supply store and a coffee shop. The gallery space is an integral part of café culture which provides a space for student works to be viewed by the public. The gallery space facilitates another common area of delight, art and critique to take place. The collaborative architecture studio is extremely important function that has been somewhat lost in the New Zealand architecture registry system. Working with an architecture firm is essential to study and development but something that Victoria currently lacks. This provides the opportunity for students to gain work experience.

## EXISTING BUILDING OCCUPATION

There are many different approaches to adaptive reuse of buildings, they range on a scale from completely gutting the interior and using the façade for heritage purposes to restoring the interior in its entirety. 11 Frederick Street has fallen into the middle ground on this spectrum. The façade will remain unchanged as much as possible. The glass brick wall and entrance will be adjusted to create a more inviting entrance. Vertical circulation is shifted to become more of a feature and a central part of the design. Public amenities will primarily be kept at ground level to facilitate circulation and create a hierarchy of public and private spaces. A light well is carved out in the architecture studio to create a double height space with internal access offering increased light and architectural delight. Administration will be on the second floor allowing fast and central access without the loss of public space at the ground floor.




As discussed public amenities included in the scheme are tailored to suit student needs, these primarily cater to facilitating learning at the residence, in particular the collaborative architecture studio, print shop and stationary shop. The café/ gallery and coffee shop somewhat facilitate sleep deprivation however the contributions to socializing far successes these negative aspects. This aspect of architecture school is unlikely to change and is simply a part of the journey. Within the project there are both communal and private facilities as shown in figure 5.01, some overlap occurs in particular dinning and study. Key areas of socializing include the dining hall, common rooms, gym and rooftop terrace. In particular these facilities are very segregated from facilities provided in the unit, this creates a clear separation between shared and personal spaces. Basic requirements in the room include a double bed, storage, ability to personalize, lockable door for privacy, openable window for temperature control and artificial light. These are only the basic needs that act as a starting point

Fig 5.01. Examination of Communal Needs Verses Private Needs

# ARCHITECTURE STUDENTS NEEDS COMPARISON TO TYPICAL STUDENT

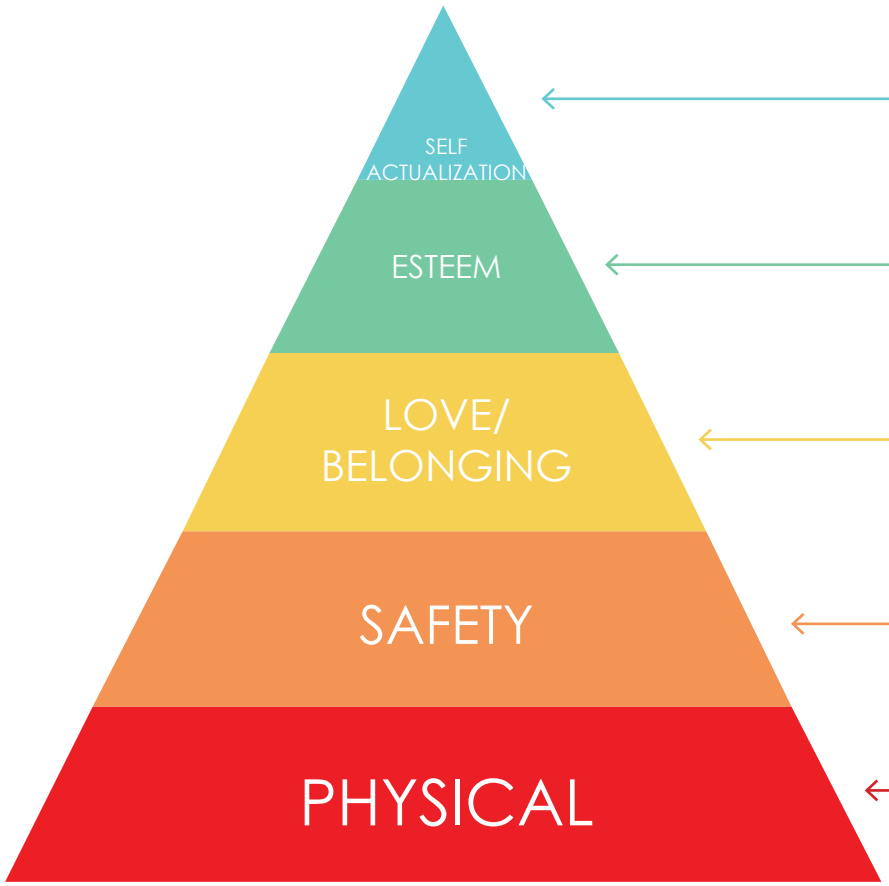



Fig 5.02. Maslow's Triangle

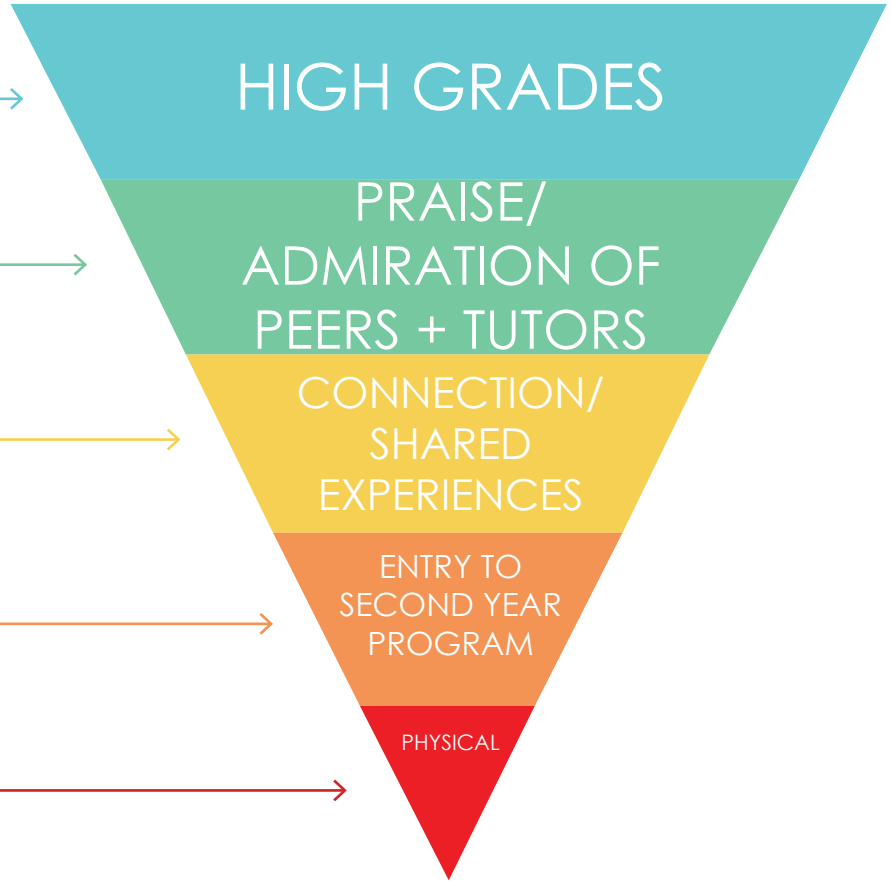



Fig 5.03. Maslows Triangle for Architecture Students

Maslow's triangle is a theory about the needs of humans as displayed in figure 5.02. Despite this theory being intended to apply to all humans architecture students are somewhat excluded from this. Figure 5.03 shows an inverted triangle with the corresponding need of architecture students. High grades and praise are the most important. Although entry into the second year of architecture school is placed towards the bottom it is still important. Physical needs remain the same however little to no importance is often placed on them, with many needs being forgotten or ignored for the sake of an assignment.

# SITE EXPLORATIONS

Initial explorations on the site were conducted using a 1:50 scale model. Units were connected to create a larger module, made up of three units each rotated 90 degrees. The roof was then aligned with the bedroom balcony to create a cascading effect. Units remain unconnected internally, maintaining the independence of each structure. Figure 5.04 displays a regimented placement on the site, this created too much clarity reducing the complexity and creativity of the form to something bland.

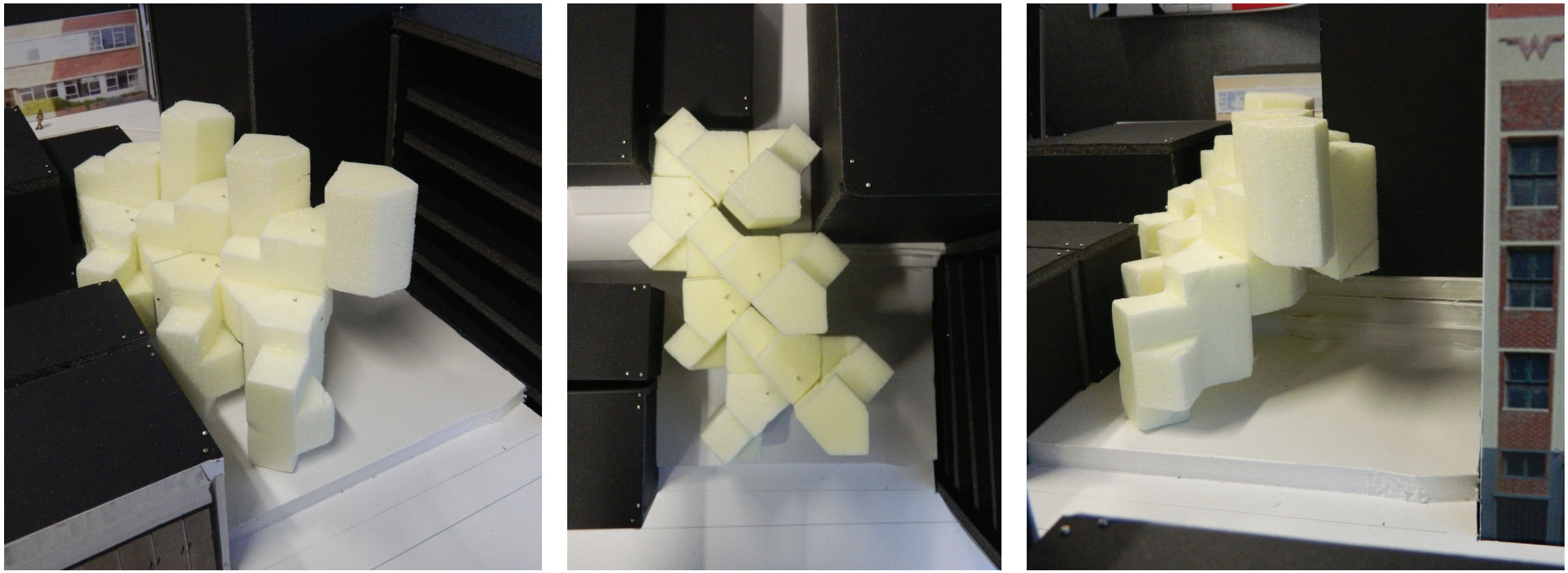


Fig 5.04. Regimented Application of Larger Module to Site

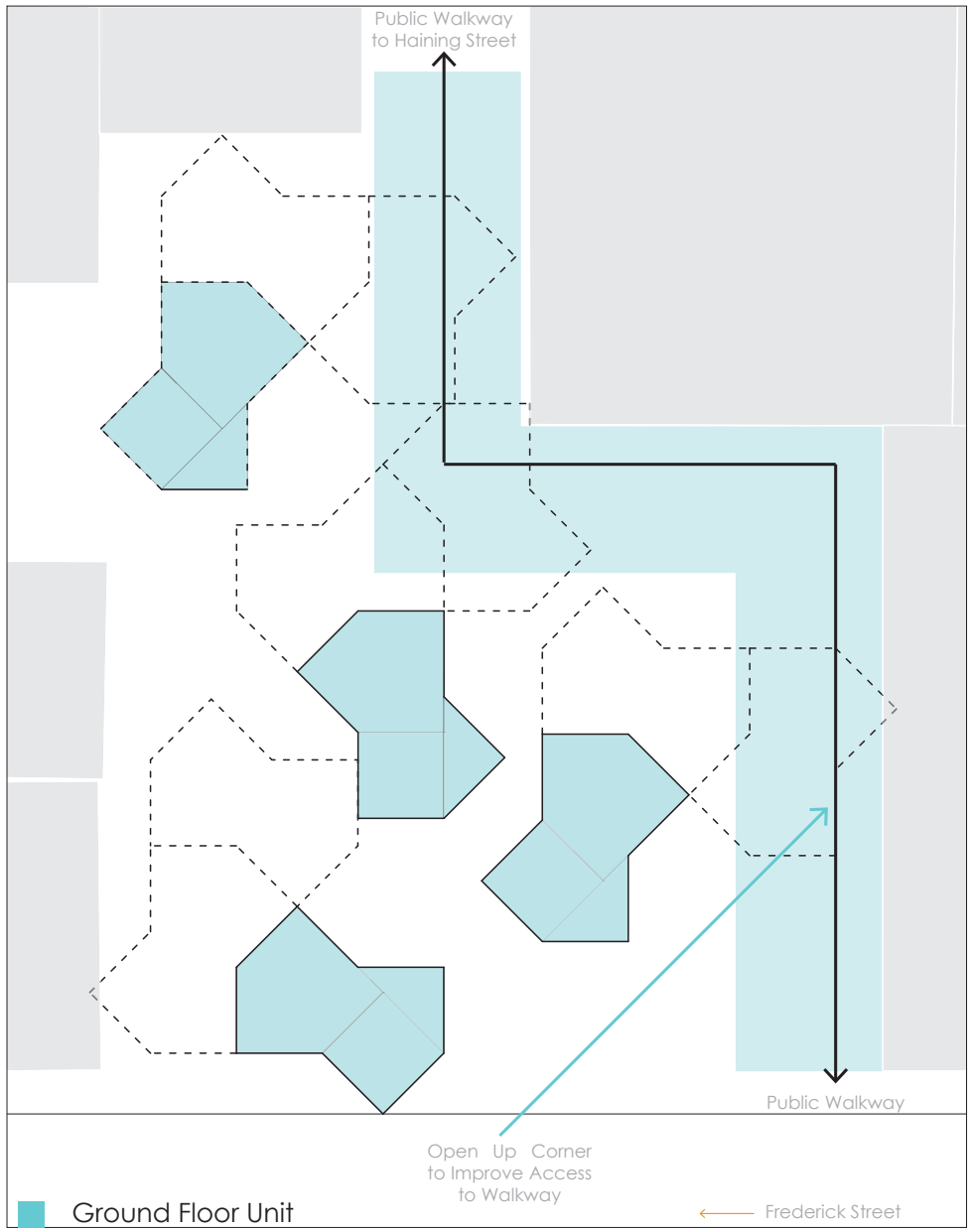
The second iteration as shown in figure 5.05 utilized the same larger module but in an unspecified manner with overarching ideas to be achieved to create a more fluid design. These included the walkway through the site, remaining within the site boundaries and height as much as possible. These ideas were translated into three layers or rules as shown in figure 5.06.

Fig 5.05. Free form Application of Larger Module to Site

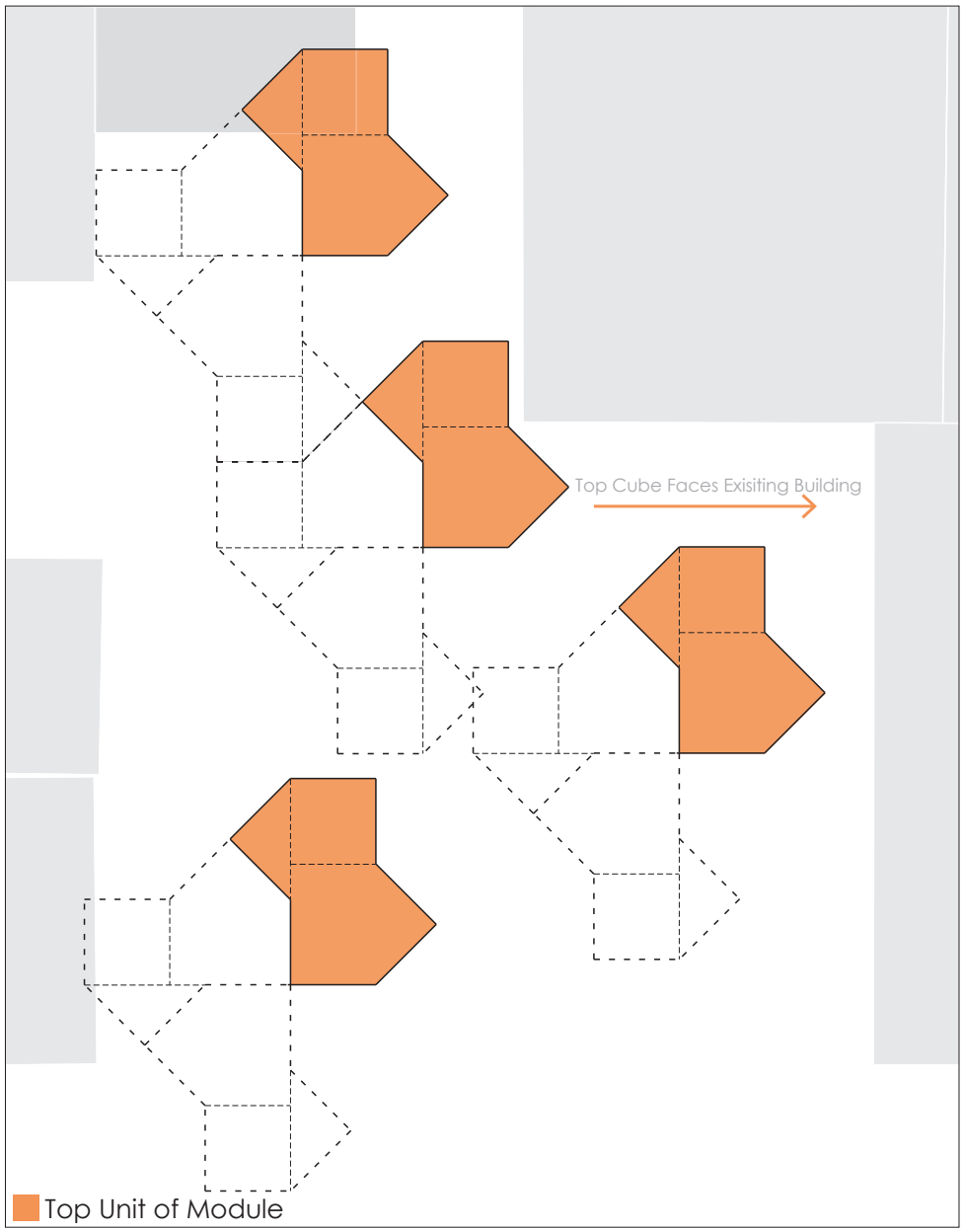
# UNIT ORGANISATION

Rules one and three are based on organization ideas whereas rule two is orientation based. At ground level the bottom unit of the larger cube must be touching the ground. A courtyard effect was desired and a walkway between Frederick and Haining streets has been carved out through the site. The bottom left side is opened up to encourage public movement through the walkway and allow for added amenities to facilitate this movement. The secondary layer is the most specific, the polygon/house shape at the top/third unit must be facing towards the existing building. The third layer is concerned with integrating the site with its surroundings, through creating a gentle slope from the back of the site to the front. This is based on heights of surrounding buildings to ensure its form not its size is the most confronting element.

Rule 1
Public Walkway

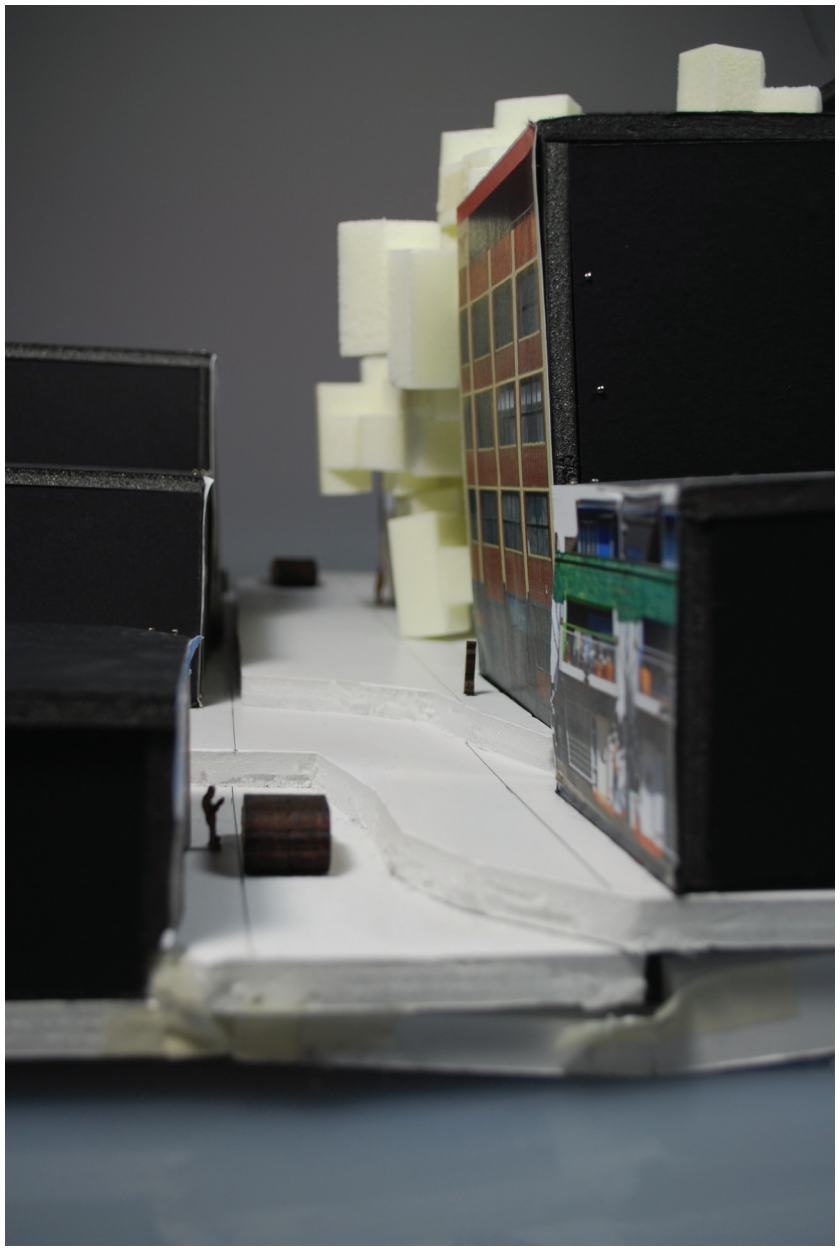


Rule 2
Parallel Orientation




Rule 3
Roof line


Fig 5.06. Unit Organization Diagram



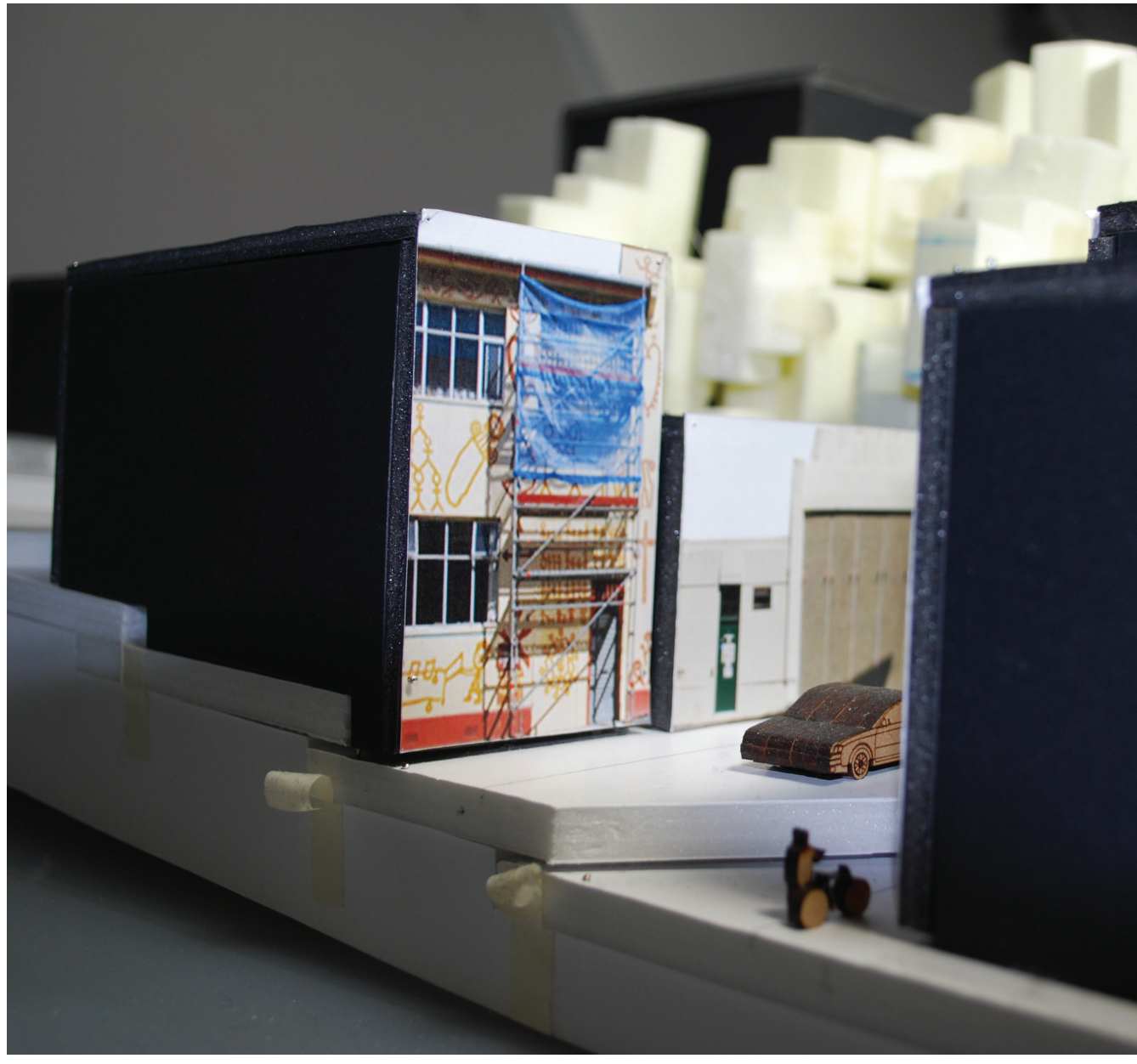
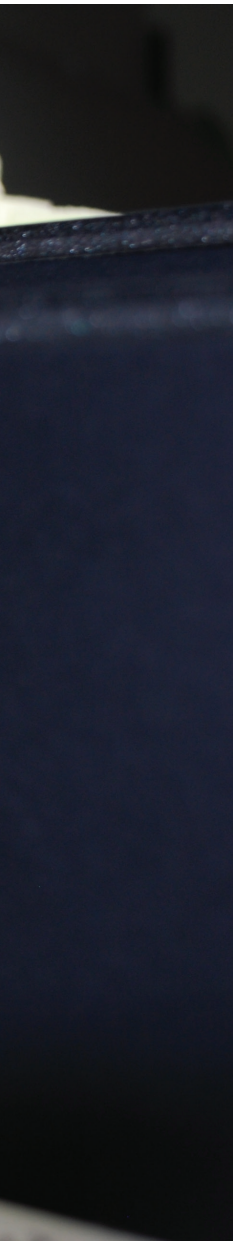


