

0 to 90

DESIGNING PRIVATE AND PUBLIC SPACE FOR GROWING OLD AND GROWING UP

by

Julia Contessa

ABSTRACT

In New Zealand the mortality age is rising and the fertility rate is dropping. This is creating a generational disconnect, resulting in a lack of social connection between the young and old and leaving the elderly with little physical support. Inevitably many of these seniors are left with little option but to leave their homes and enter a retirement village or care facility. Through this body of research and creative work I question how residential and public architecture can prompt cross generational exchange and allow people to age in place contentedly.

In order to understand how architecture may achieve this, the research is divided into three sections. The first establishes accurate conditions of context and program through a process of preparatory analysis, resulting in several design objectives. The analysis defines a site in Picton, a town that presently connects land transport between the north and south islands of New Zealand. Its location and function provide the research with a unique opportunity to create a cross program consisting of a residential space within a public place.

The second defines an engaging atmospheric response through physical drawing and making explorations. Through this process, architectural preconception of what is inside and outside is reversed in order to fragment the existing notion of aging.

The third section reconfigures all previous findings into a developed design on site. Residential, communal and public spaces begin to blur and overlap, challenging existing stereotypes of generation segregation.

The thesis develops a body of architectural designs through a range of both physical and digital techniques, namely: geographical analysis, program analysis, physical modelling, technical drawing and digital modelling. The research recognises that both methods are necessary in order to create successful architectural design outcomes that facilitate a more active physical and social connection between generations.

MOTIVATION

Although I am only 24 years old, I have already begun to think about how I would like to retire, or more precisely how I would like to age later in life. I believe that the key to a successful retirement is to first replace the idea of retirement with the idea of aging. Growing older is something that people are wedded to and it would best be re-conceived as something familiar that is always happening, instead of something new that only happens towards the end of a person's life. Currently I am nearing the end of my student life and will soon be entering the workforce. In a way I see this change as being similar to the one experienced by the elderly. In both situations, occupations, as well as locations are being adjusted and a general sense of the unknown is present. Understanding that these transitional times are similar is important as it leads to an elimination of stereotype and a rational acceptance of adjustment early.

After observing family members and friends going through this transitional time I have decided that retirement is not only based on an adjustment of occupation and location, but more importantly it is about a change of attitude. I am frequently listening to ever-changing ideas of things people aim to do for work and picturesque places people would like to live. Everyone seems to fixate on a certain character or storyline that frames their unique idea of what an ideal retirement should look like. These vary from one extreme to another. However no one ever mentions the fundamental issue of social exclusion from public as well as family and friends. Because of this I propose that a complete shift in attitude needs to be made towards aging. Lessons learnt from previous life transitions need to be reapplied, the elderly need to be reminded of the potential that they still have, through examples set by reflections of a younger age.

“In this ambiguous space, the mind has lost its geometrical homeland and the spirit is drifting.”
-Gaston Bachelard, *The Dialectics of Inside and Outside* 1964

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preparatory analysis

2
preliminary design

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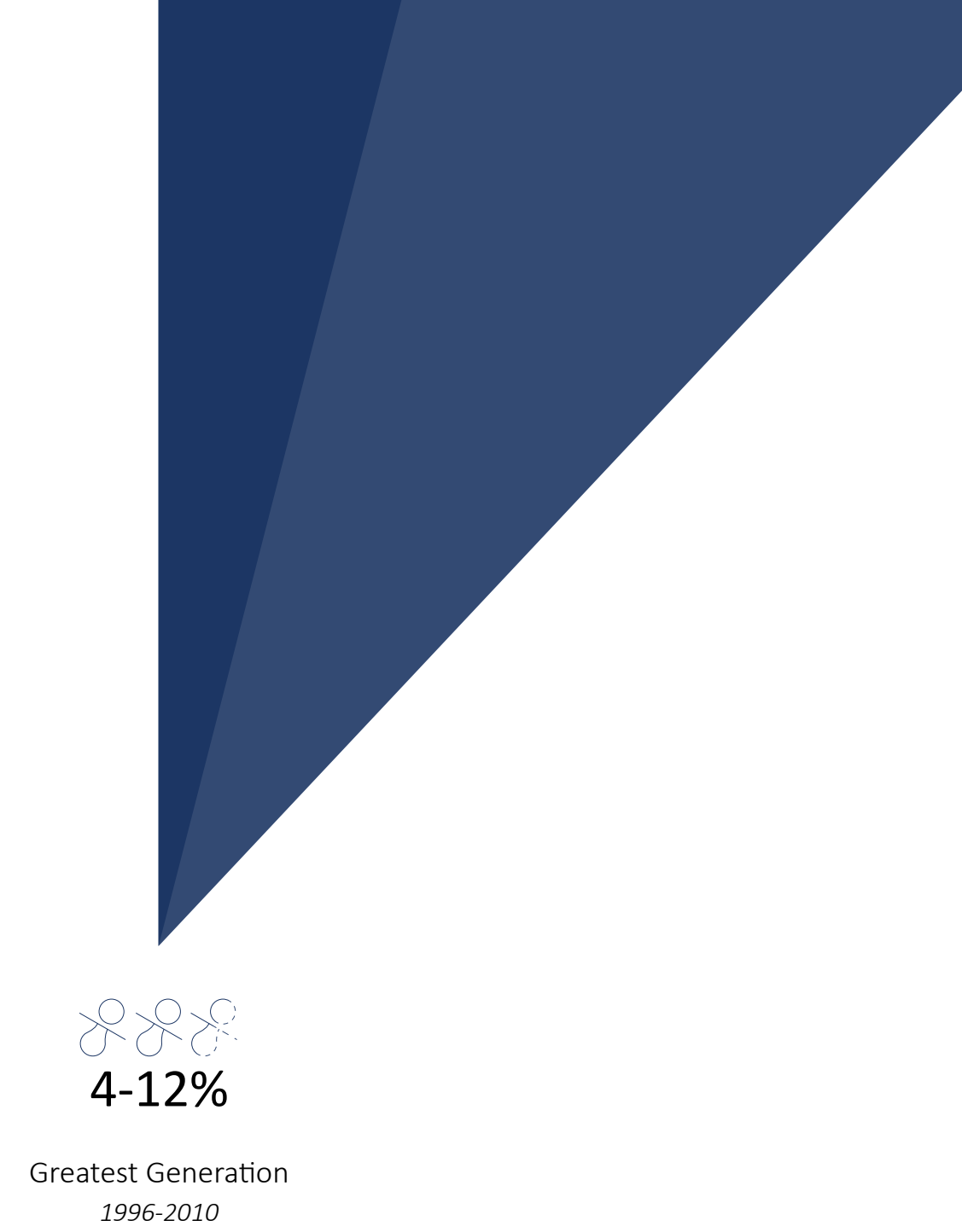
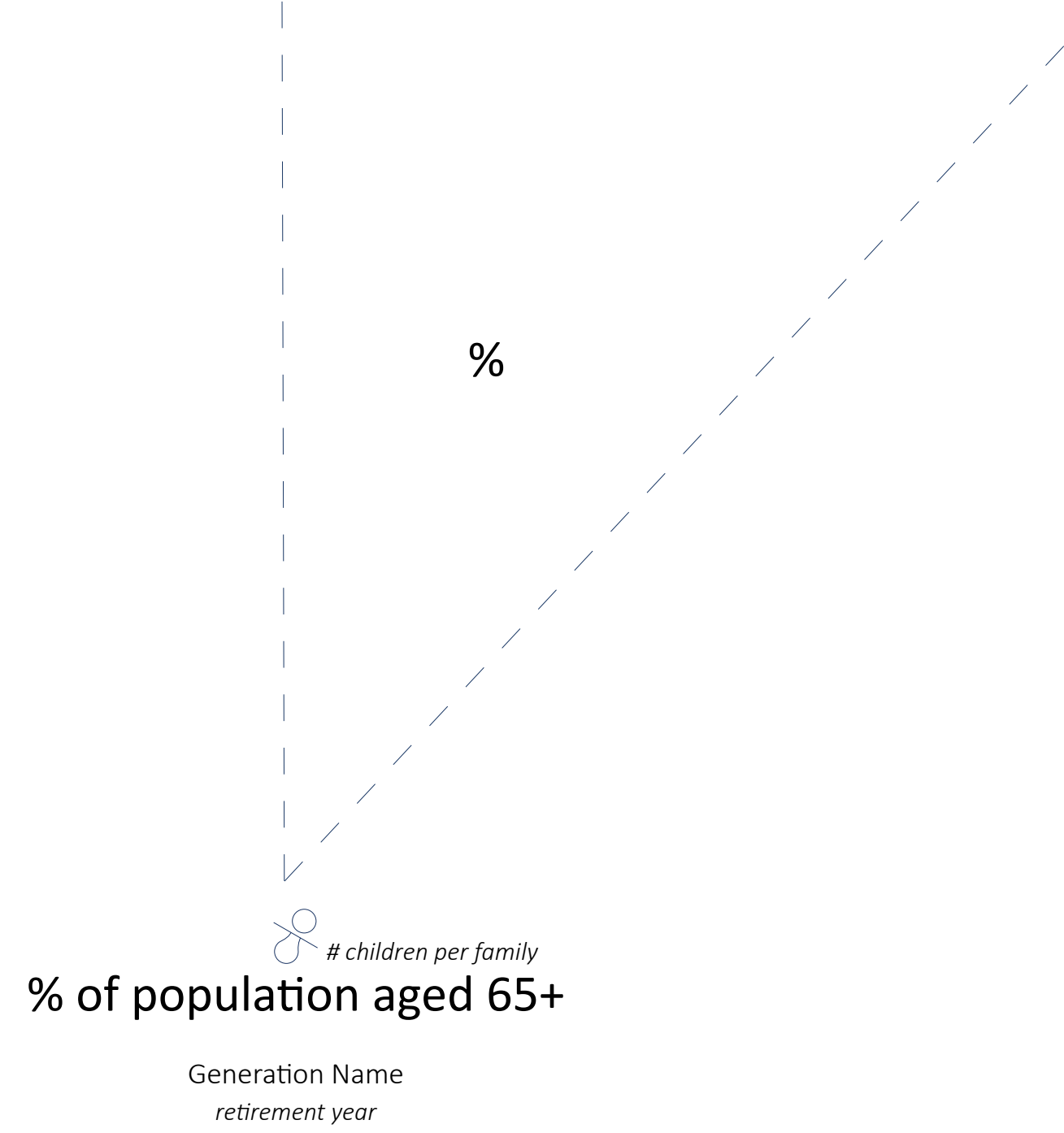
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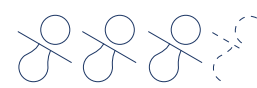
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12-21%

Baby Boomers
2011-2030



21-24%

Generation X
2031-2045

INTRODUCTION

Through a body of designed works this thesis proposes a new architectural typology for aging in New Zealand. The focus is kept to several areas of interest that aim to mediate the current population fluctuation, where the old are beginning to outnumber the young. The first is a personal connection between generations of family members. The second is a physical connection with the community, suitable to a New Zealand context and the third, an all age inclusive architecture which adapts to generational change and preference. These objectives may seem separate at first, however they are in fact connected. This research provides an example of how architecture can achieve this connection.

Over the past century the fluctuations in population age has created a generational disconnect within families. Currently the population is getting older¹, a result of an increasing life expectancy and a decreasing fertility rate². The present imbalance has been enhanced by the current low birth rate combined with the previously high one created by the baby boomers³. This creates two types of displacements for the elderly.

1 Results from Statistics New Zealand's 2013 census indicate the rise and how this projects into the future, "The 65+ age group increased from 9.9 percent to 14.3 percent of the population in that period, and is projected to grow to 23.8 percent in another 30 years"(Statistics New Zealand, 2013).

2 An average number of births per number of women in the population (Statistics New Zealand, 2009).

3 A 2009 article by Statistics New Zealand describes the rate highlights over the last century "From the mid-1940s the TFR (total fertility rate) increased dramatically, peaking at 4.3 births in 1961. New Zealand then experienced decreasing fertility, with the TFR dropping to 2.1 in 1978. This drop was largely driven by fewer women in their twenties having babies"(05). An article in the New Zealand Herald confirms a further drop to 1.92 births in 2014 (Collins, 2015).

The first is with younger family members, as more parents are choosing to delay child birth, creating a unique situation where elderly members outnumber the young. This also compromises the family support which was previously given to their grandparents by their parents, creating a reduction in solidarity across generations (Hillcoat-Nallétamby & Dharmalingam, 2006). This leaves a vulnerable quarter of the population to physically and mentally support themselves. There is also a disconnection with the younger public, as the elderly population increases, traditional architectural solutions in the form of a retirement home or village also increase to supply for the demand. However, these places are often segregated from the community, resulting in a high separation from the younger public. The proposed new type of architecture for aging intends to bridge a connection by integrating residential elements into a community setting, resulting in reciprocal benefits across all generations. In New Zealand the traditional retirement infrastructures are outdated and unadaptable to the changing wants and needs of the fluctuating aging population. In the article *Aging in Suburbia*, Taylor and Buys (2014) categorise the two main types in Australia and New Zealand and describe their unyielding nature. "The first is development in response to the situational need for supportive housing: for example, retrofitting conventional houses to create barrier-free environments The second group could be seen as the active development and marketing of housing to a defined target market, the retirement community"(58). The authors describe how both hold certain desired qualities that the other lacks. The first provides residents with full independence, familiarity and a feeling of self-determination. However to suit the aging body the house needs constant alterations and inaccessibility and isolation

eventually increase. This eventually makes them relocate to the second type which has these alterations built in, but little care given to people's individual preferences. This late acknowledgement, acceptance and planning inevitably places retirees into unsuccessful living situations. Currently there are few national examples of the two types overlapping. This thesis proposes a solution to mediate the two into a third option, an adaptable type that suits a variety of different generations. This creates an opportunity for New Zealanders to age in place sensibly in a space that is physically and socially suitable. New Zealand has the potential to facilitate and benefit from this integration. Picton in particular creates a unique social setting where there is a constant influx of visitors as well as a relatively high amount of free space to inhabit, that would otherwise be unobtainable within a central city. Still in this town as well as the wider nation this opportunity is currently being underutilised. This is particularly evident in the low amount of existing local case studies, in comparison to other countries (Taylor & Buys, 2014). Recently interest has been shown in New Zealand scholarly studies with several texts being published on these issues. Although the studies are yet to focus on what this problem means architecturally, they do provide local guidance for framing design aims and objectives.



24% +

Generation Y
2046-2065

AIMS	OBJECTIVES
Through a body of designed works this thesis argues for a reconsideration of the interior and exterior, public and private space as a way to mediate a variety of aging transitions through the cross program design of a residential space within a civic place. This aims to extend the ability of aging in place by prompting physical activity and cross generational exchange.	The aims are accomplished through the use of both contemporary and traditional design tools that mediate mastery of form for social and physical performance. The results produce two architectural types. The first is a variety of ephemeral residential units that can be readjusted to suit alternating generations as well as mediate the outside within the inside. The second is a diverse range of permanent public infrastructures that anchor public activity within the residential. The design is located along the edge of Port Marlborough in Picton, a transit town that is also experiencing its own transitions; in between north and south, port and country, stability and reconsideration. The specific site location connects Picton CBD with Shelly Beach and the Victoria Domain, providing the design with an existing thoroughfare which actively positions the elderly in close proximity to the public. The site also has a diverse section of harbour, road and bush that naturally creates areas of exposure and enclosure. This topography creates an ideal testing ground for the cross program consisting of a public workspace a crèche and a café which extends into the reserve through a series of communal pathways.

METHOD REVIEW

This thesis uses an integrated digital and physical methodology to research through design. They are chronologically applied in two sections with a digital analysis conducted in the preparatory design which is then developed through physical explorations in the preliminary design. This review discusses the benefits and limits of each method in relation to the research aims and objectives. Digital analysis is primarily used to create a reinforced grounding for the preparatory design objectives. The hierarchy of this approach is derived from an article by Jules Maloney, professor of interdisciplinary digital design while at Victoria University and Dave Bharat titled *From abstraction to being there: mixed reality at the early stages of design*. The authors stress the benefit of early digital design integration to ensure that successful, highly influential, design decisions are made early. Because of the social nature of this thesis a thorough analysis of site and program is implemented through this method. The method allows large amounts of data to be compiled and visually analysed, creating a justified site and program analysis. The site and program analysis is conducted through two separate techniques specific to each unique objective. The outcomes create a series of preparatory design objectives which are tested through physical design.

Physical Drawing and modelling is used cohesively to explore formal, material and atmospheric solutions to the design objectives set by the preparatory analysis. This method directs two sections based on inside and outside type that are initially explored separately and then combined in the developed design. The preliminary drawings and models are influenced by Gaston Bachelard's chapter *Dialects of Inside and Outside* in his book *The Poetics of Space*, where the preconception of interior and

exterior space is questioned and then reversed to create a new experience. This allows the specific analysis objectives to loosen up into an engaging design response.

Once the inside and outside qualities have been determined the process of drawing and making is depleted. The developed design is then created through digital modelling, in order to integrate the discovered interior and exterior qualities with a focus on 1:1 scale occupation.

SCOPE OF RESEARCH

The scope of this research is restricted to prolonging aging in place by prompting physical activity and cross generational exchange. This is done through the reconsideration of interior and exterior, a focus on transitional space and all age inclusive occupation. The research is focused on mediating a variety of aging intervals rather than retirement specifically. Because of this the design is restricted and does not include typologies such as retirement homes, villages and hospitals.

1

Preparatory Design

Site & Program

INTRODUCTION
AIM
METHOD

[SITE
PROGRAMME]

REFLECTION



Fig 01

INTRODUCTION

This thesis proposes to create an architecture that facilitates cross generational exchange to strengthen the ability for people to extend aging within their home. Currently in New Zealand there is an initiative to strengthen aging in place driven by health care options (Mousourakis, 2013). The care provides an opportunity for generations to interact, however the social exchange is short-lived as the younger help is ever changing. International examples have highlighted the benefits of cross generational exchange through lived examples such as the Providence Mt St Vincent in Seattle, where the elderly residents and the kindergartners support each other (S. Clark, personal communication, May 9, 2015). The elderly in New Zealand would benefit from a similar type of social situation. Currently there is a lack of local case studies exploring this issue. Therefore to determine how intergenerational exchange can be implemented within this research, a thorough analysis of the national aging situation is made.

Digital analysis is used in the preparatory design for its accuracy and efficiency. It allows large amounts of data to be processed instantly into a visual format, creating a reinforced base for the preliminary design. Jules Maloney, professor of interdisciplinary digital design while at Victoria University, highlights the importance of implementing this method early on in design. In his article, co-authored with Dave Bharat, *From abstraction to being there: mixed reality at the early stages of design* he demonstrates how this approach allows highly influential decisions to be made accurately and early to secure a strong direction. Maloney and Bharat also stress the importance of suitability, “Mixed

reality allows a wide range of technologies and the consideration of appropriate technology is central to our enquiry”(5). To ensure that this condition is met both site and program analysis is completed through two separate processes and programs that are selected for their ability to engage with the research aims. To begin, a preliminary site scope of New Zealand is conducted. The analysis is created through ArcGIS, a program which is able to visually convert the large amount of available national data. The program analysis is undertaken for a similar reason but through a different process. This time digital space is used to analyse and dissect the programs of international case studies. A Grasshopper plugin called Syntactic is used to determine a graduation of social levels between residential and public space within elderly accommodation. This creates an in depth understanding of a variety of residential situations that can be reflected on and then implemented in context onto site.

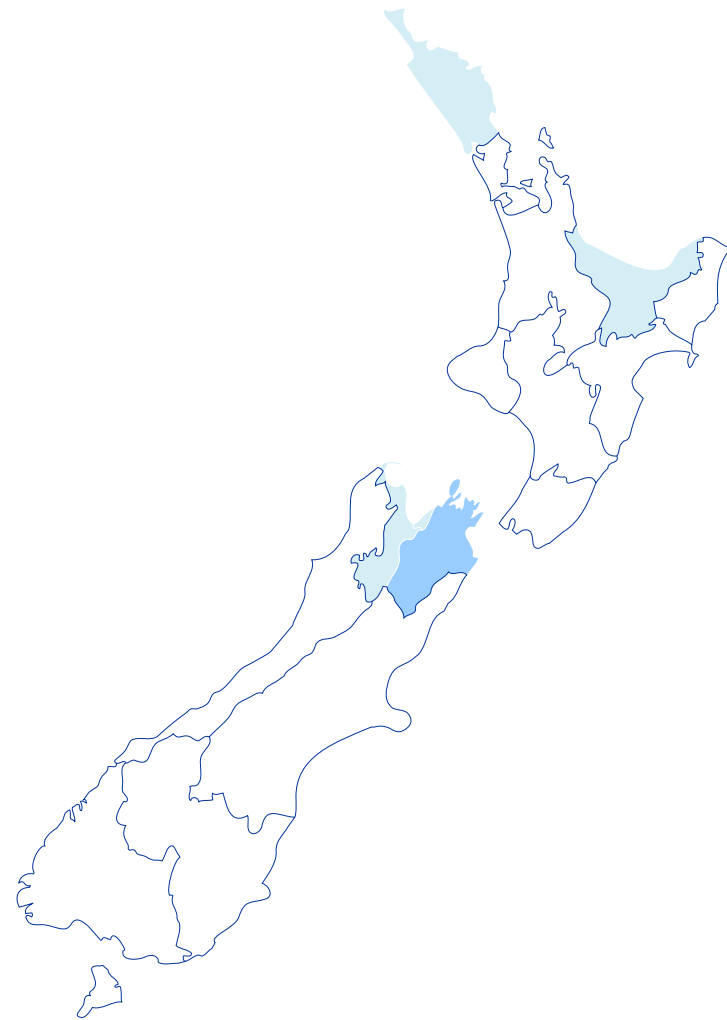


AIM

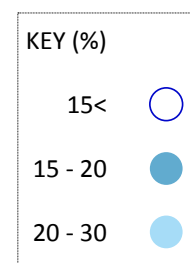
The first design phase tests how analysis tools can be used to create design objectives for the research question. By achieving these findings early an accurate understanding of the national demographic situation is made, allowing the international design solutions to be appropriately implemented on site through the direction of several design outcomes.

METHOD

The method aims to create a preparatory framework in order to optimise the design by ensuring that highly influential design decisions such as site and programme selection can be made accurately early. Since intergenerational design case studies are lacking in New Zealand this initial approach seems appropriate in providing a stable base to reflect back to.



People Ages 65+



INTRODUCTION

To mediate the paucity of New Zealand examples of architecture for cross generational exchange, a preparatory design base aims to create a better understanding of how the intergenerational research aims could be implemented within a local context. To begin, the scope of the search is widened to include New Zealand as a whole. Through a socio geographical national analysis a thorough understanding of the current aging situation is created. This concludes in the selection of a site, Picton in Marlborough, as well as two main design objectives: architecture that relates to water and sunlight.

The provincial centre of Picton in Marlborough is initially chosen for its leading percentage of retirees as well as its transitory state. Because of the constant temporary influx of people from the ferry terminal, permanent residential space is able to exist within a highly populated area. The Shelly Beach end of Waikawa Road is chosen for the specific site location as it provides an opportunity for the site conditions to vary between port, road and reserve allowing the program to transition between the thresholds of private and public. The port and road section naturally provide the design with an opportunity to create a civic place that prompts cross generational exchange and physical activity while the reserve section creates an enclosed area for residents to retreat into for a sense of privacy and separation.

ANALYSIS PROCESS

ArcGIS mapping via Statistics New Zealand + NIWA

The mapping process begins by determining potential areas that illustrate a high intergenerational divide. Data from Statistics New Zealand is input into the software ArcGIS, creating an analysis of New Zealand's aging situation. This program assembles large amounts of data, providing a quick but highly accurate geographical visualisation. The data from the Statistics New Zealand 2013 Census is input to highlight regions that were dominantly populated with people aged over 65. This process determines the main areas in which the targeted demographic are situated, highlighting several potential sites and creating an insight into two main design objectives.

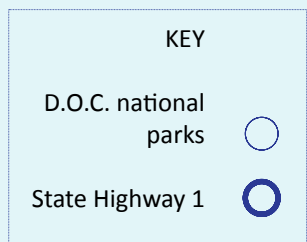


Fig 04

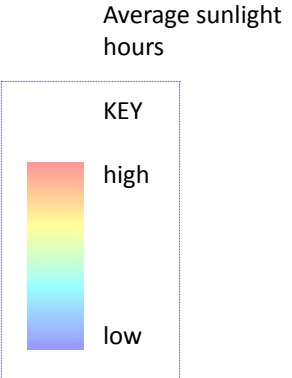
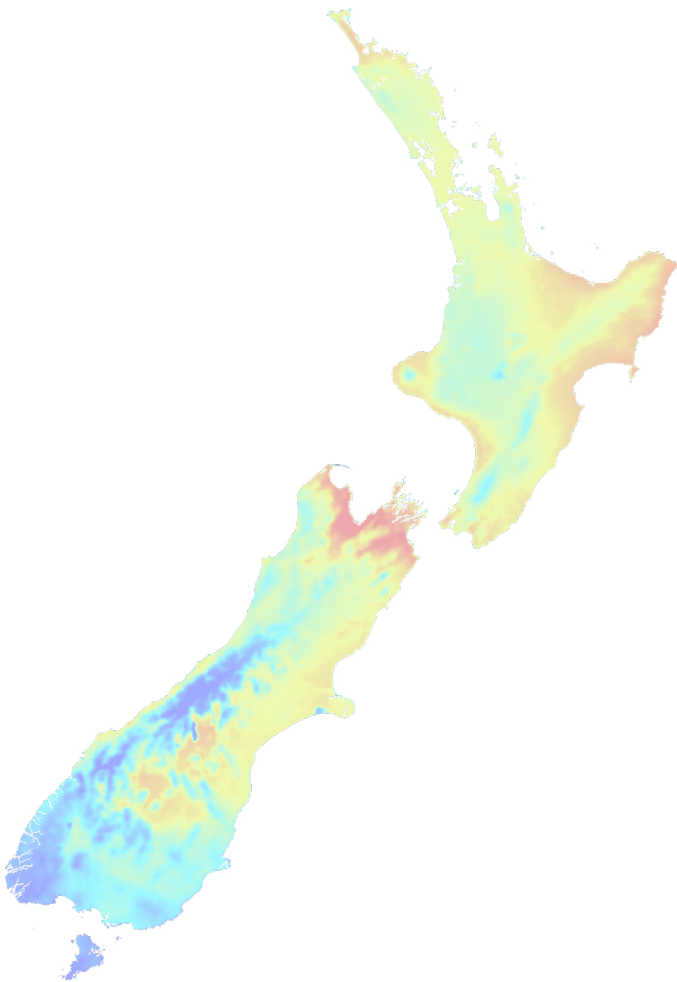
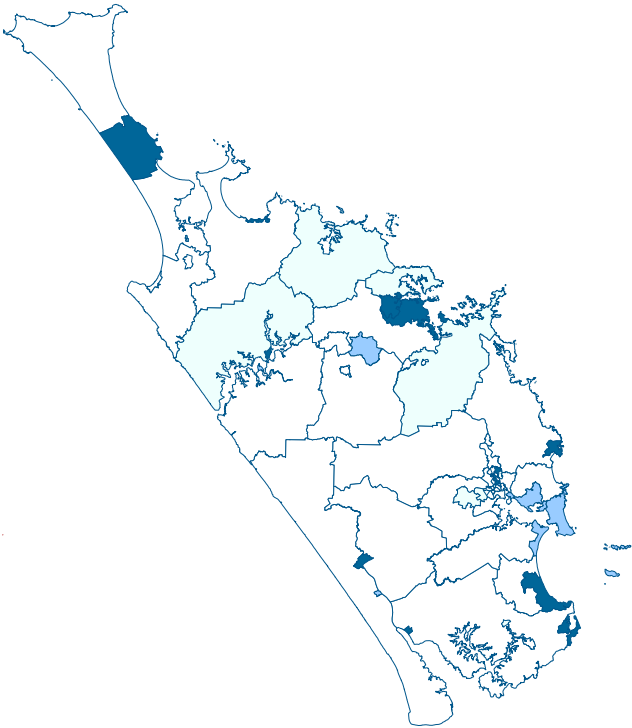
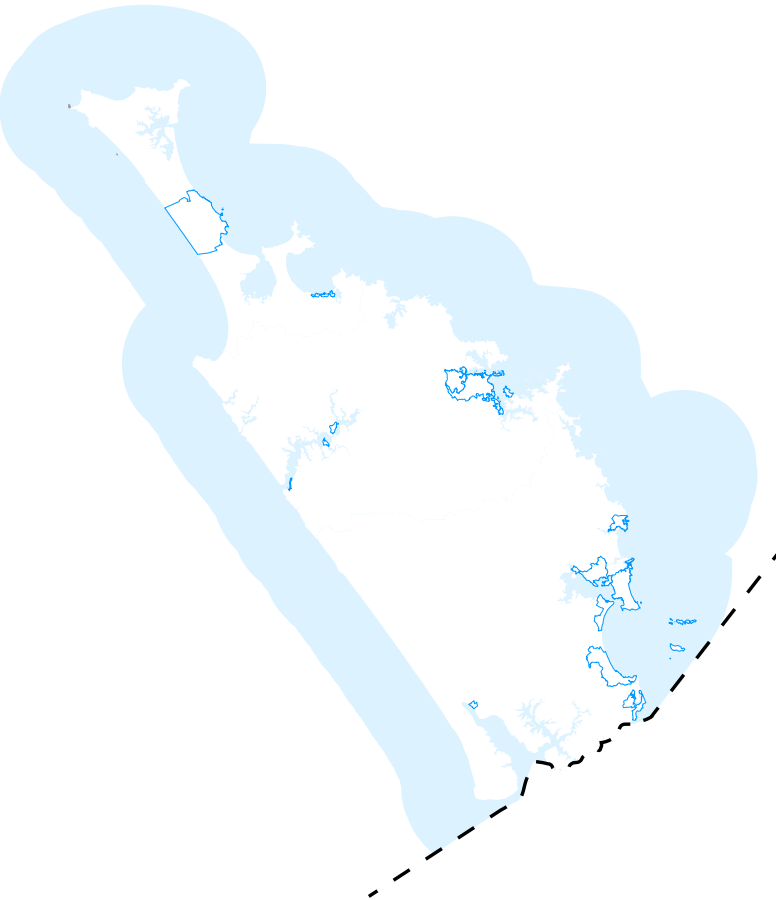
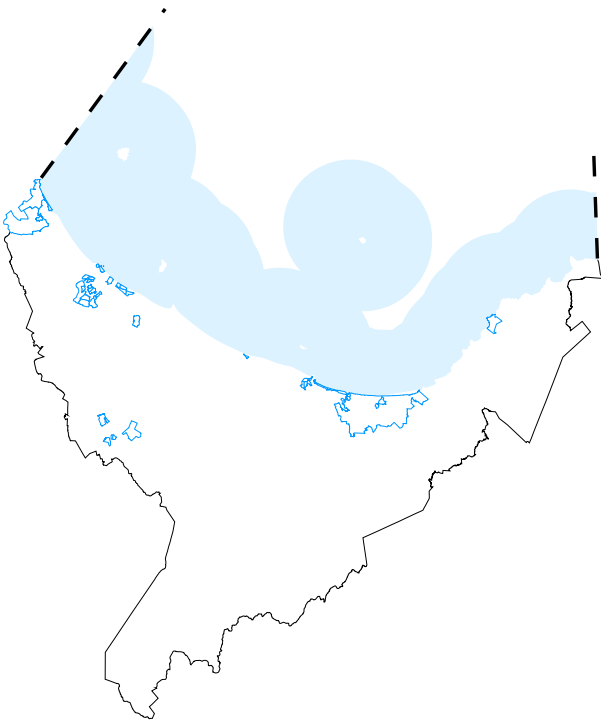
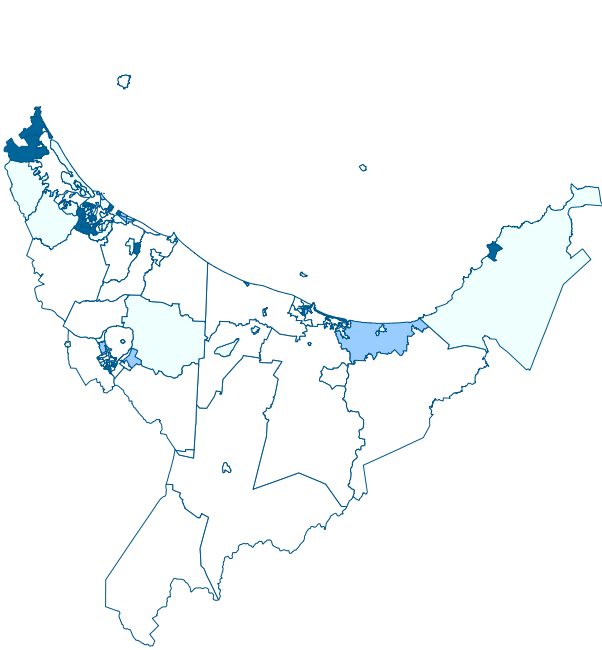


