BAZAAR IN THE 'BURBS

Infilling fine grain of activity in the coarse grain context of Paraparaumu

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A 120-point thesis submitted in partial fulfilment of the requirements
for the Master of Architecture [Professional]
Victoria University of Wellington, School of Architecture

2016

Fig. 01// Photo taken at Coastlands Mall

ABSTRACT:

The regional townships of New Zealand are losing young people. The township of Paraparaumu, located along the Kapiti Coast, is no exception. As a sprawling, low-density suburban settlement with its town center being Coastlands Shopping Center — the local mall — there are few job opportunities available. As a result, many early career adults choose to settle elsewhere. Tasked with creating more opportunities, the Kapiti Coast District Council plans to build a new commercial district. To make space for it, this will be done by paving over a large expanse of wetland adjacent to the mall.

The premise of this thesis is that generating opportunities do not have to be large scale. In more dense urban areas where space is limited, many productive activities occur within the fine grain of a city. Wetlands are also recognized as a critical natural infrastructure and a valuable social amenity. Thus, instead of building large commercial facilities that have to occupy the wetland, the design in this thesis proposes a facility made up of a finer grain and infills the glut of carpark spaces in front of Coastlands Mall. The parking spaces displaced will be relocated into a parking tower adjacent to the site.

The building type of the Bazaar was looked at in this thesis as a model, for it is fine-grained and also ingrained with its urban context. The spatial network of the Bazaar democratizes access, which is a direct contrast to the singular and hierarchical nature of the mall. The design adopts these ideas and expresses them through a network of modules on a tartan grid plan transforming the design into a rhythmic series of spaces

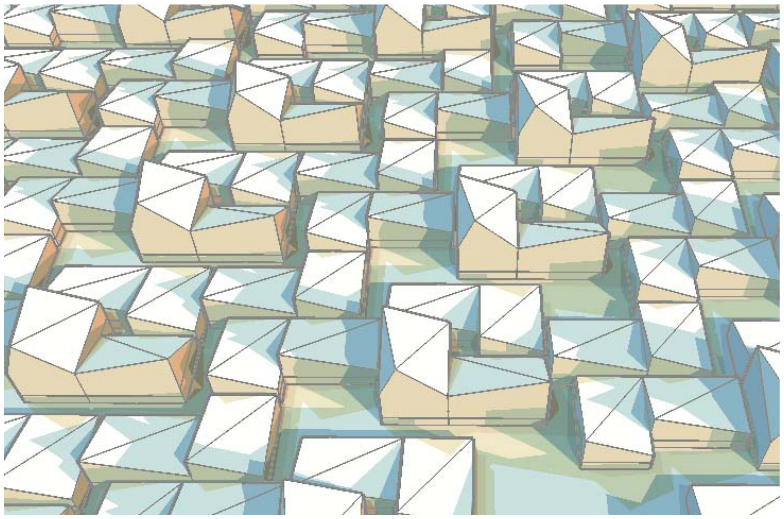


Fig. 02//Design as a tessellated pattern

that express compression and expansion, allowing it to be an interlinked network of interior and exterior spaces.

The grid is a powerful tool for organizing expanses of space though it is only useful in an architectural sense when accompanied by a fine-grained variation. Though the repetitive grid is suitable in plan, as a 3d form it quickly dissolves into monotony when repeated across a field. Similarly, the site itself is inherently charged with its spatial hierarchy. Thus, localized adjustments of the roof and exterior details were made to break the monotony and reset the spatial hierarchy.

This thesis explores how fine grain activity can be integrated into a large-grained context through the use of an additive, modular network set on a grid. Though the research findings produced one expression of this in the design outcome, the idea of a dense, fine-grained modular network is applicable in any context that has large inactive open space to be filled.

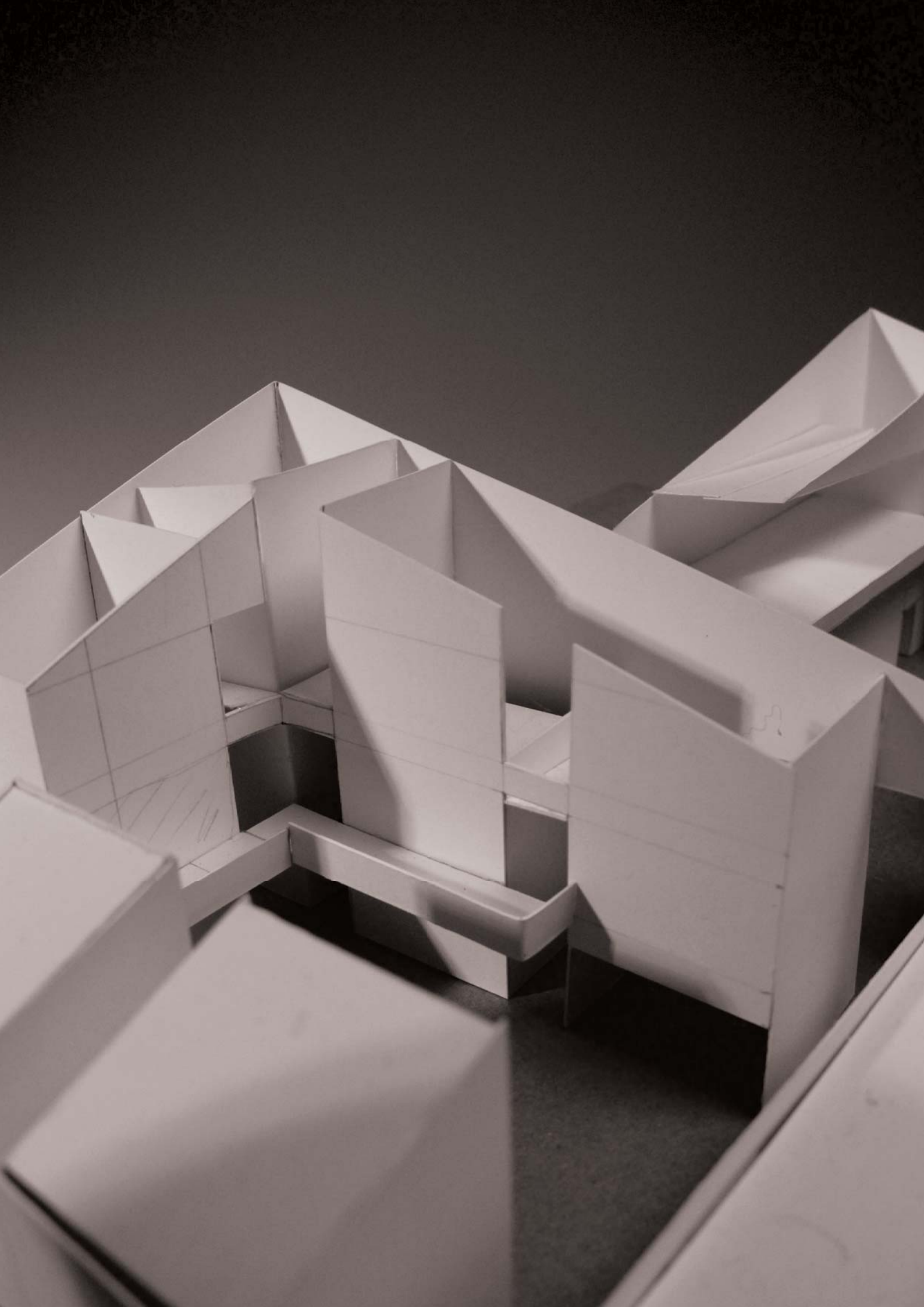
Acknowledgements:

Firstly, to my parents. Thank you for your unwavering support and doing everything in your power to open the world to me.

Secondly, to my flatmates, Daniel Crooks, Nick Denton, Yuqi Kong and Mint Wallace. You all have been family to me this year and thank you for all the moments of sanity and insanity as we tackled thesis year together.

To the cohort of 2015 and the best thesis stream team. As iron sharpens iron, you all challenged and inspired me in so many different ways. This year would not have been the same without all of you.

And finally, to my supervisors Sam Kebbell and Martin Bryant. Even though architects are often referred to as “the ultimate generalist”, what you both have impressed upon me is the importance of viewing the general through the very specific lens of an architect. Thank you for your infectious passion for this discipline.



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◄

Fig. 03// Photograph of a cardboard model of the design

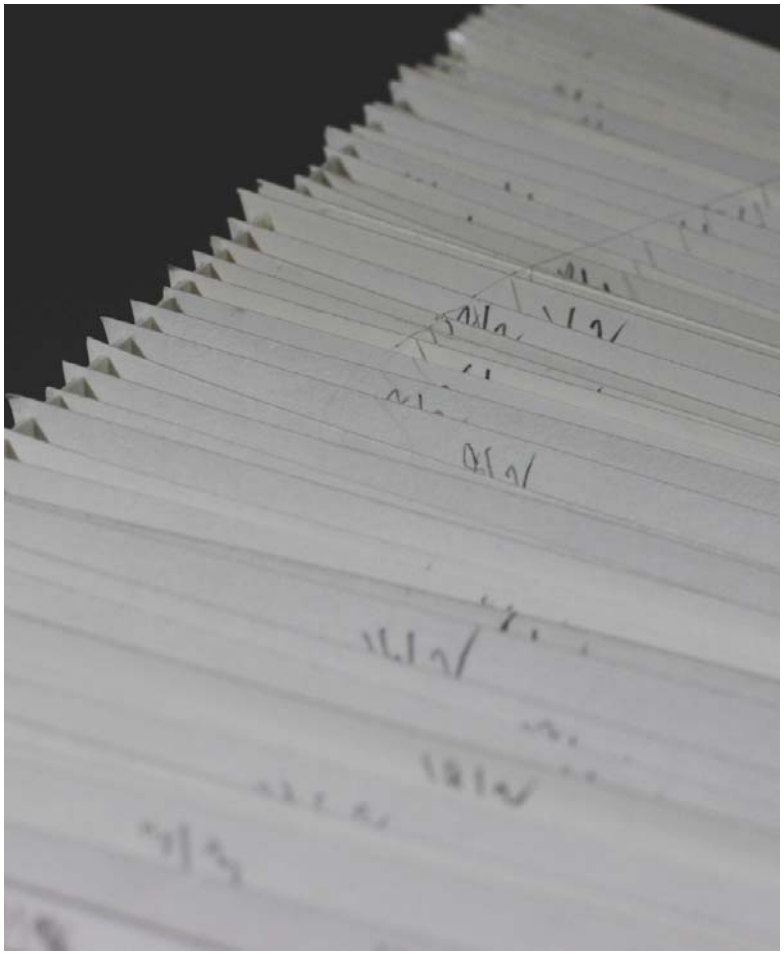


Fig. 04// Photograph of a cardboard model of the design showing organizational detail

INTRODUCTION

How this Thesis is Organized

PROBLEM STATEMENT AND OBJECTIVE

The township of Paraparaumu is a suburban sprawl and as a result, Paraparaumu faces two main issues. First, because the township is so spread out and homogenous in its settlement types, there are few job opportunities available. Secondly, the township uses the land it occupies poorly, particularly in regards to its commercial district in the town center and the sprawl of car parking. Presently, there are plans in place by the Kapiti Coast District Council to continue the sprawl of the town center. However, these involve expanding the footprint of the existing town center by paving over the valuable wetland adjacent to it.

This thesis asks if there is a way for architecture to address these issues. What if the car parking is re-allocated for productive activity? And is there a way for the architecture to achieve this while creating a better-defined site at the pedestrian scale? And can we integrate into this architecture another mode of production that might be more meaningful to a small town?

METHODOLOGY

This thesis takes a Design-Led approach to research. It sits within a wider Research Stream looking at how architecture and landscape architecture could respond to the conditions on the Kapiti Coast. This theme set the general context of our investigations while the problem and objective of the theses were based upon our own individual findings.

The development of this thesis was non-linear. Early studies and experiments were centered on contextualizing the issues of the site and the potential of what type of facility the Design will be. Using the idea of a productive facility, multiple experiments were carried out in this thesis before the small scaled manufacturing of the 'Maker Model' of production was selected as possibly being the right scaled program for the site and for the town. During this phase, this thesis also investigated the idea of digital manufacturing processes and what that could mean for the Design. The final design used the rules-based logic in digital manufacturing to influence the repeated modular organization of the facility and parametric roof forms in the buildings.

The core research of this thesis came into being when the final site of the Design was chosen. Here the idea of small-scale manufacturing found synergy with the site specific need of creating pedestrian-scale spaces within the spread-out and car-orientated nature of the site. The building type of the Bazaar became a core case study for the development of this thesis as it presented a model that addressed the issues above. From here, the thesis developed into a series of experiments that investigated the design at different scales: from the singular workspace cell to the building and the site-wide collective.

► *Fig. 05// Diagram of Methodology*

Chronology of Design

Reflect

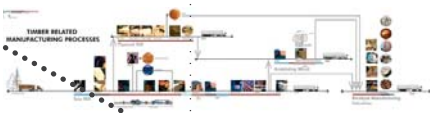
Siting

Program

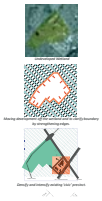
Form

Case Studies

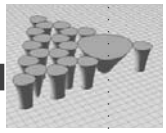
Settling on the Wetland?



Manufacturing Potential in the Kapiti Coast.



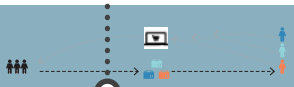
Moving Off the Wetland



Digital Fabricated Structure

Digital Fabrication with ShoP Architects

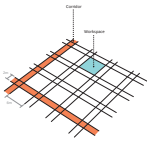
Context / Site
// p.39



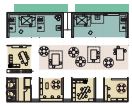
Maker Model
//p.33

Maker Neighborhoods
//p.34

The Workspace Cell in the Tartan-Grid// p.108



The Bazaar
//p. 81



The Module
// p.121

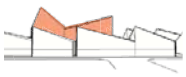
Collaborative Spaces
//p.118

The Research

Courtyard Spaces
//p.57

Module Into Field
// p. 126

Alternative Programs
//p.152

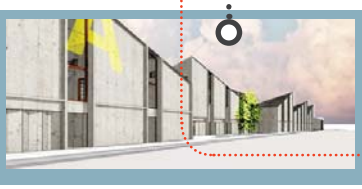


Composition of Modules on Site
//p. 151

Articulation of Form
//p.159

The Design
//p.24

The Design
//p.45



Mat-Bulding
//p.94

THESIS STRUCTURE

This thesis is organized as an annotated series of experiments. Aside from the core case study of the Bazaar, which is examined in its own section, smaller case studies and theoretical comparisons are presented as threads in line with the critical reflection.

The thesis is organized into four parts:

'The Context' – This section sets the scene for the design research. Here, the observations made regarding the site and context are formed into a brief.

'The Design' – Presents the final proposed design solution.

'About the Bazaar' – The building type of the Bazaar is examined and discussed.

'The Research' – This section presents the experiments that were carried out. The experiments follow an iterative format, where a core idea is expounded then reflected upon before moving forward to the next iteration. These are grouped into series to show the issues that arose as the Design grew, highlighting the deviations from the expected outcome of each iteration and design decisions carried out to bring about the final Design outcome.

Fig. 06// Thesis Structure

The Context

[1.1]
Setting the Scene

[1.2]
The Issues

[1.3]
The Site

The Design

About the Bazaar

The Grand
Bazaar

Beirut Souks

Mat-Building

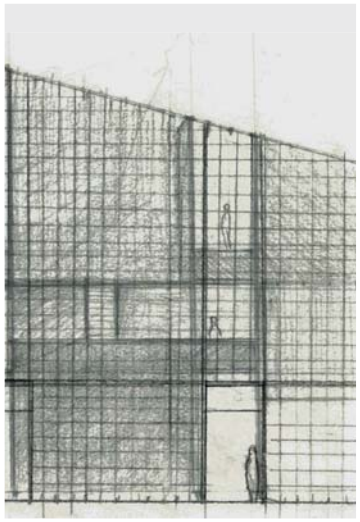
The Research

[4.1]
Six by Six
and Two

[4.3]
The Thick 2D

[4.2]
Three by Four
Module

[4.4]
Formal
Articulations



[1.0]

CONTEXT

Setting the Scene

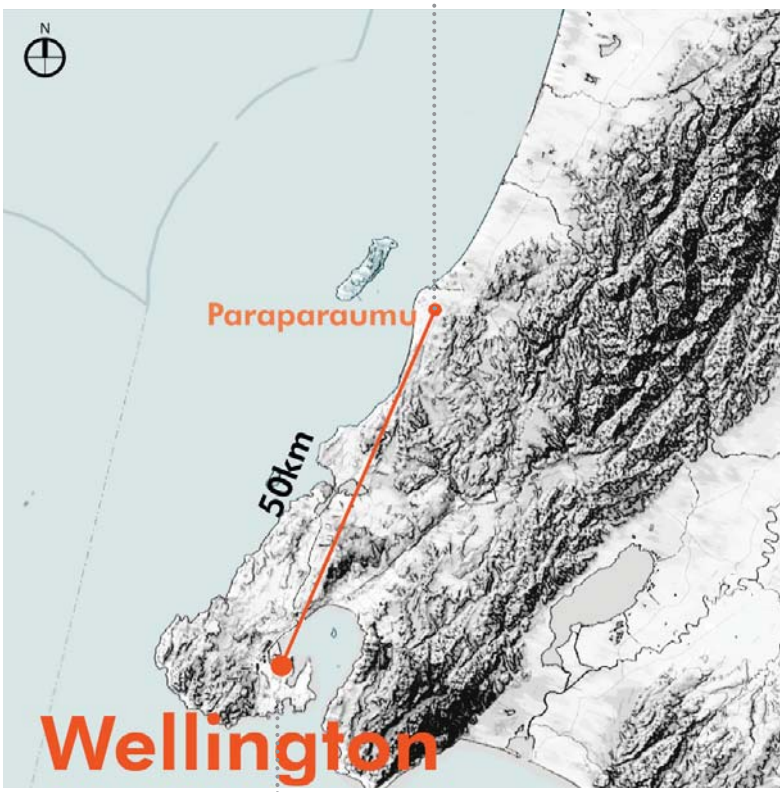
[1.1]

SETTING THE SCENE

About the Site

Largest Township along the Kapiti Coast.

[SITE]



Capital City of New Zealand

Fig. 1.01 // Map showing distance from Wellington to Paraparaumu


Bordered by the Ocean
The areas of human settlement take the form of towns located on the flat lands that once used to be teeming with wetlands.
With sparse population and ample land area, the town sprawls outwards in patches of low density dwellings.
Paraparaumu Town Center
[SITE]

Fig. 1.02 // Photo taken from Paekakariki Hill Road lookout towards Paraparaumu Township during an early site visit.

Paraparaumu, the largest patch of settlement along the coast, exemplifies the issues related to the sparse urban form.

Framed by fertile foothills

Map of Paraparaumu Township

Fig. 1.03// Diagram of context

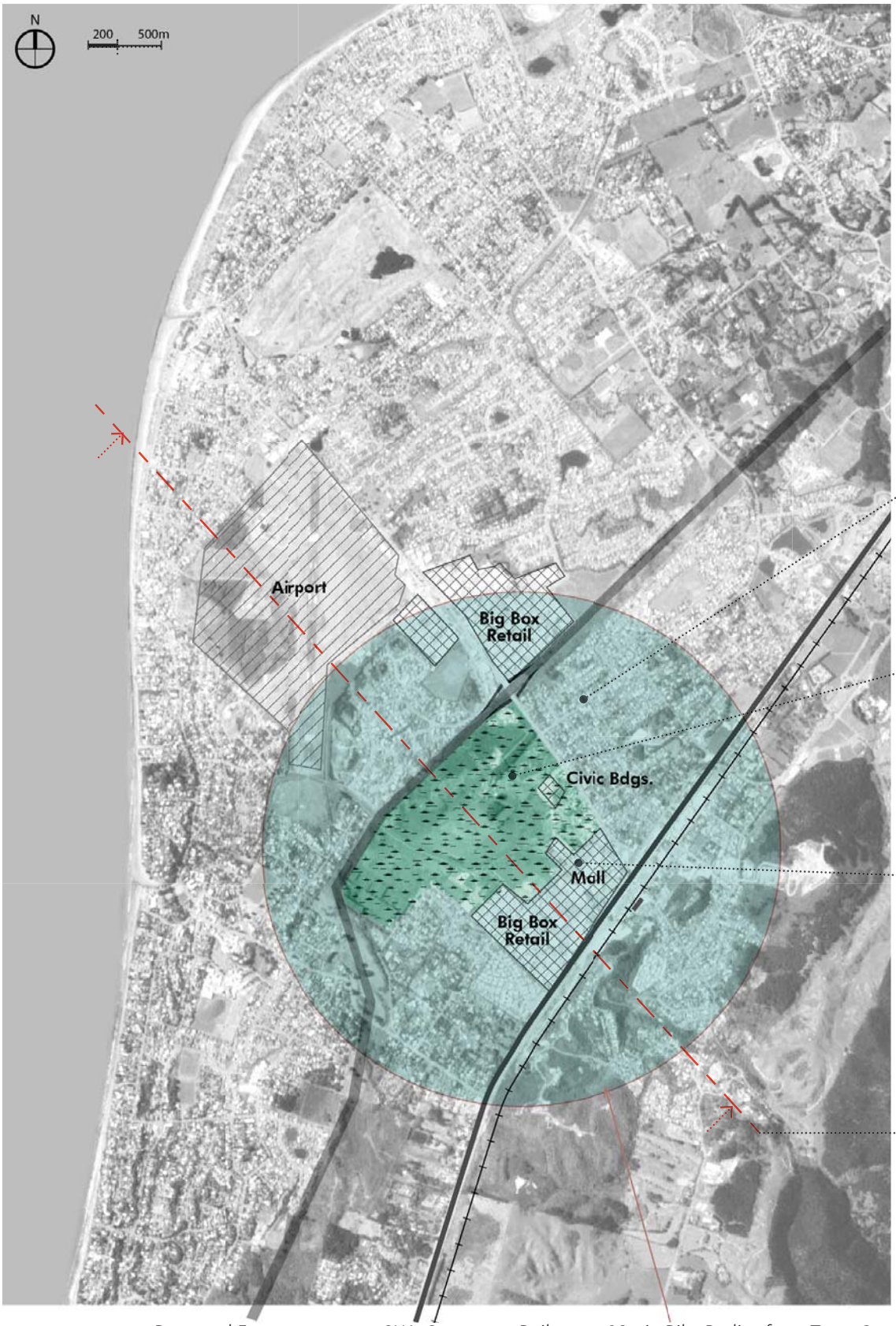


Fig. 1.04// Diagram showing types of settlement in Paraparaumu

Main Settlement Types found in the Town Center Area

Detached Housing Settlement

This is the largest settlement type in Paraparaumu. It is very low density. Paraparaumu town central is populated at 8.6 persons per hectare.

(Profile Id)

Open Wetland

Tracts of remaining land yet to be developed.

Commercial / Civic

The main anchor of the area is Coastlands Mall, while other big box type retail and civic buildings flank its surrounds, each set amidst a desert of carparks.

Geomorphological Cross-Section – Over the Page

Schematic Geomorphological Cross-Section of Paraparaumu in East-West Direction

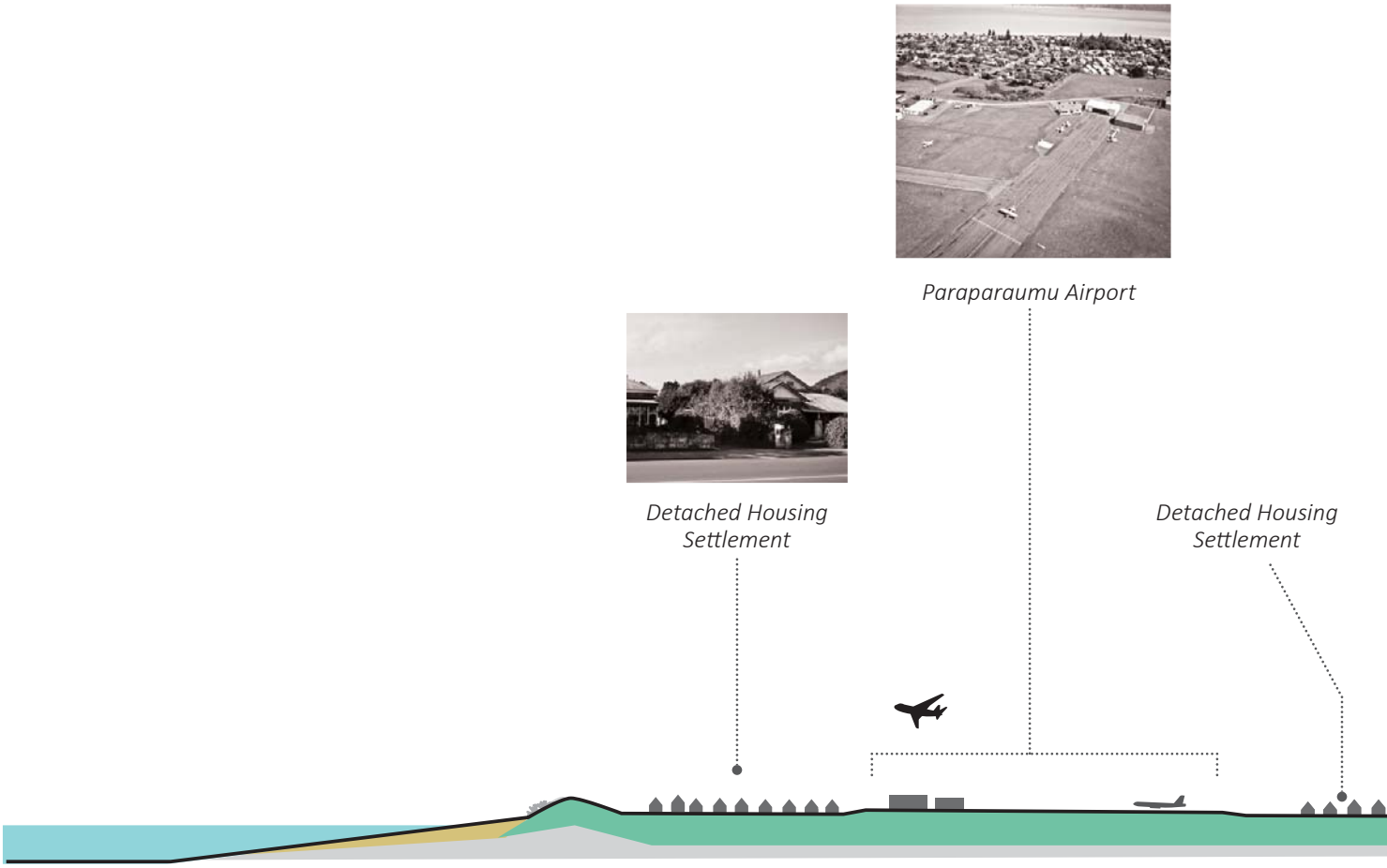


Fig. 1.05// Sectional diagram of Paraparaumu township

Paraparaumu Town Center

[SITE]

Proposed Expressway

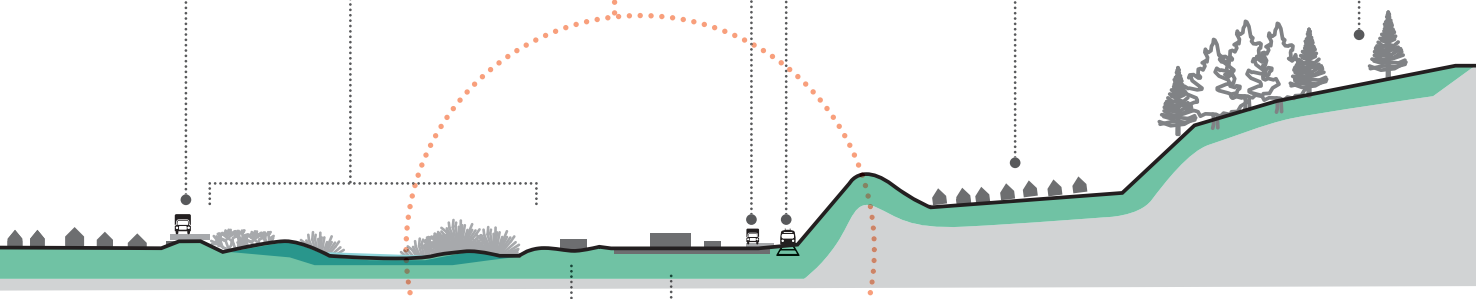
State Highway 1

Commuter Train

Remaining Wetland

Detached Housing Settlement

Commercial Forestry



Wetland

Foot Hills

fig. 1.5 //

Civic Buildings such as the Kapiti Coast District Council (Pictured), Parparaumu Library etc.

Coastlands Shopping Mall

Fig. 1.06//Map of Paraparaumu town centre

Map of Paraparaumu Town Center

100 250m

Fig. 1.07// Images of the key features of Paraparaumu Town Centre

Modes of Transpotation

1.Paraparaumu Airport

2.Proposed Expressway Paraparaumu town center interchange

3. Paraparaumu Train Station

4.Existing State Highway 1

Commercial Buildings

5a. Coastlands Shopping Center

5b. Big Box Retail Area

5c. Office Park

Civic Buildings

6a. Kapiti District Coast Council

6b. Paraparaumu Library

6c.Kapiti Primary School

6d. Kapiti Community Center

6e. Coastlands Aquatics Center

6.f. Police Station

[1.2]

THE ISSUES

Motivation for a Design Response

// Overview

The issue with Paraparaumu comes in two parts: Spatial and Economic, two distinct problems that are closely interlinked.

Spatially, Paraparaumu is predominantly a suburban sprawl type settlement (see fig. 1.4); thus its population is spread very thinly over its area. Commercial areas in Paraparaumu are made up of Coastlands Mall and other Big Box retail centers, located at the core transportation nodes. These tend to host large franchise-type stores to draw the population into the area. As the suburban sprawl type settlement orientates around the private vehicle, coupled with the standardization of franchise stores by their parent corporation, commercial development becomes a cumbersome affair requiring large swathes of car parking space (Feldstein 528). Being a regional township with lower land prices, this is achieved by taking up open wetlands that are yet to be built upon (see fig. 10). The town center of Paraparaumu is made up of these large franchise stores, scattered like islands amidst a car park desert.

It is within this setting that many young, early career adults are leaving the area. With such a spread out and bland offer of amenities, there is little that appeals to this group. As a result, the region is losing out on the potential productivity of an entire age-group, thereby further homogenizing the economic activity to that of more franchises and super stores.

The following section will look at the implications of these two issues in detail.

What the wetlands used to be.

What the wetlands look like now.

// Wetland to 'Burb.

The township of Paraparaumu was once covered in wetlands that stretched the entire 30km length of the Kapiti Coast. However, with settlement, these were cleared away. First for farmland, then later during the housing boom of the 1950s, they were paved over into suburban neighbourhoods of cul-de-sacs and detached family homes. (Maclean)

The township is still very young. There are few tracts of open wetlands left. One such area is located next to Coastlands Mall (fig. 1.6). With a smattering of public facilities around it (fig. 1.7), this area gained the de-facto status of town center. As a result, plans are now in place to develop over this last remaining section of wetland (fig. 1.10).

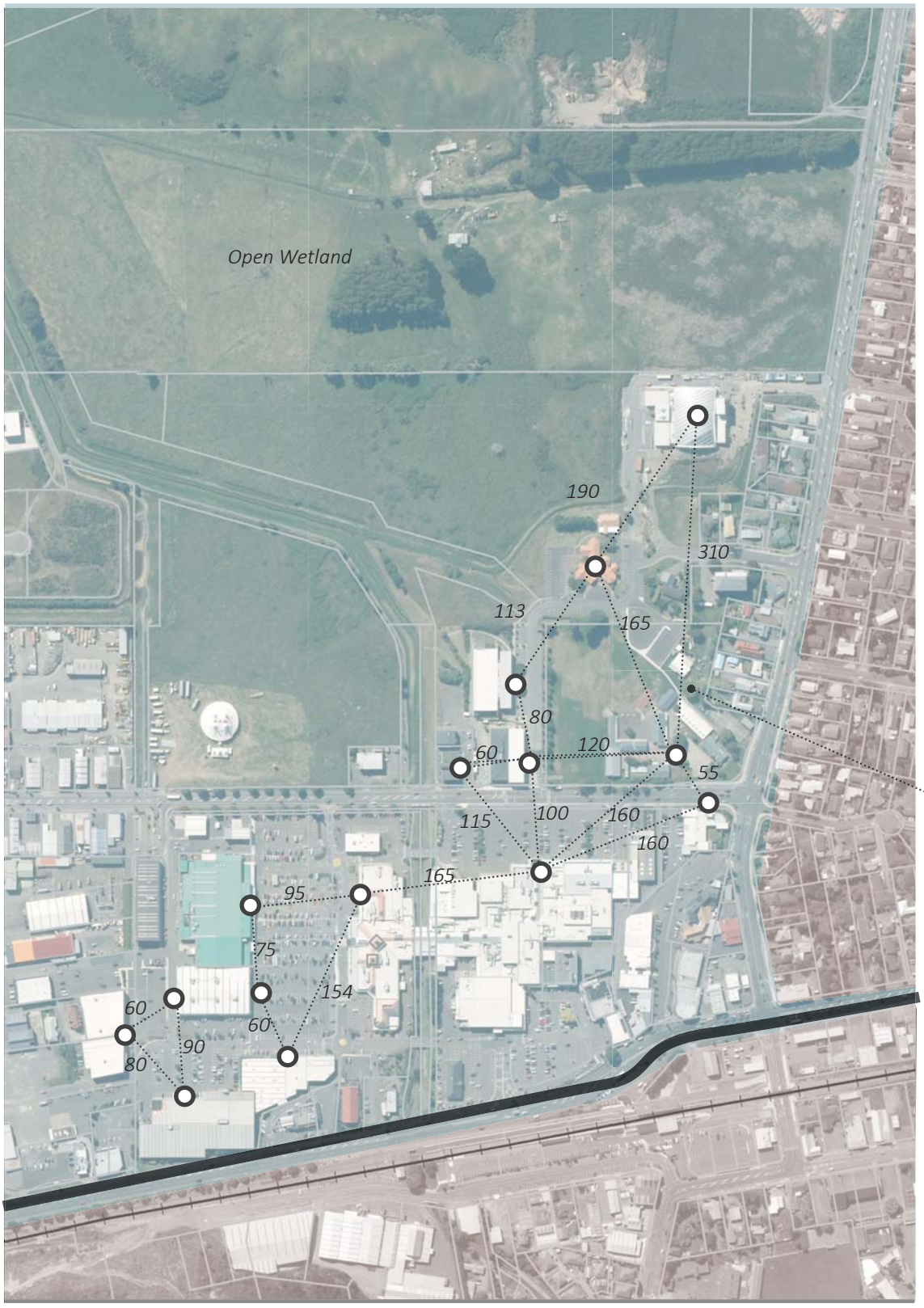
◀

Fig. 1.08 // Photo of remaining natural wetland found at Waikawa Beach, 30min north of Paraparaumu.

▲

Fig. 1.09// Photo of remaining 'wetland' at the center of Paraparaumu with developments encroaching.

Distance Between Buildings in Town Centre



All Measurement to the nearest 5 metres

With the exterior spaces designed for cars, it becomes an uncomfortable space for pedestrians to navigate.

// The Spread-Out Town Centre

The existing town centre is sparsely occupied. Though there are many commercial and civic facilities in the area, they are set far apart at an average of 100m between one building and the next.

The exterior builtscape is designed for car access – i.e. carparks and wide roads – and as a result, Paraparaumu town centre relegates pedestrian space to interiors of buildings. This leaves the exterior space, which makes up approximately 23% of the whole area, inactive and empty. There is potential for the town centre development to be more space efficient.

Distance between key buildings (as measured from their entrances) are spread far apart. Average at approximately 100m between each building.

◀

Fig. 1.10 // Diagram showing distances between buildings in the town centre rounded to the nearest 5m.

▲

Fig. 1.11// Photo taken looking across the carpark towards Coastlands Mall.

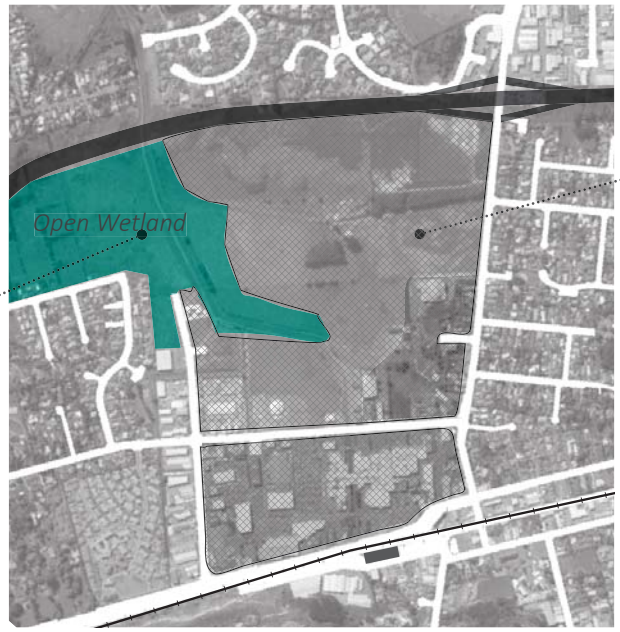
Building Over the Wetland

Though the condition of the existing wetland is closer to a grazing field than a healthy wetland. It still serves as a water retention area, and local residents traverse through it for recreation.

Building development has already begun to encroach upon the remaining tract of wetland. The latest of these was Coastlands Aquatics Centre, opened in August of 2013.

Existing Wetland to Built Development Ratio

The wetland is engineered to be the smallest size possible so as to make more space for development which is seen as having more value.



The new town precinct will be approximately 2.5 times the size of the existing built area.

Wetland remaining after proposed Town Center Precinct Development.

2015 Flood on the Kapiti Coast.

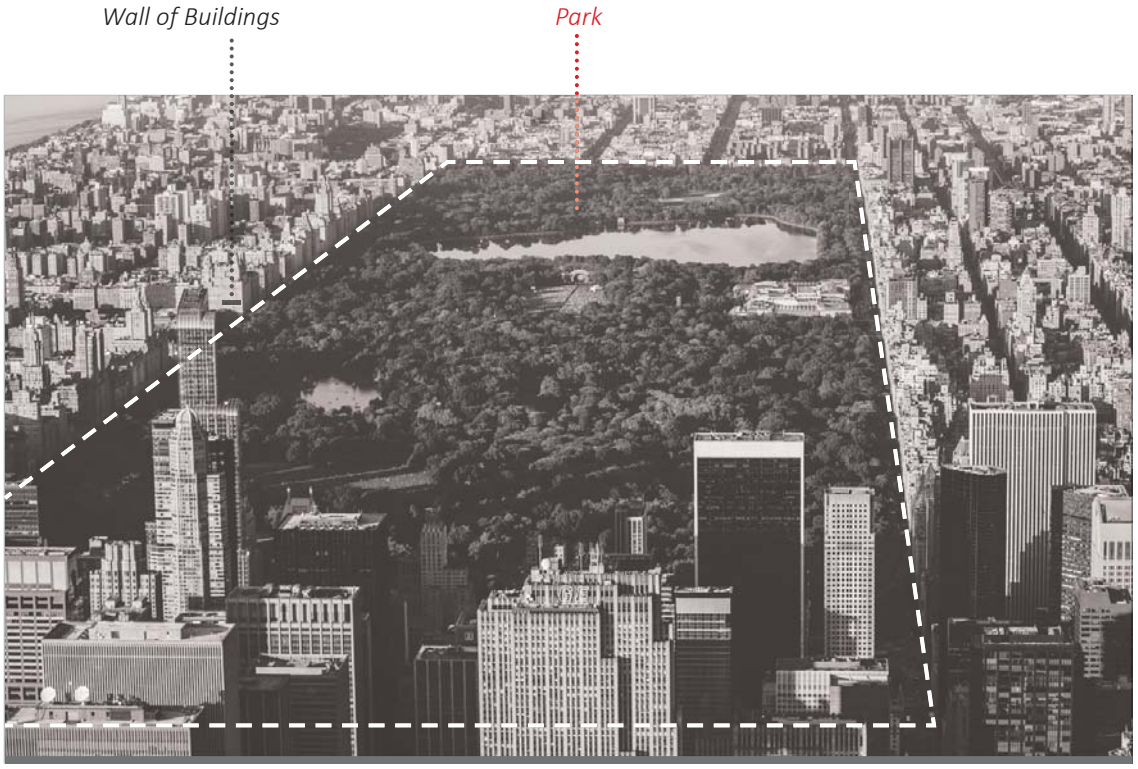
// The Value of Wetlands

Wetlands are a valuable natural resource. Though the current wetland on site is more farm-like than its original state, a healthy wetland is essential for maintaining the water cycle and the availability of water in the appropriate quantity and quality. Wetlands regulate the local climate, mitigate the effects of flood and erosion and also purify containments. This is often done much more effectively and cost-efficiently than man-made alternatives. Beyond its infrastructural utility, it also fosters biodiversity and is a recreational amenity for the area (Russi. Ten Brink and Farmer).

With the recent flooding on the Kapiti Coast in May 2015 – a flood that stranded thousands (Mussen) – the region is more in need of its wetlands than before. It is a natural infrastructure that needs to be strengthened, not minimized.

◀ *Fig.1.12// Diagram comparing the existing Wetland to built area to the one as adapted from "Structure Plan for Para-paraumu Town Centre" Document. (Kapiti Coast District Council)*

▲ *Fig 1.13// Aerial image of flooding on the Kapiti Coast in May 2015 (Accessed 20/11/2015)*



// Moving off the Wetland

Paraparaumu should develop its town centre. But this should not come at the cost of removing its open wetlands. Presently, these tracts of wetlands are seen as leftover spaces yet to be built upon. Their value comes from being turned into commercial space with lettable rates.

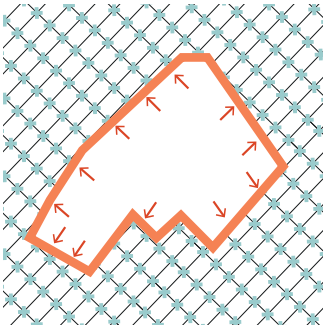
However, if the inherent value of the wetland itself is recognized and this area of open wetland in the middle of town was re-classified as a Park instead of leftover space, there is potential here for both the city and wetland to flourish. One example is Central Park in New York City (see fig. 1.12). Here the urban-scape densified around the Park's perimeter forming a very distinct boundary between the urban-scape and the landscape, allowing each to be a more heightened version of itself.

▲
Fig. 1.14// Central Park, New York City is an example where the park and the built remain very distinct entities. This was emphasized by a wall of buildings that frames the park.

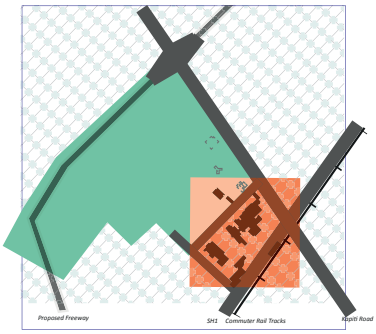
►
Fig. 1.15// Diagram showing Urban Strategy.

Move off the Wetland / Intensify the Edge

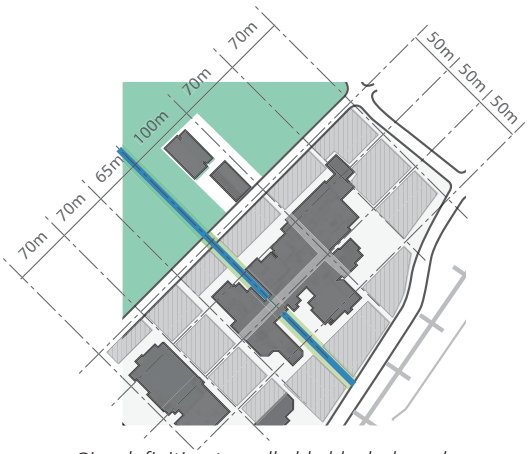
Undeveloped Wetland



Moving development off the wetland to clarify boundaries by strengthening edges.



Densify and intensify existing 'civic' precinct.



Give definition to walkable blocks based upon dimensions already existing on site.

Demography of the Region

Kapiti Coast
19%

Wellington
40%

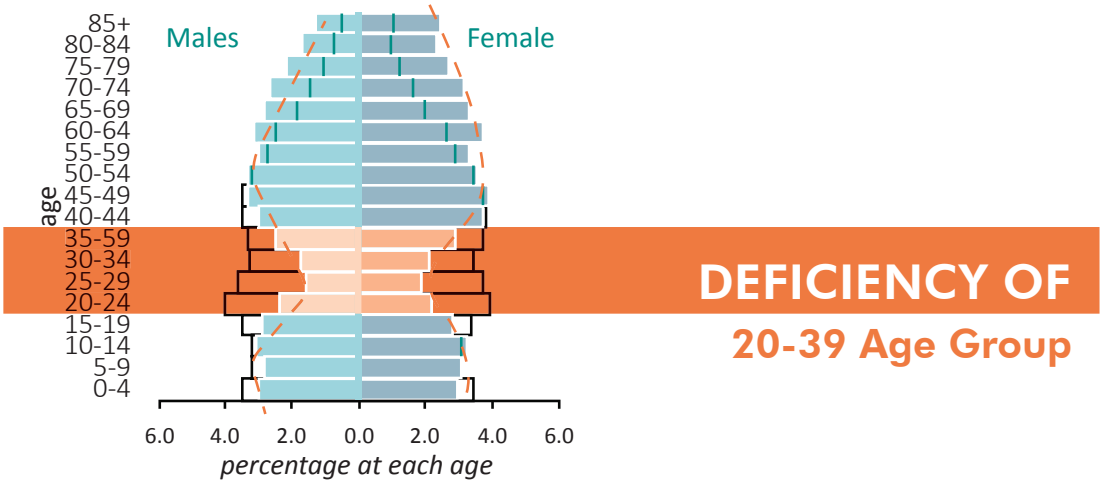
Percentage of Population with an equivalent Tertiary Level Qualification or above.

7.8
labour market entry

/10
labour market exit

At a ratio of 7.8 per every 10, the Kapiti Coast has had fewer people at labour market entry than exit age.

Kapiti Coast (Wellington RC unshaded)



Age Distrubtion of Kapiti compared to Wellington

Data from census as published in Greater Wellington Socio-Demographic Profile 1986-203 by Natalie Jackson

// Economic Status

Paraparaumu suffers from a lack of economic diversity and a shortage of skilled labour. Though the township is the commercial and administrative center of the Kapiti Coast, its economy is propped up by a heavy reliance on the construction and retail sector. With limited opportunities available, there is a mass exodus of young people from the Kapiti Coast thereby completing this vicious cycle (Koh).