Fig 5.07. Physical Model testing Unit Organisation as diagrammed in figure 5.04



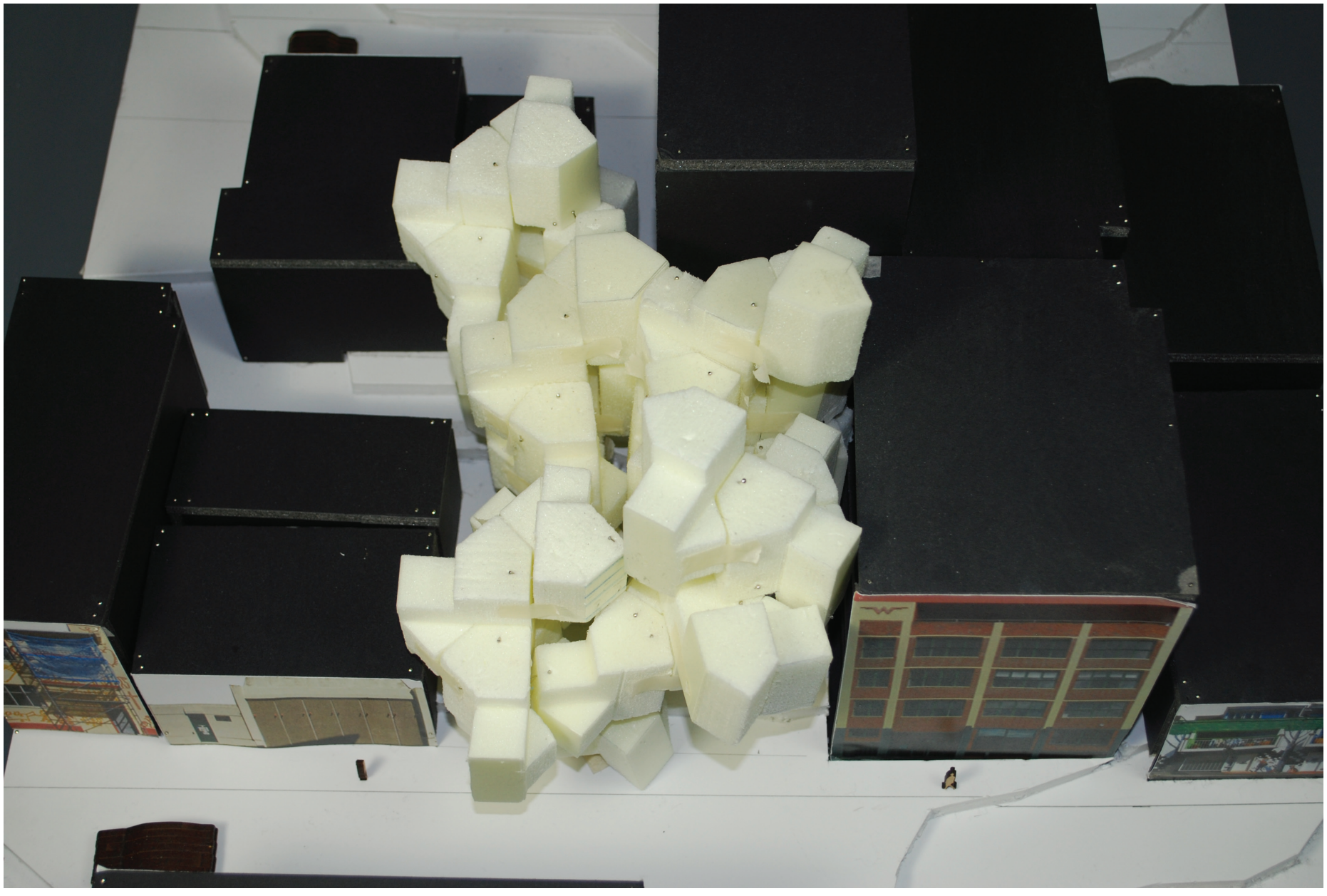
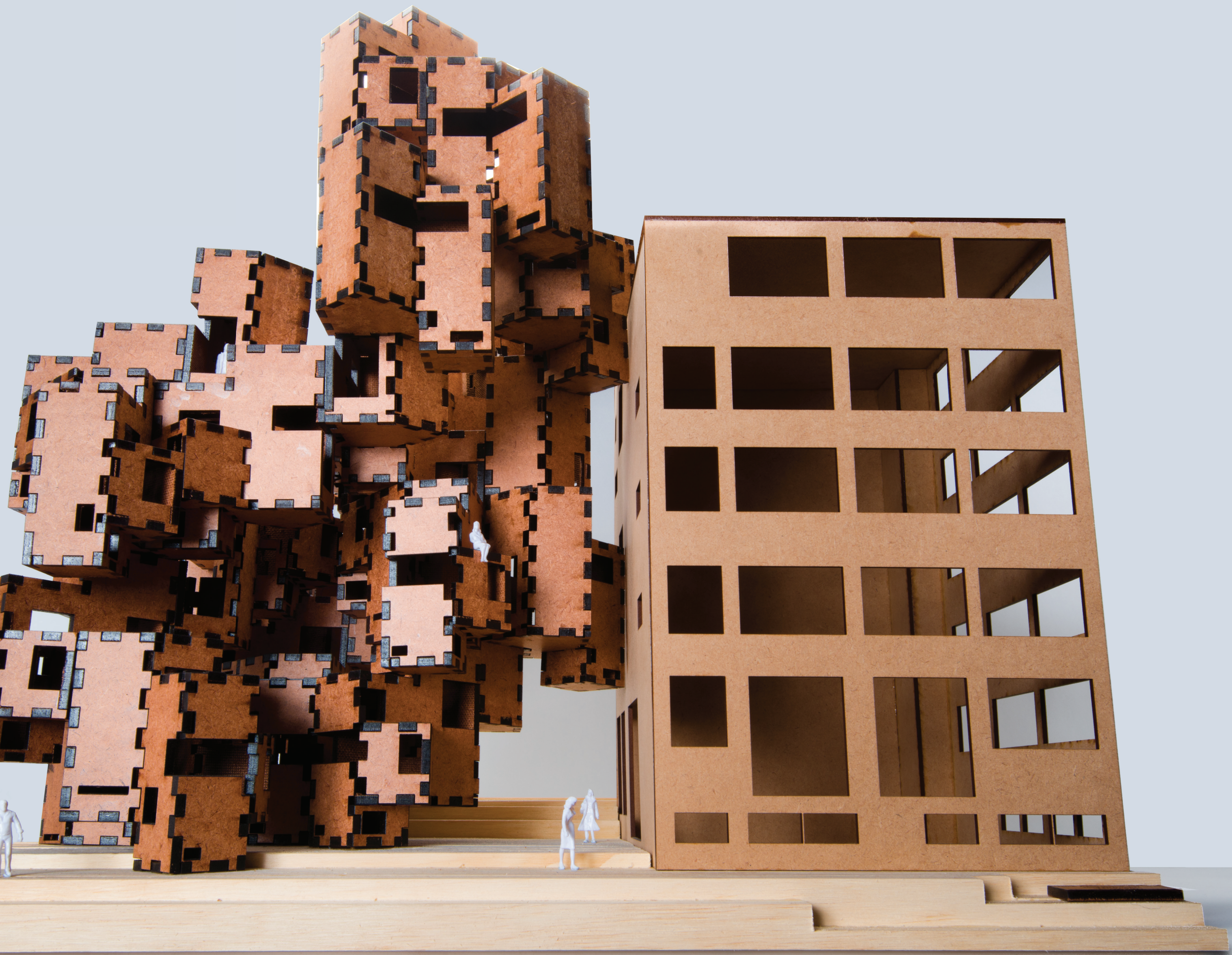


Fig 5.08. Wooden Model of Existing Building and Additional Units. Scale 1:50

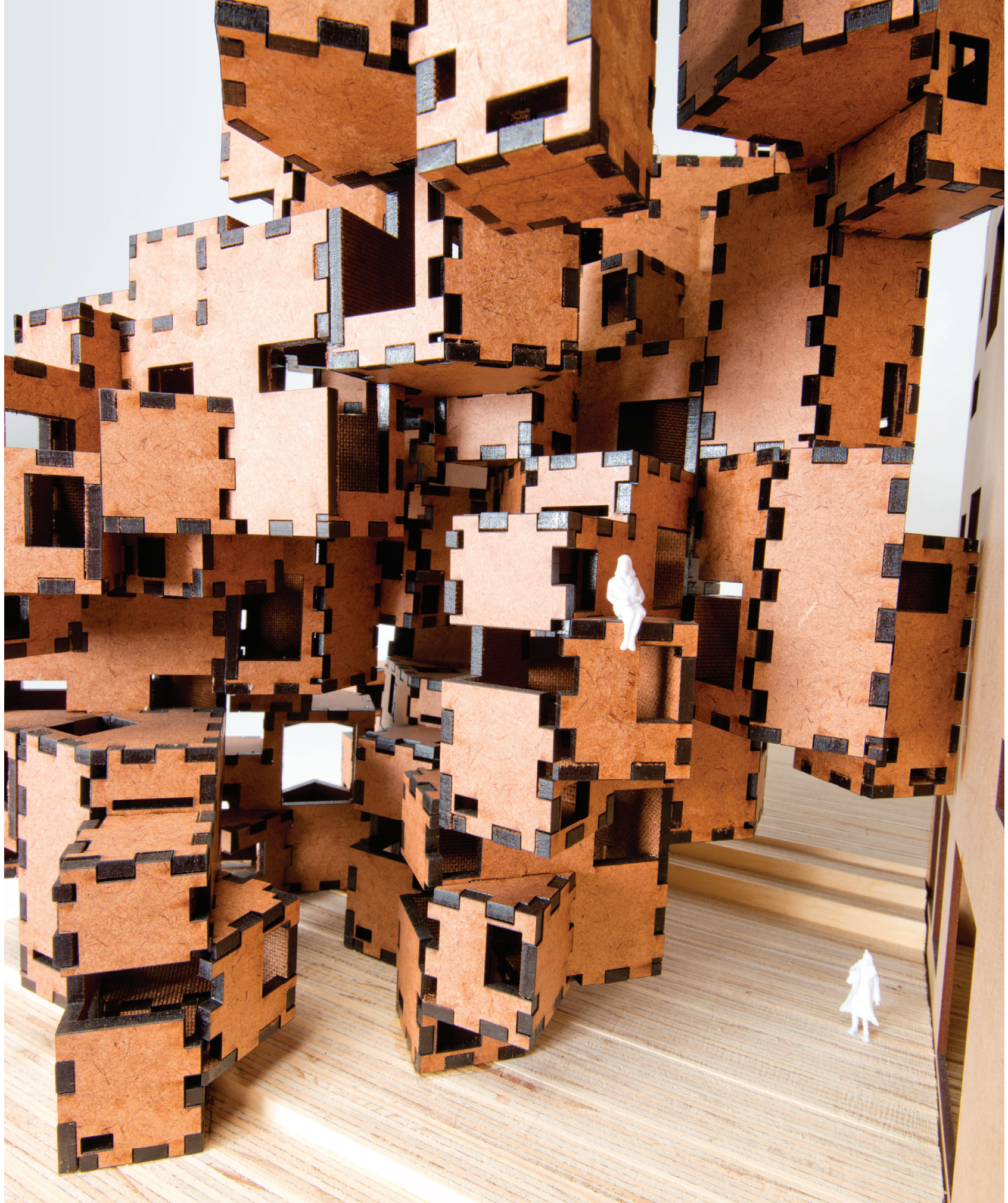


REVERSE PERSPECTIVE OF SCHEME

STREET VIEW

DETAILING OF MODEL
CONSTRUCTION METHOD

RIGHT - VIEW OF WALKWAY AND GROUND FLOOR COURTYARD



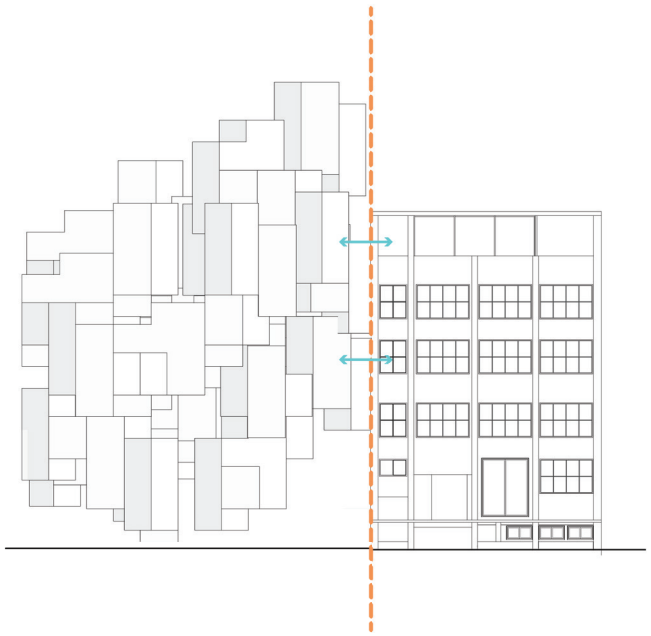



Fig 5.09. Existing Building Segregation

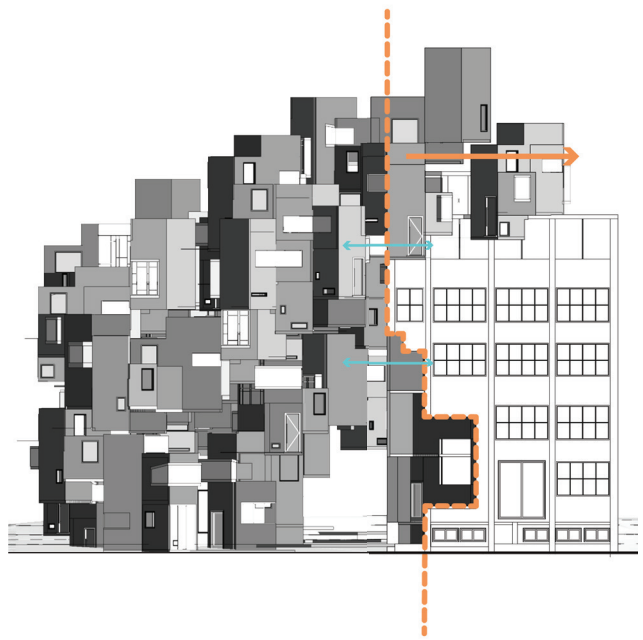



Fig 5.10. Building Integration

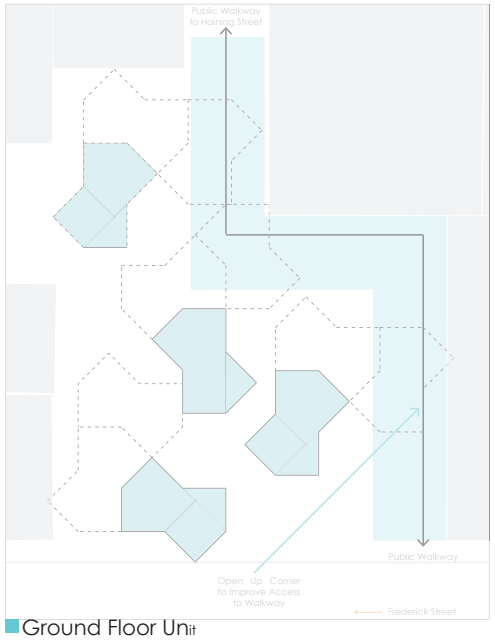
# INTEGRATION OF NEW UNITS AND EXISTING BUILDING

There is a clear distinction between the additional units and the existing building, this almost creates two visually separate buildings due to the contrast in aesthetic and form. The two horizontal connections for circulation are the only thing breaking the invisible wall between as shown in figure 5.09. Two methods have been applied to better integrate the new with the existing. Additional units placed at roof level is combined with removal of a portion of the front right corner as shown in figure 5.10 The negative detail was derived from the form of the units to reinforce the connection subtly.

# FINALIZED UNIT ORGANIZATION

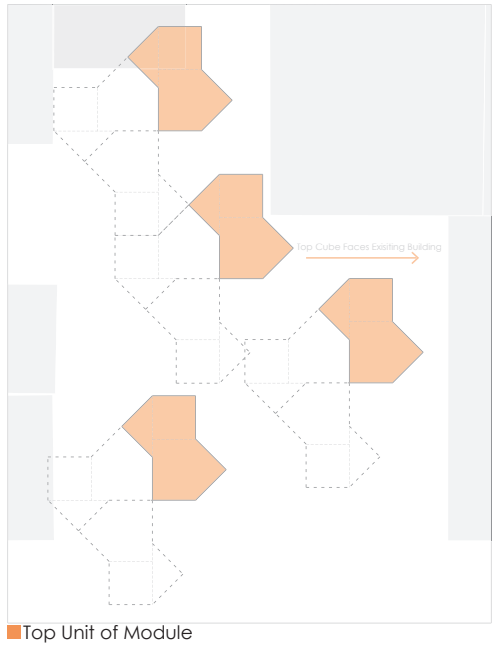
The additional units at roof level have been applied with no specific orientation as shown in figure 5.11 creating a four rule to accompany the three discuss previously.

RULE 1
PUBLIC WALKWAY



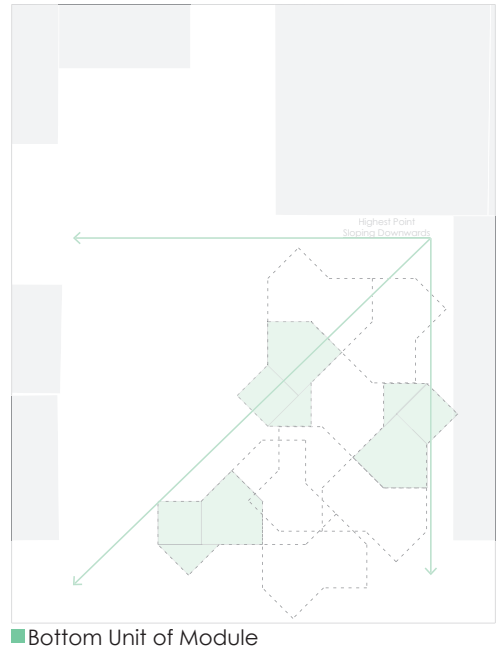

Ground Floor Unit

RULE 2
PARALLEL ORIENTATION




Top Unit of Module

RULE 3
ROOF LINE




Bottom Unit of Module

RULE 4
INTEGRATION


Fig 5.11. Additional Unit Organization Diagram

# CIRCULATION AND FACADE INTEGRATION

Circulation is complex due to lack of linear corridors mitigating a major flaw in current student accommodation standards. With the exception of the two subterranean units and units placed at ground level all other units are required to enter the main building to gain access. Connections are placed at floors two and four, all circulation branch from these two points. This is beneficial for two reasons, firstly safety and secondly creating opportunities for interactions with other residents. Floors two and four will house communal areas to facilitate interaction between residents. Floor three will hold the dining hall and kitchen, allowing equal distance from each connection. The exploded axonometric in figure 5.10 shows how the circulation works. Each unit has a landing extending the width of the front wall with one or more stairs as required to reach the next unit.

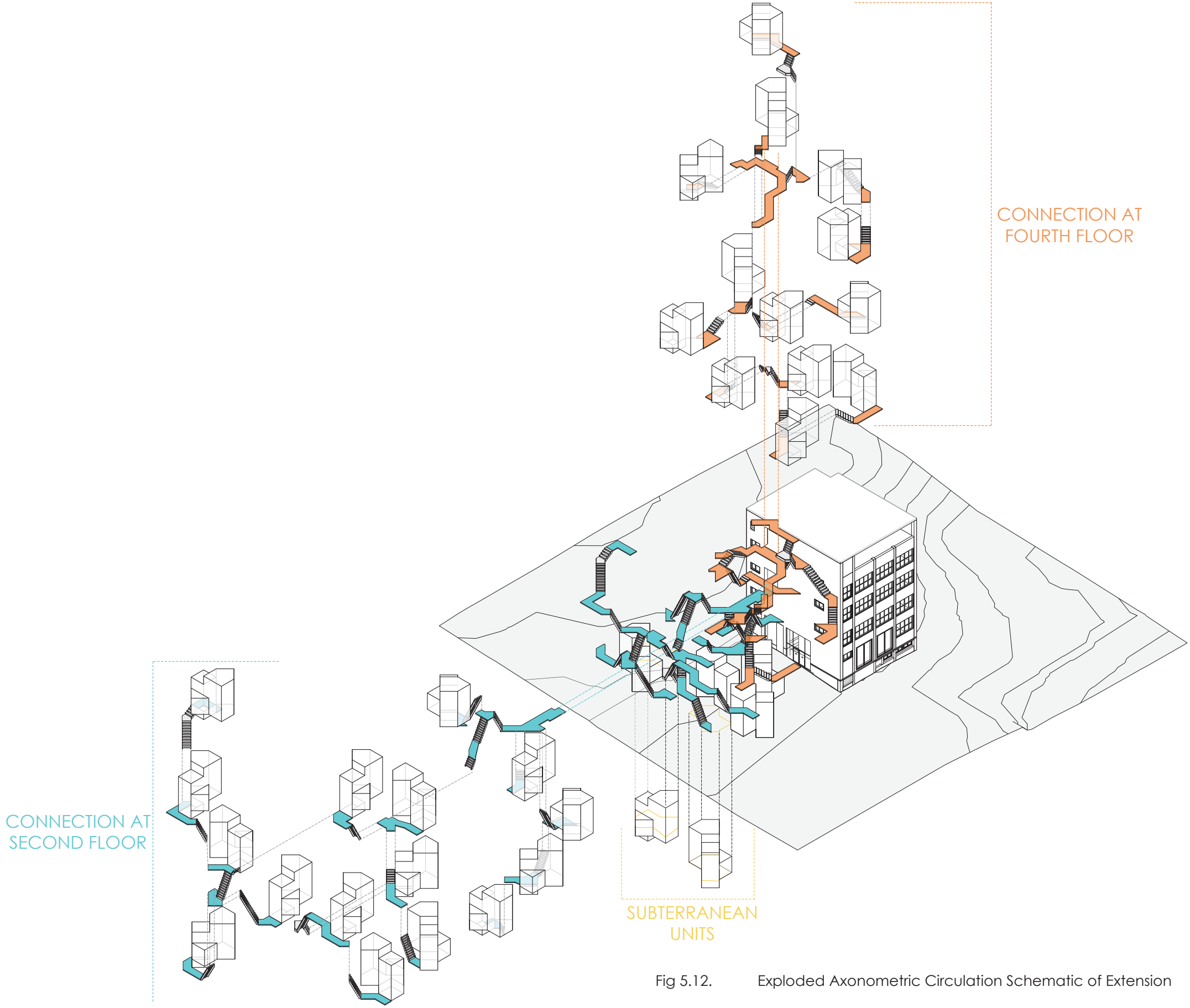


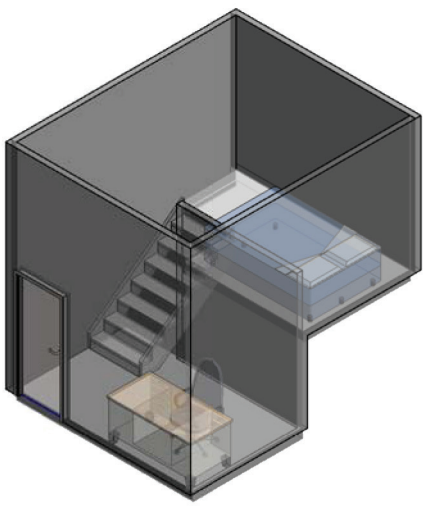

Fig 5.12. Exploded Axonometric Circulation Schematic of Extension

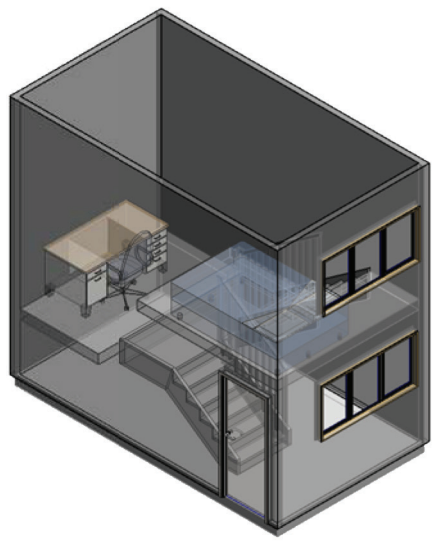
CHAPTER

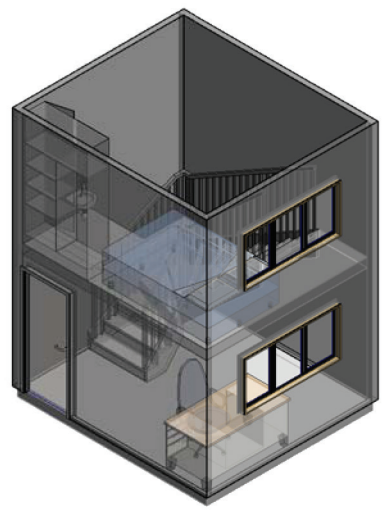
# 06

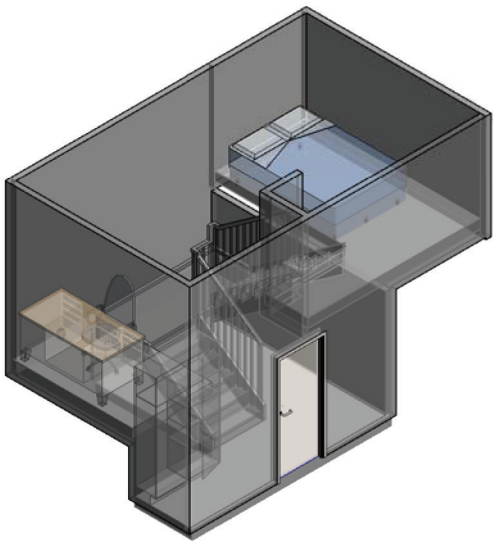
# UNIT METHODOLOGY

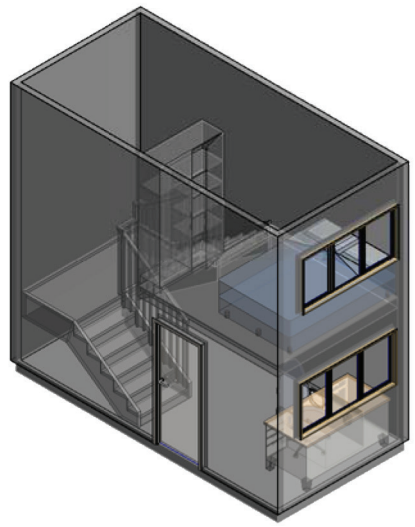
The ideal architecture unit has gone through a series of iterations, it is intended to cater to a single student's needs. It goes beyond the standard functions of a room in a typical hall to allow more independence and acknowledges architecture students appreciation of the built environment.
Each unit is broken into three floor levels, the first having a bathroom and entry, the second floor houses the main living space and lastly the bedroom is placed above the bathroom in a loft style. A small balcony is accessed via the bedroom window. All heights in the unit are based on the Modulor system, with the double height space using the same measurement as the units in the Unité de Habitation. However the plan is based around a two metre measurement and a 45 degree angle of rotation in combination with the standard 90 degree orientation. The form allows the units to fit together and tessellate perfectly or be aligned with selected faces. The heights allow the same tessellations to occur vertically. This flexibility of shape and connection has created an extremely complex form with a single unit and three layers of orientation rules as showing in the previous chapter. Window penetrations are determined by unit location within the overall scheme. Three generalized window arrangements are applied to the unit, taking into consideration unit orientation/position, view and sunlight. With one optimised for units positioned towards Frederick Street, another for those facing Haining Street and lastly one designed for unit's located in the middle of the scheme. Subterranean units are independent due to different requirements. Within each of the three window orientations there are two different entry locations determined by the most effective line of circulation. Thus there are six variations of units. One basic layout has created six variations. Unit type and location within the site ensure that each unit has a slightly different view from its neighbour ensuring each user an independent experience of the hall. This design goes beyond traditional accommodation typologies provided by university halls.