Fig 05

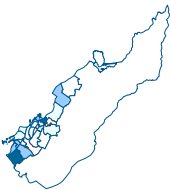
Northland



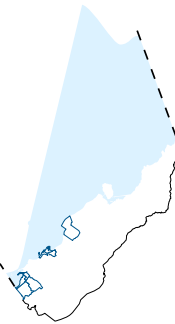
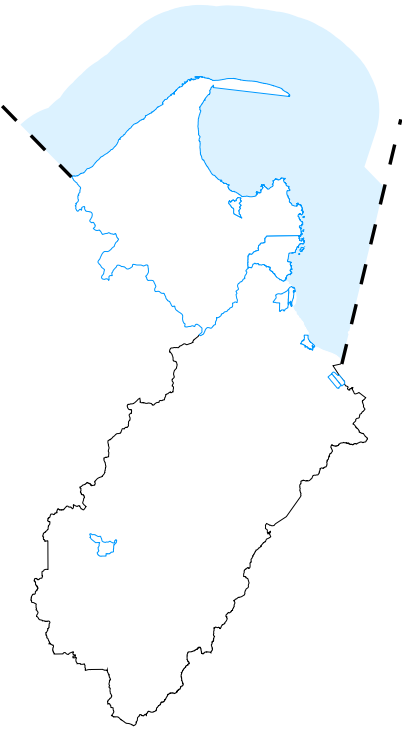
Bay of Plenty



Tasman



Nelson



People ages 65+

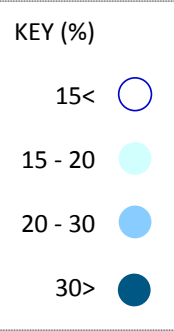
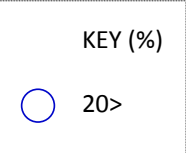
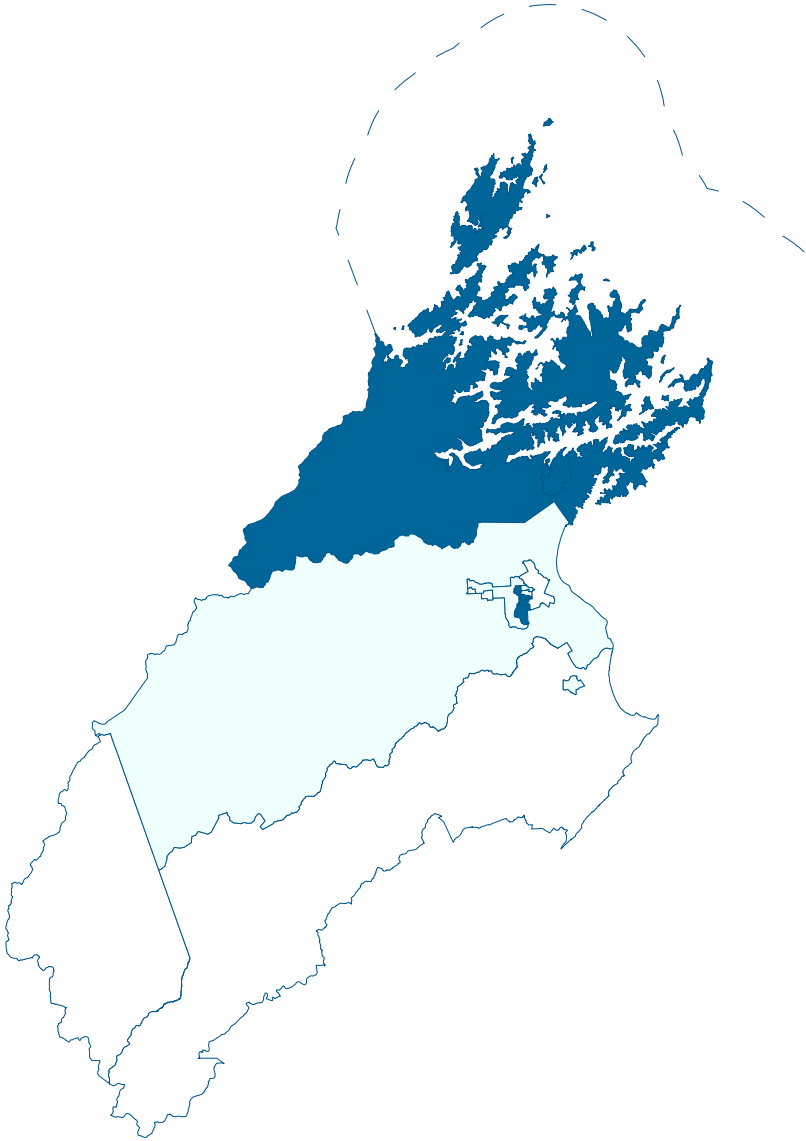


Fig 06

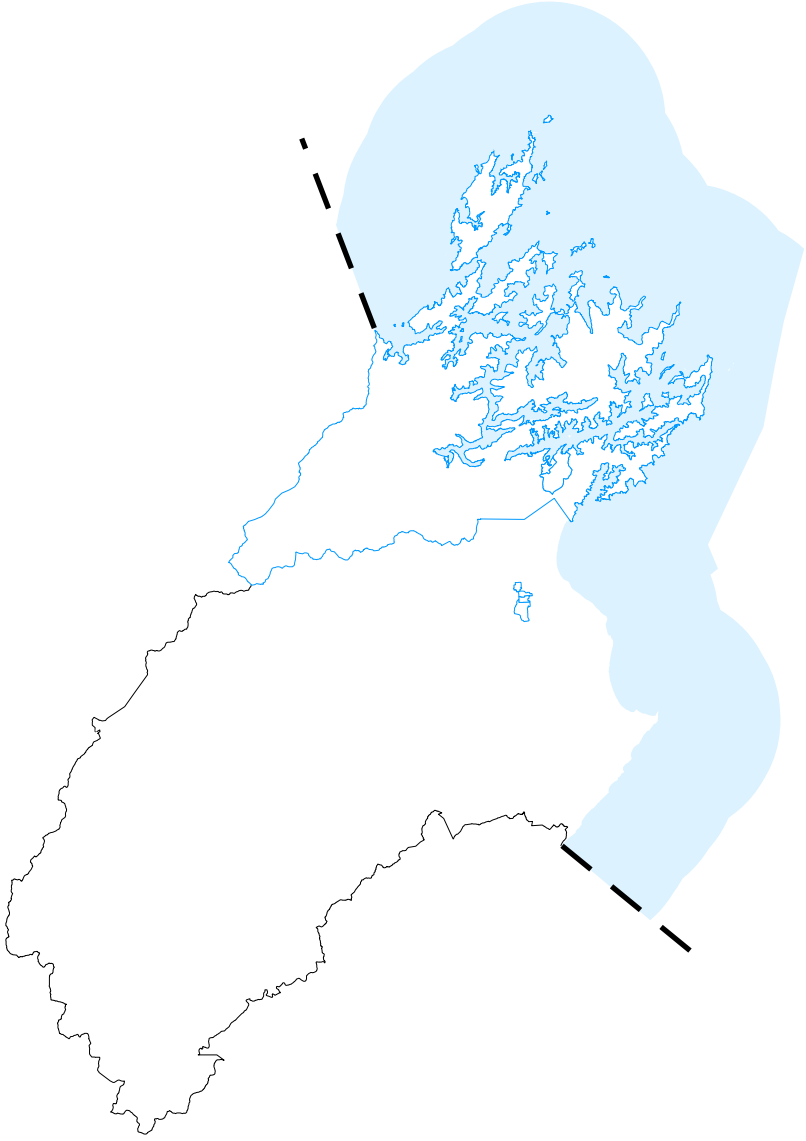
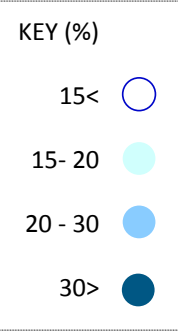
People aged 65+ residing in close proximity to water



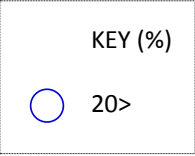
Marlborough

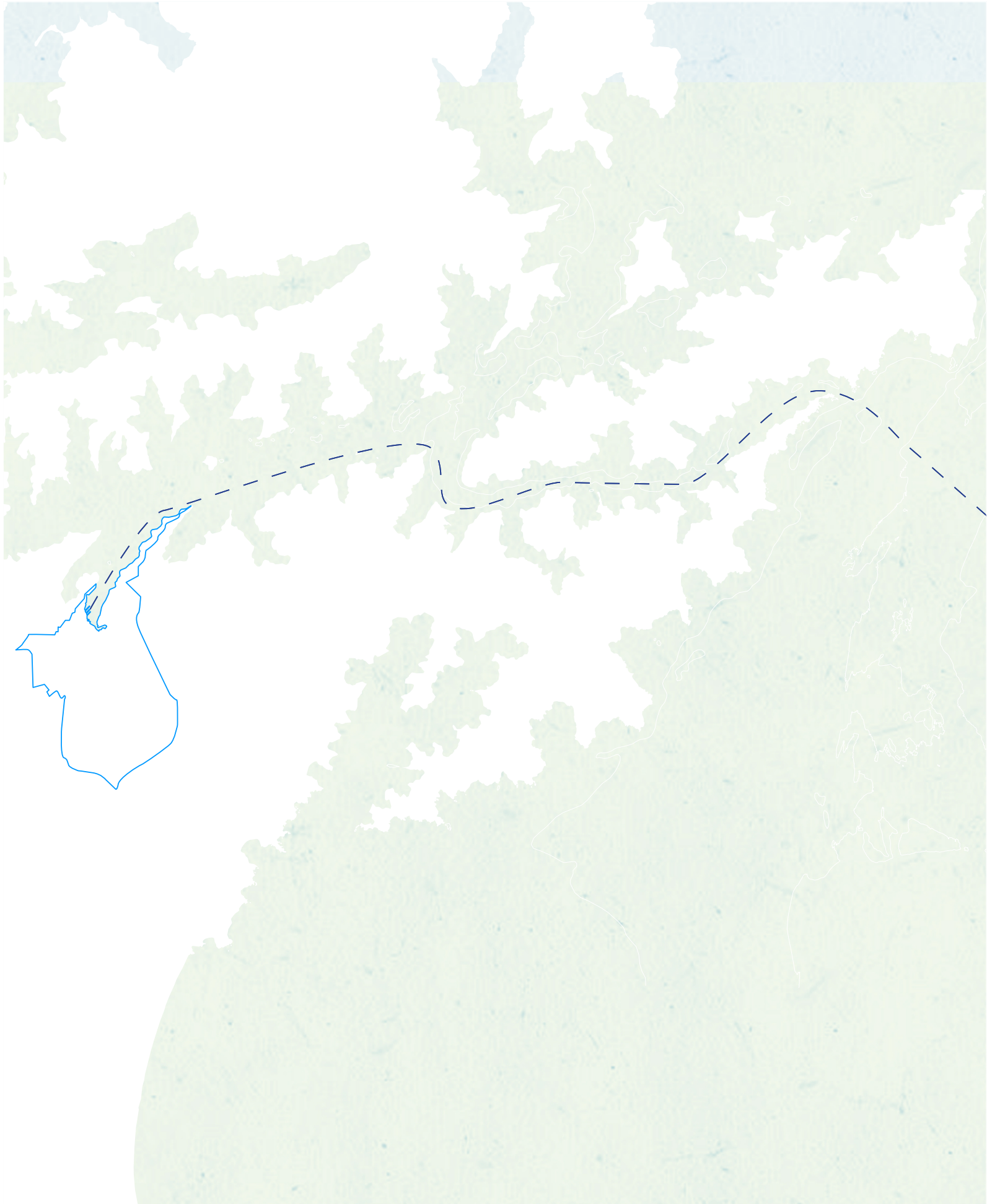


People ages 65+



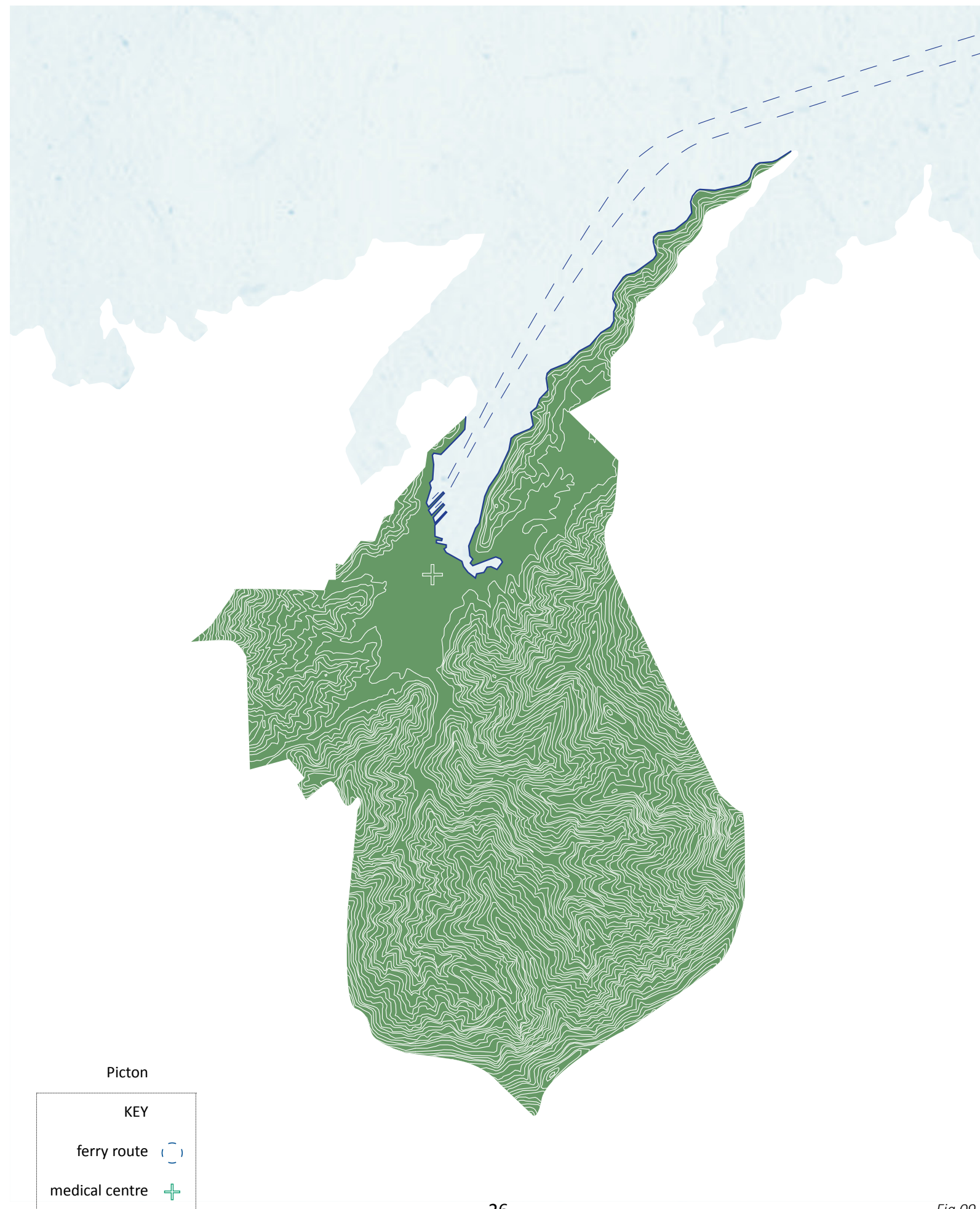
People aged 65+ residing in close proximity to water





Wellington to Picton
ferry route





Clifford Bay Ferry Re-Route 2013

Picton's Port Marlborough has always provided a vital transportation link between the north and south islands of New Zealand. Because of this the town has developed into a place of transition, with hundreds of travellers passing through each day. However in 2013 the New Zealand Ministry of Transport had considered moving the terminal to Clifford Bay 200km south of its existing site. It is unclear to predict what this would mean for the town; however it is safe to say that its social fabric would change significantly. Picton would no longer hold its unique ephemeral sense of place. Fortunately the re-route was dismissed, for now, and instead the existing terminal has been upgraded. This thesis proposes to solidify the ports resilience through both a public and residential design aiming to facilitate cross generational exchange, strengthened by the constant influx of travellers.

Picton, Marlborough

A majority of the areas are located in close proximity to water as well as areas of longer sunlight (see fig. 06). These elements provide a base for site selection; however the most important factor in the decision is transportation. Unlike any of the other regions, Picton in Marlborough is the only area located along New Zealand's main State Highway 1 as well as being directly connected to Wellington capital through a 3 ½ hour ride on a variety of ferries leaving daily. A Picton site has the potential of providing occupants with the lifestyle opportunities of coastal living in a civic setting which would otherwise be unobtainable in a denser area such as Wellington. Additionally the ferry connection would continue to provide an accessible and affordable wider connection to the city.

Waikawa Road

A similar transportation focused approach is also taken in selecting the Shelley Beach end of Waikawa Road for the specific site location. It is positioned at the end of Picton's accessible Foreshore walkway, which starts at the ferry terminal and ends at Shelly beach, connecting the CBD with the Victoria Domain. The proximity of other attractions, both civic and natural, also influenced the site selection (see fig. 11).

Fig 10



ATTRACTIONS

bus depot	1
ferry terminal	2
Picton CBD walkway	3
visitor information centre	4
playground	5
Four Square	6
library	7
supermarket	8
Marina Cove Retirement Village	9
dog park	10
Victoria Domain trails	11
Shelly Beach	12

Fig 11

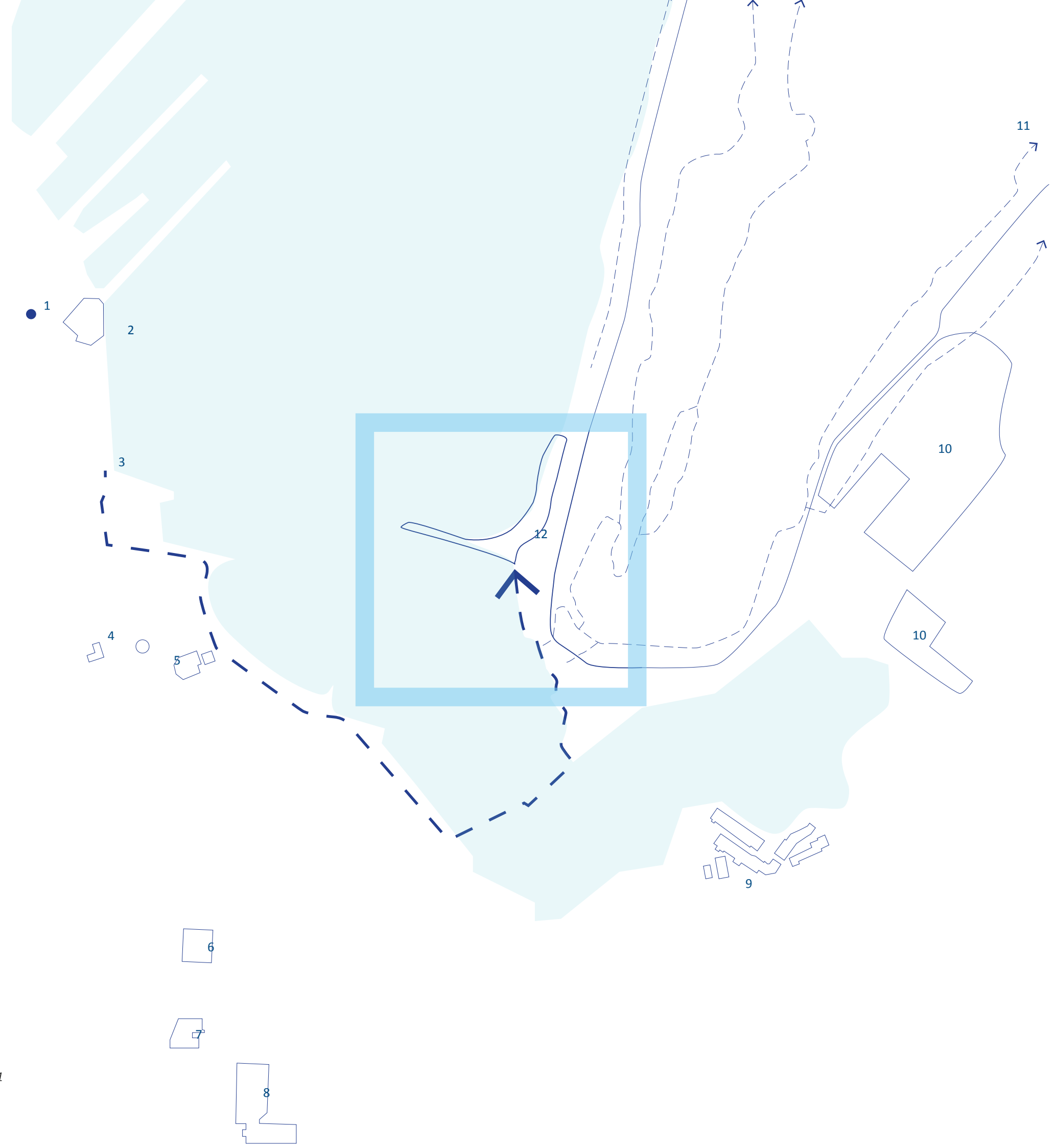




Fig 12

SITE REFLECTION

The ferry connection to Wellington is what sets Picton apart from the other regions. It creates an accessible link between a low density town setting and a high density urban one allowing a variety of age groups to travel between these two places. The occupants are able to take trips over for work, leisure or to visit family and friends while still benefiting from their highly public coastal location. However a compromise is made since Marlborough has a lower under 15 population count compared to other regions¹ meaning that the influx of young professionals using the work spaces is uncertain. Therefore this would become a central design objective, to create an architecture that would engage with people of all ages, reinforcing Picton as a progressive town and reassuring its validity in being the most suitable place to link the two islands of New Zealand.

¹ Results from Statistics New Zealand's 2013 census indicate that the under 15 population count in the Marlborough Region is lower than several other regions with a high percentage of people 65 and over.



INTRODUCTION

This section describes and analyses international examples of aged care design which provide their own unique programmatic approach of mediating between public and private space. Each case study is focused on a different concept of soft boundaries, distortion, scale hierarchy and diversity. They are then analysed in terms of their level of social integration between areas. The majority of elements in the various programs are used to influence the preparatory design outcome, resulting in a variety of low to medium density houses that vary in levels of accessibility and occupation. It is important to note that the influence of these case studies is strictly programmatic and not aesthetic. The case studies in chapter two explore this further.

ANALYSIS PROCESS

INFLUENCE

Space Syntax Program Analysis

Ideas are in Things: an application of the space syntax method to discovering house genotypes

Space Syntax is an analytical architectural theory aimed to formulate, generate and evaluate program design (Hillier, Hanson, & Graham, 1987). The analysis comprises of four main measures, one of which, integration, is the focus of this study. This measure is able to determine the necessary connections and disconnections needed to achieve the desired level of social integration and segregation between public, semi-public, semi-private and private areas. A high integration measure would class areas as highly social whereas a low measure would be more private (Klarqvist, 2015).

The methodology of this analysis is based on the article *Ideas are in Things: an application of the space syntax method to discovering house genotypes* where, founders of the theory, Bill Hillier and Julienne Hanson demonstrate a way of analysing program at a residential scale. In the article, 17 floor plans are studied through two levels of analysis that distinguish the interior and exterior integration. This approach seems appropriate in prompting solutions to the research question as it is able to measure the level of social interaction between both residential and civic programs.

DIGITAL PROCESS

Syntatic Grasshopper Plugin

Syntatic is a Grasshopper plugin that aims to practically implement this theory through an immediate design response. This plugin is mainly used for its translation of the integration measure into a single ranked graph that is able to respond immediately to programmatic changes. The syntactic integration analysis is first used to analyse the existing conditions within international examples, to determine a common genotype. This is then reflected on in regards to local conditions resulting in several design objectives.

SOFT BOUNDARIES

de Rokade / Arons en Gelauff Architecten
The Netherlands
2006

De Rokade is a hybrid architecture made up of generously sized accessible apartments, a public space which includes a kindergarten and a discretely connected medical facility. Each of these programs has its own separate identity aiming to create solutions to a variety of retirement stigmas. Arons en Gelauff explains why keeping these areas distinct was important to the brief, “It’s all about offering options while preserving autonomy instead of prescribing a nursing home lifestyle” (Arons & Gelauff, 2010). The design ensures that occupants have all of the offerings of a nursing home if they need it but also the option to disregard these facilities completely and solely use the apartments in a way that is consistent with their previous home. To achieve this the residential design is skillfully generous, the apartments are located within a cross form 74 storey tower with 4 separate dwellings per floor. The innovative form allows each unit to face into itself at a right angle, creating a feeling of openness and privacy. The low amount of occupants per floor also adds an element of discretion and safety. With less adjacent neighbours people can choose to communicate and form relationships at a small scale within the large complex. Otherwise they can also interact with people below in the public block which contains both commercial and communal space. These two reciprocal programs aim to encourage use from both the occupants and the wider community, resulting in a design which actively prompts activity and creates a socially charged environment. In a video discussion, architect John Penton comments on his witnessed success of the place, “There

is real value in seeing a place like this as a resource. Not where something is done for people but which is an enabling resource for people do things and to contribute to the community perhaps in a way which they had never realised that they could do. How you make those barriers soft but keep people safe is one of the really big dynamic difficulties that one has to resolve” (HCAuk, 2009). Because of these soft spaces the aimed demographic of 55+ year olds can choose to move in to the apartments with no strings attached, no different, independence wise, to their previous homes. With a range of age groups the complex aims to eliminate the image of bleak and isolated retirement care and instead replace it with a desirable location that is thriving, enjoyable and convenient. Aron en Gelauff comments on their ambitions, “The ageing couple moving out should be able to boast to their left-behind neighbours about the beautiful smaller apartment where they have a fantastic view, a concierge and a bus stop in front of the door. Their children should envy parents for their well illuminated condo in the town centre where an excellent life-style is within reach” (Arons & Gelauff, 2010).

De Rokade successfully creates an architecture that prompts social exchange. A variety of different facilities are specifically organised to allow people to lead a range of independent lifestyles with the added proximity to both necessary and leisurely services. Soft and hard boundaries are carefully positioned to create both security and freedom in predetermined areas. This social focus on program creates an

existing example of how architecture could further prompt cross generational exchange. It is important to note that although the design is proving to be highly successful in the Netherlands, its scale and form would not necessarily suit a Picton, New Zealand context. In the video discussion Antony Hamilton, an English retirement resident, comments on the suitability of the design in the Netherlands in comparison to the United Kingdom, “This is purely and simply from the point of view from a user, I don’t think that this type of complex would work in the UK . . . generally people in the UK live a different type of lifestyle to the people in Holland” (HCAuk, 2009). However rather than disregarding the program of de Rokade as a case study, its layout is instead fragmented and recombined. Elements such as the distinctness of form are carried through but reduced to a lower height that is sympathetic to the Picton skyline. The tunnel that connects the apartments to the medical facility is also translated into a wide accessible path from the Wikawakawa Road site to the Picton Medical centre. Similarly the 4 per floor unit layout which is entered by lift is now a series of dwellings accessed by pathways that begin at the port and carry on up into the reserve.

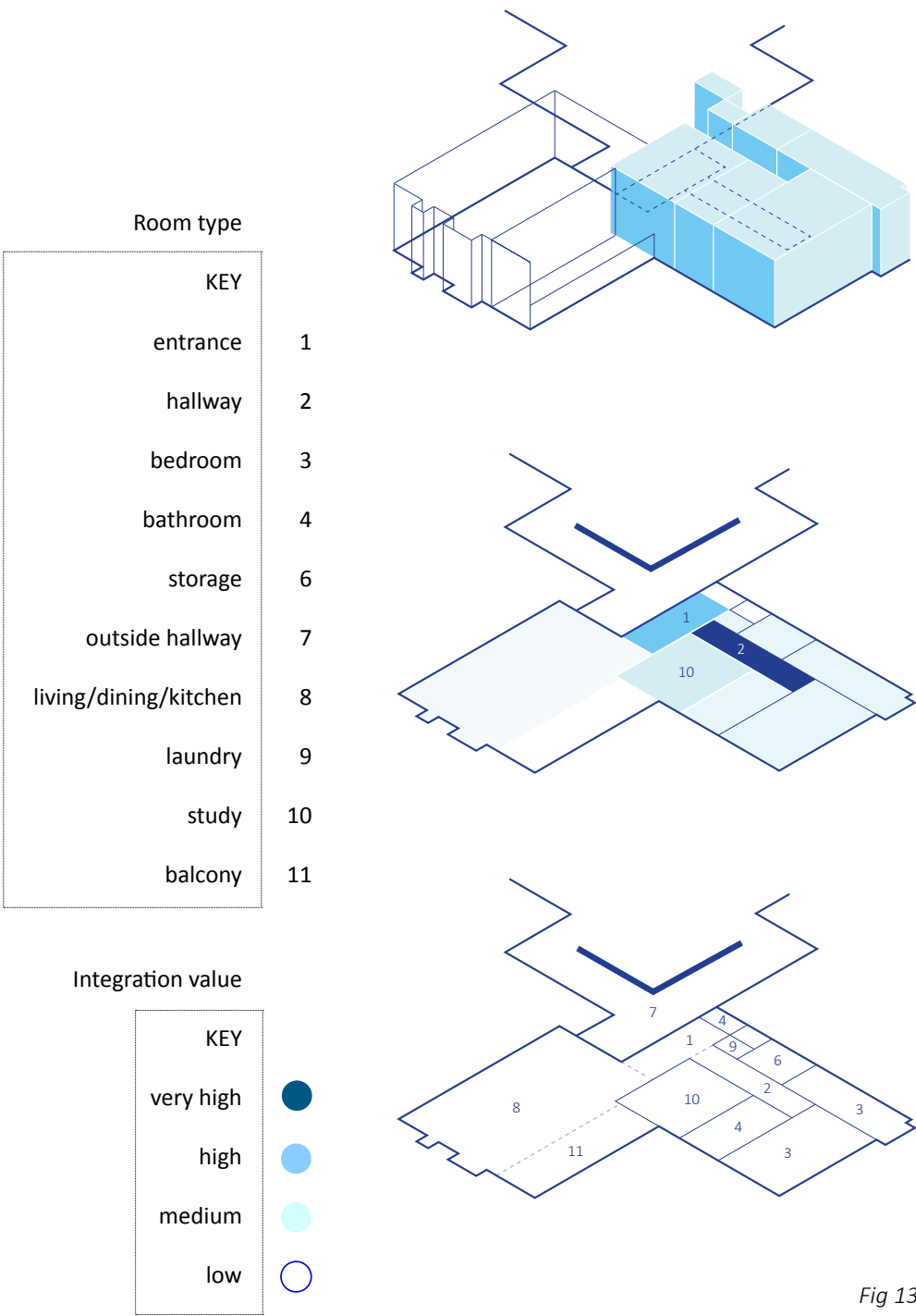
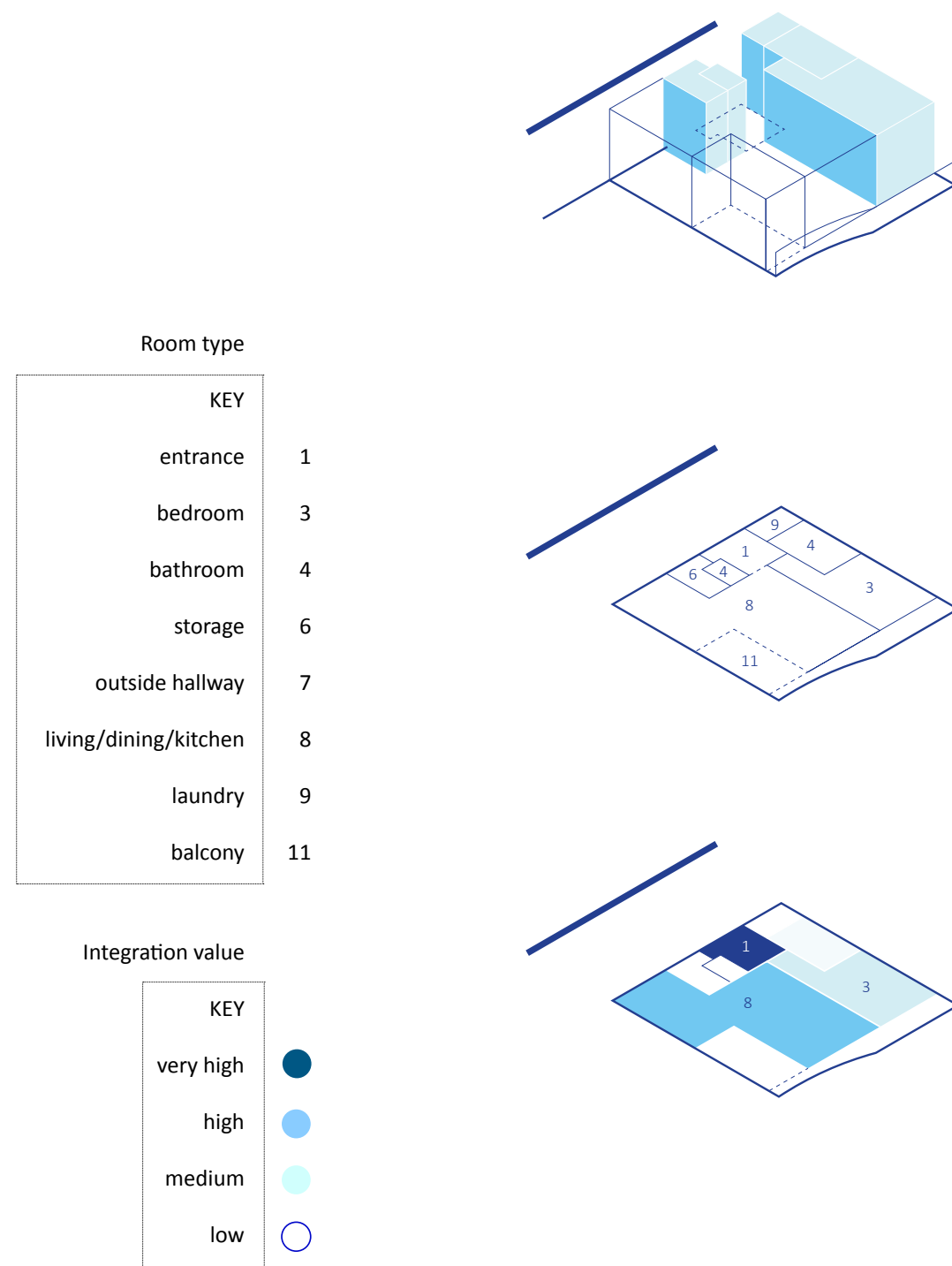


Fig 13



CAMOUFLAGE

de Plussenburg / Arons en Gelauff
 Architecten
 The Netherlands
 2007

De Plussenburg is a hybrid of independent living apartments and a cleverly disguised medical facility. Lourie Harrison explains their approach in her article *The Plussenburgh*, “Arons en Gelauff’s strategy of “stealth-care architecture” involves hiding the visual and programmatic markers of aging: an inconspicuous elevator connects the new residence to the medical facility and accommodates continuous and specialised medical attention for all residents” (92). Architects Arons en Gelauff explain that this deception is key to the design’s success with a focus on occupying a generation in denial of aging and in need of a low maintenance, urban location that has the added, but not necessary, benefit of an adjacent medical facility. The Plussenburgh provides all three through an actively unconventional approach. Unlike the accessible cement and brick buildings surrounding it the structure rises 50m high and boasts a total of 200 different types of reds, oranges and pinks (Harrison, 2013). The architects stress the importance of the details in their endeavour, “If we want to cater for ‘young old’, we have to offer them beautiful buildings with possibilities for customisation instead of last resorts” (Arons & Gelauff, 2010). The design implements this philosophy in three main ways. The first and the most striking is the brightly coloured glass selected to enclose the medical facility. The second is the wave like balconies of each independent unit, fitted with twisted steel balustrades that emphasise a rhythm between levels and add a unique aesthetic. The third and less apparent is the large amount of space prescribed to certain

areas. In particular hallways and bathrooms are well over the minimum required area to cater for future accessibility.