If the region is to be economically competitive, it must attract the highly-skilled workforce of the "Creative Class" (Florida). As Richard Florida observes, areas that hold a high concentration of Creative Class people are the "economic winners of our age" (101). Creative Class people look for communities with high-quality amenities and "above all else the opportunity to validate their identities as creative people" (101). It is this clustering of human capital that attracts companies, or in many cases, creates them.

◀ *Fig. 1.16 // Graphs showing the Demography of the region.*

▲ *Fig. 1.17// Photo taken inside Coastlands Mall showing a cross-section of demography in the region.*

// The 'Maker' model of Industry

In the last decade, there has been a shift in the way people view production and consumption. As a reaction against the disenfranchising effect of the old, mass production model - where the 'makers' are treated as anonymous cogs and its customers as a standardized, passive consumer – a new movement of small-scale, independent Makers is on the rise (Didcock; Westbury, The Rise of The Maker) (see fig. 1.19).

These new 'Makers' are highly creative, and new media savy. They are not limited by physical geography to access supplies and customers. Calling it the "Etsy-effect", Marcus Westbury observes that online market places have globalized the small-scale business by removing the reliance of foot-traffic. At the same time, this also allows distinct, local creativity to flourish. This is beneficial locally as, Westbury describes, "makes for distinctive, original and local places" (Westbury, "The Etsy Effect").

▲

Fig. 1.18// The Team at 'George and Willy', a furniture start-up based in Tauranga - A regional city that is fast becoming a 'Creative Center'. Original Photo by Jane Keam

►

Fig. 1.19//
Diagram showing the difference between new model of small-scale production as compared to the old model based upon mass production..

New ‘Makers’ Model

Individuals or small teams.
Flat Structure:
- Owner is Designer and Maker.
- Autonomous and Collaborative.

The internet becomes an equalizing plateform for the makers. Marketing is done through social media and sales transcations are made online. Goods are made in small batchs per order with minimal waste.

Customers are individuals located all over the world. They connect with the Makers directly and therefore are able to receive personalized and unique products.

Large companies.
Top- Down, Hierarchical.
Production is outsoured overseas to lower labour costs.
The Makers are annoynmous and replaceable.

Goods are held in a brick and mortar store till a customer comes to purchase. Possibility of waste and inappropriatness to purpose.

Customers are limited to the geographical accessibility of the store. They are assumed to be homogenous in what they need.

Old Model

Case Study: Maker-Centred Neighborhoods

New Castle and East London are two areas which have seen a revival of small-scale makers. What is interesting is in both cases the Makers tend to conglomerate together in a tight area, whether that is a street mall or a city block. At the scale of the individual Maker space, there is also a fluidity of program. This is made possible by the informal nature of a small-scale company, thus opening up the company to more personal interactions with its clients and community

NEWCASTLE, AUS.

The Renew Newcastle Company, formed in 2008, began an initiative where it matched untenanted offices and stores with creative programs such as galleries, co-working spaces, etc. With a particular focus on the Hunter Street Mall area, the company filled 20 plus vacant spaces with productive, creative activity. Over time, this dense area of creativity gained momentum, and Hunter Street Mall has grown into a unique local attraction. Many programs have since thrived and graduated from the initiative into full rent paying tenants. Currently, there are 58 individual creative programs managed by the Renew Newcastle Company in the Hunter Street area ("Renew Newcastle").

Studio Melt
Originally a jewelry workshop seeded into a small 6m wide storefront on Hunter Street Mall. Studio Melt has flourished into a local creative hub. It is active during the day as a jeweller and boutique during the day and hosts community workshops in the evenings.

Through social media, Studio Melt has gained a loyal following both internationally and locally. This in turn brings more people into the region (Westbury, "The Etsy Effect").

▲
Fig. 1.20// Workshop Space in Studio Melt. Photo by Studio Melt.

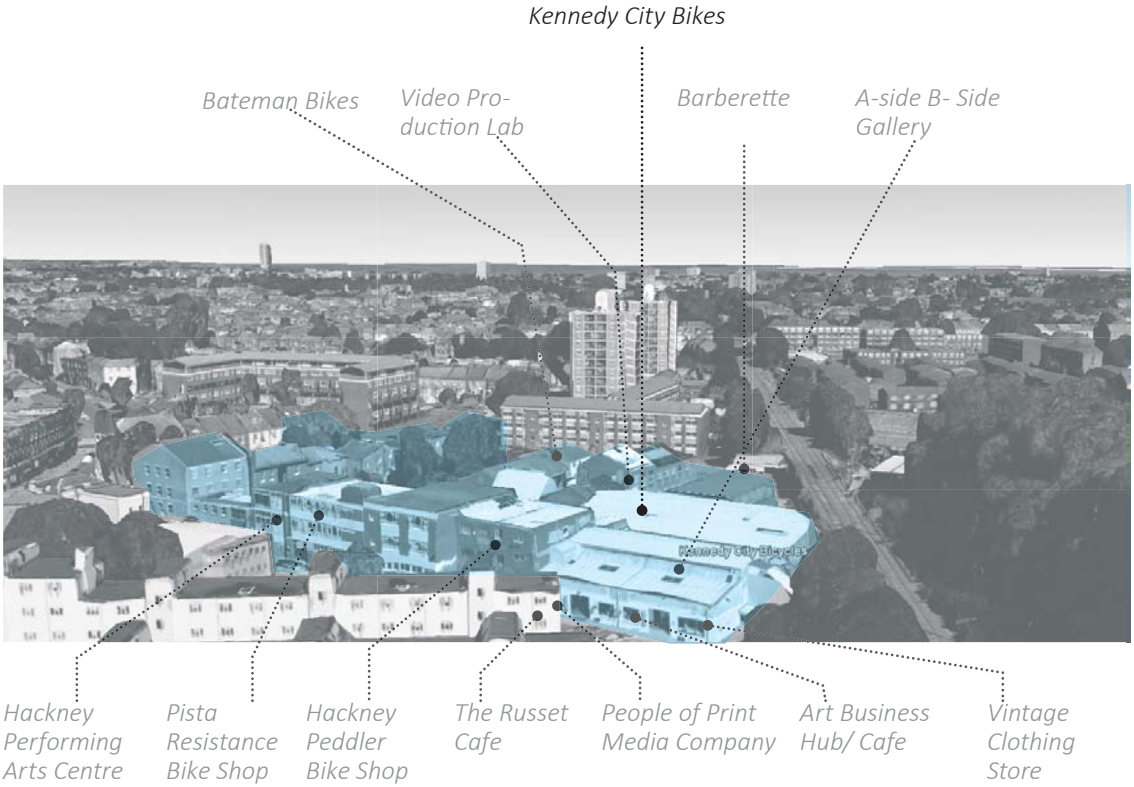


Fig. 1.21// Kennedy City Bikes sits in a residential block with 11 other creative businesses.

EAST LONDON, UK.

The medium-density neighborhoods of East London have also seen a renaissance of boutique manufacturers back into the region. While some such as the Whitechapel Bell Foundry have been in the area since 1570, others such as the London Cloth Company were established as recently as 2011. These Makers are characterized by a reversion to traditional crafts and techniques, creating high quality and bespoke pieces in workshops nestled amongst terrace houses and old warehouses for customers all over the world.

Kennedy City Bikes
Located in warehouse in a mostly residential neighborhood. Kennedy City Bikes epitomizes this new model of small scale, informal and personable production. Though they do not run a physical retail store, their workshop is open for interested parties to drop-by to have "a cup of tea, a chat and a test-ride" (Kennedy City Bicycles). Kennedy City Bikes is located in a 90 by 100m block along with various other creative businesses, including three other bike hobbyist shops (fig. 1.21).

Fig. 1.22// James Kennedy working on Bike at KCB. Photo by Charlotte Schreiber

Fig. 1.23// Photograph of Models used in the Design Research stacked in a pile.

// Summary

Bringing in Makers into Paraparaumu town centre is a good way of thinking about how to address the area's spatial and economic condition.

Currently, the existing buildings on site are spread out with large tracts of surface carparks in-between, resulting in a dispersed town centre form. This is typical of the sprawl type settlements as land prices are lower and cars are central to getting around. The mall and big box retail buildings on site are also symptomatic of the suburban sprawl condition, as they need to hold a wide variety of stock at low prices to attract customers to them.

However, the maker model could change this. As the Maker's primary customer interface is through the web rather than a brick and mortar store, Maker spaces are focused on making and collaborating instead of just the sales transaction. Presently, the Maker model of manufacturing and retail is still seen as an alternative to the mainstream mass production model. Therefore, there is no specialized facility for this, and the Makers have had to adapt to the spaces available - such as residential garages, vacant retail stores, and storage warehouses - as thriving Maker communities exist in dense, compact areas. This is easier to achieve in urban settings where the urban grain is finer. However, as Paraparaumu is very spread out, the existing settlement conditions will not readily accommodate.

This mismatch of the spread out town form with the fine-grained program creates an opportunity for a new building type to come into the area. This thesis asks: what if the surface parking spaces are re-allocated into a parking block? Is there a building type that could repurpose the open expanse in the town centre into a fine-grained hive of activity?

[1.3]

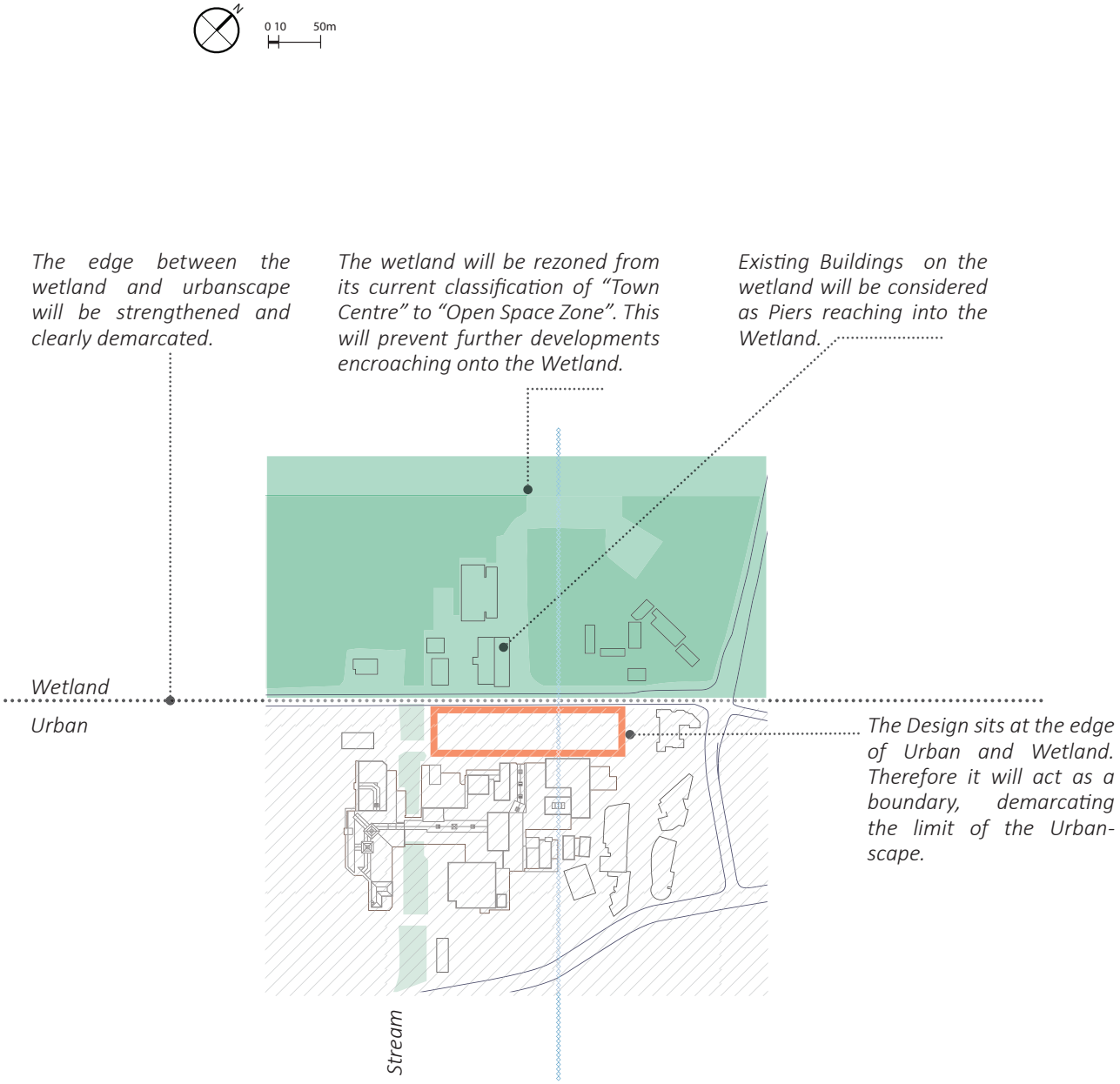
THE SITE

(-40.915697, 175.003913)

Fig. 1.24// Diagram showing location of site

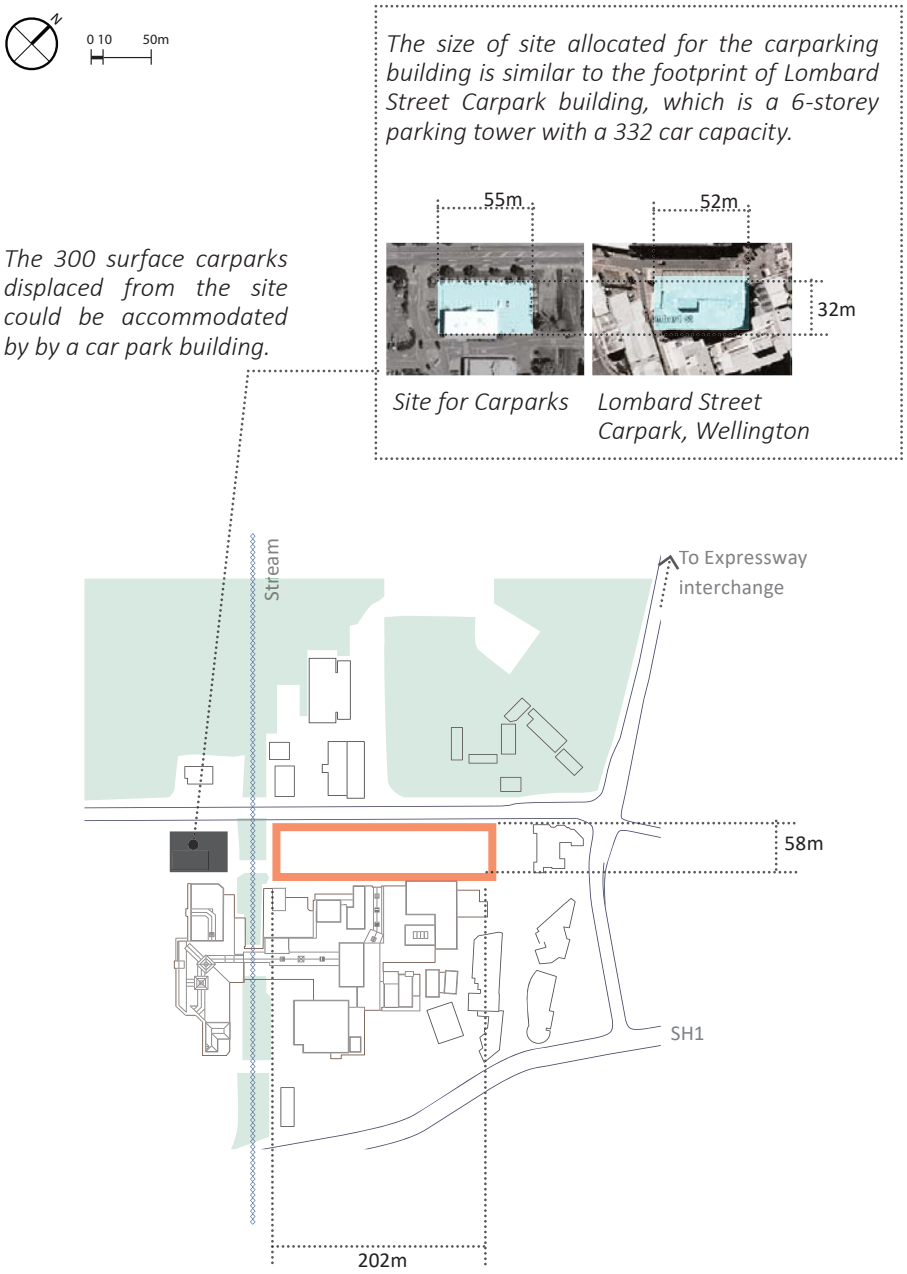
Site in Context

Fig. 1.25// Diagram showing the urban strategy



Separation of Wetland and Urban

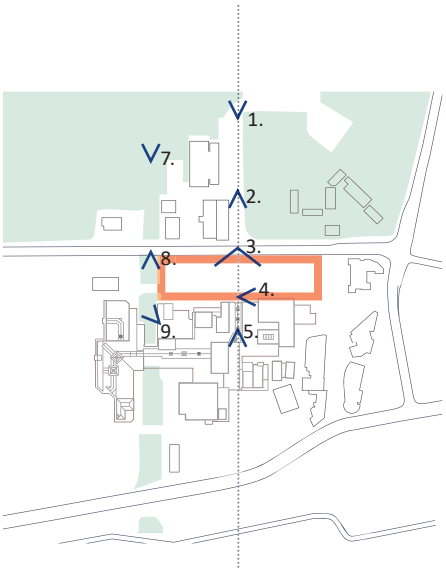
Fig. 1.26// Diagram showing the relocation of the the existing program on site.



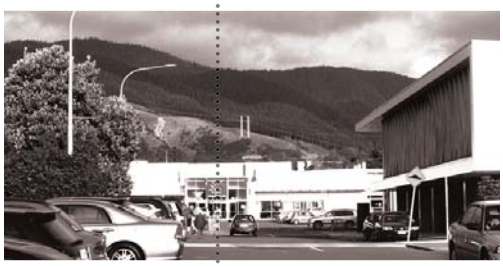
Relocating Existing Carparks

Views on Site

Views From Wetland to Mall Main Entry



1. // View out to the Wetland



2.// View from KCDC toward Coastlands Mall

3.

4.// View of Entrance and Carpark

5.// Interior of Coastlands Mall

Fig. 1.27//

Stream Running On Site

7.// Stream winds out into the Wetland

8.// Stream flows under Coastlands Mall

[SITE]

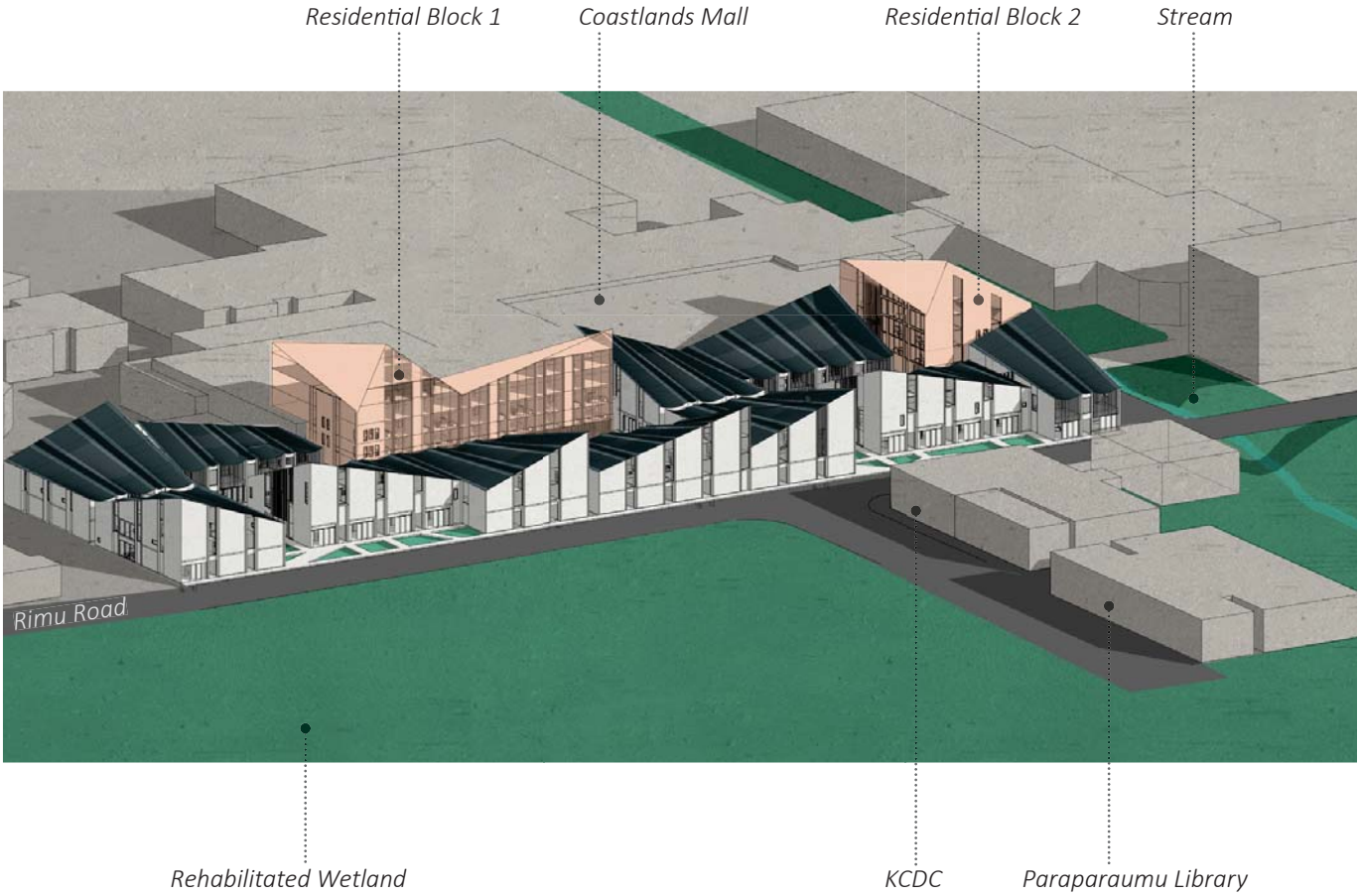
6.// Sign at Entry to Coastlands Mall

9. // View from Coastlands Mall food court out towards the stream

[2.0]

THE DESIGN

Fig. 2.01// View of the design from Rimu Road



// The Design On Site

The design is a Maker's Facility made up of interconnecting blocks that fill the entirety of the site, with a series of courtyards woven in between.

Each block is home to multiple maker companies with individual workshops, administration spaces and shared support spaces. On site, there are also two residential blocks included in this design at a masterplan level.

◀ *Fig. 2.02 // Plan view of the design on site showing the relationship with the rehabilitated wetland and mall.*

▲ *Fig. 2.03// Axonometric diagram of the design on site*

ELEVATION FROM RIMU ROAD

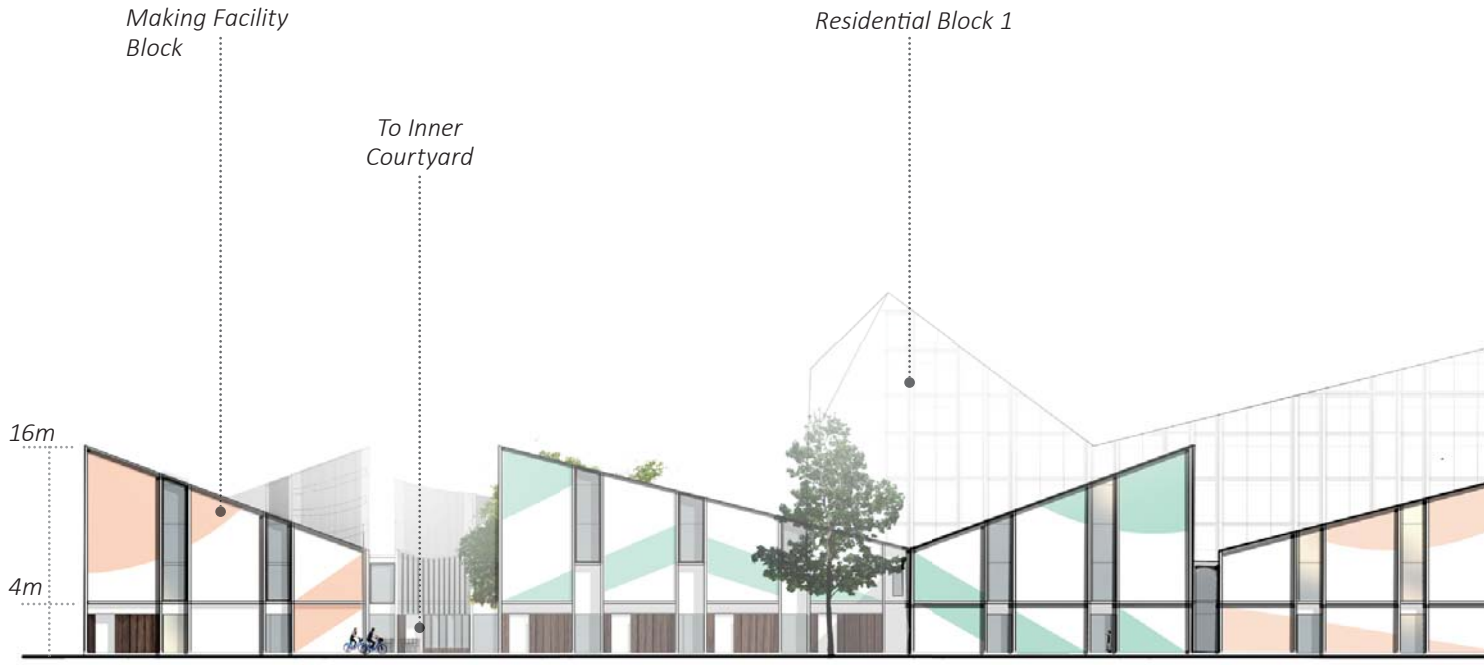
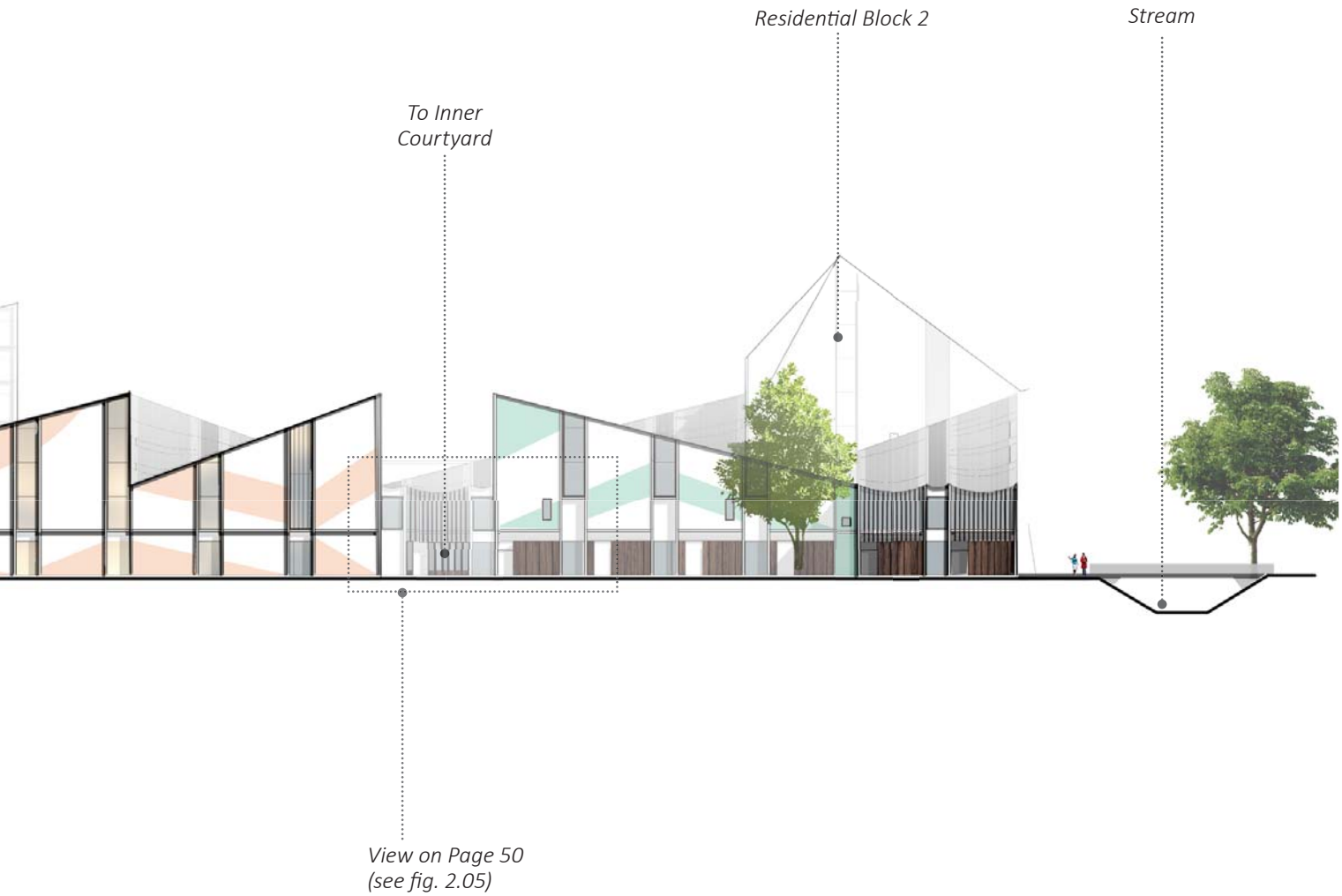


Fig. 2.04//


Residential Block 2
Stream
To Inner
Courtyard
View on Page 50
(see fig. 2.05)

Painting used to denote the identity of the block.

The interlinking courtyards function as bioswales, filtering any pollutants from the Making Process.

Fig. 2.05// View into the facility from Rimu Road looking towards the inner courtyard

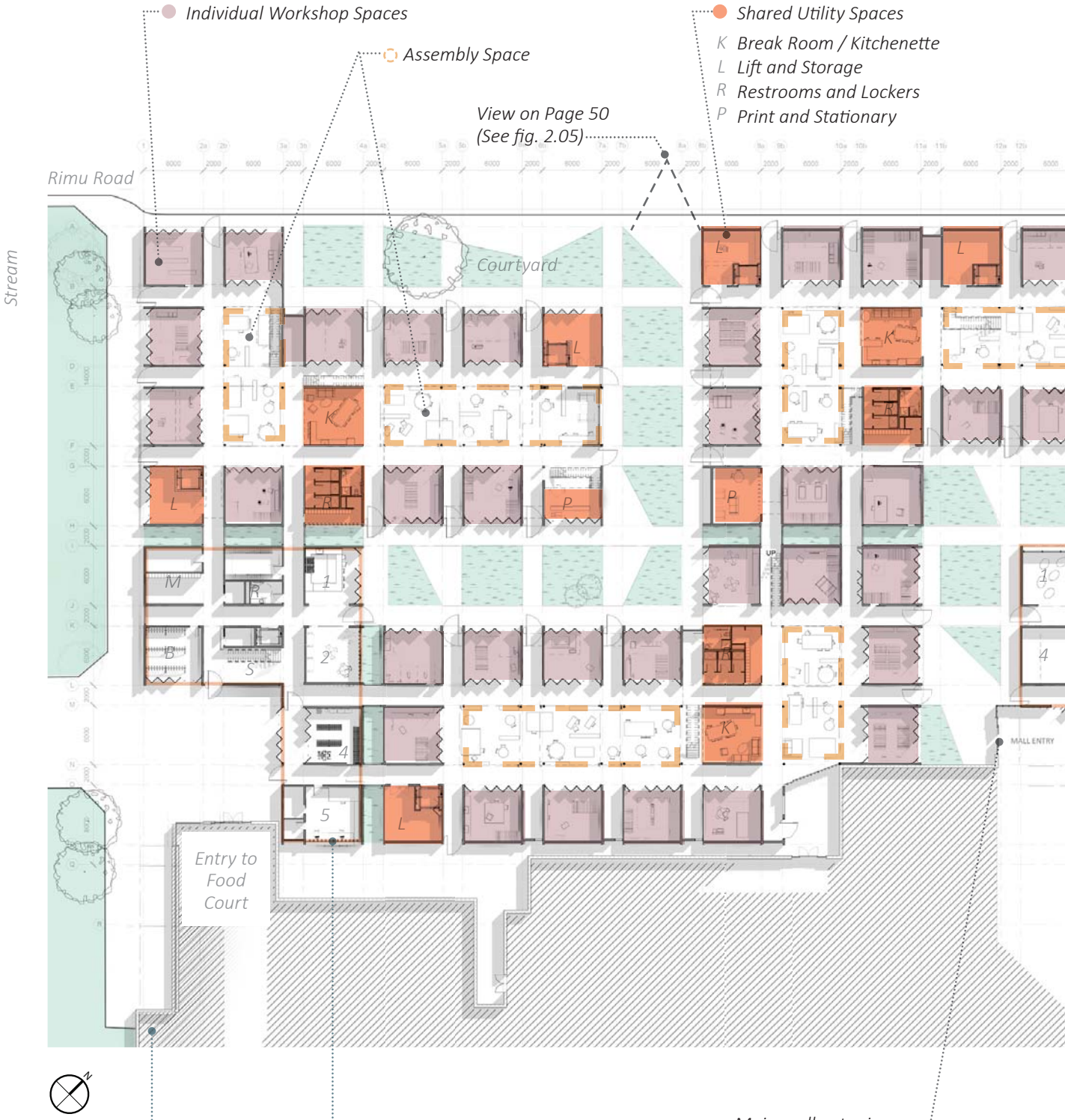
Folding doors allow for variable access widths to the workshops within.

Glass swing-door for normal use.

Concrete calls back to the brutalist aesthetic of modern industrial buildings.

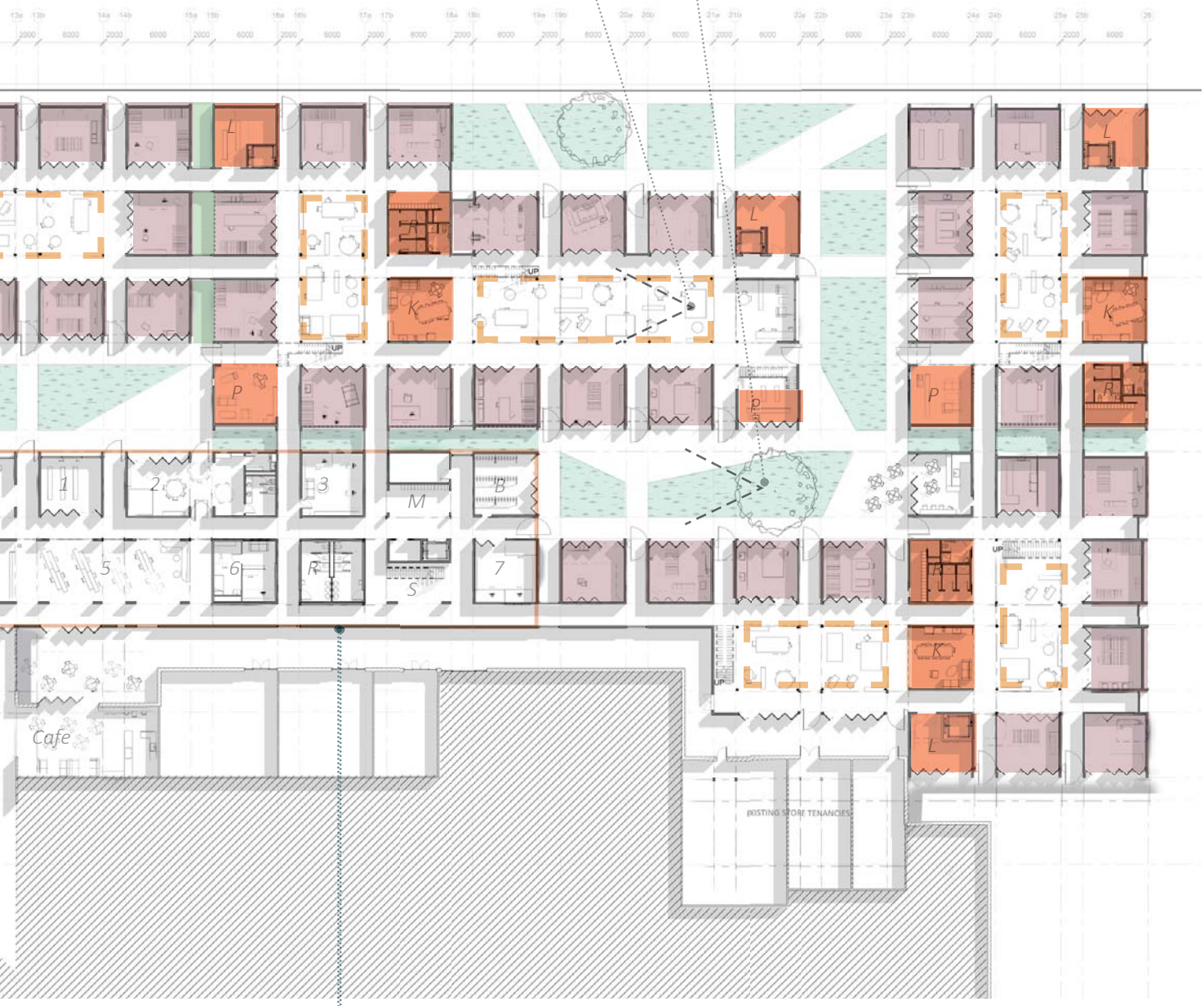
FFL +0.0m

LEVEL 1



View on Page 54
(See fig. 2.07)

View on Page 56
(See fig. 2.08)



Residential Block 2:

1. Exhibition
2. Child Care
3. Child Care Admin
4. Stage
5. Table Spaces
6. Med. Clinic
7. Building Admin
B. Bike Storage
M. Storage / Mail Boxes
R. Restroom
S. Lift and Stairs

Modules on either side of the courtyard are sloped down towards it. This allows rainwater to flood into the bioswales and secondly the lowered height prevents the courtyard from being an oppressive space.

The singular tall residential block in the courtyard gives the space a focal moment. For this reason, the residential block does not need to be of the same visual language as the rest of the design. It could be a block designed by another to sit on this footprint.

Folding doors surround the bottom level of the courtyard, allowing the interior and exterior to become extensions of each other.

There are more ground surface area in the courtyard is dedicated to bio-swales rather than paved walking areas. This allows the courtyard to become a respite from the intensity of activity within.

Fig. 2.07// View of a courtyard space
Refer to fig. 2.06 for location

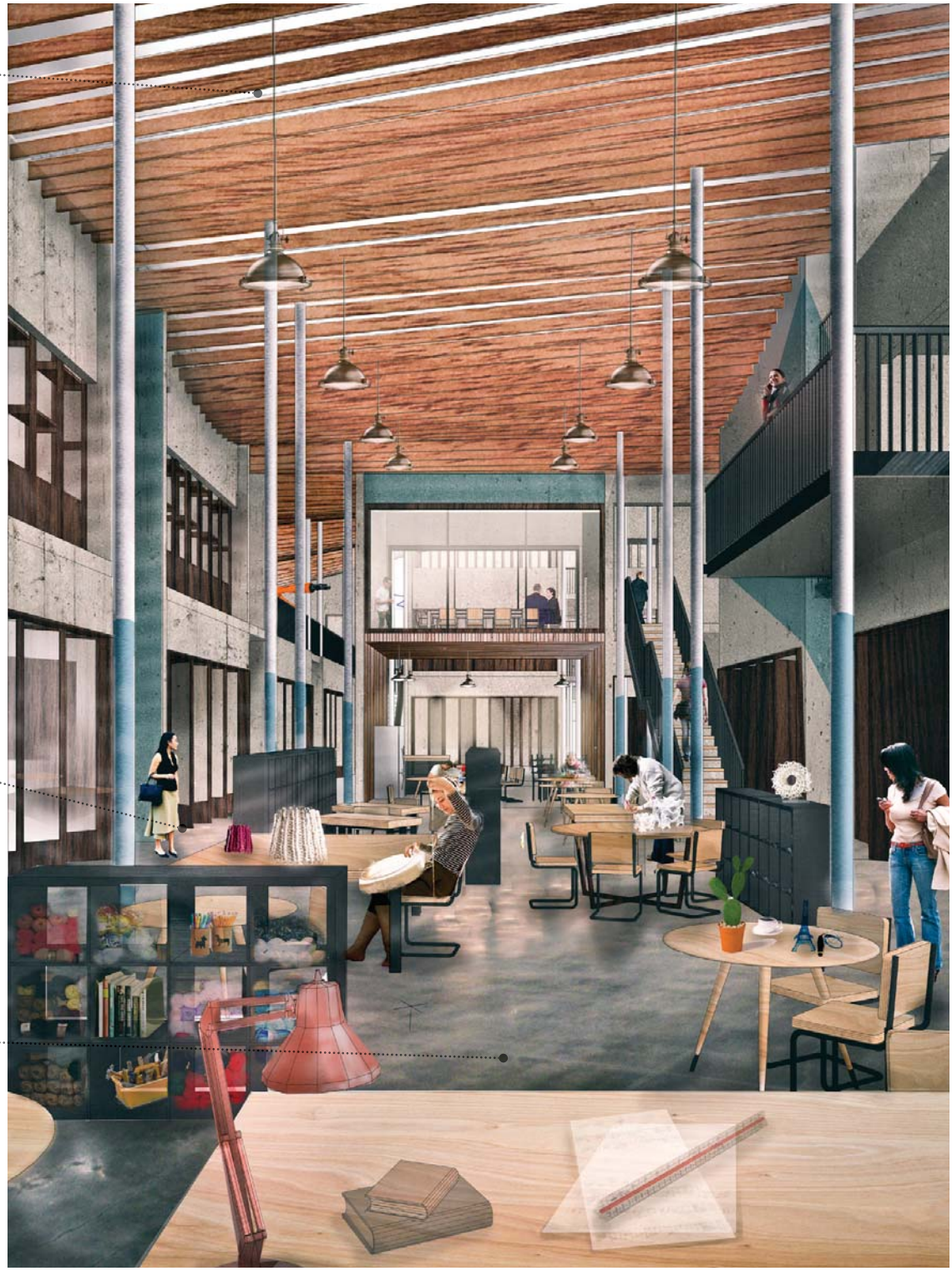

#we
rk it

Undulating joists diffuse daylight into the atrium space.

Main circulation corridor for public access is demarcated by the columns.

Assembly space is shared by all the Maker companies within this block. It is an open space and flexible space allowing Maker's choice in how they choose to work.

Fig. 2.08// View of the Assembly Space. Refer to fig. 2.06 for location



FFL +4.0m

LEVEL 2

Enclosed workshop spaces (i.e. Photo Studio, Spray Room, etc)

Open machining space (i.e. 3d Printer Farm)

Shared Utility Spaces

L Lift and Storage

M Meeting Room

N Nap Space and Library

Coastlands Mall

Residential Block 1: Recreation

1. Bar
2. Seating
3. Billiards Space
4. Bar Storage
5. Bar Office

S. Lift and Stairs
R. Restroom

Residential Block 2: Support Offices

1. Law Firm
2. Accounting Firm
3. Marketing and P.R.
4. Network Management
5. Insurance Firm
6. Temp. Office
7. Shared Conference Room
8. Waiting Area
S. Lift and Stairs

Fig. 2.10// View from the Level 2 walkway looking towards the Admin Space with the individual Workshop Spaces underneath

Access walkway to the admin space recedes behind the offices/workshop stack to visually emphasize the autonomy of the individual companies.

Admin Space

Workshop Space.

Fig. 2.11// Interior view from Level 2 looking towards Meeting Room space with Break Space elow.

In this block, the meeting room and kitchen stack are on the perimeter. This will connect to another modular block should the facility expand.

Open Machining Space.
The more performative machines such as the 5 axis cnc router are displayed from the mezzanine space.

FFL +7.0m

LEVEL 3

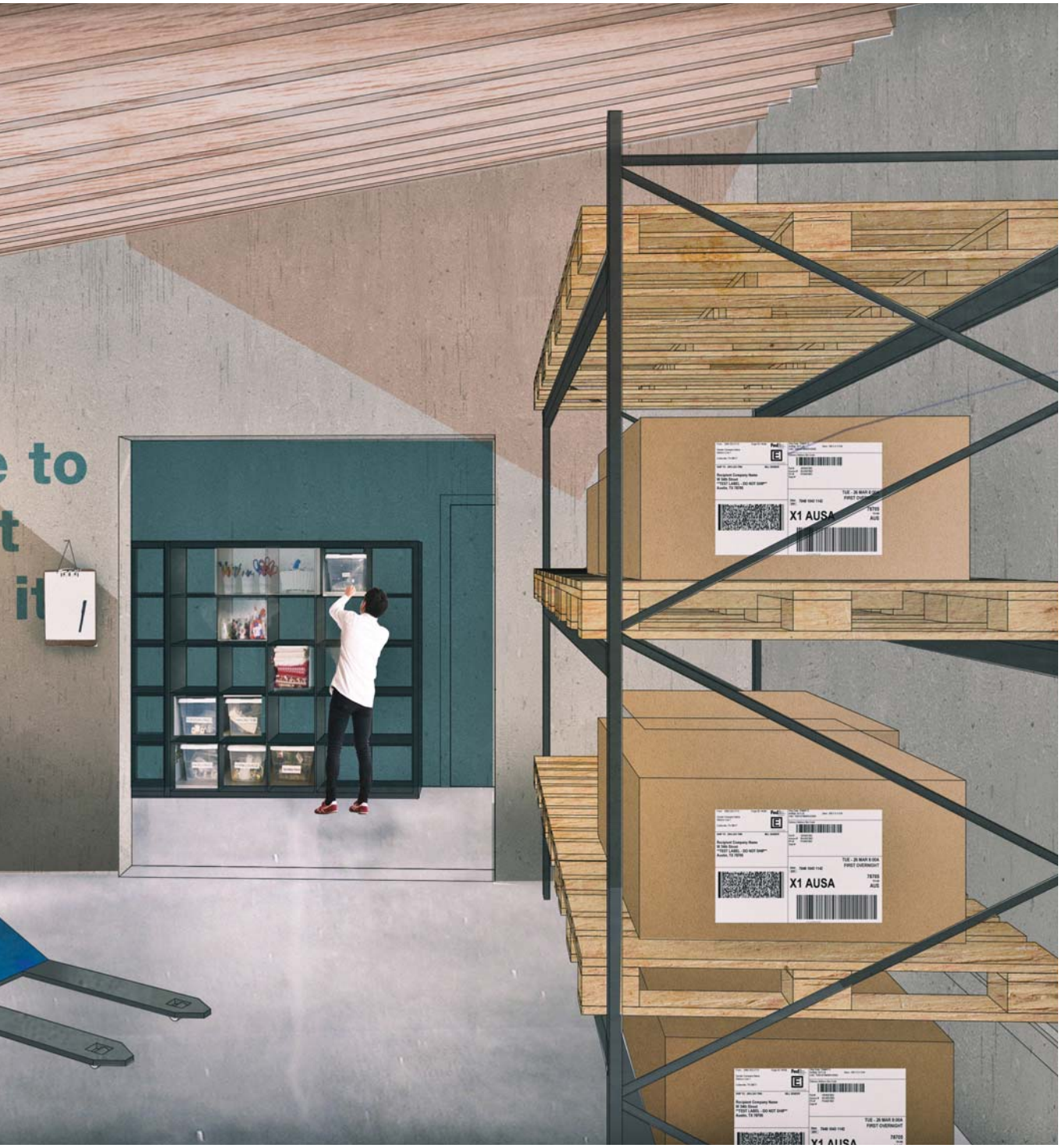
View on Page 6
(See fig. 2.13)

Residential Block 2: Apartment

1. 1 Bedroom
2. 1 Bedroom with Balcony
3. 3 Bedroom
4. Studio
S. Lift and Stairs

This Storage Space overlooks the atrium space.