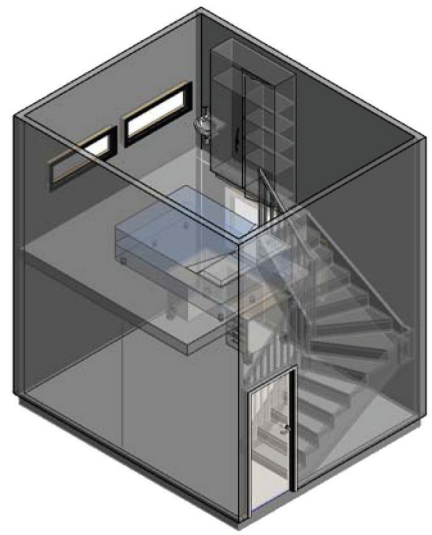






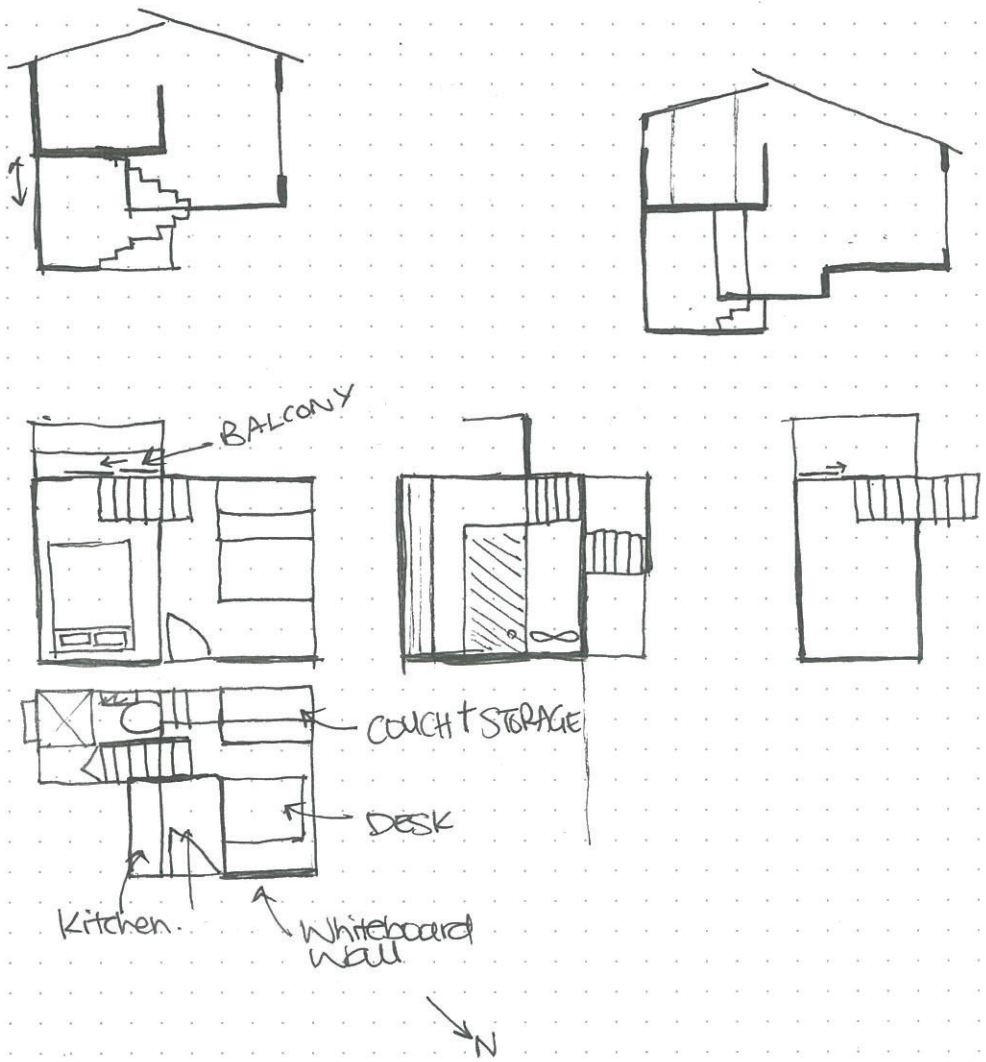


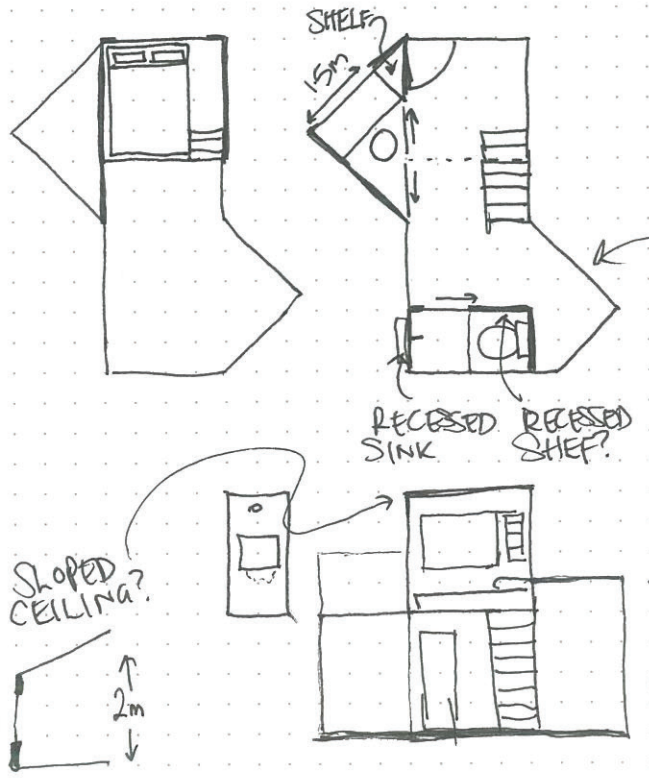


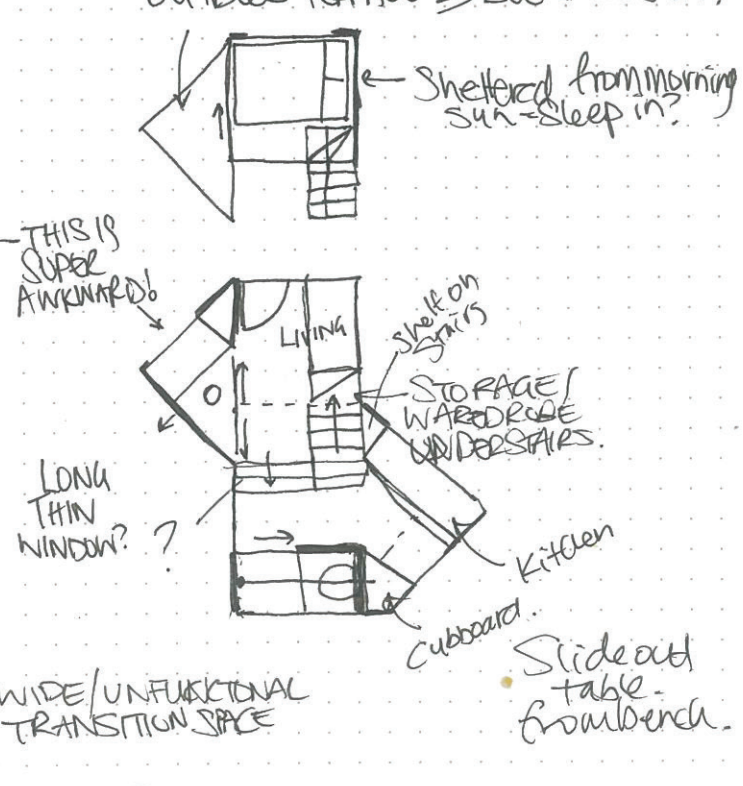


# INITIAL DIGITAL MODELLING

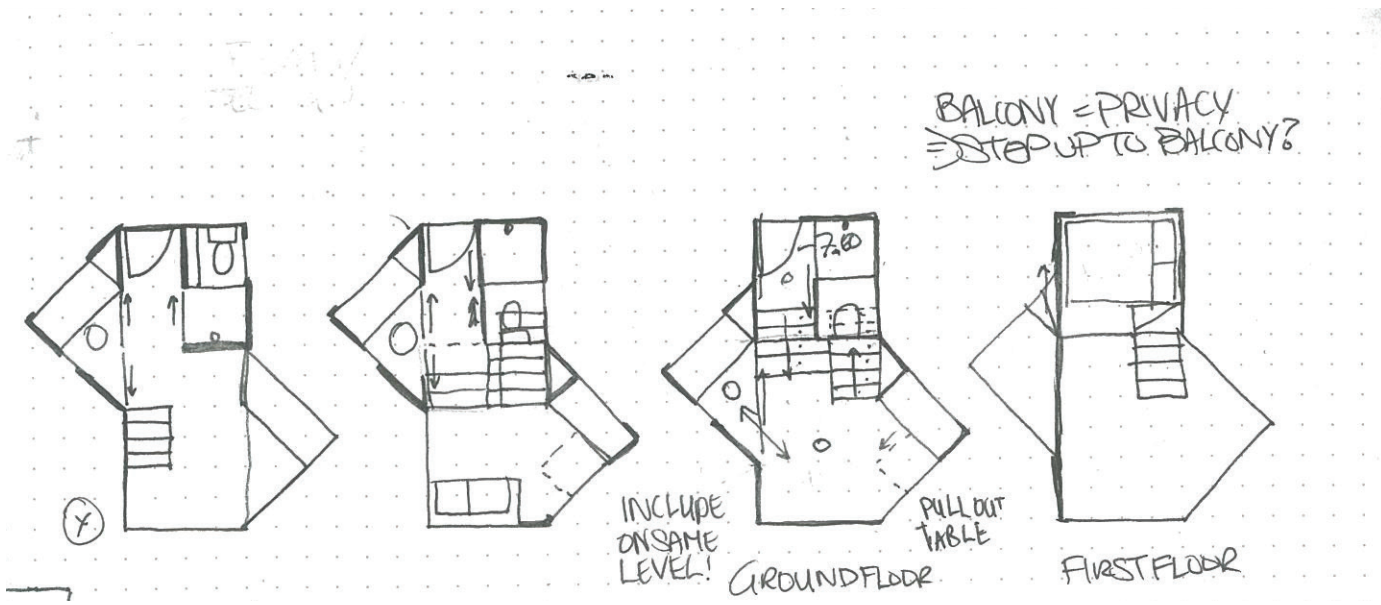
Initial modelling focuses on designing the individual room. These rooms were primarily focused on creating the most amenities in the smallest floor area possible. Split level units are the primarily method of space saving. It was clear that stairs were the biggest wasted space, providing minimal functional space below other than storage. Placing floors above also became an issue due to lack of head height, making the floor above unusable or the stairs below.
Overall these ideas where unsuccessful as they did not exceed current practice, only recreating the same standard in a slight variation. All iterations were designed with the intent of being arranged by a communal corridor. Further research into student housing and adaptive reuse made it apparent that this was not enough. One idea that began to become apparent in later iterations was that of interlocking through split levels. This was explored further through sketching.

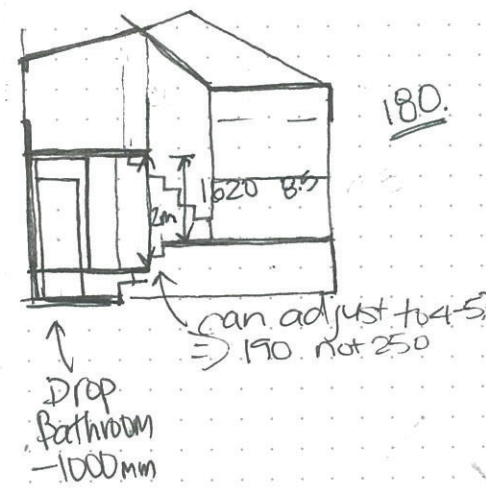


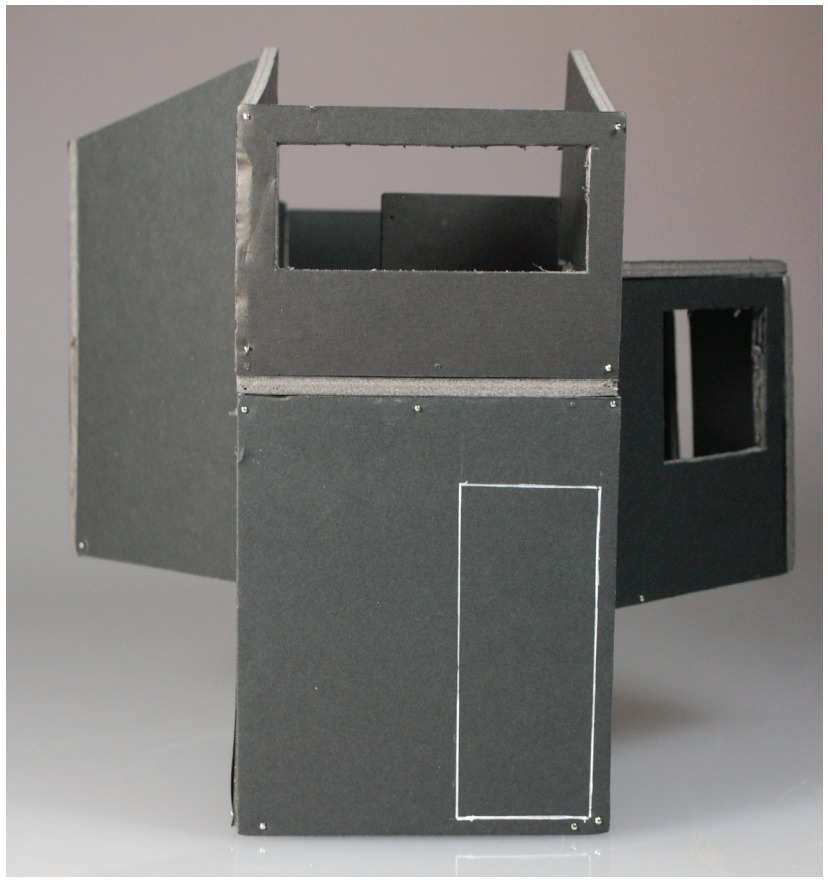

SWAP LIVING + BATH

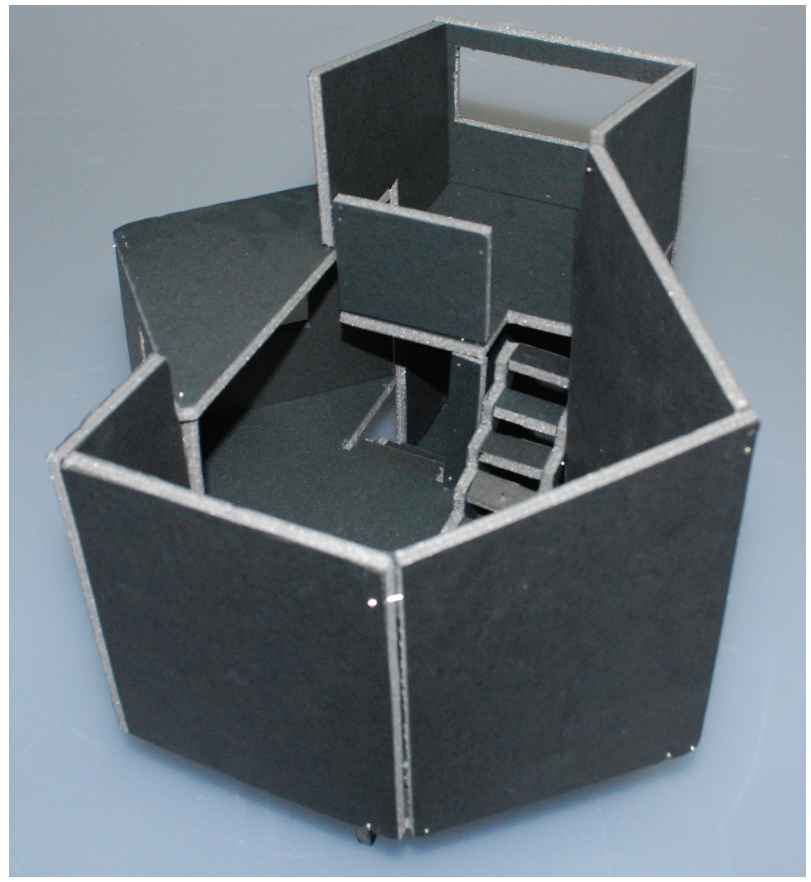


# SKETCH IDEAS

Sketches began exploring split level studio arrangements, with the addition of both a bathroom and kitchenette. This is one method of how my design goes beyond the minimum standard of student housing, by providing every student with their own basic facilities rather than making it available to a select few that can afford it.

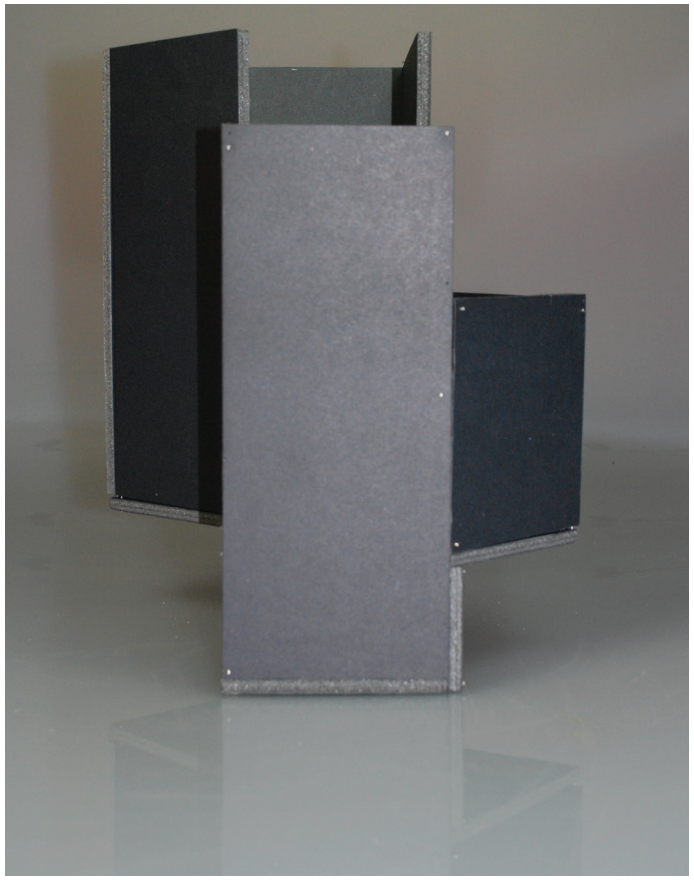


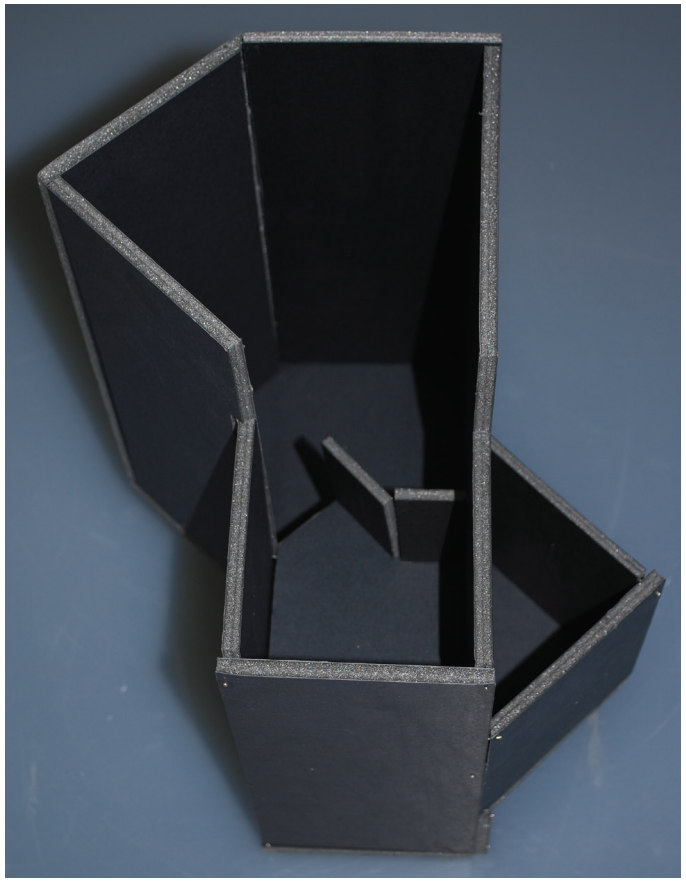


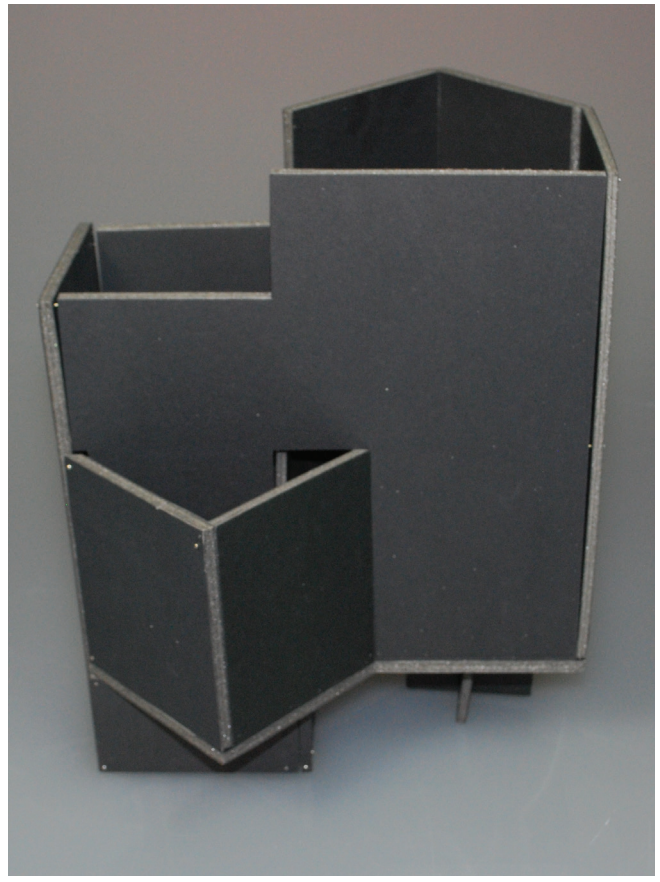
# PHYSICAL MODEL ONE

SCALE 1:20

The first physical model utilizes standard ceiling heights with a similar floor plan to the final design. This design experiments with a sloped ceiling, thus making it unable to interlock with the units above and below. This unit was unsuccessful due to inability to interlock and wasted space primarily through stair location and orientation.



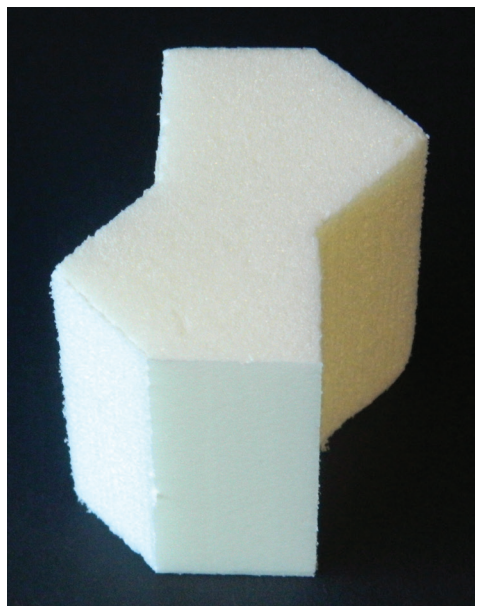




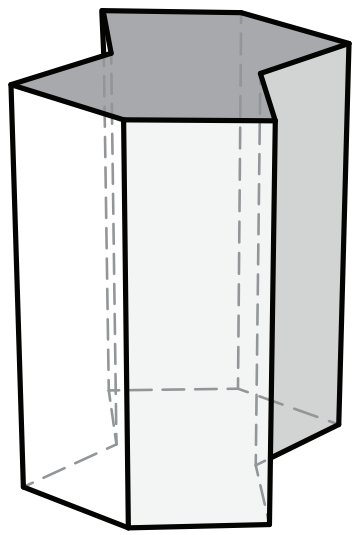
# PHYSICAL MODEL TWO

SCALE 1:20

This module utilizes the 2m width and the squared ceiling that allows interlocking. Windows have been excluded from this model to focus on the overall form. This form was successful and has been developed further.



1:100 FOAM EXTRUSION OF FORM

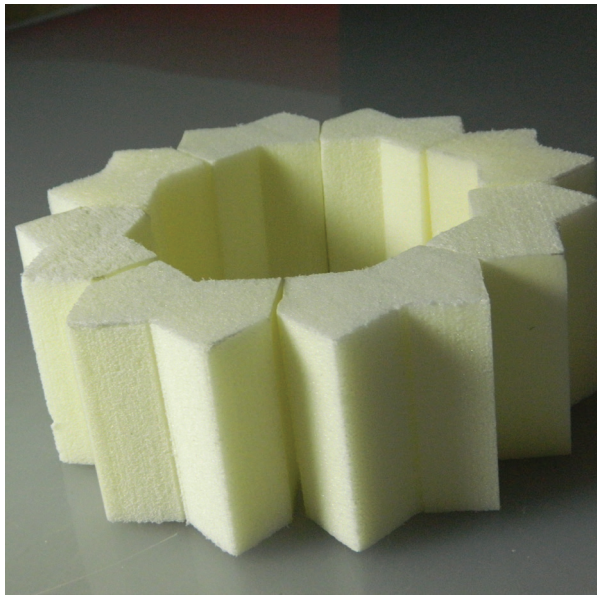


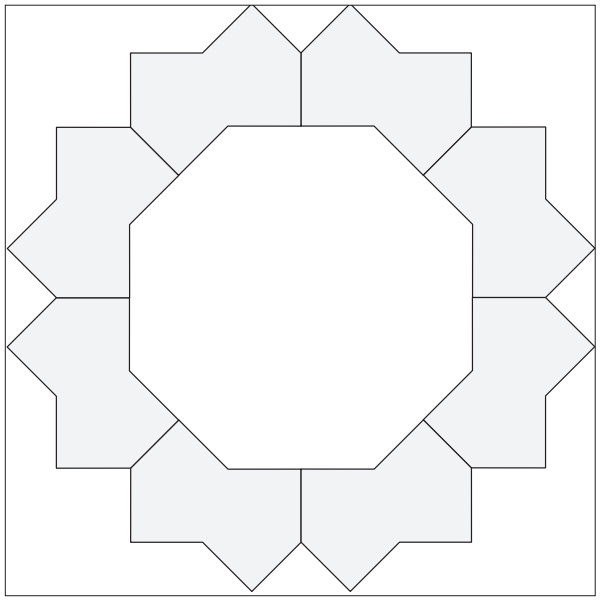
LINE DRAWING OF EXTRUSION

# TESSELLATION

After testing the unit at a large scale, moving into how this form can be combined to create a whole scheme was the next step. Initially the basic form was extruded to the desired height to be tested. This was completed using foam at 1:100 in line with the initial site model. Initially a single layer of units were tessellated to determine how best they could fit together one a single plane. This was then used to determine how the unit might best be stacked vertically. It was determined that there were many possible tessellations with many resulting in gaps that had the potential to be used for outdoor areas. However using such a regimented system limited design possibilities. The module itself had been proven to be successful, with the 45° angle allowing many design possibilities. From here a three cube module was determined to allow a larger module with the same rules but the appearance of less rules almost chaotic in nature.

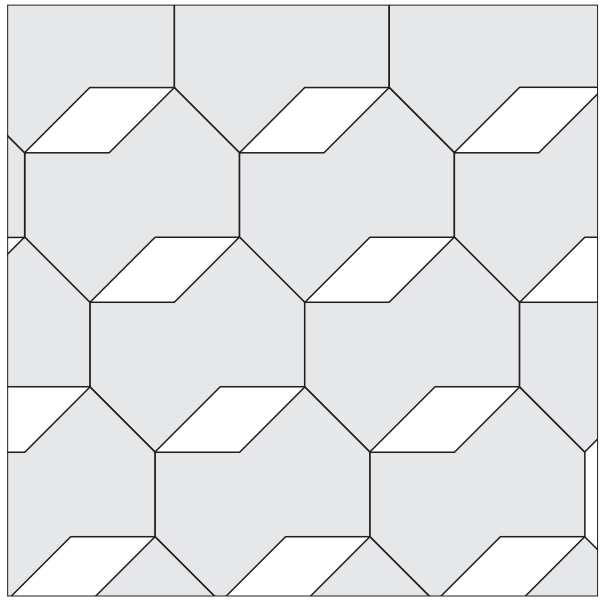
# POSSIBLE TESSELLATIONS OF INDIVIDUAL UNIT 1:100





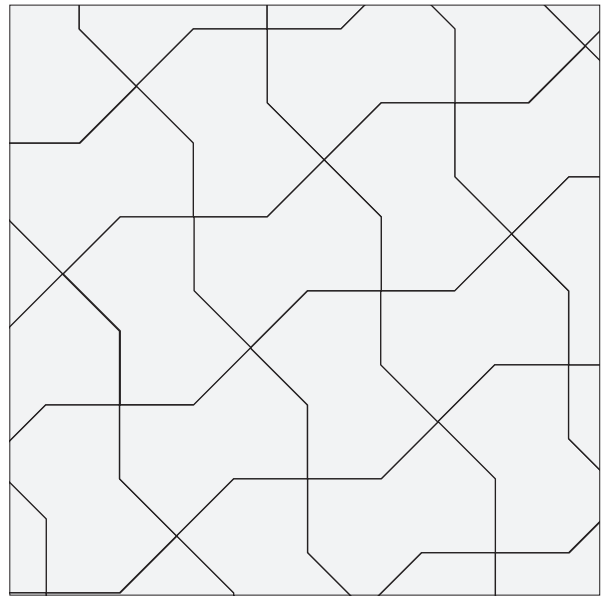
COURTYARD ARRANGEMENT

Creates shared private courtyard for eight residents. Difficult to arrange effective circulation to accommodate form.