The conclusions drawn from the case study reveal the benefits of disguising accessibility through form and materiality. However, there is little architectural evidence showing relationships between the occupants themselves. Connections between both the adjacent Plussenburgh units and the existing accessible units below are approached through a standard modernist philosophy. By lifting the apartments above the ground two separate structures are created. Because of this, residency location is determined by health status, creating an unnecessary hierarchy between the occupants themselves as well as the wider public below. This thesis stresses the importance of both personal and urban relationships within the aging process. Rather than focusing on the visual opinion the architecture receives, a successful aging design should also be focussed on creating interactions and closer connections between the residents themselves. The use of materiality to disguise and create character is a feature that could be developed further to create these relationships. Specifically the use of colour and texture within the Plussenburgh effectively eliminates the retirement décor stereotype and is incorporated into the developed design of this thesis. Elements of the residential units take on this aesthetic to create desirable all age inclusive dwellings, undistinguished by their level of accessibility.

Fig 14

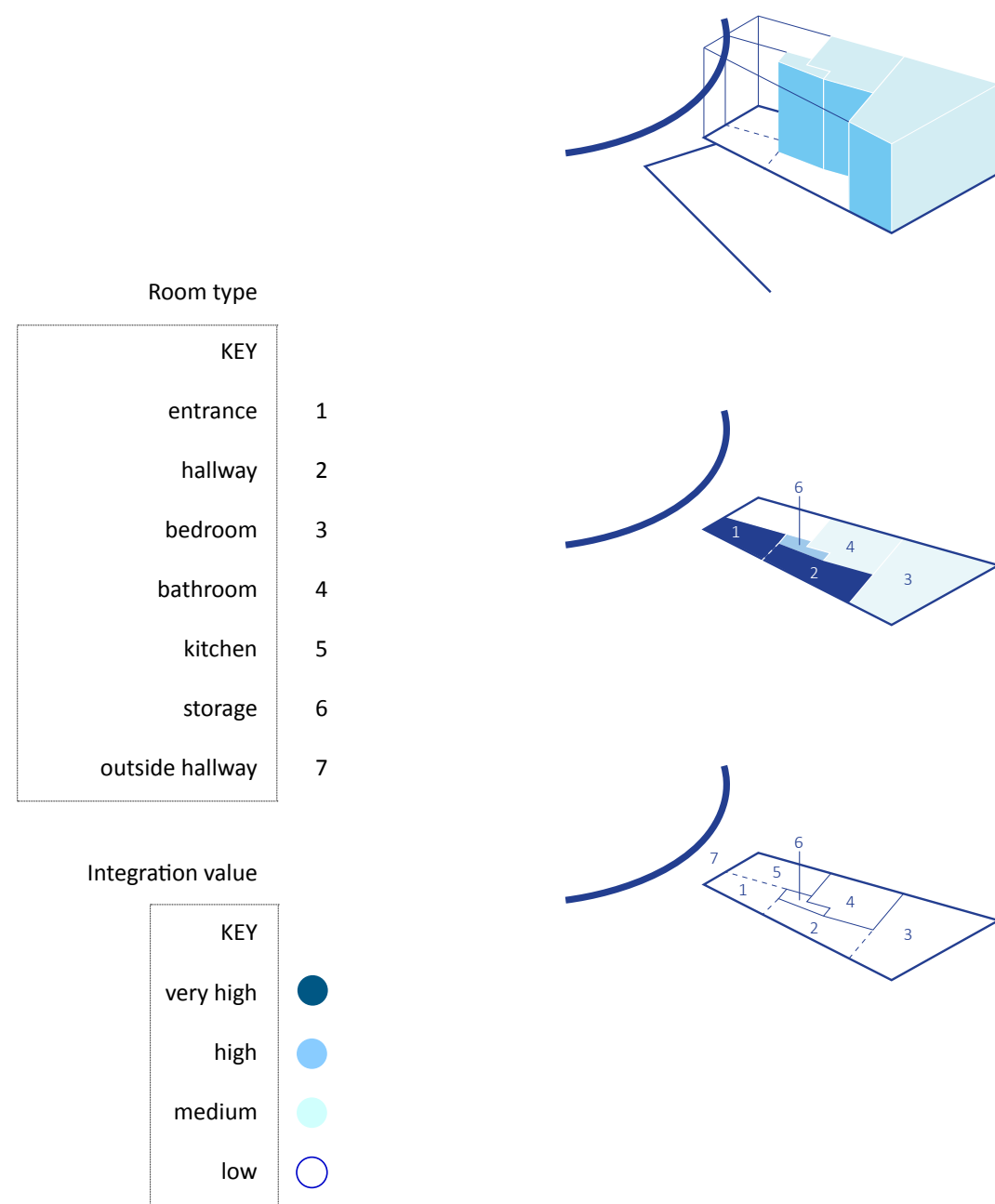


Fig 15

SCALE HIERARCHY

New Carver Apartments / Michael Maltzan
Architecture
Los Angeles
2009

The New Carver Apartments are an affordable housing solution that is targeted at, but not exclusive to, housing the homeless and disabled elderly. The design focuses on reintegrating its disadvantaged occupants back into the community through a stronger sense of security and identity. To achieve this, through its tight budget, the residential units are kept to a minimal footprint in exchange for an enhanced community space. Mimi Zeiger comments on this approach in her article *New Carver Apartments*, “Individual apartments are efficient: At 304 square feet, they’re monastic studios with small kitchens – so residents rely on the shared space” (2). This creates actively prompted social interactions where the communal spaces become extensions of the home. These areas are also visually and often physically connected to the street, creating an opportunity for the public to form an internal understanding of the architecture and its occupants. The project architect, Micheal Maltzan, comments on his method in Zeiger’s article “It is important that people see that [the residents] are part of the greater community – it’s not to put them on display but to see them as real” (2). The architecture and its occupants choose to evade the stereotype by putting an end to their concealment and camouflage. Instead, through architectural form and program a bold statement is made that exerts community and stability, resulting in an enhanced urban fabric.

The New Carver apartments challenge the brief by bringing together a variety of different homeless demographics into a

united communal group that strives for public acceptance. This thesis shares a similar social desire of individual and urban inclusion, by using the building’s innovative approach to program hierarchy. By reducing the scale of the private units and enhancing the quality of the shared spaces the residents are encouraged to leave their isolated dwellings and interact with their neighbours. This can be done either actively in the communal seating areas or passively through the kitchen and laundry. Residents are given a variety of activity choices making interactions fluid and comfortable. In the article *Designing for a Lifetime in New York and Other US Cities* the authors summarise the specific way that this case study is useful in the endeavoured exchange central to this thesis, “By incorporating communal spaces – kitchens, dining areas, gathering spaces and gardens – into the Carver’s raised form, as well as medical and social service support facilities into the plinth beneath, the project encourages its residents to reconnect not only with each other, but also with the world outside its doors” (Maltz, Hunter, Cohen, & Wright, 2014). This strategy intends to prompt retirees out of their individual dwellings and into the surrounding communal space, creating potential situations for cross generational exchange and an increase of physical activity. However unlike the Carver apartments the target market of this research is all age and status inclusive. This broad net increases the interaction spectrum but also creates issues of privacy, safety and ownership, which will need to be explored further.

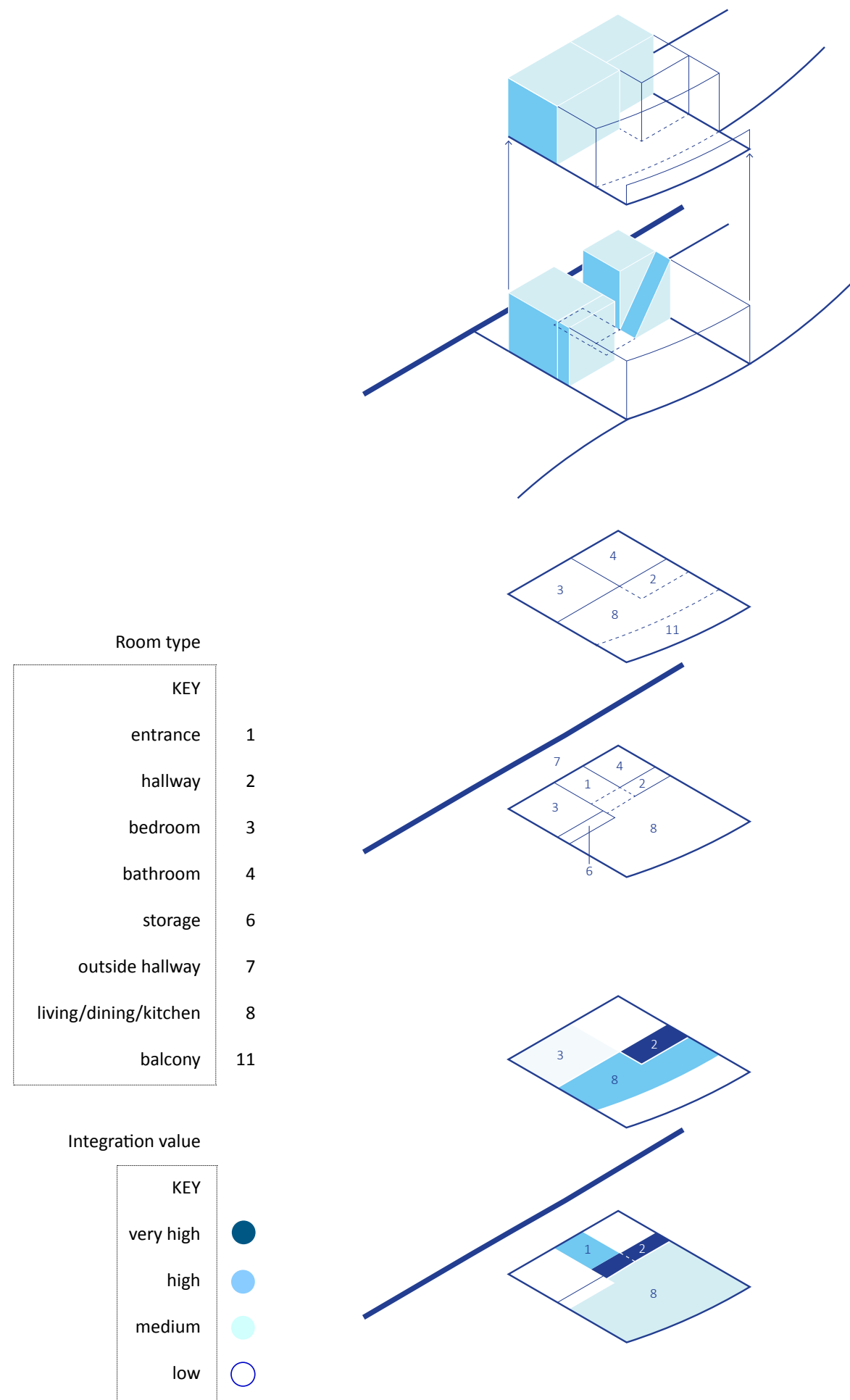


Fig 16

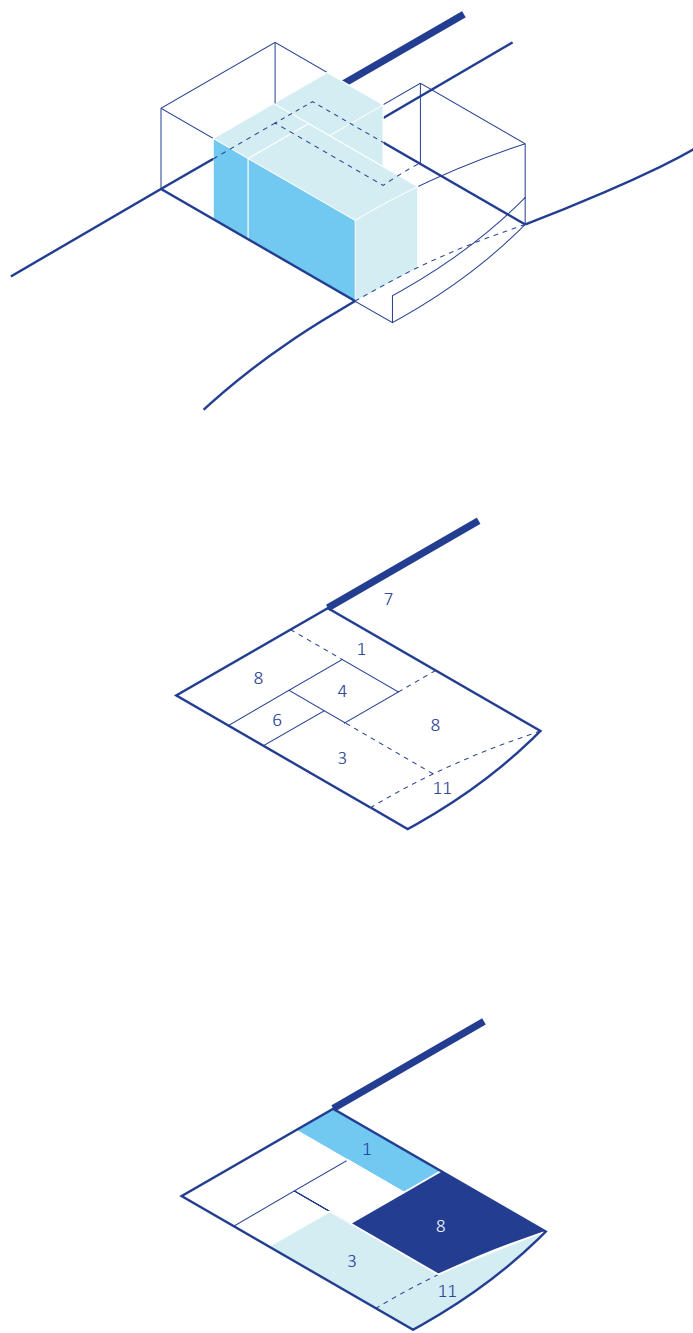
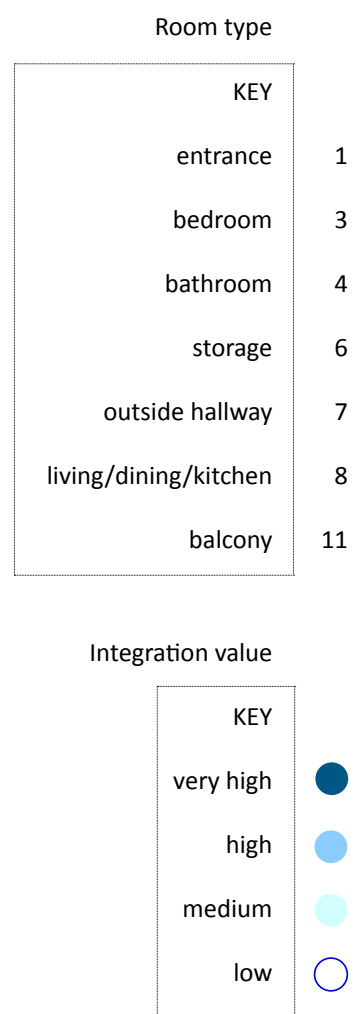
DIVERSITY

Beginenhof / Barbara Brakenhoff
Berlin
2007

Beginenhof is an apartment block targeted at housing single aging women while also promoting their individuality and social interaction. The apartments consist of three unit typologies which are determined by elevation: courtyard units on the ground floor, two storey terraces on top and standard units in between. Almost no two units are the same, each with a slightly variable configuration. Similarly to de Rokade, each apartment is also clustered into a group of four. In the book section *Beginenhof* Barbara Brakenhoff explains why, “The spatial structure is designed to facilitate and promote communication and social interaction: on each of the floors, four apartments are accessed via a joint balcony area which can be used and personalised by the group” (Brakenhoff, 2009). This common space becomes a shared entity that these neighbours can inhabit, creating smaller scale relationships within the larger complex.

Beginenhof is made up of independent living apartments intended for single aging females. However some of the units have purposefully been designed for more than one person to inhabit to promote family occupation. This program method does encourage multigenerational residence, however the ratio of larger apartments to single accessible ones is low. This thesis argues that an equal percentage is necessary for consistent interaction and a balanced sense of ownership. The research also stresses the importance of open residence acceptance of

all demographic types, not only single females like at the Beginenhof. This way the public places which are directly connected to the residential spaces will be used comfortably, without hesitation, by the public. Figuring out how to make these spaces safe for the residents without creating solid boundaries is key to the design’s success and will need to be developed thoroughly.



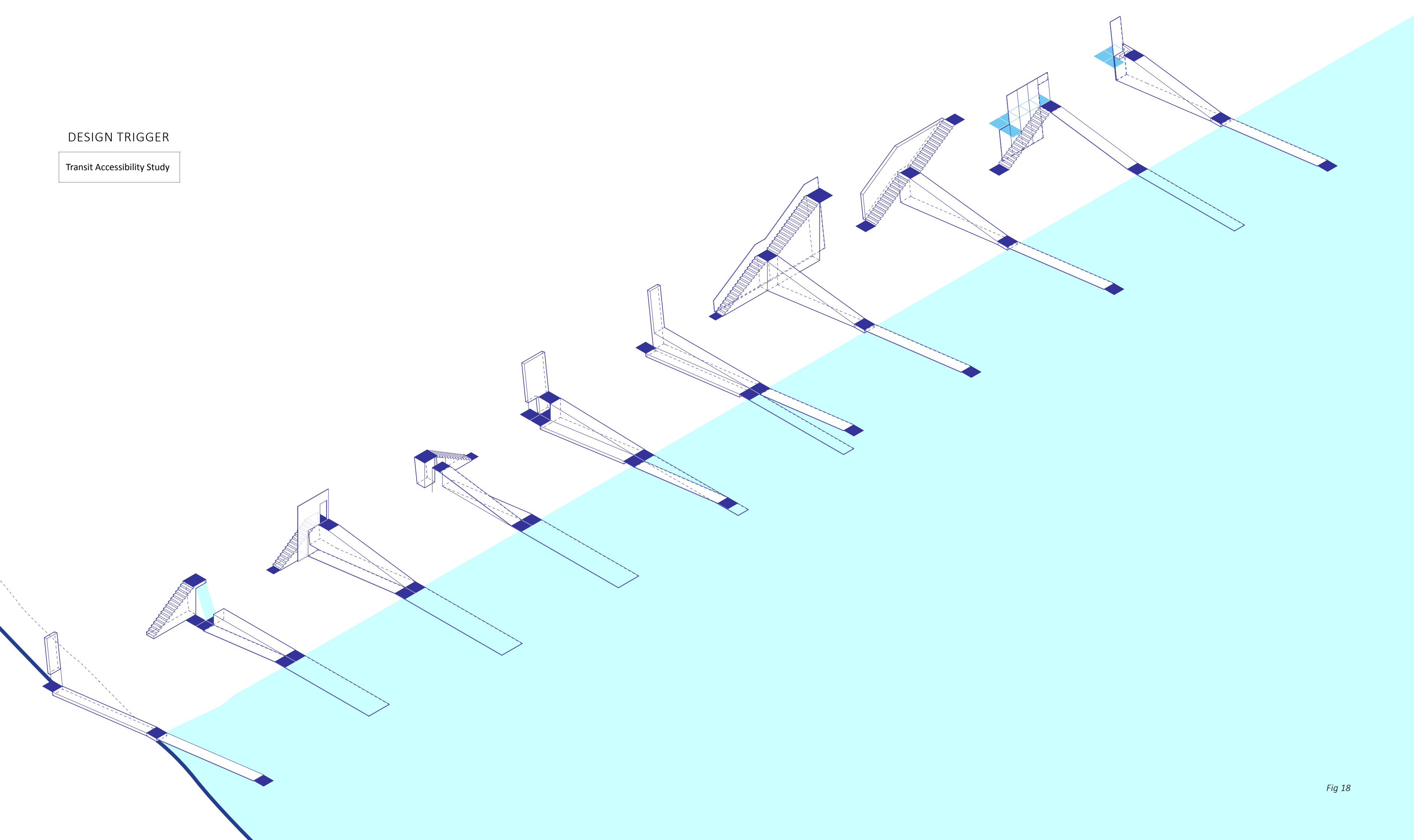
ANALYSIS OUTCOME

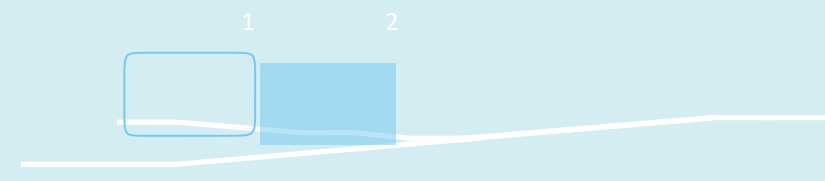
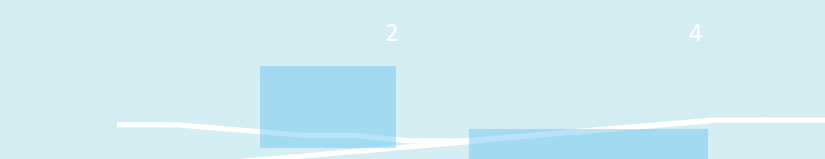
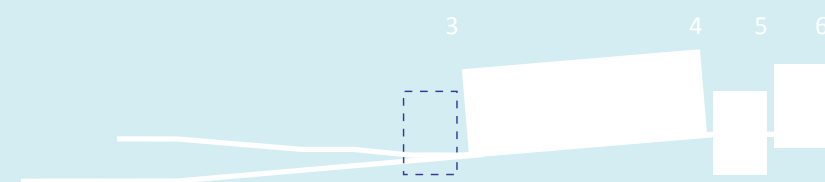
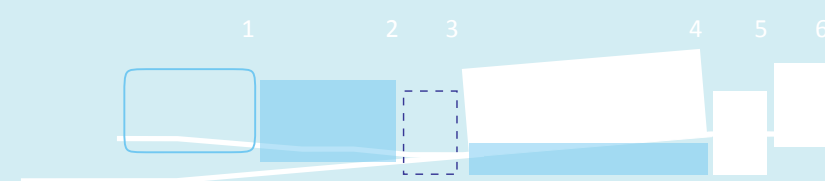
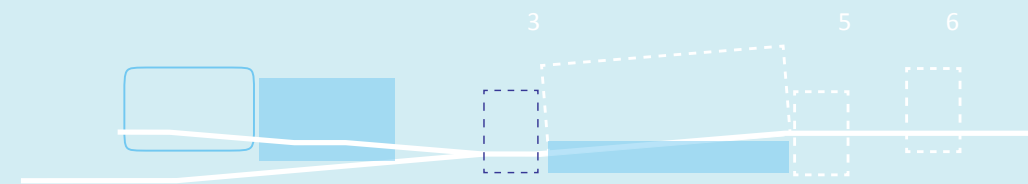
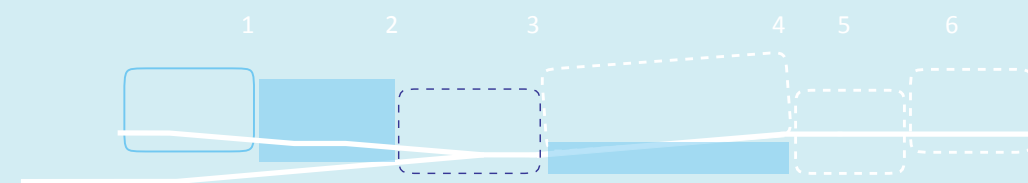
Syntatic Program Analysis

The Syntatic analysis of the case studies highlight that the highest integration value occurs in either the entrance or hallway. These areas are usually informal and are designed to transport people from one space to another. Unlike the larger traditionally social areas such as the living and dining rooms, these smaller, but frequently used, spaces are designed to a minimum access dimension. In order to enhance social interaction it is proposed that high usage transit areas should be scaled up and integrated with traditional kitchen, living and dining room typologies. In the article *Factors Predicting Retirement Community Social Space Success* Nichole M. Campbell explains a way to measure successful integration, “Findings from this mixed methods research suggested the best predictors of how well a space was liked and used were: Proximity of social space to resident daily paths of travel, sense of privacy within the space; and opportunities to actively engage with other residents and the built environment” (1). These factors justify the validity of the design objective to increase and integrate areas of travel with areas of regular social behaviour. However the design would need to develop an approach to create spaces that feel secure and private.

DESIGN TRIGGER

Transit Accessibility Study





DESIGN OUTCOME

*Reconsidering Inside & Outside
Public & Private*

The aim to prompt cross generational exchange and physical activity is dependent on the reconsideration of public and private space. Like the high density projects reviewed reducing sedentary behaviour is central to this inquiry, even more so because of the lower density. To mediate this, appropriate domestic areas are reduced in scale and moved out into more public spaces. The success of the public and private spaces is determined by the conclusions made from the project review and Syntatic analysis.

MEASURES OF SUCCESS

- 1 Scale hierarchy of communal space over private sedentary space
- 2 Soft Boundaries integrating kitchen, living and dining areas within high transit pathways to increase chance interaction
- 3 Distorting the age stereotype to encourage multi generation residency, through a diversity of residential scale and accessibility
- 4 Balanced ratio of civic to residential space to encourage informal public behaviour
- 5 Sense of belonging within both the public and private spaces

Domestic Areas KEY	
Reduced in scale & relocated	
Lounge	3
Dining	5
Outdoor	6
Service areas to stay the same	
Bathroom	2
Kitchen	4
Private Areas that can't be relocated	
Bedroom	1
Bathroom	2

Fig 19



METHOD REFLECTION

The use of digital space as an analysis tool creates an understanding of where New Zealand's aging population is situated. It also provides the ability to analyse the programs of existing international projects which demonstrate a variety of influential features. The results produced a design focus on enhancing in between travel spaces, to increase cross generational exchange in an informal and comfortable way. This conclusion triggered a transit design response which investigated accessibility, connectivity and privacy (see fig. 1.2). Although the formal language is insightful, in this case, the use of digital design tools hinders the creative design process. To create a new type of architecture, unique to the atmospheric and ephemeral aims of this thesis, the preliminary design is explored through the act of making.

2

Preliminary Design

Inside & Outside

INTRODUCTION
AIM
METHOD
CASE STUDIES

[INSIDE
OUTSIDE]

REFLECTION

INTRODUCTION

The program analysis investigates ways to support aging in place, by using high density case studies that demonstrate successful aspects that are parallel to the aims of this thesis. This preparatory research concludes in the design objective of fully integrating public and private space and several ways of measuring the social success of the design explorations. The fact that the chosen projects are all high in density is contradictory to the lower density Picton site. The preliminary design explorations aim to develop an answer to this conflict through a series of physical design tests. New case studies are introduced that demonstrate methods of translating these high density measures into a new design suited to its smaller scale.

AIM

Through the act of making, the preliminary design tests aim to free the traditional boundaries of public and private architecture by challenging the perception and use of space. Through physical modelling the program design objectives develop through a creative process, free from digital influence. This aims to create a design focus on the atmospheric and ephemeral effect a space has on social and physical behaviour.

METHOD

The preliminary design explorations aim to re-construct the relationship between inside, residential, space and outside, public space. This is achieved through a physical model making process influenced by theory and built example. Initially Gaston Bachelard's chapter *The Dialects of Inside and Outside* in his book *The Poetics of Space* provides the foundation where he argues that the traditional solidity of interior space and vastness of exterior space is misguided and should instead be reversed. This mirrored theory provides a rich platform for shaping design solutions to the preparatory questions. The explorations are split into two formal languages of vast interior and concrete exterior space which is developed alongside the architectural examples. Through the process of making, the spaces are fragmented and then recombined, eventually crossing over through discovered adjacencies.

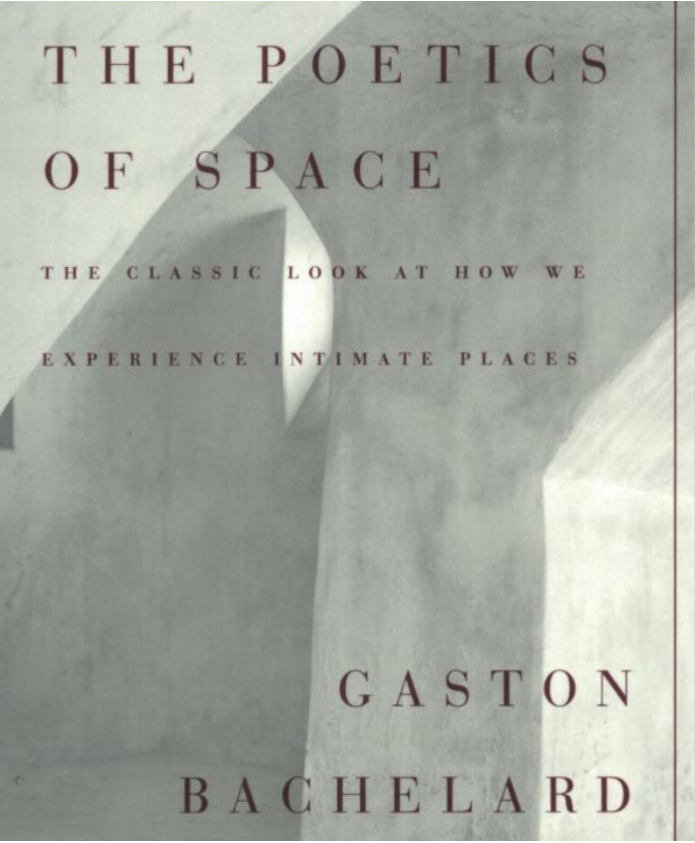


Fig 21

INFLUENCE

The Dialects of Inside and Outside
Gaston Bachelard
1958

The book *The Poetics of Space* by Gaston Bachelard illustrates a poetic approach to describe, analyse and evaluate architecture. This research focuses on the section *The Dialects of Inside and Outside* which directs a method of breaking down the traditional barriers between the interior, residential and exterior, communal space. The text was initially written in 1958 but for the purpose of this research, it is considered appropriate as its content is timeless and the influence provides an opportunity to strengthen the design objectives.