Fig. 2.13// Interior View of a typical Level 3 Storage space.


X1 AUSA
X1 AUSA

FFL +11.0m

LEVEL 4

Service Plant Room And LIft Housing

Foldaway Stair Access

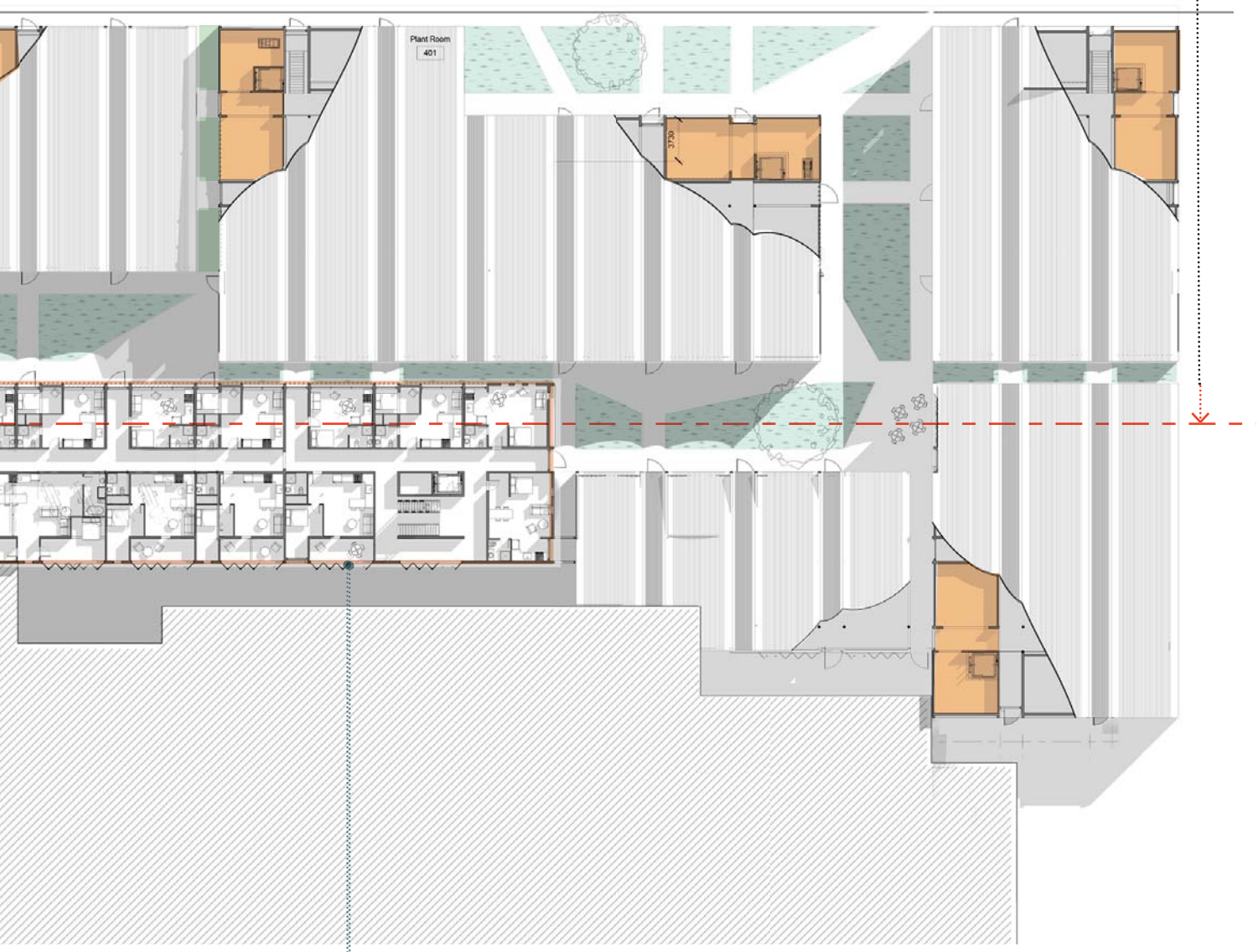
Coastlands Mall

Residential Block 1: Apartments

Apartment Units from Level 3 to 7

Fig. 2.14// Plan of design - level 4

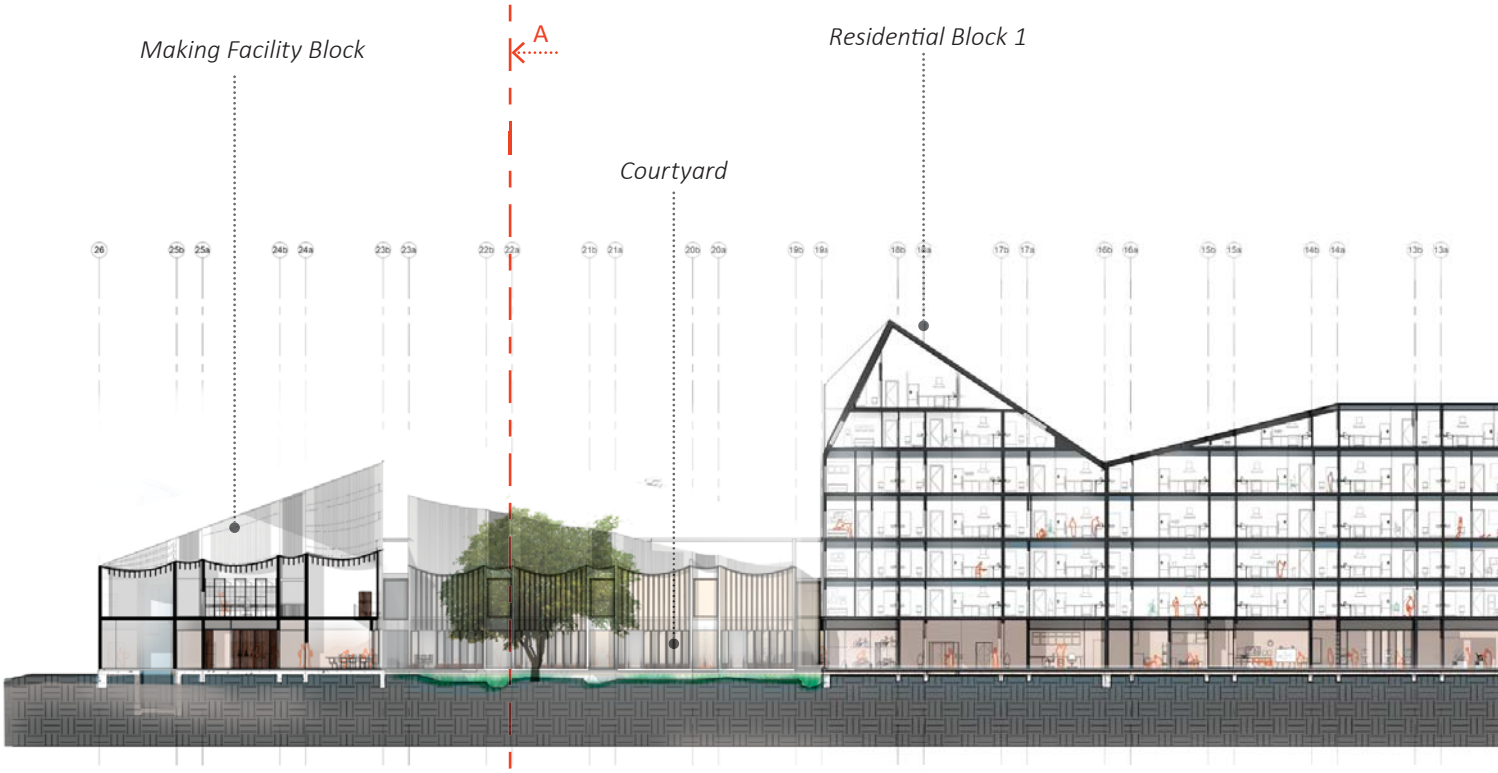
Longitudinal Section on Page. 72
(See fig. 2.15)



Residential Block 2: Apartment

Apartment Units from
Level 3 to 7

LONGITUDINAL SECTION



Transverse Sections on Page 74
(See fig. 2.17)

Fig. 2.15// Longitudinal section of design

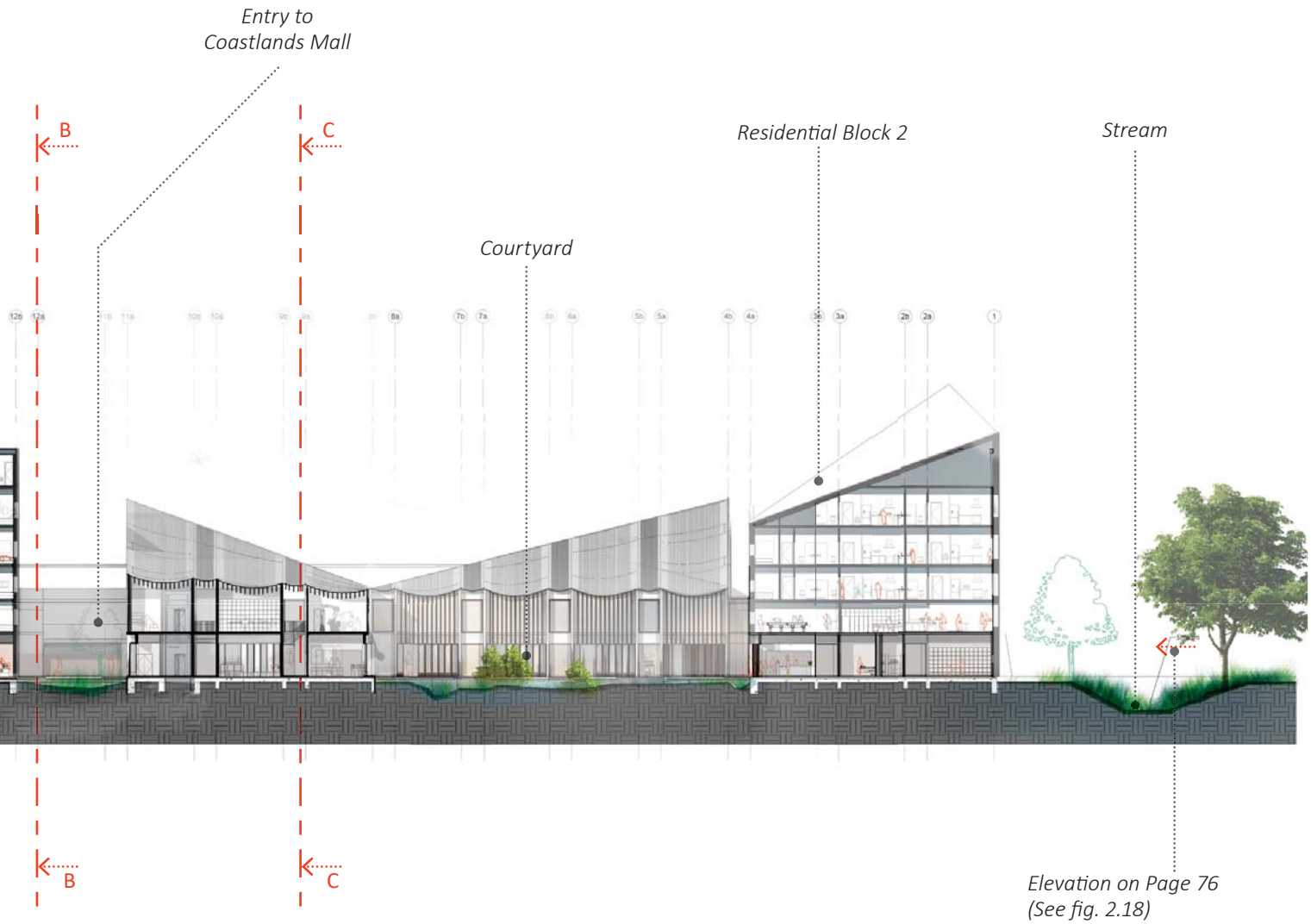


Fig. 2.16// Plan showing where transverse sections are located.

TRANSVERSE SECTIONS

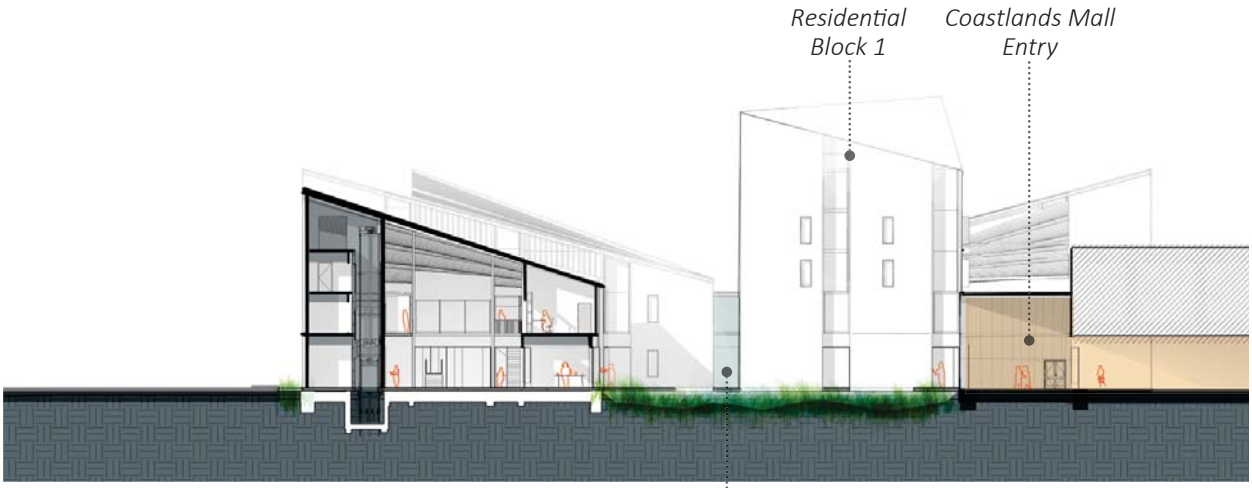
Reference Plan (Level 1)

An exterior access tennancy is usually the least desirable tennancy in the mall. Here it is reactivated as it is grafted to become an extension of the design.

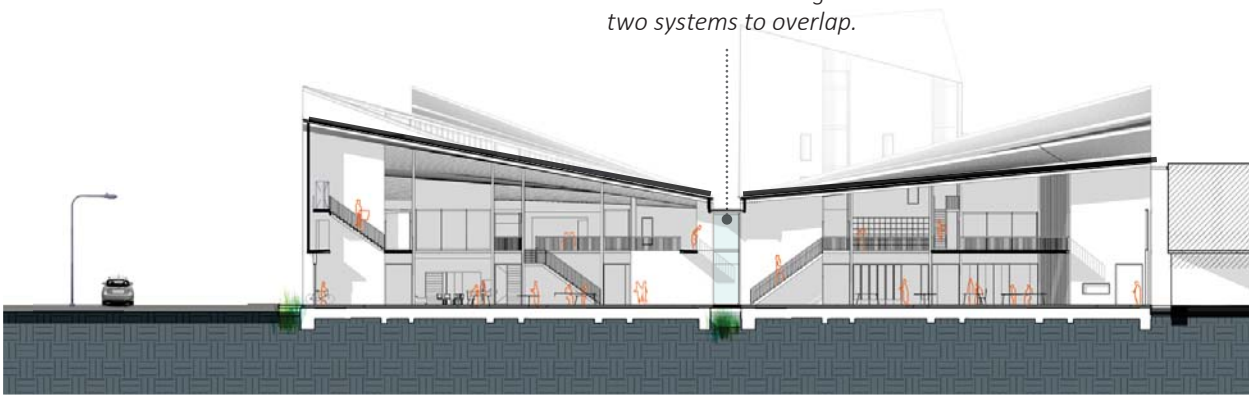
Mall entry and main circulation corridor

Fig. 2.17// Transverse sections through the design

Section AA - Courtyard Space



Section BB - Connection to Mall Entry



Section CC - Passageway Connections

ELEVATION FROM STREAM

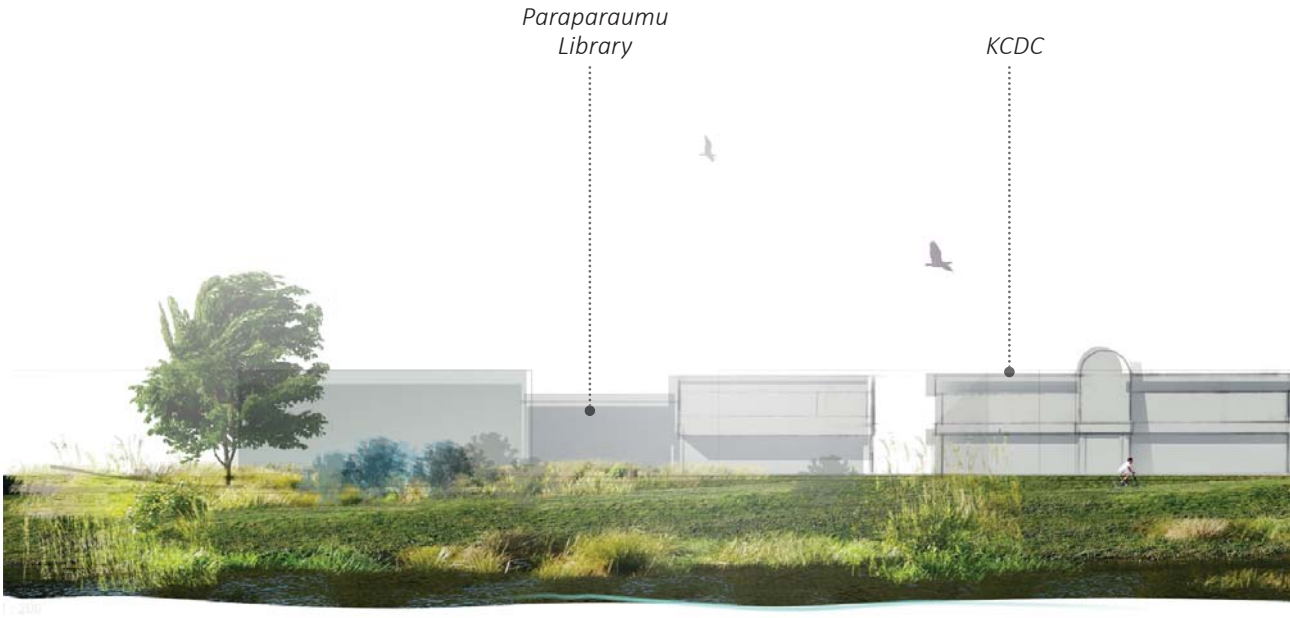
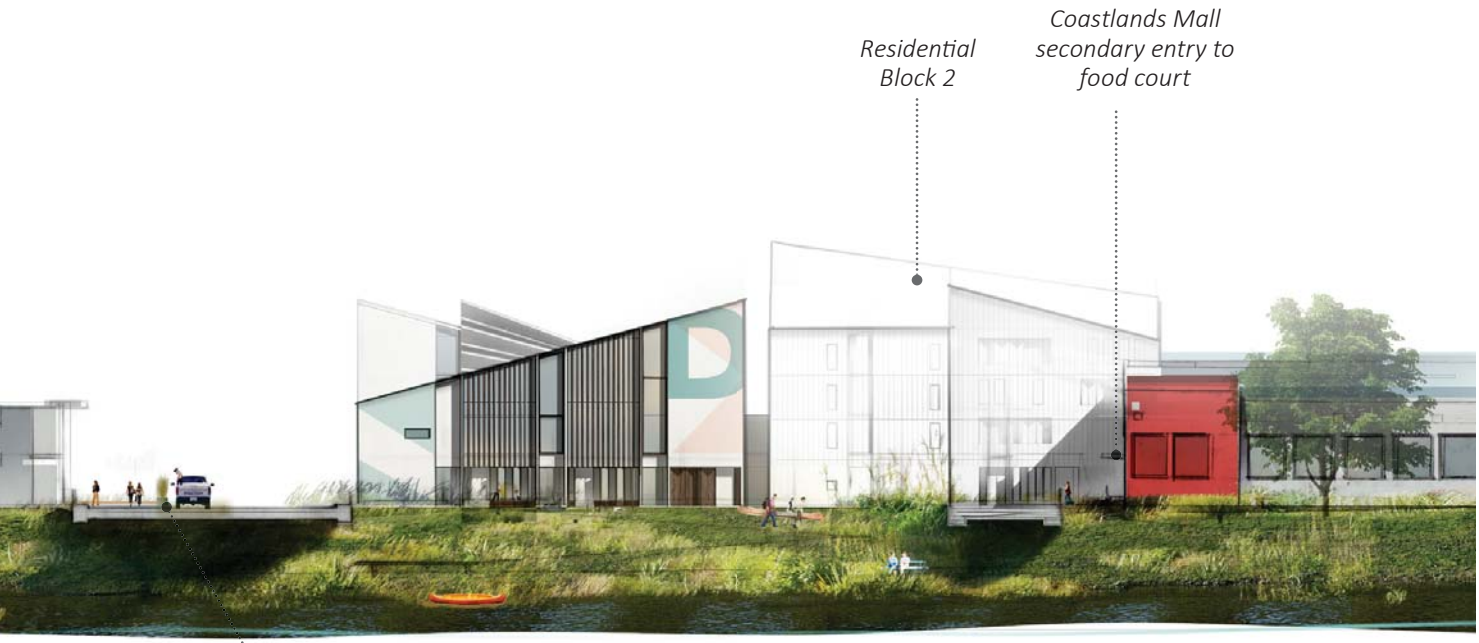


Fig. 2.18// Elevation of design and surrounding context from the stream



[3.0]

ABOUT THE BAZAAR

And Other Key Case Studies

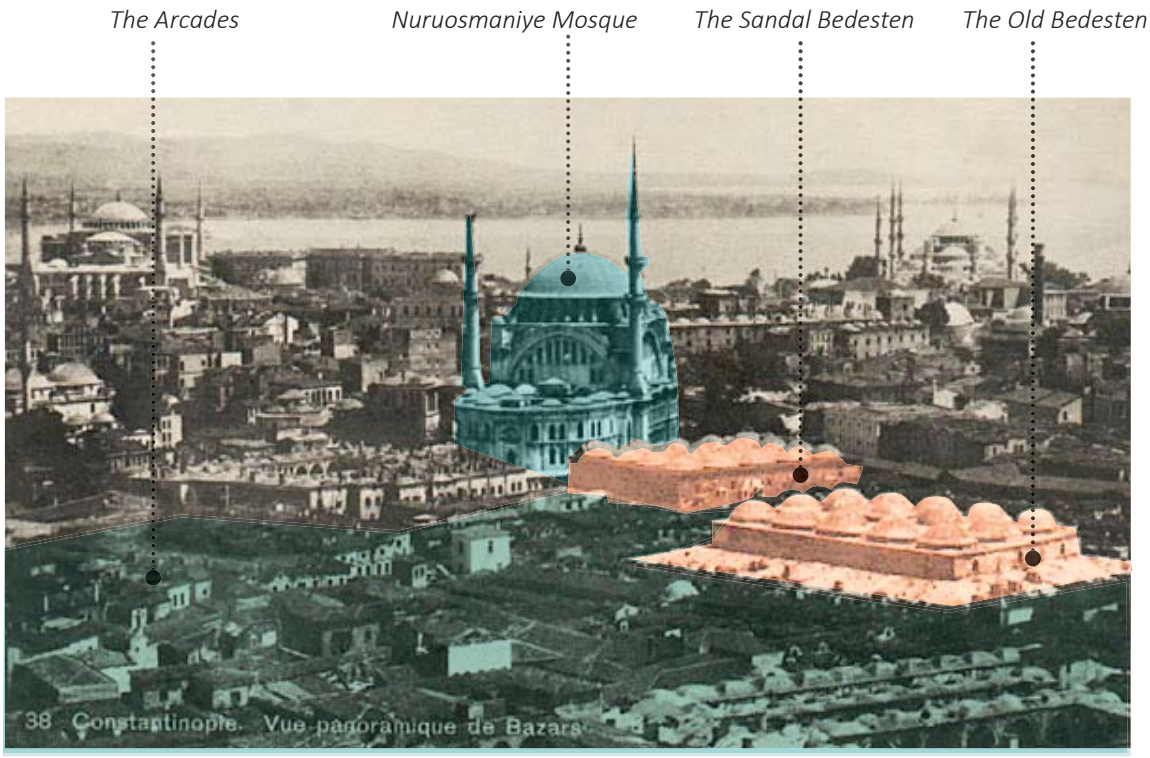
// Chapter Introduction

The Design presents a different approach to the idea of retail. It stands in contrast to the singular and spread out nature of the Mall and the Big Box building types that exist on site. Early in the Design process, the building type of the Bazaar was looked into as a case study as it shared similar ideals with the Maker culture. The following section examines the Grand Bazaar in Istanbul as an example of this type, and then more contemporary variations of the Bazaar in Rafael Moneo's Beirut Souks and the idea of the Mat-Building through Le Corbusier's Venice Hospital.

Though the development of the Design occurred without specific reference to the latter case studies, the ideas explored were similar and as a result, the Design shared many similarities in their formal expression.

Fig.3.01// Istanbul, general view of Kapali Çarsi or Grand Bazaar.


Nuruosmaniye Mosque
The Sandal Bedesten
Arcades
The Old Bedesten
B
D
C


The Arcades
Nuruosmaniye Mosque
The Sandal Bedesten
The Old Bedesten
38 Constantinople. Vue panoramique de Bazars

// The Grand Bazaar

The Grand Bazaar, or Kapalicarsi, in Istanbul, is the most well-known example of this building type. Covering a total of 30.7 hectares in the heart of the city, the Bazaar sits between the Beyazit and Nuruosmaniye mosques (ArchNet). It is typical for Bazaars to be found next to mosques as they were intended to be a permanent revenue source for religious charities (Unsal). Therefore, the existence of the Bazaar is predicated not on maximizing profits but to be a passive facilitator of free enterprise (Demil and Lecocq; Fanselow).

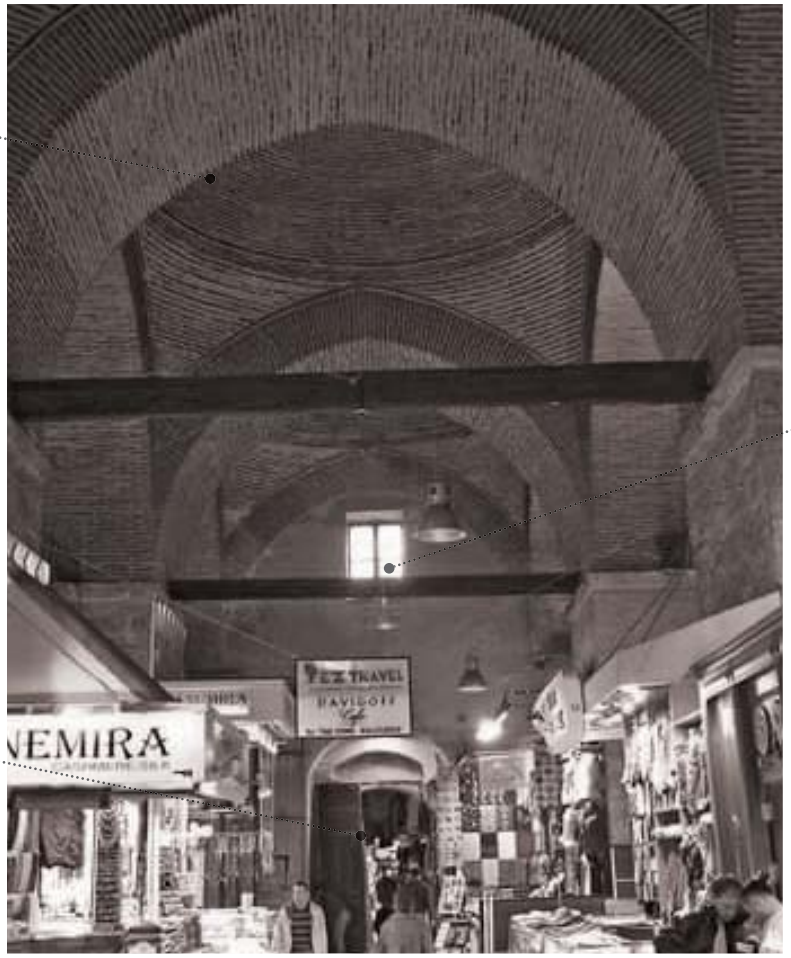
The Bazaar itself is made up of two distinct building types, the Original Bedestens and the Arcades that grew around them.

Fig.3.02// Floor Plan of Bazaar with neighboring Nuruosmaniye Mosque. Original Image from: n.d. 35mm Slide. Aga Khan Award for Architecture.

Fig. 3.03// Image showing the main parts of the Grand Bazaar in Istanbul. Original

The Original Bedesten

Domed roof to achieve the greatest span between supports.



Originally, the interior was lit by small windows along the perimeter, making the space viable for trading only during daylight hours.

Entry into the bedesten

Bedesten is the Ottoman Turkish word for Covered Market. It is a singular building characterised by domed halls where the Arasta, the actual market itself, is held. There are two Bedestens in the Grand Bazaar, both of a similar type. The Old Bedesten is the larger of these and was built in the 1400s specifically for trading and storage of luxury goods. It is an enclosed structure with controlled access points. Before the 1960s, the Bedestens were populated by traditional craft workshops. These were usually open displays that were closed with curtains or thin partitions at night (ArchNet).

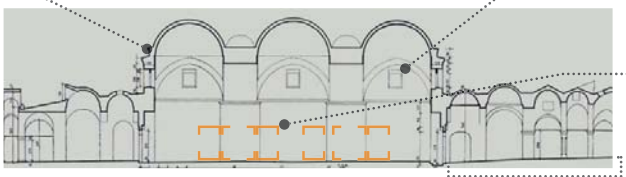
Fig 3.04// Interior view of the Old Bedesten. The more traditional workshop stalls have now been replaced with tourist boutiques. Photo by Vince Millet.

Built of stone and brick. The structure aims at being simple and functional. The domed roofs were carried on large interior pillars, allowing the floor plan to be kept clear, giving the greatest flexibility to how stalls could populate the interior. (Unsal)

MAIN INTERIOR COURTYARD

Though the main interior courtyard is double height, the Bedesten is only one storey high.

How the stalls would populate the space



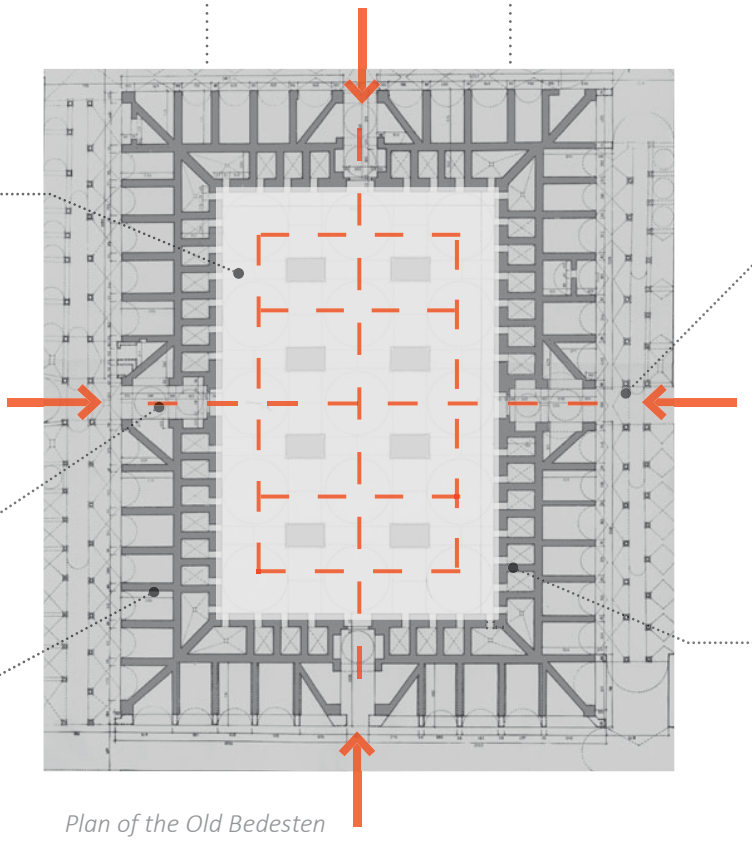
PERIMETER STORES

Section of the Old Bedesten

The main interior courtyard of the Bedesten is a free plan, with a grid of large pillars supporting the roof. (Unsal)

The interior layout is a grid-like field which individual stalls organize themselves around. The interlinking pathways flatten out any hierarchy inherent to the space, democratizing access to any of the stalls held in the Bedesten.

The main interior courtyard measures 45.3m by 29.4m (ArchNet)



There are four entries into the Bedesten. The entries are narrow for security, but one in each direction so as to accommodate choice of access.

Permanent stalls are built into the walls of the Bedesten. There are 44 shops total in the inner perimeter, and 56 in the inner perimeter.
Each stall is small, between 3 to 5m in width and depth. (ArchNet)

Plan of the Old Bedesten

Fig 3.05// Plan and Section of the Old Bedesten.

The Arcades

The interior of the Arcade is more akin to a street rather than the Bedesten, with stores lining either side of a central circulation corridor.

STORES | CENTRAL PEDESTRIAN CORRIDOR | STORES

The arcade is not a singular building; it emanates from the entries of the Bedestens forming a gridded network and connecting with the surrounding streets. It becomes an urban condition that weaves the Bazaar back into urban context (See fig. 3.07).

As the Bazaar is set amidst narrow streets of a similar grain, there is no discernible elevation which marks the boundary of its extent. Only the main entries into the Bazaar signify its threshold. Over time, the stalls along the arcades self-organized into districts, with each arcade-street becoming the unit for a specialty district.

Fig 3.06// Interior of the Arcade Street. Photo by: Sam Tang, 2010

THE OLD BEDESTEN

SANDAL BEDESTEN

ARCADES

The arcades are organized in a gridded formation. The multiplicity of pathways gives visitors choice in how they move through the space.

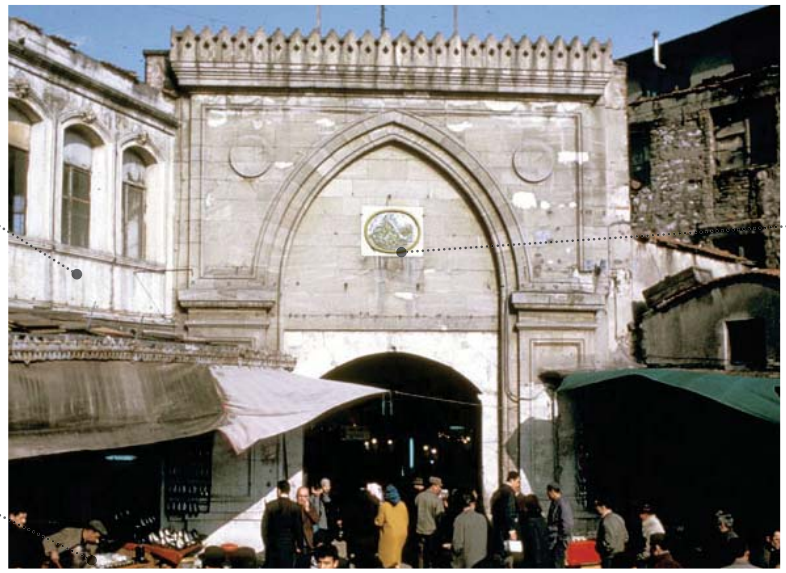
The network of arcades knits the Bedesten into the surrounding streets, in plan, becoming part of the the urban fabric itself.

Stalls offering the same crafts self-organize into specialty districts (Geertz). Though there are no hard bounadries regarding the extent of each district, the arcade seems to be the unit of measurement. Even today, the arcades are still referred to by artisans that once occupied them, such as slipper-makers (terlikciler), shoe-makers (kavafcilar), mirror-makers (aynacilar) etc. (ArchNet)

Fig 3.07// Plan of Bedesten with surrounding Arcades. Original Image: Unsal, Behcet. 1970

The varied and eclectic surrounding facades, make it difficult to gauge the extent of the Bazaar.

The program of market stalls extends beyond the confines of the covered Bazaar, further integrating the Bazaar into the Urban Context.



The striking Beyazit Gate marks the threshold of the Bazaar.

Fig. 3.08 //Beyazit Gate of the Grand Bazaar. Photo by Walter B. Denny. Ca. 1960

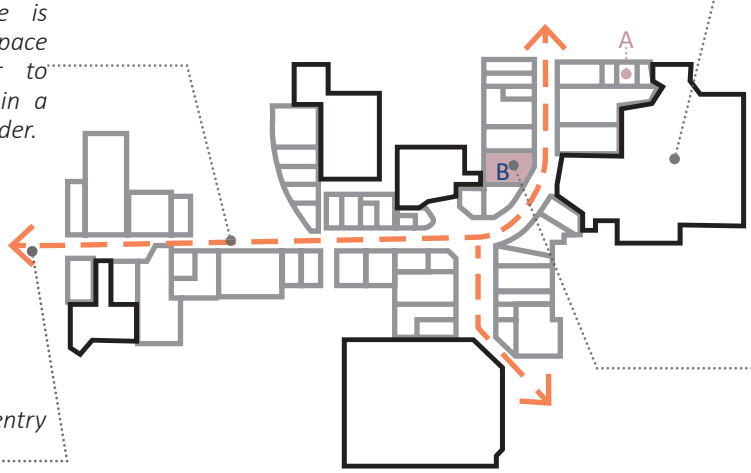
Comparing differences between the Bazaar and the Mall

[Coastlands Mall]

Singular and Hierarchical

A singluar main pathway connects between the anchor stores. As there is only one, the space forces the user to view the stores in a predetermined order.

Large anchor stores, such as a supermarket or a department store, placed at opposite ends of the Mall draw people through facility.



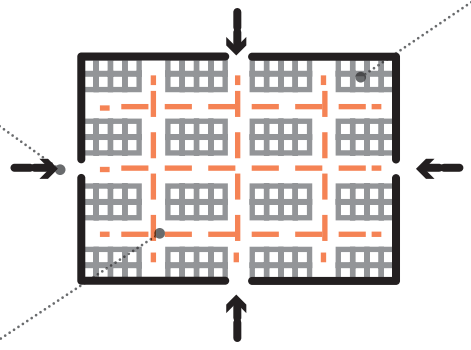
The value of all subsequent stores correlates to its proximity to the main pathway between the anchor stores. For example: Location of Store A will be less valueable than Store B.

Limited external entry points. Internally focussed.

Layout and Circulation

Limited external entry points. Also Internally focussed.

In the interior, there are multiple pathways through the building. This gives visitors choice of how they want to move through the space.



The evenly sized stalls and plurality of pathways through the space flattens the spatial hierarchy.
Where the mall controls how visitors move though the space by limiting options, the Bazaar multiplies them. As a result, the space itself is neutralized from preferencing one stall over another.

[Bazaar - The Bedesten]

Plural and Equal

Fig 3.09// Diagram comparing Coastlands Mall and Bazaar based on layout and circulation.

Clientelization in the Bazaar

With a flattened spatial hierarchy along with the absence of mass advertising, Bazaars are very "information poor" (Geertz 29). There is no spatial or visual influence to tell you where you should go and what you should purchase. As a result, the experience of shopping in a Bazaar is democratic but also chaotic.

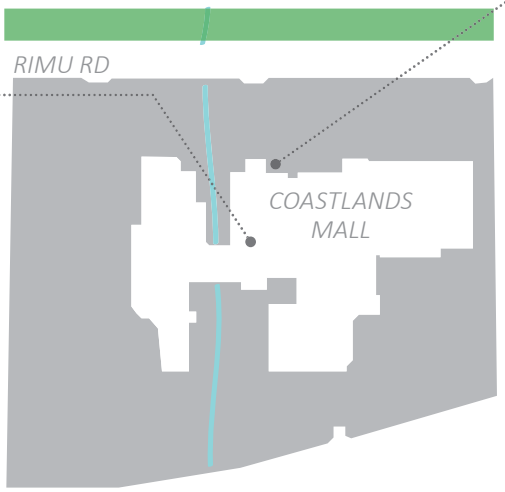
Chaos is not necessarily bad. The trial and error of finding information over time produces what Clifford Geertz identifies as Clientelization, where there is a "symmetrical, egalitarian and oppositional" relationship between the purchaser and purveyor (30). "A butcher or wool seller is tied to his regular customer in the same terms as he [is] to them" (30). In contrast to the one-directional, transaction-based relationship of the current retail experience, the spatial layout of the Bazaar fosters an interdependent one.

This more relational approach is akin to the informal and personable approach favoured by the Makers, though it is likely most Maker-customer transactions occur virtually. Allowing more opportunities for face to face interactions is beneficial for social connectedness and exchanges of ideas.

Comparing differences between the Bazaar and the Mall (cont'd)

[Mall]
An Island

Coastlands Mall sits at the centre of the its block away from its adjacent contexts – like an island surrounded by an ocean of carparks.

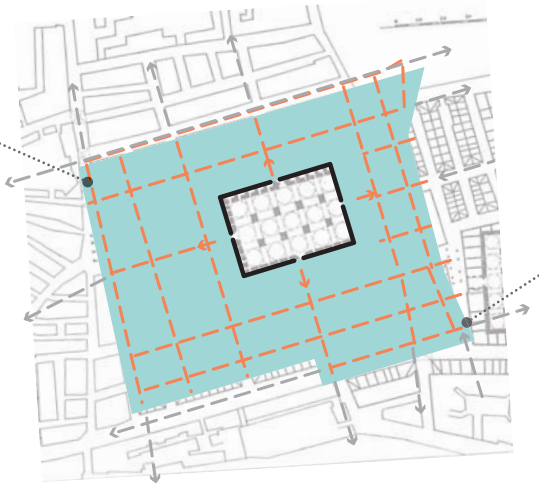


The mall is an additive building. Various extensions are added as per the requirements of the anchor stores. As a result, the exterior form is irregular with clunky leftover spaces that are uncomfortable to occupy.

The cinema block at Coastlands shown above is an example of this, though it occupies a prime space next to the stream. The space outside it is relegated to rubbish collection.

Engagement with Context

The Bazaar is also an additive building. The arcades added on are done in short sections that connect back into the city streets. Though footprint of the Bazaar is large, its finer grain reads as a neighborhood in the city rather than one large building.



With arcades spanning in both perpendicular directions, the bazaar grows as a network.

This frees the Bazaar from being bound by the geometry of the original Bedestens and allows the Arcade to fill into nooks and crannies of the city.

[Bazaar - Arcades]
A Woven Patch

Fig 3.10// Diagram comparing Coastlands Mall and Bazaar based on engagement with context.

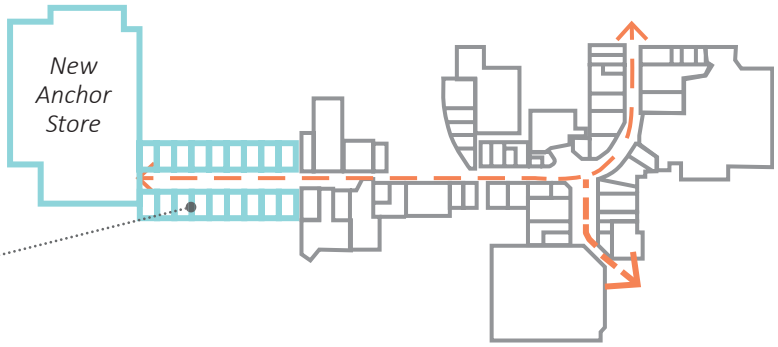
Fig 3.11// Diagram showing how the mall typology would grow.

How a Mall would Grow

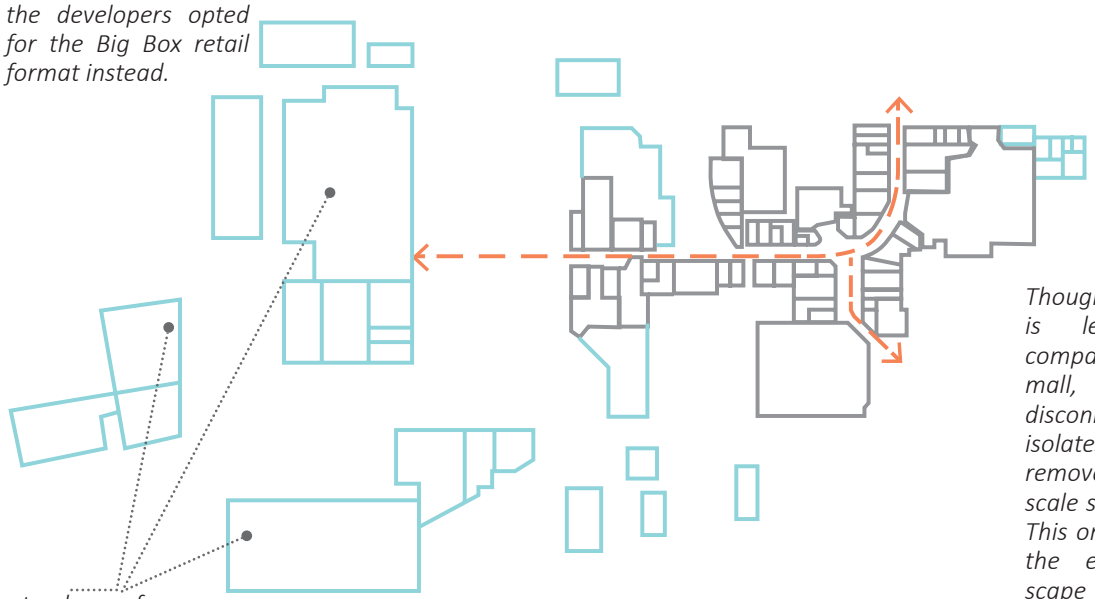
If the mall were to expand, it would need to occur along the existing pathway.