ROW ARRANGEMENT

Small private outdoor area created. Easily arranged into a typical corridor arrangement. Difficult sunlight access, in particular for multiple levels.



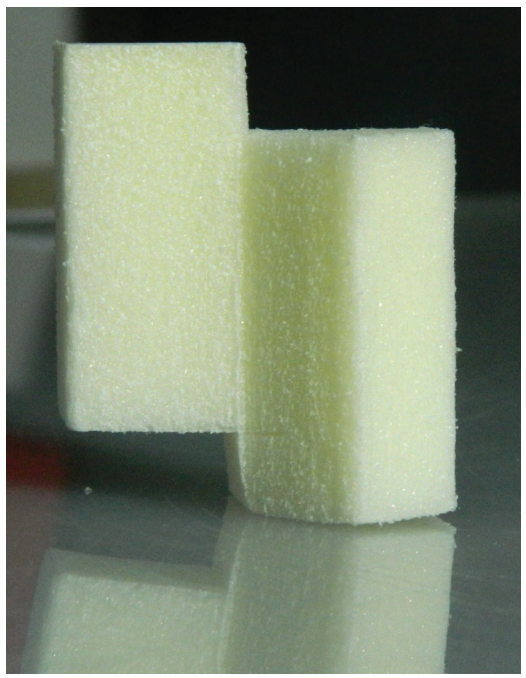
INTERLOCKING ARRANGEMENT

No wasted space. Extremely problematic sunlight access and circulation.

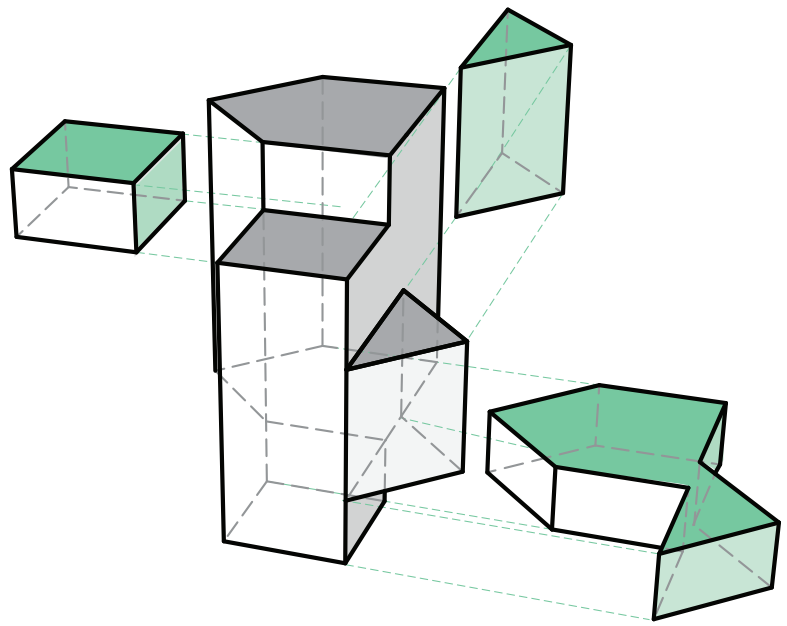
# MODULE CONNECTION TESTING

Experimentation with vertical stacking led to adding more detail to the model. The notches established in the previous 1:20 scale model was essential to determine how best to fix multiple units together. With no set rule the options were endless and difficult to reproduce for further development. A basic rule or larger module was necessary to create logic without overruling the intriguing shape.
The notching stacked vertically very easily however once again became too easy to fall into the trap of a traditional corridor formation. A more unusual larger module was determined to be effective in creating logic without losing delight.

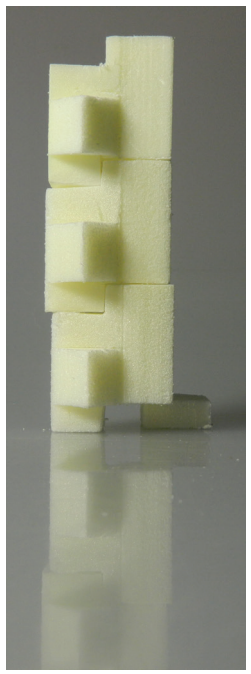
Interlocking apartments are uncommon in modern high rise buildings, despite Le Corbusier's avocation for them through the Unité. This is likely due to the increased cost and decreased floor area being seen as less valuable than the atmosphere created. This design shares this idea of interlocking, however in a different way. Rather than interlocking to create a shared corridor space they interlock to create variation and aesthetics. They do not link as tightly as the Unité, and provide more outdoor space due to the lack of enclosed corridors. The spaces between units have more significance and importance.



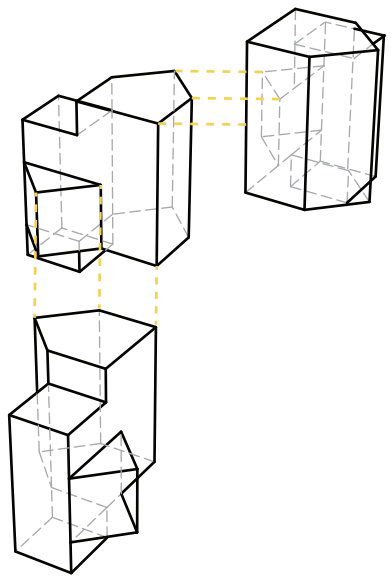
1:100 FOAM MODEL - DETAILED



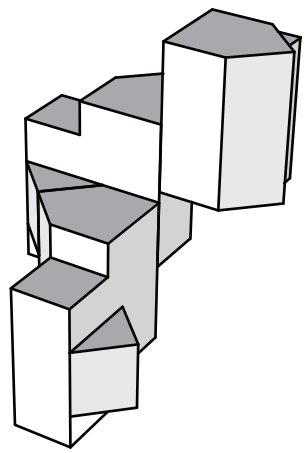
NOTCHING DIAGRAM



VERTICAL STACKING
OF UNITS

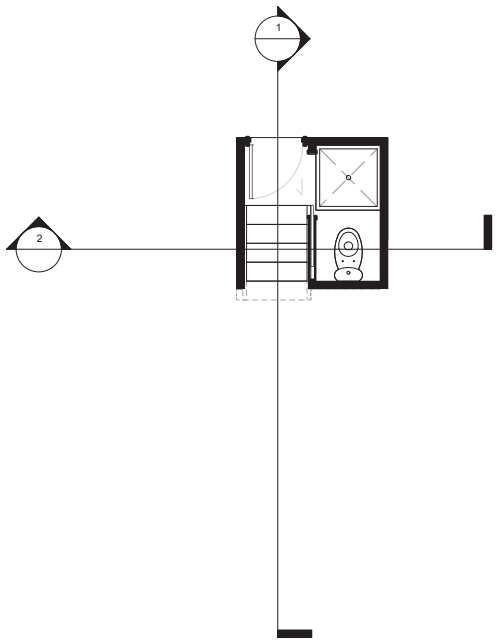


CONNECTION
DIAGRAM OF
LARGER MODULE

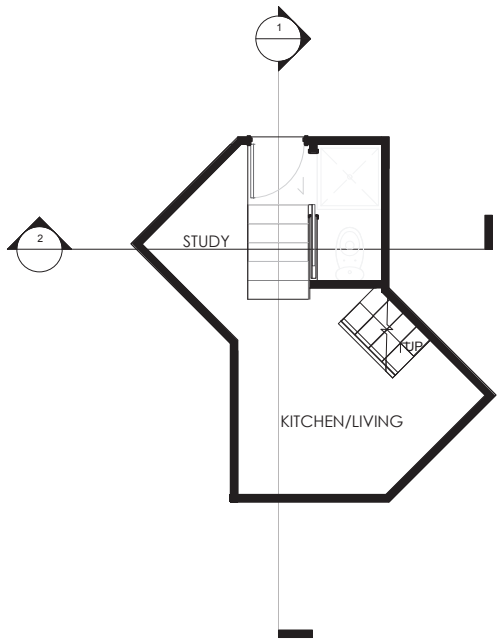


LARGER MODULE
DIAGRAM

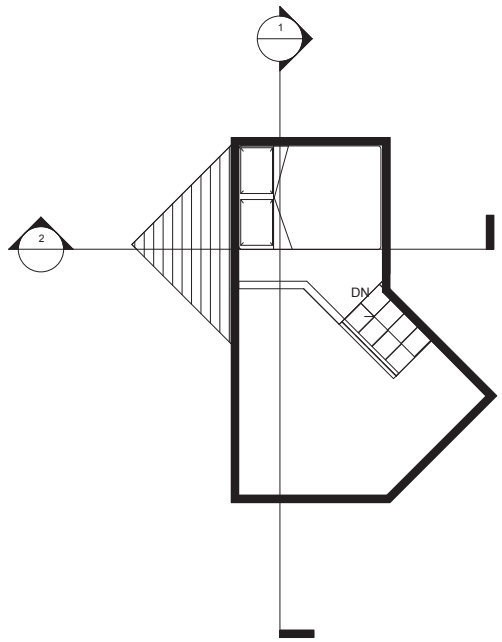
# PLANS




LEVEL 1

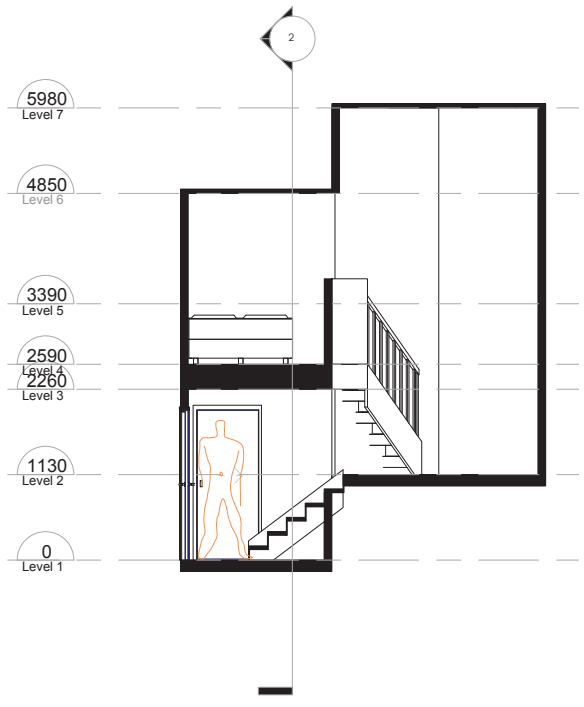



LEVEL 2

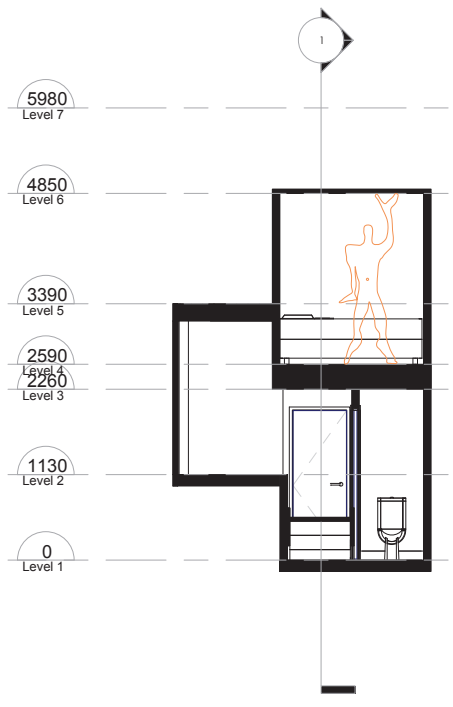



LEVEL 3

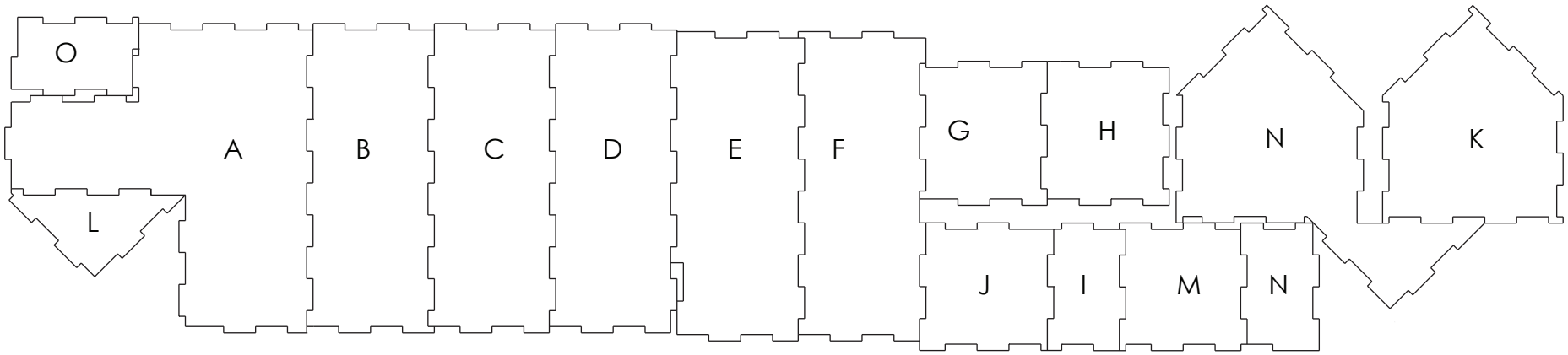
# SECTIONS



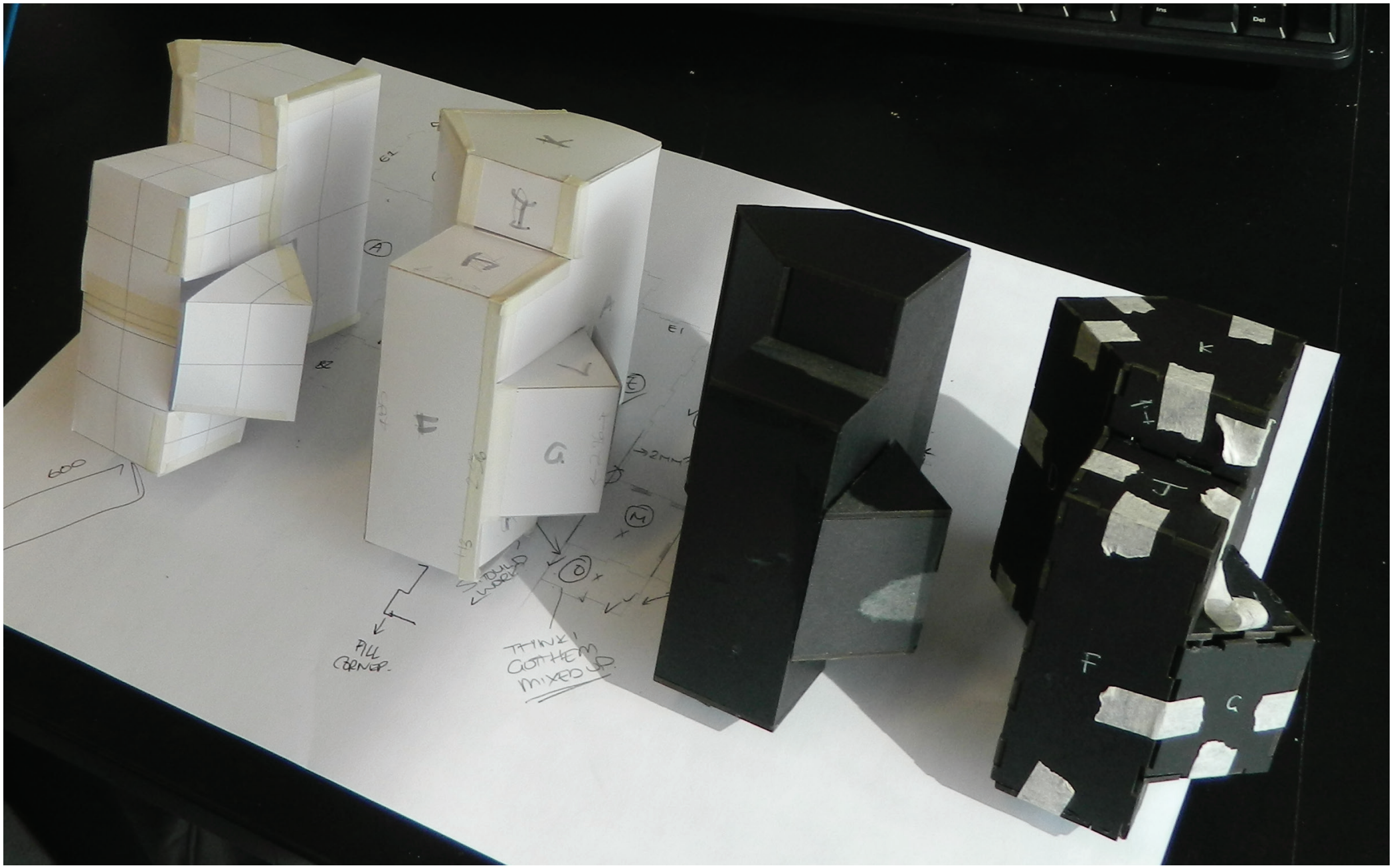

SECTION 1




SECTION 2




NET OF BLACK CARD UNIT WITH NOTCHING DETAIL
Each piece is labelled for assembly




DEVELOPMENT OF 1:50 SCALE MODEL FROM SHEET MATERIAL
From left to right: folded paper model, thin white card model with tabs, thin black card glued and thick black card with interlocking notch mechanism.

# INITIAL WINDOW SIZES

LARGE WINDOW

MEDIUM WINDOWS

SMALL WINDOWS

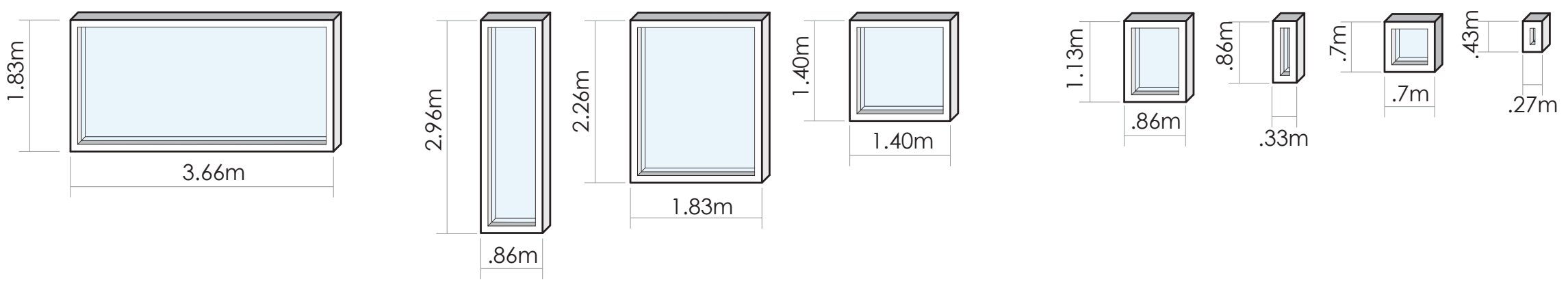



Fig 6.01. Initial Window Size Schematic 1:100

Window sizing follows modulor dimensions ensuring all vertical elements share the same proportioning system. A set of window sizes have been defined, then applied to a scale model based upon unit location within the whole scheme. Nine possible window sizes range from one large, three medium and five small in either square or rectangular shapes are used. No set quantity of windows must be applied to a single unit, placement is entirely determined by location within the scheme and judgement as to if enough light and views is provided.

# FORENSIC INVESTIGATION OF DESIGN

Forensic investigation was completed to determine opening placement. Circulation was broken into two categories and distinguished on the model, this determined that two entry locations were required for effective circulation. Windows were then placed where appropriate. This placement was then analysed for trends to determine optimal positioning. Three key areas were established as having different needs and focuses. Units orientated towards Frederick Street focused on optimising views to the street, while maintaining privacy if located at ground level. Units facing Haining Street focused on optimising sunlight and views to the street, while trying to avoid large windows facing south to reduce heat loss. Centrally located units are strongly focused on maximizing sunlight access thus more windows and of larger size. All units shared an emphasis on view shafts, in particular creating lines of site through entire units to the units beyond. Openings are not limited to single surfaces, but are used to breakdown harsh corners and create a visually intriguing suggestion of what architectural student accommodation can be.

# FINAL WINDOW SIZES

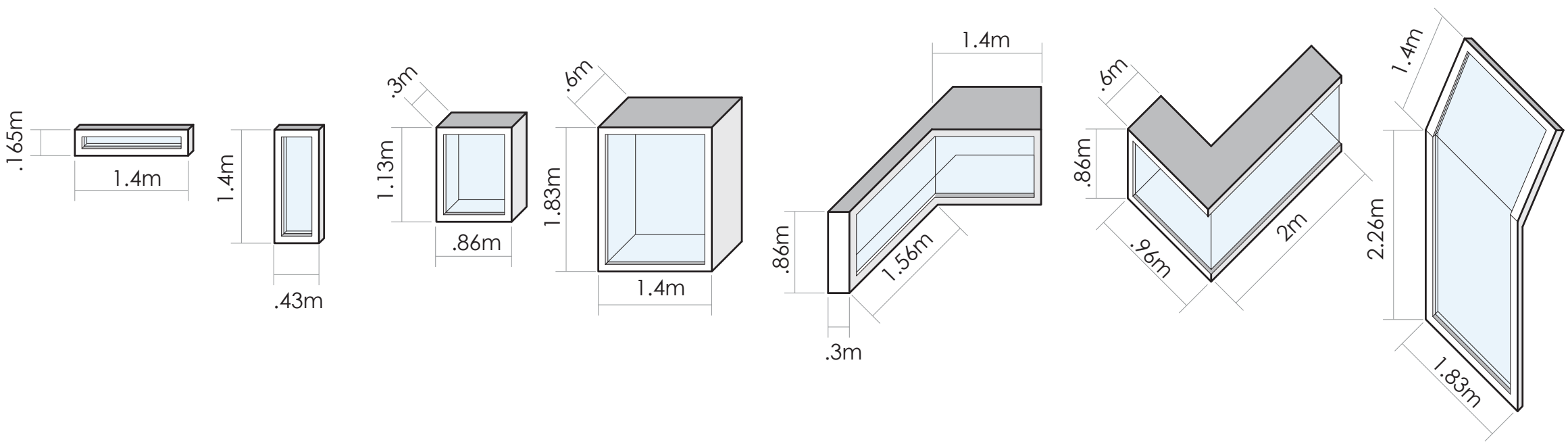
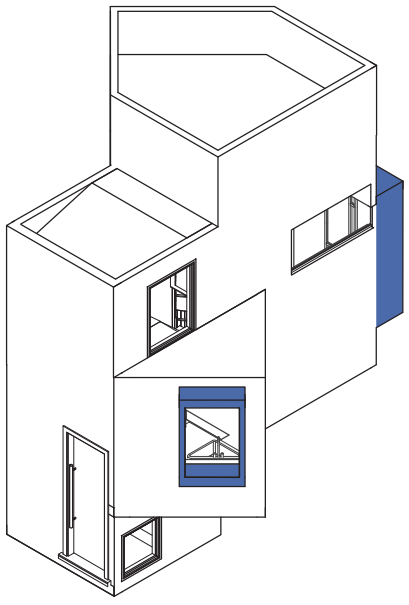
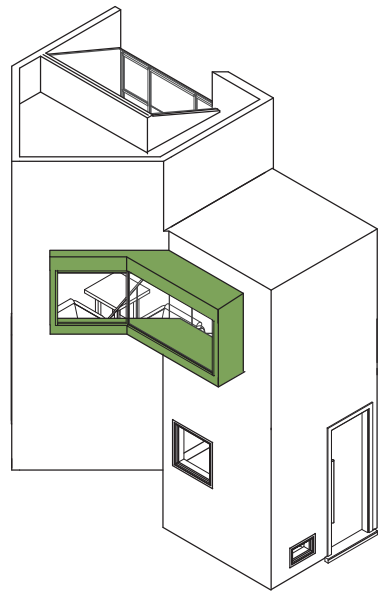



Fig 6.02. Developed Window Size Schematic

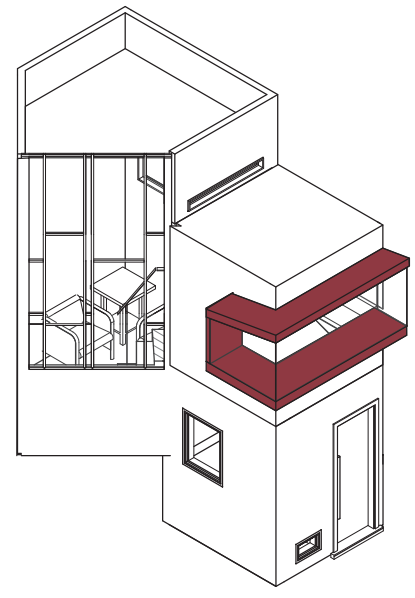
Analysis of the physical model lead to altering window shapes and sizes. Two additional smaller sized windows were included. Larger windows placed on multiple faced were adjusted accordingly and a number of windows sill depths were increased as shown in figure 6.02 Windows with increased depth have been assigned a colour accent to highlight their position and create a visual distinction in unit types as shown in figure 6.03. Colours selected have been derived from Le Corbusier's colour palette number two in the method prescribed.