The Dialects of Inside and Outside constructs a general argument that the existing conception of defined interior and open exterior space should be restructured. The author elaborates on the claustrophobic unease that is felt inside, as opposed to the immense dizziness felt outside. Instead he suggests that, to free up possibilities, the roles should be reversed, resulting in an effect where, “Intimate space loses its clarity, while exterior space loses its void, void being the raw possibility of being” (218). By flipping the dialect the spaces begin to overlap and create opportunities for something new. Bachelard concludes on the benefits that can be gained when flipping the dialect, “In this ambiguous space, the mind has lost its geometrical homeland and the spirit is drifting” (218).

This reversal frees the program of preconception and restraint, allowing the design process to challenge the way space is perceived. The chapter also provides

a series of antonyms: clarity and void, certainty and distinctness, claustrophobia and agoraphobia. These opposing definitions fuel design triggers, adding definition to the interior and exterior objectives of distinctness and integration. This results in a residential space that adapts qualities of its surrounding exterior, creating a sense of being outside within certain areas of the home. Residents are prompted to exit their interior into certain, clearly defined, public space that aims to attract both tenants and the public equally, through its elimination of agoraphobic space.

The Dialects of Inside and Outside is able to direct the design development of this research with a poetic influence, aggravating the justified social objectives set by the preparatory analysis. A rigorous model making process is applied in order to satisfy both physical and digital sides of the methodology. Once a sense of atmosphere and ephemeral space is realised the process depletes and switches back to digital modelling for 1:1 scale occupancy.



Fig 22

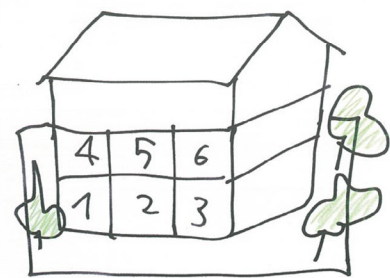
Sejima Wing Kitagata Apartments /
Kazuyo Sejima
Japan
2001

+

Moriyama House / Ryue Nishizawa
Japan
2005

The Sejima Wing Kitagata Apartments focuses on creating soft boundaries both physically and socially within a brief constrained by public housing regulations (Sejima, 2001). The semi-transparent, narrow form aims to create a soft physical and mental boundary between the public ground level and the private residential units. Each level is bordered with an open air corridor and a number of scattered cross section perforations that provide clear views through the entire depth of each apartment. By selecting to highlight appropriate areas that require low amounts of privacy a sense of transparency and lightness is created without over exposing the residential units. In a written interview Kazuyo Sejima comments on her balance of enclosing and exposing, “This plan, with continuous corridors along each façade, means that we are trying to hide the interior, to retain some privacy. We didn’t want everything to appear on the outside” (Zaera, 2000, p.12). For additional privacy and individuality four required room types are arranged into a multitude of unpredictable apartment configurations. Sejima describes the benefits of this programmatic formation, “Here the composition of the unit gives us some privacy, because no one can understand which part belongs to any given family. This effects the elevation of the public corridor.

It’s very homogenous, as there are so many doors but no pipes or small windows, so it is not possible to tell from the outside which spaces are living, which are kitchen and so on” (Zaera, 2000, p.13). The approach not only provides privacy, it also adds a sense of community. Each unique unit is provided with multiple access ways into an open corridor that is connected to a variety of other unit types, resulting in casual social interaction among a variety of different residents. In the book section *Adjusting the Boundaries of Architecture*, David Buck summaries the social success of the design, “Instead of being the family apartment, the new module has become the individual room, giving the Kitagata a much more varied organisation. This greater flexibility – and a wonderful expression of the design’s generosity – allows the traditional and conservative notion of ‘family’ to be reinvented to include groups of friends living together or informal associations of elderly residents in a new form of extended family” (100).



The Sejima Wing apartments challenge the standard public housing brief with a long narrow structure that provides each room with a successfully balanced level of enclosure and exposure. In particular the design focus on program configuration and layers of transparency resolves issues of disconnection between the residents themselves as well as the public. The lived-in design creates a strong example of how program, structure and materiality can create an atmosphere that prompts social interaction.

To translate the apartment examples into a lower rise design, direction is taken from Kazuyo Sejima's later residential work with Ryue Nishizawa in SANAA. The Moriyama House in particular which requires a lower height line is divided into a series of units tailored to a variety of different requirements. In the book *Houses: Kazuyo Sejima + Ryue Nishizawa, SANAA*, curator Agustín Pérez Rubio comments on the effects of separating each dwelling throughout the site, "This group of individuality proportioned buildings establishes an independent landscape and atmosphere of its own" (91). This additional case study creates a link between the high density studies and lower density reality, where the landscape of floor levels and facades are translated into a design that is closely related to the ground.

This thesis aims to achieve a similar result where both examples from the Sejima Wing and Moriyama House are translated into several design outcomes. The first is to eliminate the retirement housing stereotype by encouraging a variety of demographics. The Sejima example of freely combining unit configurations to create a complex elevation (Sejima, 2001) is implemented with an added

focus on mediating accessibility and isolation. Similarly the open plan corridors of the Sejima wing are also used as a model of reducing isolation and immobility through defined, semi-permanent, communal living, dining and working transit ways. The prediction of sedentary activity is also minimised by translating the fully exposed apartment terrace and washrooms into partially exposed living, dining and bedrooms. These areas which encourage slow behaviour are also reduced in scale and displaced into the shared outside space. This focus on social success makes the Sejima Wing apartment block an appropriate case study for the design of the inside residential space. Through example the apartment blocks pose answers to several of the design objectives summarised in the preparatory study. Once again the height and scale of the apartment block is translated onto the lower density Picton site.

Fig 23

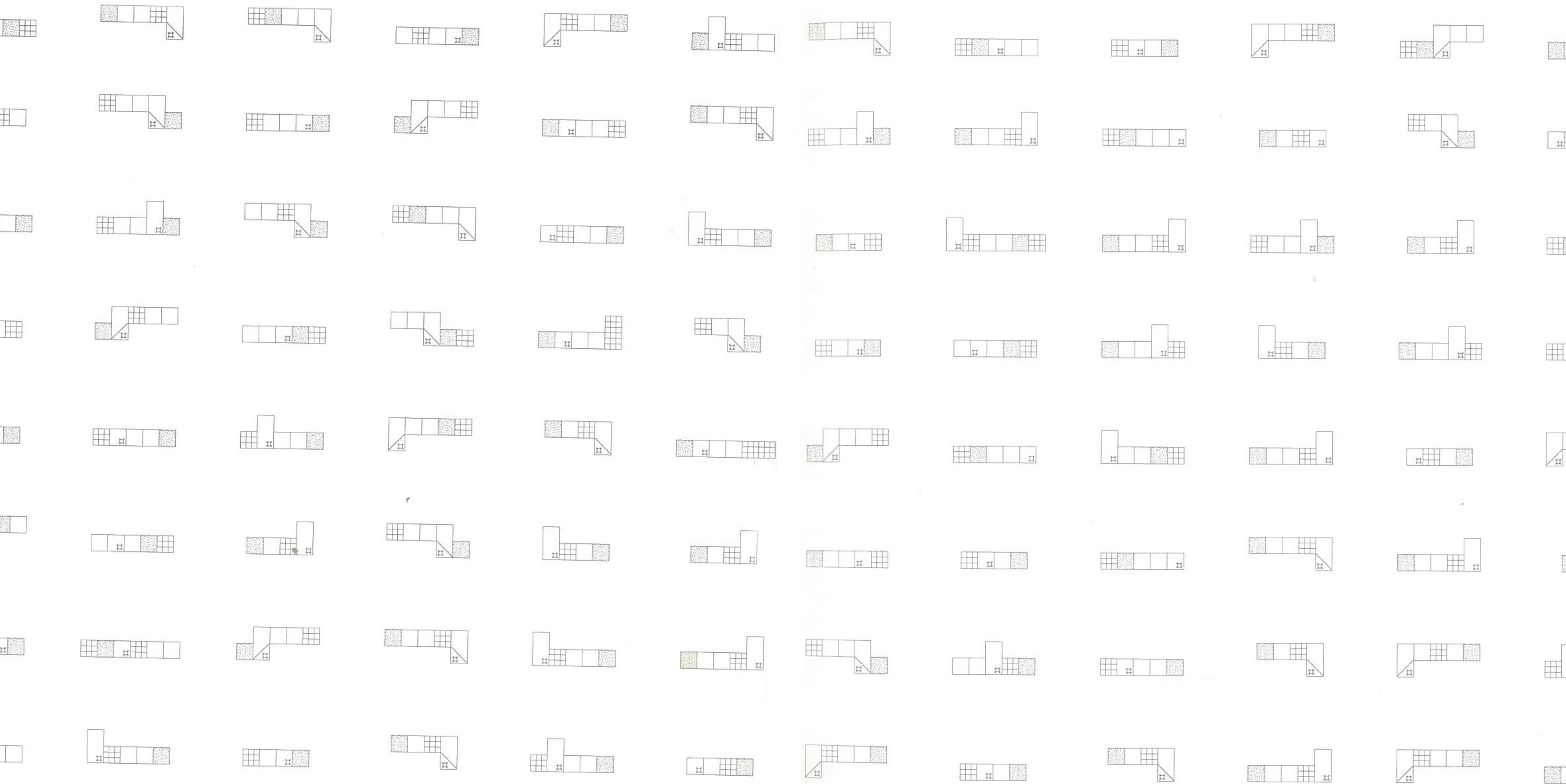


Fig 24

2012 Serpentine Pavilion /
Herzog & de Meuron and Ai Weiwei
London
2012

The 2012 Serpentine Pavilion collaboration between Herzog & de Meuron and Ai Weiwei, is a design discovered through a process of compression and overlap (Herzog, Meuron, & Ai, 2012). The approach aims to celebrate the history of the event, by revealing and constructing foundation remnants found below the allocated Serpentine Gallery space. The final design is discovered through a sequence of steps, beginning with the unearthing and digitising of past pavilion fragments. Architectural tensions and benefits are then developed through a process of selection and elimination. In the article *A Conversation*, Pierre Meuron explains their approach, “So we were interested in discovering and analysing what had been done in previous years, and in revealing those traces and using them as generating forces for our design. After having made this choice to work with those traces, it was a matter of deciding which traces to select for our final design” (96). Here Meuron describes that certain remnants are deemed more fruitful than others and given hierarchy within the final outcome. Jaques Herzog agrees by revealing two favoured elements, “We’ve used SANNA’s roof because we liked the way it explored the full extent of the site – and that somehow had to find an imprint here. Also we were very happy to find the circle of Olafur Eliasson’s pavilion because that is a symbol of coming together”(Olcayto, 2012). To secure engagement with the partially submerged design, the occupation of the space is considered through terms of access

and comfort. Director of the Serpentine Pavilions, Julia Peyton-Jones comments on the openness of the final form, “You’re going to allow people to become time travellers, to retrace their lives and provide them with the context to do that in a completely democratic space: a structure without walls” (Herzog et al., 2012 p.98). Visitors are encouraged to comfortably use the space in their own way. A soft cork landscape of steps, seats and shapes creates a hospitable space that connects with the soil. In the article *Excavating the Future*, Joseph Rykwert summarises the material qualities of the space, “That surfacing transforms the ‘dish’ into a soft and welcoming underbelly, and its character is extended to the movable stools, all made of the same friendly material”(45).

The 2012 Serpentine Pavilion is a design driven by a process of discovery. The focus is rigorously directed towards creating a historical architectural analogue that can be actively engaged with by all visitors. This required a level of detailing to ensure the place was comfortable and welcoming to a variety of people and group types. The redesigned fragments achieve this through their collective forms and material qualities. It is important to note that the pavilion design is short lived and although the space is adequately suitable to accommodate and shelter the gallery visitors, over time the soft material of the cork would deteriorate through use. Since this research aims to provide a permanent public space, elements from the pavilion example are reinterpreted

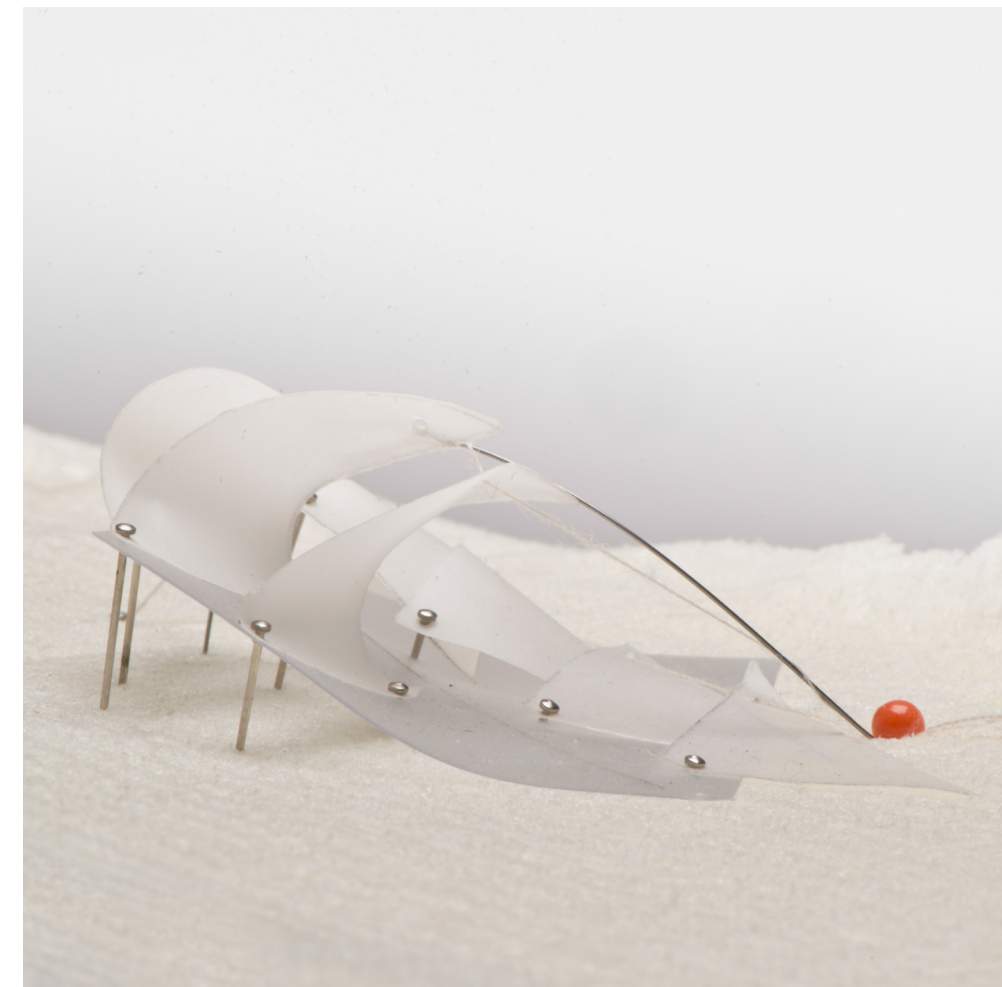
to endure residential and public use. The result is a balanced design that is both solid and flexible to create stability and variety. Rather than unearthing historical remnants the process of this research aims to reveal formal fragments of sitting and walking. Through a series of technical drawings, a selection of angles, heights and depths are discovered and compressed into an overlay of activity. Like the discovered space of the pavilion, the design of this thesis aims to create stable space that can be reconfigured to create a discovered personalised level of comfort, leaving an individual short lived mark to be discovered.

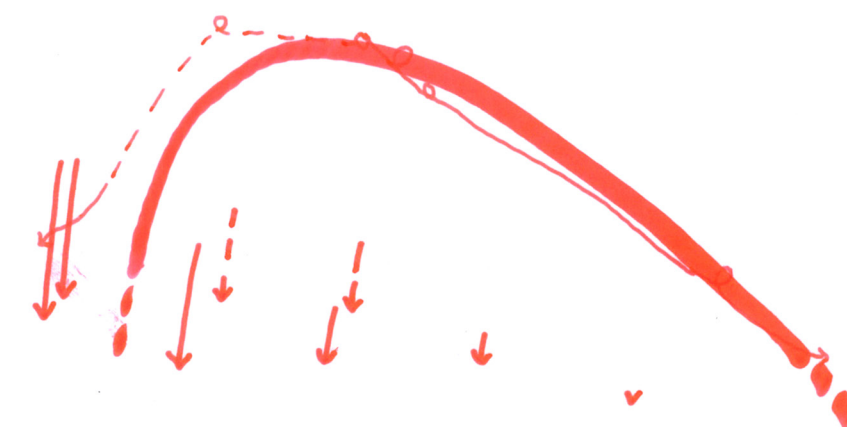
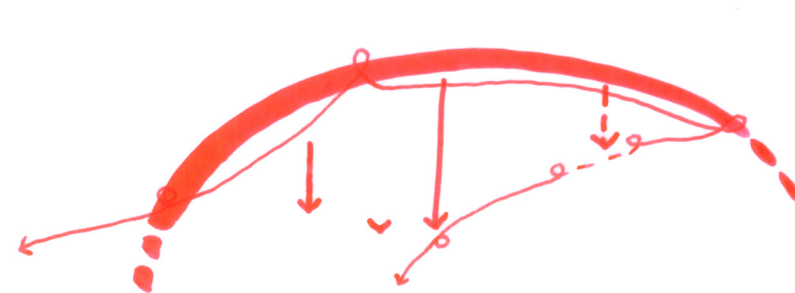


This section aims to promote cross generational exchange and physical activity through two design objectives that challenge notions of structure, form and privacy. The first aims to reduce sedentary behaviour within the home by fragmenting private internal space through anagram. The result creates a blurred boundary between the private and public, where the vastness and unpredictability of the outside infiltrates the internal logic and clarity of the inside. The second aims to eliminate the retirement housing stereotype by creating a range of visually different but similarly configured housing types. Tension creates numerous variations, through slight adjustments of force, where structure and materiality is no longer concrete. The combination of the two design outcomes conclude in a series of disguised accessible and non-accessible types with intimate spaces that have lost their clarity.

PROCESS

Tracing paper, steel rod, string and pins are used to create design tests that are altered depending on the location and intensity of the support. A minimal amount of rod and thread is used to structure the paper, aiming to create a pure tension result. This way multiple new forms are discovered depending on the direction of the tension being applied through the string.





Materials

KEY	
rod	
string	
pins	

70

Structure

KEY	
	primary
	secondary
	tertiary

71

A VARIETY OF TYPES



basic



divided



symmetrical



self supporting



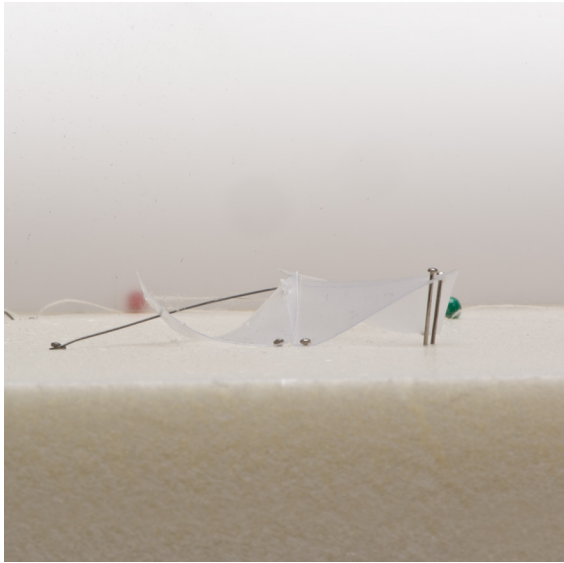
complex



multiple



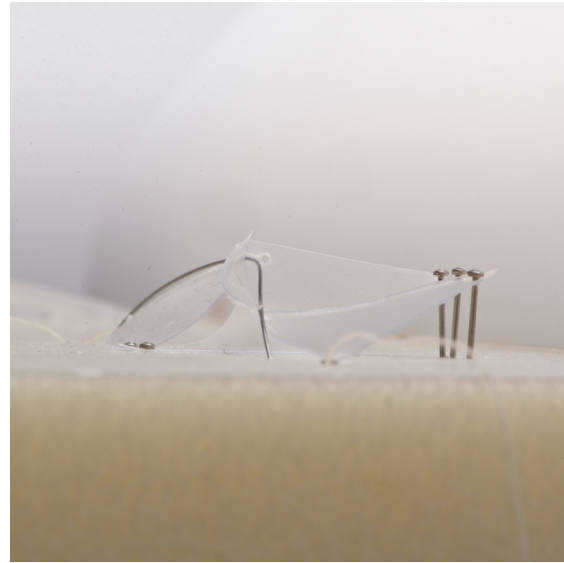
basic



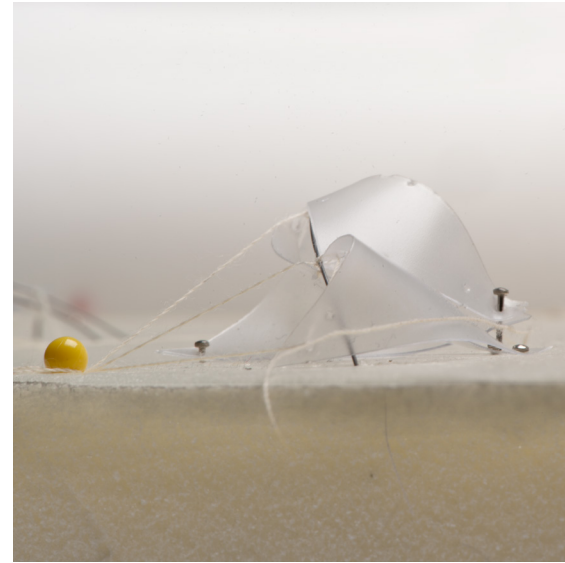
divided



symmetrical



self supporting



complex



multiple



Materials

KEY	
rod	
string	
pins	

Structure

KEY	
	primary
	secondary
	tertiary



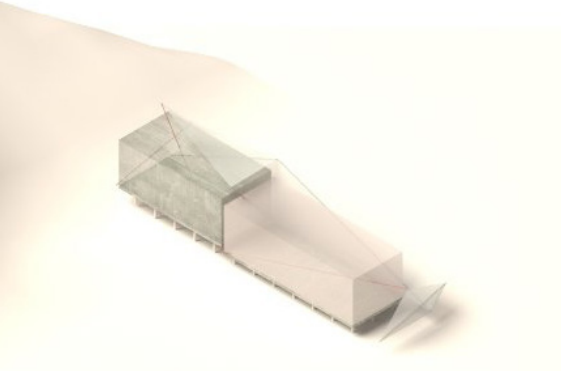
DESIGN OUTCOME

The structural force of tension is a strong factor in the development of the residential form and materiality. The most compelling exploration, labelled self-supporting, summarises the outcome, with a form almost completely controlled by tension. Here the paper grid is symmetrically positioned and manipulated through equal and opposite tension forces. This makes the tracing paper collide and bend, creating a strengthened new form, supported purely by tension. For further understanding of how these forms and structures can be occupied and built, this equilibrium effect is translated into the structural principle of tensegrity, where compression members are isolated within a net of form defining tension members. This structure has the potential of creating the same ethereal forms which integrate the vastness and unpredictability of the exterior into the residential space.

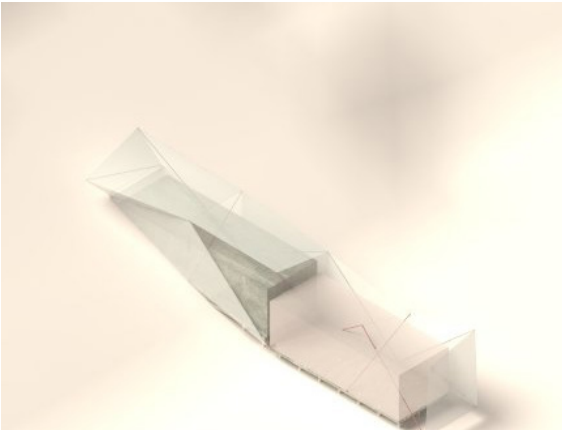
TENSEGRITY DEVELOPMENT

Digital Space is used to develop the residential form by testing a large variety of tensegrity configurations. The plugin Rhino Membrane is used to accurately and efficiently determine a variety of formations based on occupancy, accessibility and level of isolation. A strategy is discovered where smaller houses receive higher levels of tension, allowing larger amounts of the outside space to infiltrate in. As the scale increases with occupancy, less tension is applied, providing more privacy for larger groups that are predicted to be younger and more active.