Typically a new anchor store will be placed at one end and smaller stores will line the distance between the existing mall and the anchor store.

Expanding the Mall



The reality on site is that instead of expanding the mall, the developers opted for the Big Box retail format instead.



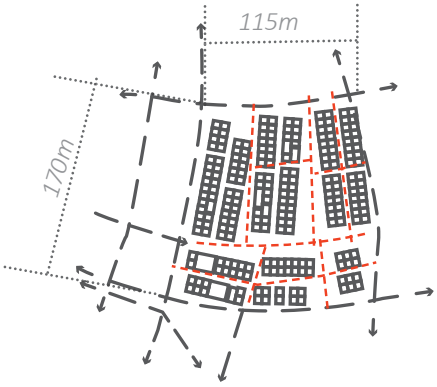
Instead of one disconnected Mall 'Island' there are now multiple'Islands'.

Expanding into Big Box Retail

Though this format is less controlled compared to the mall, it also further disconnects and isolates each store and removes the small-scale store completely. This only homogenizes the economic land-scape rather than diversifies it.

BAZAAR TYPES 1:

Generous proportions with high quality finishes make this an attractive space in which to be.



Similar to the Bazaar, the Beirut Souks are organized as a distorted Grid that connects into the surrounding streets.

▲▲

Fig 3. 12// View from an Interior courtyard of Beirut Souks looking toward one of its arcades.

▲

Fig 3.13//Diagram of Beirut Souks showing connectivity. Orange line shows internal circulation pathways while the grey lines show the surrounding streets.

// Beirut Souks

Beirut Souks is a contemporary interpretation of the Bazaar. Designed by Rafael Moneo, this shopping complex opened in 2009.

The word souk comes from the Arabic word sūq meaning marketplace. The complex itself directly correlates with interlinking arcades of traditional Bazaars; however as it is a contemporary building within a capitalist economy, the distribution of stores themselves is more like a mall with large multinational brands taking up the prime floor space.

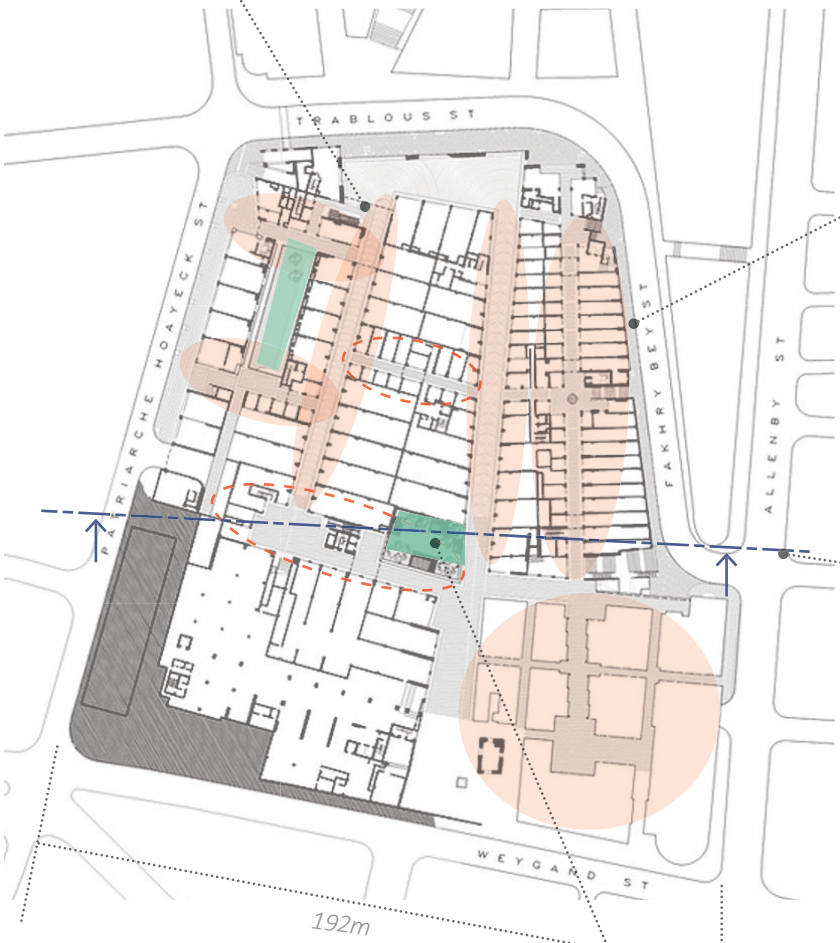
What is interesting about the Beirut Souks is its use of levels, where the traditional Bazaar is set on a singular plane on the ground floor. However, as the Beirut Souks is sited on a slope, it tilts this plane, allowing it to spiral upon itself creating interlinking spaces on different levels.

1 segment storefront

2 segment storefront

The Complex is made up of a series of interlinking "souks". Some souks are stretches of an Arcade- street, others are an open air courtyard; the individual souks are circled below.

In keeping with the rhythm of the Bazaar Arcade, the facade along the corridors of the arcades is broken into regular segments, though the size of the store behind them varies.



Tenancies within a souk are similar in size, though they vary across the entire complex.

Section shown below

The main 'ground'-plane occurs over multiple levels so as to follow the slope of the site.

The 'ground' plane spirals back activating a 'souk' above an existing souk space

Pockets of garden spaces provide relief from the density of building

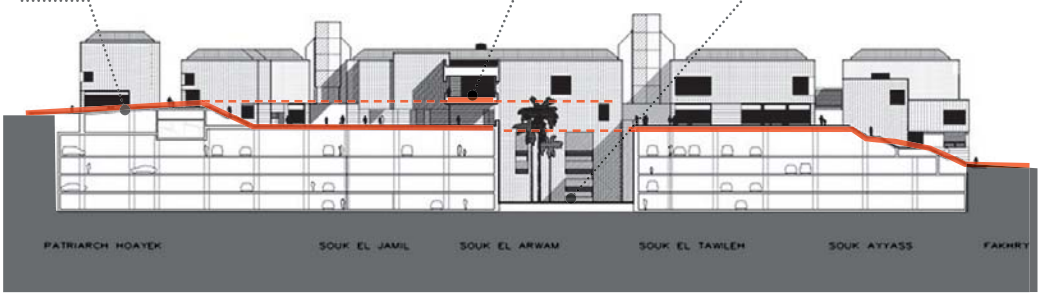
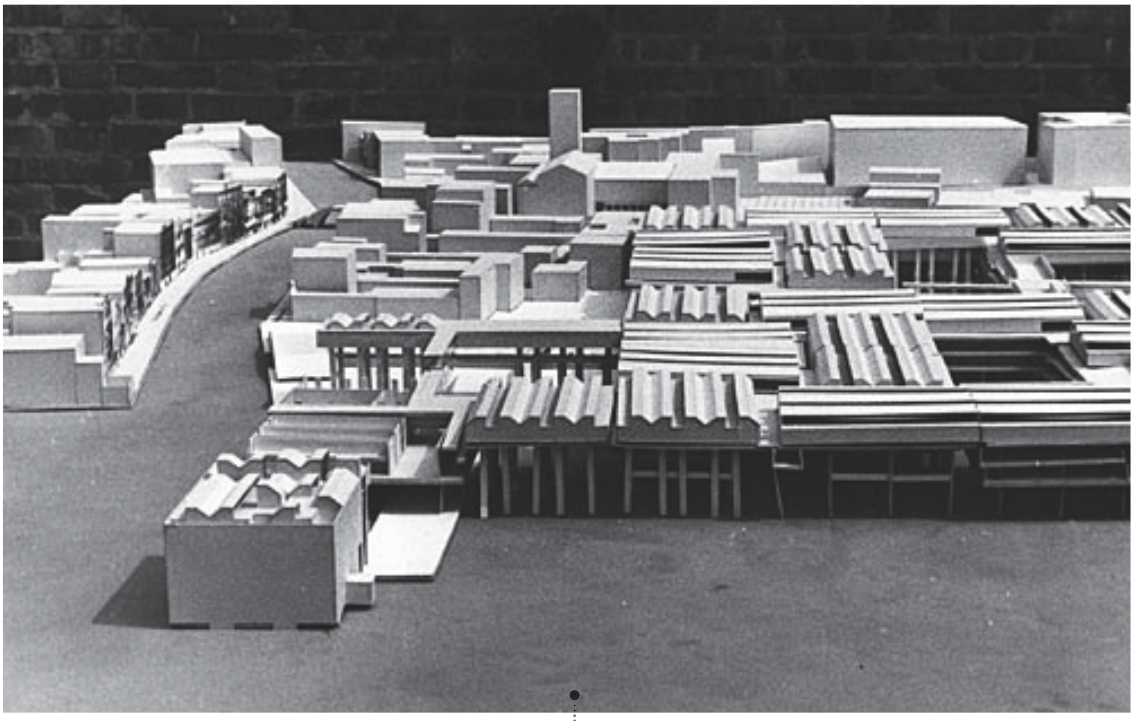


Fig.3.14// Plans and Section of the Beirut Souks. The plan is diagrammatic showing main tenantable spaces rather than a specific level.

BAZAAR TYPES 2:



The Venice Hospital, though never built, exhibits the principles of Mat-building. It was initiated by Le Corbusier in 1959, then later continued till 1966 by his protégé Guillermo Julilian de la Fuente after Le Corbusier's death.

The view above demonstrates the complex itself, though identifiable by its repetitive roof structure, merges with urban context of the city self.

// Mat-Building and Le Corbusier's Venice Hospital

Mat-Building is a building typology coined by Alison Smithson in her 1974 article "How to recognize and read Mat-Building". Within it, Smithson identified series of strategies and characteristics belonging to Mat-building, which is distilled into three compositional principles: Metric, Program, and Place (Calabuig, Gomez and Ramos). These will be discussed in the following pages with reference to Le Corbusier's Venice Hospital.

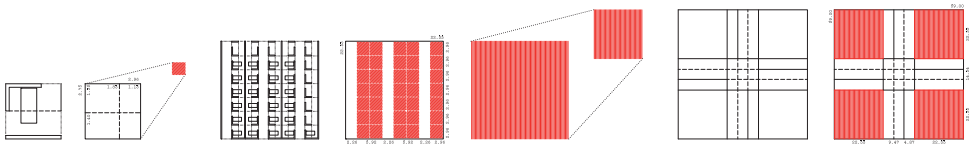
The genealogy of Mat-Building goes back to the Bazaar, and to the "close-grained, cellular organization of the Islamic city" (Smithson 576). Like the Bazaar, the Mat-Building is more comparable to an urbanist model for a neighborhood than one for an individual building (Sarkis). Although both the Mat-Building and the Bazaar are about generating an active and unfolding urban life, the Mat-building aims to do so without neglecting "some form of order" (Allen, "Mat Urbanism" 126).

Fig 3.15// Model of Venice Hospital in context, as viewed from the Lake. Atelier Julian.

Fig.3.16//

A Mat-Building is made up of repeating small, regular sized modules that accumulate to form a larger module which are repeated and added again (Calabuig et. al; Allen, "Practice").

Compositional Principle 1: Metric



The smallest module is Bed Modules or Unités de Lit.

Multiple Unités de Lit + service rooms form Unités de Soins

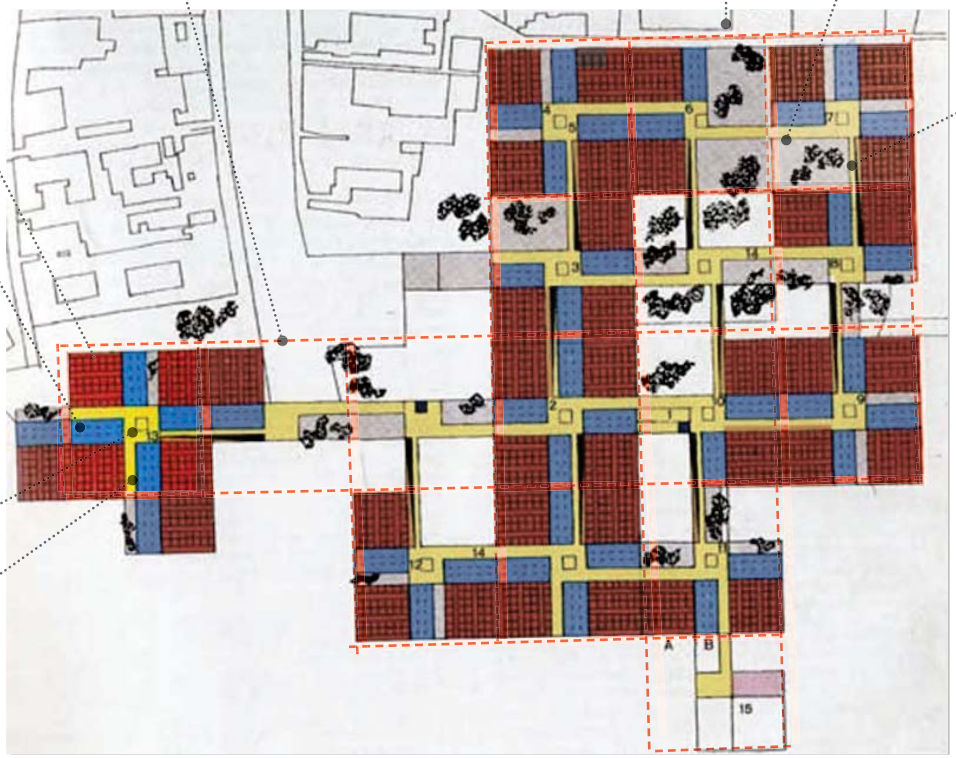
Unités de Soins + Corridors form Unités de Bâtisse

The building at a macro-scale is organized on a modulated grid; each underlying square cell is a specialty unit. Within each unit contains:

- *Patient Wards*
- *Treatment Space*
- *Small "square" / Core*
- *Corridor "Streets" (Sarkis)*

Though the Unités de Bâtisse all share the quadrant strcture, the interior arrangements vary locally.

Some units contain court-yard space to break up the overall density of the building.



Interlinking and axial circulation path corridors give occupants the choice of pathways similar to the Bazaar.

With multiple options, the architect programed separate routes for patients and doctors.

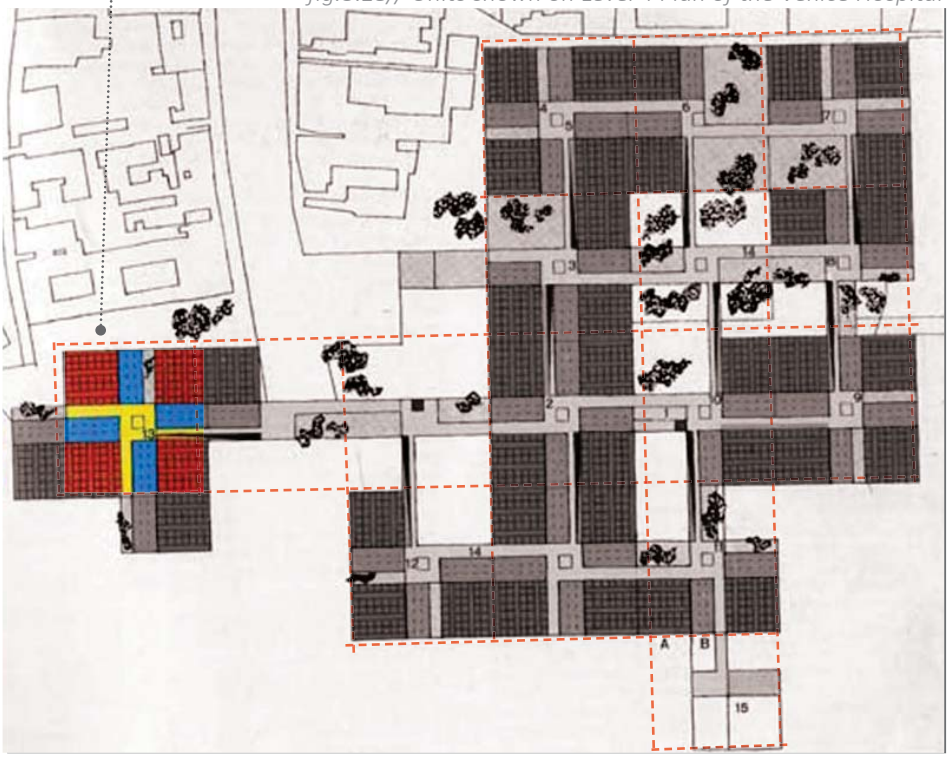
Fig.3.17// Level 4 Plan of the Venice Hospital.

Compositional Principle 2: Program

Each Unités de Bâtisse is a self contained medical department, therefore program bounded by the rules and geometry of the unit (Calabuig et.al).

With each unit being similarly interconnected and organized, the function that occurs within it becomes interchangeable. This is summed up by Smithson's professing that the Mat-Building "epitomize[s] the anonymous collective" (576).

fig.3.18// Units shown on Level 4 Plan of the Venice Hospital



Program is also stratified in layers. With most public programs at the ground and most private at the top level.

The more public spaces are raised on pilotis to allow freedom of movement.

Circulation interweaves between the levels, knitting the layers together.

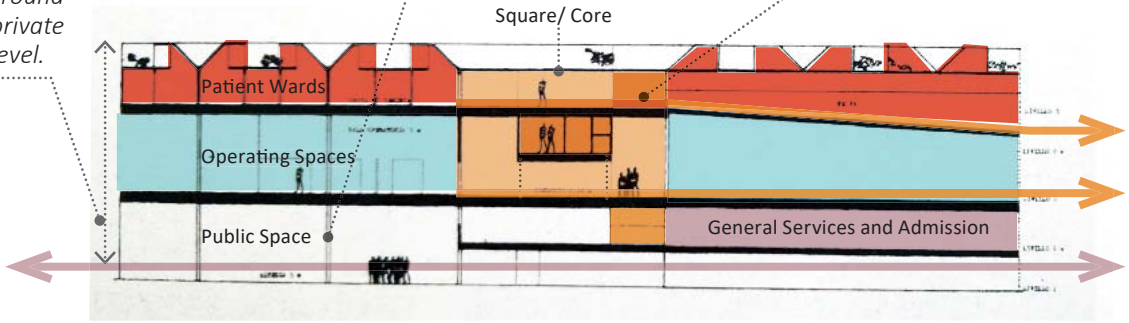


Fig.3.19// Diagram showing the program of the Venice Hospital in section; original drawing by Atelier Julian (1966)

Compositional Principle 3: Place

The decentralized and modular character of the Mat-Building makes it anti-monumental (Smithson).

The field-like condition of the Venice Hospital, with its internal squares and corridor streets, extends the existing urban character of Venice out over the lake (Calabuig et. al), albeit a more rectilinear version (Smithson).

Though dense and medium-rise in height, the "stem and cluster" organization of a Mat-Building have the potential to grow indefinitely (Allen,"Mat Urbanism" 123). In the case of the Venice Hospital, this is contained by the city and water.

Fig. 3.20// Model of Venice Hospital in context by Atelier Julian, 1966 (10).

Where the Bazaar has no exposed façade as it is bound by the buildings that encircle it, the Venice Hospital sits at the edge of the urban context and therefore has its facade on the water's edge completely exposed. To Le Corbusier, the façade in this instance becomes a barrier to the continuity of his free plan. On the Venice Hospital, he writes."I projected a hospital complex that can spread like an open hand: a building without facade in which one enters by the underneath, it has to speak within" (qtd in Allard 31).

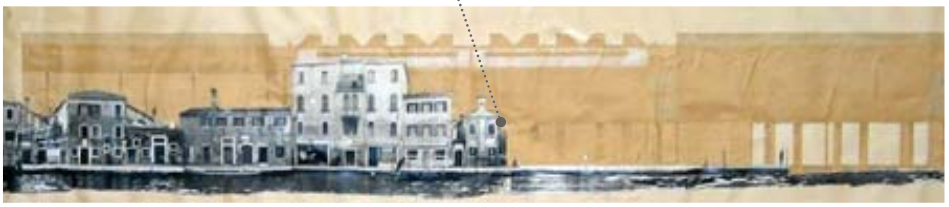


Fig.3.21// Collage showing the facade of the Venice Hospital and surrounding buildings from the water.

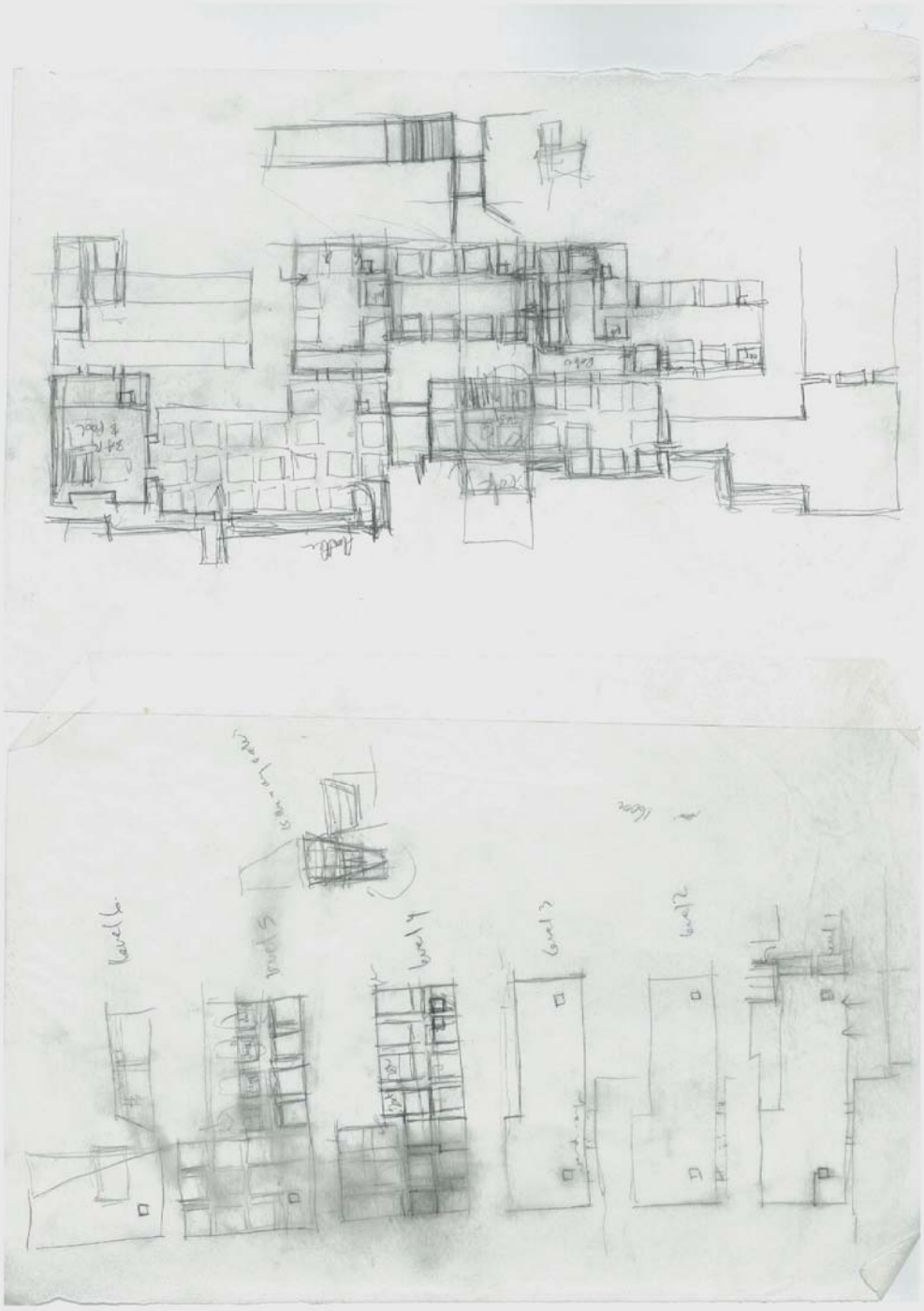


Fig.3.22// Design Sketch used to figure out the Design's Plan

// Summary

The Bazaar is a useful case study as it presents how a fine-grained, additive building type could fill a large urban area. Composed of a network of shopping arcades, the Bazaar is also a pedestrian orientated building type that hosts small vendor stalls and workshops. This makes the Bazaar a suitable building-type for addressing the objectives set out by this thesis.

What is interesting is that the Bazaar, and the typologies that share its lineage, is characterized by a decentralized approach to spatial organization, opting for multiplicity and choice over singularity and control. This is similar to the democratic and independent spirit of the Maker movement. Similarly, because there is freedom of choice, navigating through the Bazaar could be described as chaotic. However, this is useful as it creates stronger purveyor and purchaser relationships.

As an organizational tool, the Bazaar is also a field condition as all activities occur on the same level or plane. The singular active plane is still present in the latter case studies though it was tilted in the Beirut Souks and stacked in the Venice Hospital to accommodate the multiple levels of contemporary buildings.

The regular and rectilinear organization of the Mat-building type case study is similar to that of the Design. Though the Design itself differs from Le Corbusier's Venice Hospital, it was developed using similar compositional principles, particularly in regards to Metric. The next section will look at the development of the Design more closely.

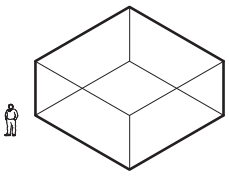
[4.0]

THE RESEARCH

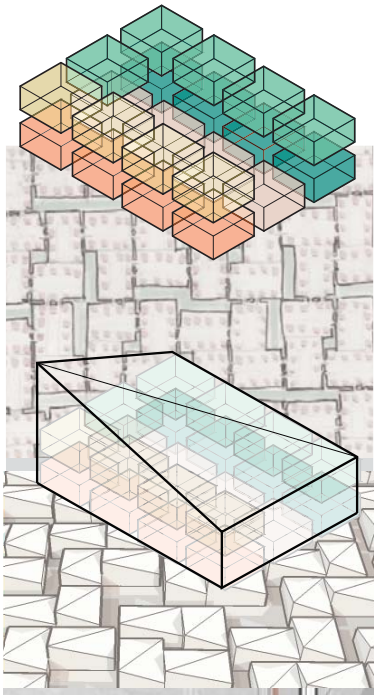
Responding to Context

// Chapter Introduction

Similar to the modular nature of the Venice Hospital, the Design is an aggregating series of cells. This chapter is organized to reflect that:



[4.1]
Six by Six and Two
The Workspace Cell and the Tartan Grid



[4.2]
Three by Four
The Collaborative Module

[4.3]
Tessellate
From Module into Field

[4.4]
The Thick 2d
Plan to Form

[4.5]
Formal Articulation
Finding Poetry in the Order

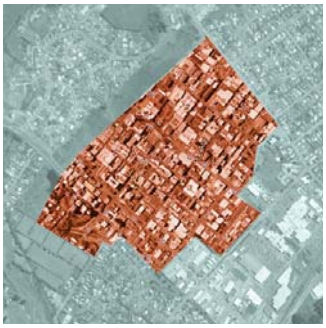
[4.1]

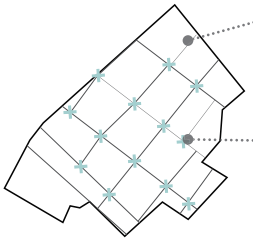
SIX BY SIX AND TWO

xx

Urban Grain Comparisons

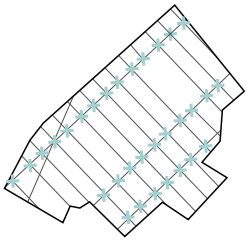
Te Aro, Wellington - 150x200m



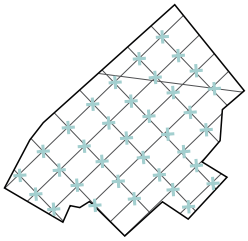


Point of decision making for the visitor.

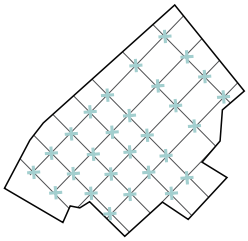
Midtown, Manhattan - 60x280m



North Beach, San Francisco - 80x130m

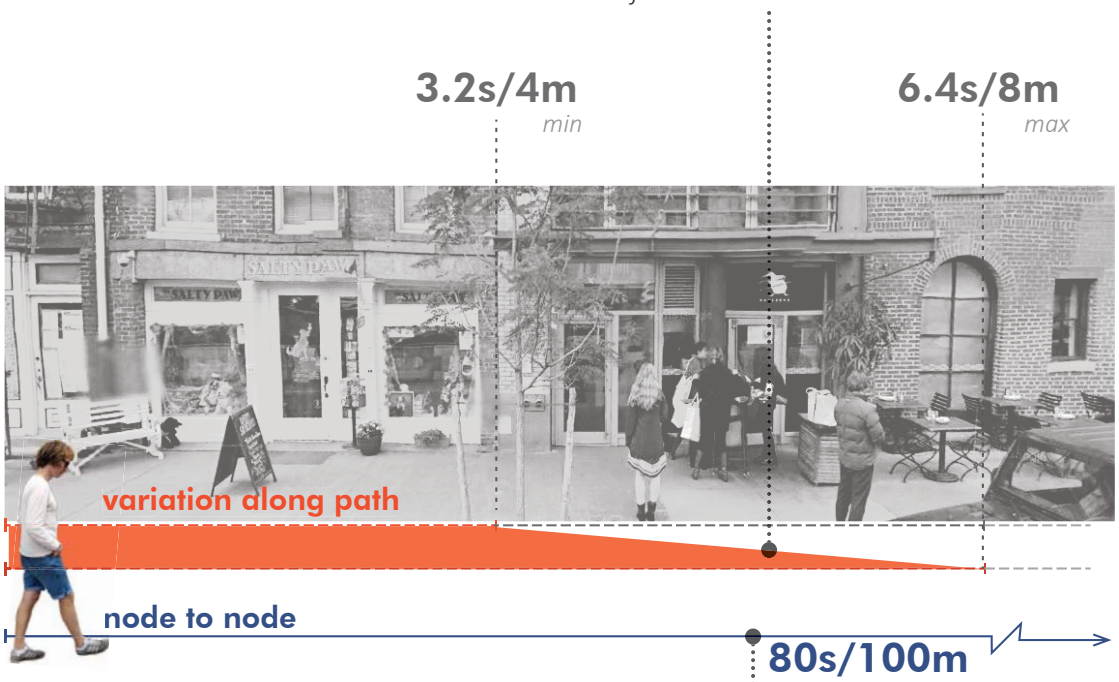


Eixample, Barcelona - 100x100m



Prior to settling off the Wetland, tests were carried out by collaging city blocks of renowned pedestrian cities into the town centre to understand the density potential of the site compared to its existing low density state.

4m is the mean dimension that arises from walking past a shopping street, where approximately every three paces lead to a new store to look into. Some of the larger stores had shop fronts stretching to around 8m. This I quantify as the limit for one stretch of wall before the walk feels monotonous. Therefore the ideal dimension is between 4 and 8m.



This is measured at the walking subject's pace of 1.25m/s

By reaching a node (i.e. intersection) every 100m, the walking subject is kept engaged by having to make a directional decision every 80secs.

// The Walking Scale

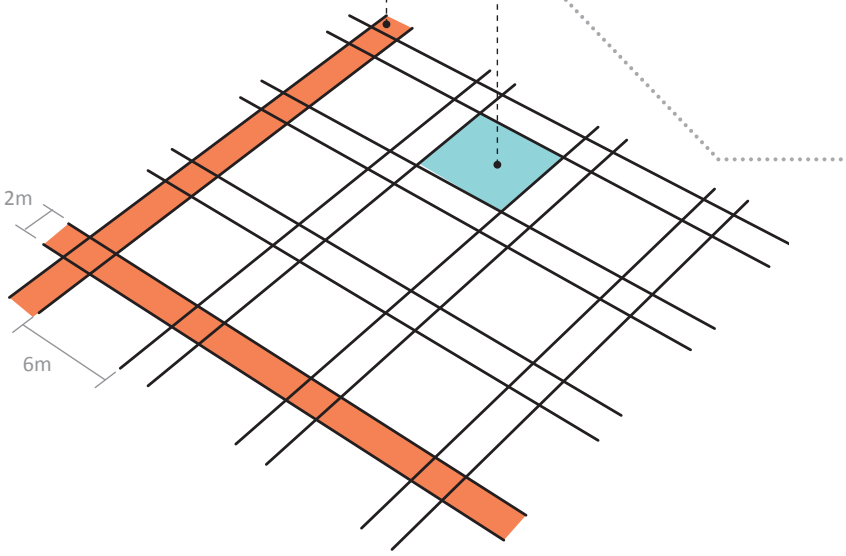
To address the dispersed nature of the site, experiments were carried out to understand what makes a walk enjoyable. This was first tested out by comparing the grain of walkable cities to the condition on site (see fig.4.01). The next set of tests was carried out by walking along streetscapes of different grains to find how often variations – i.e. a change in store front – needed to occur for the 'walk' to feel interesting and not tedious (see fig. 4.02).

◀

Fig. 4.01 // City grain comparisons to the existing grain on the site.

▲

Fig. 4.02// Diagram showing key dimensional findings from walking scale studies.



A 2m corridor is sufficient width for 2 people to walk alongside each other comfortably, though it is intimate enough that if 2 walkers were to cross paths, they cannot do so without acknowledging each other.

The length of each side of the cell is less than the 8m limit. Though slightly more than the 4m average found, a 6m per side length is a comfortable proportion for the workspace cell, particularly as it has a pleasing 3:1 ratio to the width of the corridor.

Grid Organizational Plan

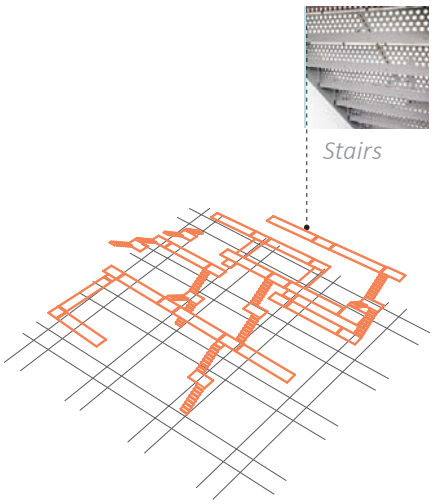
// A Tartan Grid

The Maker model values small-scale and autonomy. They are independent but also value being in proximity to other makers.

This first design iteration envisions a Tartan Grid of 6x6m workspace cells with 2m wide corridors in between. This is an organization of dense proximity but with clear delineation between each workspace cell. The tartan grid becomes a framework with which the creative activity could interact.

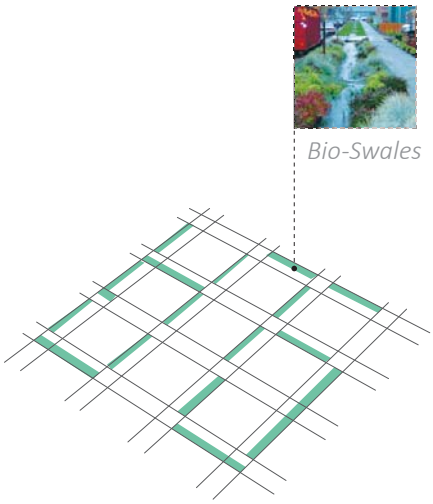
▲ *Fig. 4.03// Diagram showing the Grid Organization.*

► *Fig. 4.04// Diagrams of potential features that could arise from the Grid Organization.*



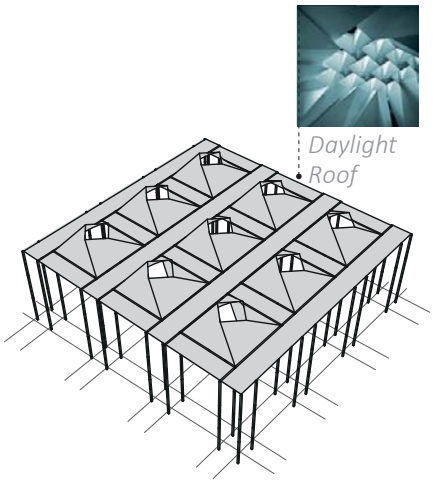
Circulation

The corridors act as circulation pathsways and green infrastructure so as to allow all the workspace cells to be equally unencumboured by these services.



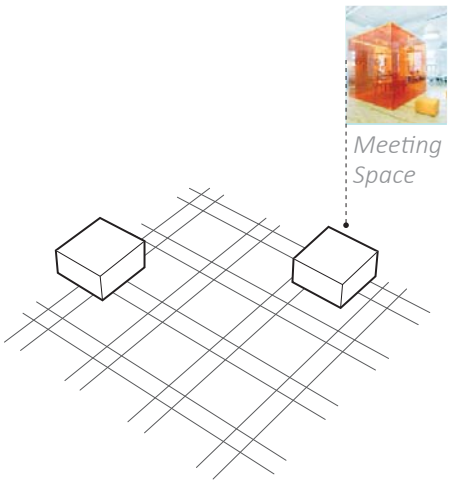
Green Infrastructure

As the 'making' is at a small scale, any pollutants could be treated immediately and locally using green-infrastruture such as bio-swales.



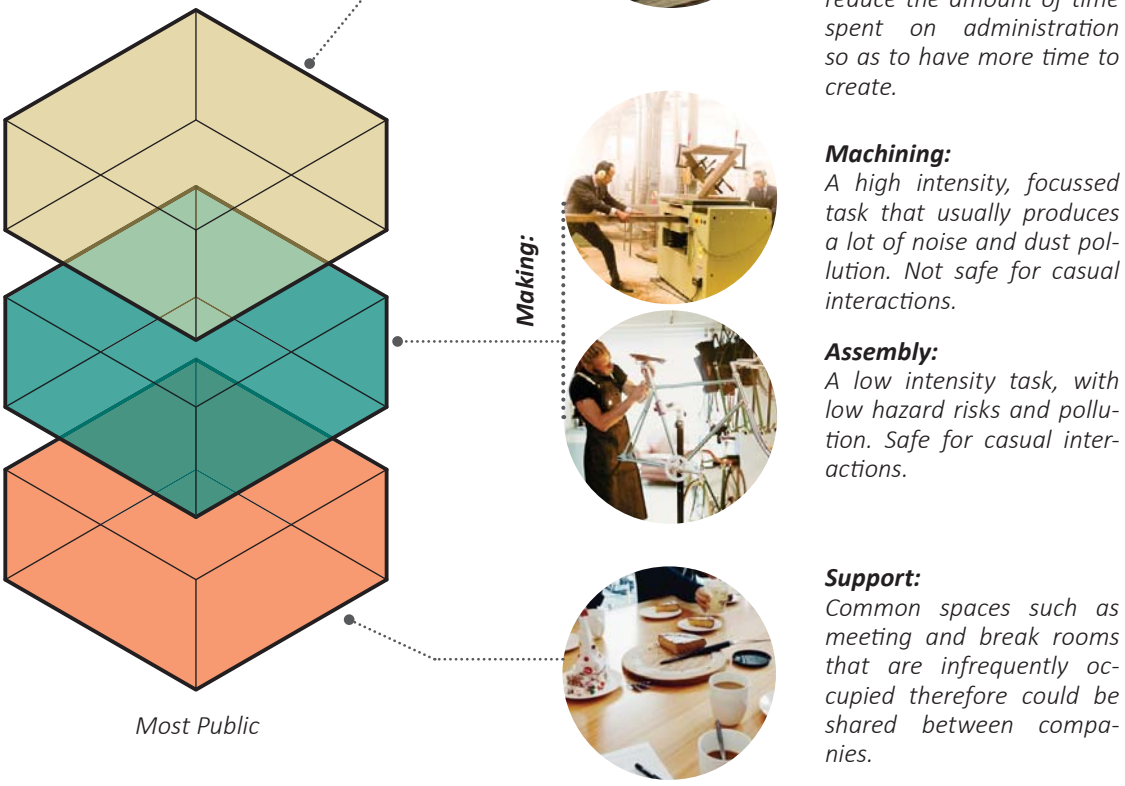
Structure.

The support structure in this Tartan Grid can be made thinner than a straight grid, making the internal space feel lighter, with Roofs only spanning small distances, as Daylight is introduced.



Enclosed Areas

Certain workspace cells could be enclosed for more private activities.



Main Programs in a Maker Company

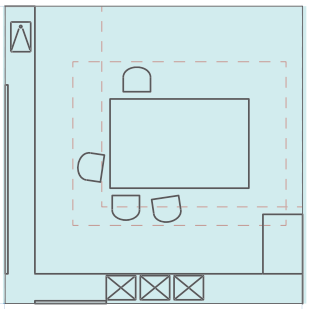
▲
Fig. 4.05// Diagram showing main programs in a maker company.

►
Fig. 4.06// Diagrams of suggested occupancy of workspace cell

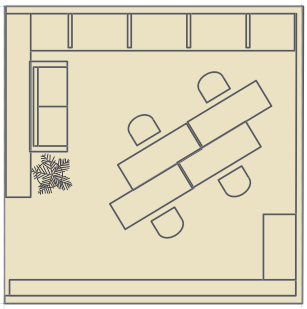
// Programs in Workspace Cells

The 6x6 workspace cell was tested to see how the activities carried out by makers would occupy it.

In the plans to the left, the primary programs identified all fit comfortably into a 6x6m workspace cell. As each cell only has one function, thus one company will need to travel between multiple cells to carry out its tasks.

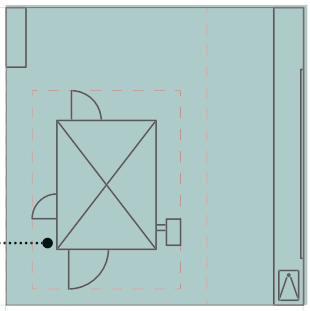


Workspace 1

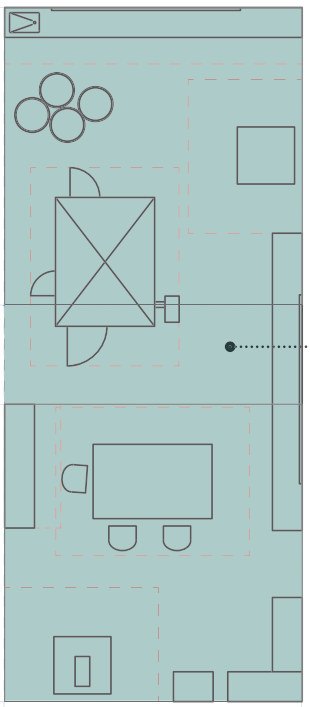


Office 1

Though a singluar large machine such as 5 axis cnc machine takes up a large portion of space in the cell, there is still enough space for a workbench



Workspace 2

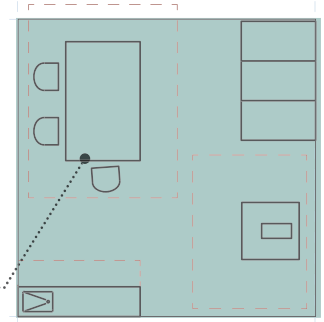


As the workspace cells are all the same size, the programs within them are self-contained and interchangeable.

Though multiple workspace cells could be connected together to form a larger workspace, however this is just a larger unit rather a program specific space.

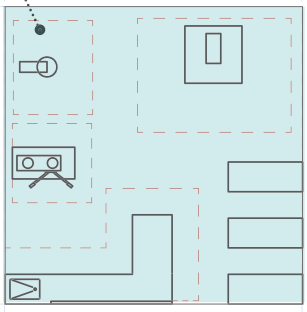
Smaller machines mean more space for other tasks such as a large assembly table,

or more machines.

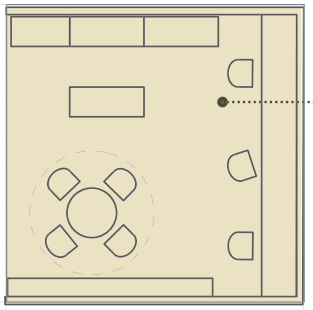


Workspace 3

Workspace
Across two Cells



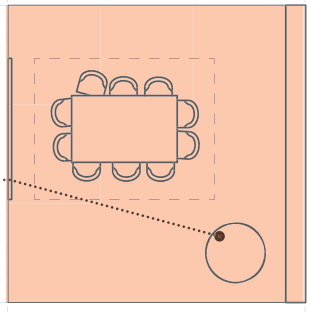
Workspace 4



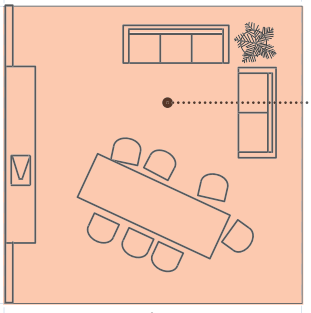
Office 2

A 6x6 workspace cell allows offices to be laid out in various ways.This layout includes spaces for both individual and collaborative work.

Meeting rooms are spacious with enough space for a refreshments table.



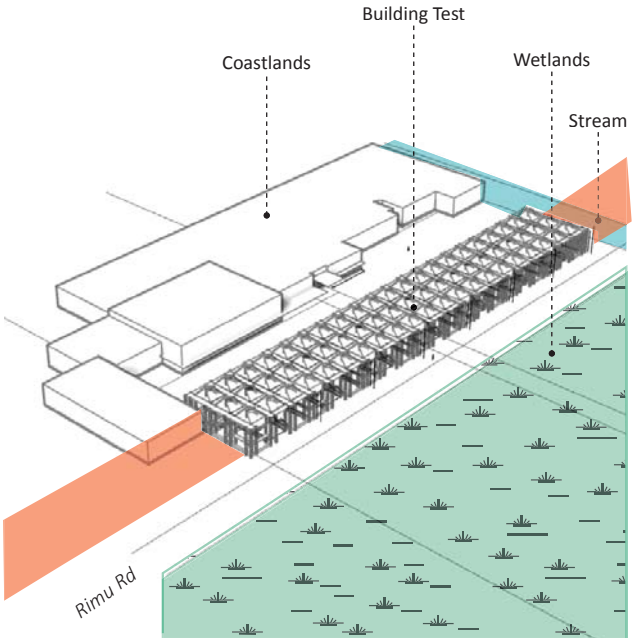
Meeting Room



Break Room

Break room space could be a gathering space across multiple companies, though it only holds up to 12 persons comfortably.