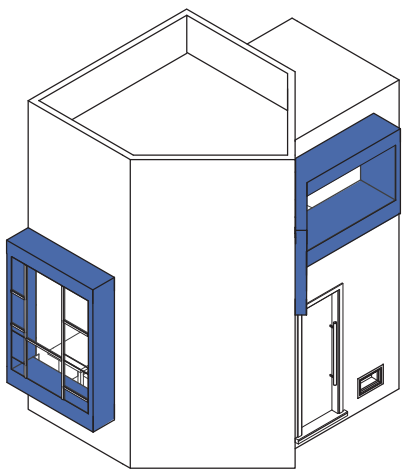
UNIT TYPE 1
ENTRY A



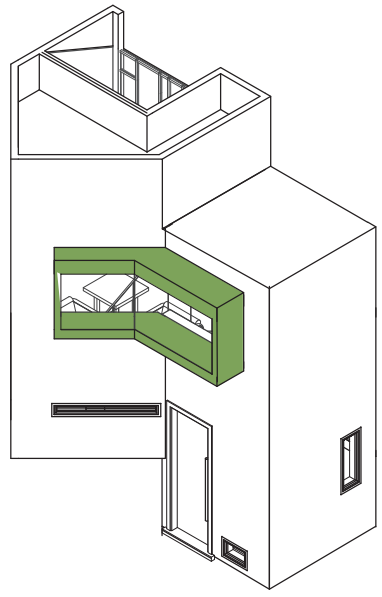
UNIT TYPE 2
ENTRY A



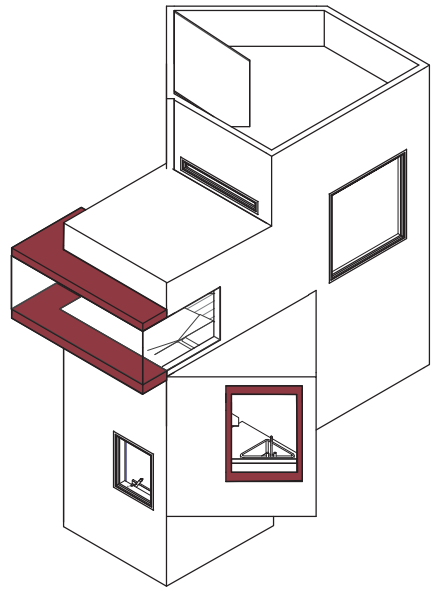
UNIT TYPE 3
ENTRY A



UNIT TYPE 1
ENTRY B



UNIT TYPE 2
ENTRY B



UNIT TYPE 3
ENTRY B

Fig 6.03. Window Colour Allocation Schematic

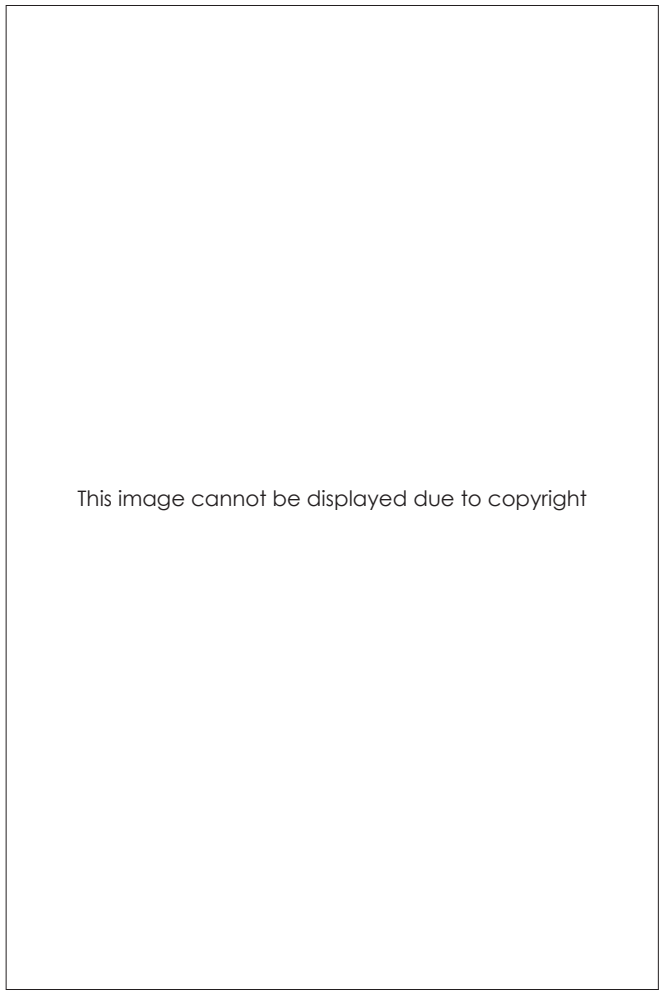



Fig 6.04. Integrated Storage stairs

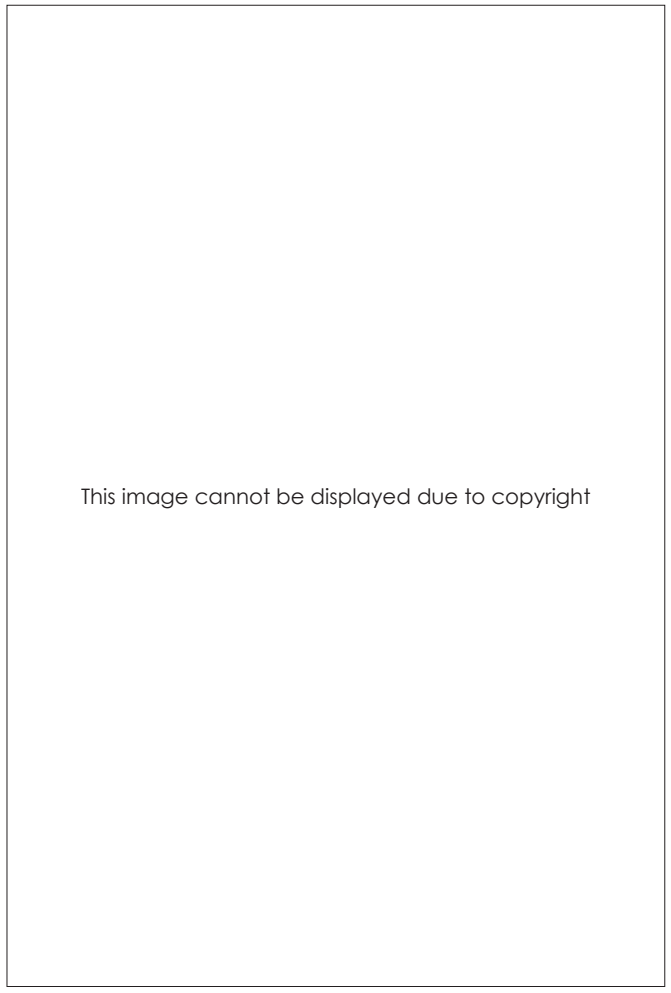



Fig 6.05. Space saving stairs with storage

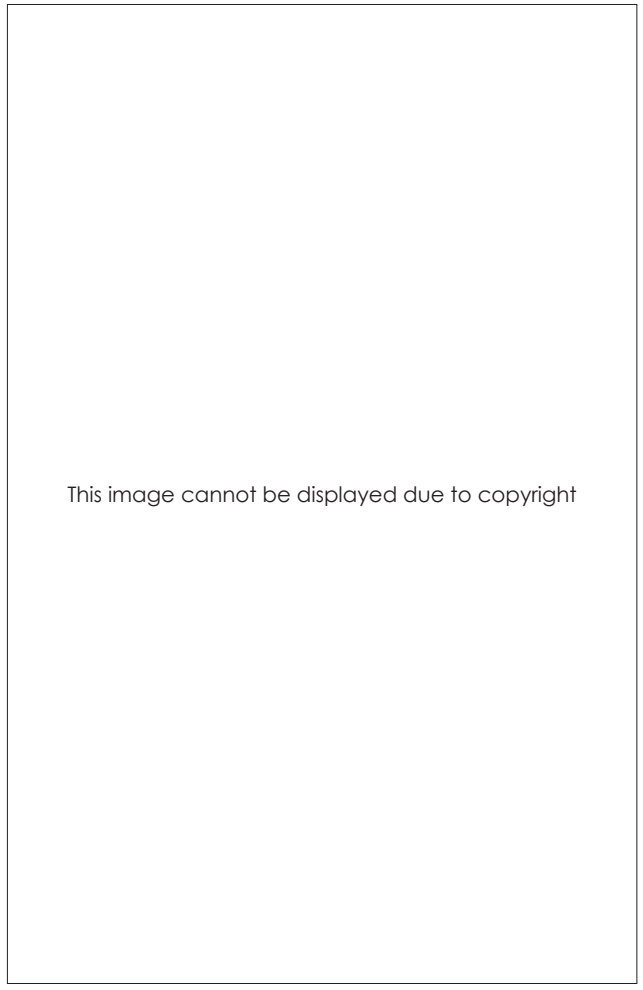
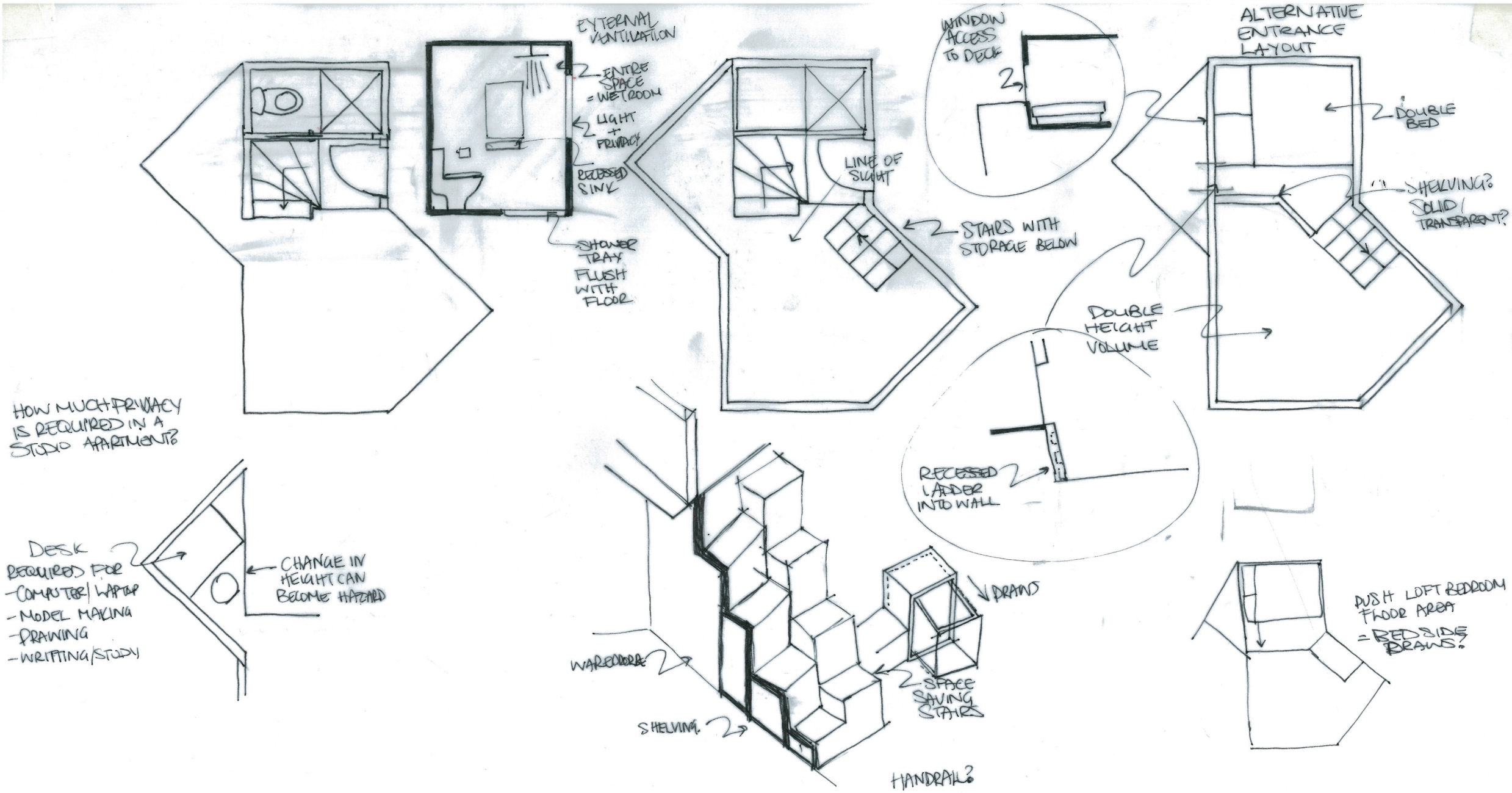
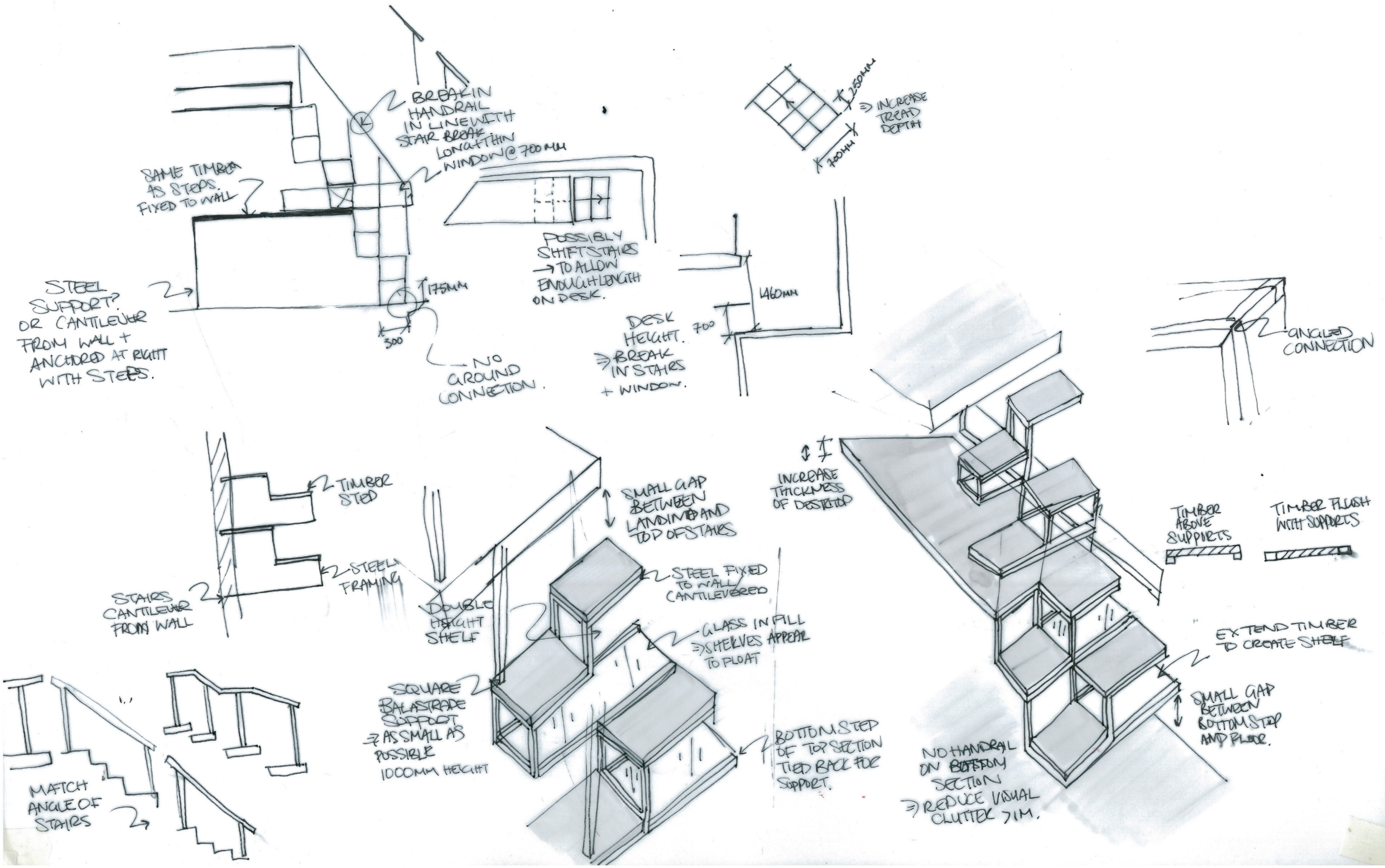



Fig 6.06. Space saving stairs with integrated storage and desk

# THE STAIRS

Early iterations quickly identified the stairs as an area of wasted space. Space saving stairs were investigated as a method to mitigate wasted space. Options include ladders, storage under the stairs and doubling up riser height with a half tread. The latter option was selected as the most effective method. Precedent images are shown in figure 6.04-6. Initial stair design was completed manually, then developed further digitally to test both aesthetics and materials.
One key feature to come from precedent study was the use of the integrated table as shown in figure 6.06. This idea allowed the space below the stairs to be used not only for storing books and ornaments but also as a functional and integral part of the ideal unit. The contrast in materials between the stairs and the desk allows a visual separation between functions.


EXTERNAL VENTILATION
ENTIRE SPACE = WETROOM
LIGHT + PRIVACY
RECESSED SINK
SHOWER TRAY FLUSH WITH FLOOR
WINDOW ACCESS TO DECK
LINE OF SIGHT
STAIRS WITH STORAGE BELOW
ALTERNATIVE ENTRANCE LAYOUT
DOUBLE BED
SHELVING? SOLID / TRANSPARENT?
DOUBLE HEIGHT VOLUME
HOW MUCH PRIVACY IS REQUIRED IN A STUDIO APARTMENT?
DESK REQUIRED FOR
- COMPUTER / LAPTOP
- MODEL MAKING
- DRAWING
- WRITTING / STUDY
CHANGE IN HEIGHT CAN BECOME HAZARD
RECESSED LADDER INTO WALL
DRAWS
WARDROBE
SHELVING
SPACE SAVING STAIRS
HANDRAIL?
PUSH LOFT BEDROOM FLOOR AREA = BEDSIDE DRAWS?


BREAK IN HANDRAIL IN LINE WITH STAIR BREAK LONGITHIN WINDOW @ 700 MM
SAME TIMBER AS STEPS. FIXED TO WALL
STEEL SUPPORT? OR CANTILEVER FROM WALL + ANCHORED AT RIGHT WITH STEPS.
175MM
300
NO GROUND CONNECTION.
POSSIBLY SHIFT STAIRS → TO ALLOW ENOUGH LENGTH ON DESK.
DESK HEIGHT. ⇒ BREAK IN STAIRS + WINDOW.
700
460MM
250MM
700MM
⇒ INCREASE TREAD DEPTH
ANGLED CONNECTION
TIMBER TREAD
STEEL FRAMING
STAIRS CANTILEVER FROM WALL
DOUBLE HEIGHT SHELF
SMALL GAP BETWEEN LANDING AND TOP OF STAIRS
STEEL FIXED TO WALL CANTILEVERED
GLASS INFILL ⇒ SHELVES APPEAR TO FLOAT
SQUARE BALASTRADE SUPPORT ⇒ AS SMALL AS POSSIBLE 1000MM HEIGHT
BOTTOM STEP OF TOP SECTION TIED BACK FOR SUPPORT.
INCREASE THICKNESS OF DESKTOP
TIMBER ABOVE SUPPORTS
TIMBER FLUSH WITH SUPPORTS
EXTEND TIMBER TO CREATE SHELF
SMALL GAP BETWEEN BOTTOM STEP AND FLOOR.
NO HANDRAIL ON BOTTOM SECTION ⇒ REDUCE VISUAL CLUTTER ?IM.
MATCH ANGLE OF STAIRS

# STAIR DEVELOPMENT

ITERATION 1

Testing out sizes and materiality of initial idea adapted from precedent research. Focus on creating a clear separation between upper and lower portion of stairs.

ITERATION 2

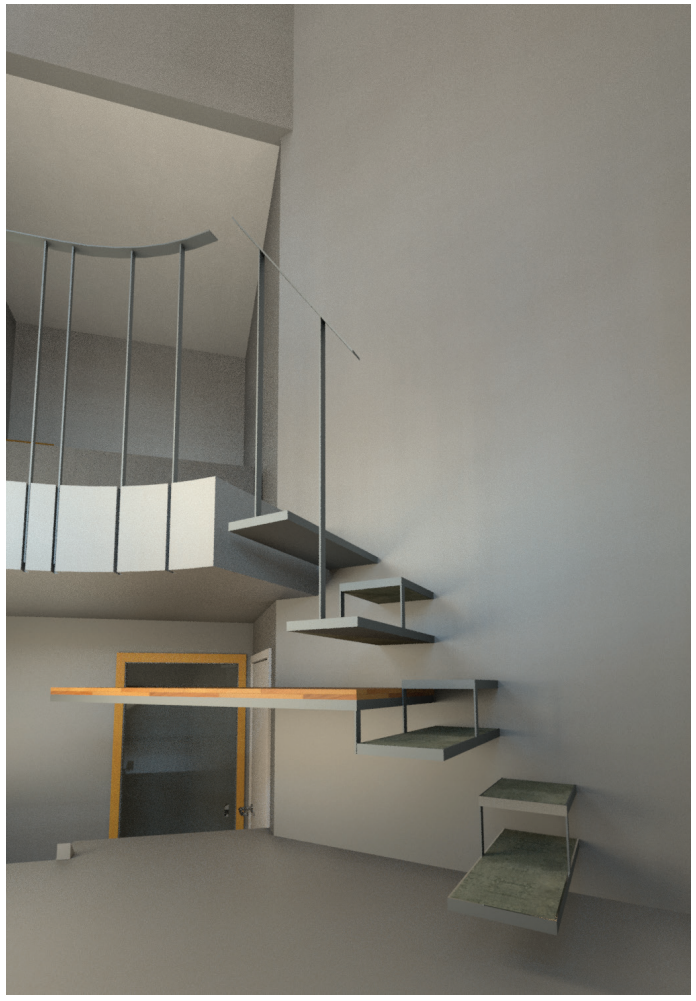
Slender metal members, timber inset into metal framing. Increased storage capability by extending bottom step to wall.

ITERATION 3

Change in material, desk remains timber stair treads concrete to create distinction between desk and stairs.

ITERATION 4

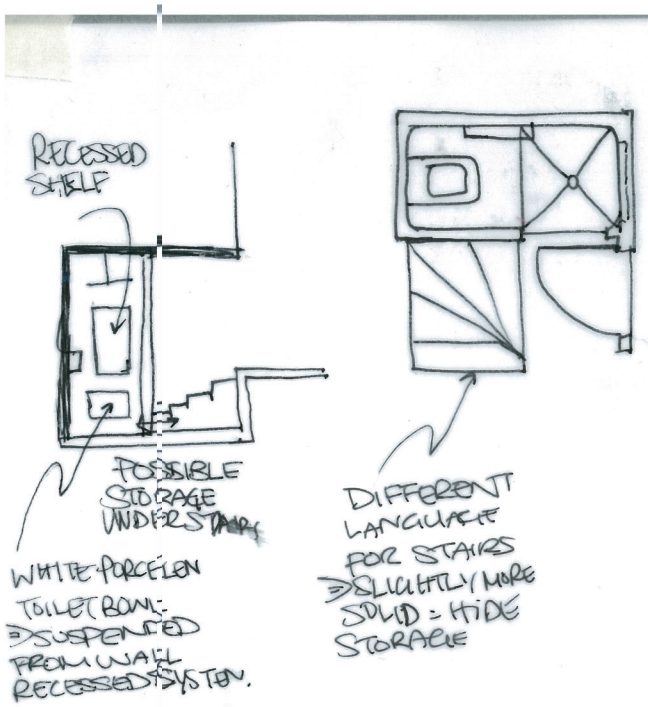
Wall separating bedroom and lounge swapped to match balustrade of the stairs to create a more coherent transition between spaces.



ITERATION 5

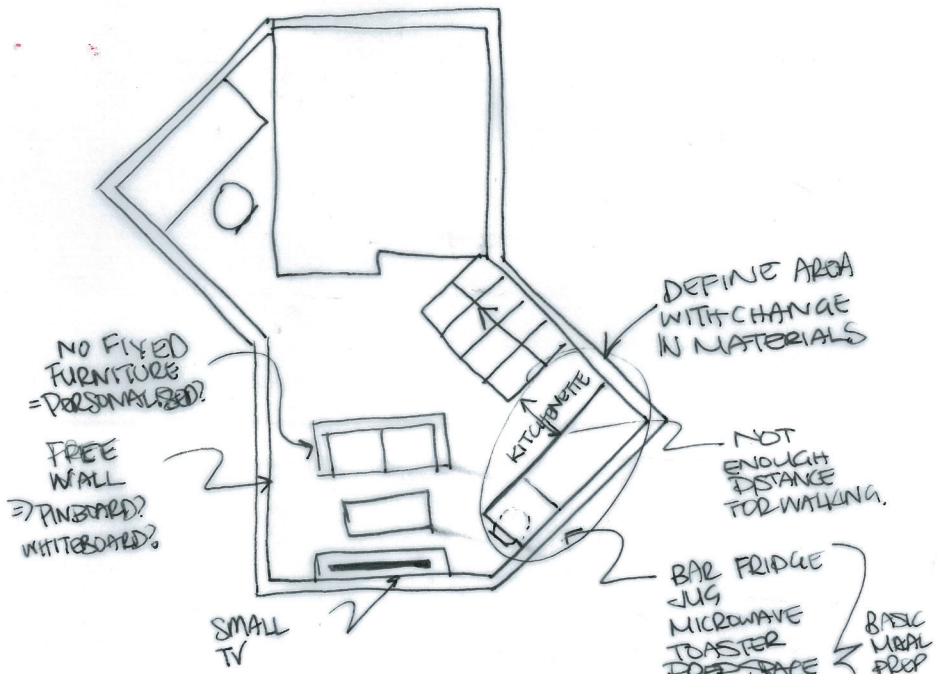
Method of fixing balustrade adjusted from top to side of floor, accentuates delicate nature of balustrade.