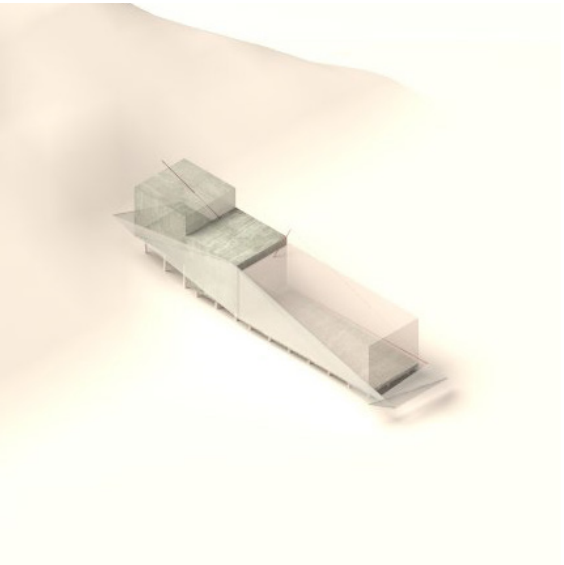
KEY
level of accessibility
occupant #



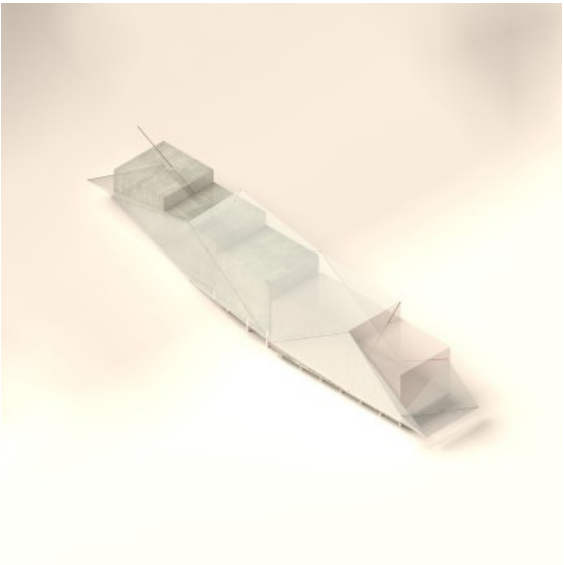
accessible
1-2



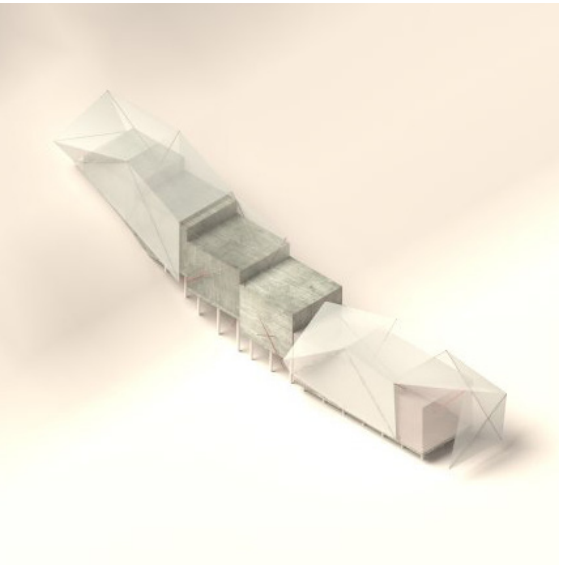
part
1-2



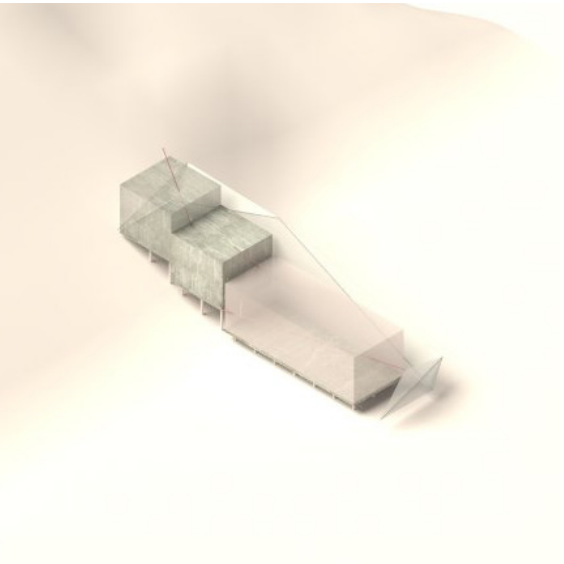
accessible
2-4



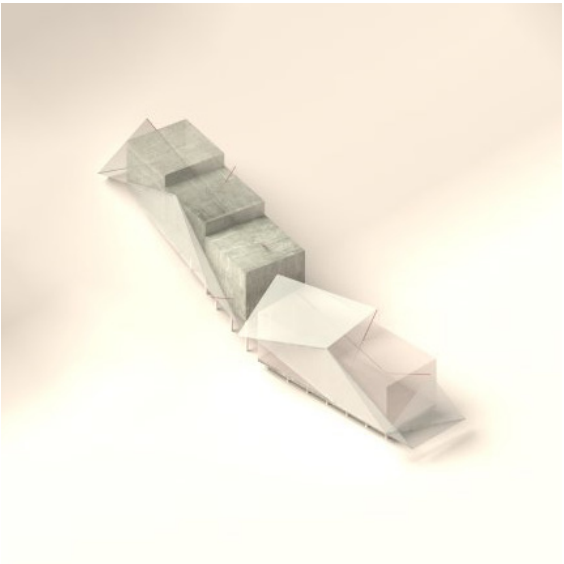
part
2-4



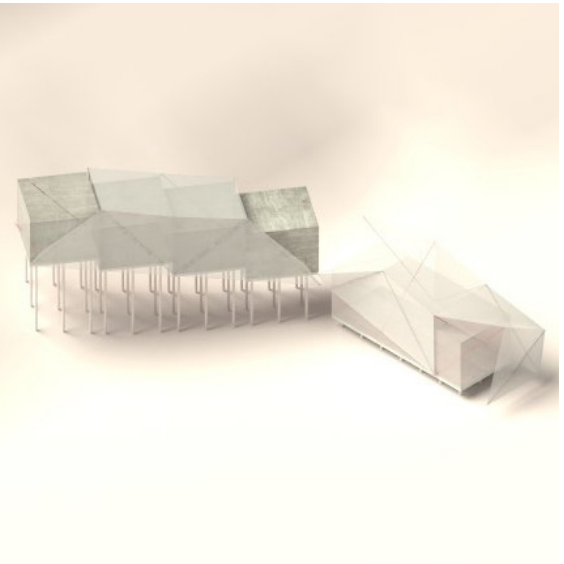
non
2-4



accessible
3-6



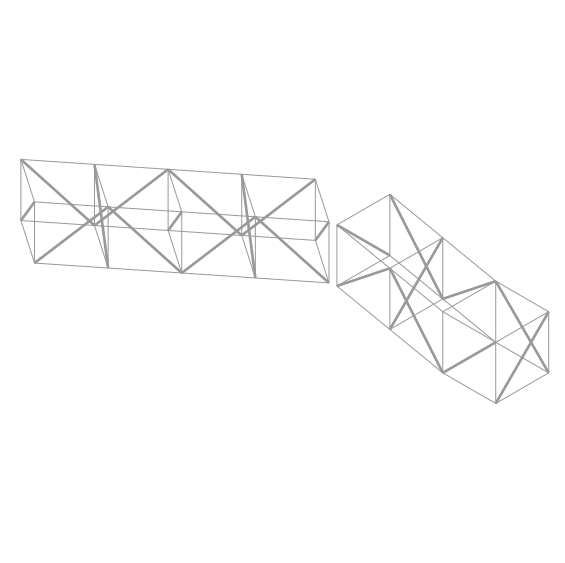
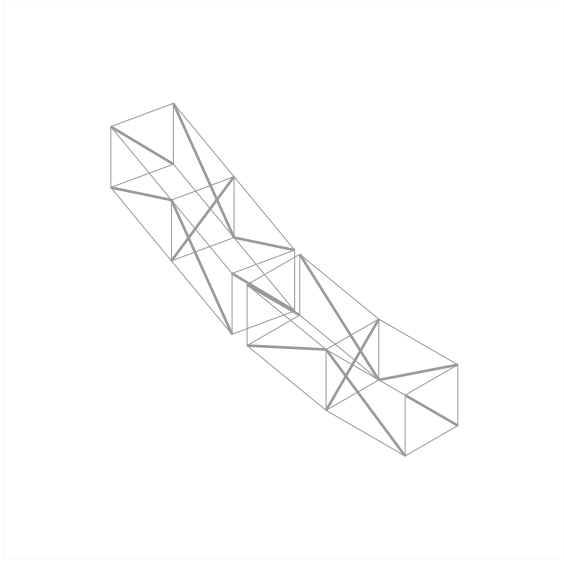
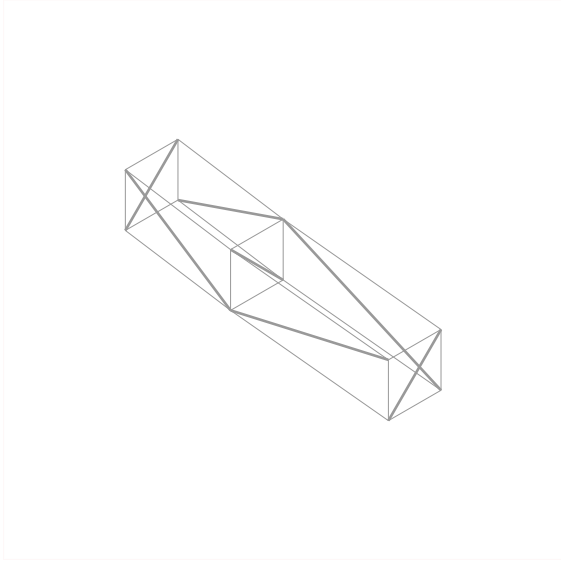
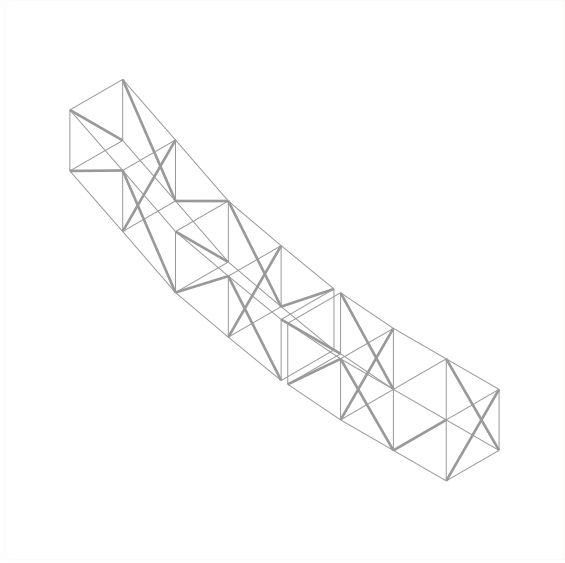
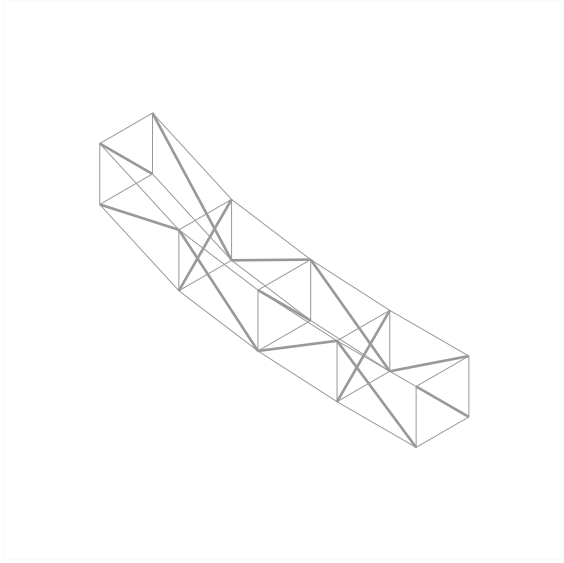
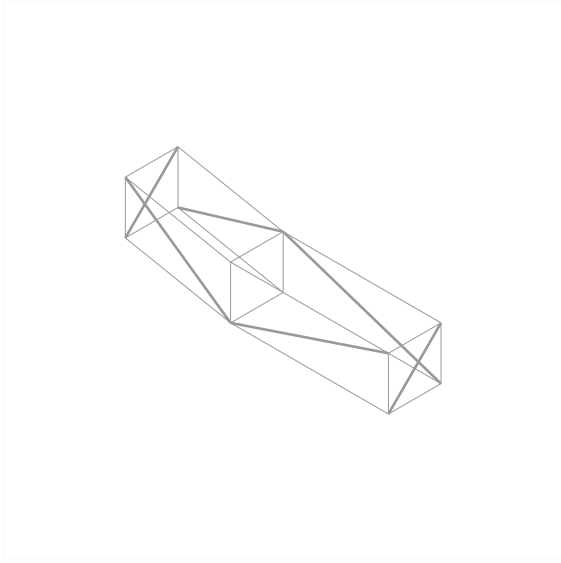
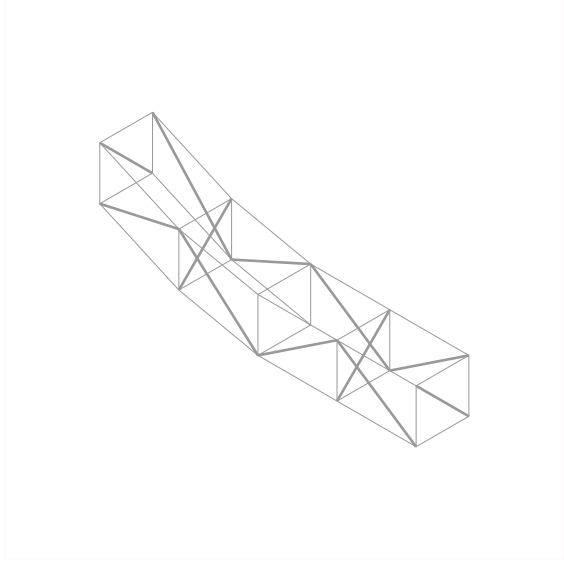
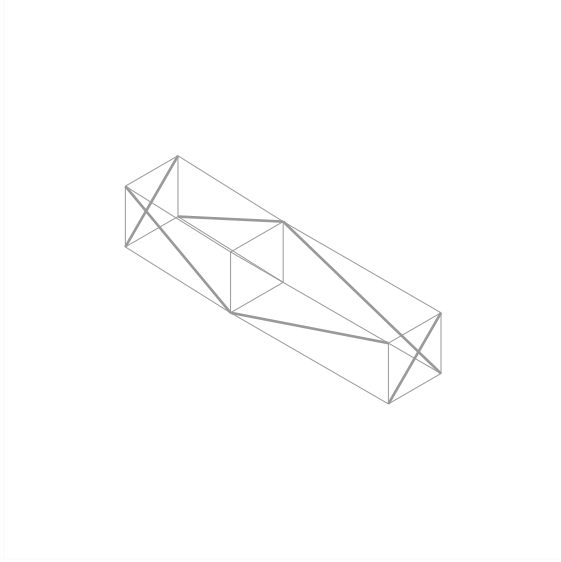
part
3-6



non
3-6

RESIDENTIAL CONFIGURATIONS

By adjusting occupation amount and level of accessibility slight structural variations of size and slope is created. Once tensegrity is applied the configurations are altered dramatically. Further tension is formed when the structure is integrated with the orthogonal spaces they enclose. Particularly the smaller more accessible units which collide more with the tensegrity skin and expose more inside space. This structural technique allows slight adjustments of length and gradient to create a multitude of unique units. The residents are given a sense of individuality and an enforced level of exposure depending on how isolated they are.

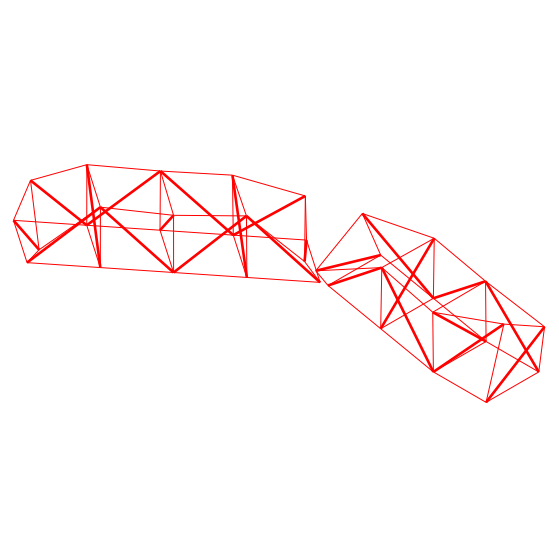
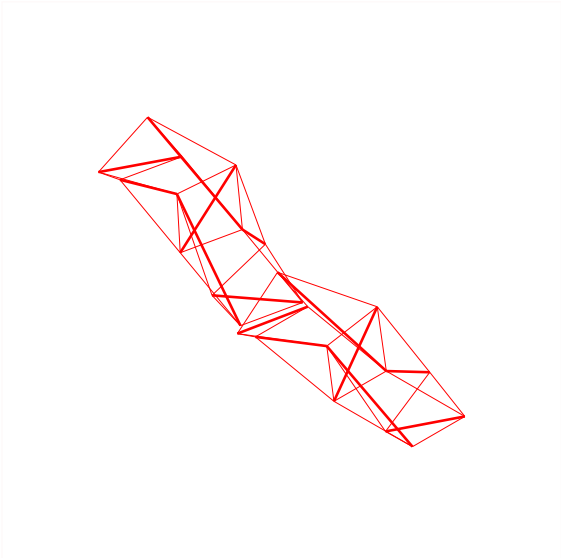
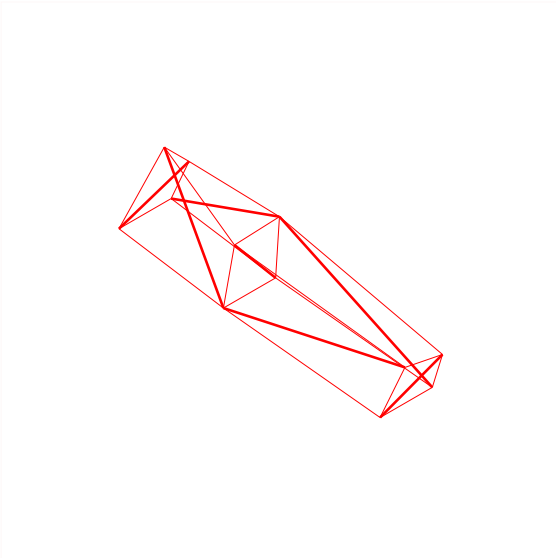
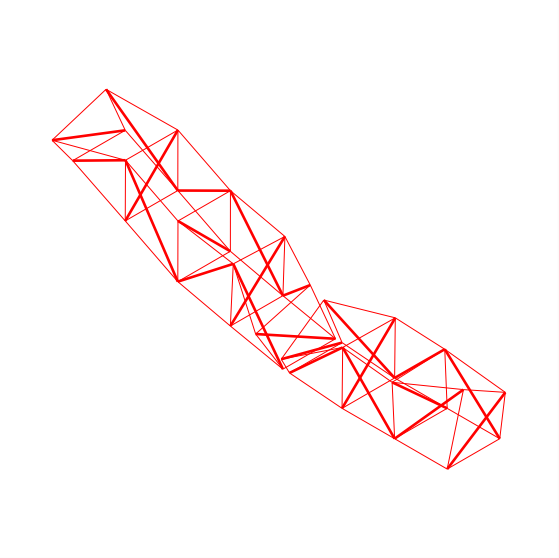
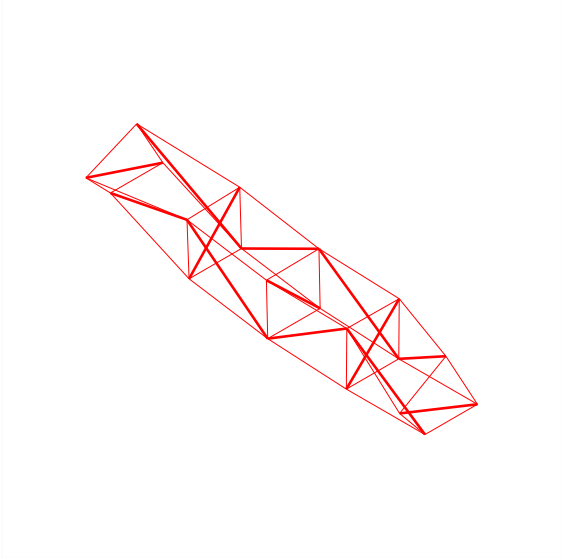
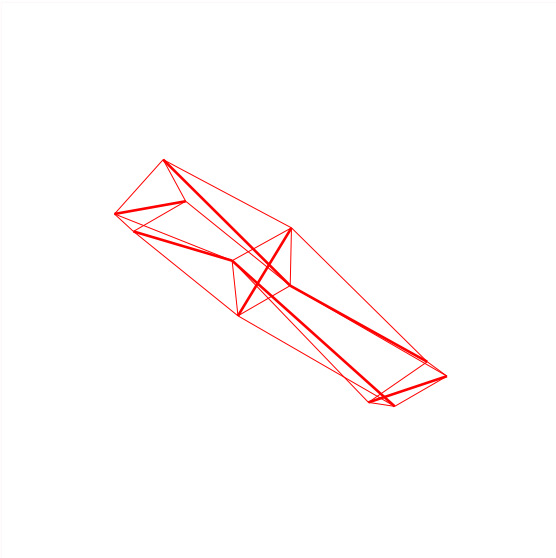
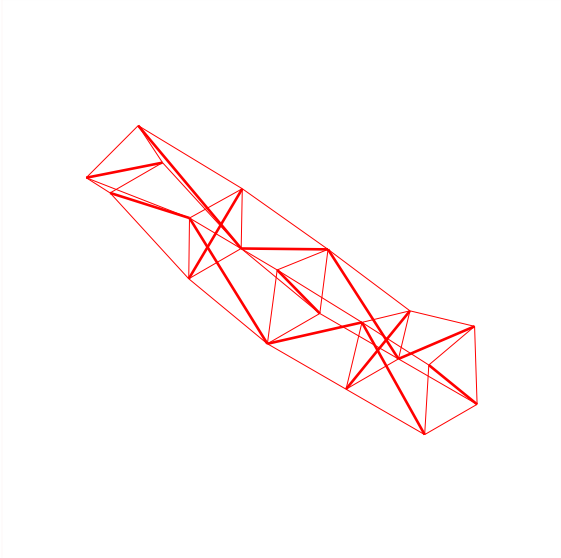
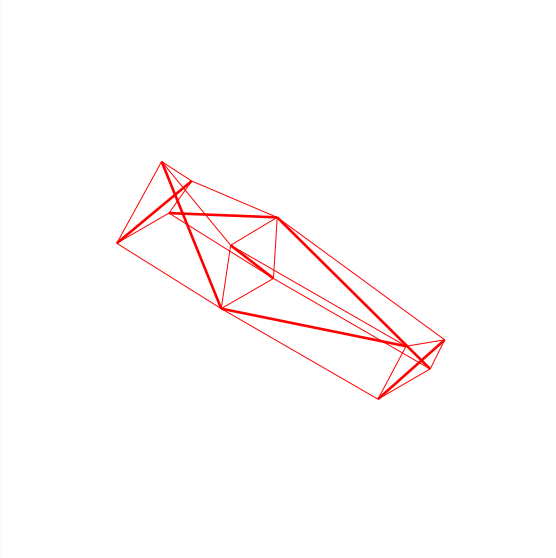


Before tensegrity

KEY (members)

tension

compression



RhinoMembrane
tensegrity applied

KEY (members)

— tension

— compression

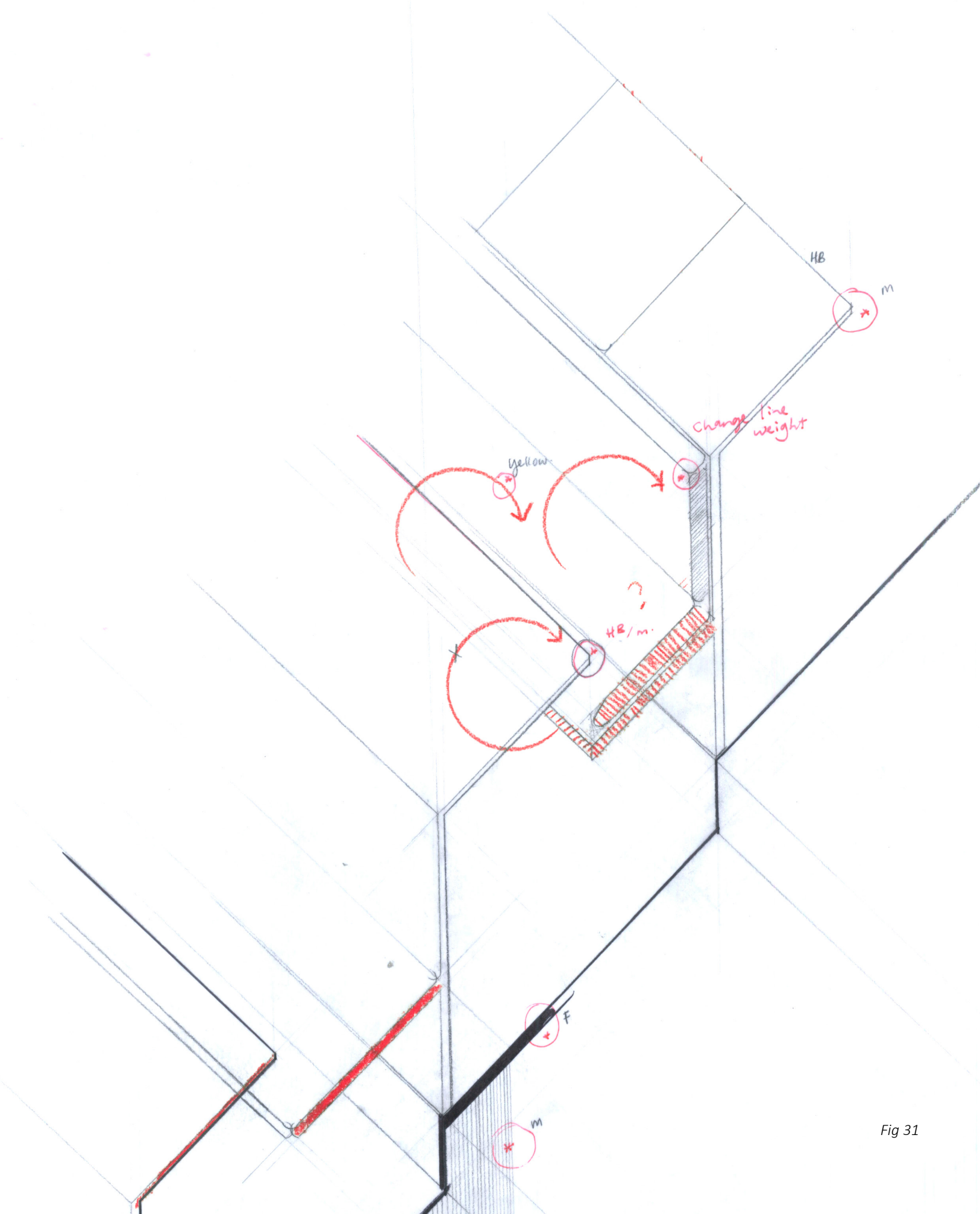
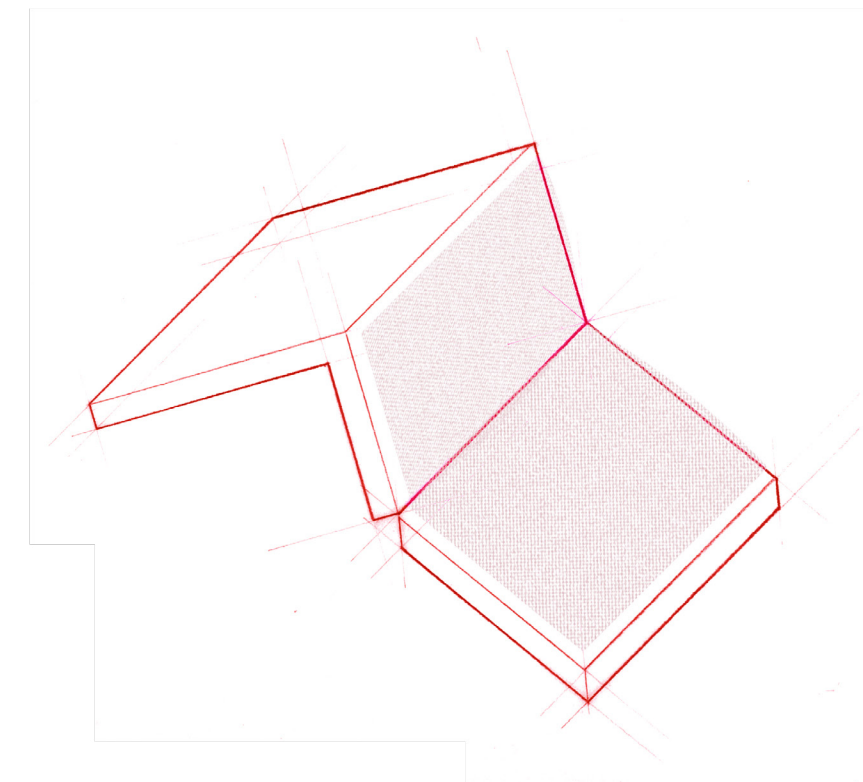
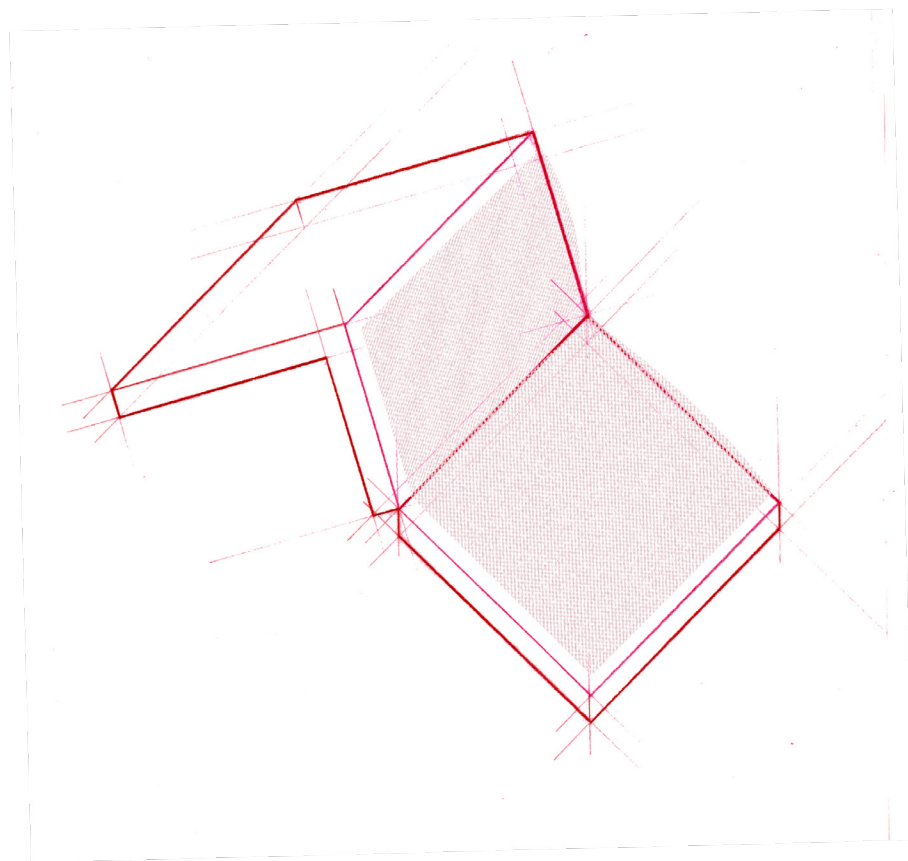


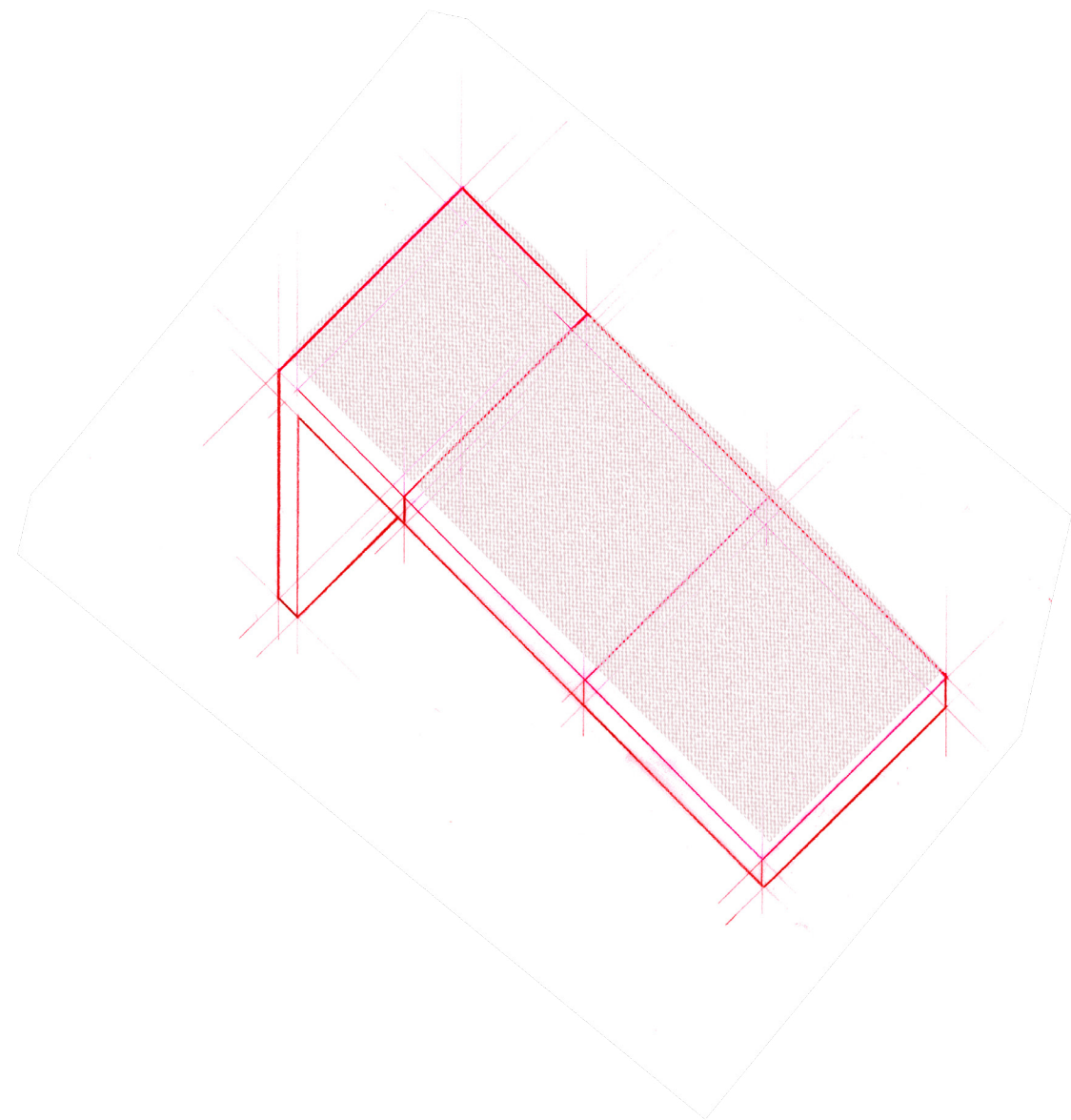
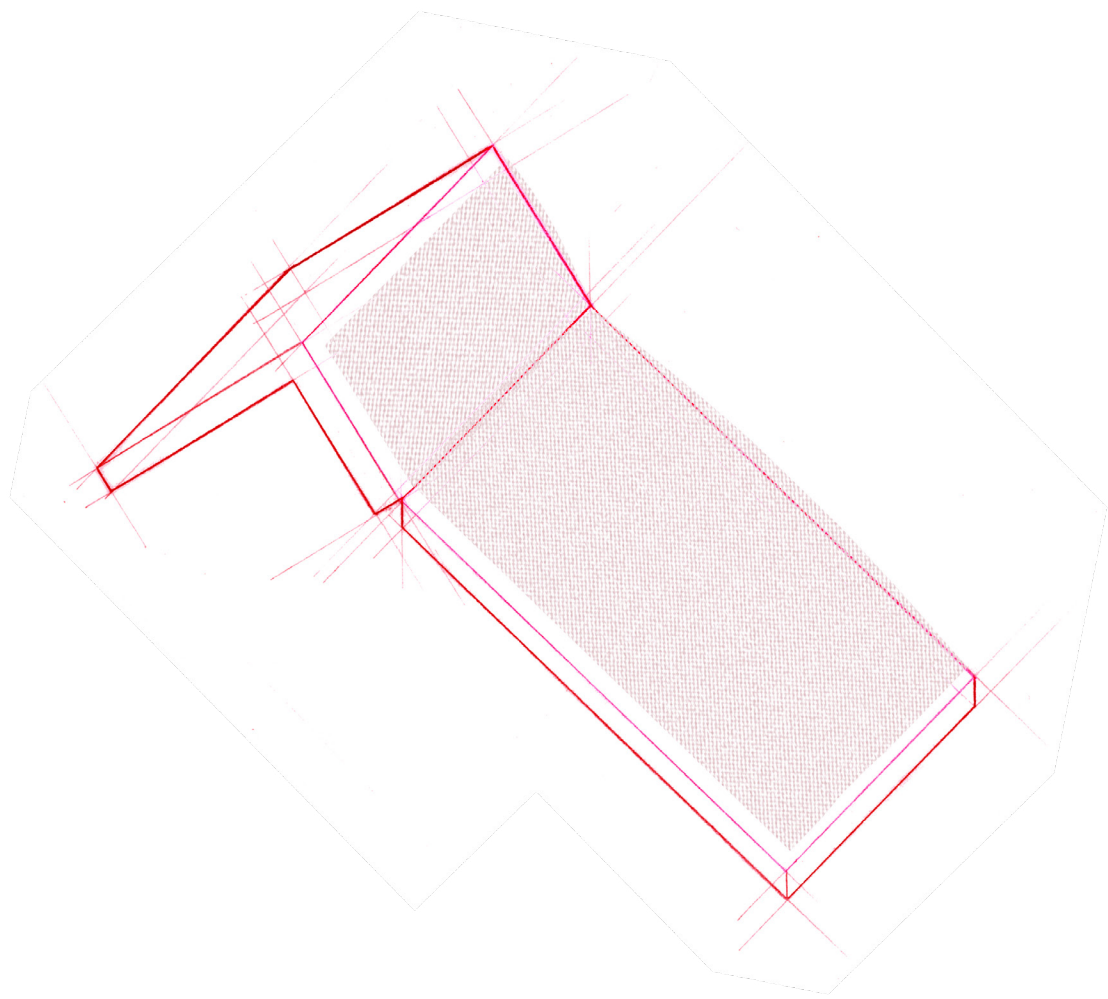
Fig 31