Iteration 1 - Grid on Site

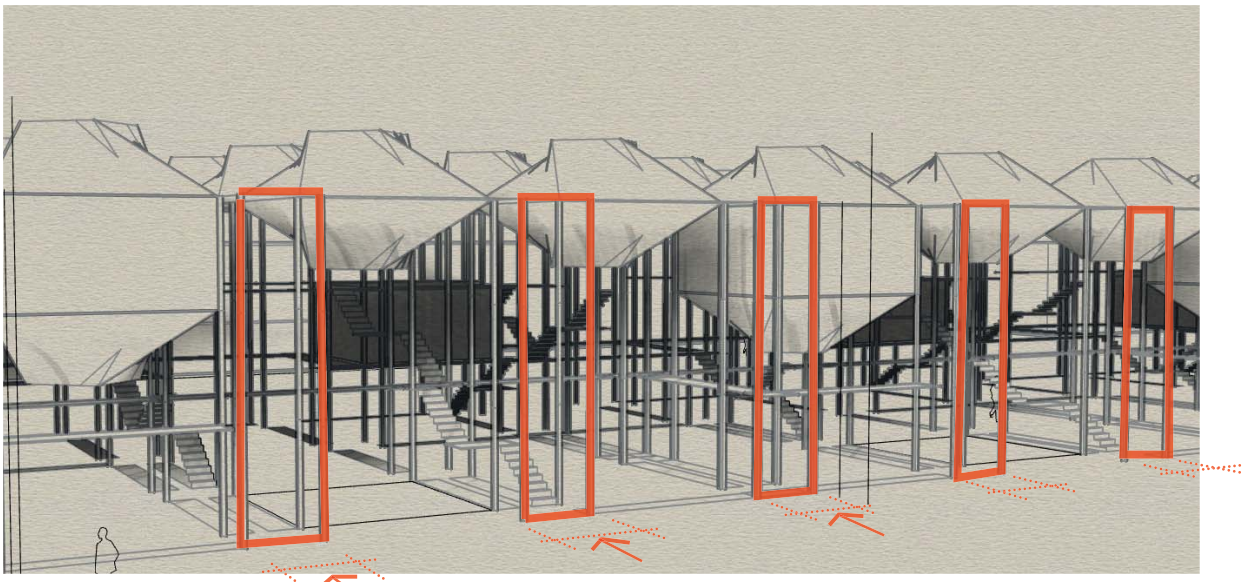


// Building as Boundary

The workspace cell concept is expanded upon and placed on site. This scheme sits against the edge of the road, forming a uniform wall towards the wetland, demarcating the boundary between the urban and the wild.

Fig. 4.07// Diagram showing scheme in relation to context

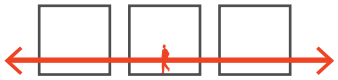
Fig. 4.08// Perspective sketch of the scheme lining the edges of the street.



The circulation corridors fronting the street become multiple entry points into the scheme.

Due to the dimesional limit imposed, there remains a gap between the new designed building and Coastlands. The juxtaposition of the two buildings on either side charges this gap with an uneven tension. One point of contrast is the number of entry points. While the new designed scheme has multiple entryways, the mall, designed to funnel visitors, only has 3 public access doors. The mis-match sets up a hierarchy in this open area and subseqeuntly also creates pockets of inactive, 'dead' spaces.

Fig. 4.09// Sectional diagram showing scheme at 3 cells wide.



The gridded layout is limited to 3 cells deep, so an occupant will only ever be one cell away from the exterior at any point within the scheme.

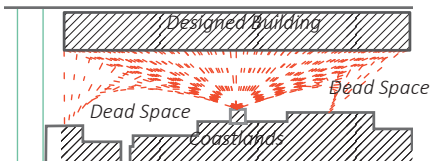


Fig. 4.10// Plan diagram showing paths between the public entryways of the designed scheme with Coastlands.

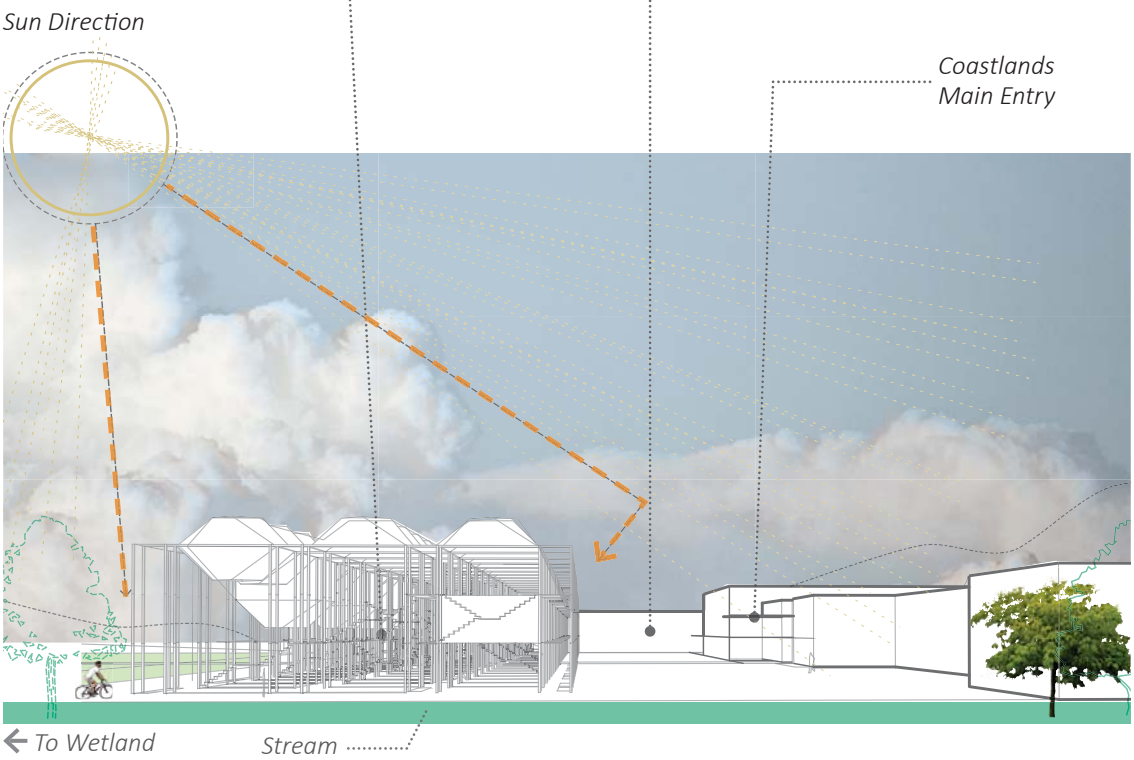
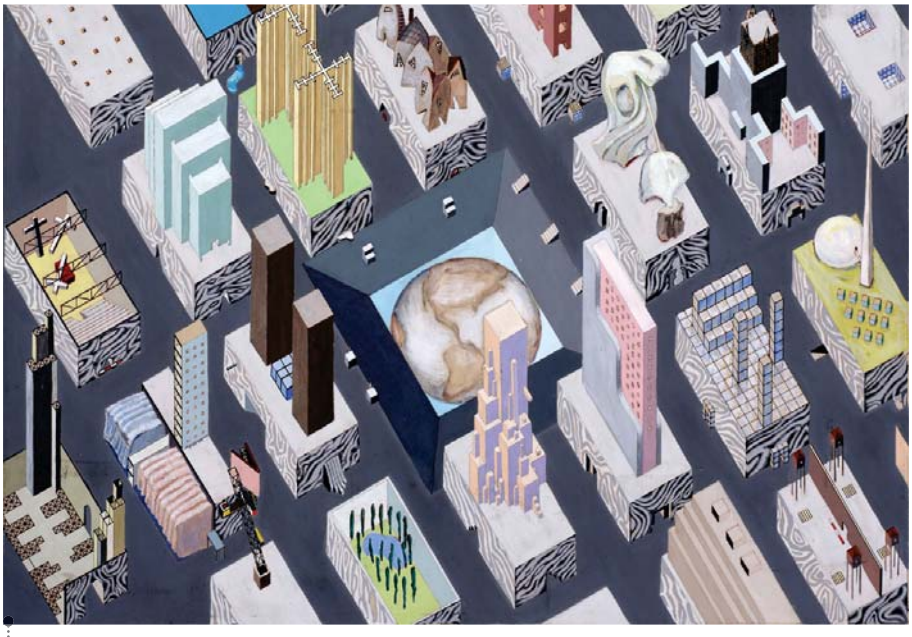
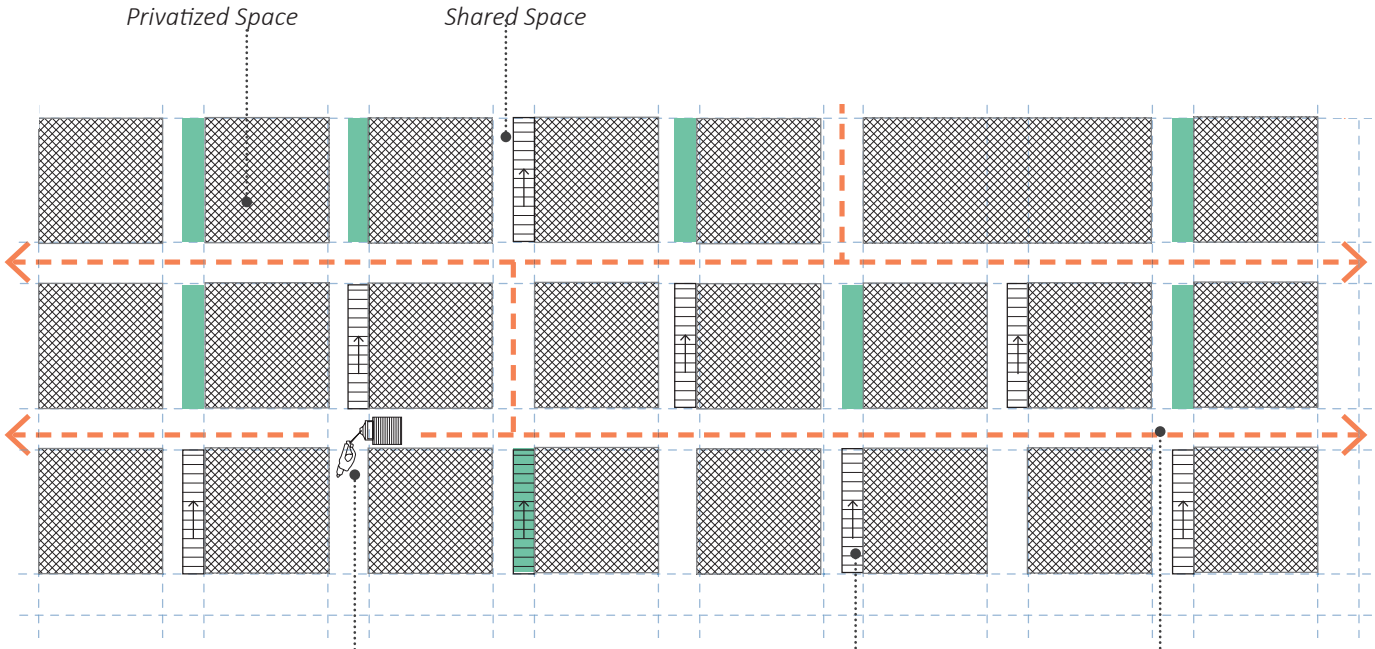


fig. 4.11// Perspective diagram of the scheme and Coastlands looking from the stream.

A still from the office scene in Playtime. An absurdist observation of how the private cubicles create a world within itself but leaves the public passeways sterile and impersonal.



Koolhaas's City of the Captive Globe is an urban-scale variation of the dense grid plan. The observation here is that the uniform grid can mediate the differences between the dramatically different skyscrapers. This as a result separates each cell from its contexts to become "a self-contained enclave" (Aureli 23), which is the opposite of the collabortive intent of the design.



//Critique: The Isolating Grid

One intention of the design is that by having lots of makers in the same space will create opportunities for collaboration and the cross-pollination of skillsets and ideas.

In iteration one, the strong delineation of each private workspace cell perhaps marks out too clearly the ownership boundaries. With the only shared public space being the 2m wide corridors, the various makers may cross paths, but there are no neutral areas for working in the same space. This could mean that each maker will choose to stay within hiw or her workspace cell for longer periods of time. As a result, the facility will be densely packed but also disconnected.

◀▲ *Fig. 4.12// Still from: Tati, Jaque. Playtime. (1967)*

◀ *Fig.4.13// City of the Captive Globe. Drawing by Rem Koolhaas. 1994*

▲ *Fig. 4.14// Diagram of plan showing Issues of Iteration One.*

[4.2]

THREE BY FOUR MODULE

The Collaborative Module

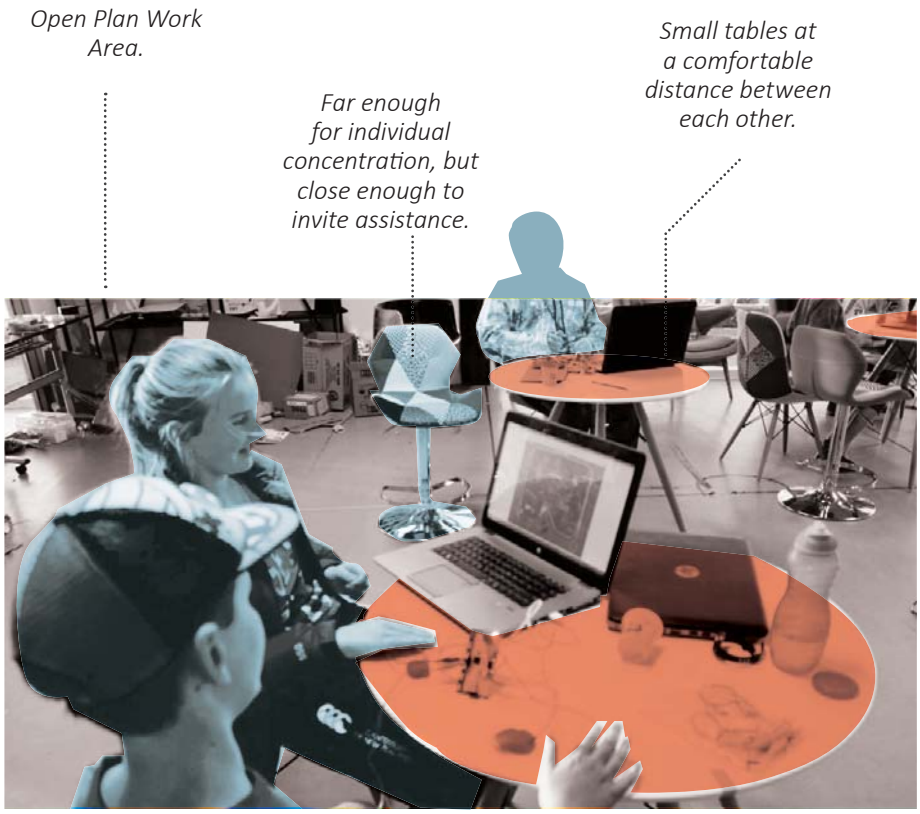


Fig. 4.15 // Interior Spaces of Mind Lab, Lower Hutt, Wellington

// Case Study:
The Creative and Collaborative Space

To understand collaborative and creative spaces. I looked at Mind Labs in Petone, Wellington. Mind Labs is a facility aimed at teaching children how to make things with rapid proto-typing tools. This is done through practical engagement and play (The Mind Lab). The hands-on, collaborative and explorative approach of Mind Labs is similar to what I would like my facility to foster.

Looking at images from their programs, this is achieved by allocating generous amounts of undefined spaces

The transitional and program neutral space of a wide corridor becomes a testing space.

Program 1

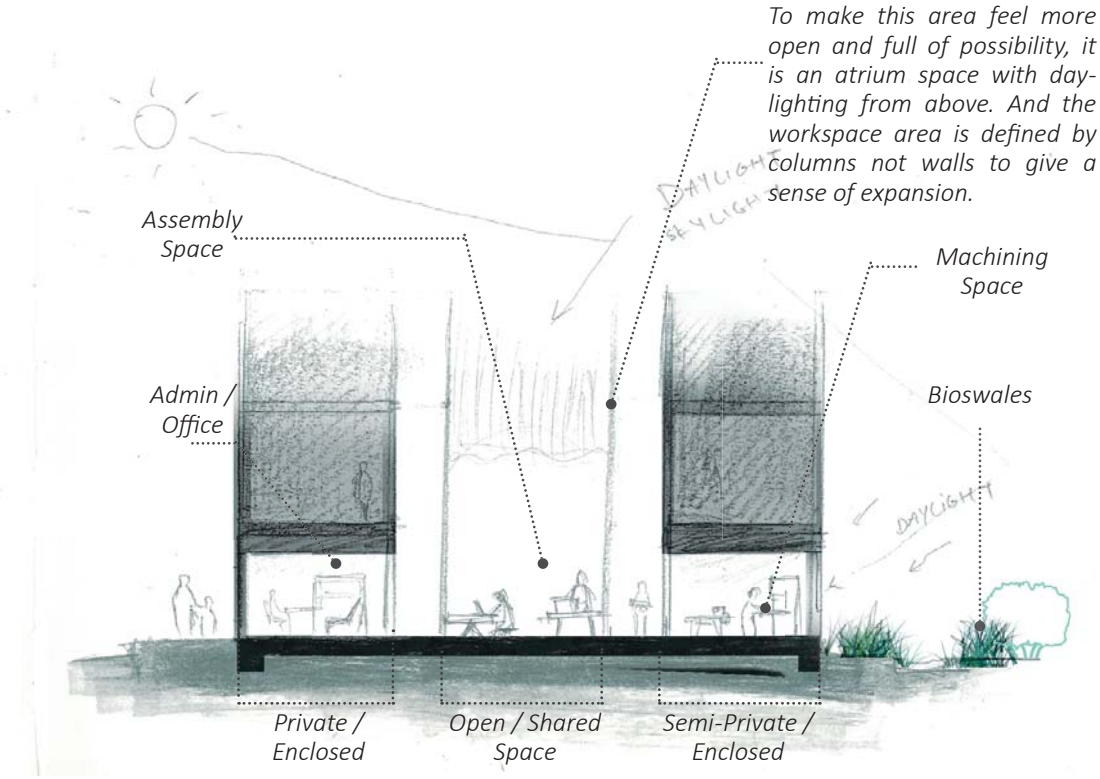
Malleable space in the middle.

Here, chairs are reimagined as tunnels.

Program 2

between programmed spaces. The neutrality and transitional quality of the undefined spaces allow the occupants to collide and spark new ideas.

At a furniture scale, the private workspace is defined by small tables rather than a room. Tables within an open work area become points into which people are drawn. Unlike a room which has a clear threshold between the private interior and the public exterior, the threshold for a point is less clear. As a result, this increases the chance for casual interactions and silo-ing is less likely to occur.



//The Three by Four Module

Instead of a grid plan that stretches to infinity, this iteration groups workspace cells into a three by four cell unit which will be referred to as a module.

Each module will house one set of support amenities – i.e. restrooms and break spaces – which three companies will share. The scale of the module is determined so that the amenities can be accessed in under 30 seconds of walking from the furthermost part of the module. Also, a three by four cell ratio creates an aesthetically balanced shape.

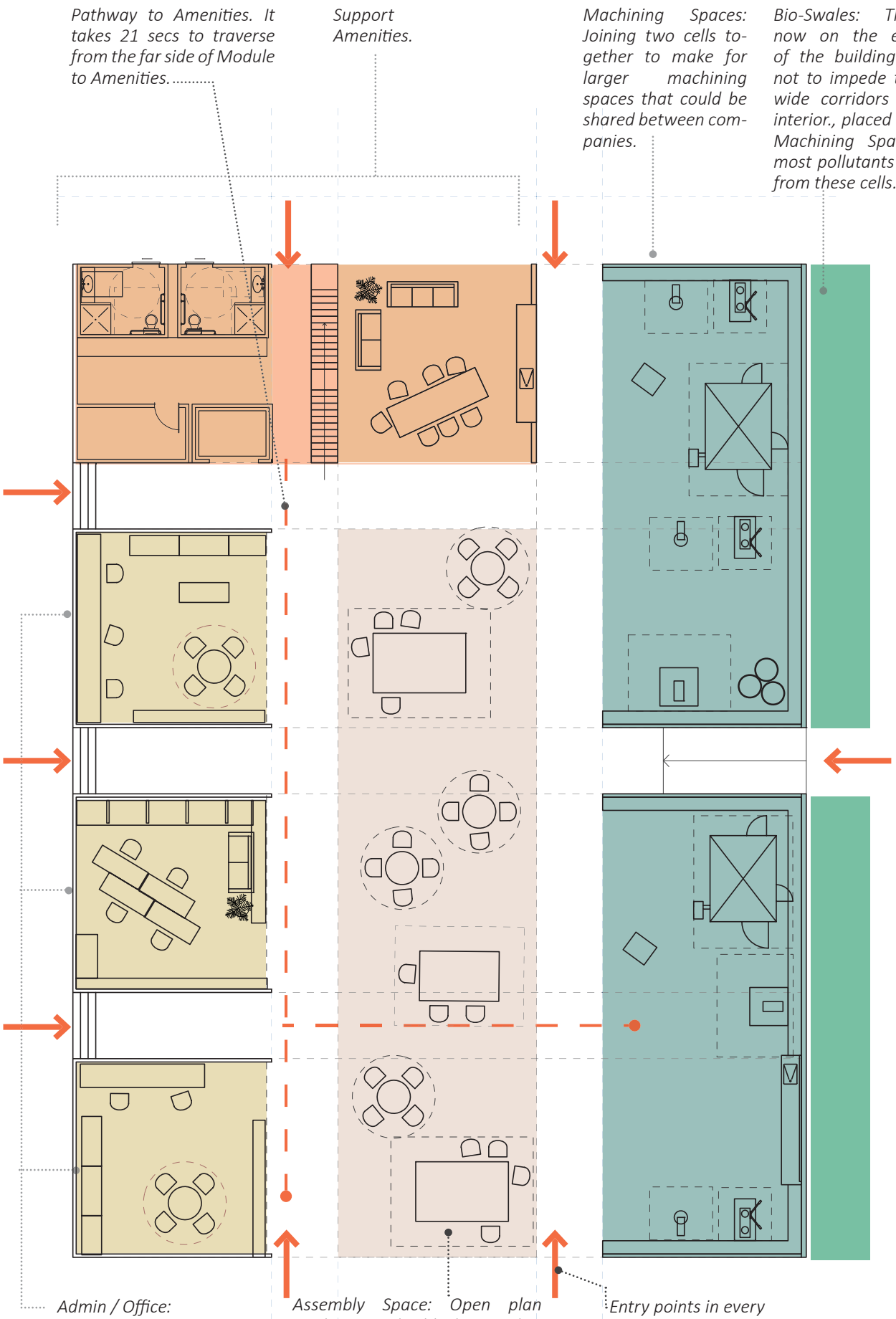
All the key programs are located on the ground floor so as to concentrate activity on this plane.

▲

Fig. 4.16// Section Diagram showing degrees of shelter for each cell across the module.

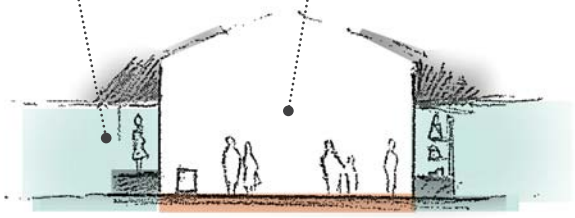
►

Fig.4.17// Plan of module showing how each of the programs could be laid out across the cells.

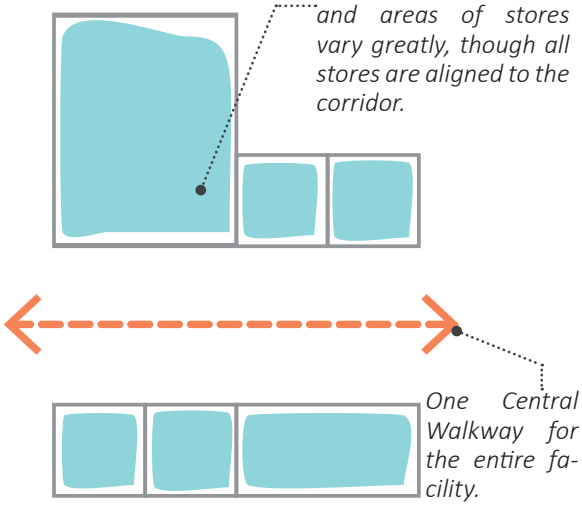

Pathway to Amenities. It takes 21 secs to traverse from the far side of Module to Amenities.
Support Amenities.
Machining Spaces: Joining two cells together to make for larger machining spaces that could be shared between companies.
Bio-Swales: This is now on the exterior of the building so as not to impede the 2m wide corridors in the interior., placed next to Machining Spaces as most pollutants will be from these cells.
Admin / Office: Separate for each company.
Assembly Space: Open plan workspace. Flexible layout that can be reshuffled to match the fluxuating work loads of the companies that share this module.
Entry points in every direction.

Controlled, distinct boundaries. The space for each store is retained strictly behind its storefront.

The public moves through the mall via a wide central corridor designed to handle all the traffic in the mall.



The sizes of storefronts and areas of stores vary greatly, though all stores are aligned to the corridor.

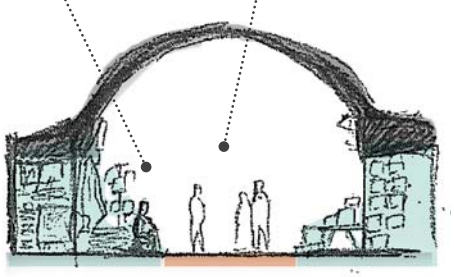


One Central Walkway for the entire facility.

[Mall]

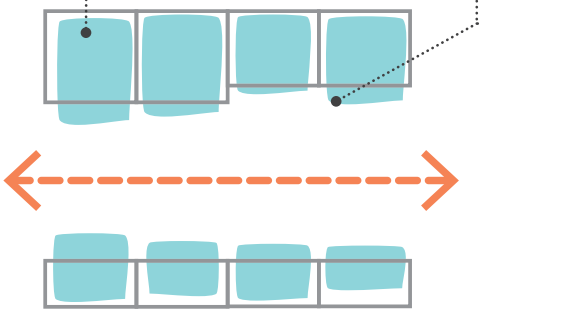
Blurred Boundaries - Store inventory spills beyond the formal boundary of the store.

The public moves through the bazaar via central corridor.



The size of stores is generally quite small, around 3 to 5m wide / depth; they vary in sizes.

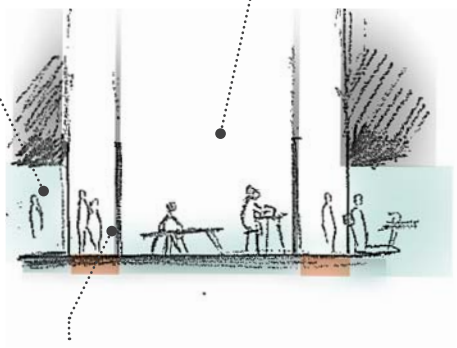
Edges of the public walkway made less distinct by the store inventory spillage.



[Bazaar]

Defined boundaries between walkway and working space. As walkway is narrow, keeping it inventory spillage free is a safety precaution.

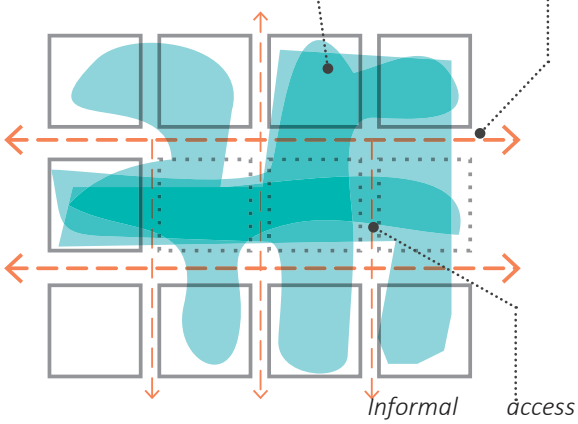
Customers traverse along the walkways, though visually drawn to the assembly space in the middle workspace as it is the most open and light.



Support columns frame the central workspace. This opens the assembly area (as defined in fig. 4.17) for interaction, while creating a visual boundary. Giving customers a threshold through which to pass.

The space each maker company will occupy will overlap, creating more opportunities to interact.

Two main unobstructed walkways through the length of the space.



Informal access paths across the width of the space.

[The Design]

//Public and Private Space in the Module

The space organization in the module is fluid and overlapping. This differs from both the mall and bazaar layout (see fig. 4.18). The private programs such as the office are moved to the sides while more public programs such as the assembly space of the companies are grouped together across multiple cells without barriers. This neutral middle area becomes a space of interaction and negotiation and is common for all of the companies.

The main public circulation will still be along the 2m wide corridors. However, on the assembly space side, the bounds of the corridors are loosely defined by columns rather than walls. This means that clients will walk into spaces right in amongst the making process without being in the way of a specific task. This greater level of engagement between the client and the making process is in alignment with the Maker model.

◀

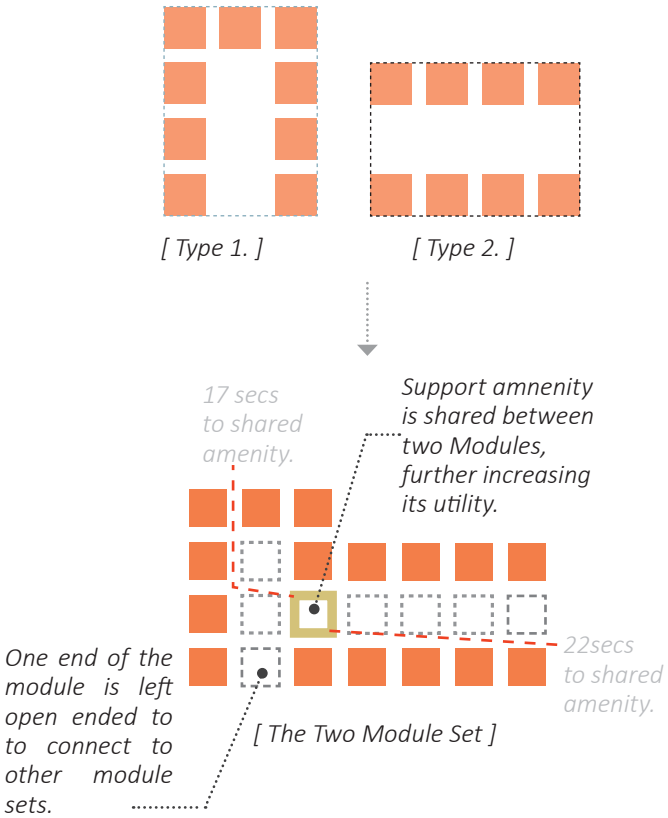
Fig.4.18// Diagram comparing the lay-outs of public and private spaces of the Mall, Bazaar and The Design.

[4.3]

TESSELLATE

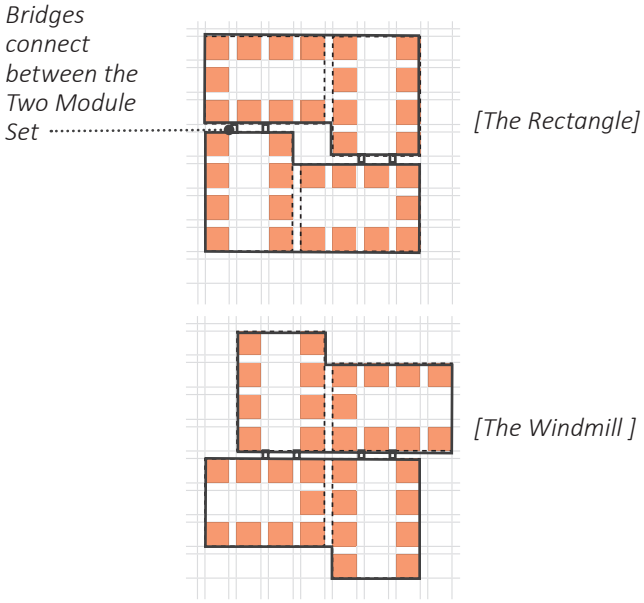
From Module into Field

1.
The Two Modules Set



2.
Base Module Group

Only two types of Base Module Groups can be formed from the geometry of the Two Module Set.



Making the Module into a Pattern

// Tessellate

The plan of the module is tessellated to form a variegated field condition. The geometry of the module knits pockets of exterior space into the field. In this iteration, the design is broken up into a series to interior and exterior spaces, which creates breaks and lightness within a densely packed field.

▲

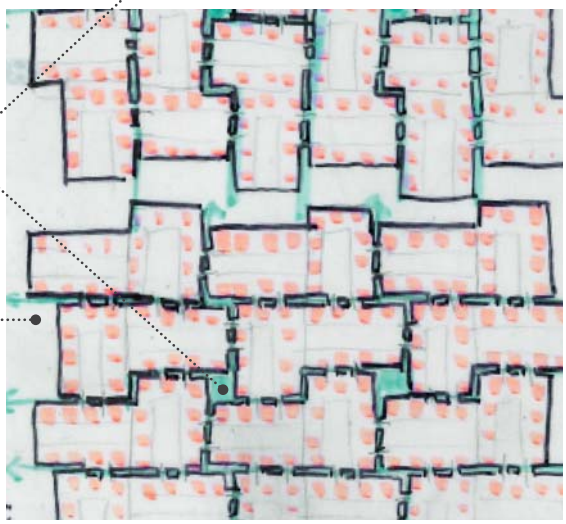
Fig.4.19// Diagram showing how the Module aggregates into a tessellation pattern.

3.
Module Groupings as Field

The Base Module Group is then repeated to form a field condition. The remaining exterior space will be used for the bioswales, forming a network of interlocking green space.

[A] *Rectangle Group Only. With no difference between amount of space by changing the orientation of the two module set.*

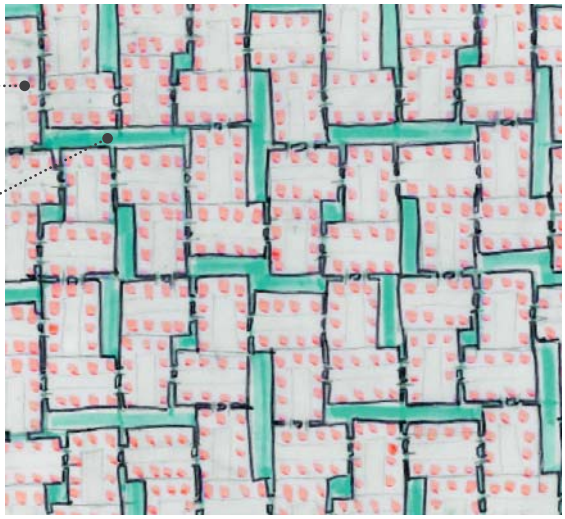
Small pockets of green space dotted through the field.



[B] *Windmill Group Only. Similar interior to exterior ratio density to the rectangle group.*

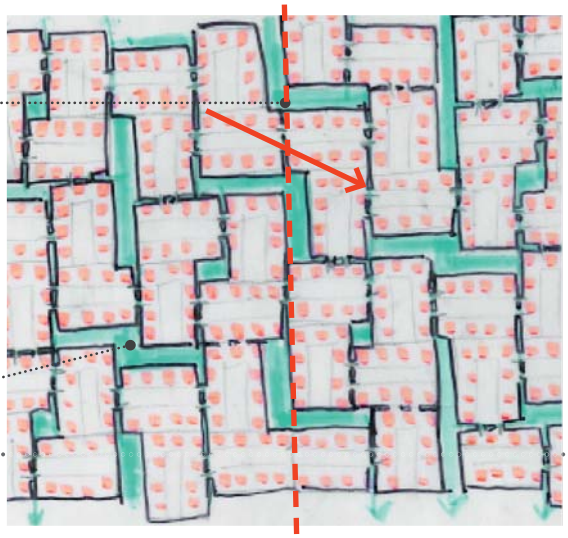
[C] *Alternating between Rectangle and windmill groups in a regular pattern*

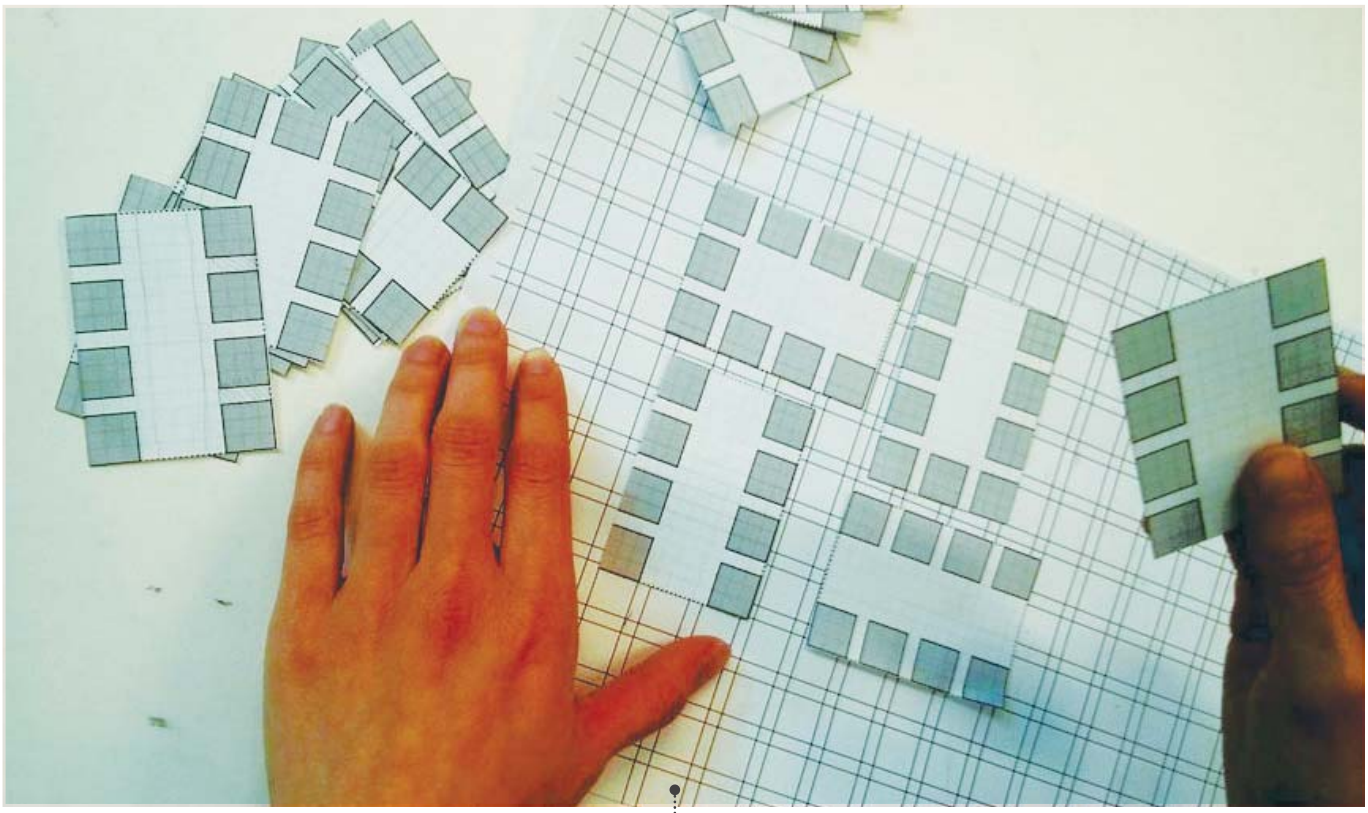
Green space pockets of varying sizes



[D] *Alternating between rectangle and windmill groups with a half module group vertical for every two module groups across.*

Evenly sized green space pockets with greater variation compared with 'C' above. This appears more dynamic by comparison.





The Modules were laid out on a grid, scaled to the area of site, like a jigsaw puzzle. This method allowed the usefulness of the pattern to be assessed and adjusted very quickly.

//Testing Field on Site

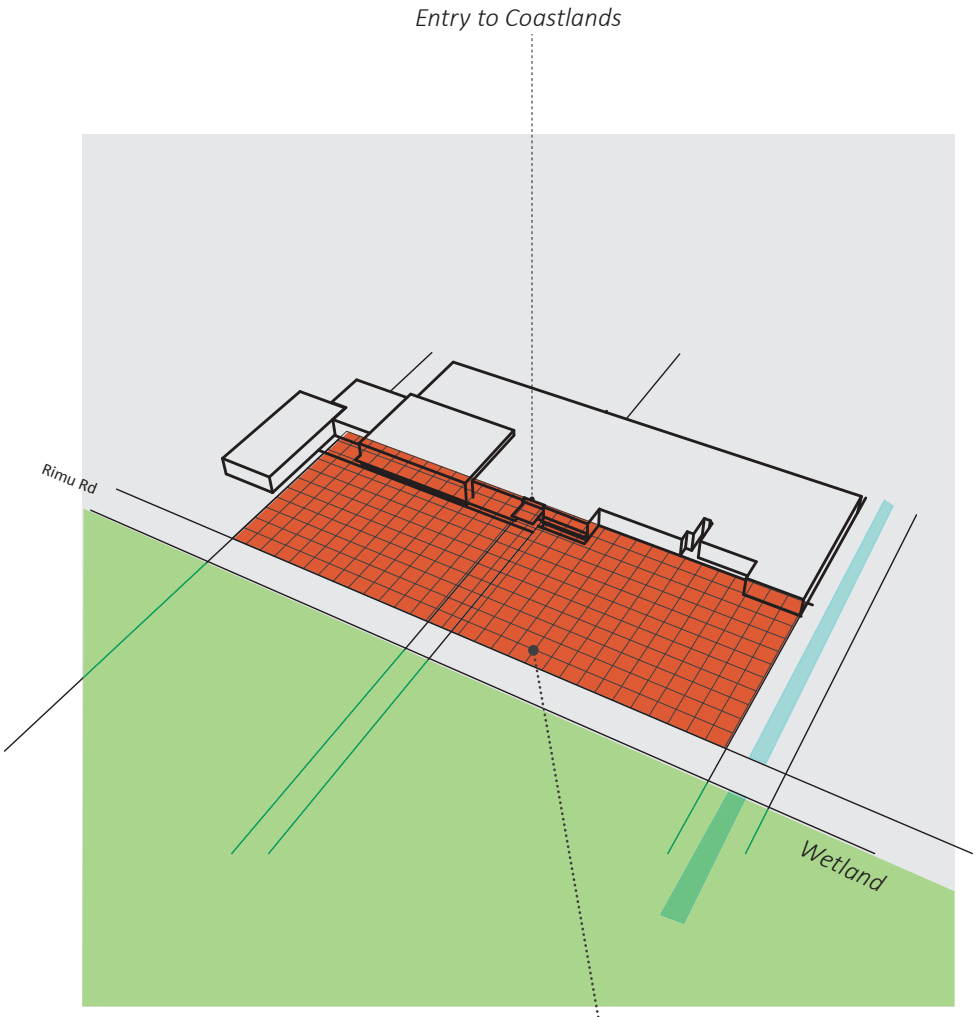
The patterns explored are placed on site to find what combination best interacts with the context. The main purpose here is to flatten out hierarchy to democratize access. The two key organizational principles regarding exterior space and value distribution are outlined next.

▲

Fig.4.20// Photo of author laying out plan of the modules as a puzzle.

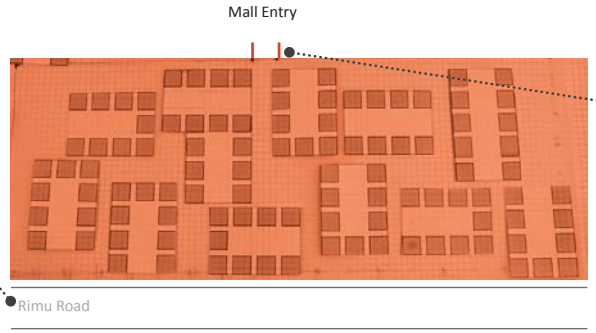
►

Fig.4.21// Diagram showing grid over-layed on site.

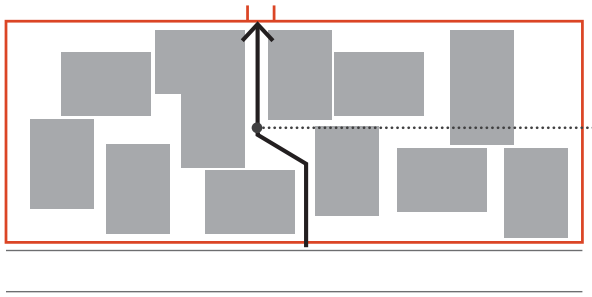

Entry to Coastlands
Rimu Rd
Wetland
Extent of area on site which was used as an underlaying grid upon which the module plans were placed.

1.Distribution of Value

The majority of customers to the site will arrive from the Rimu Road side of the site.

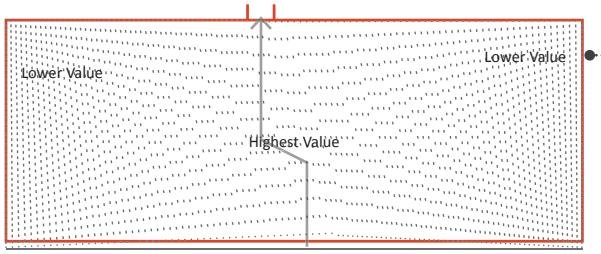


The main 'exit' from the site in this direction is through the mall main entry.



This pattern combination creates an open exterior route directly between Rimu Road and the mall entrance.

Direct Spatial Route to Mall Entry

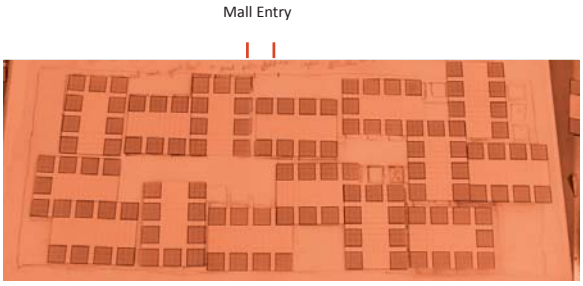


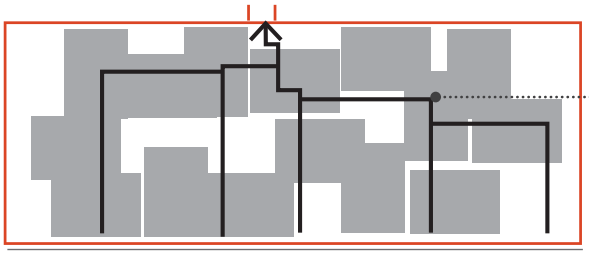
The directness of this route becomes the main pathway similar to that in the mall. This sets up a hierarchy of value across the site. The further away from the main pathway a lcoation is, the lower in value it becomes.