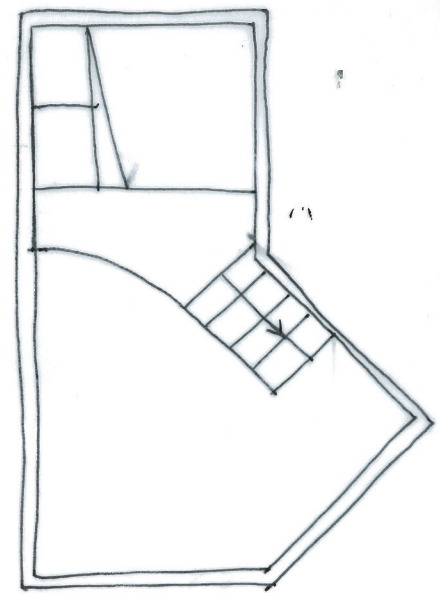
# ALTERNATIVE ENTRY DEVELOPMENT

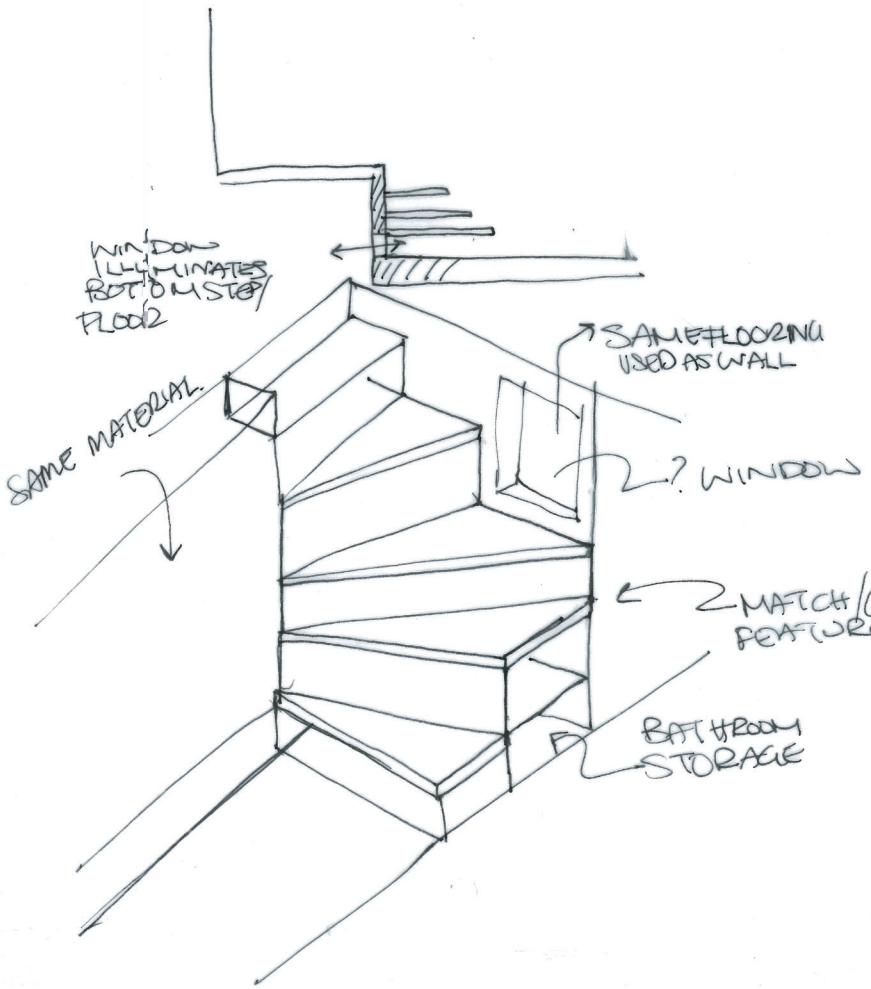


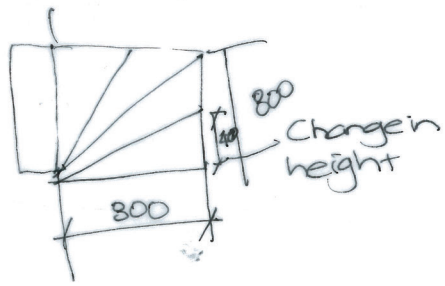




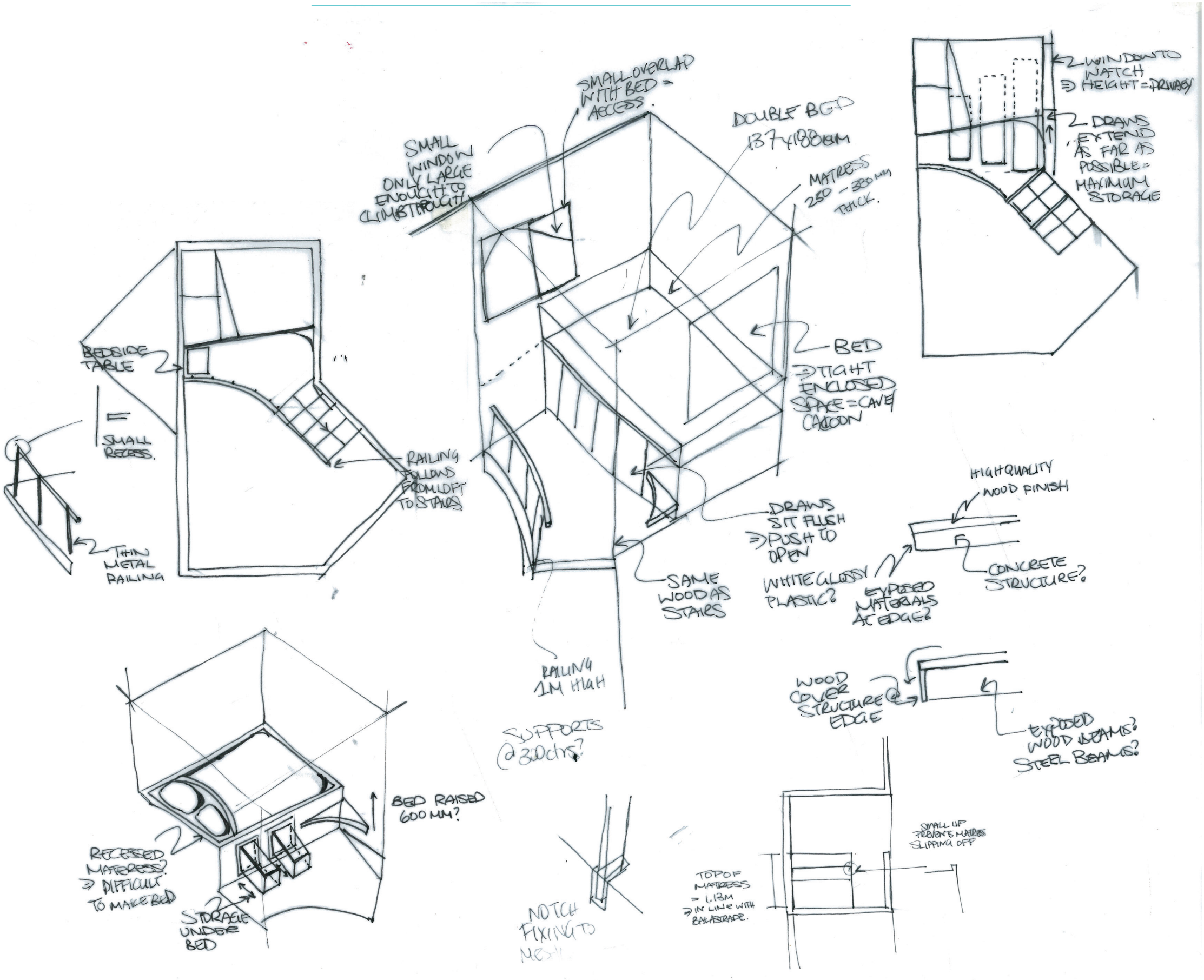




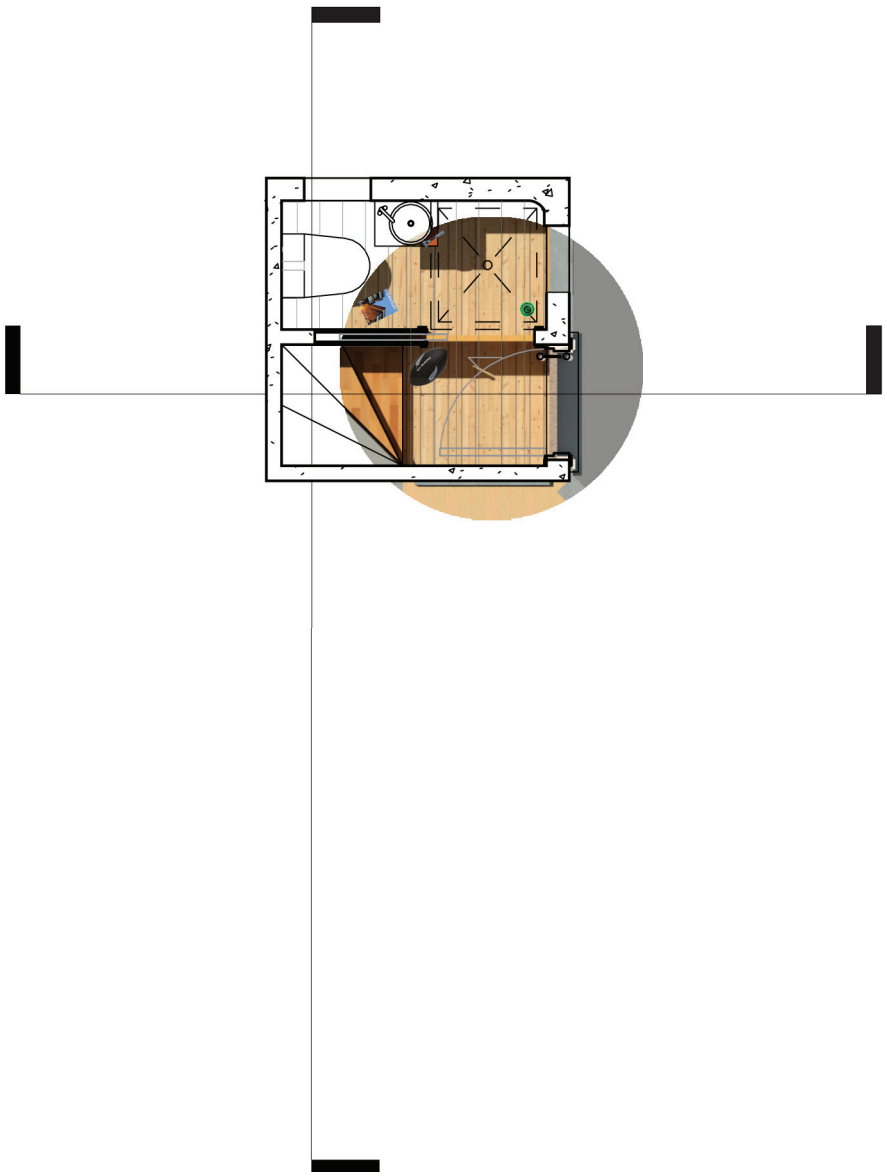



# BEDROOM DEVELOPMENT

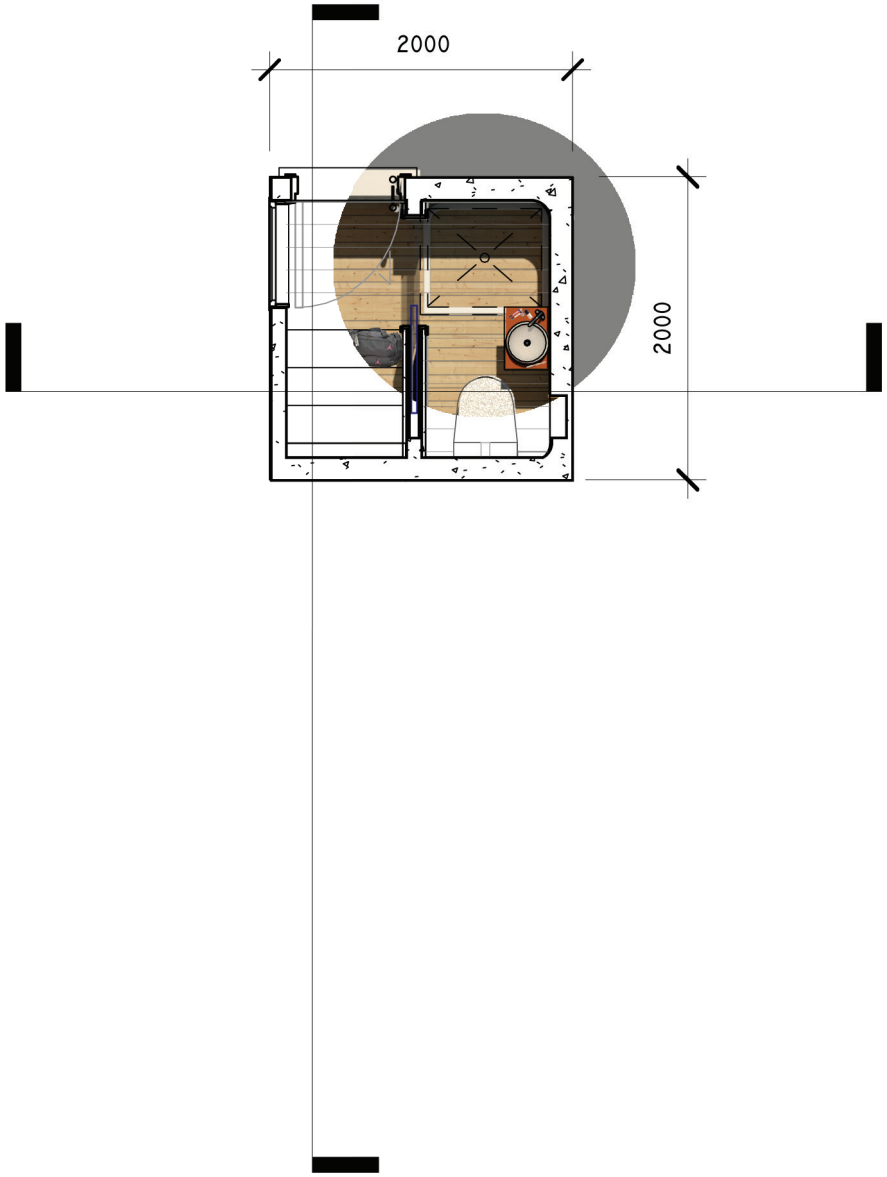


# FINAL BASIC UNIT PLANS

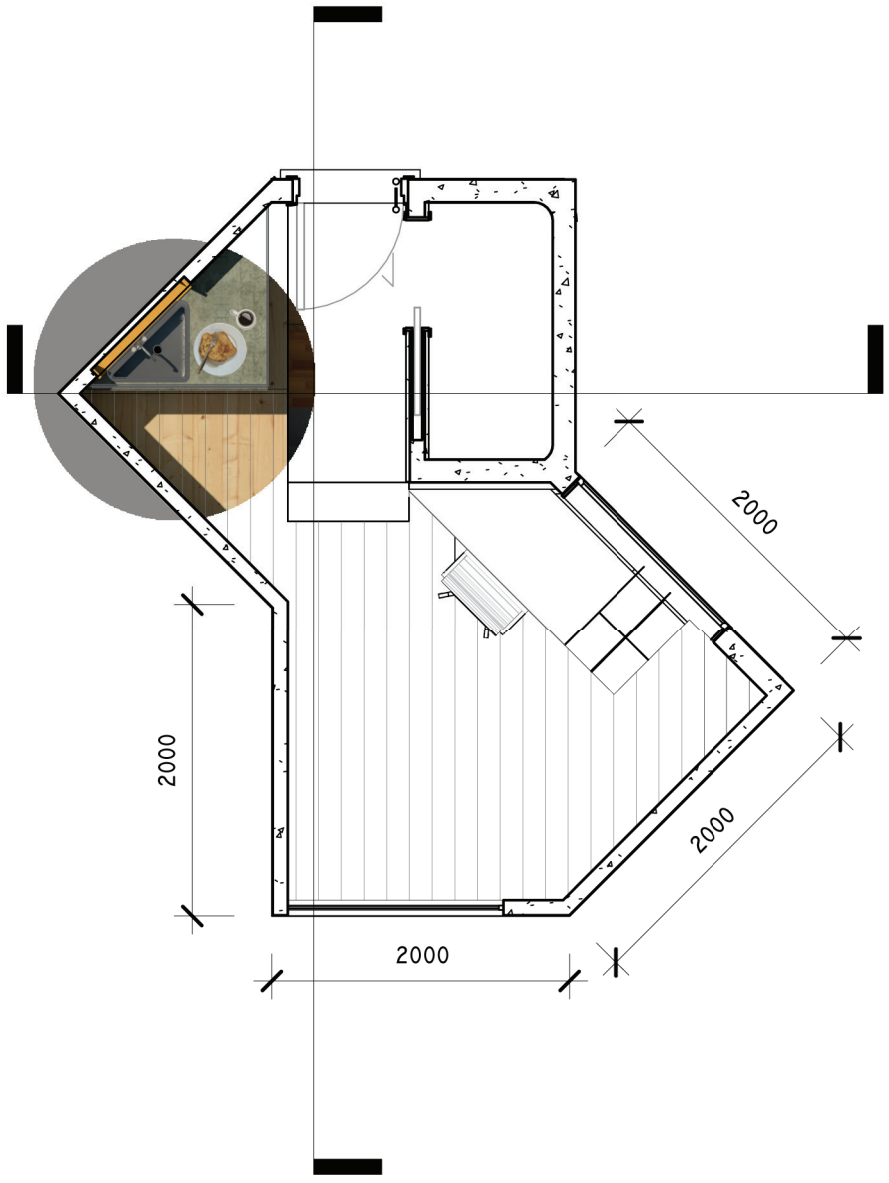
INDIVIDUAL UNIT PLANS 1:50



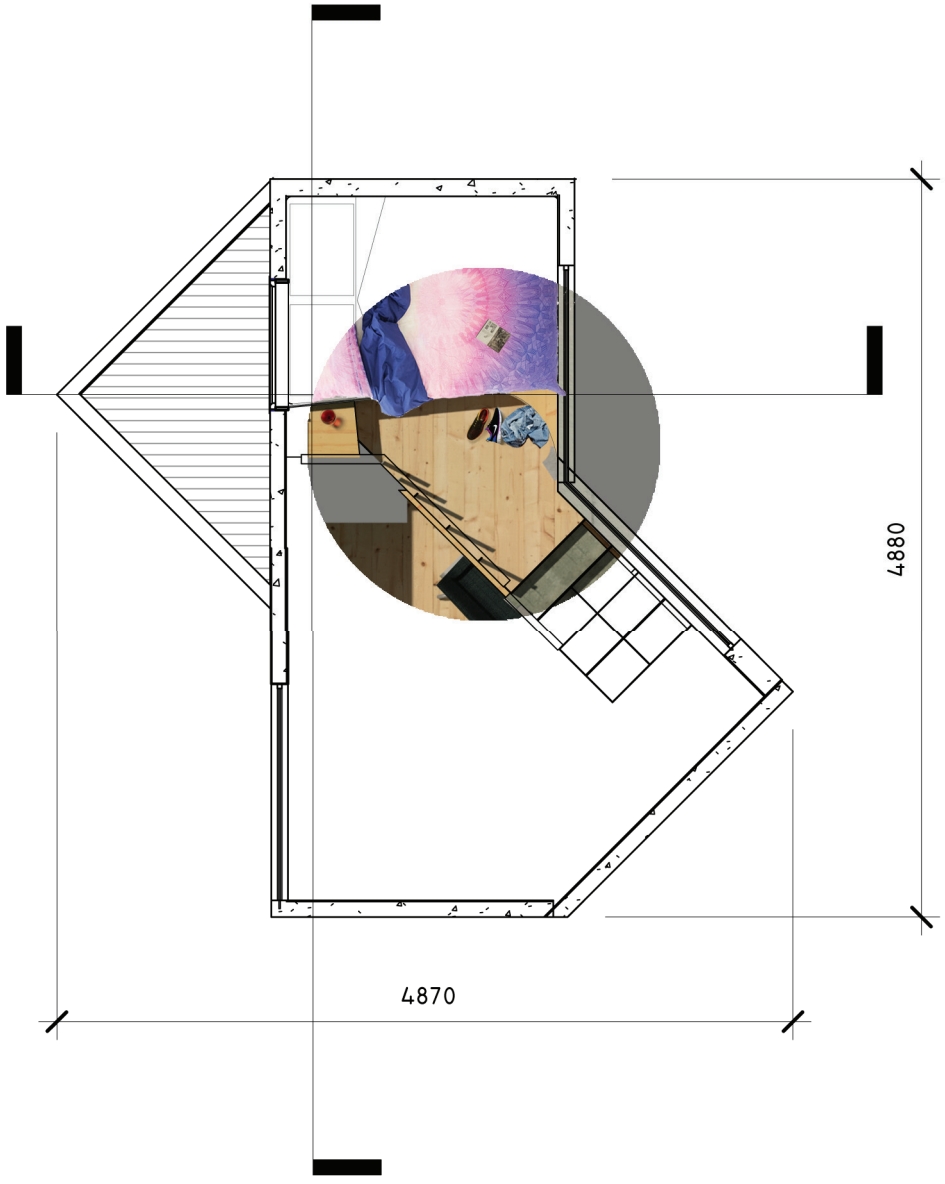
ALTERNATE ENTRY FIRST FLOOR PLAN




STANDARD ENTRY FIRST FLOOR PLAN

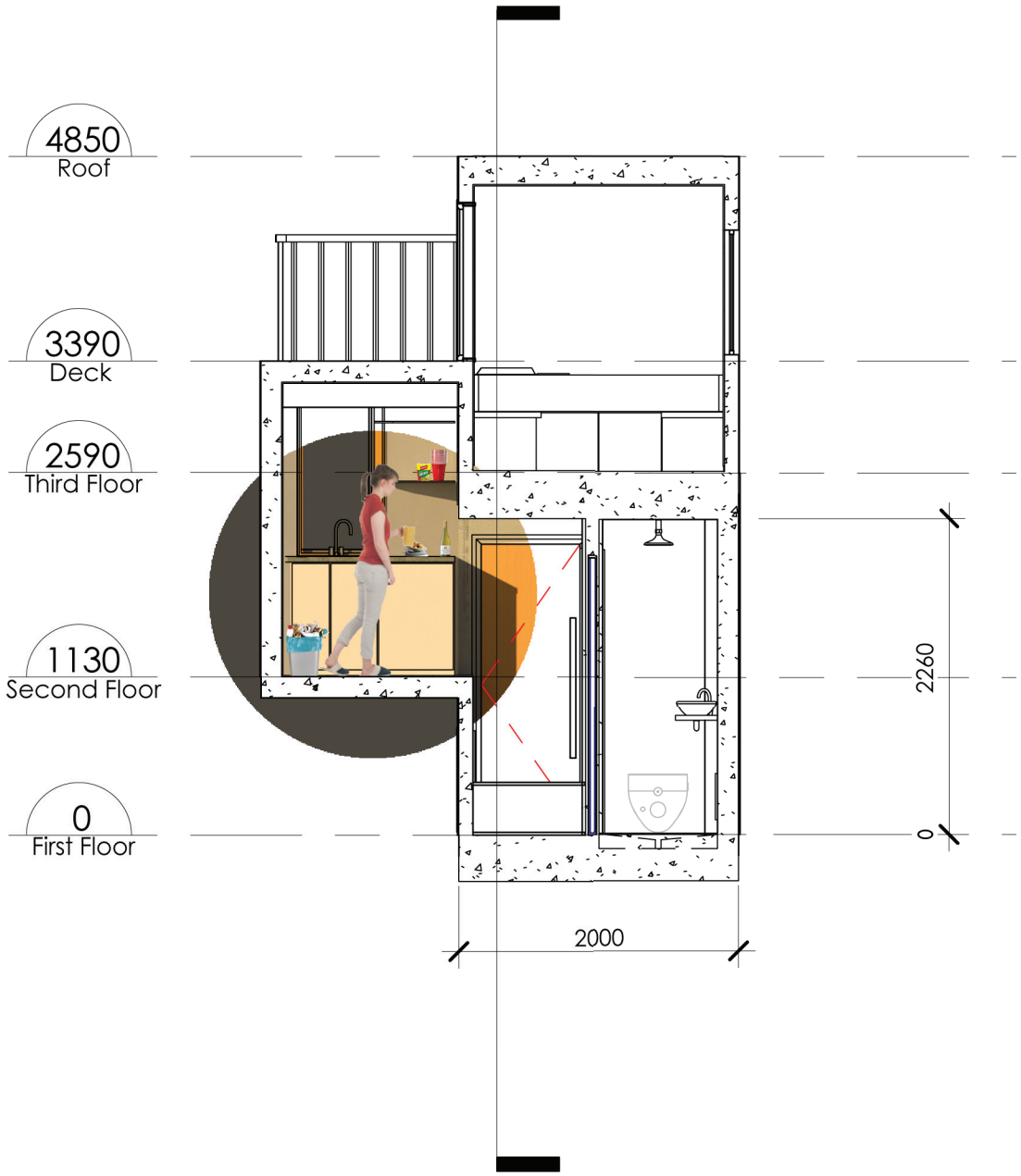



SECOND FLOOR PLAN

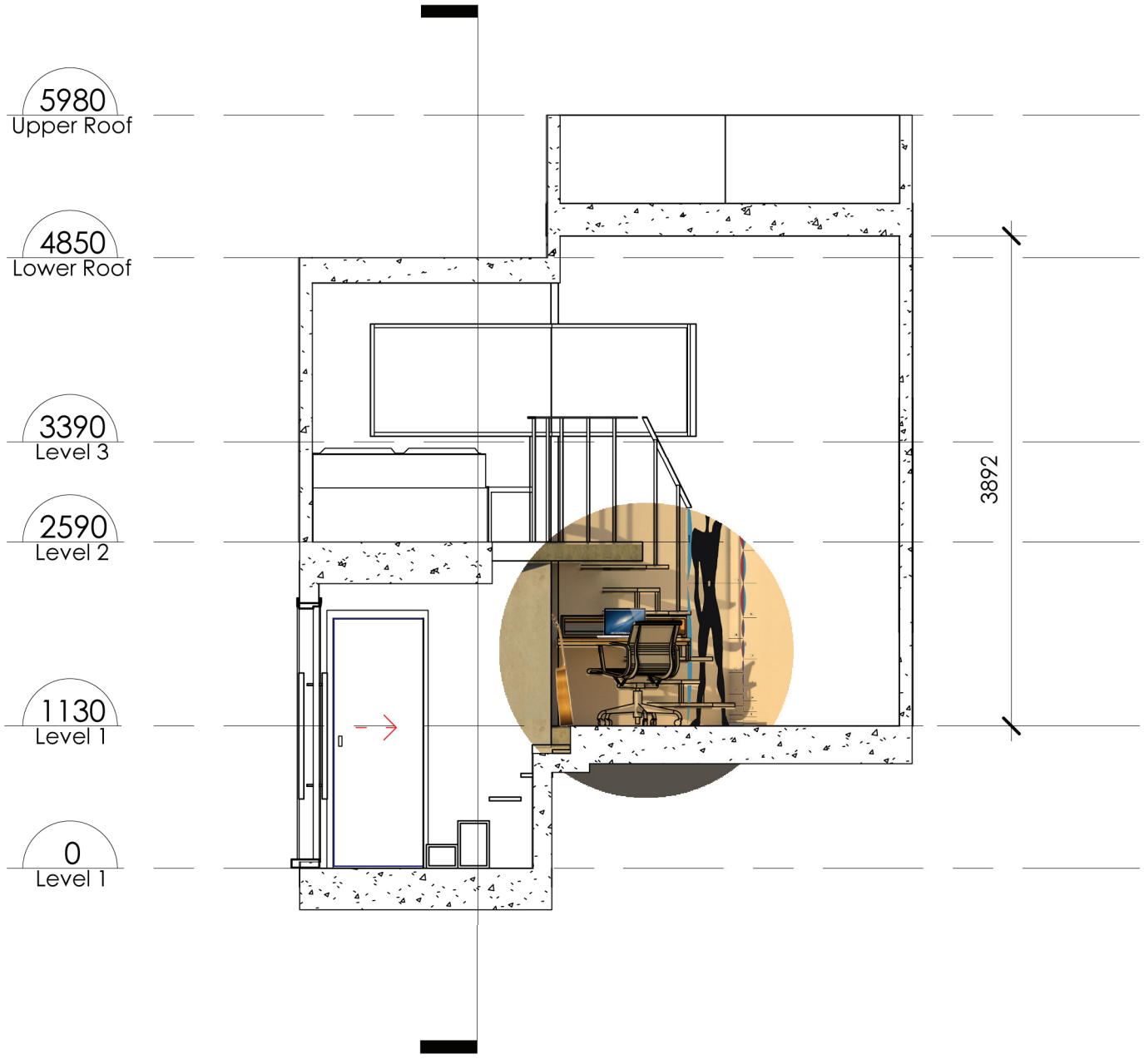



THIRD FLOOR PLAN

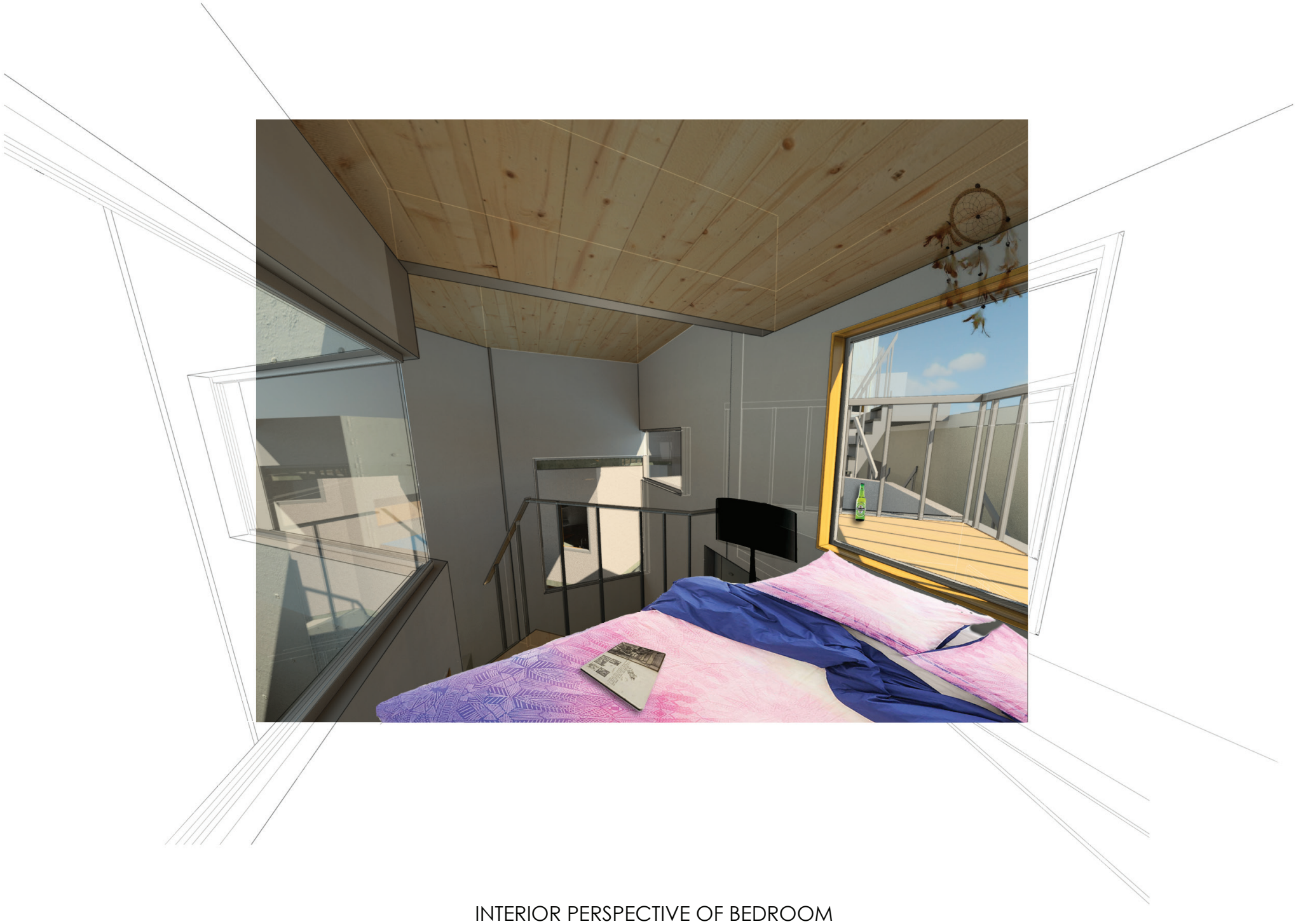
INDIVIDUAL UNIT SECTIONS 1:50



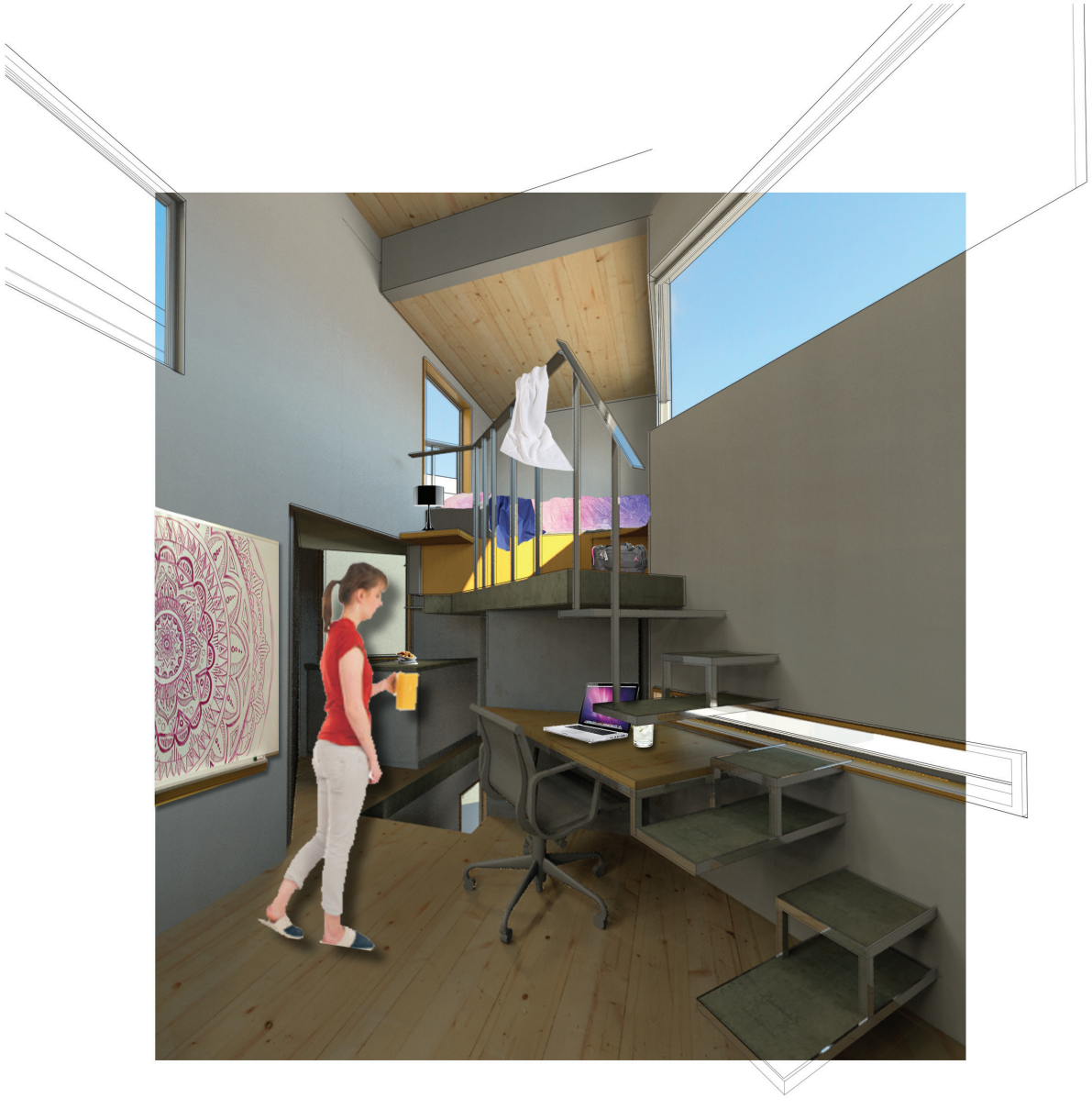

LATERAL SECTION




LONGITUDINAL SECTION



INTERIOR PERSPECTIVE OF BEDROOM



INTERIOR PERSPECTIVE OF LOUNGE AND STUDY

INTERIOR PERSPECTIVE OF BATHROOM AND ENTRY

# UNIT SUMMARY

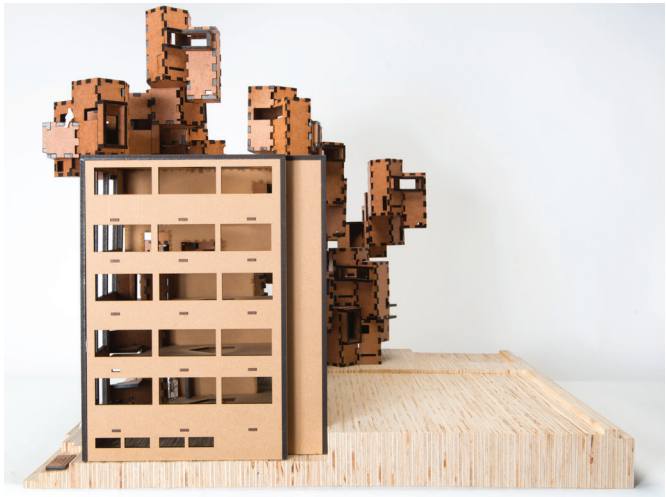
Various Micro-Architecture space saving techniques have been employed. The bathroom has the same floor area as a typical toilet. The shower utilizes the space typically consumed by the door, acting as both transition area and shower for maximum efficiency. Stairs leading from the lounge/study space to the bedroom have been specifically designed to use half treads allowing a decreased length required. Split level configuration reduces the height of the stairs required. To maximise the efficiency of the stairs storage has been placed in the open riser and an integrated study desk projects from the middle tread. The overall aesthetic of the stairs was to create something that appears to be floating, contrasting the solid exterior of the unit and hard interior surfaces of the timber floor. The open risers allow for the area underneath the treads to be uses as a bookshelf or display cabinet. Creating the perfect study area. Storage has been placed under the bed, to maximise space, while raising the bed to the height of the window allowing users a view while in bed. This also increases ease of access to the roof and makes the bedroom more of a tight cosy space increasing sense of security and comfort.

CHAPTER