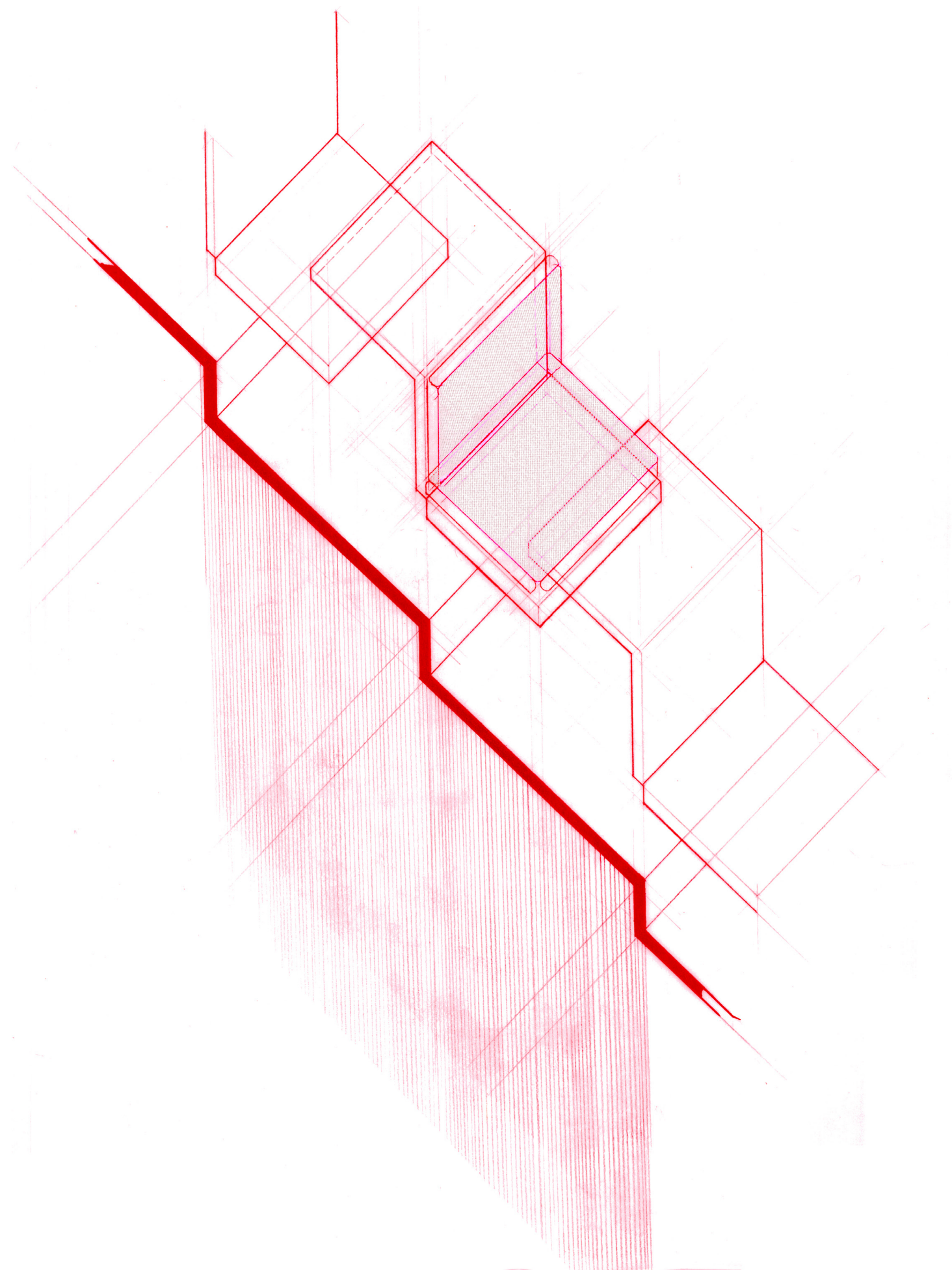
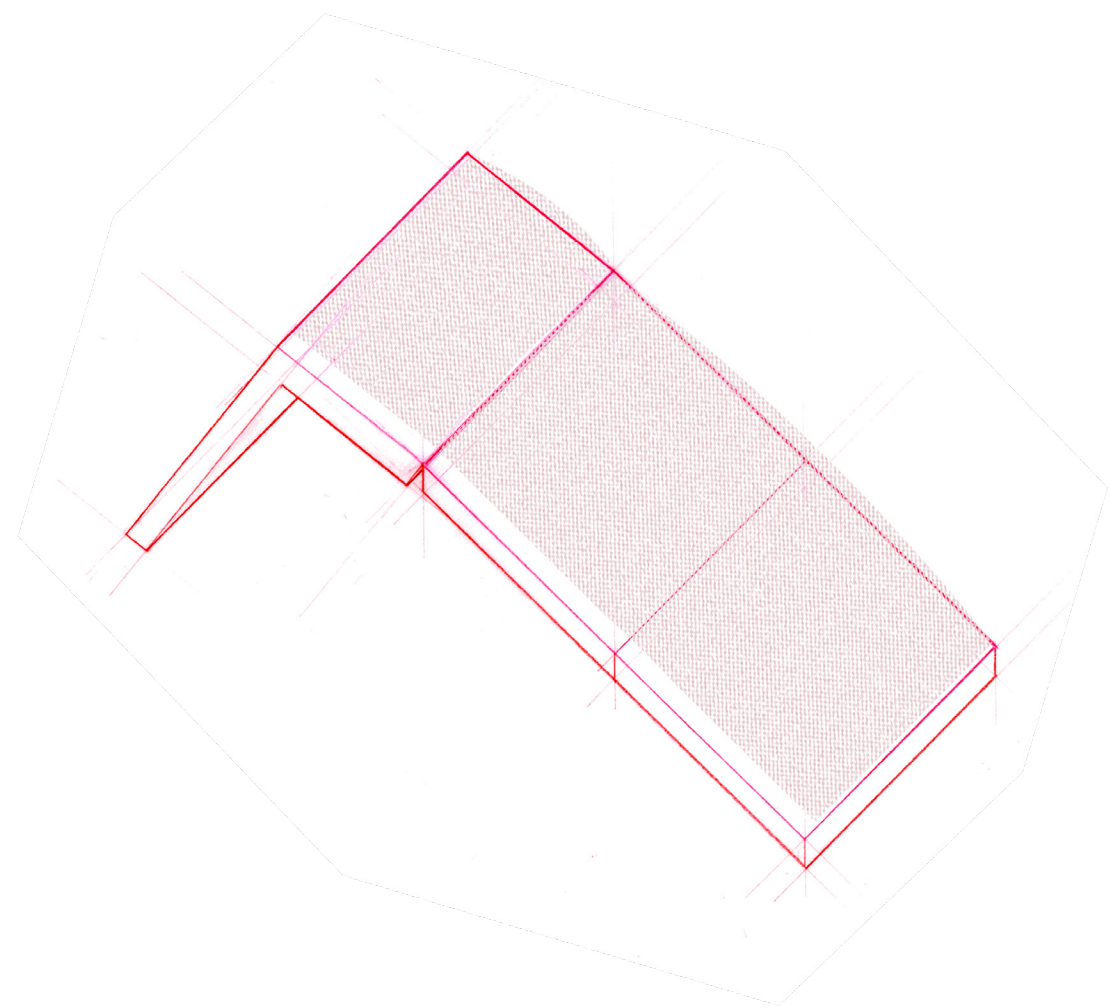
This section develops a method of promoting cross generational exchange and physical activity by integrating a public place into a residential space. The program analysis objective of activating transit ways is explored through the overlap of moving and static space. Notions of ownership, use and temporality are challenged through the development of a communal space that is primarily used by the residents, as an extension of their home, and by the public as a temporary place to sit, walk and do activities. To achieve this, the vastness and unpredictability of the outside space is broken down into distinct areas that are directed by access and a compression of sitting styles. The resulting seats are both permanent and temporary reflecting and guiding the overlap of people and activity.

PROCESS

The process of defining outside space is split into two parts. First technical drawings of access and seating are derived from *N.Z.B.C. Clause D1 Access Routes and Neufert Architects' Data*. These sketches are then compressed into a series of studies, resulting in the design concept of ephemeral forms that are equally permanent and temporary. Physical models reinterpret the drawings through the development of materiality and detail. Wax is used for its ability to explore subtle qualities of temporality and potential to cast texture, highlighting areas of sitting and moving. Cork and string is initially used to add an element of interaction and movement, later wood and steel is added for more stability.







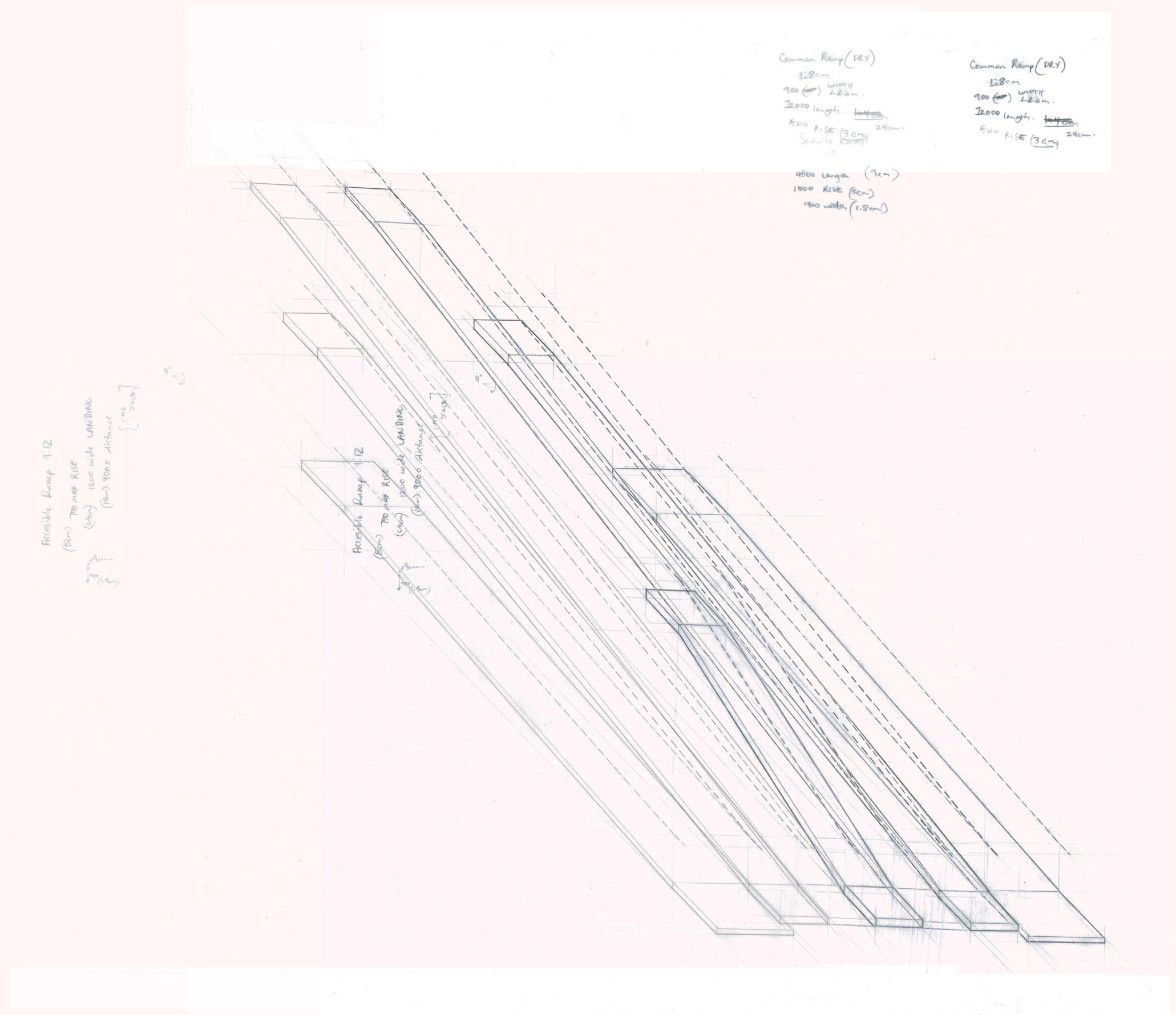
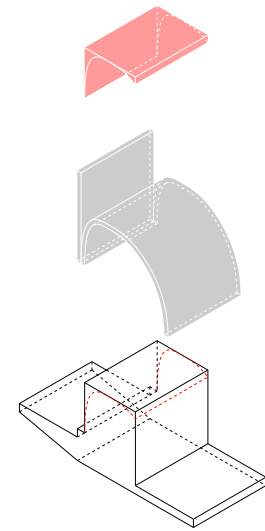


Fig 33

Service Stair
(minor Private)

Private/
or Secondary

Fig 34



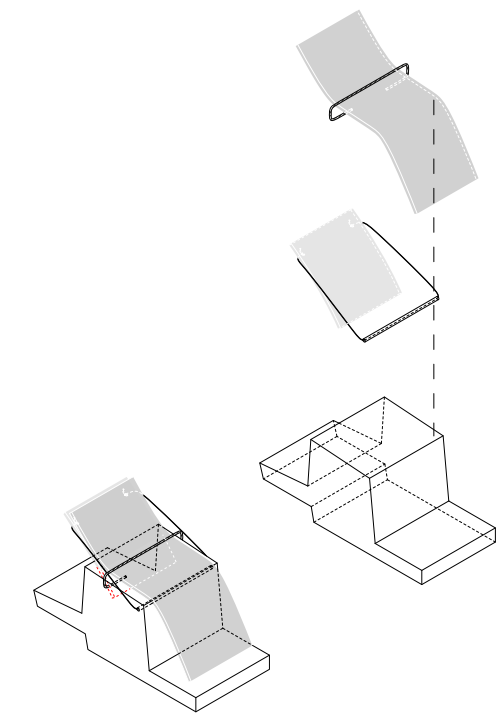
Sitting

Materials

cast wax
cast cork

98

Fig 35



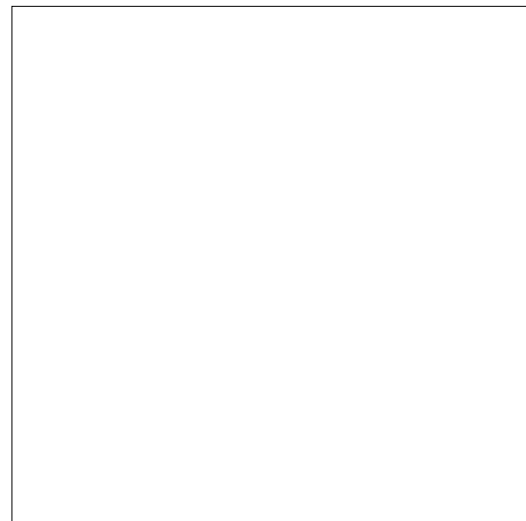
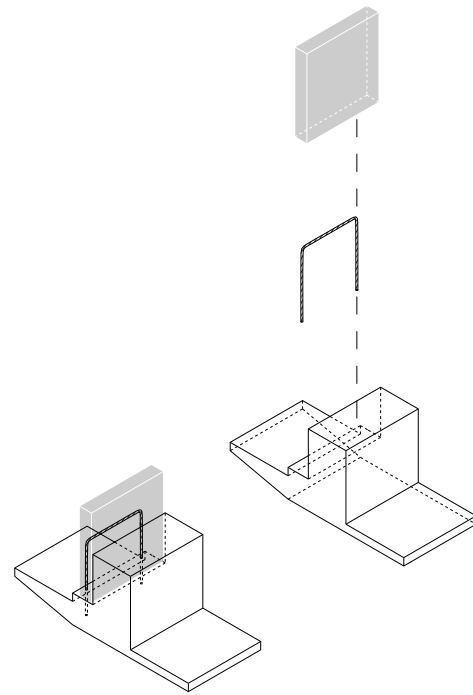
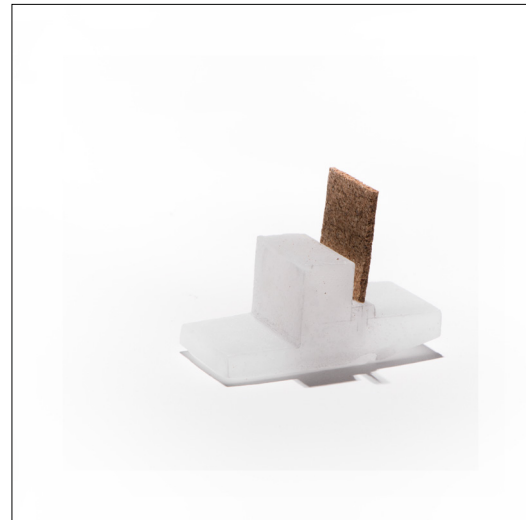
Longer Recline
with flexible support

Materials

cast wax
cast and bent cork
steel rod
string ties
pin fixings

99

Fig 36



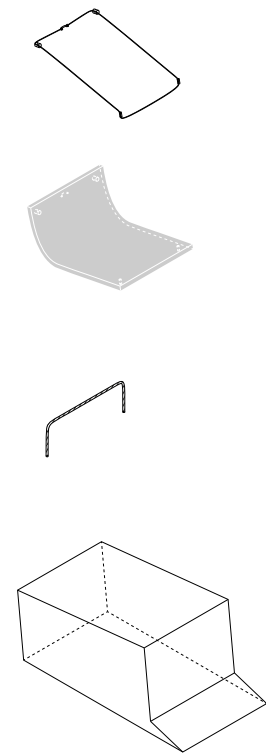
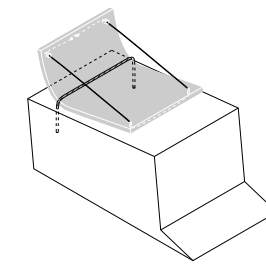
Sitting Upright
with strengthened support

Materials

smooth cast wax
thick cork
steel rod

100

Fig 37



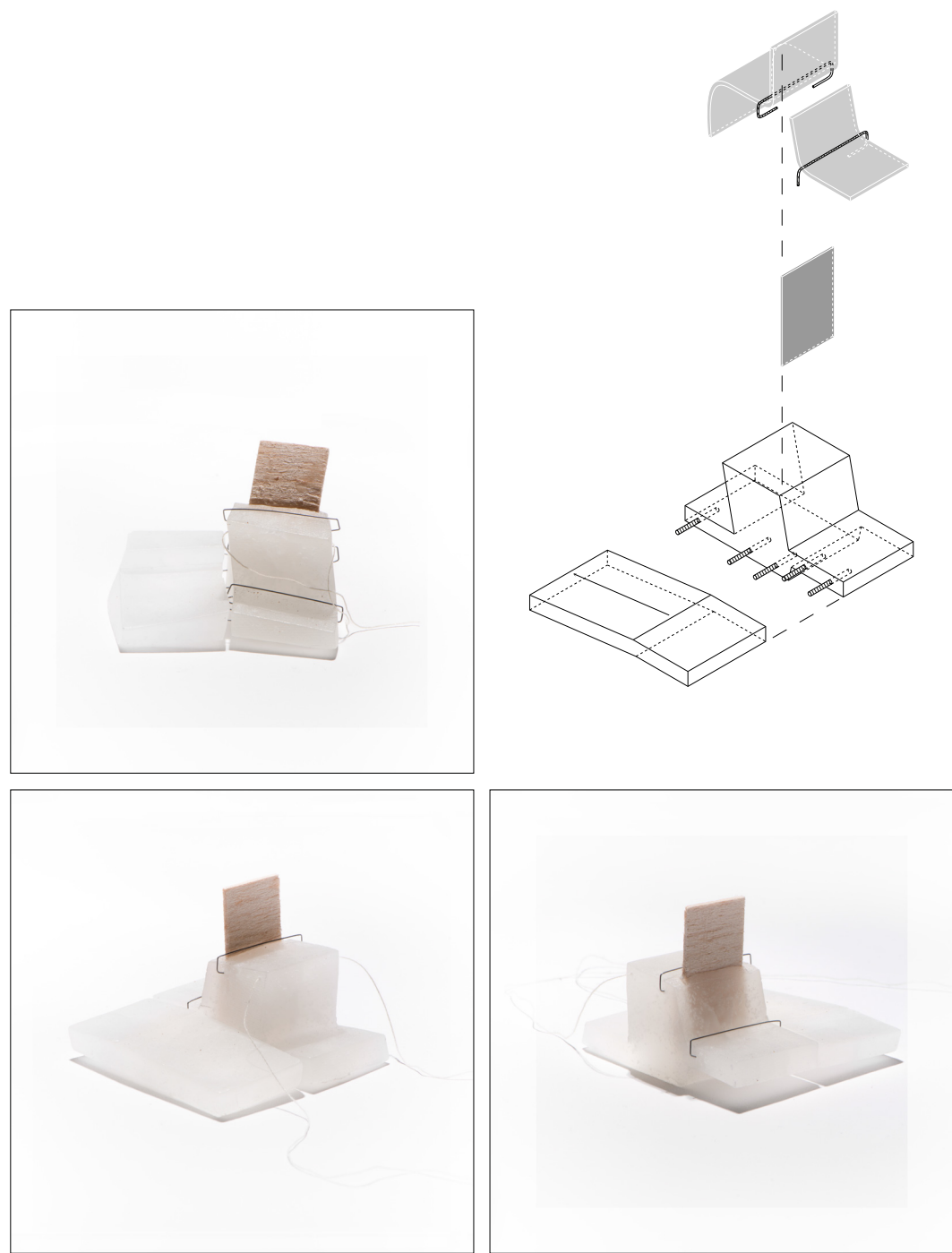
Temporary Recline
with flexible support

Materials

gloss cast wax
bent cork
steel rod
string ties
pin fixing

101

Fig 38



Walking and Sitting
with strengthened support

Materials

smooth and textured wax
wooden plank
steel rods

102

Fig 39



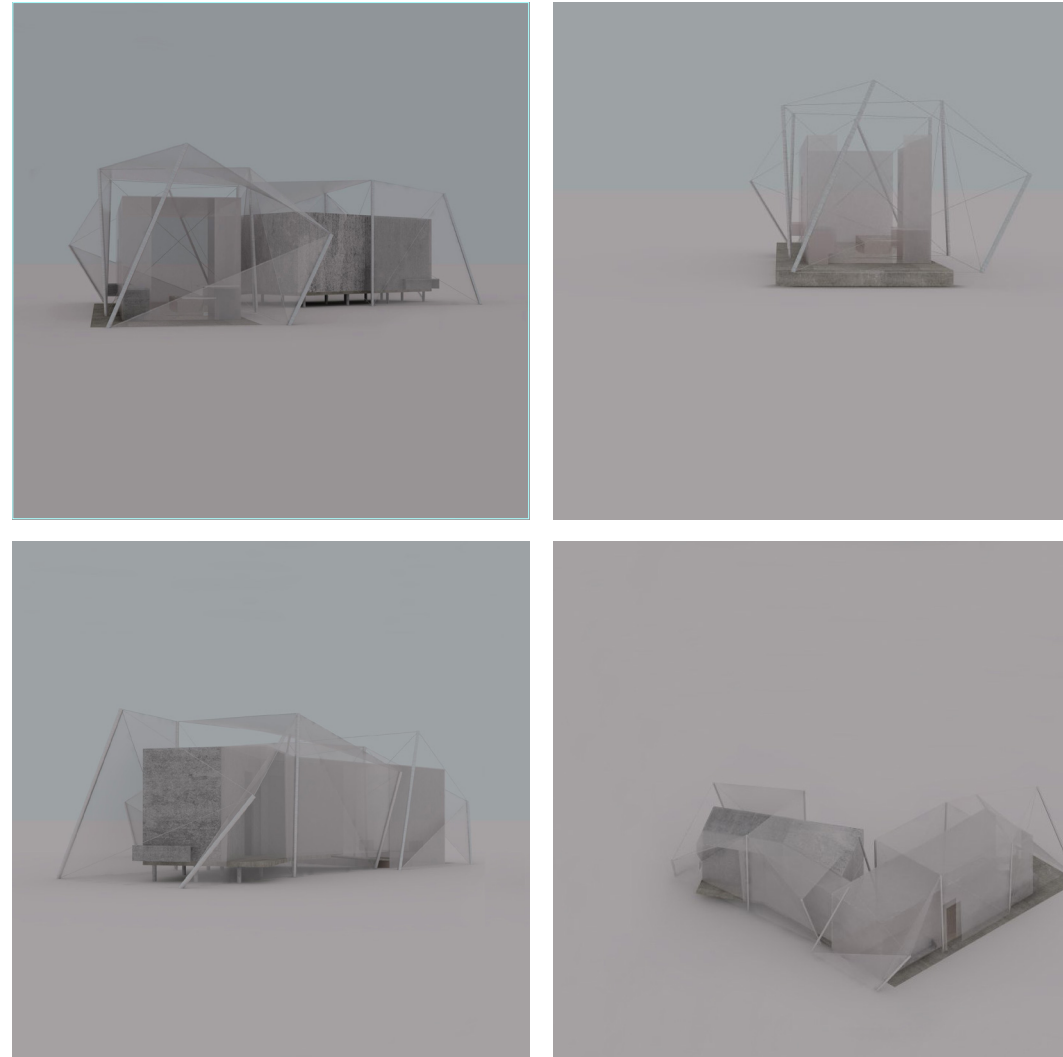
Permanent and Temporary

Materials

smooth and textured wax
cast wooden plank
bent cork
steel rods

103

Fig 40



DESIGN OUTCOME

The concept of compression through overlap is a big influence in the development of the outside form. The seat studies, in particular, reflect the material qualities and usage patterns desired for achieving a balanced sense of permanency and temporality. The initial stair and ramp studies are not as successful in their atmospheric quality. Although they do produce some interesting gradual patterns, the result is still similar to the program accessibility study which also requires further development. Through the preparatory research, fully integrating transit pathways into communal spaces is justified as a major measure of success. Therefore, to fully integrate the public and the private space, further development of access is required. Areas of transit should adapt and support the formal and material qualities of the surrounding activity and landscape in order to strengthen the connection between places of movement with places of cross generational exchange.

REFLECTION

The method of physical modelling and drawing has developed a translated language of the high density measures into a lower scale site. Resolution of form, structure and materiality has unveiled the atmospheric and ephemeral qualities necessary to free the traditional boundaries of public and private space. The two sections inside and outside develop independently and successfully determine an approach to the residential structure, the seating details and materiality. The separation of the two types of spaces mean that the access forms tying them together do not advance as well. To mediate, the method of making is depleted and instead the design is developed through 1:1 scale digital modelling. This aims to fully integrate the inside, outside and transit spaces through a better understanding of occupation and site.

3

Developed Design

Live Work & Play

INTRODUCTION
AIM
METHOD

SITE
PROGRAM

SOFT BOUNDARIES
DIVERSITY
SCALE HIERARCHY
DISTORTION

TRANSPARENCY
COMPRESSION

REFLECTION

INTRODUCTION

The developed design cumulates the preparatory and preliminary studies into a series of public, residential and communal spaces. The design explores ways in which architecture can prompt intergenerational exchange between both residents and visitors along an active edge of Port Marlborough in Picton. The design is driven by integration of both people and program, resulting in moments of overlap where both permanent and temporary occupants of diverse ages collide.

AIM

The aim is to interpret the research through a developed design that focuses on integration to facilitate intergenerational exchange and physical activity. The design objectives, soft boundaries, diversity, distortion, scale hierarchy, transparency and compression drive the design through layers of spaces and places that are experienced along a series of pathways.

METHOD

The final design aims to prompt intergenerational exchange through a series of overlapping public and private spaces. Structure and materiality translates the concepts of transparency and compression, directing the relationship between the residential and communal space. This connection is also developed further in regards to the preparatory analysis, creating soft boundaries, diversity, distortion and scale hierarchy.

The public infrastructures are driven by site and program, specifically, water connectivity and accessibility. The series of spaces address the work and play components of the brief resulting in a floodable lecture theatre, swimming pool crèche and mooring cafe.



SITE

The site is located along the end of the Picton CBD walkway and the beginning of several Victoria Domain pathways. This creates a large amount of existing thoroughfare and activates the site with both Picton residents as well as ferry visitors. The populace is beneficial for the public and communal program but creates privacy concerns for the residential units. To mediate this the east west cross section of the harbour, road and reserve is fully utilised, allowing the terrain to naturally create areas of exposure and enclosure. The lecture theatre, crèche and café are exposed along the waters edge whereas the residential and communal areas are tucked into the enclosure of the tree line.

PROGRAM

The program mediates between the privacy of residential and communal space within a public place. The infrastructures consist of a series of overlapping spaces where the transparent residential structure and materiality is integrated with the compressed communal form, movement and activity.

The communal programs are divided into three place types of working, playing and eating. Each area is experienced along a pathway ending at either the lecture theatre, crèche or café. Residential units branch off the communal pathways creating a variety of height lines and levels of accessibility. This naturally positions the less inclined accessible units at the foot of the domain and creates a higher amount of exposure between the older residents and surrounding activity.

- KEY
- jumping pier 1
 - cafe / bookable entertainment space 2
 - boat access 3
 - cafe boat mooring 4
 - 1:12 max moving pontoon ramp 5
 - heated communal pool 6
 - creche 7
 - floodable lecture theatre 8
 - communal work / play area 9
 - communal play area 10
 - communal work area 11
 - Victoria Domain 12
 - Shelly Beach 13
 - Picton CBD walkway >

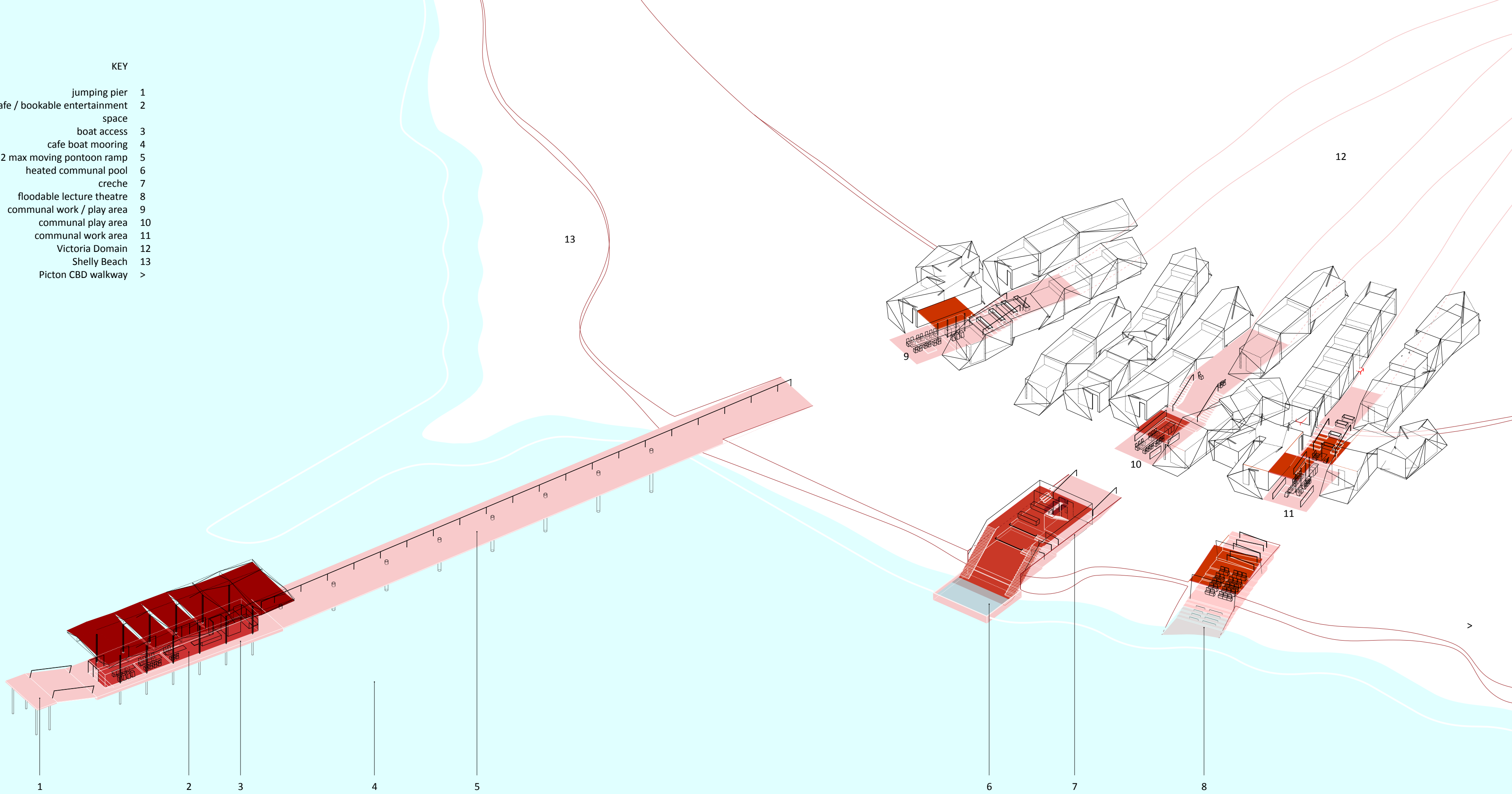
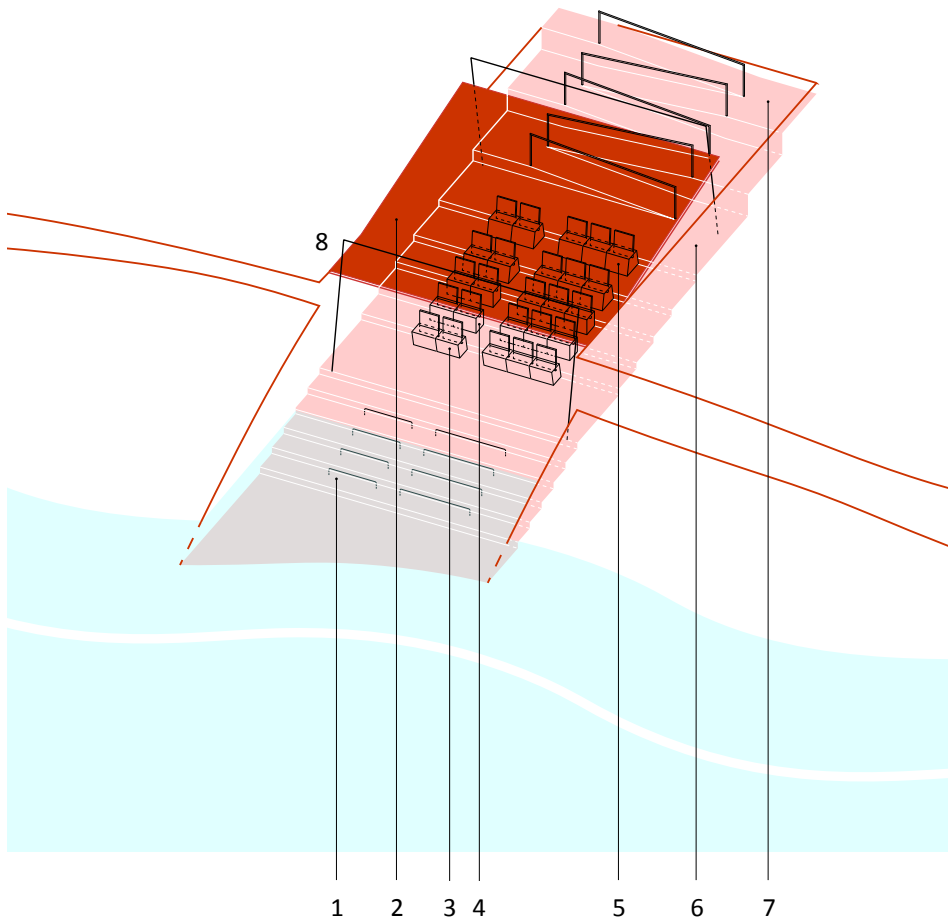