Uneven Distribution of Value

Avoiding Strong Singular Access

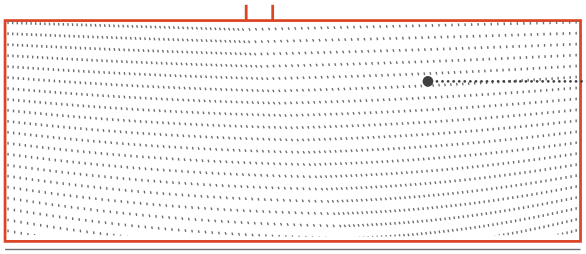
Fig.4.22// Diagrams showing the distribution of value in certain formation conditions .





In this combination, there is no large direct path from Rimu Road to the mall. All possible pathways to mall entrance will traverse multiple modules. This way, no pathway is perceived as more direct.

Multiple Routes Passing through varied spaces to Mall Entry

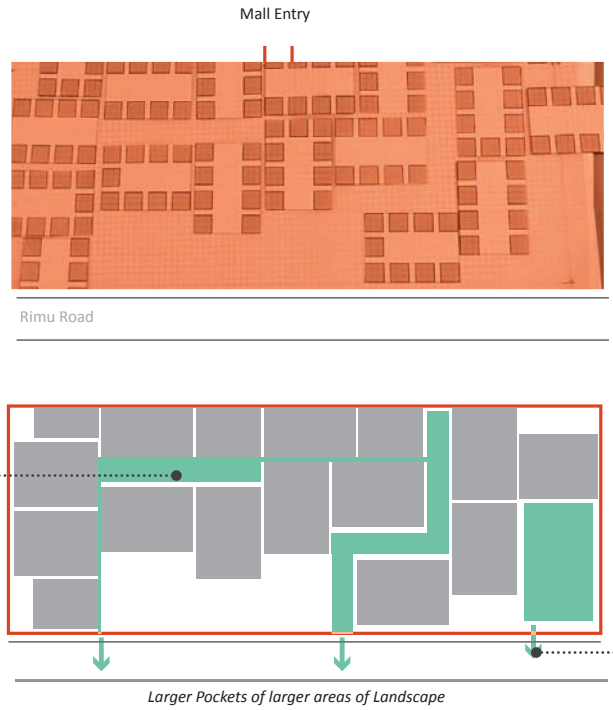


The mutiplicity of pathways without a dominant option in this configuration neutralizes the hierarchy embedded in the space. As a result, the value is the same across the site.

More Even Distribution of Value

Choosing Multiple & Dispersed Access

2. Distrbution of Exterior Spaces



Fewer and larger green spaces means that all pollutants across the facility are concentrated, which is more demanding on the bioswale infrastructure.

Fewer exit points mean it will carry a heavier flow as it goes out into the wetland.

Avoiding Fewer and Larger Green Spaces

Fig.4.23// Diagrams showing the distribution of exterior spaces.

Pollutants are dispersed into multiple bioswales, therefore processing infrastructure can be lighter and smaller.

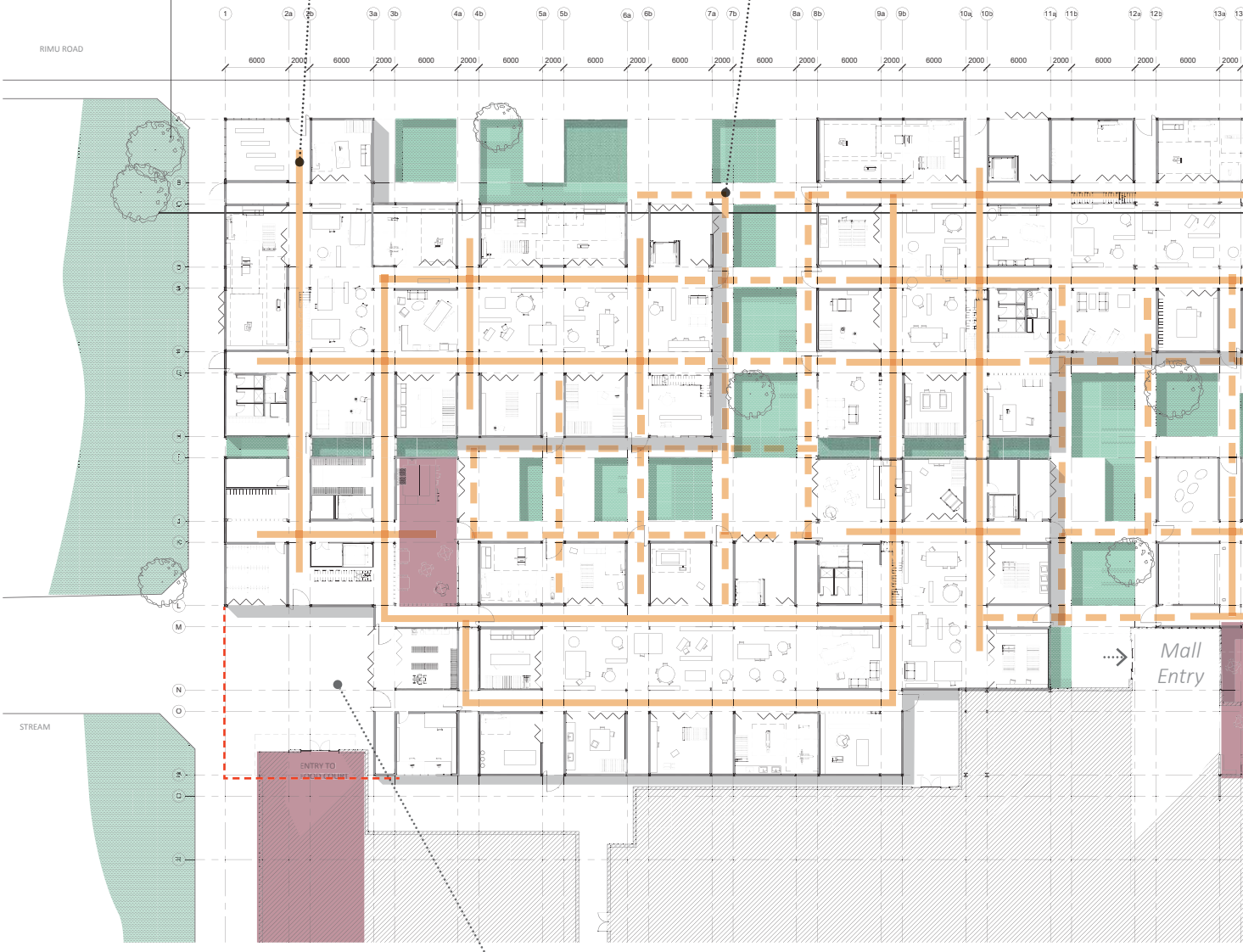
Multiple smaller outlets are gentler on the wetland.

Choosing Multiple Smaller Green Spaces

Iteration 2 - Tessellated Floor Plan On Site

Interior Pathways.
With the interlinking module arrangement, a person moving through the space can visit all of the modules without going outside.

Exterior Pathways.
The exterior paths connect with the interior pathways knitting the entire site in a network of pathways – much like the Bazaar, offering the occupants freedom in how they move through the space. making the space porous to navigate.



Level 1 Occupation Study Floor Plan

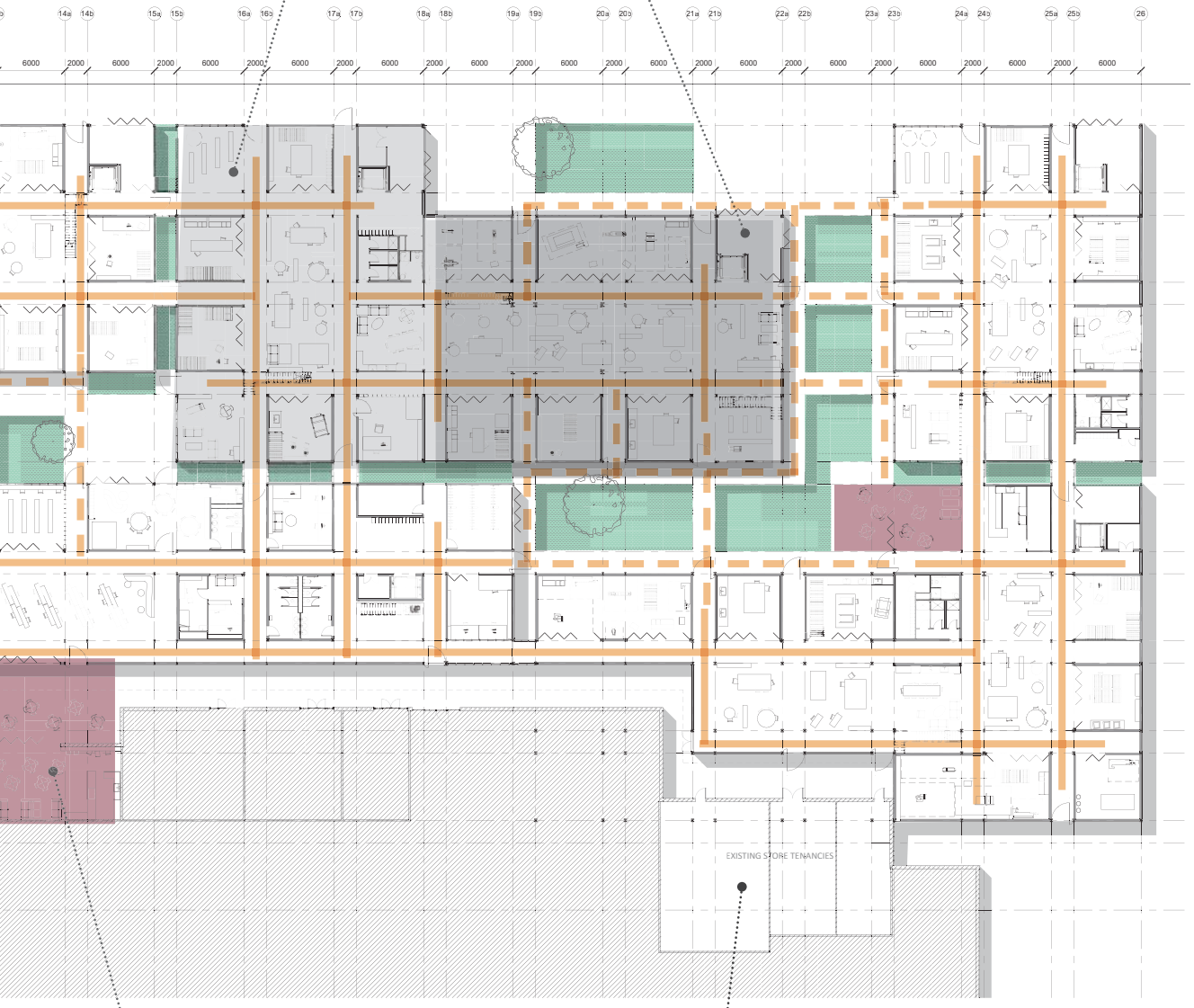
The module pixelates into the workspace cell and corridors to accommodate the irregular masses that make up the mall.

Original extent of the module

Fig.4.24// Plan showing features of the design that arises as aresult of the chosen module foramtion.

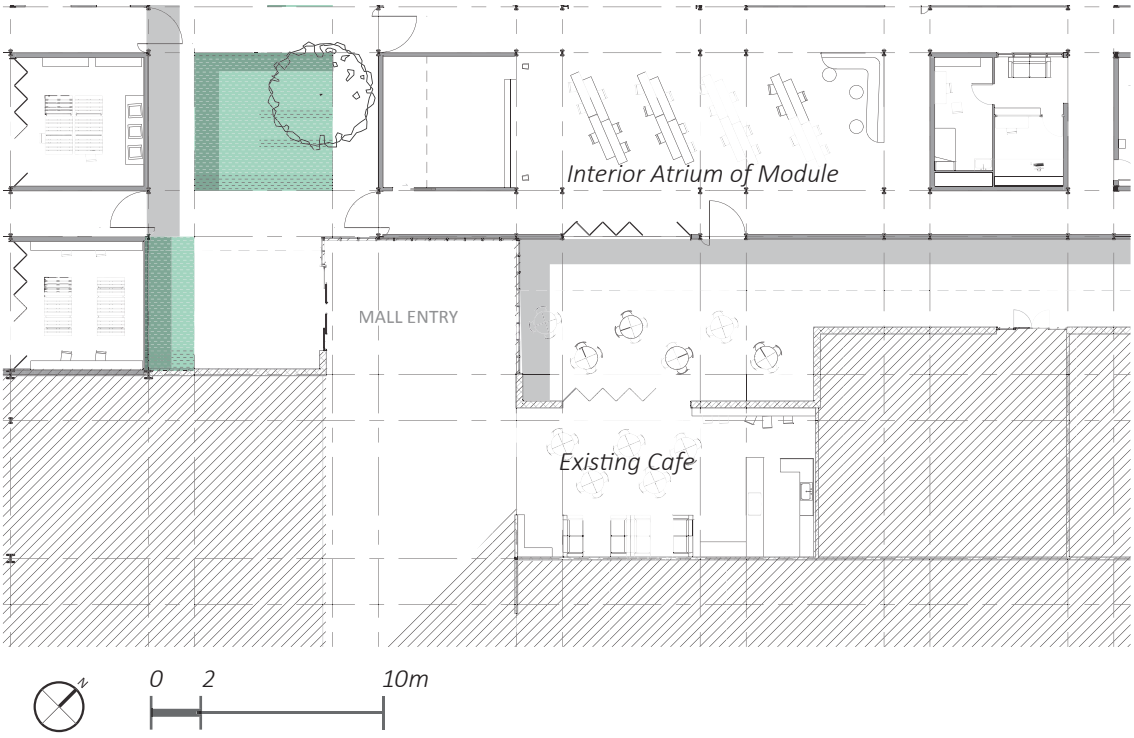
As each Two Module Set is essentially an independent entity, it can function independently to the rest of the facility. For example, one set may be closed off for a fit-out. The rest of the facility will still be able to function without much disruption.

This would also work if one module of the Two Module is closed.



Eateries on Site
The existing café on the exterior of the mall which previously faced the carpark will be framed by the modules and serve this maker facility.

Tenancies on the exterior of the mall connect to the Design. These tenancies which are previously considered to be of lesser value compared to the ones located inside the mall are activated and a useful extension of the design.



//Engaging with the Perimeter

Because the design is made up of fine-grained units, it can pixelate to fit amongst the odd geometries of its surroundings. Also, as the design has a matrix of pathways it made sense to connect these back into some of the existing routes and amenities on site. For example, the café that once faced the carpark next to the mall entrance is now reframed into a more interior space serving a cluster of workspace cells within a module (see fig. 4.25). Like the bazaar, the design is embedded into its context by connecting to the pathways and program around it.

From a form perspective, design is intended to be a new insertion into town centre; therefore it does need reflect its surroundings in this way. The formal development of the design will be discussed in the next section.

▲
Fig.4.25// Plan showing the café area

►
Fig.4.26// Diagram showing how the design connects with its perimeter.

Main Entry

Secondary access into mall via the food court links back into the design.

Robert Harris Café. Exterior sitting spaces face onto car park. Interior of the café connects with the main circulation route.

Untennanted Stores. As these are only accessibly from the exterior, they are too far from the main mall circulation path to be useful, connecting this back into the dense activities of the design will make it useful again.

[4.4]

THE THICK 2D

Plan to Form


Break
Space
LIFT
WORKSHOP
(MACHINING)
OFFICE
ASSEMBLY
SPACE
OFFICE
WORKSHOP
(MACHINING)
OFFICE

// First Test

The first attempt to translate the module floor plan into a building was simply to extrude the plan. This was modeled with wood veneers, plastic sheets and sticks of balsa in an attempt to give the model some sense of character. What becomes apparent is that there is an incoherence, particularly between the workshop side and the office side of the elevation. Though the horizontal roof plane is visually pleasing on one module, this would quickly become dull if repeated over multiple modules.

◀ *Fig.4.27// Ground Level Floor Plan of Module*

▲ *Fig. 4.28// Photographs showing the model translated from the floor at various angles.*

Fig.4.29// Axonometric diagram showing the four key masses explored

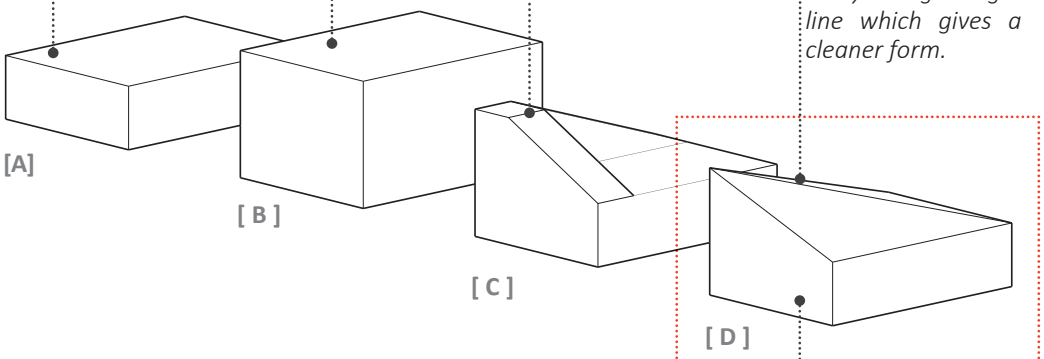
[A] is the control mass; it is created by extruding the footprint of the module to 2 levels. Block-like and squat.

[B] is the footprint extruded to 8m. Still block-like, also quite monumental.

The upper levels slope down to the top of level 2 in both directions.

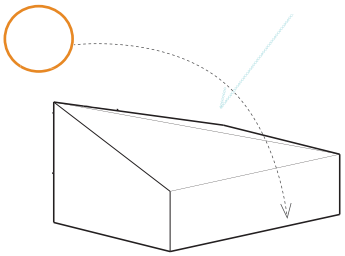
As a form, [C] is irregular and a little disjointed, when connected with other modules.

Similar to [C] the upper levels slope to level 2 in both directions. This occurs across the whole of the module mediated by a single ridgeline which gives a cleaner form.



Axonometric of the masses

The sloping profile of the elevation recalls the saw-tooth roof lines of industrialist factories.



For the design, skylight open on the sloped roof side to receive daylight.

This is intentionally inverse to the saw-tooth roof as allowing light from the sloped side of the roof opens the opportunity for a feature light diffusing ceiling. Above image shows an earlier experiment of what the ceiling could be.

Fig.4.30// Diagram of what the roof could be.

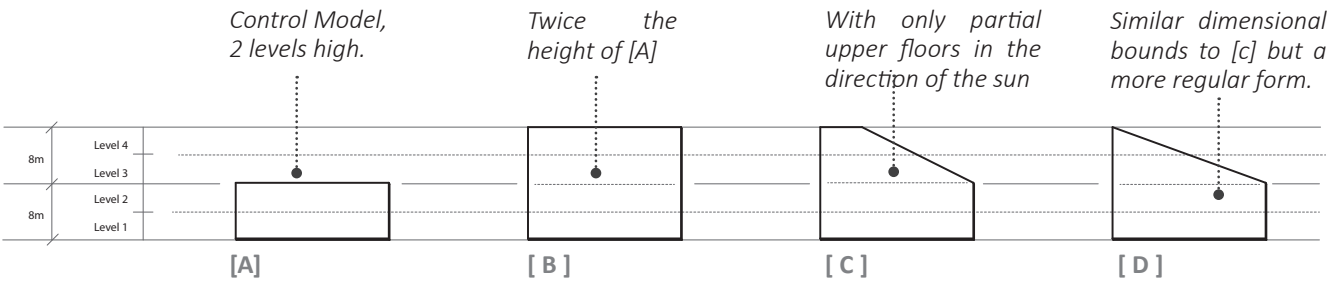


Fig.4.31// Elevation of mass heights

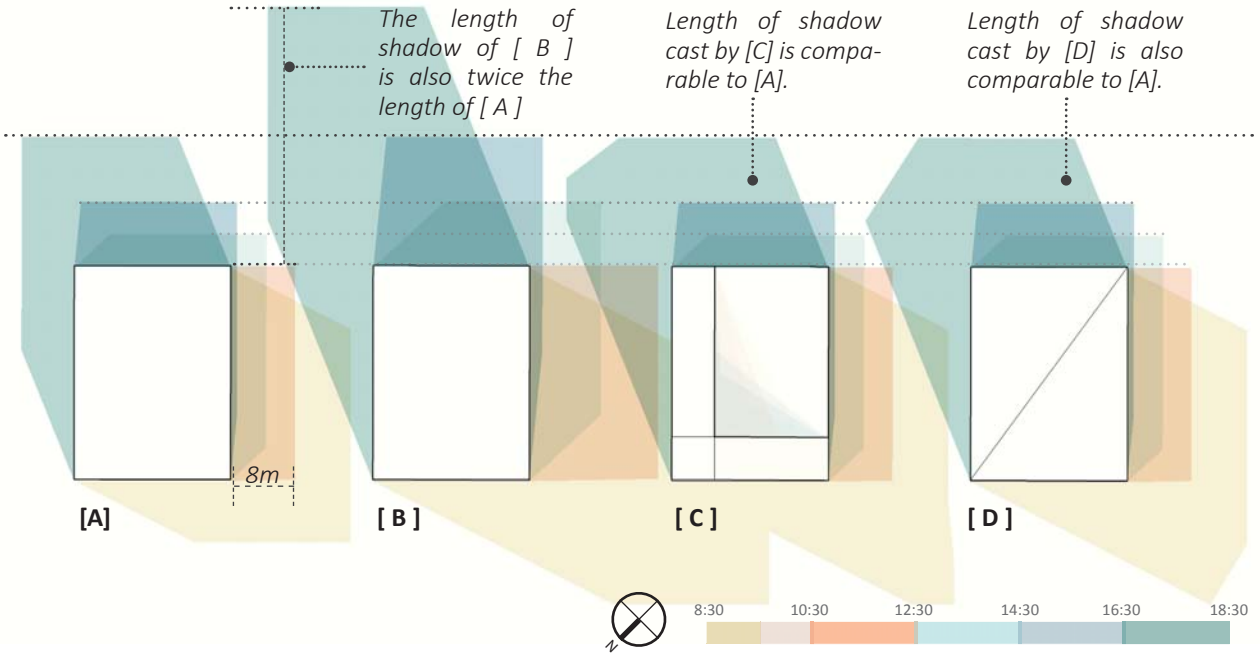
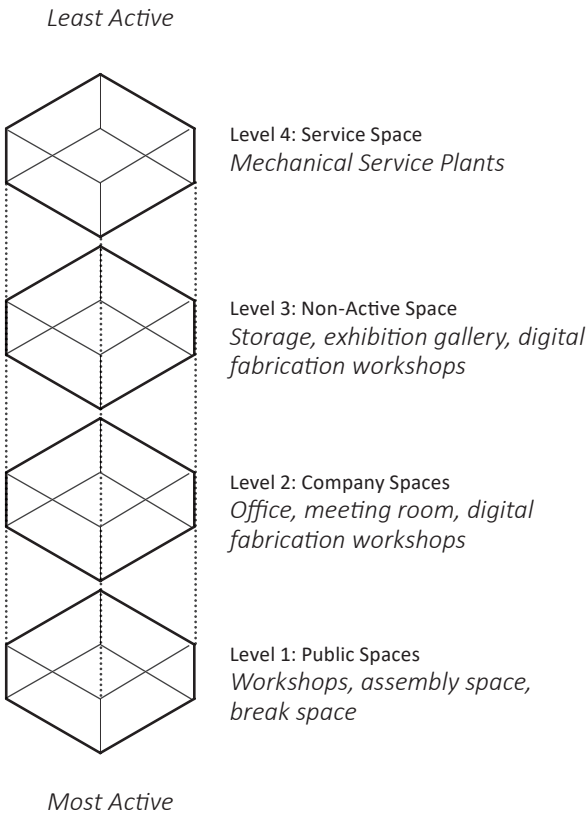


Fig.4.32// Plan view of Shadows cast at equinox

// Mass Studies

Masses of varying height and shapes were generated from the same modular footprint. These were examined in relation to shadows they cast.

Mass [C] and [D] has a shadow area to the default of mass [A]. Mass [D] was ultimately selected as its profile was reminiscent of the roof forms of more traditional factories of industrial times. I thought this was an interesting reference as the the design will be a facility for a different kind of making.



Vertical Program Allocation

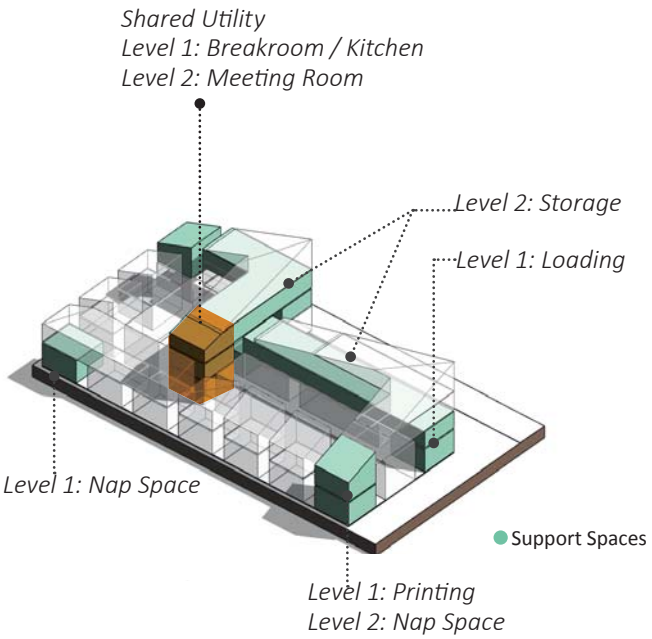
▲
Fig.4.33//Diagram showing the logic of program allocation along the vertical axis.

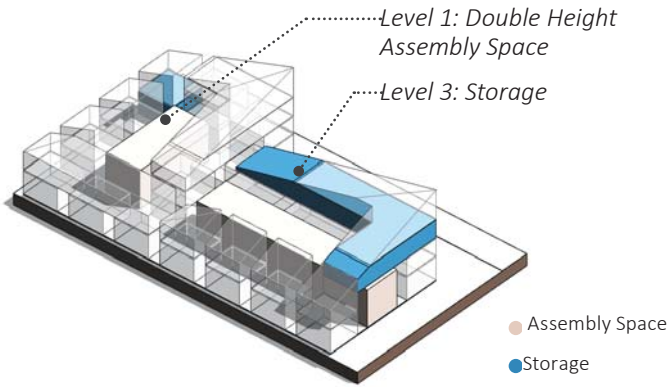
►
Fig. 4.34// Axonometric Wireframe of the Two Module Set showing where different programs sit in the interior.

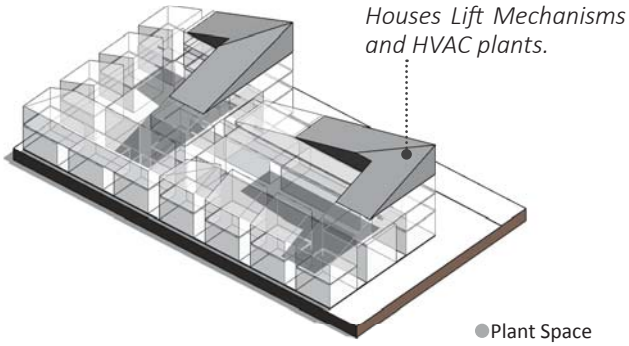
// Integrating Programs

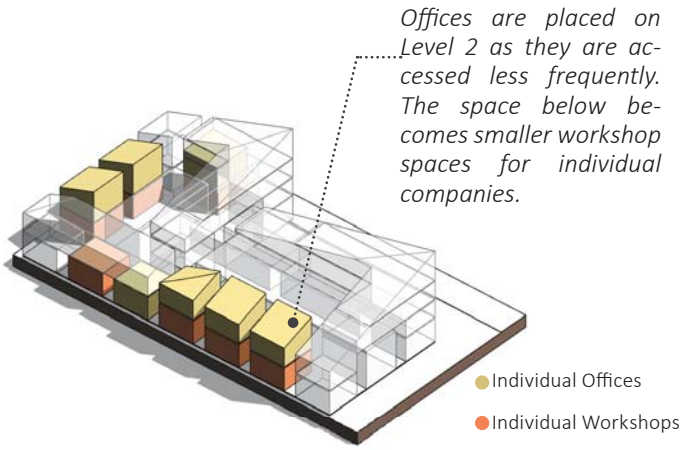
The Two Module set, which formed the basis of the tessellation, was extruded into 3d form. The interior spaces within are allocated program.

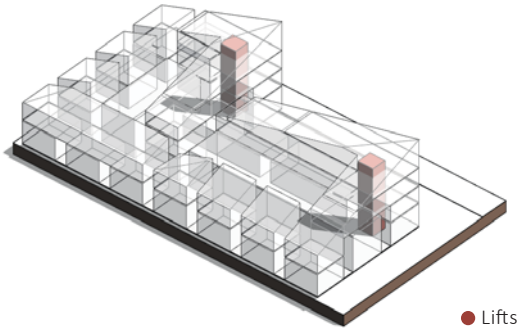
As the break room and meeting room are shared across two modules, they sit at the centre of the two modules. All other spaces such as plant space, assembly space, offices and workshops, etc. are allocated per module unit.

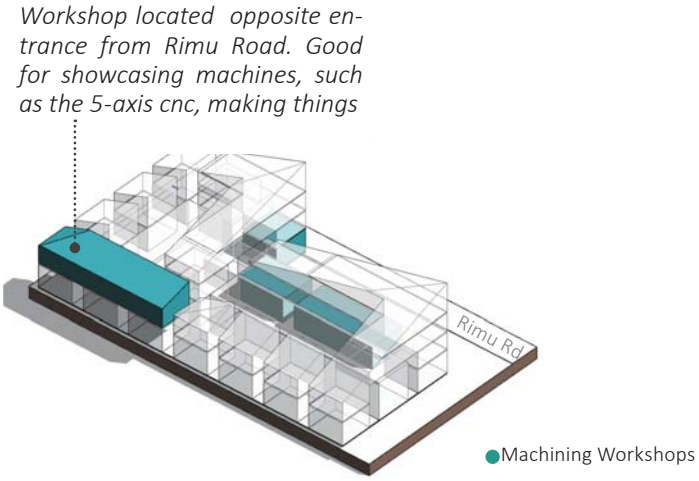

Shared Utility
Level 1: Breakroom / Kitchen
Level 2: Meeting Room
Level 2: Storage
Level 1: Loading
Level 1: Nap Space
Support Spaces
Level 1: Printing
Level 2: Nap Space

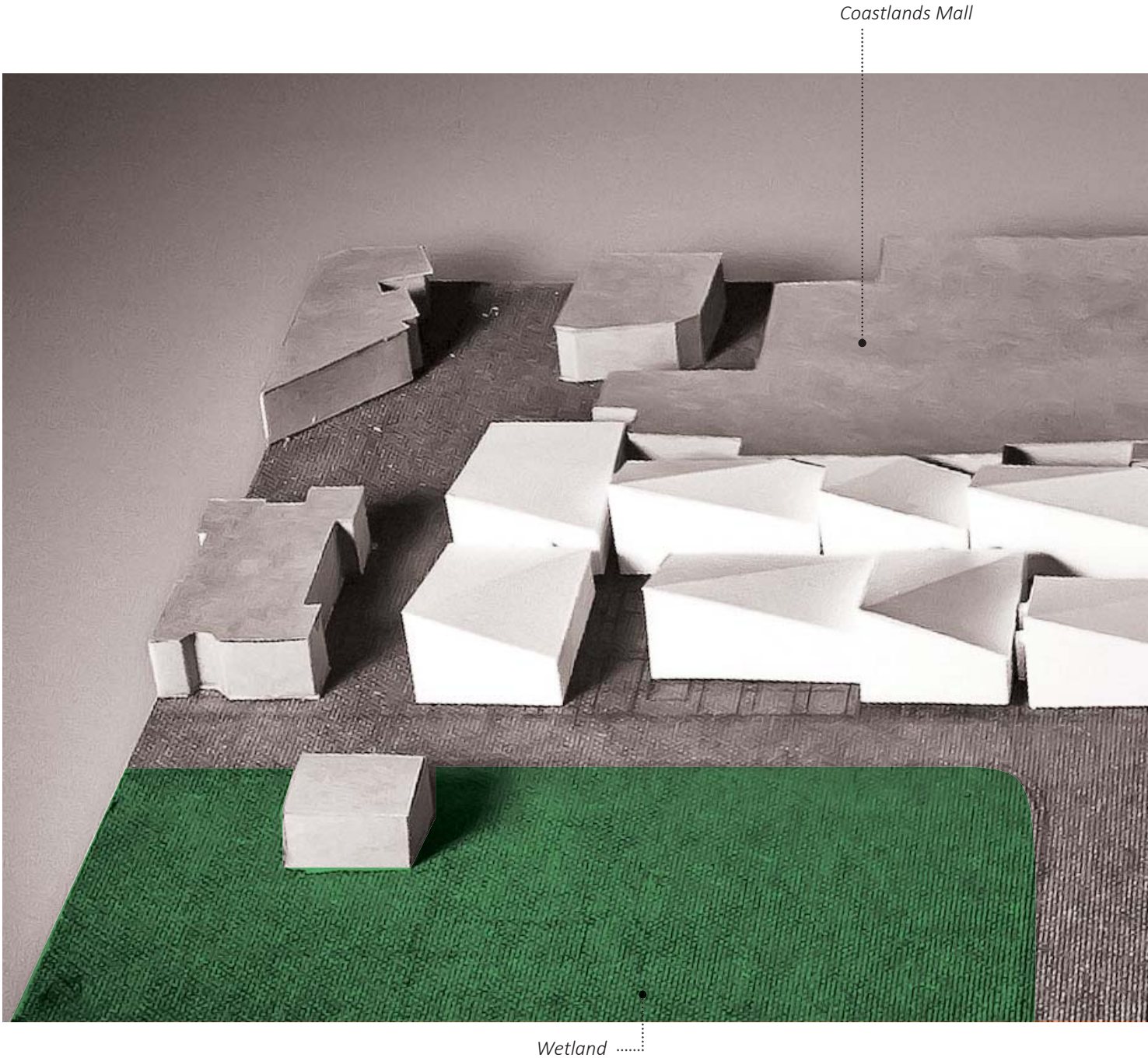

Level 1: Double Height Assembly Space
Level 3: Storage
Assembly Space
Storage


Houses Lift Mechanisms and HVAC plants.
Plant Space


Offices are placed on Level 2 as they are accessed less frequently. The space below becomes smaller workshop spaces for individual companies.
Individual Offices
Individual Workshops


Lifts

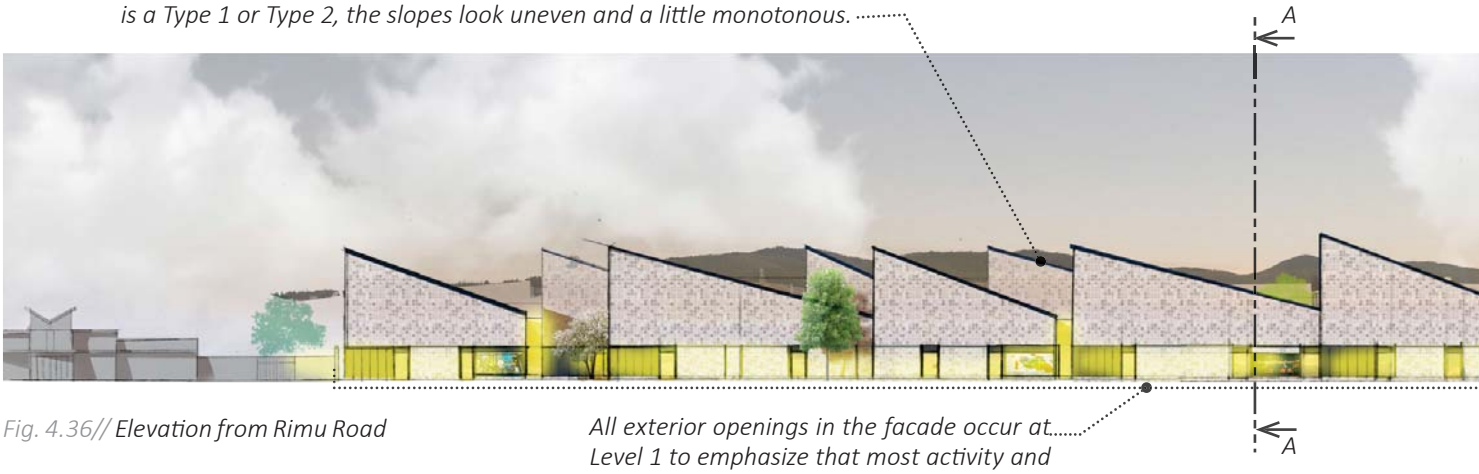

Workshop located opposite entrance from Rimu Road. Good for showcasing machines, such as the 5-axis cnc, making things
Rimu Rd
Machining Workshops



Iteration 3: Model of Mass on Site.

Fig.4.35//Card model of mass on site.

From this elevation, all roofs slope in the same direction from 16m to 8m above ground. However as the length of the module varies depending on whether it is a Type 1 or Type 2, the slopes look uneven and a little monotonous.



All exterior openings in the facade occur at Level 1 to emphasize that most activity and interaction happens at this level.

Fig. 4.36// Elevation from Rimu Road

Fig. 4.37// Section A-A

// Mass on Site - Elevation

The chosen mass is applied to all the modules on site (see fig. 4.35).

The walk traversing the design from Rimu Road to mall entrance is a series of enclosed and open spaces, forming a beautiful rhythm, though in the elevation from the Rimu Road, the slope of the roofs appears monotonous and uneven.

Fig. 4.38// Elevation from the stream

Stream

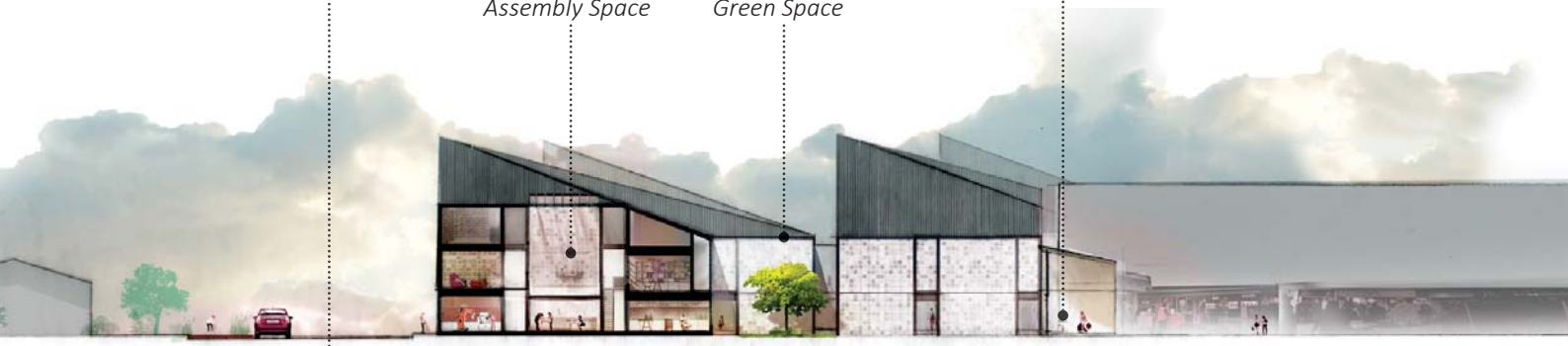
Variation of aperture types to give the ground floor facade rhythm.

Rhythm of walking from Rimu Road to the mall

Full Height Assembly Space

Courtyard Green Space

Entry to Mall



Enclosed

Open

Enclosed

Open

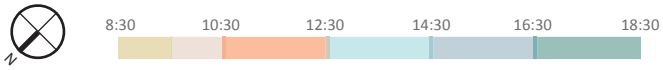
KCDC Building

Bridge

The apex of the design is signifcantly higher than the buildings in the surrounding context, though with the roof sloping down to 8m at its lowest, the design does not dwarf its surroundings.

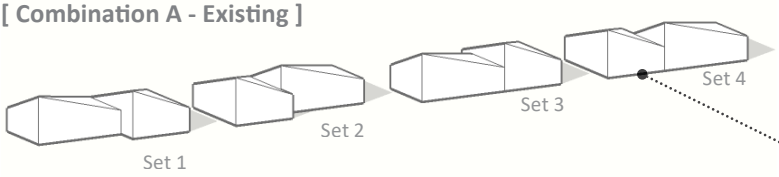
Interfacing courtyard to mall entry could be used as an outdoor exhibition space, to give interest to a transitional space.

Mall Entry to Food Court.

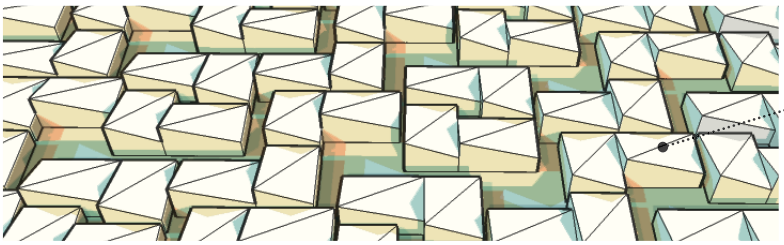


Key: Shadow cast on equinox.

[Combination A - Existing]

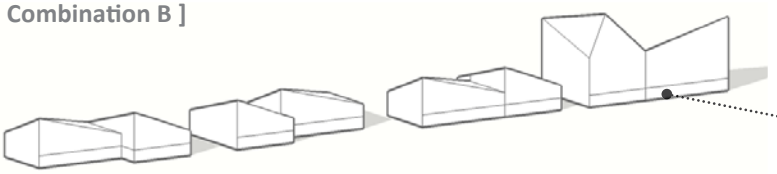


There are four variations of the Two Module Set that form the tessellation. In this combination all four variations are based on the same form.

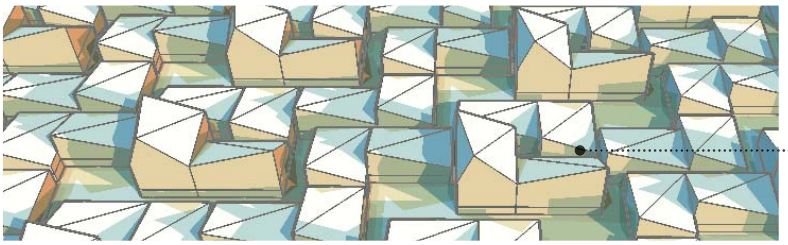


The thick 2d field this combination generates is homogenous and bland. with no distinguishing moments.

[Combination B]

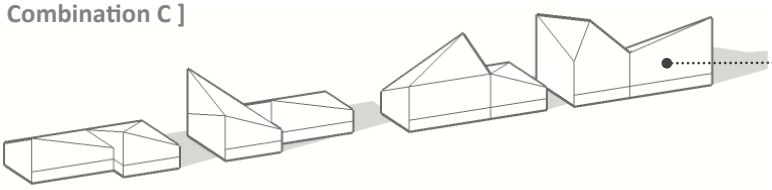


Three of the Two Module sets are based on the same form, while the fourth is a taller, angular mass.



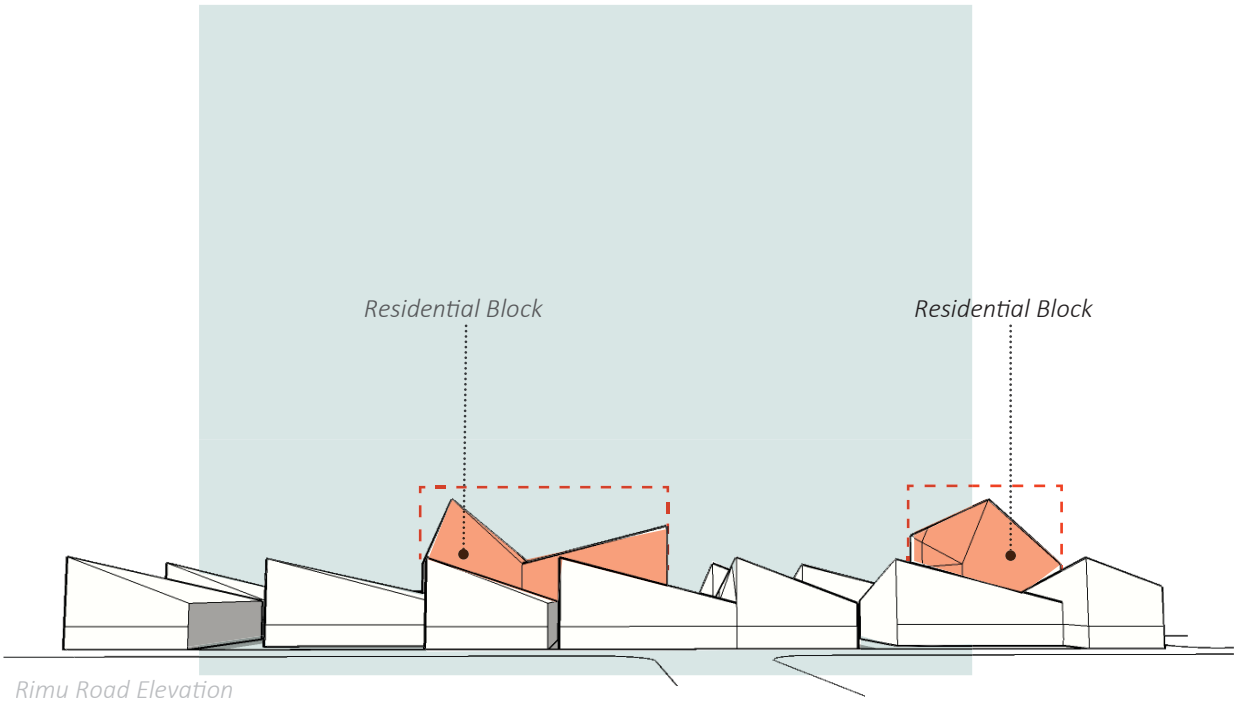
The one different Two Module set creates a nice rhythmic break in the continuity of the field, adding a point of interest on an otherwise uniform state.

[Combination C]



Every Two Module set is different form.

The field generated becomes busy and chaotic. With all of the Two Module sets being different, as a field they blend back into a sameness.



Rimu Road Elevation

Though the form of the fourth Two Module Set is angular like the other modules and reminiscent of a crystal shard, what actually makes the composition work is its hieght above the other modules, and its proximity to the next of its set. A straight box building as outlined would work with this composition also; a crystal shard mass is more visually interesting.