# 07

# FINAL DESIGN

This chapter presents the final design outcome in a variety of mediums. Following the design and development of the individual unit, focus shifted to the complex as a whole. Initial ideas developed through designing the individual unit as one cannot be completed irrelevant of the other. Significant methods of exploration used in previous chapters have been repeated as a final test and for consistency. Figure 7.08 is the second iteration of this model highlighting in particular the additional units and the amended entrance. Plans have been resolved to a greater detail and deal with the scheme as a whole rather than individual parts. In particular floor plans highlight the interaction between the addition and the existing building conversion. Ground floor unit programmes have been changed, with public amenities being placed in units with the least privacy, maximising public interaction with the site. All amenities are catered towards aiding students learning with a small coffee shop located at the front of the site, a print shop and stationary shop are located directly behind. Sections give an overall idea of the workings of the scheme and hint at the atmosphere created. A final circulation diagram shows how the additional units tie in with the existing circulation. These are accessed through the rooftop access. Perspectives locate the scheme within its context and give a glimpse at the outcome. Empty walls are intended to be utilized as a blank canvas, allowing students another creative outlet that can be repainted repeatedly. This also acts as another way to draw users to using the walkway.



LEFT SIDE

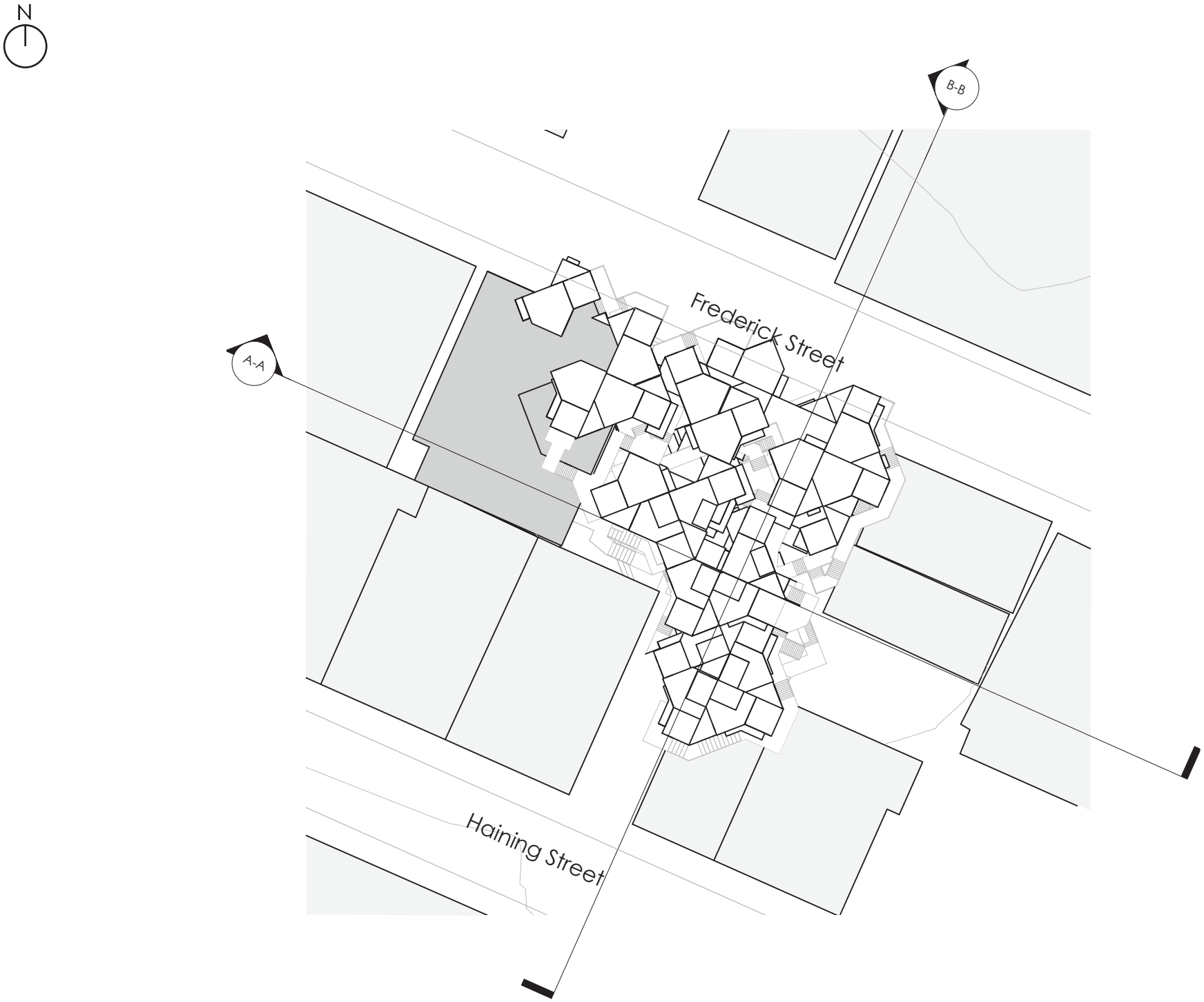
RIGHT SIDE

BACK SIDE

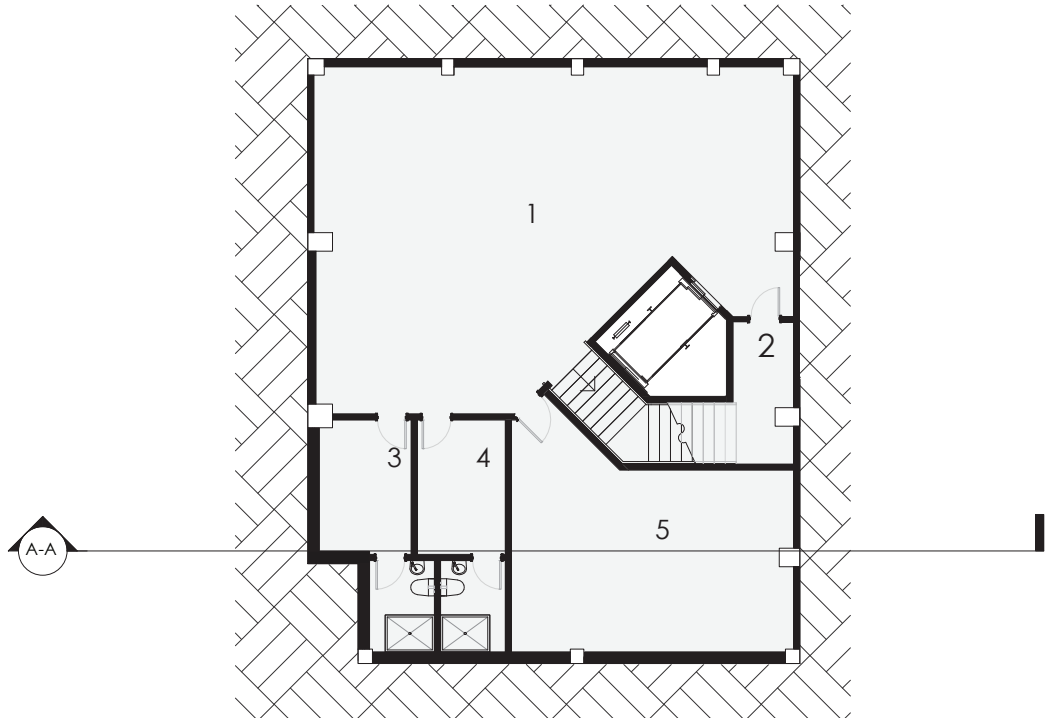
LEFT - FINAL DESIGN MODEL OVERALL.

DETAIL VIEW OF UNIT CONNECTION TO EXISTING BUILDING AND WINDOW

DETAIL VIEW OF NEGATIVE DETAILING AT ENTRANCE



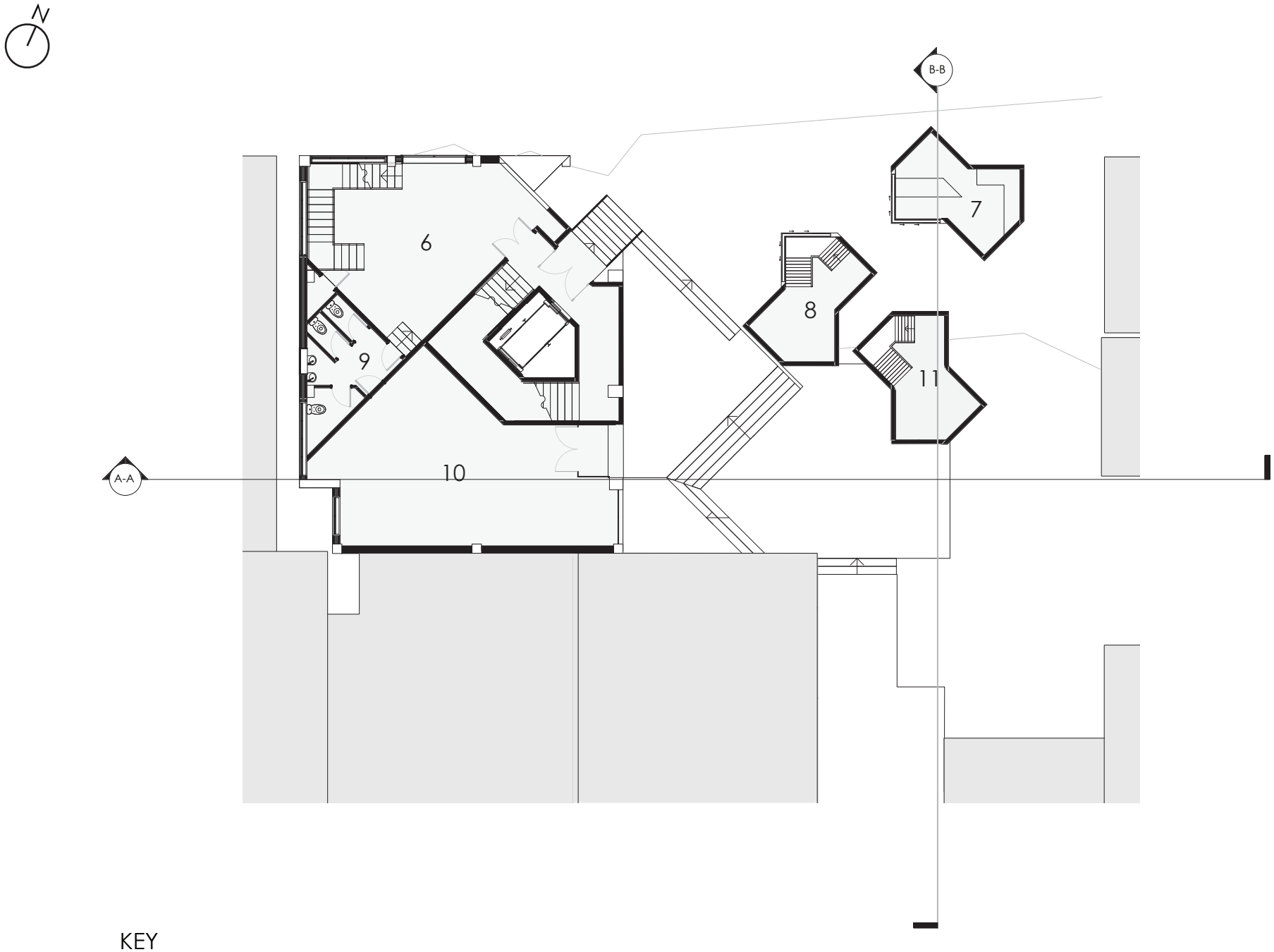

SITE PLAN
SCALE 1:500




KEY

1 - Gym
2 -Storage
3 - Female Changing Room
4 - Male Changing Room
5 - Communal Laundry

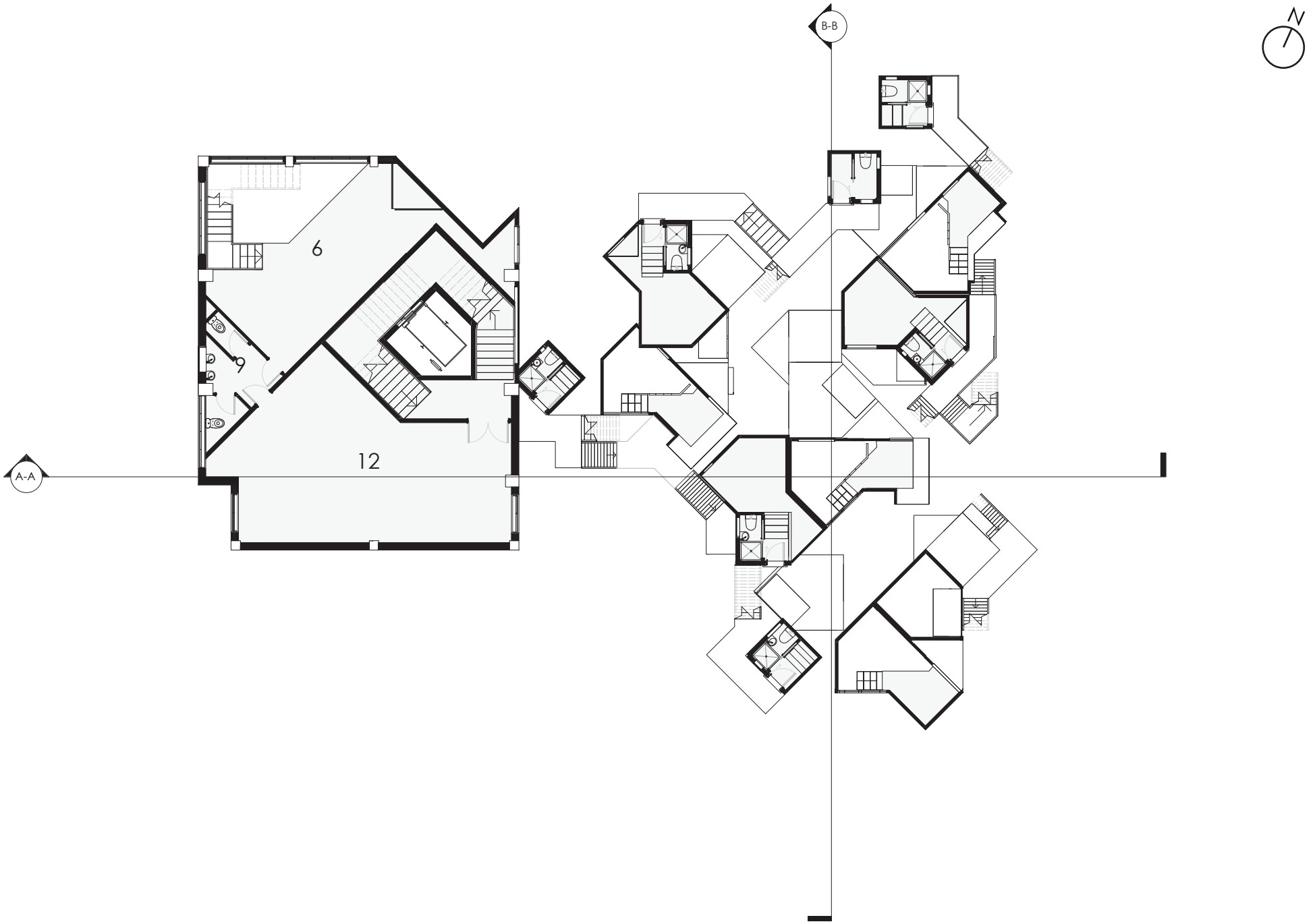
BASEMENT PLAN
SCALE 1:200




KEY

6 - Architecture Office
7 - Cafe
8 - Printshop
9 - Bathrooms
10 - Cafe/Gallery
11 - Stationary Shop