Fig 43

KEY

- step seats 1
- roof seating 2
- temporary seats 3
- upright seats 4
- recline seats 5
- wheelchair space 6
- 1:12 ramp entrance 7
- roof access 8

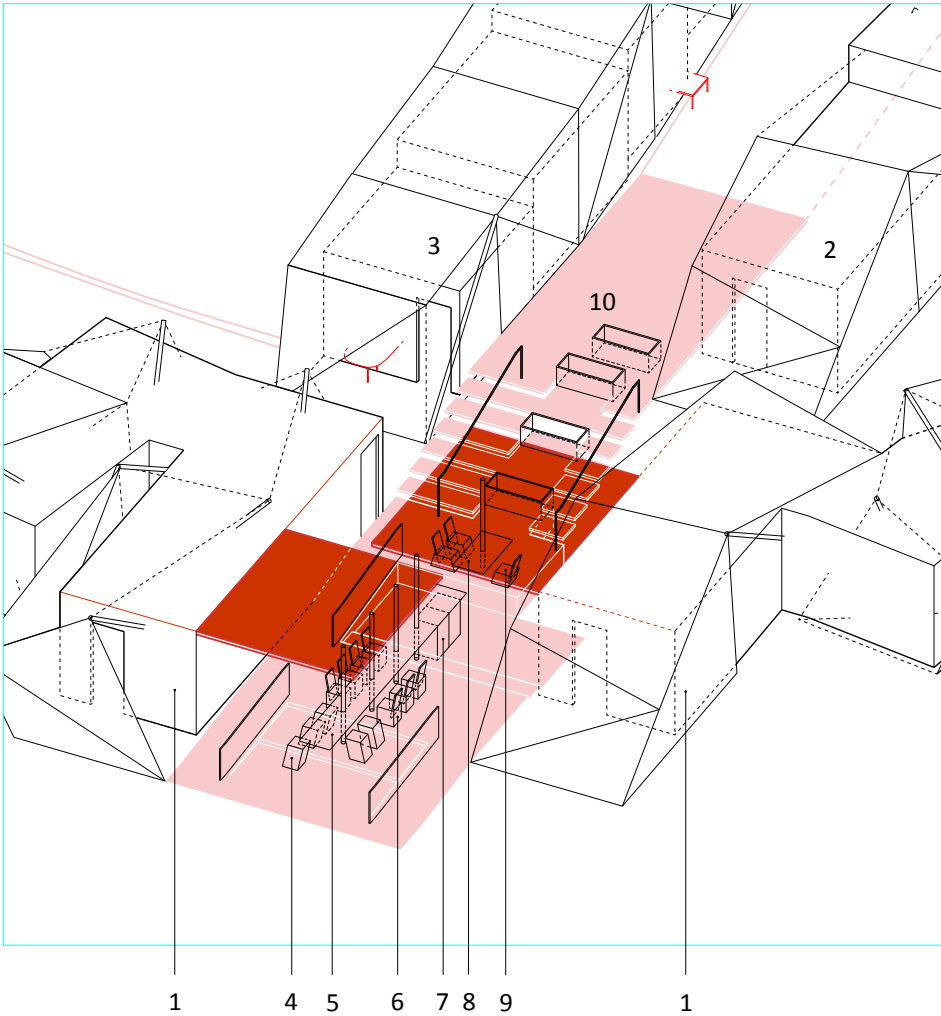
Floodable lecture theatre / shared work space



KEY

- 1 bedroom accessible 1
- 2 bedroom part accessible 2
- 2 bedroom non accessible 3
- high seats 4
- communal work table 5
- upright seats 6
- communal kitchen 7
- communal cafe table 8
- recline seats 9
- communal planters 10

Communal work area



- KEY
- heated pool 1
 - pool steps 2
 - pool slide 3
 - indoor play area 4
 - seat / desk / sleep area 5
 - 1:12 ramp 6
 - w.c. / changing room 7
 - step entrance 8
 - 1:12 ramp entrance 9
 - kitchen 10
 - roof access stairs 11

Creche / communal heated pool

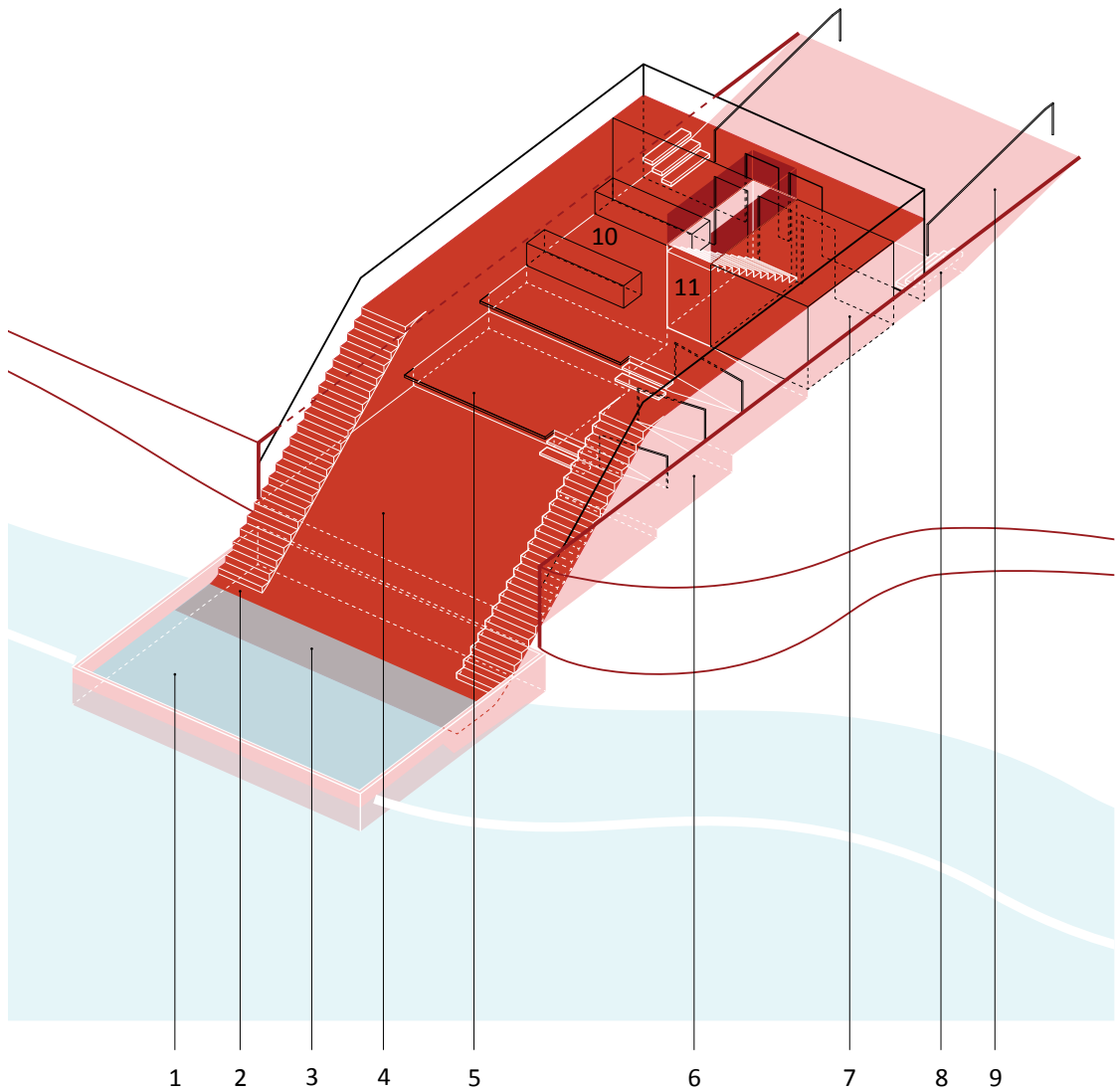


Fig 46

- KEY
- 1 bedroom part accessible 1
 - 1 bedroom accessible 2
 - 2 bedroom non accessible 3
 - child seats 4
 - communal table 5
 - upright seats 6
 - communal kitchen 7
 - slide 8
 - recline seats 9

Communal play area

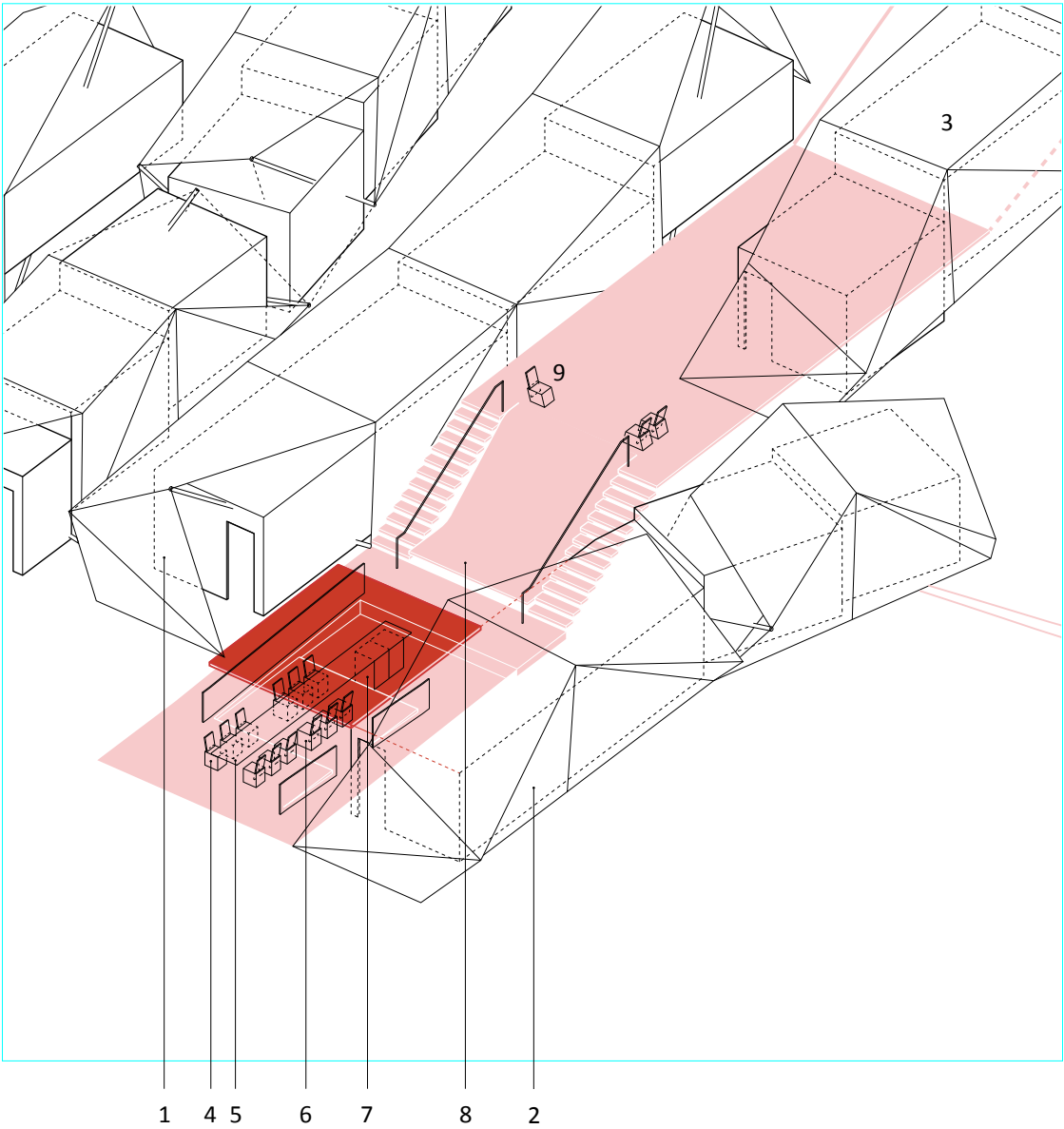
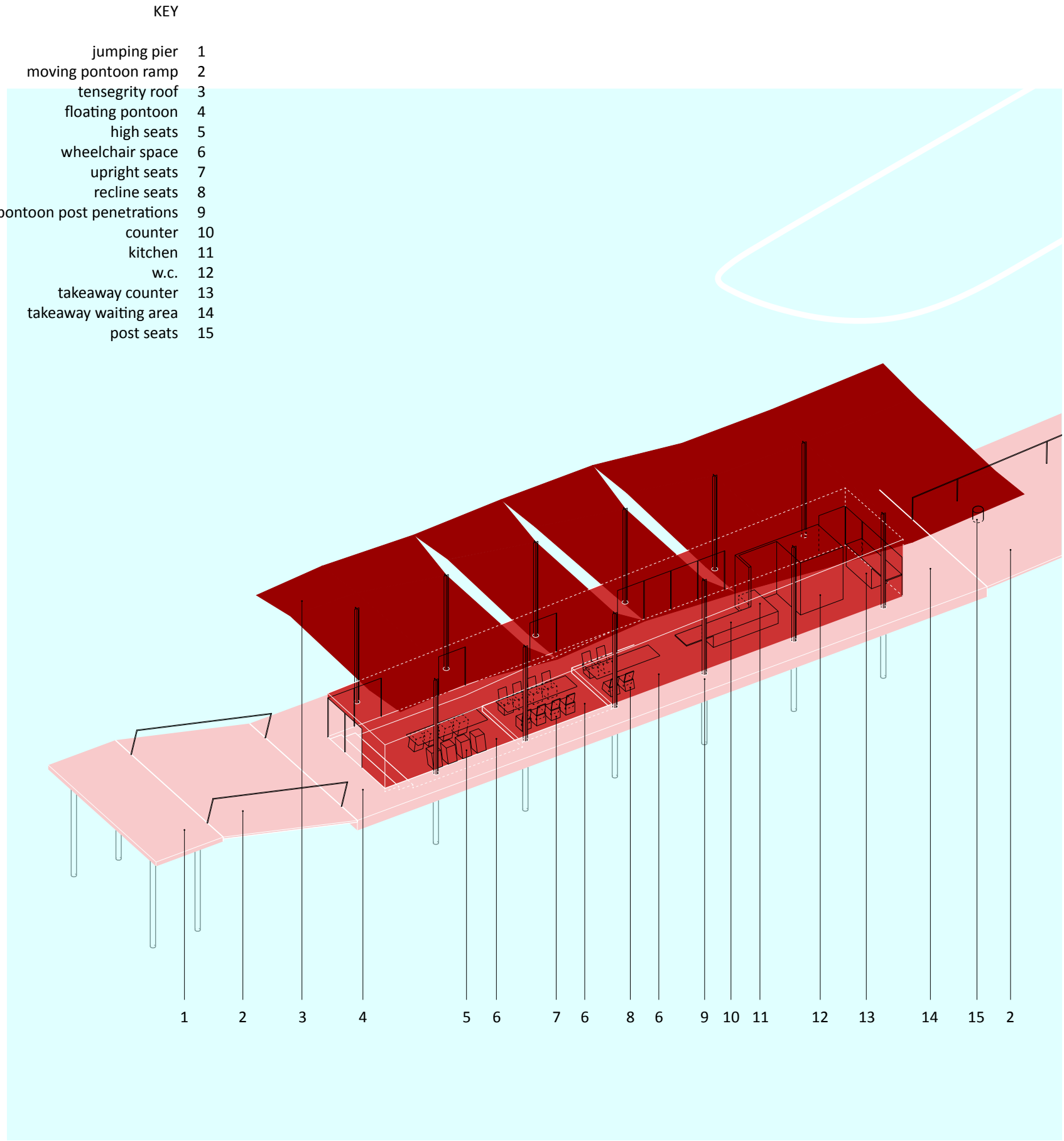
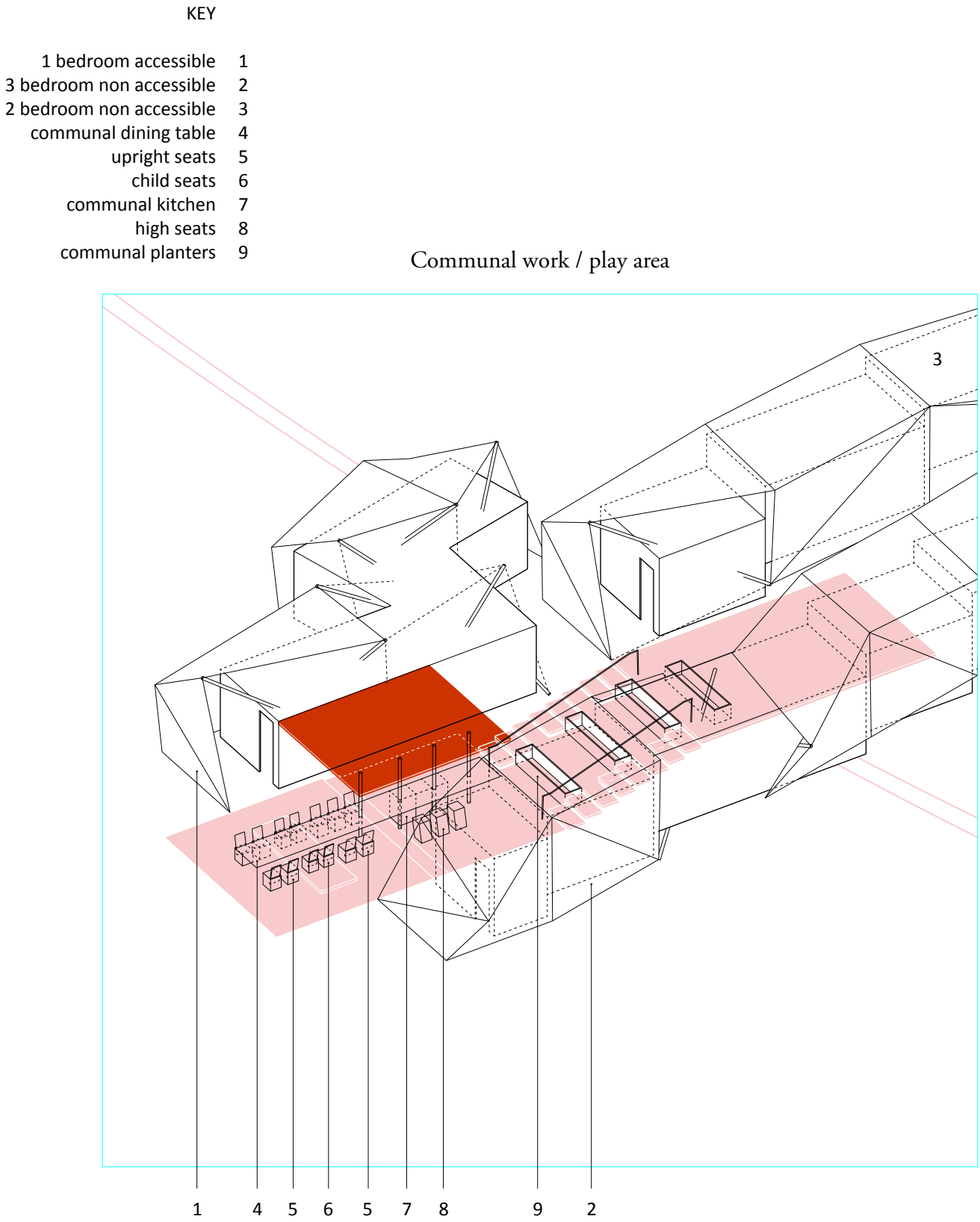


Fig 47



Cafe / bookable entertainment space



Communal work / play area

DIVERSITY



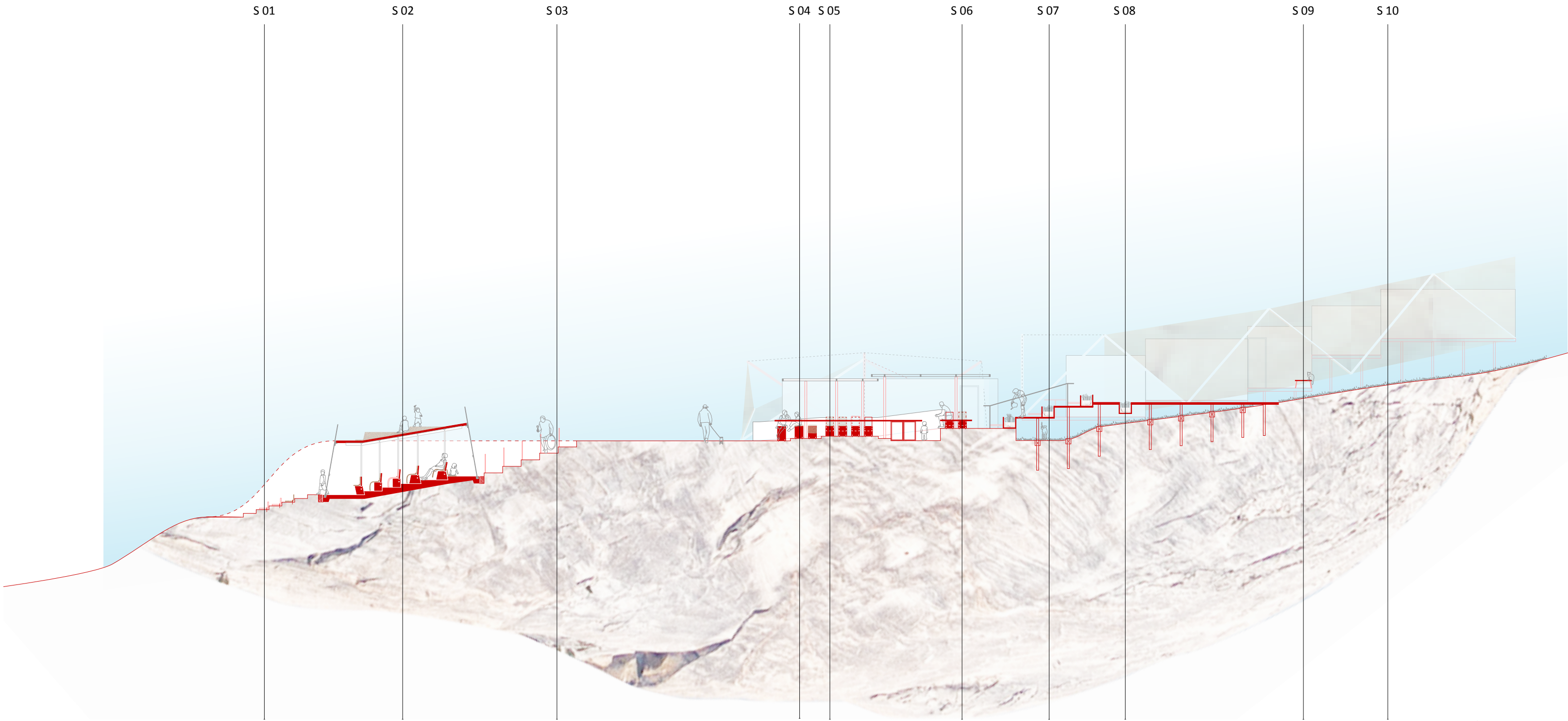
A diversity of access way levels and seat types are created to ensure a wide range of demographic use. The lecture theatre, crèche and café also promote a variety of activity patterns, allowing individual spaces to populate at various times of the day. This ensures that the site is constantly being visited by a variety of different people. The residential units are also diverse in size and accessibility level. This promotes a variety of different occupant groups ranging from a single, fully accessible, unit to a 3 bedroom, non accessible, family home. The accessible homes, walkways and seats are given hierarchy by being located around the main road which provides access to all the programs on site. Being in close proximity to the programs and to other people aims to encourage the less mobile residents and visitors to fully use the site and integrate with other generations.

SOFT BOUNDARIES

The developed design mediates structure, materiality and levels to create soft and hard boundaries between spaces. This aims to facilitate intergenerational exchange without imposing it by creating a feeling of both security and freedom depending on the amount of privacy required. Soft boundaries are used to integrate the spaces along a series of pathways leading into the reserve. This provides both residents and visitors with flexible options to use and transition through a variety of areas comfortably. Hard boundaries, such as lockable doors and concrete walls, are used to create a feeling of autonomy, particularly for the residents, in such a public setting.

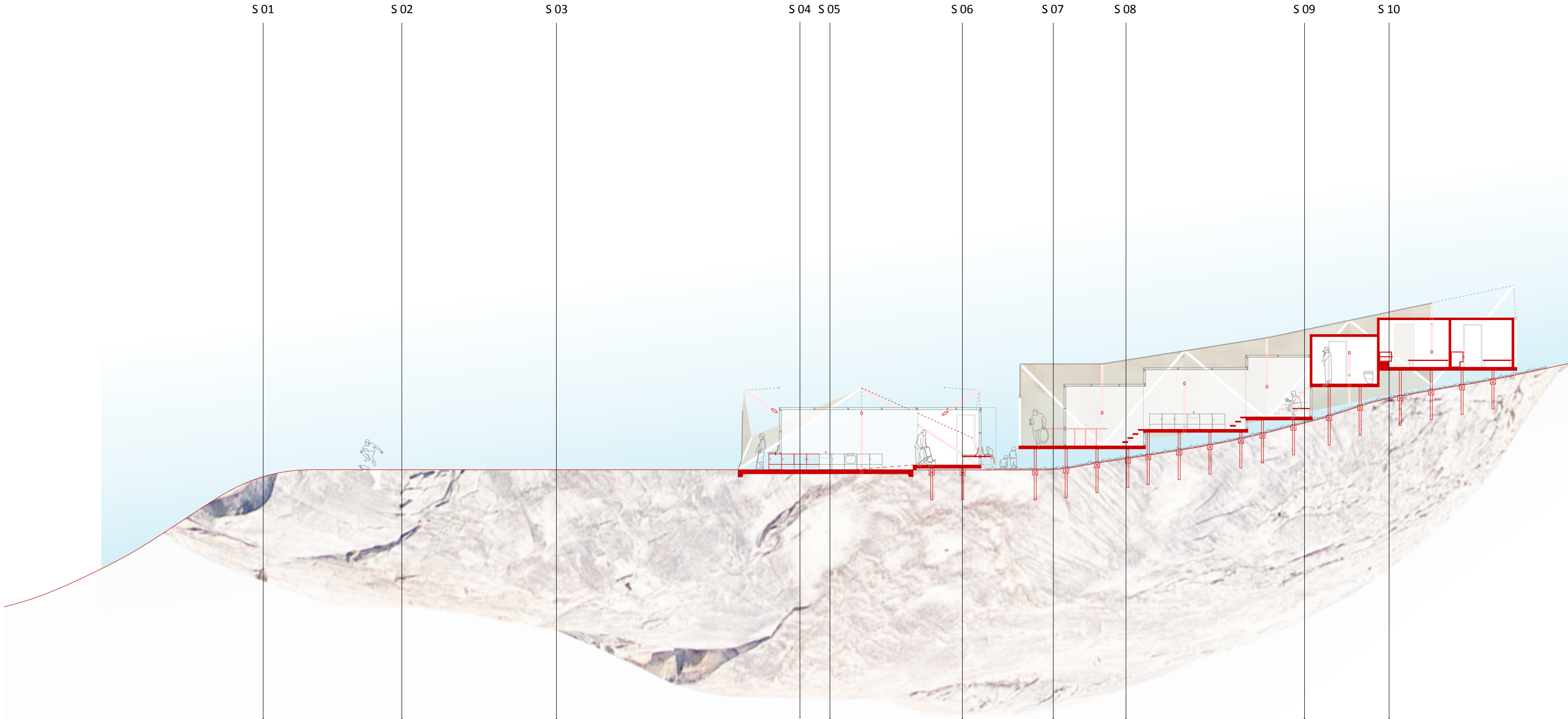
Floodable lecture theatre / shared work space

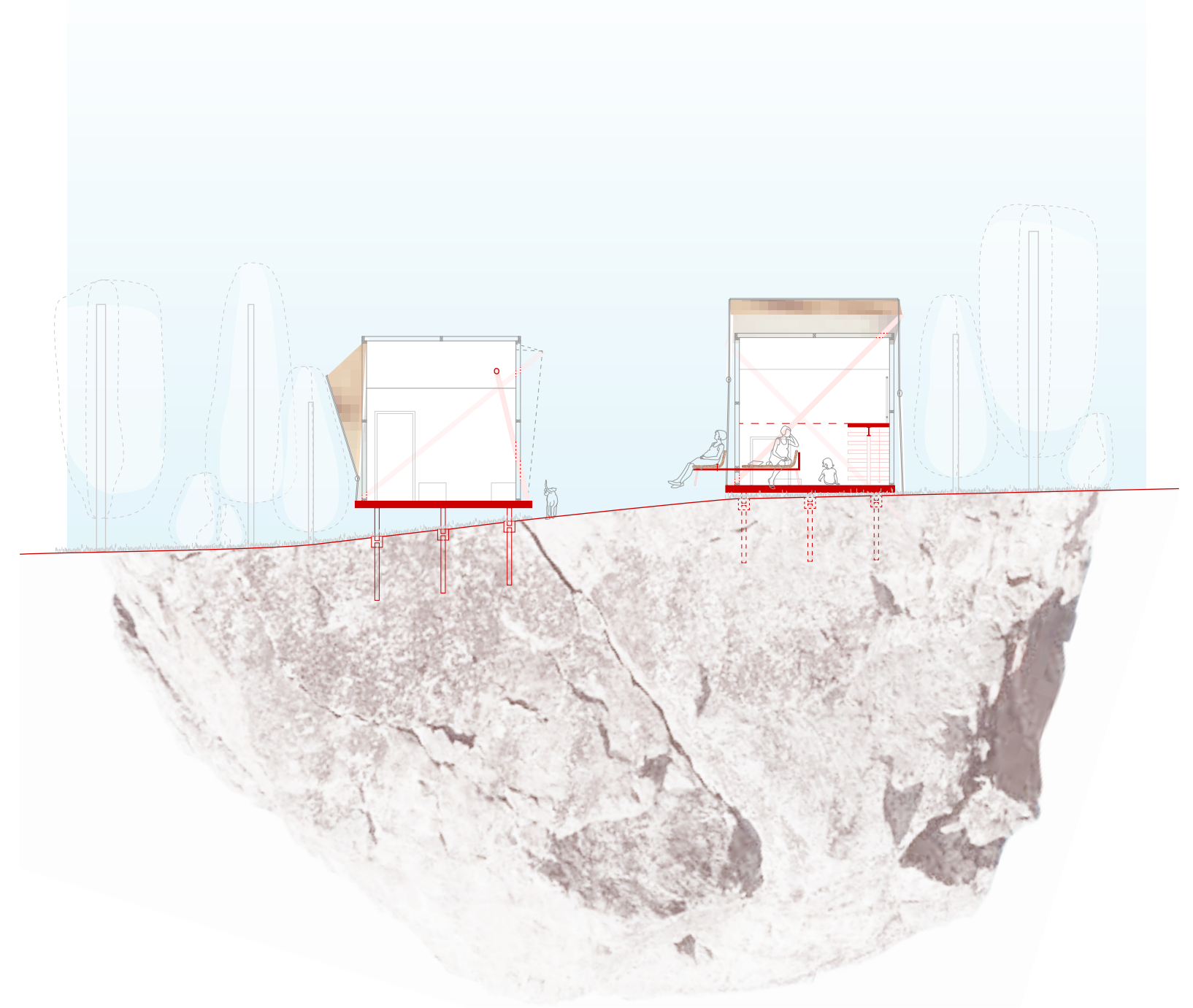
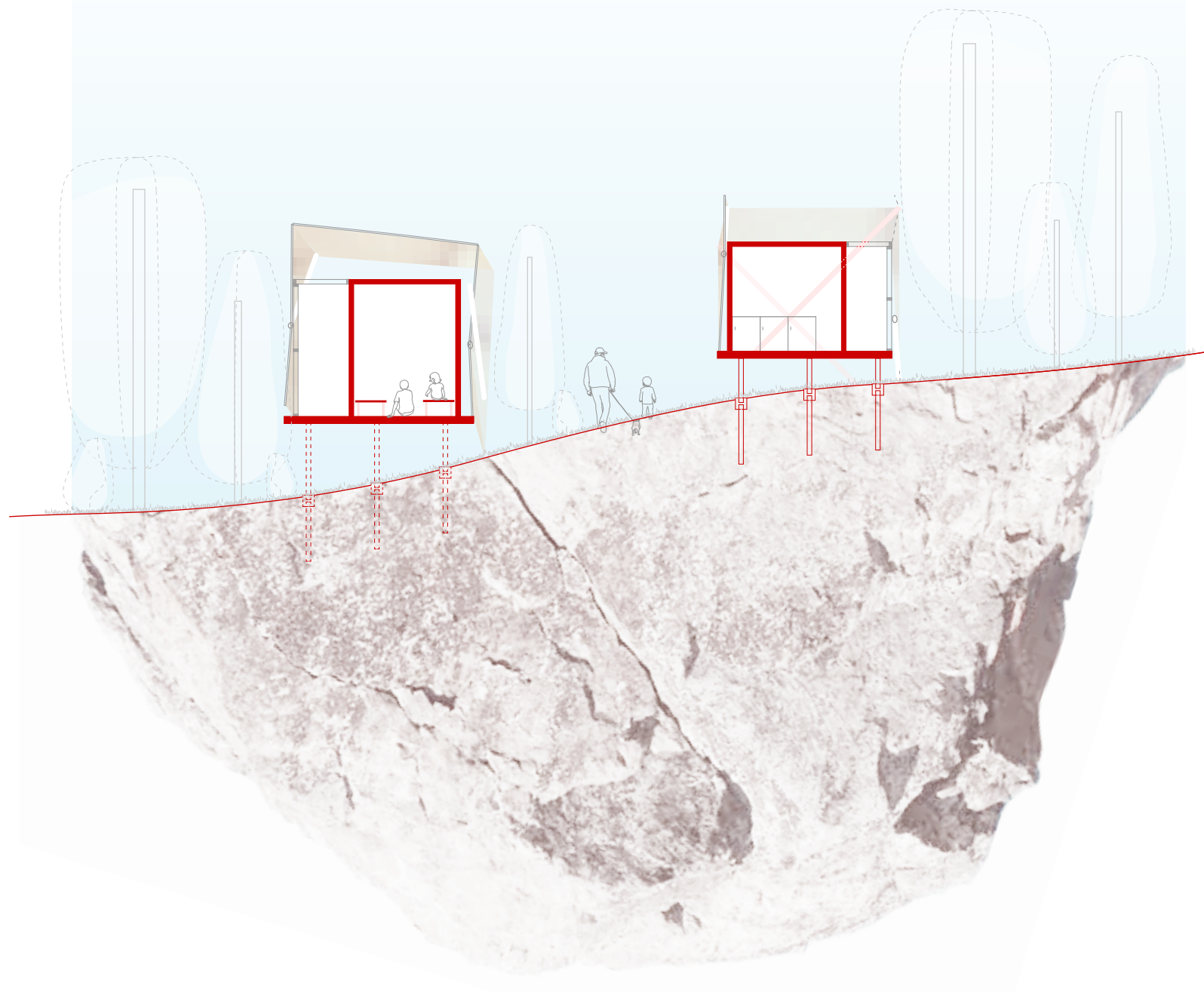
Communal work area