◀ *Fig. 4.39// Testing out different combinations of mass for the Two Module Set footprint.*

▲ *Fig. 4.40//Diagram of the chosen combination applied to site shown in elevation.*

// Massing Composition

To break the uniformity of the previous iteration, different form combinations were tested to change the composition. These were tested first in a field to see how the forms would interact with each other (see fig. 4.39).

The final set chosen includes one Two Module Set with a larger volume in the same footprint. This was ideal for introducing a residential block on site.

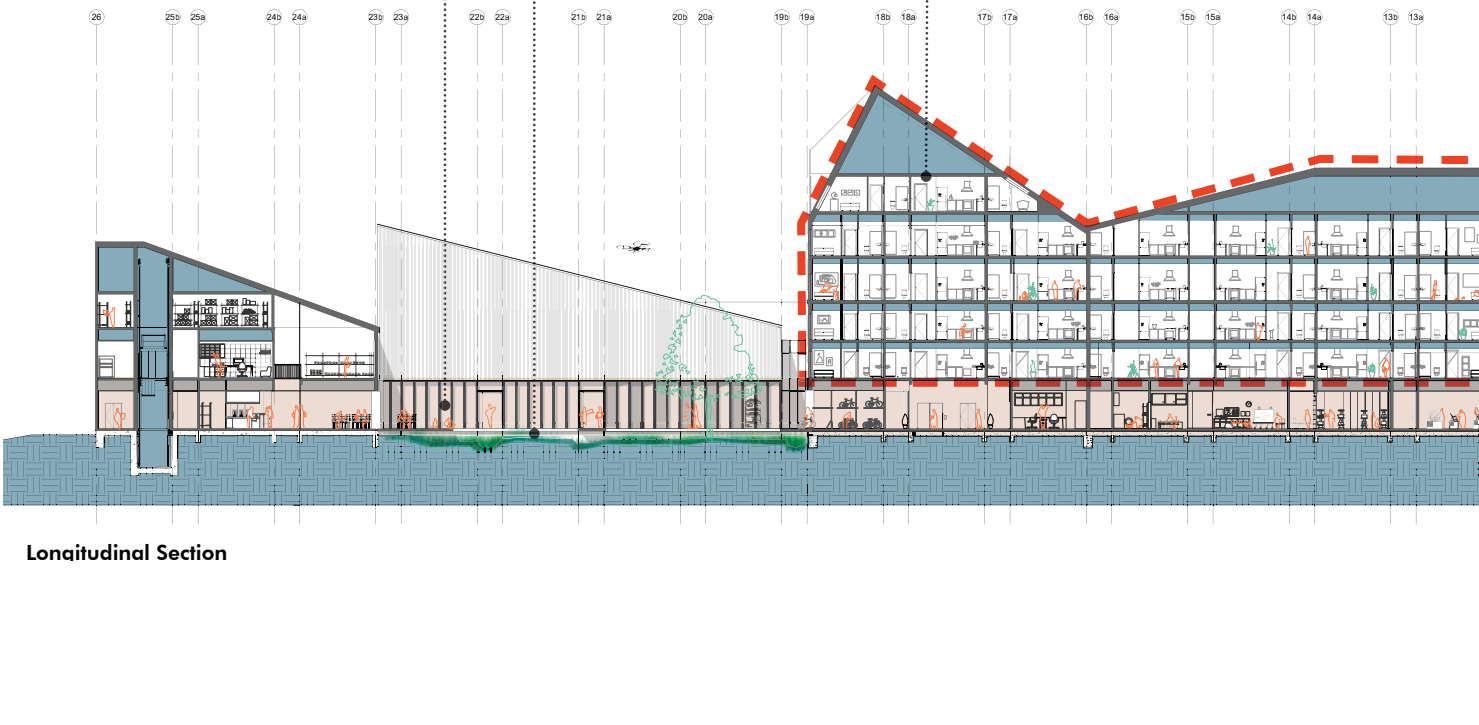
Fig. 4.41// Sectional diagram through the design .

Section through the Centre of Design

Public and Active Programs occur on the ground floor.

As this block is high rise, the upper floors are isolated from the activity on the lower levels. This is ideal for a Residential Block.

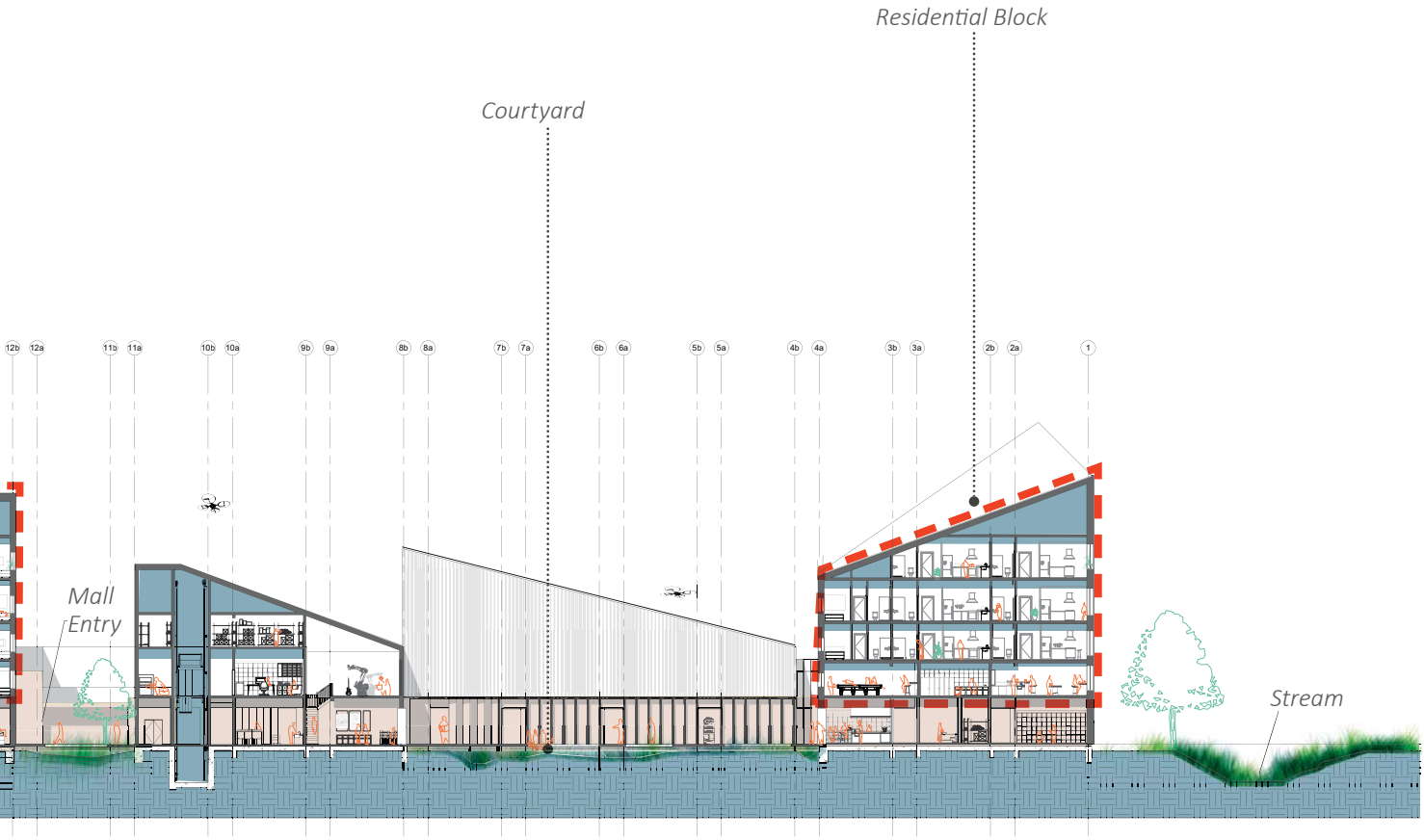
Courtyard



Longitudinal Section

Currently, the majority of Paraparaumu's residential stock is detached houses. However, as the intention was to attract young and early career adults back into the region, there is opportunity here for an apartment block of studios and 1-2 bedroom units. This added program means the site will remain active even when the standard work day is over, making it a 24 hour neighbourhood. Living on site is particularly desirable for the Makers as it validates their creative lifestyle by giving them the flexibility to pop into the workshop whenever inspiration strikes.

Fig. 4.42// Floor Plan showing apartments in the residential block.



Re-Orientating Roof Slants

The composition across the site becomes two tier:. A Lower tier of Maker facilities and an upper tier residential blocks peaking above them.

Having the residential blocks creates moments of interest to the composition as a whole, though uniform roof slant of the lower tier still reads monotonously.

KCDC Building.

Upper Tier

Lower Tier

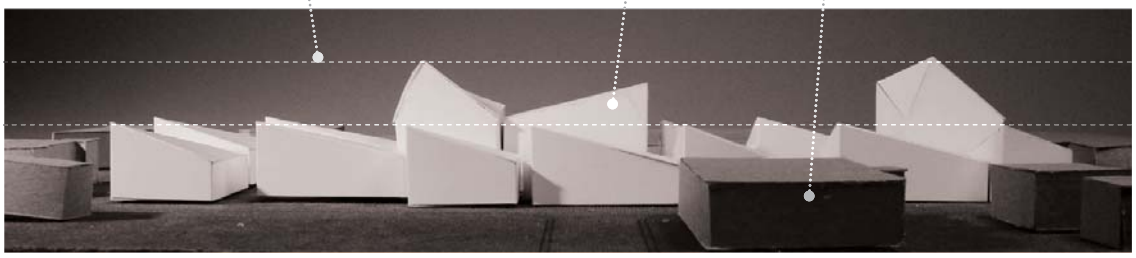


Photo of Massing Model on site from Rimu Road

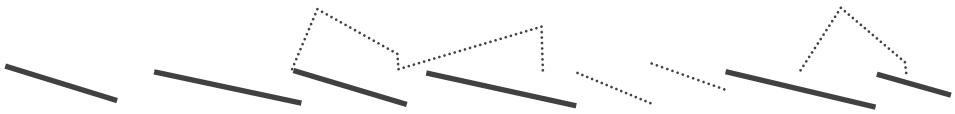


Diagram showing roof slant

Composition of mass on site before

Fig. 4.43// Diagrams comparing the change in roof slope across the Rimu Road elevation of the design.

The blocks on the lower tier are reorientated to bring more playfulness to the composition.

To retain the factory-like roof slant in the main Rimu Road elevation, the modules along this edge all have elevations with the taller façade towards the road.
This also allows the design to retain its wall-like presence marking the edge of the urban-scape.

Upper Tier

Lower Tier

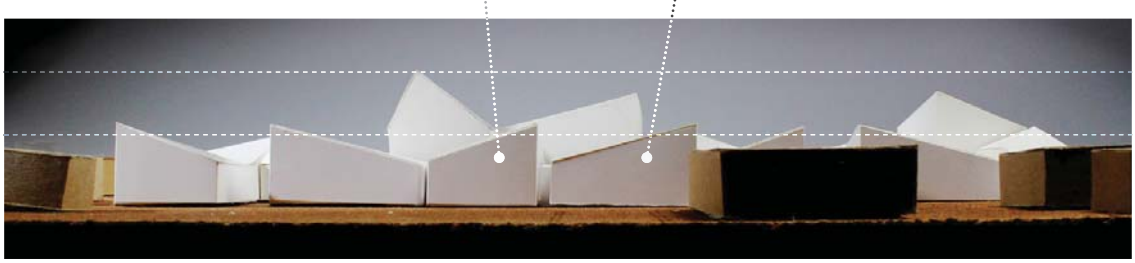


Photo of Massing Model on site from Rimu Road

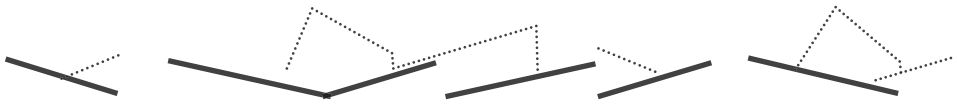
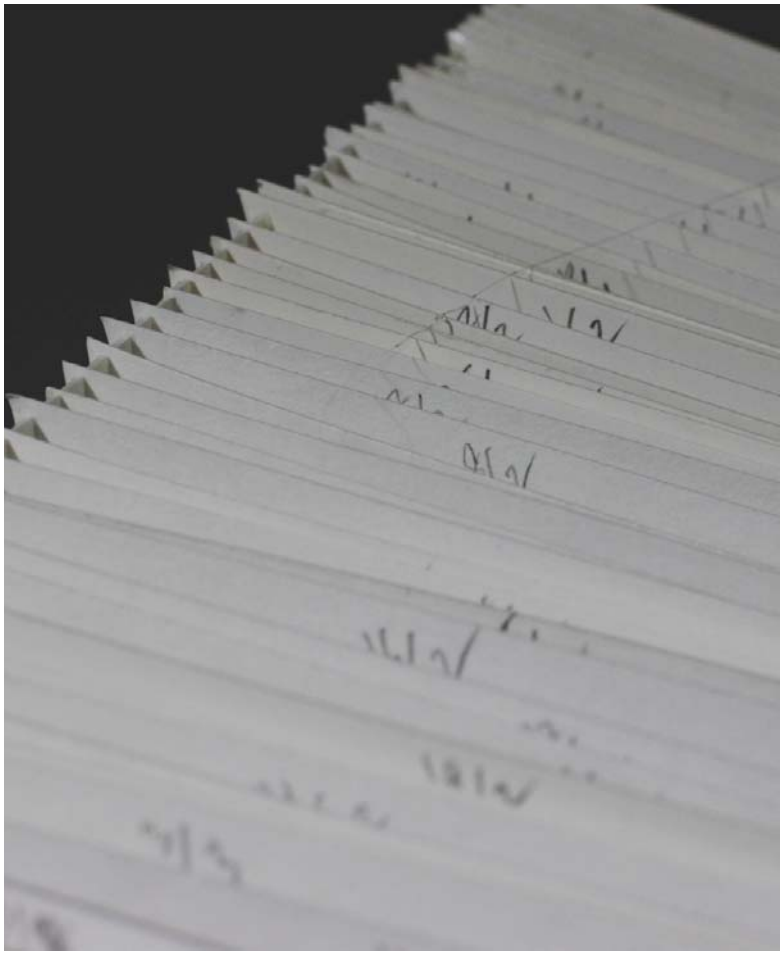


Diagram showing roof slant

Composition of mass on site after reorientating the lower tier modules.

Note on Scope:

The following section charts the development of the Maker Facility modules. The residential blocks, though their presence on the site is useful, are not critical to the original intent of the Maker facility beyond the discussed ground floor circulation and their massing on site. As the upper levels of the residential block function as accents amongst the continuous field of the Maker facilities, they will not be further developed in this next section.



"[Order] is understood as a given, as a matter of strategy. The real questions arise at the level of the module, and the pattern to become architecture."

- Guillermo Julian de la Fuente on the Venice Hospital (Allard 32)

Fig. 4.44// Photo of the roof study model detail

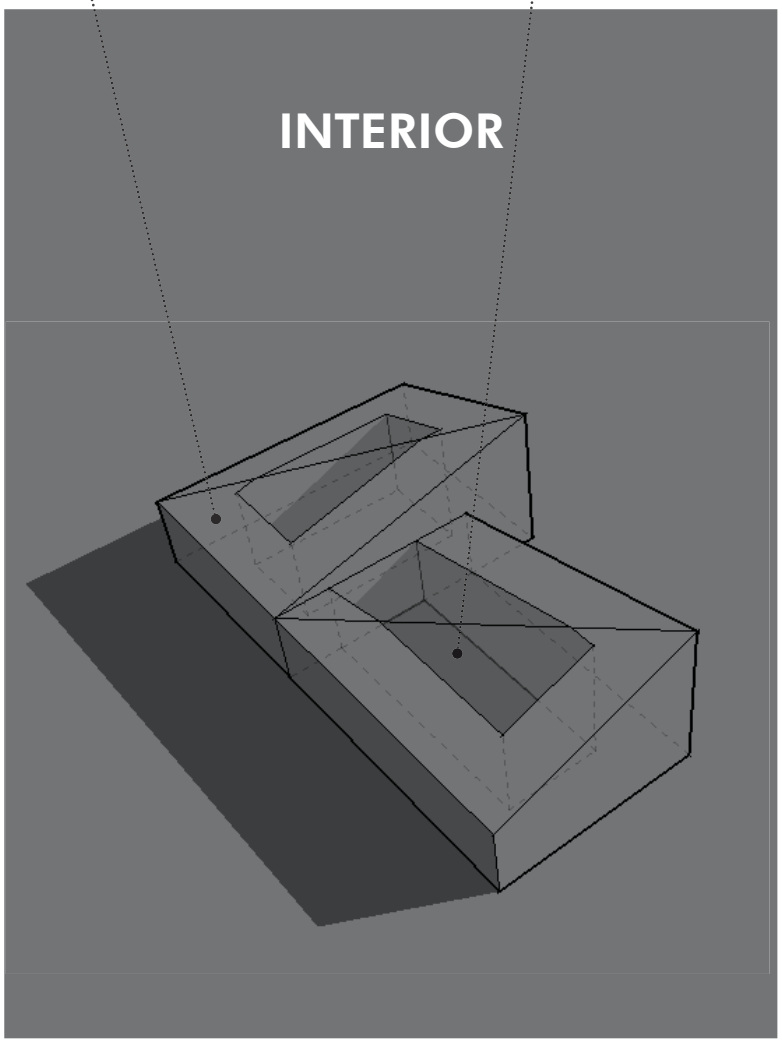
[4.5]

FORMAL ARTICULATION

Finding architecture from the order

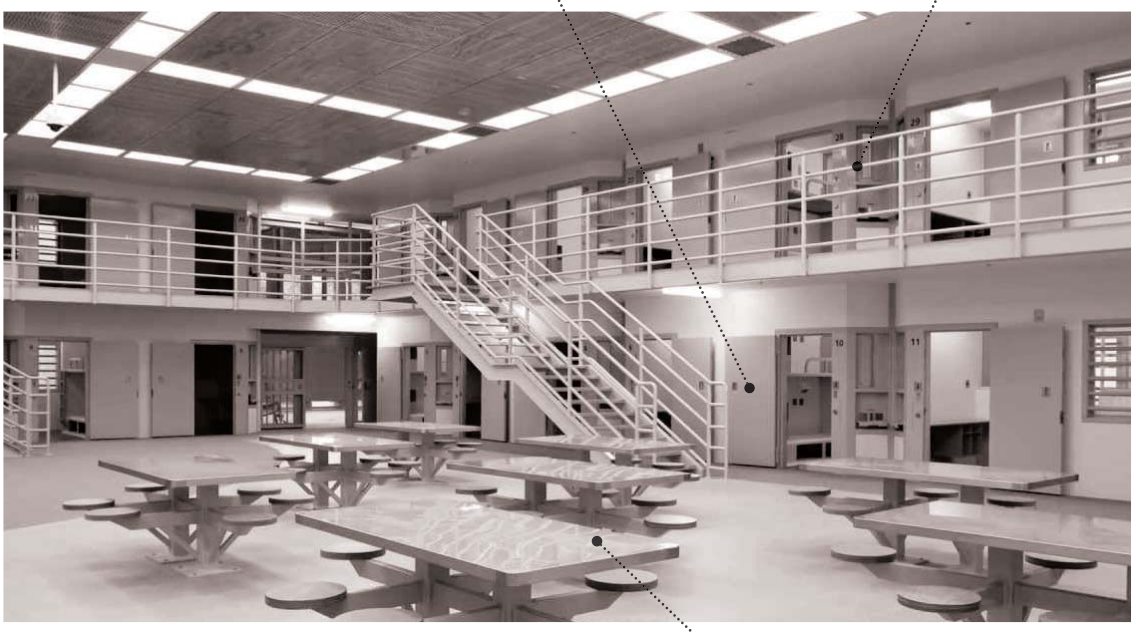
Enclosed space around perimeter of the module for the more private programs of office and workshops that are unique to the individual companies of Makers.

Open atrium in the centre of the Module which is for the double-hieght, shared assembly spaces for the various comapnies.



The uniform and flat articulation of the wall elements reinforces the wall-like nature of the boundary.

The strong horizontality of the handrails within this space appears barring.



Mount Eden Correctional Facility.
This area of the facility is similar to the organization of the design as individual private cells surround a double-height social space at its centre. Though the planning of this building is similar, the articulation of its interior still appears oppressive.

The rectilinear and fixed furniture reinforces the controlled nature of the space.

//The Internal Facade

The organization of the internal space is intended to be an alternating threshold of openness – i.e. atrium – and enclosure – i.e. workshops and offices. This at its most primitive could be described as a donut like mass, dense at the sides and open in the center (see fig. 4.46).

The facade of this internal atrium space needs to be broken up and given depth. Otherwise, if it remains uniform and flat, the atrium space could become oppressive rather than open and porous.

◄

Fig.4.45//Diagram showing the mass organization within a Two Module Set.

▲

Fig. 4.46// Interior View of Mount Eden Correctional Facility.

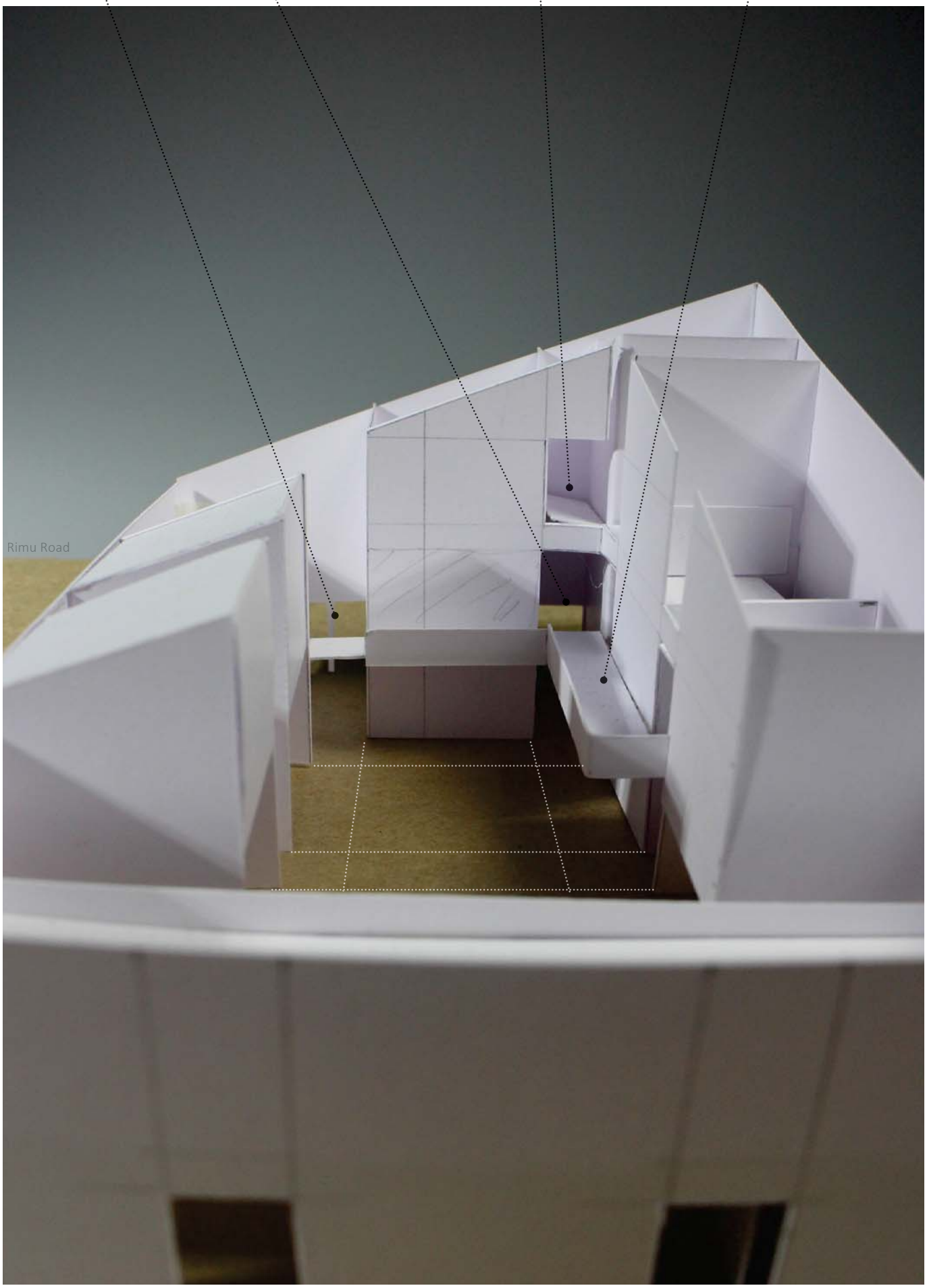
Varied street-side entrance experience.

Light Entry

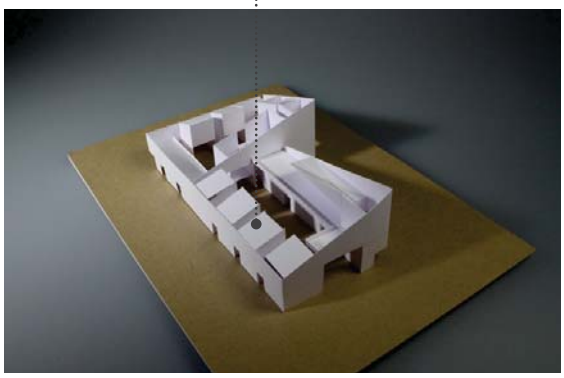
Enclosed Entry

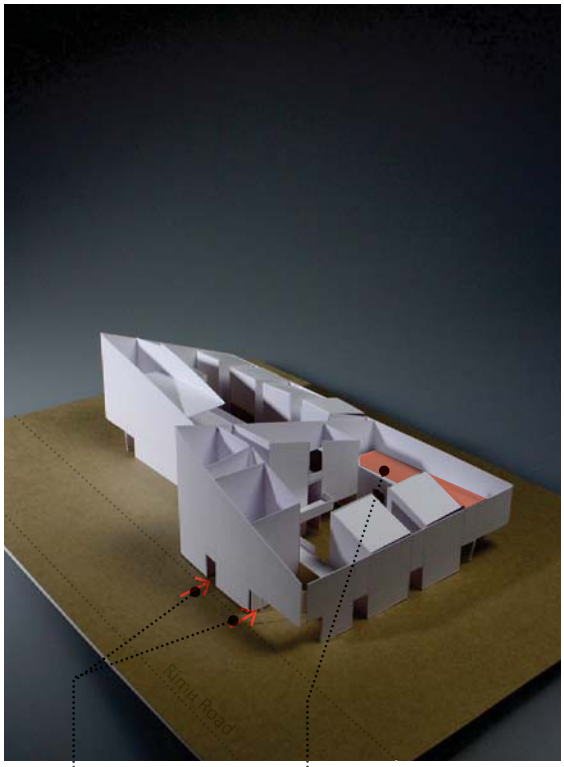
Apertures looking down into the assembly space align with corridor in the Tartan Grid Plan.

Cantilevering walkways on Level 2 follow the corridors also. This breaks the mass of the taller interior on this side wall.



The [Office/Workshop] Stacks are articulated as individual interior voulmes.



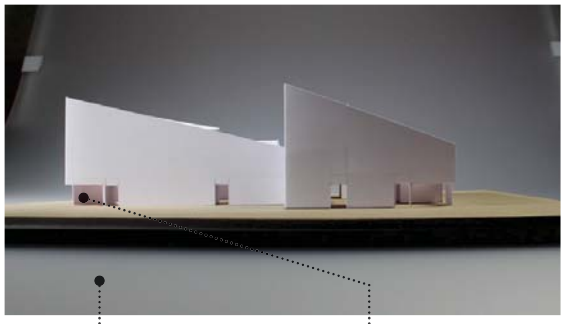


Street Side Entry

Machine Workshop/ Showcase Space. Visible upon entry

The Assembly Workspace points towards the enclosed [Meeting Room].

[Break Room] flows into the adjoing Module



Elevation from Rimu Road

Loading Space

//Interior - Two Module Set

From the programs explored, a card model was used to test how the spaces within the Two Module Set could be articulated.

In this iteration, internal workspace cells are extruded into blocks while apertures and connecting elements like the balcony are aligned to the tartan grid plan. The facade is still monolithic and wraps around the entire Two Module Set.

◄

Fig. 4.47// Photo of Interior Space looking from the short side of the Type 1 Module

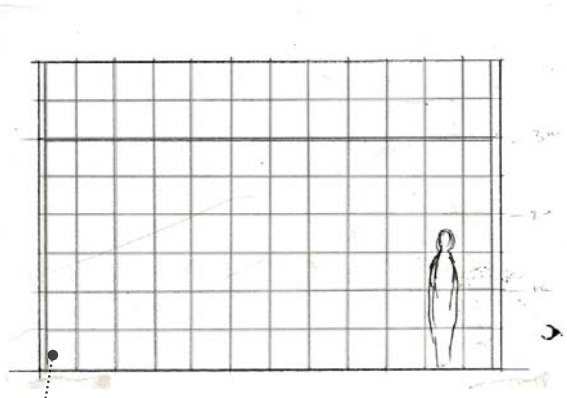
▲

Fig.4.48//Photos of Card Model showing articulation of spaces.

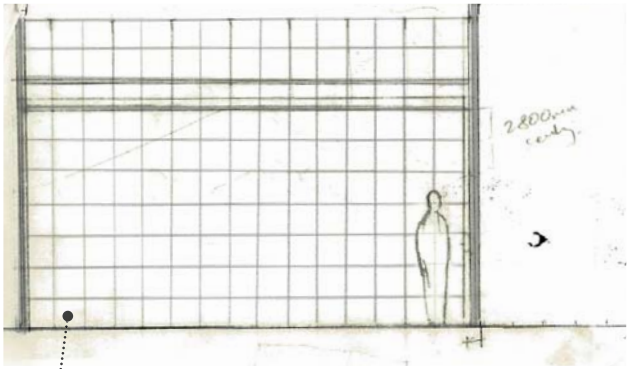
Note: Columns framing the Assembly Space were not modelled.

Subdividing the Grid

To emphasize the gridded organization, the interior elements are articulated to dimensions that divide evenly to the base dimensions of the 6x6m workspace cell and 2m corridor.



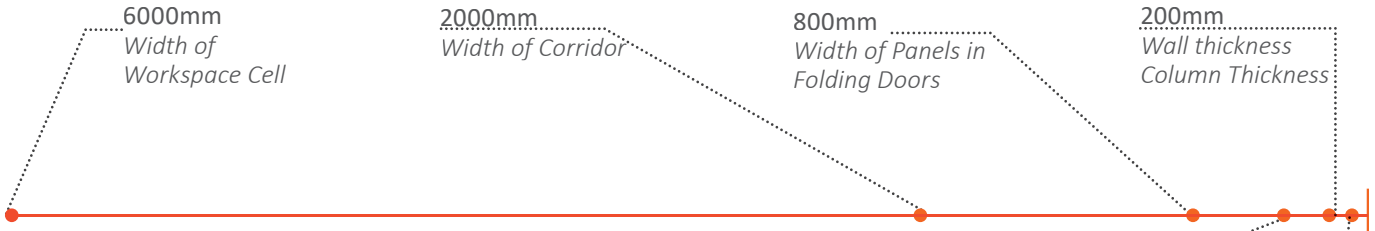
500mm subdivides evenly into both the 6m workspace cell and the 2m corridor dimensions. As this dimension fits into 2m an even four times, it feels incredibly cartesian and rigid.



A 400mm subdivision is a finer grain. It fits into the 2m width at 5 times. This makes this dimension feel more organic and appears more humanist than the 500mm subdivision.

Fig.4.49// Subdivision Tests

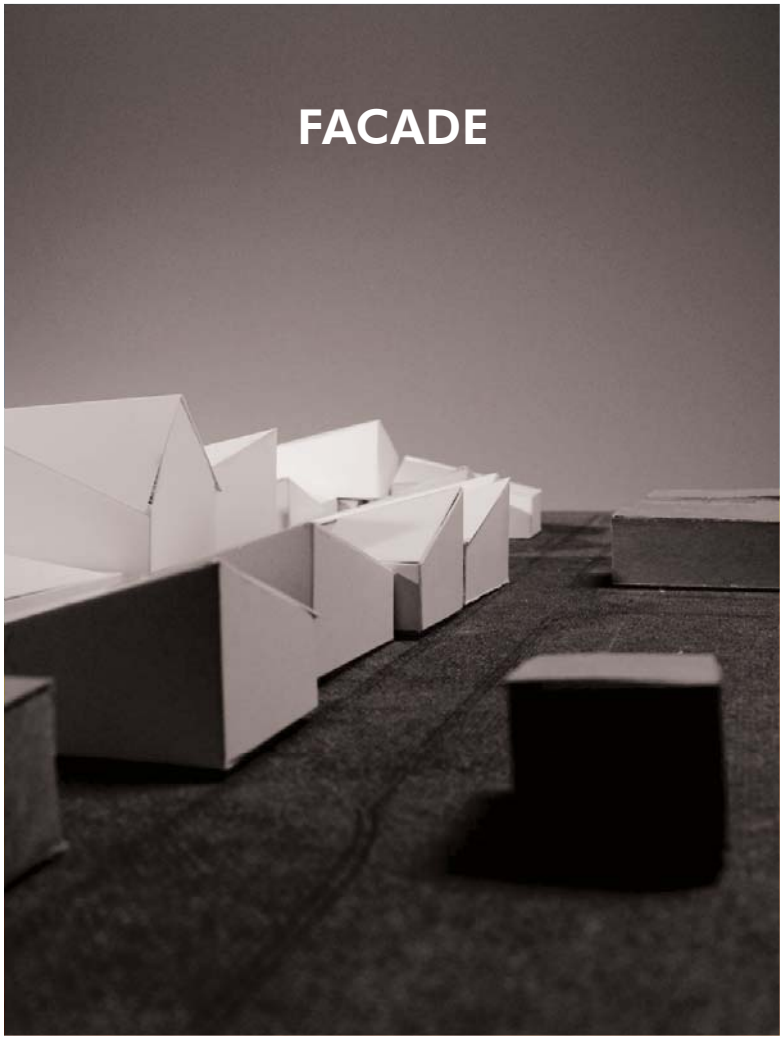
Fig.4.50//

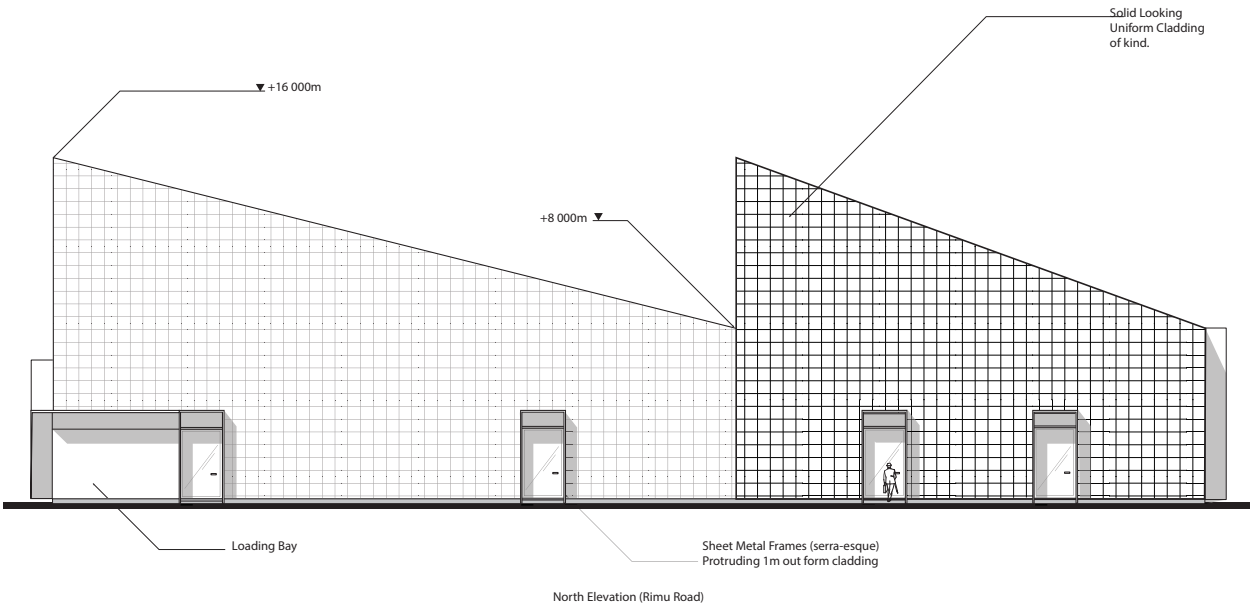


Dimensions of elements in the building

These dimensions are factors or multiples of the 400mm unit which allows all the interior elements to be visually harmonious.

Fig.4.51// Interior view of Assembly Space with elements to the dimensions of the subdivision metric.


FACADE



North Elevation of a Two Module Set

//The Monolithic Facade

Even though the complex itself is made up of additive modules, the facade of each of the modules appears as a monolithic box. This makes the module reads as an over-arching whole, giving no indication of the fine-grain that occurs within.

◀
Fig.4.52//Model on site showing the wall-like relationship of the facade as a monolithic mass to the wetland.

▲
Fig. 4.53// North Elevation of a Two Module.

The monolithic facade is broken up so as to appear more porous and to give better definition of the additive nature of the workspace cell organization within.

The continuous roof spans over one module to distinguish this as a macro unit.

The front facing facade is pulled inwards, emphasizing the framing elements. The building therefore reads as if pulling inwards upon itself.

//The Draw-me-in Facade

The internal workspace cell extrusions are articulated on the facade. The corridor spaces translate as vertical slits in the facade which intrigue the viewer to see what is within.

Fig. 4.54// Perspective drawing showing module with a separate facade.

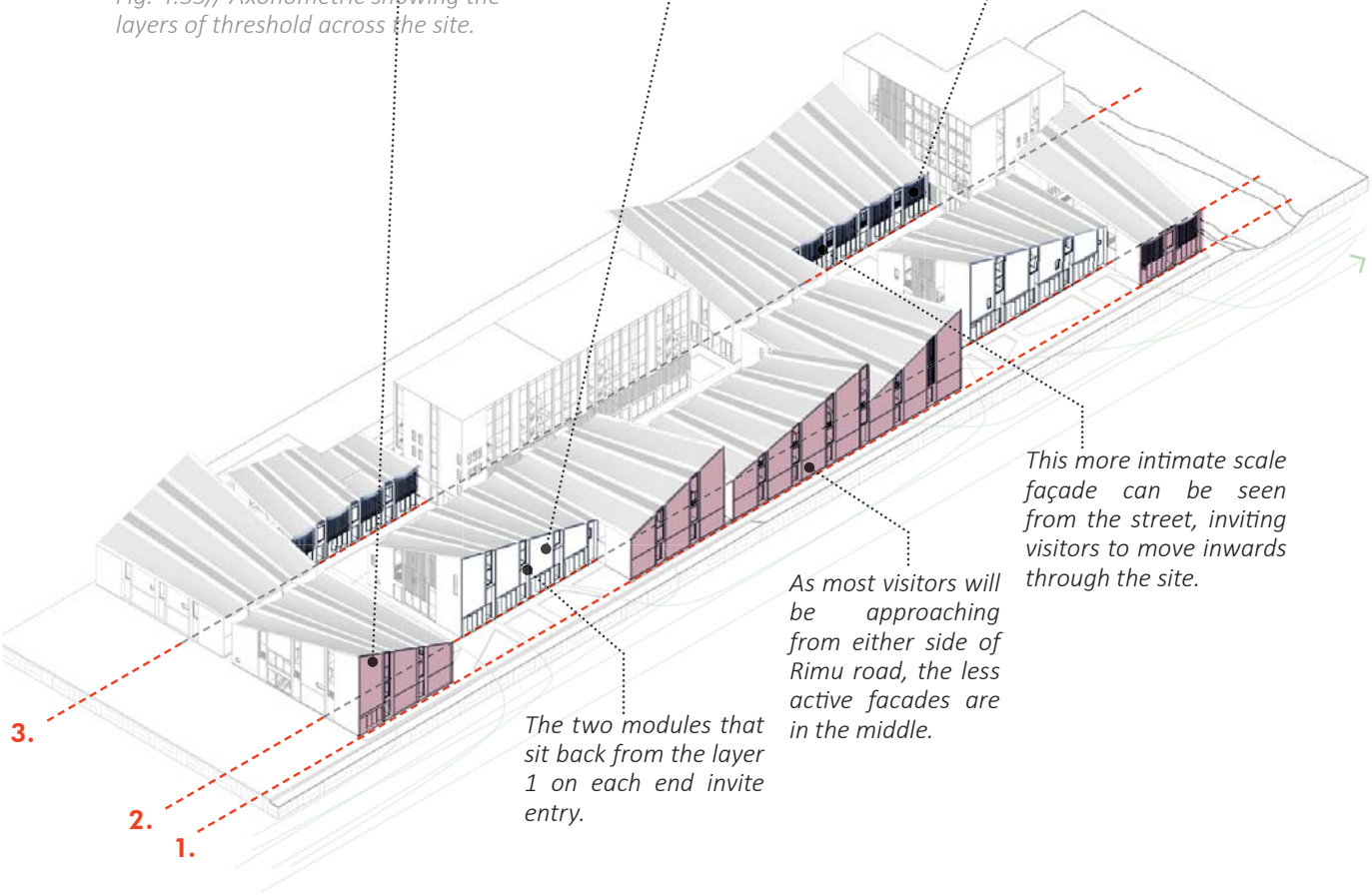
Across the complex, there are three layers of building visible from the street. These build up in detailing in order to draw the street-side visitor inwards through the complex.

Layer 1: The outermost layer. Marking the boundary of the urban -scape, the façades along this edge are flat with few to no apertures inward aside from the entryways.

Layer 2: The length of one workspace cell in from the layer 1. The facade of this layer is a little more varied, with folding doors lining the ground floor, inviting greater connection from the outside-in.

Layer 3: Five cells in from layer 1, the facade along this edge faces toward the courtyard. This elevation has a more active facade with vertical louvres on the top level, and folded door along the bottom. The intimate scale of this facade is inviting and human scale.

Fig. 4.55// Axonometric showing the layers of threshold across the site.



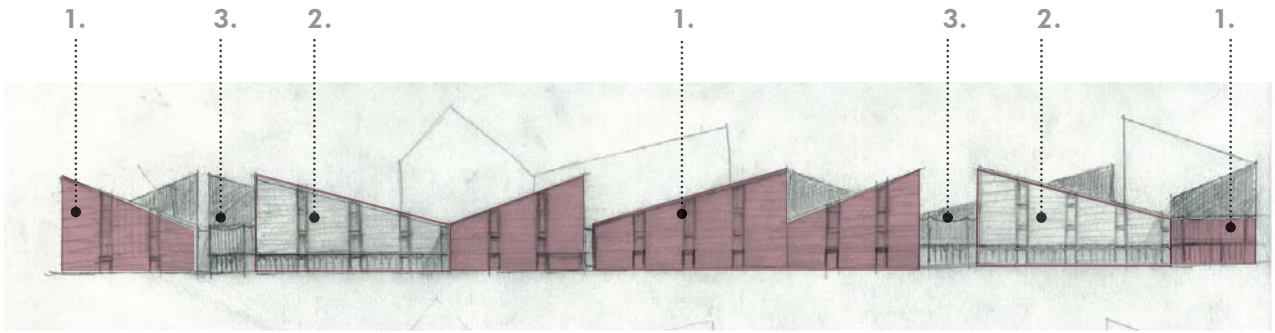


Fig. 4.56// Elevation showing the layers of threshold across the site.

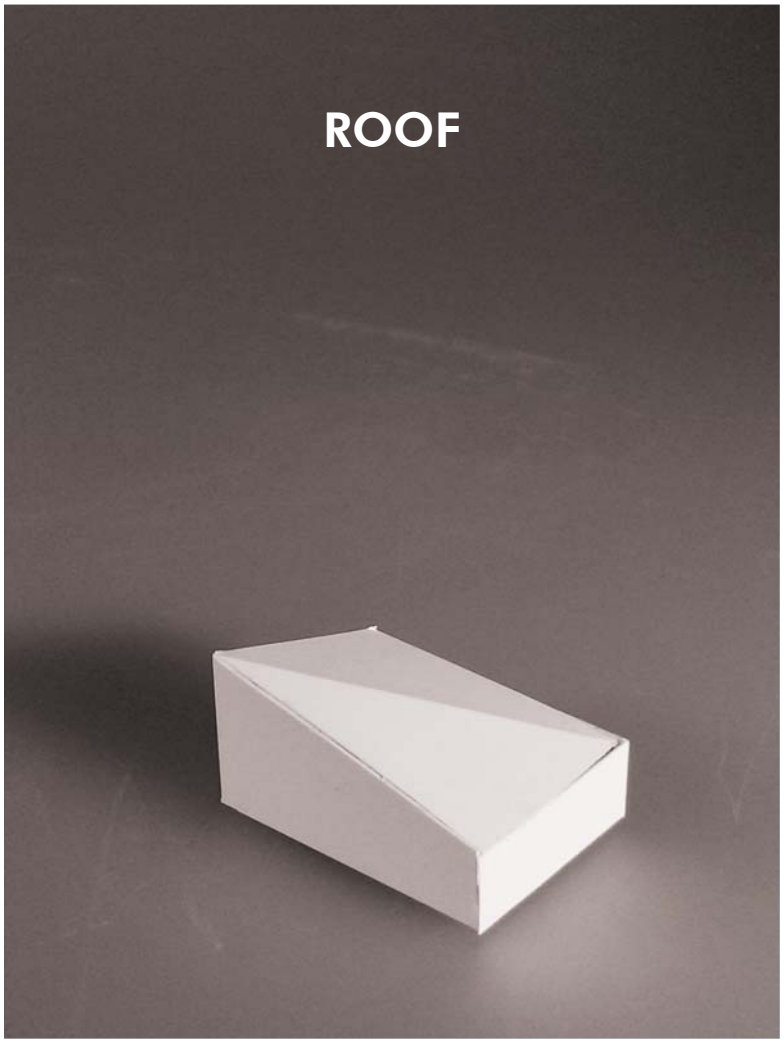


Fig. 4.57/ The form of the basic module. Cardboard model.