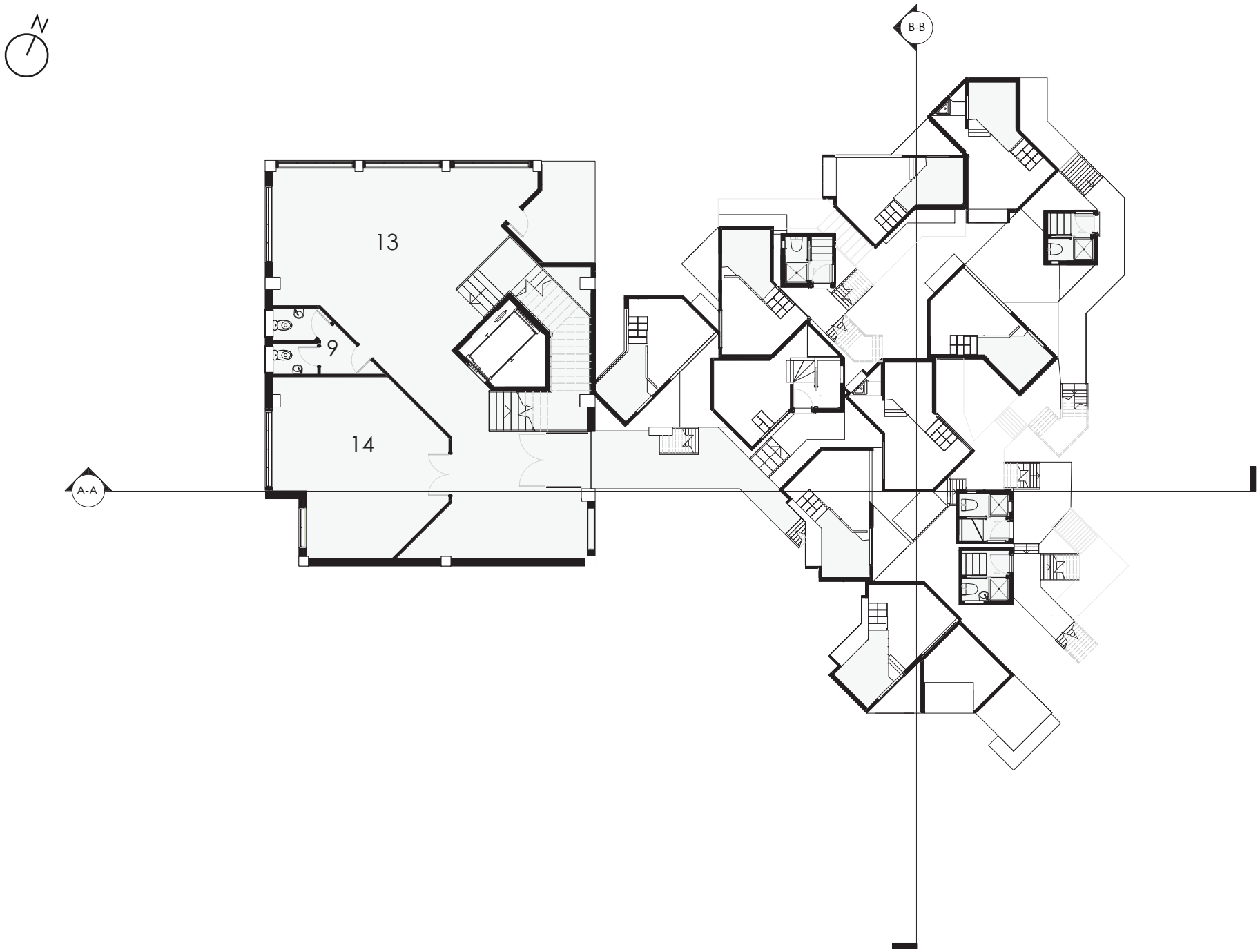
GROUND FLOOR PLAN
1:200




KEY

12 - Administration

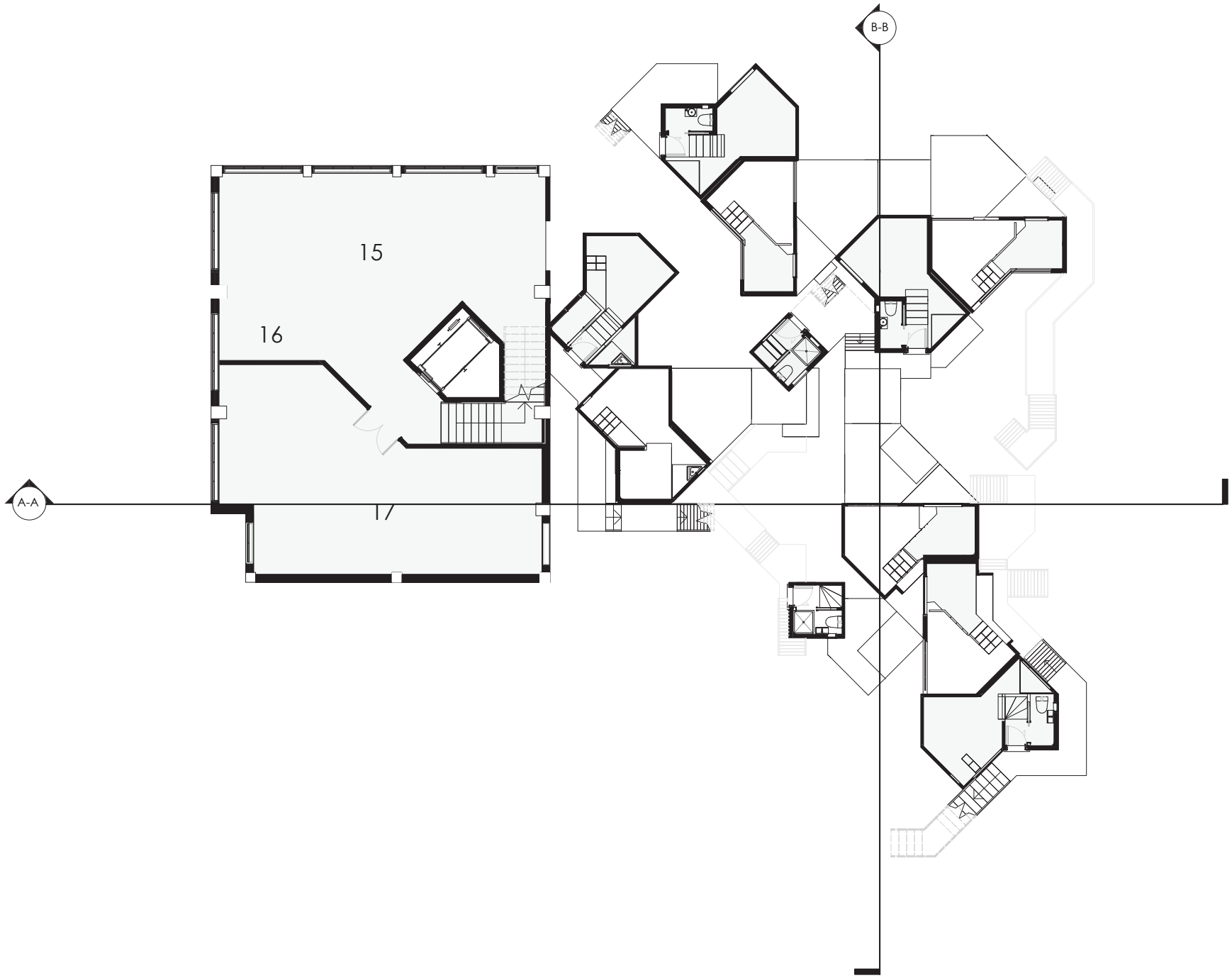
FIRST FLOOR PLAN
1:200




KEY

13 - Common Room
14 - Workshop

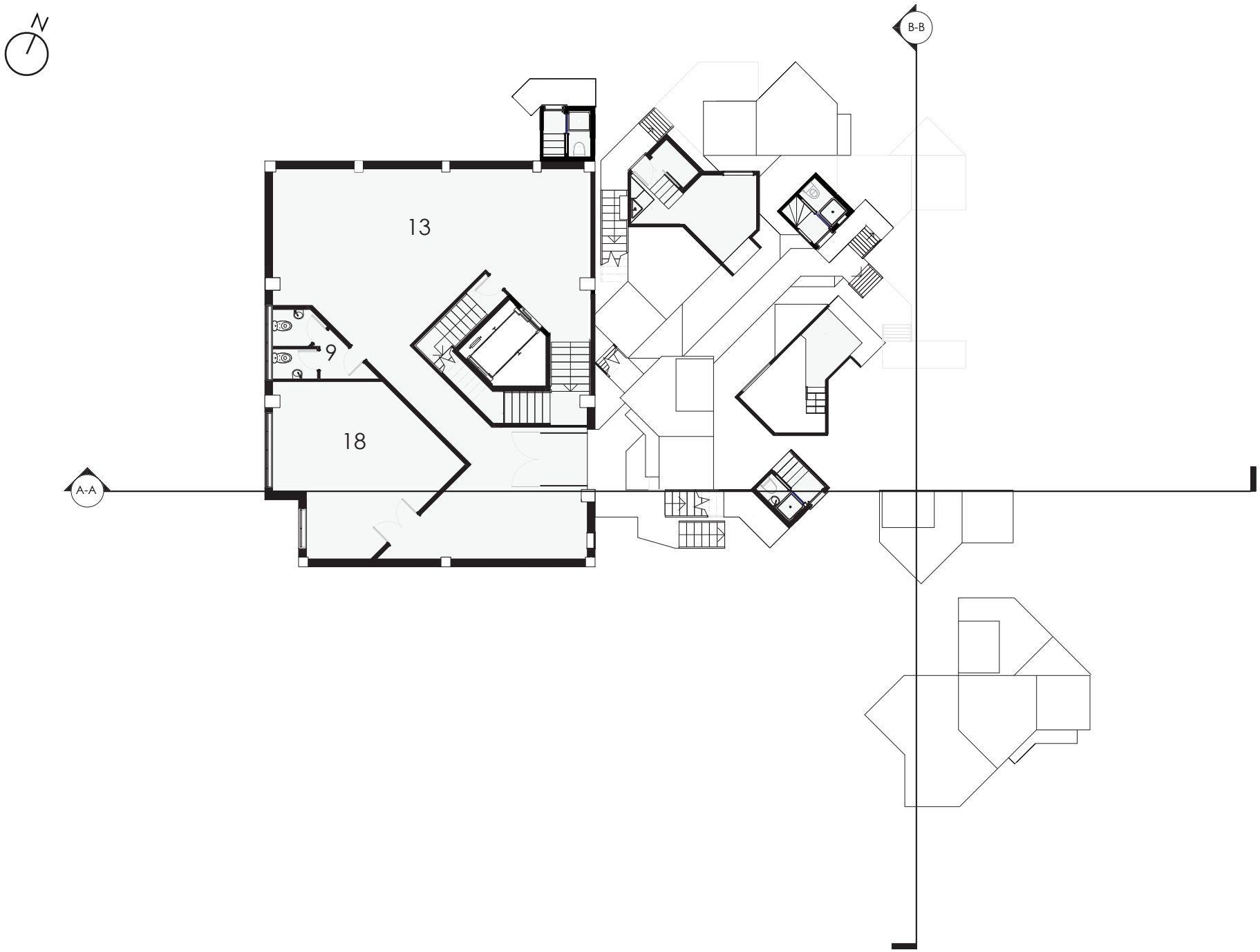
SECOND FLOOR
1:200




KEY

15 - Dinning Hall
16 - Serving Area
17 - Kitchen

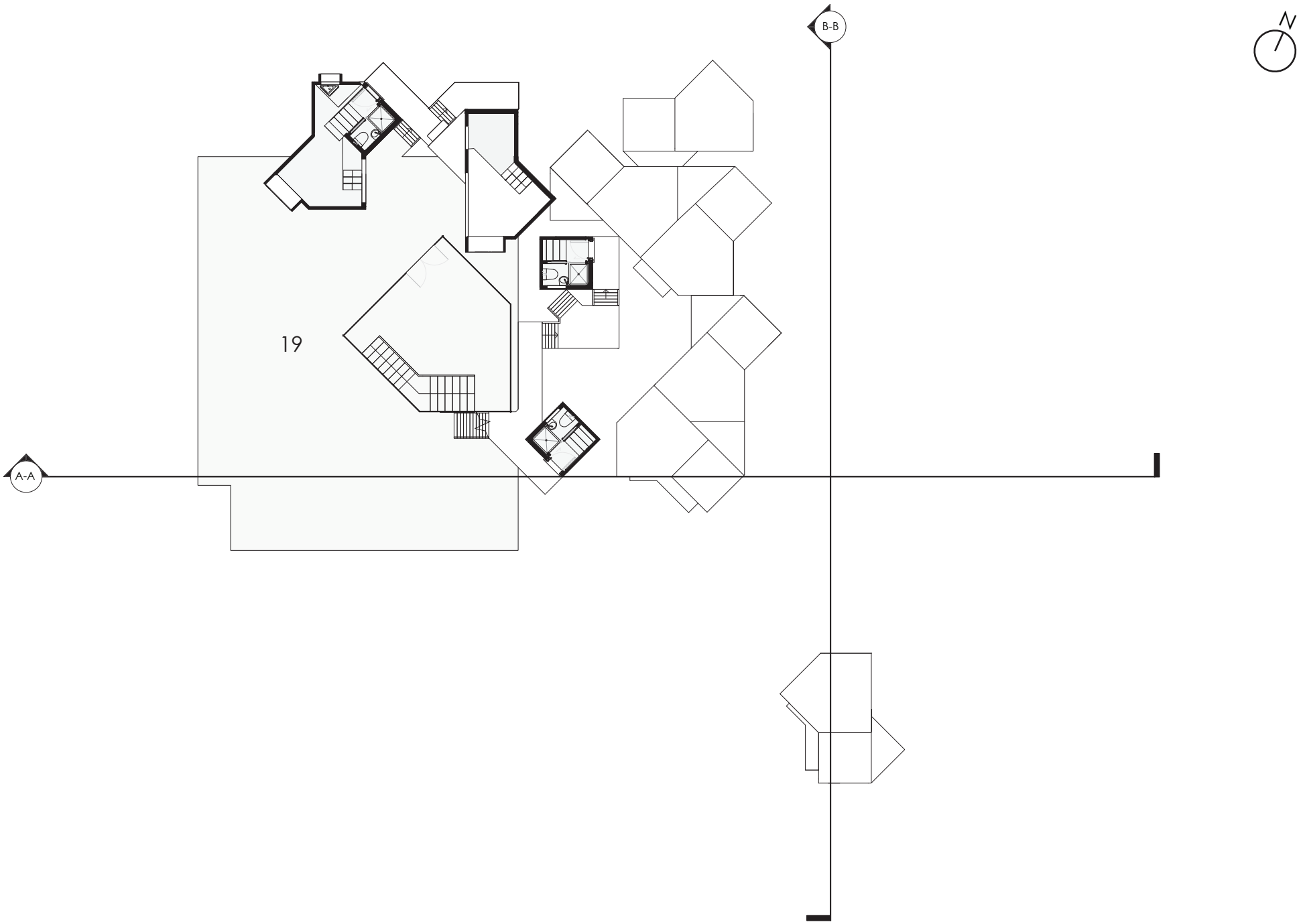
THIRD FLOOR
1:200




KEY

18 - Study Room

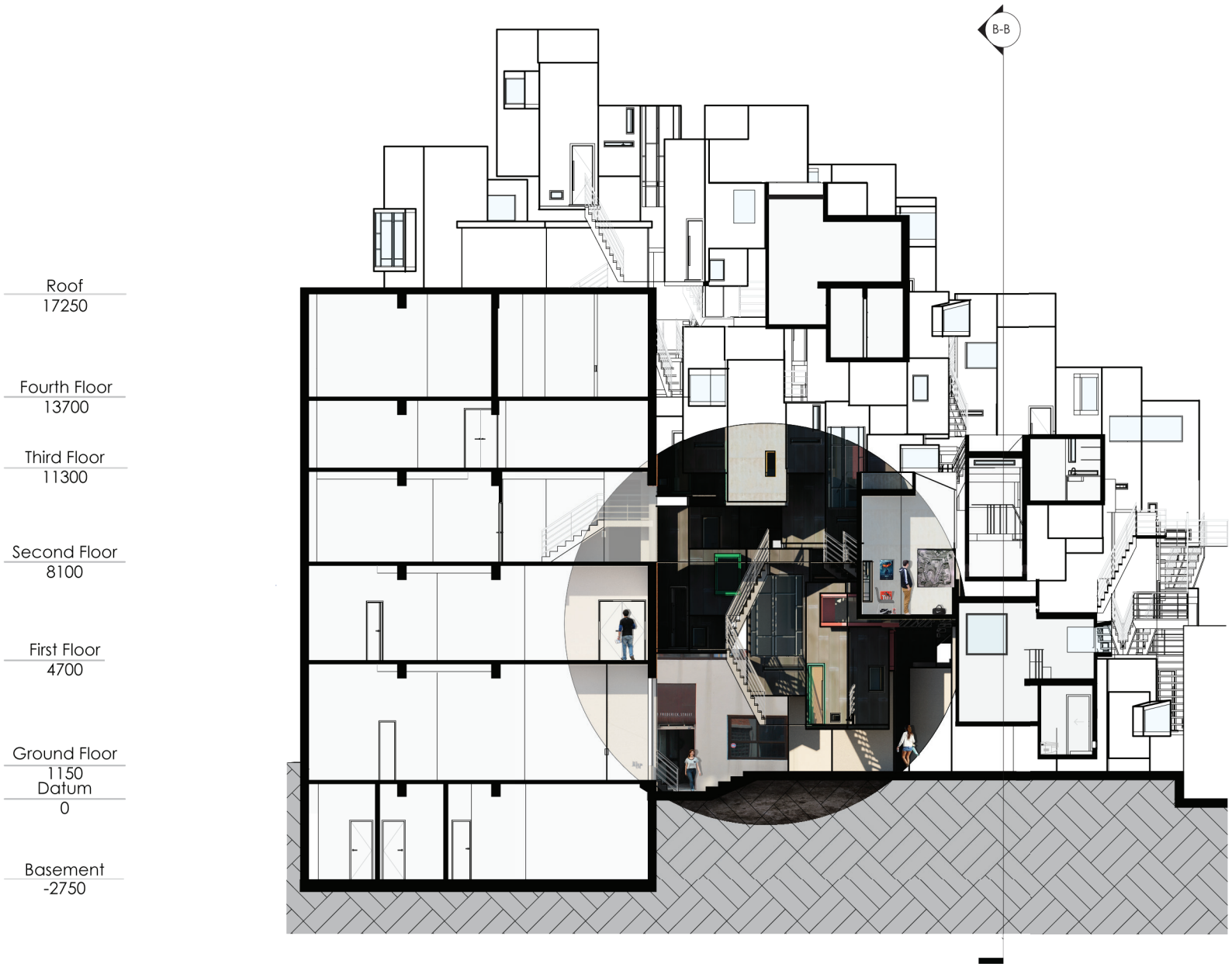
FOURTH FLOOR
1:200



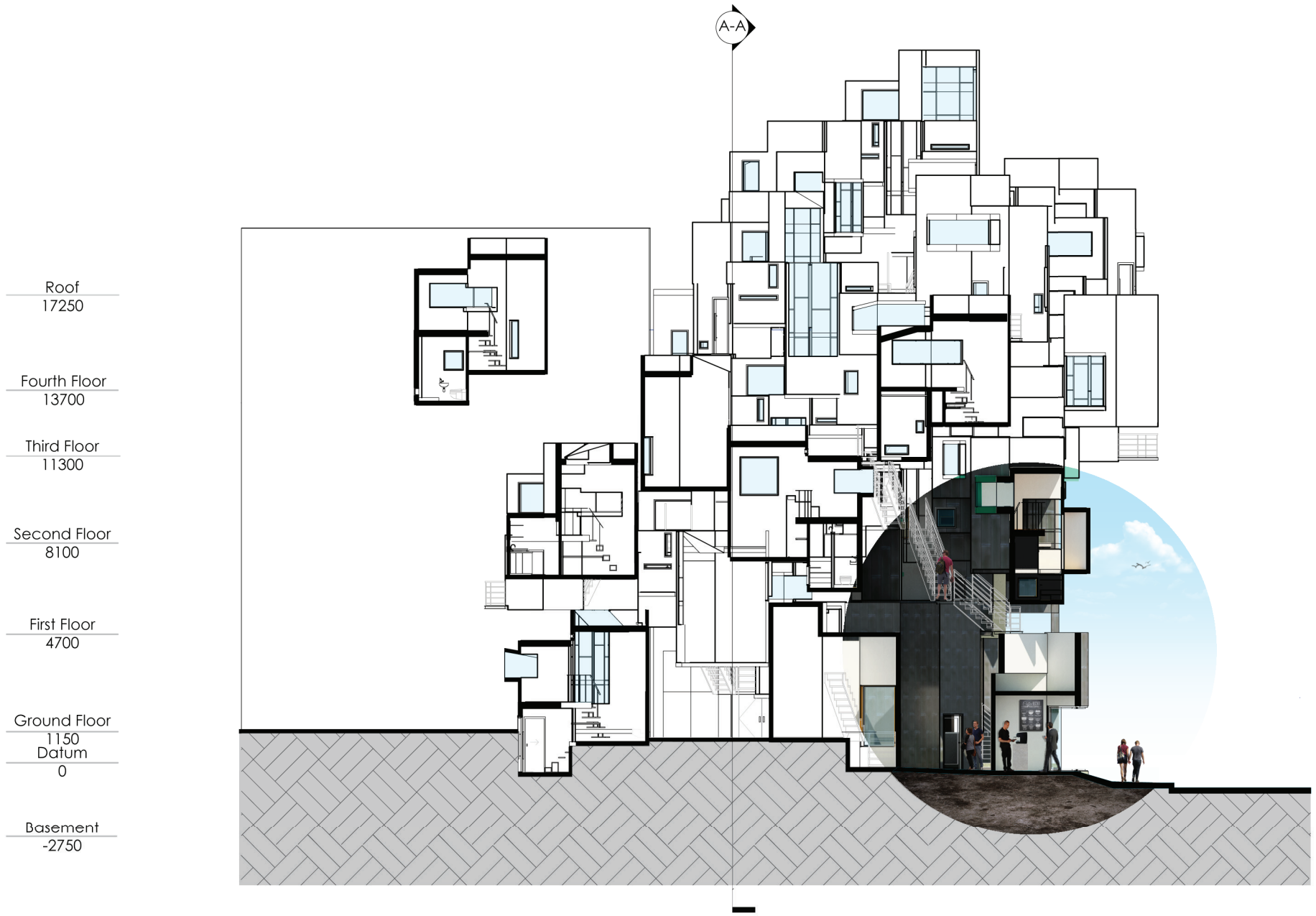

KEY

19 - Rooftop Terrace

ROOFTOP
SCALE 1:200

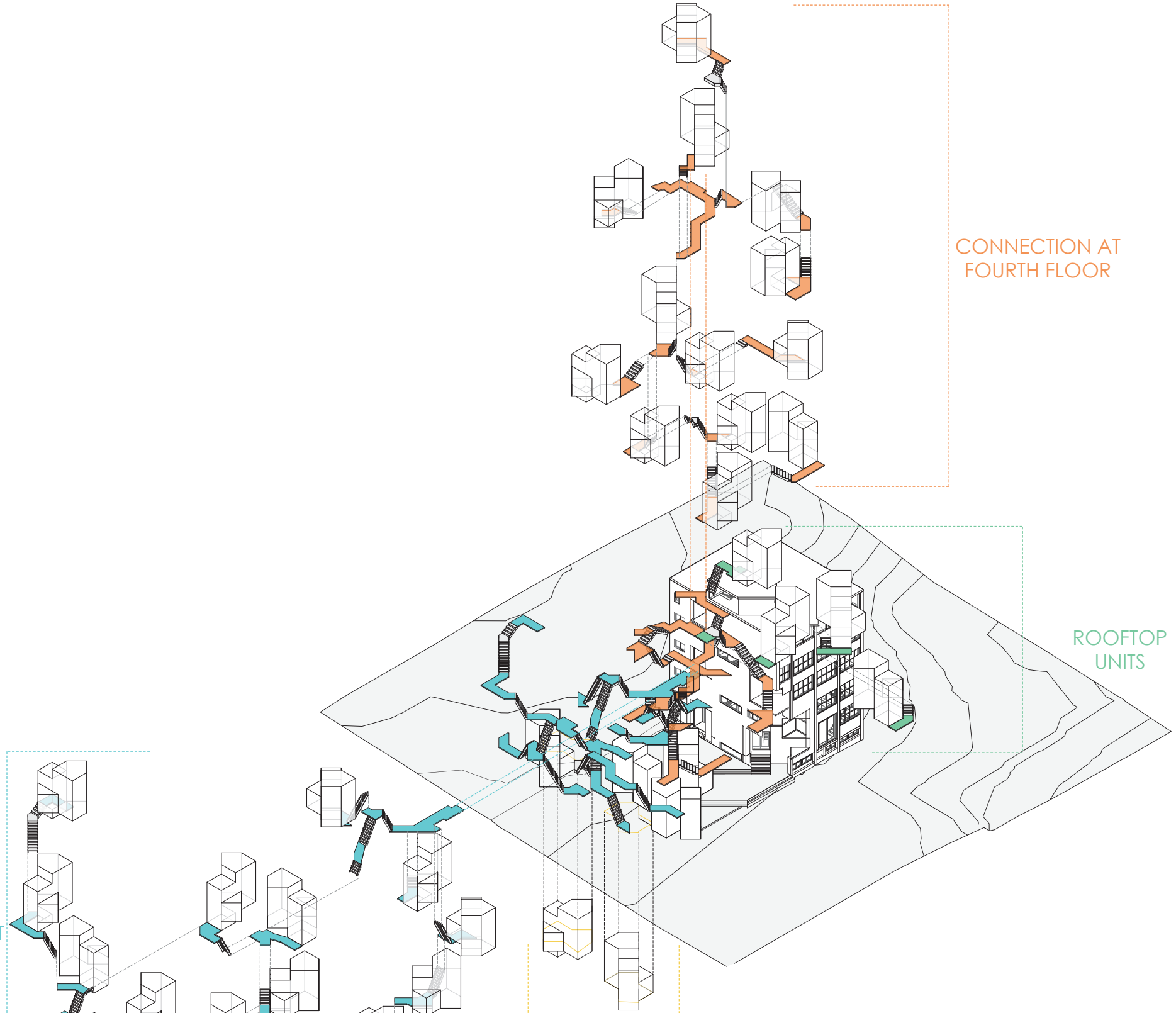



SECTION A-A
1:200

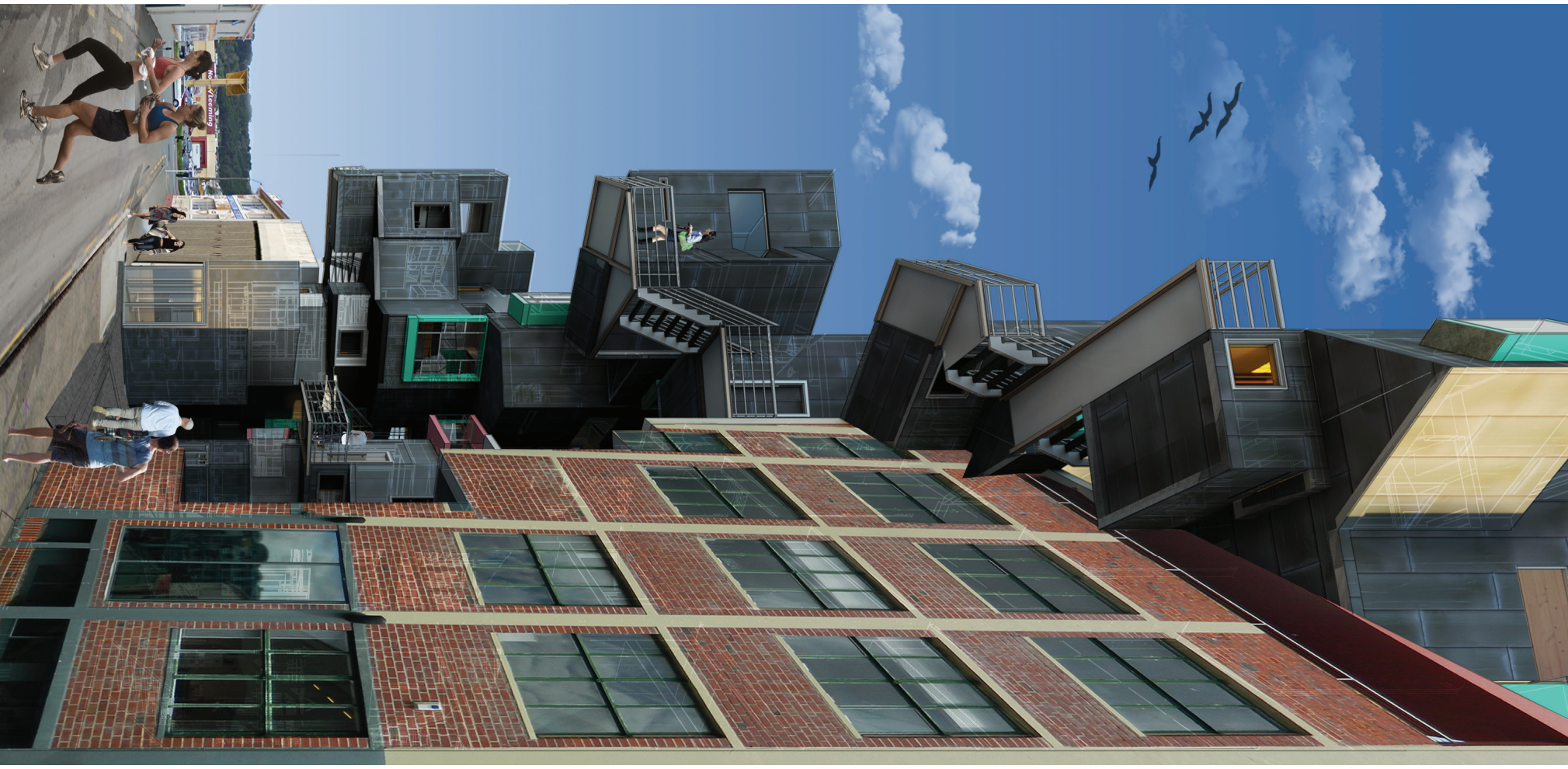



SECTION B-B
1:200

Fig 7.01. Exploded Axonometric Circulation Schematic of Final Design

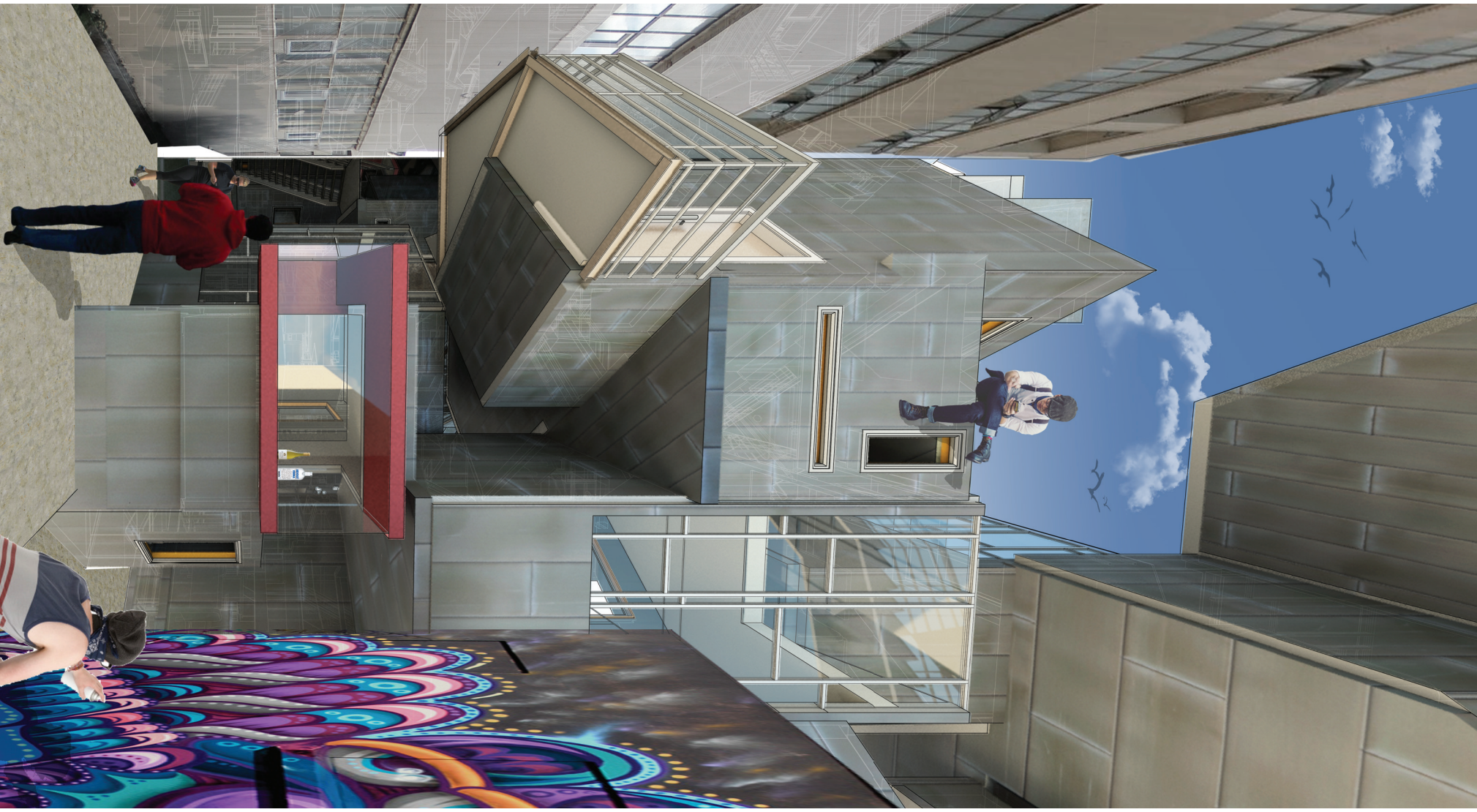

CONNECTION AT
FOURTH FLOOR
ROOFTOP
UNITS
CONNECTION AT
SECOND FLOOR
SUBTERRANEAN
UNITS

STREET VIEW LOOKING TOWARDS TORY STREET



FRONT PERSPECTIVE OF DESIGN IN CONTEXT

REAR VIEW OF SCHEME FROM HAINING STREET ENTRY



VIEW FROM  PLATFORM AT EDGE OF SCHEME

CHAPTER

# 08

# CONCLUSION

As Victoria University doubles student numbers, demand for student housing will increase accordingly. Current accommodation is insufficient in providing sufficient housing for architecture students. This thesis provides a feasible solution to improving the quality of student accommodation to acknowledge the individual and design for them rather than designing for the masses with cost as the only driver.

This research was completed in three parts, the site, the unit and the overall scheme. Each part had distinct parameters and outcomes but are all intertwined with each other, one could not evolve independent of the other parts. The site was selected for the building it contained and the implicated parameters it set. 11 Frederick Street offered a stimulating but not overwhelming building to adapt to a change of program. While the site offered enough space for an essential addition. Design of the ideal architecture unit embraces specific design to directly challenge current student accommodation standards, by designing a prefabricated unit or series units that allows each user to have a unique experience. The unique experience is created through the formation of the overall scheme. Removal of the standard linear corridor allows unexpected interactions and views of the whole scheme. Location within the whole building dictates the windows and entry type of each unit, optimising it for access, sun and views.

This design is simply one test of many possible design outcomes. Further research could be conducted, firstly the exploration of expanding the current design above and across the road as required to keep up with housing demands. Secondly applying the unit to an alternative site to explore the implications and possibilities presented by site. In particular on windows, circulation and overall form. This can be conducted both with and without another building. Thirdly investigate the design outcome through changing the proposed client. Architecture students provided one of the most demanding and particular client to act as a starting point. Student accommodation would benefit greatly from the same research being conducted on all major areas of study.

Quality learning occurs in a closed loop cycle. It never ceases, just as our love of the built environment can't be turned off as desired. School is where we are shown new concepts and techniques. Home is where we must be able to experiment and fully grapple with ideas, with ourselves as the test subjects. This in turn develops our architectural preferences, improving us as designers. Travel is when we get to expand our mind through viewing wonders already realised. Learning at home is the vital link that is so often missed, but can no longer be forgotten.

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Figure 1.02

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Figure 1.03

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Figure 1.04

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Figure 4.12

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Figure 4.21

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Figure 4.22

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Figure 4.24

Authors Own. Based of *Ground Level GA Furniture.*
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Figure 4.25

Authors Own. Based of *Level 1 & 2 GA Furniture*
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