Fig. 4.58//

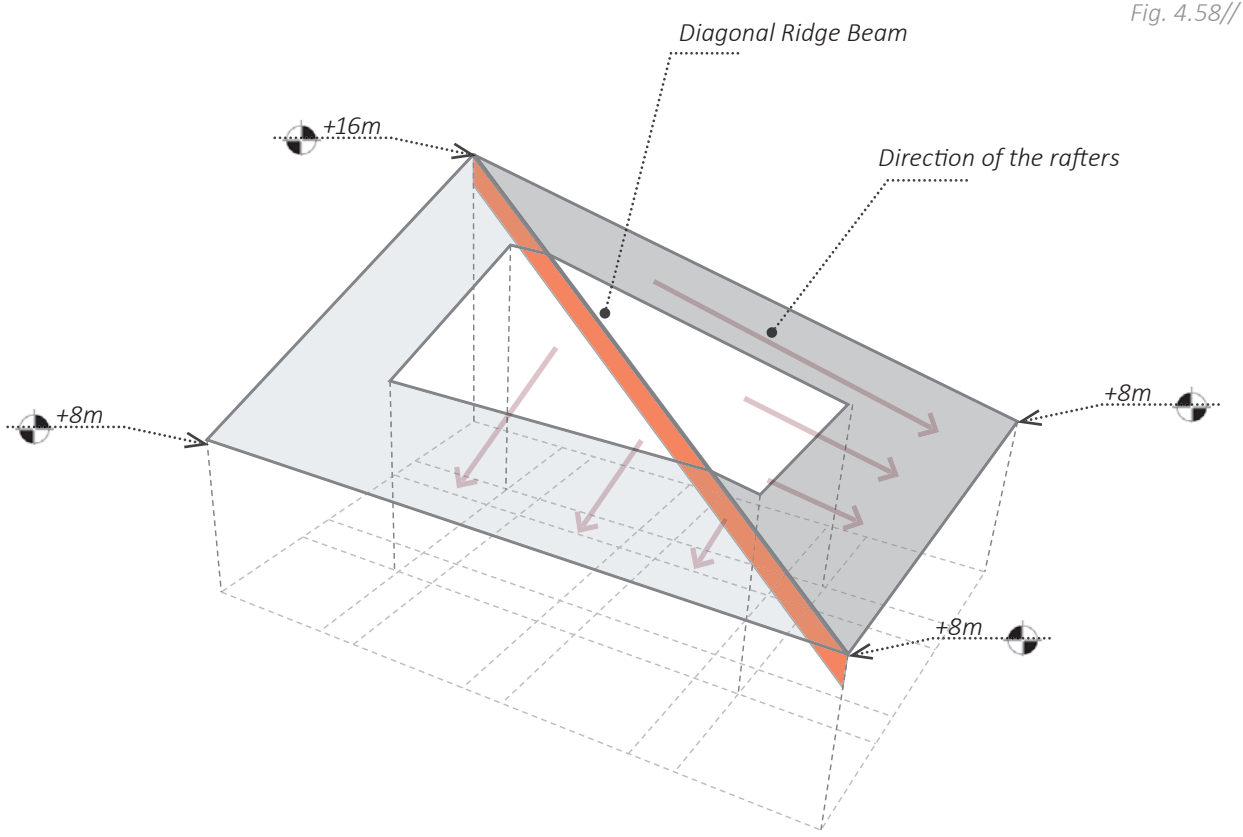
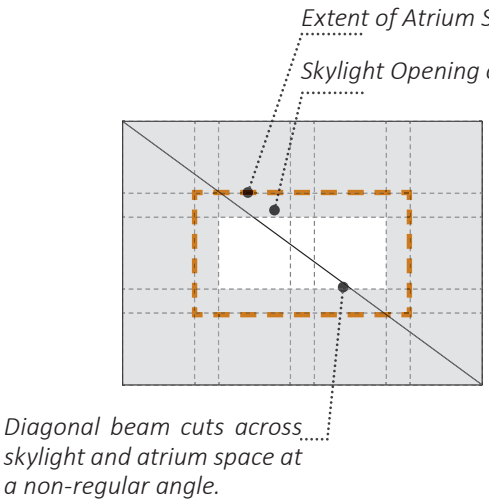


Diagram of Roof Structure



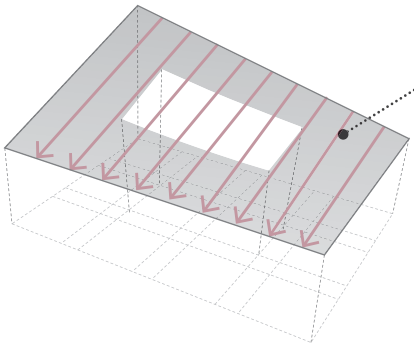
//The Diagonal Ridge Beam

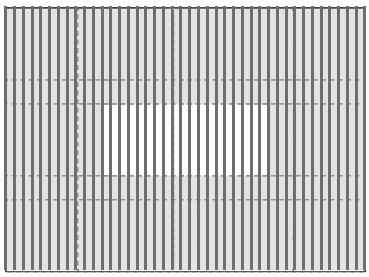
In the current form of the mass, a large beam would be needed to support the diagonal slope of the roof. However, this beam would cut the double height atrium space at a non-regular angle. As this is a strong, visual element, it would detract from the dominant language of the grid.

Fig. 4.59// Plan Diagram of the Diagonal Ridge Beam against the underlying grid

Fig. 4.63//

In elevation, the gradual change in slope of the rafters forms a parabolic curve which gives the module a gentler quality compared to the previous iteration.





In plan, the rafters connect across the width of the module.

// Parabolic Roof

In this iteration the central ridge beam is exchanged for rafters sloping along the width of the module. Because this is in the same direction as the grid, the grid still reads as the strongest organizational element in the module. The gradual change in slope creates a parabolic curve which looks striking in elevation.

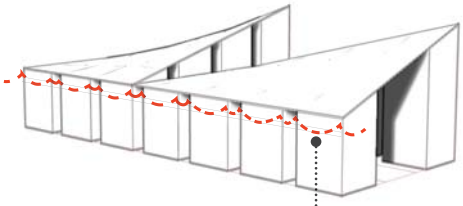
Fig. 4.60// The form of the basic module. Cardboard model.

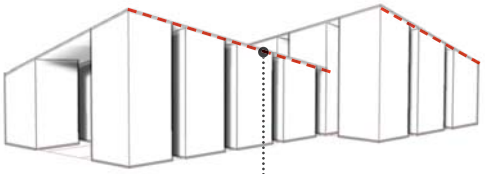
The closely spaced rafters mediate the quality of light coming through the roof. This will work well for providing evenly distributed daylight into the assembly space. These are spaced at 800mm centres.

This iteration allows the design to retain the same facade profile on all four sides.

Fig. 4.61// The form of the basic module. Cardboard model.

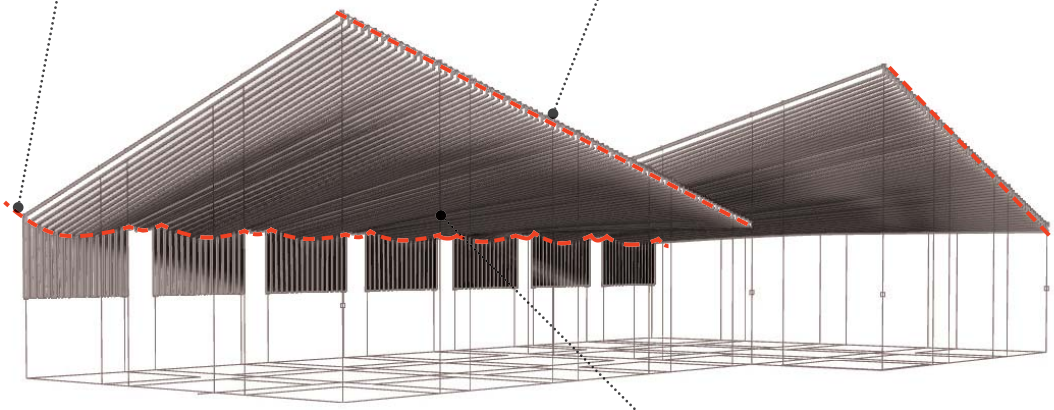
Draped fabric awnings create a suggestive and inviting entry into the stall beneath.





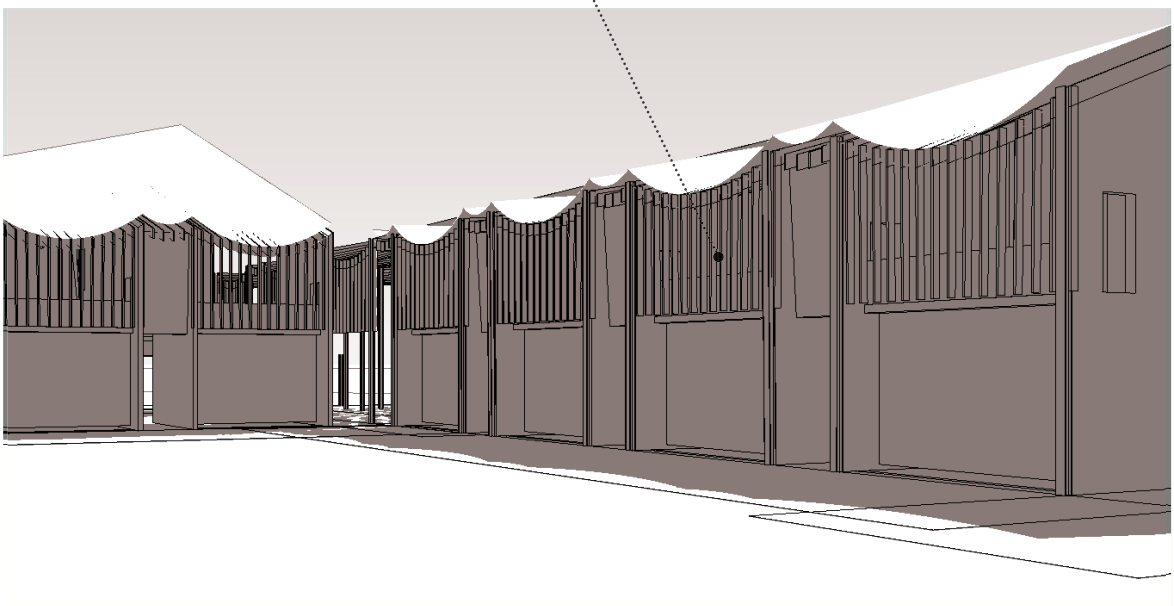
This draping language is carried into the lower roofline of the module, marking out the varying width of the workspace cell and the corridor.

The roofline on the upper edge will remain straight. This gives the facade on this side a uniform quality, particularly on the elevation that that is facing towards the wetland at layers 1 and 2 (see fig. 4.55).



With the rafters all aligned in the same direction, the ceiling is wavey and has an undulating quality.

Wooden louvers extend the interior language of the beams over the facade. This breaks up the facade into the two level, further emphasizing the human scale.



▲◄
Fig.4.62//Photo showing the draped awnings in markets in Morocco. Photo by Audrey Chao.

◄
Fig. 4.63// Axonometric diagrams showing the difference between roofline on the tall facade and the shorter facade.

▲
Fig. 4.64// Appearance of the lower side of the module in a courtyard like framing.

// The Draping Roof

As the roof structure is made of parallel rafters, this opens up the possibility of creating an undulating roof line which appears to drape over the wall elements. This draping effect only occurs on the lower side of the module, setting up a contrast between the taller and sharper façade that faces toward the wetland and the gentler, more human-scaled facade on the lower side of the module facing the courtyard.

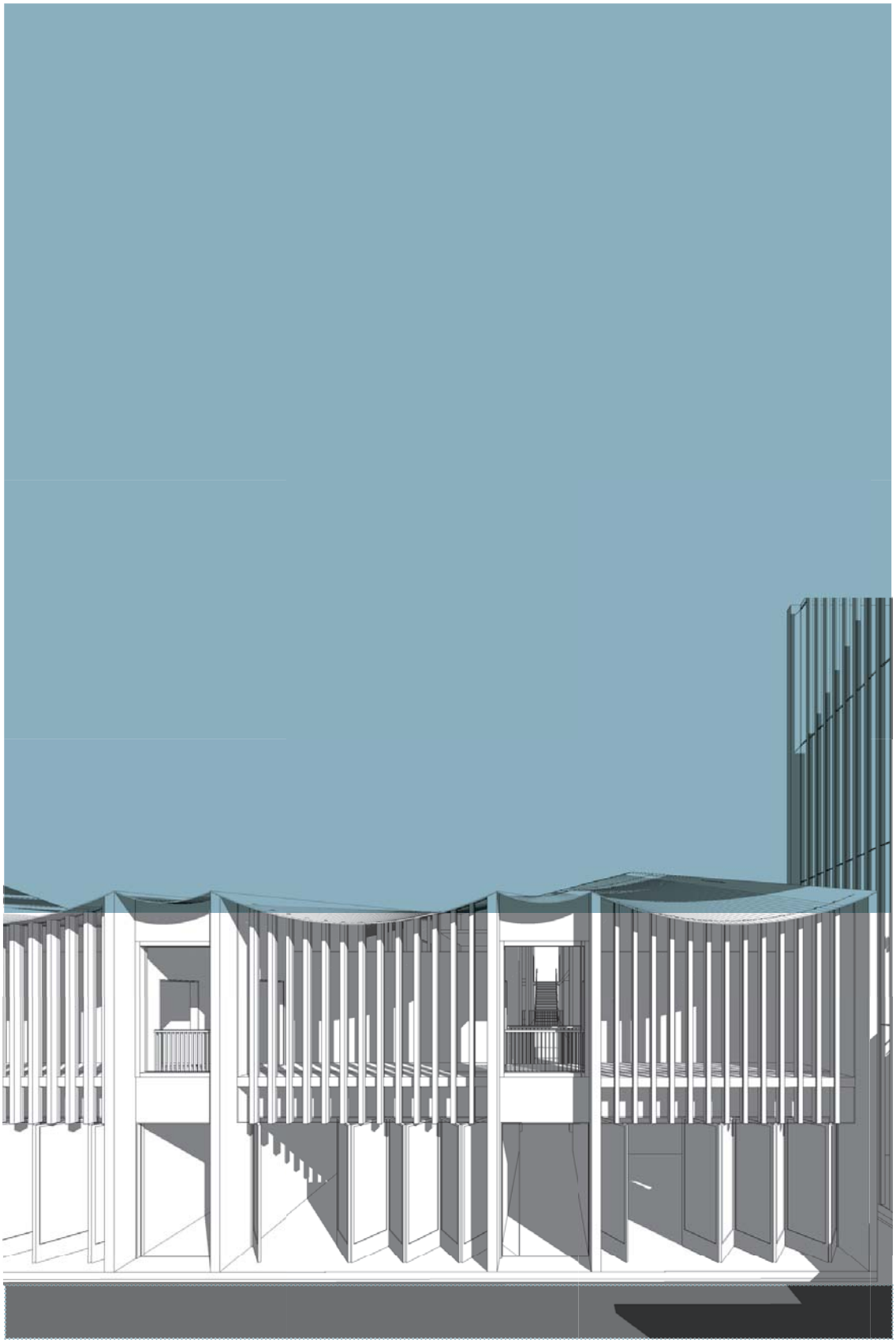


Fig. 4.65// Courtyard view of the design

CONCLUSION

and Critical Reflection

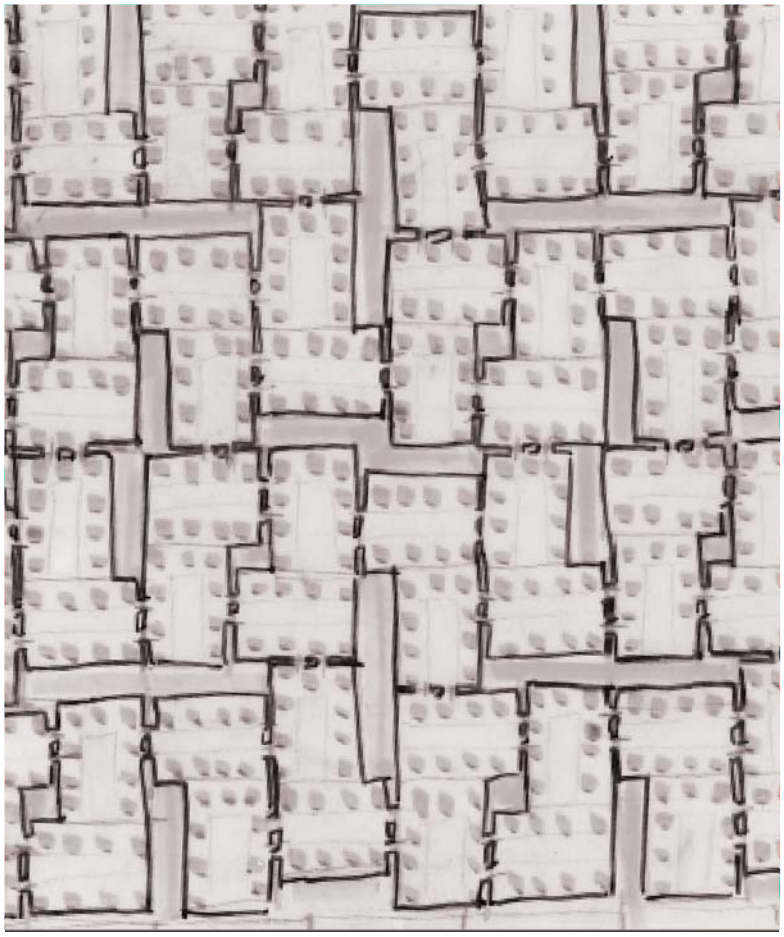


Fig. 5.01// Tessellation Pattern Drawing

In Conclusion...

This thesis sets out asking if it is possible for architecture to reconfigure Paraparaumu town centre by creating a design that can accommodate a higher density of activity, give better definition to the urban space for the pedestrian and house an alternative mode of production. Early in the research process, the Bazaar presented a model that addressed these objectives as it is a building type filled with small-scaled tenancies in a dense network of arcades. The fine-grained nature of the Bazaar, its multiplicity of pathways and how it interweaves back into the surrounding city made it a useful case study.

An essential feature of the Bazaar is that it operates on a singular plane. Though the final design outcome has multiple levels, these levels are in essence an extrusion of the main, ground floor plane. Thus, the design outcome could be thought of like a thick 2d field. It is the properties of this field that addresses the objectives of this thesis.

The design takes on the principles learnt from the bazaar and expresses them through a tartan-grid field. The field is a tight grid with intervals set at 6m and 2m – a scale determined by the rhythm of a stimulating walk. This grid serves as an underlying organizational tool. Thus the resultant design, organized using this grid, is scaled appropriately for the pedestrian. As the grid is a field condition, this is a good strategy for breaking up large open areas into more walkable subdivisions. In this thesis, this strategy was used to divide the carpark for permanent buildings; it could also be applied to more temporary interventions such as a market or an expo.

A 6 by 6m cell forms the basic unit of the grid, and these are grouped into a 3 by 4 cell formation called a module. This then is tessellated as a pattern across the site forming a variegated field, puncturing the densely gridded field condition with a rhythmic series of spaces that express openness and enclosure. The variation of different spaces within the tessellated field makes the design an attractive space to move through– engaging visitors to explore their way through the breadth of an area rather than following a singular path. This could be beneficial as it activates all areas on the field for activity with no dead spaces. This condition creates a much more efficient use of land than leaving the area dormant as surface parking.

The module was designed as collaborative unit, meaning a limited number of Maker companies will belong to each module but as a result they will get to know each other very well and foster an exchange of skills and ideas. What is useful is that the tessellated field allows for this grouping but also connects each module into the wider collective. This connected, sub-grouping of spaces is useful for creating interlinked communities. It offers a way of ordering density that is a more relational alternative to the uniform grid. This could be a way for encouraging the exchange of ideas and work opportunities by maximizing the chances for interaction, which is usually rare in a suburban town as its settlement form is too dispersed to have the density required for people to bump into one another.

The mall is a hierarchical space. In the mall, large anchor stores act as attractors while a singular main pathway, lined with smaller store tenancies, connects between them. The value of each tenancy is determined by its proximity to the main pathway. The gridded field, by contrast, is an organizational tool that democratizes space due to its uniformity and multiplicity of pathways. Though the grid may be spatially neutral within itself, the site is not neutral. The access points and boundary conditions on site can act as attractors and charge the space with an inherent spatial hierarchy. However,

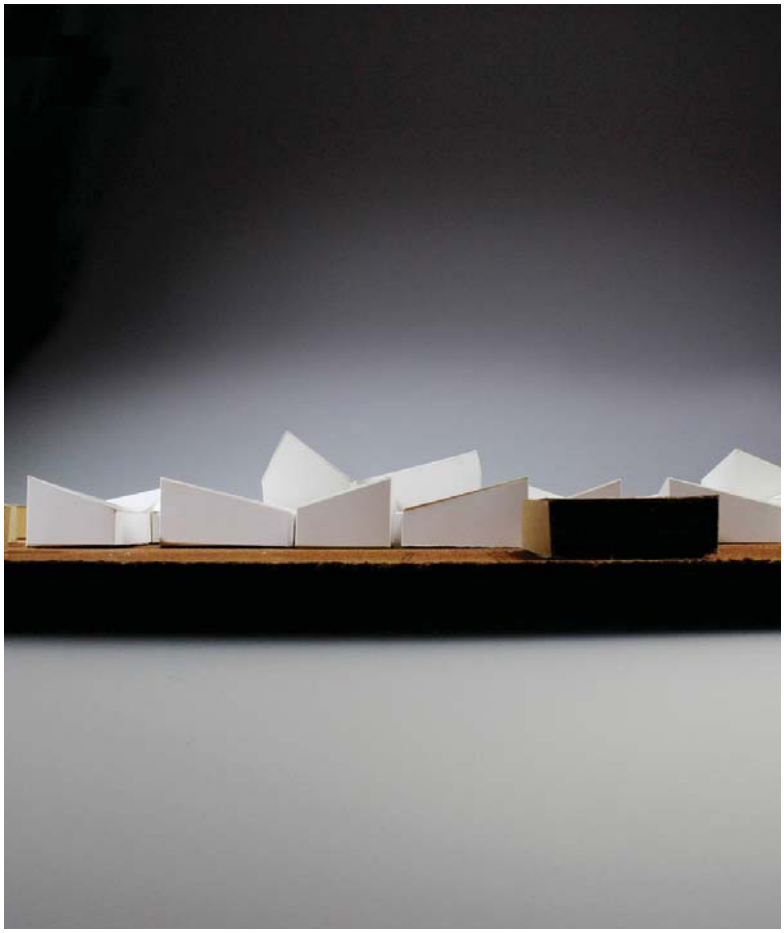


Fig. 5.02// Massing Model on Site.

the tessellation patterns generate a variegated field condition which means it has internal variation but is spatially unbiased overall. Therefore, the tessellation pattern can be shuffled and re-orientated to counteract the spatial charges on site.

This was an interesting insight, as the Bazaar-type building is often viewed as a uniform field that is democratic and connected with its context. However, this is only achieved by selective adjustments of the field to fit into the site. This is a useful characteristic particularly as the design is infilled into an established town centre; the tessellated field offers a way of mediating between the existing urban condition and the internal order.

A limitation of this Design is that as a field condition, it has the potential to sprawl – though a sprawl that is dense with activity, but a sprawl nonetheless. As this grid is fine-grained, it has the potential to be poured into a variety of different spaces. Therefore this design strategy is most useful when applied to sites that are finite and contained.

From the perspective of a typological study, I think the design outcome presents a possible model of what production and retail could look like in a post-mass consumption context. It meets the objectives set in the beginning as it offers a way of repurposing the suburban town centre to be inhabited and activated with new activities in a way that is more democratic and human-scaled. Though this particular scheme was designed with 'Maker' companies in mind, ultimately the program itself is interchangeable, and any small-scale activity could fit within it. This design research demonstrates how the principles of the Bazaar as applied through a fine-grained tessellated grid can be a useful framework for considering how to grow our suburban town centres by infilling into them rather than spilling out of them.

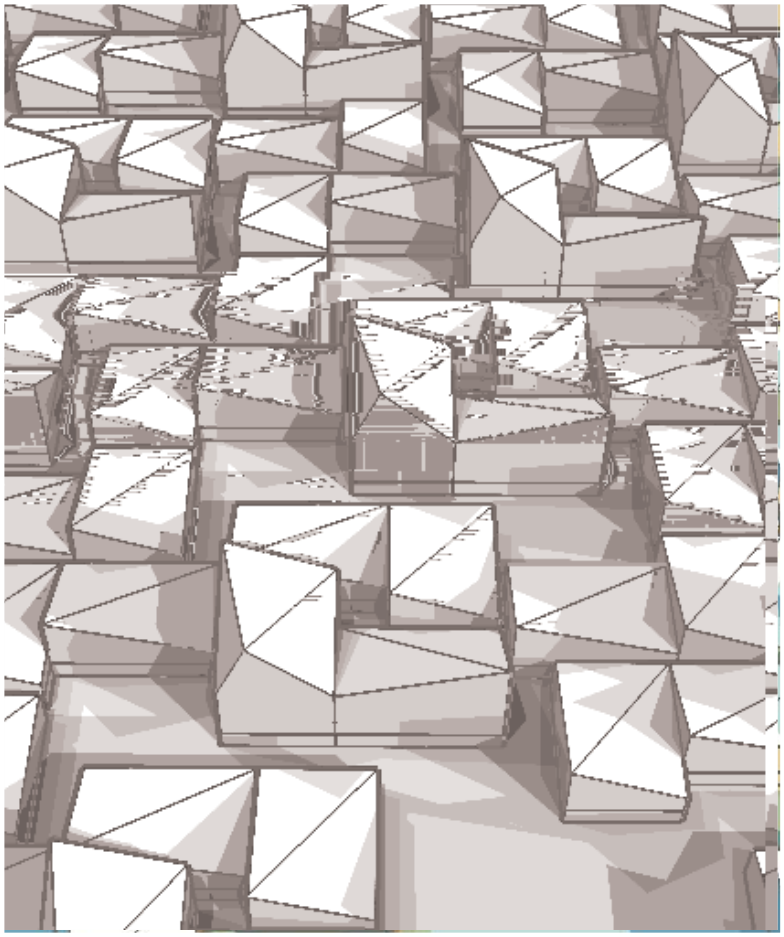


Fig. 5.03// Modules tessellated across the site as a 2D Field.

[5.1]

REFERENCE

//WORKS CITED

profile.id. About the profile areas, Paraparaumu West. 2013. Website. April 2015.

Allard, Pablo. "Bridge over Venice." Sarkis, Hashim. Le Corbusier's Venice Hospital. Munich: Prestel Verlag, 2001. 18-35. Print.

Allen, Stan. "Mat Urbanism: The Thick 2-D." Sarkis, Hashim. Le Corbusier's Venice Hospital. Munich: Prestel Verlag, 2001. 118-126. Print.

—. Practice: Architecture Technique + Representation. London: Gordon and Breach, 2000. Print.

Archnet. Kapalıçarşı. n.d. Digital Library. June 2015. <http://archnet.org/sites/3472/media_contents/8579>.

Calabuig, Debora Domingo, Raul Castellanos Gomez and Ana Abalos Ramos. "The Strategies of Mat-building." 13 August 2013. The Architectural Review. Web. <http://www.architectural-review.com/rethink/viewpoints/the-strategies-of-mat-building/8651102.fullarticle>. 8 June 2015.

Corbusier, Le. "Rapport Technique." Sarkis, Hashim. Le Corbusier's Venice Hospital. Munich: Prestl Verlag, 2001. 36-47. Print.

Demil, Benoit and Xavier Lecocq. "Neither Market nor Hierarchy nor Network: The Emergence of Bazaar Governance." Organization Studies (2006): 1447-1466. Print.

Didcock, Barry. "The rise of the makers: Barry Didcock examines our growing fascination with crafting things by hand." Herald Scotland 8th November 2015. News Article. November 2015. <http://www.heraldscotland.com/news/13952435.print/>.

Fanselow, Frank S. "The Bazaar Economy or How Bizarre is the Bazaar Really?" Royal Anthropological Institute of Great Britain and Ireland (1990): 250-265. Print.

Feldstein, Lisa. "You Eat Where you Are: Disparities in Food Access." Hutson, Malo Andre. Urban Communities in the 21st Century: From Industrialization to Sustainability . USA: Cognella, 2010. 515-538. Print

Florida, Richard. "The Power of Place: The Creative Class." Kantor, Paul and Dennis R. Judd. American Urban Politics in a Global Age: The Reader. New York: Pearson Longman, 2008. 98-114. 2008. Print.

Geertz, Clifford. "The Bazaar Economy: Information and Search in Peasant Marketing." The American Economic Review (1978): 28-32. Print.

Jackson, Natalie. Greater Wellington - Socio-Demographic Profile 1986-2031. Socio-Demographic Profile. Waikato: The University of Waikato, 2012. Print.

Kamchanaporn, Nuttinee. "150cm Domesticity." Attiwill, Suzie and Philippa Murray. Situation. Melbourne, Australia: RMIT University, 2014. 229-241. Print.

Kapiti Coast District Council. Structure Plan for Paraparaumu Town Centre. Structure Plan. Kapiti: Kapiti Coast District Council, 2012. Print.

Kennedy City Bicycles. n.d. November 2015. <http://kennedycitybicycles.cc/home/4581635408>.

Knight Frank. Global Cities Skyscrapers 2015 Report. Knight Frank Global Cities. London: Knight

Frank, 2015. Web. <http://www.knightfrank.com/resources/global-cities/knight-frank-global-cities.pdf>.

Koh, Liz. "Kapiti Chamber Puts Local Economic Growth in Perspective." 26 March 2015. Kapiti Coast Chamber of Commerce. Web. <http://www.kapitichamber.org.nz/news/media-and-press/kapiti-chamber-puts-local-economic-growth-in-perspective/>. 16 June 2015.

Maclean, Chris. Wellington places - Kapiti Coast. June 2015. Web page. August 2015. <http://www.teara.govt.nz/en/wellington-places/page-15>.

Mussen, Deidre. "Evacuations after Heavy Rain, Floods and Slips in Wellington Region." 14 May 2015. Stuff. Web. <http://www.stuff.co.nz/national/68535256/evacuations-after-heavy-rain-floods-and-slips-in-kapiti-live-blog>. 26 June 2015.

NZ Transport Agency. MacKays Crossing to Peka Peka Community Engagement Report. Community Engagement. Wellington: NZ Transport Agency, 2009. Print.

—. "Mackays to Peka Peka Expressway." n.d. NZ Transport Agency. Web. <http://www.nzta.govt.nz/assets/projects/mackays-to-peka-peka/docs/expo-2/5-kapiti-road-paraparaumu-town-centre.pdf>. 25 June 2015.

—. "Mackays to Peka Peka Expressway." n.d. NZ Transport Agency. Web. <http://www.nzta.govt.nz/assets/projects/mackays-to-peka-peka/docs/expo-2/14-walking-and-cycling.pdf>. 25 May 2015.

—. "Wellington Northern Corridor." n.d. NZ Transport Agency. Web. <http://nzta.govt.nz/assets/projects/mackays-to-peka-peka/docs/expressway-alignment-brochure.pdf>. 3 July 2015.

Powell, Walter W. "Neither Market nor Hierachy." Research in Organizational Behavior Vol. 12 (1990): 295-336. Print.

Renew New Castle. 2015. Website. November 2015. <http://renewnewcastle.org/>

Russi, Daniela, et al. The Economics of Ecosystems and Biodiversity for Water and Wetlands. London and Brussels;: IEEP, 2013. August 2015. <http://www.teebweb.org/publication/the-economics-of-ecosystems-and-biodiversity-teeb-for-water-and-wetlands/>.

Sarkis, Hashim. "Introduction." Sarkis, Hashim. Le Corbusier's Venice Hospital. London: Prestel Verlag, 2001. 12-17. Print.

Satell, Greg. "Business Have to Build Networks to Keep People from Drifting Apart." 7 February 2013. Business Insider Australia. Web. <http://www.businessinsider.com.au/improving-communication-2013-2>. 7 July 2015.

—. "The Semantic Economy." 11 March 2012. Digital Tonto. Web. <http://www.digitaltonto.com/2012/the-semantic-economy/>. 24 June 2015.

—. "Why the Digital Revolution is Really Just Getting Started." 4 May 2014. Forbes. Web. <http://www.forbes.com/sites/gregsatell/2014/04/05/why-the-digital-revolution-is-really-just-getting-started/>. 2 July 2015.

Shan, Paul Chu Hoi. "The Power of Factories." Ai, Stefan. Factory Towns of South China. Hong Kong: Hong Kong University Press, 2012. 55-59. Print.

Simmel, Georg. "The Metropolis and Mental Life." Wilhelmine Germany and the First World War (1903): 1-9. Print.

Smithson, Alison. "How to recognise and read mat-building." Architectural Design (1974): 573-590. Print.

Sounds of Making. Sounds of Making. 2012. Web. <http://soundsofmaking.com/>. 25 June 2015.

"Makers of East London." 23 September 2015. Spitalfields Life. Web. <http://spitalfieldslife.com/2015/09/23/makers-of-east-london/>. 15 October 2015.

Unsal, Behcet. Turkish Islamic Architecture. London: Alec Tiranti Ltd, 1970. Print.

Westbury, Marcus. "The Etsy effect": New castle, New South Wales and how creativity can revive a struggling city economy. 9 June 2015. Article. 5 May 2015. <http://www.citymetric.com/business/etsy-effect-newcastle-new-south-wales-and-how-creativity-can-revive-struggling-city-economy>.

—. "The Rise of The Maker." Bespoke. Vol. 1. 1. ABC, September 2015. September 2015. <http://iview.abc.net.au/programs/bespoke/AC1408T001S00>.

Williamson, Oliver E. "The Economics of Governance." The American Economic Review Vol. 95(2) (2005): 1-18. Print.

Wymelenberg, Kevin Van Den. "The Benefits of Natural Light." 19 March 2014. Architectural Lighting Technology. Web. <http://www.archlighting.com/technology/the-benefits-of-natural-light_o>. 20 June 2015.

//SOURCE OF FIGURES

All Images are by the author unless otherwise stated.

Introduction:

Figure 06: Thesis Structure

Context:
Google Maps .Web. Mar. 2015 <https://maps.google.co.nz>

About the Bazaar:
"Constantinople. Vue Panoramique de Bazars". N.d. Postcard. Fine Arts Library, Havard College Library; ArchNet. Digital Library. June 2015.

Context

Figure 1.01: Wellington to Paraparaumu Map
Base map: Map Box. Web. Mar. 2015 <http://www.mapbox.com>

Figure 1.03: Map of Paraparaumu Township
Base map: Map Box. Web. Mar. 2015 <http://www.mapbox.com>

Figure 1.04: Main Settlement types found in the town centre area.

Aerial Photo:
"Kapiti Aero from Above". Kapiti Aero Club. Web. Mar. 2015 < http://kapitiaeroclub.co.nz/wp-content/uploads/2011/03/photo1-11.jpg>

Figure 1.05: Schematic Geomorphological Cross-Section of Paraparaumu in East-West Direction

Paraparaumu Airport:
"Kapiti Aero from Above ". Kapiti Aero Club. N.d. Digital Image. Kapiti Aero Club. Web. Mar. 2015 < http://kapitiaeroclub.co.nz/wp-content/uploads/2011/03/photo1-11.jpg>

Proposed Expressway:
"Aerial view of the Kapiti Road expressway interchange." N.d. NZ Transport Agency. MacKays to Peka Peka Expressway. Web. Mar. 2015 <http://www.nzta.govt.nz/assets/projects/mackays-to-peka-peka/docs/expo-2/5-kapiti-road-paraparaumu-town-centre.pdf>

Figure 1.06: Map of Paraparaumu Town Centre

Base map:
Kapiti District Council GIS Map. Web. Mar. 2015 <http://apps.geocirrus.co.nz/HTML5/Index.html?viewer=kcdc>

Figure 1.07: Buildings on Site
Paraparaumu Airport:
"Kapiti Aero from Above ". Kapiti Aero Club. Web. Mar. 2015 < http://kapitiaeroclub.co.nz/wp-content/uploads/2011/03/photo1-11.jpg>

Proposed Expressway:
"Aerial view of the K□piti Road expressway interchange." N.d. NZ Transport Agency. MacKays to Peka Peka Expressway. Web. Mar. 2015 http://www.nzta.govt.nz/assets/projects/mackays-to-peka-peka/docs/expo-2/5-kapiti-road-paraparaumu-town-centre.pdf

Figure 1.10: Diagram showing distances between buildings in the town centre

Base map: Kapiti District Council GIS Map. Web. Mar. 2015<http://apps.geocirrus.co.nz/HTML5/Index.html?viewer=kcdc>

Figure 1.12: Diagram comparing the existing Wetland to built area

Base map: Google Maps. Web. Mar. 2015 <https://maps.google.co.nz>

Figure 1.13: Aerial image of flooding on the Kapiti Coast in May 2015
"Helicopter Footage Shows Shocking Extent of Kapiti Flooding." 14 May 2014. Webpage Screen Capture. One News. Web. <https://www.tvnz.co.nz/one-news/new-zealand/helicopter-footage-shows-shocking-extent-of-kapiti-flooding-6313258.html>. 25 June 2015.

Figure 1.14: Central Park, New York City
Quintano, Anthony. "Global Citizen Festival in Central Park New York City with NYonAir". (2014). Digital Image. Flickr. Yahoo! Inc. Web.. Aug. 2015.

Figure 1.15: Diagram showing strategy
Base map: Google Maps. Web. Mar. 2015 <https://maps.google.co.nz>

Figure 1.15: Demography of the Region

Age Distribution: Jackson, Natalie. "Age-Sex Structures of the TAs of the Wellington Region in 2011". Greater Wellington Socio-Demographic Profile 1986-2031. (2012): 31. Report

Figure 1.18: The Team at "George and Willy".
Keam, Jane. "Tuesday Features- George and Willy". Jane Keam Photography. Digital Image. Jane Keam Photography. Web. June. 2015. < http://www.janekeam.com/george-and-willy/ >

Figure 1.19: Model Comparisons

Table and hands:
Shutter Stock. Web. 2015

People Machining. Machining:
Hellman Chang- Canelli 01. Helman-Chang: Bringing Glamour back into Furniture Design. (2013) Digital Image. Core 77. Web. June 2015. <http://www.core77.com/posts/25741/hellman-chang-bringing-glamour-back-into-furniture-design-25741>

Jewellery:
Facet Necklace. Meshu. N.d Digital Image. Meshu. Web. June 2015. https://meshu.io/make/facet

Factory:
Burtynsky, Edward. "Manufacturing #15". 2005. Digital Image. "Manufactured Landscapes" Honest Films. Web. June. 2015 < http://www.honestfilms.net/index.php/85-manufactured-landscapes.htm>

Department Store:
"The Warehouse". 2015. Digital Image. YouCan. New Zealand Post. Web. June 2015. < https://youcan.nzpost.co.nz/content/uploads/2015/05/the-warehouse.jpg >

Figure 1.20: Workspace Space in Studio melt.
"Workshop Groups". N.d. Digital Image. Studio Melt. Web. Nov. 2015 <http://studiomelt.com.au/workshops-3/>

Figure 1.21: Kennedy City Bikes sits in a Residential Block with 11 other creative businesses. View generated by Google Earth. Nov. 2015

Figure 1.22: James Kennedy working on Bike at KCB.
Schrieber, Charlotte. "James kennedy – Bicycle Maker". Makers of East London. (2015). Spitalfields Life. Web. Nov. 2015 < http://spitalfieldslife.com/2015/09/23/makers-of-east-london/ >

Figure 1.24: Site in Context
Base Map. Kapiti District Council GIS Map. Web. Mar. 2015
<http://apps.geocirrus.co.nz/HTML5/Index.html?viewer=kcdc>¬¬

Figure 1.26: Relocating Existing Carparks
Aerial Image of Carpark Sites: Google Maps .Web. Mar. 2015 <https://maps.google.co.nz>

Typology:

Figure 3.01: Istanbul, general view of Kapali Çarsi or Grand Bazaar.
Jsraelowitz, Moise. "Constantinople, Vue Panoramique des Bazars". Ca 1902.. Postcard. Fine Arts Library, Havard College Library. ArchNet. Digital Library. Web. June 2015.

Figure 3.02: Floor Plan of Bazaar with neighboring Nuruosmaniye Mosque.
Original Image from: "Floor plan of the bazaar; Nuruosmaniye Mosque is on the left" 1976. 35mm Slide. Aga Khan Award for Architecture. ArchNet. Digital Library. Web. June 2015.

Figure 3.03: Image showing the main parts of the Grand Bazaar in Istanbul.

Original Image:
"Kapalıçarşı ". n.d. Postcard. Fine Arts Library, Havard College Library. ArchNet. Digital Library. Web. June 2015.

Figure 3.04: Interior of Old Bedesten
Millet, Vince. The Grand Bazaar. 2008. Digital Image. Flickr. Yahoo! Inc. Web. June 2015. < https://www.flickr.com/photos/brokendrumphotography/2348512418/>

Figure 3.05: Plan and Section of the Old Bedesten.

Original Image:
Ayverdi, Ekrem Hakki. 1973. Drawing. Osmanli mi'marisinde Fatih. ArchNet. Digital Library. Web. June 2015.

Figure 3.06: Interior of an Arcade Street
Original Image by Sam Tang. 2010.

Figure 3.07: Plan of Bedesten with surrounding arcades

Original Image published in: Unsal, Behcet. Turkish Islamic Architecture. London: Alec Tiranti Ltd, 1970. Print.

Figure 3.08: Beyazit Gate of the Grand Bazaar.
Denny, Walter B. Beyazit Gate. ca. 1960. 35mm Slide. MIT Libraries, Aga Khan Visual Archive . ArchNet. Digital Library. Web. June 2015.

Figure 3.10: Diagram comparing the Coastlands Mall and Bazaar

Base map of Bazaar – Arcades originally published in: Unsal, Behcet. Turkish Islamic Architecture. London: Alec Tiranti Ltd, 1970. Print.

Figure 3.12: View from an Interior courtyard of Beirut Souks looking towards one of its arcades.

Moneo, Rafael. Beirut Souk. 2009. Digital Image. Aga Khan Visual Archive . ArchNet. Digital Library. Web. June 2015.

Figure 3.14: Plans and Section of Beirut Souk.

Plan and Section Drawing:
Moneo, Rafael. Beirut Souk. 2009. Drawing. Aga Khan Visual Archive . ArchNet. Digital Library. Web. June 2015.

Interior View:
Divulgação."Beirut Souk". 2010. Digital Image. "Burberry abre 1ª loja no Líbano". Usefashionblog. Web. June. 2015. < http://blog.usefashion.com/blog/conteudo.aspx?idconteudo=81520>

Figure 3.15:
Model of Venice Hospital in context
Atelier Julian. 1966. Photo. Sarkis, Hashim. Le Corbusier's Venice Hospital. London: Prestel Verlag, 2001. Print.

Figure 3.16:
Compositional Principle 1: Metric
Diagram originally published in: Calabuig, Debora Domingo, Raul Castellanos Gomez and Ana Abalos Ramos. "The Strategies of Mat-building." 13 August 2013. The Architectural Review. Web. <http://www.architectural-review.com/rethink/viewpoints/the-strategies-of-mat-building/8651102.fullarticle>. 8 June 2015.

Figure 3.17:
Level 4 Plan of the Venice Hospital.
Le Corbusier. Venice Hospital. 1964. Drawing. Sarkis, Hashim. Le Corbusier's Venice Hospital. London: Prestel Verlag, 2001. Print.

Figure 3.18:
Units shown on Level 4 Plan of the Venice Hospital.

Le Corbusier. Venice Hospital. 1964. Drawing. Sarkis, Hashim. Le Corbusier's Venice Hospital. London: Prestel Verlag, 2001. Print.

Figure 3.19:
Diagram showing the program of the Venice Hospital in section,
Atelier Julian. Detail Sections. 1966. Drawing. Sarkis, Hashim. Le Corbusier's Venice Hospital. London: Prestel Verlag, 2001. Print.

Figure 3.20:
Model of Venice Hospital in context
Atelier Julian. 1966. Photo. Sarkis, Hashim. Le Corbusier's Venice Hospital. London: Prestel Verlag, 2001. Print.

Figure 3.21: Collage showing the facade of the Venice Hospital
Atelier Julian. Ca 1966. Collage. Sarkis, Hashim. Le Corbusier's Venice Hospital. London: Prestel Verlag, 2001. Print.

Design

Figure 4.01: City Grain Comparisons
Base map: Google Maps .Web. Mar. 2015 <https://maps.google.co.nz>

Figure 4.04: Diagrams of potential features that could arise from the grid organization.

Stairs Image from Pixabay. Web. Jul 2015.

Bio Swales: Bio-Swales. N.d. Digital Image. National Association of City Transportation Officials. Web. Jul. 2015. http://nacto.org/publication/urban-street-design-guide/street-design-elements/storm-water-management/bioswales/

Daylight Roof:
Vu, Khao. White Forest. 2015. Digital Image. Instagram. Facebook Inc. Web. May 2015. < https://www.instagram.com/archdekk/>

Figure 4.05: Diagram showing main programs in a maker company

Machining:
Hellman Chang- Canelli 01. Helman-Chang: Bringing Glamour back into Furniture Design. (2013) Digital Image. Core 77. Web. June 2015. <http://www.core77.com/posts/25741/hellman-chang-bringing-glamour-back-into-furniture-design-25741>

Assembly:
Schrieber, Charlotte. "James kennedy – Bicycle Maker". Makers of East London. (2015). Spitalfields Life. Web. Nov. 2015 < http://spitalfieldslife.com/2015/09/23/makers-of-east-london/ >

Figure 4.13: Still from: Tati, Jaque. "Playtime". Playtime. Dir. Jacques Tati. Perf. Jacques Tati, Barbara Dennek, Jacqueline Lecomte, Velerie Camille, and Leon Doyen. S.n., 1967. DVD.

Figure 4.14: "City of the Captive Globe".
Koolhaas, Rem. City of the Captive Globe. 1994. Drawing. Koolhaas, Rem. Delirious New York: A Retroactive Manifesto for Manhattan. New York: Monacelli, 1994. Print.

Figure 4.16: Interior Spaces of Mind Lab, Lower Hutt, Wellington.
Mind Labs. 2015. Photo. Facebook. Web. Aug. 2015 <https://www.facebook.com/themindlabnz/photos>

Figure 4.30: Diagram of what the Roof could be.
Saw-Tooth roof taken from Google Street View: Google Maps .Web. Nov.2015 <https://maps.google.co.nz>

Figure 4.46: Interior View of Mount Eden Correctional Facility.
Still taken from: "Mt Eden Corrections Facility redevelopment combines five new buildings with two existing prisons" Trends Ideas. 2012. Video. Youtube. Web. Nov. 2015 < https://www.youtube.com/watch?v=NQI_HPW8Mfo>

Figure 4.62: Photo showing the draped awnings in Markets in Morocco. Chao, Audrey. 2010. Photo.