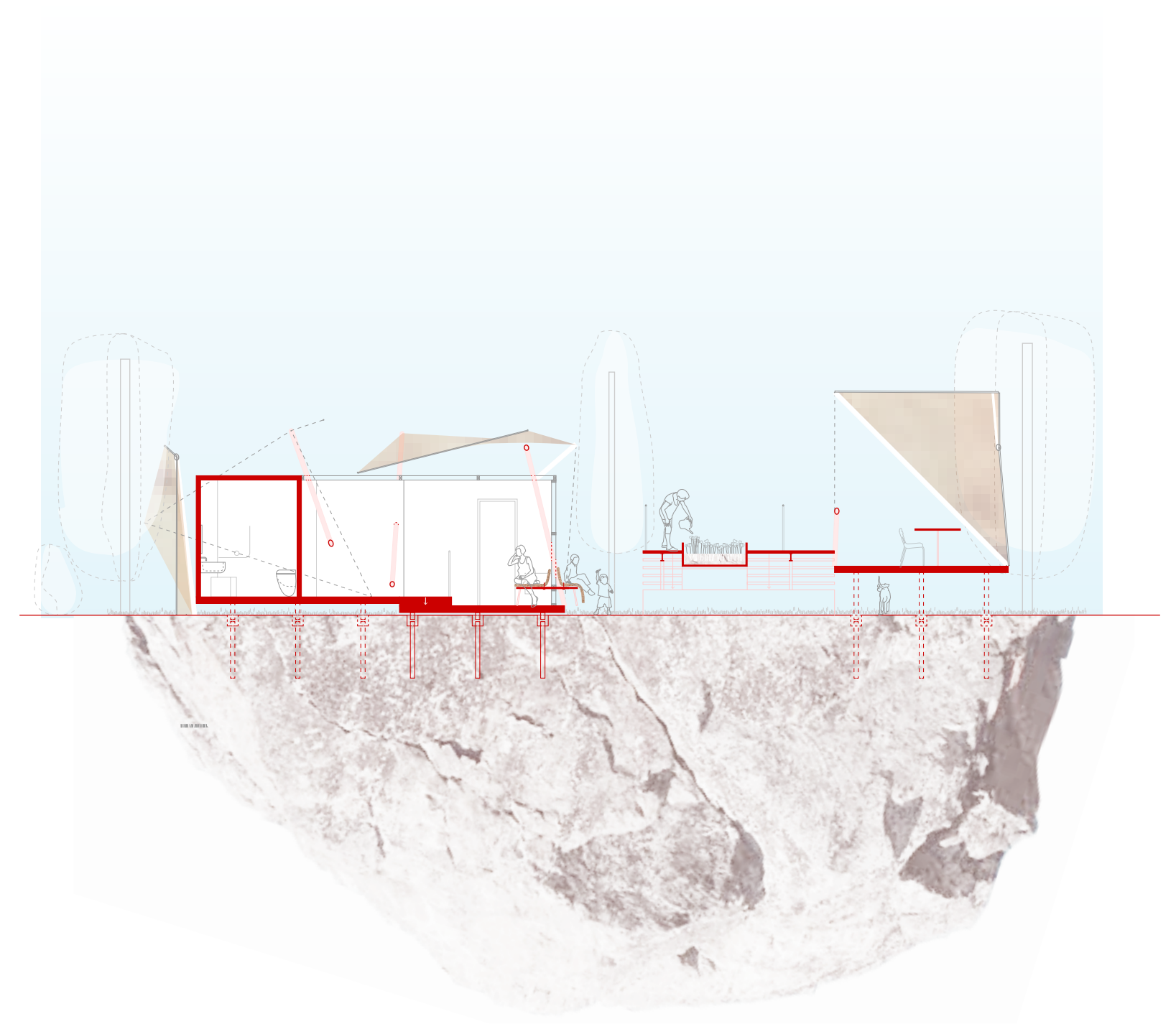
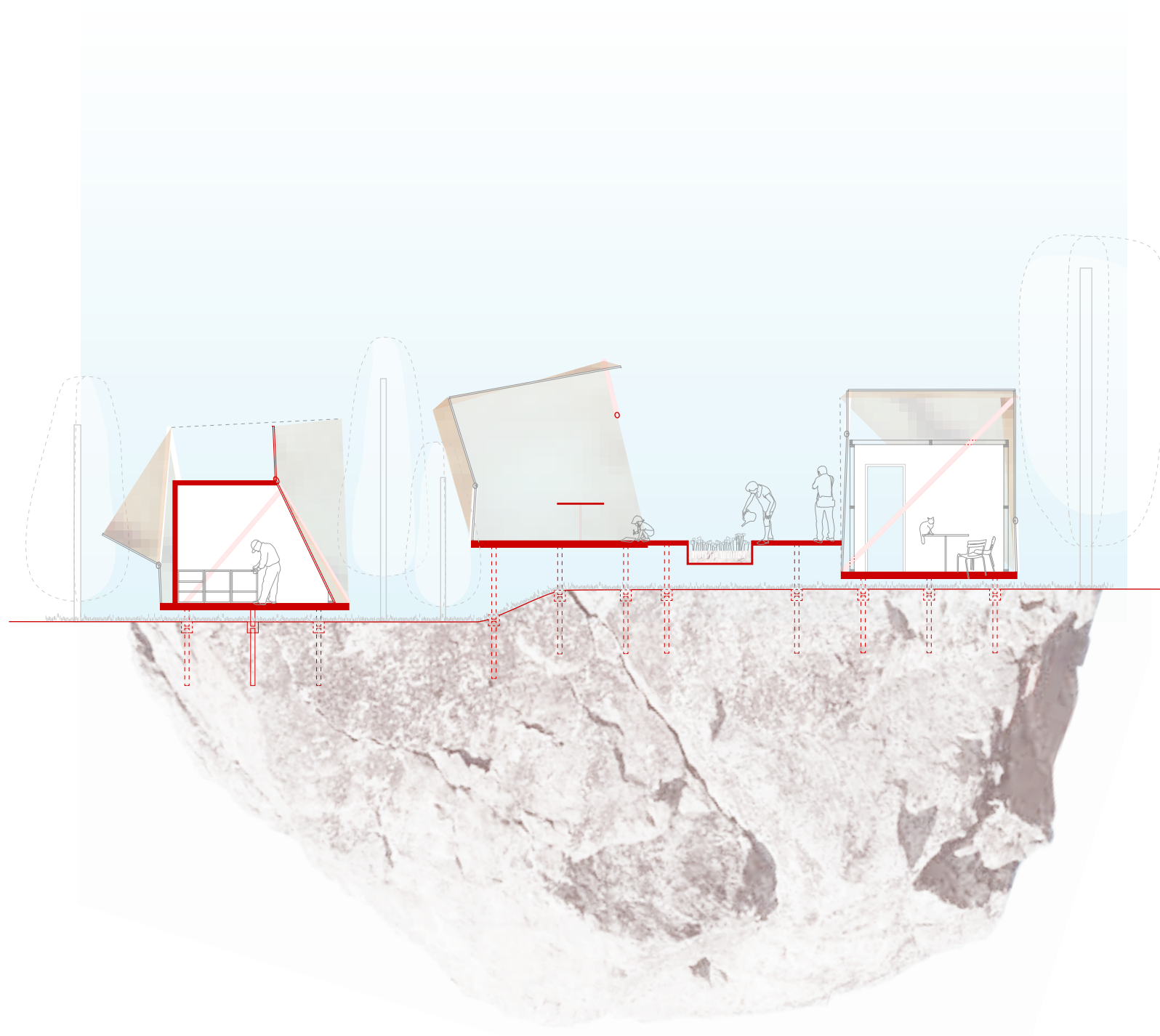


Picton CBD walkway

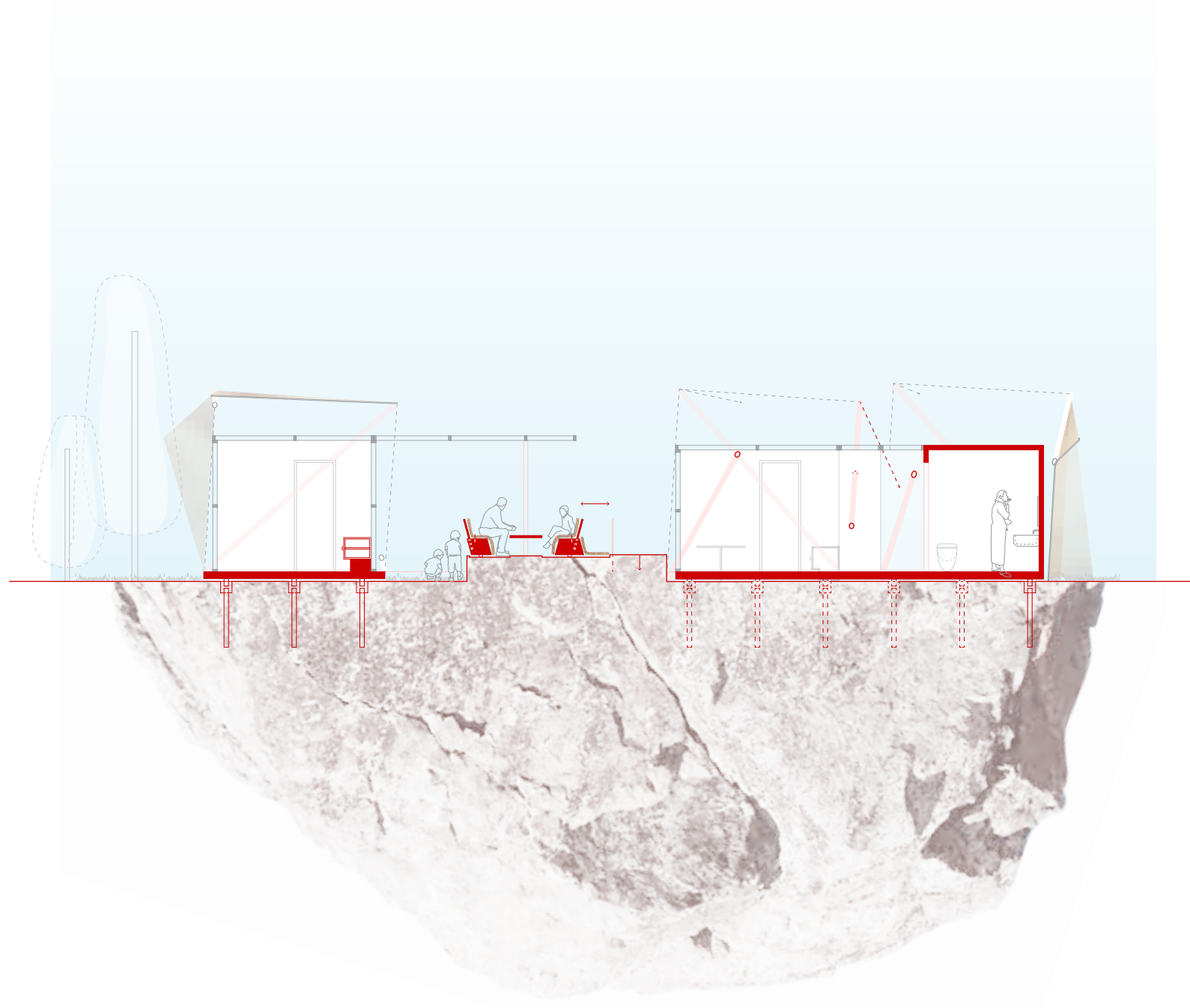
1 bedroom accessible unit / 2 bedroom non accessible unit



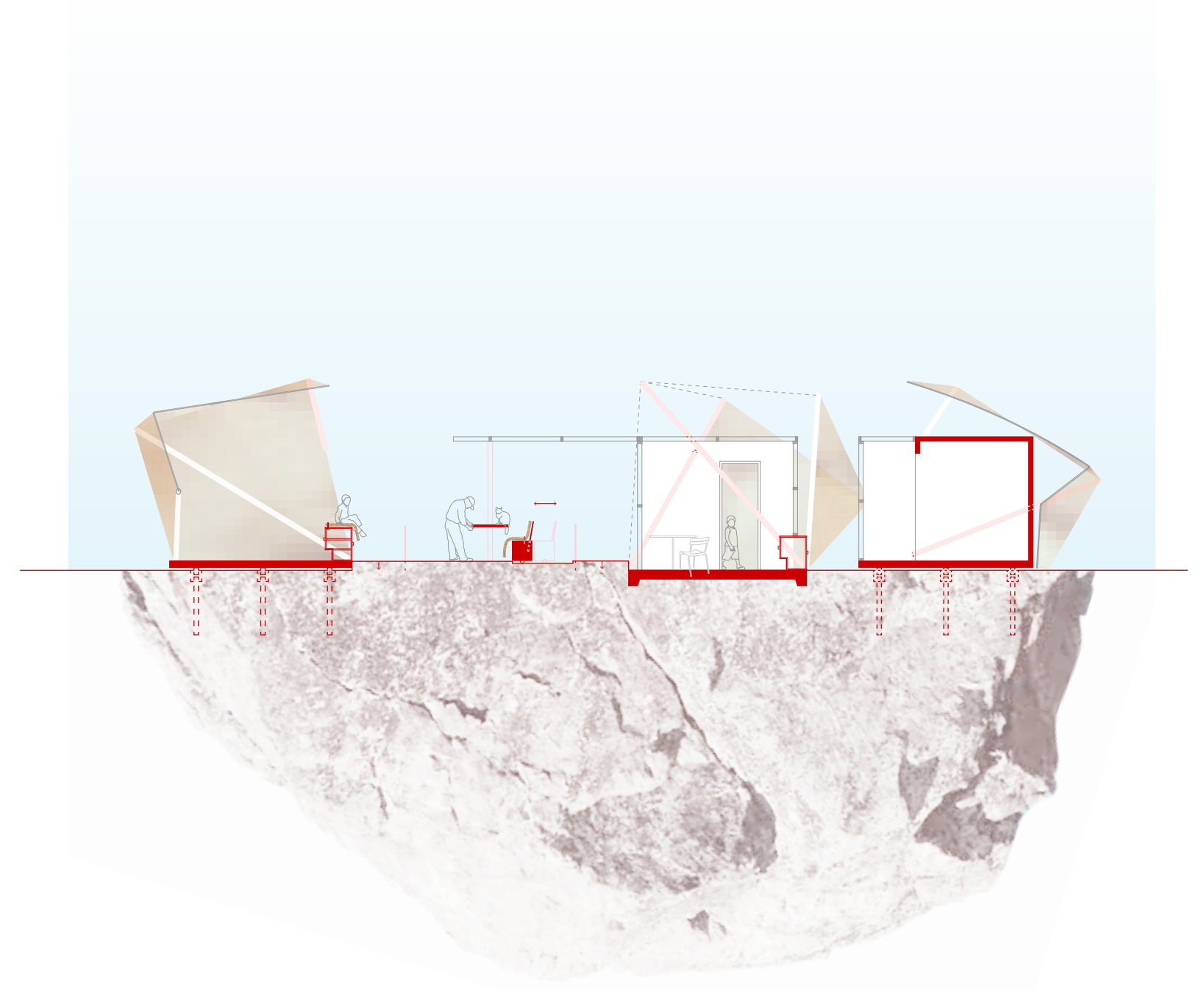


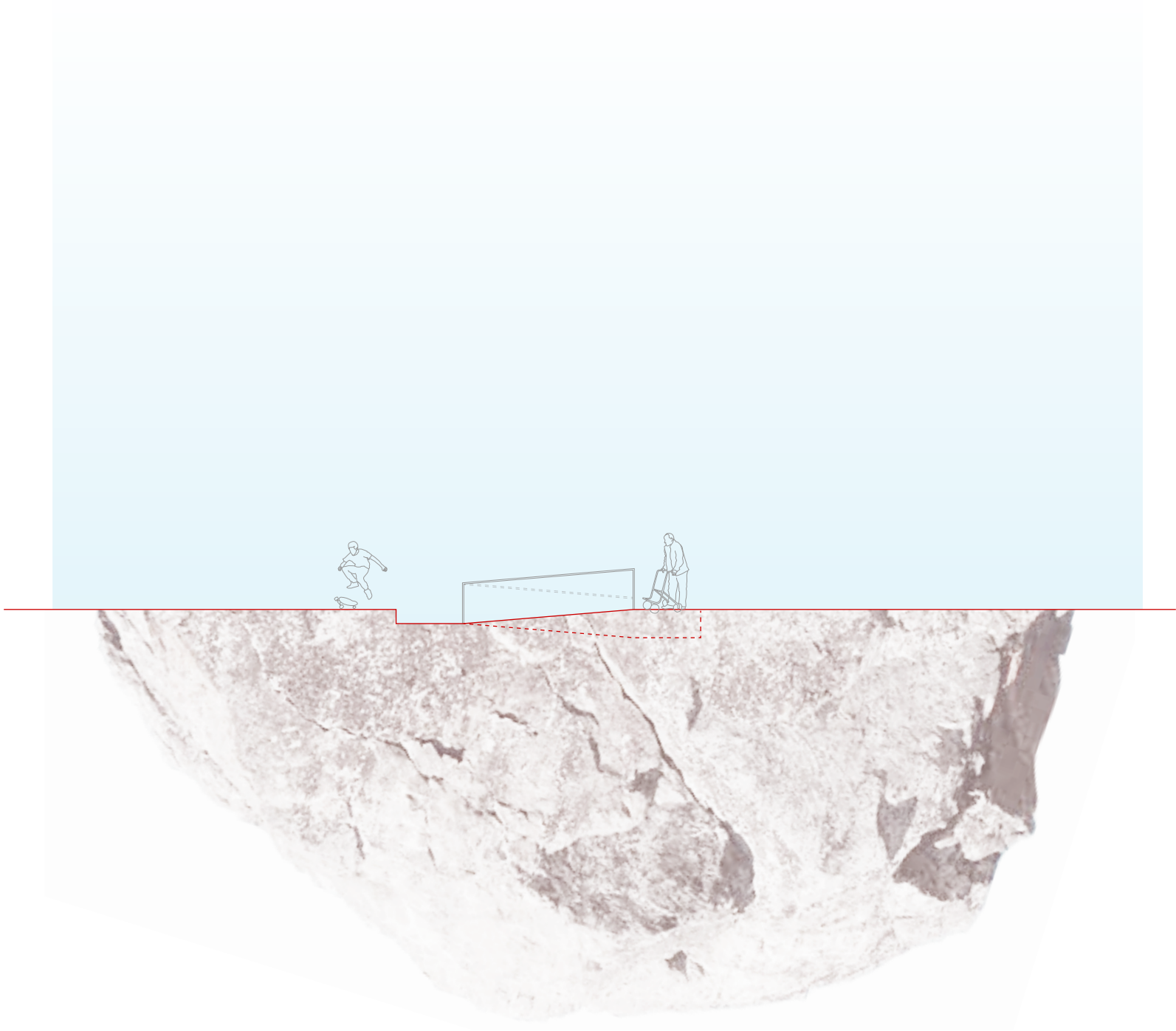
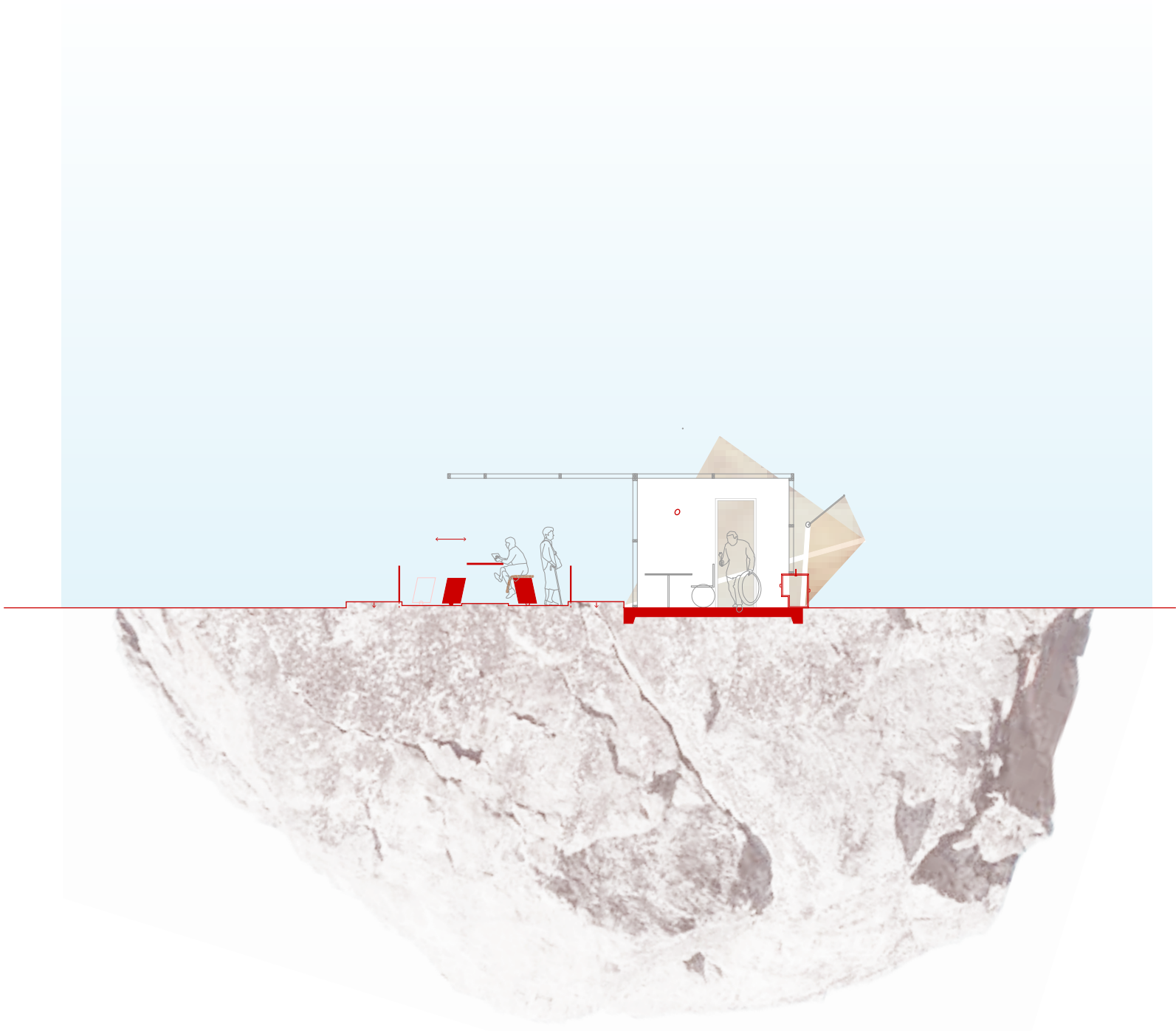


S 06

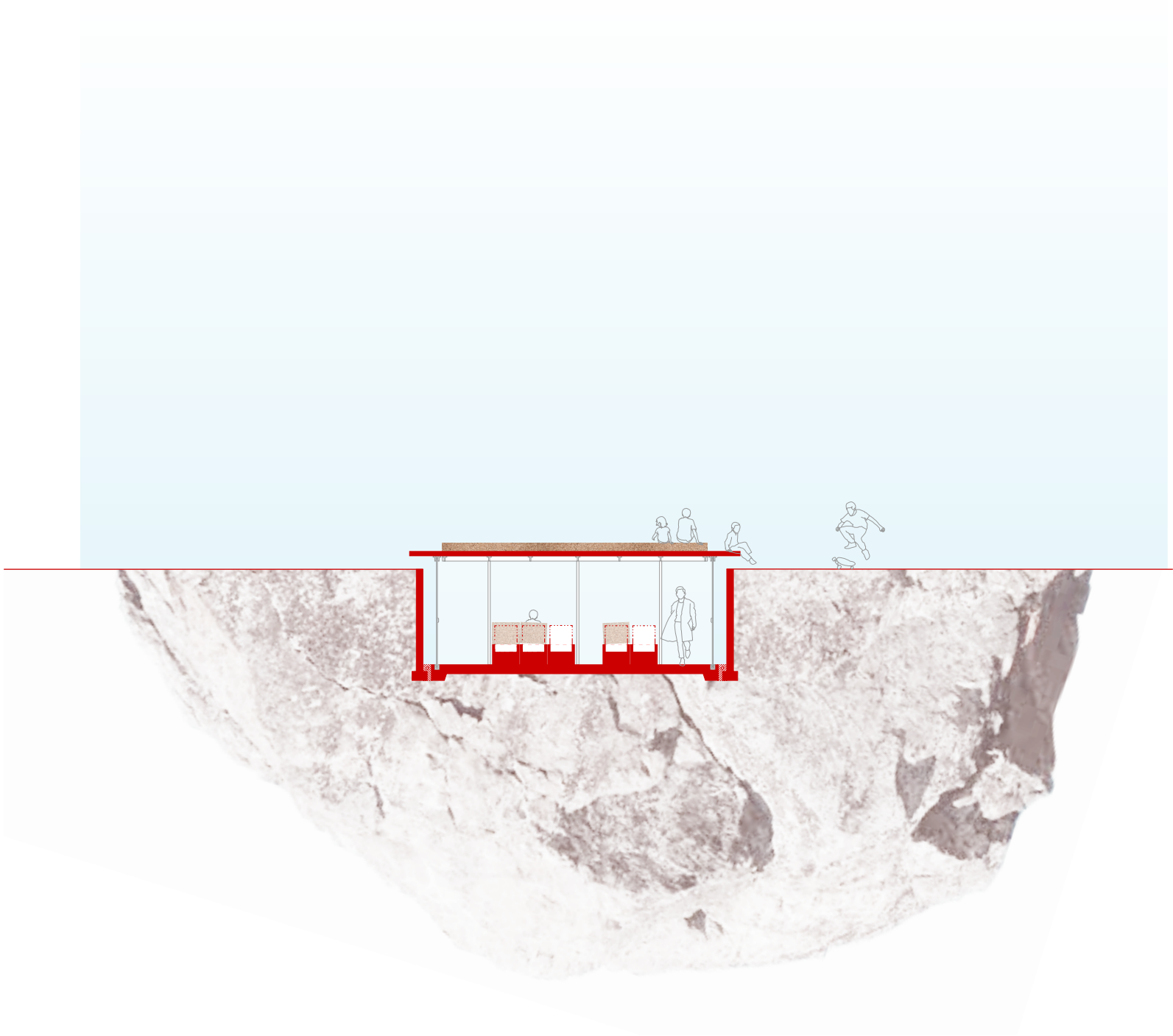


S 05

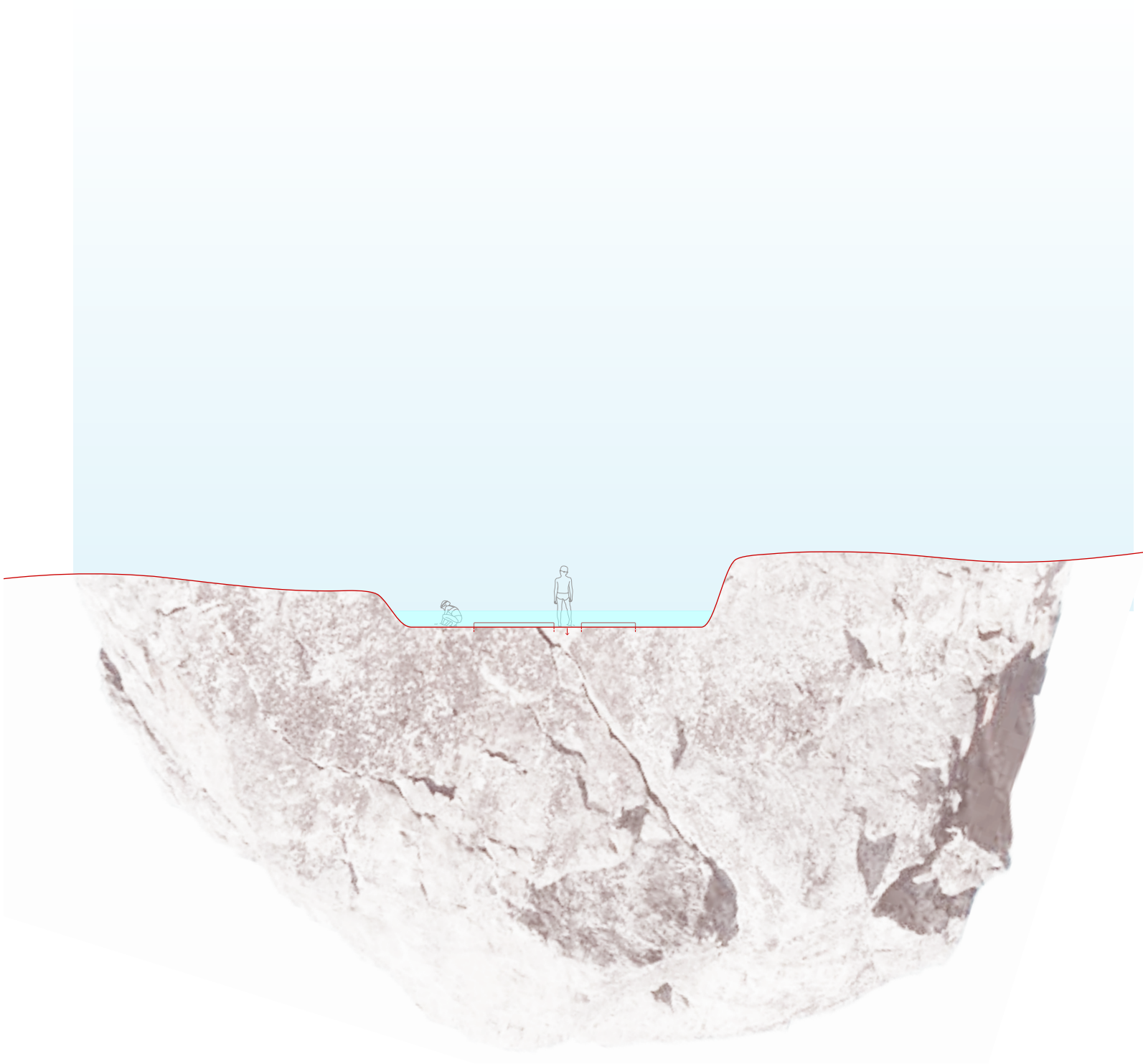


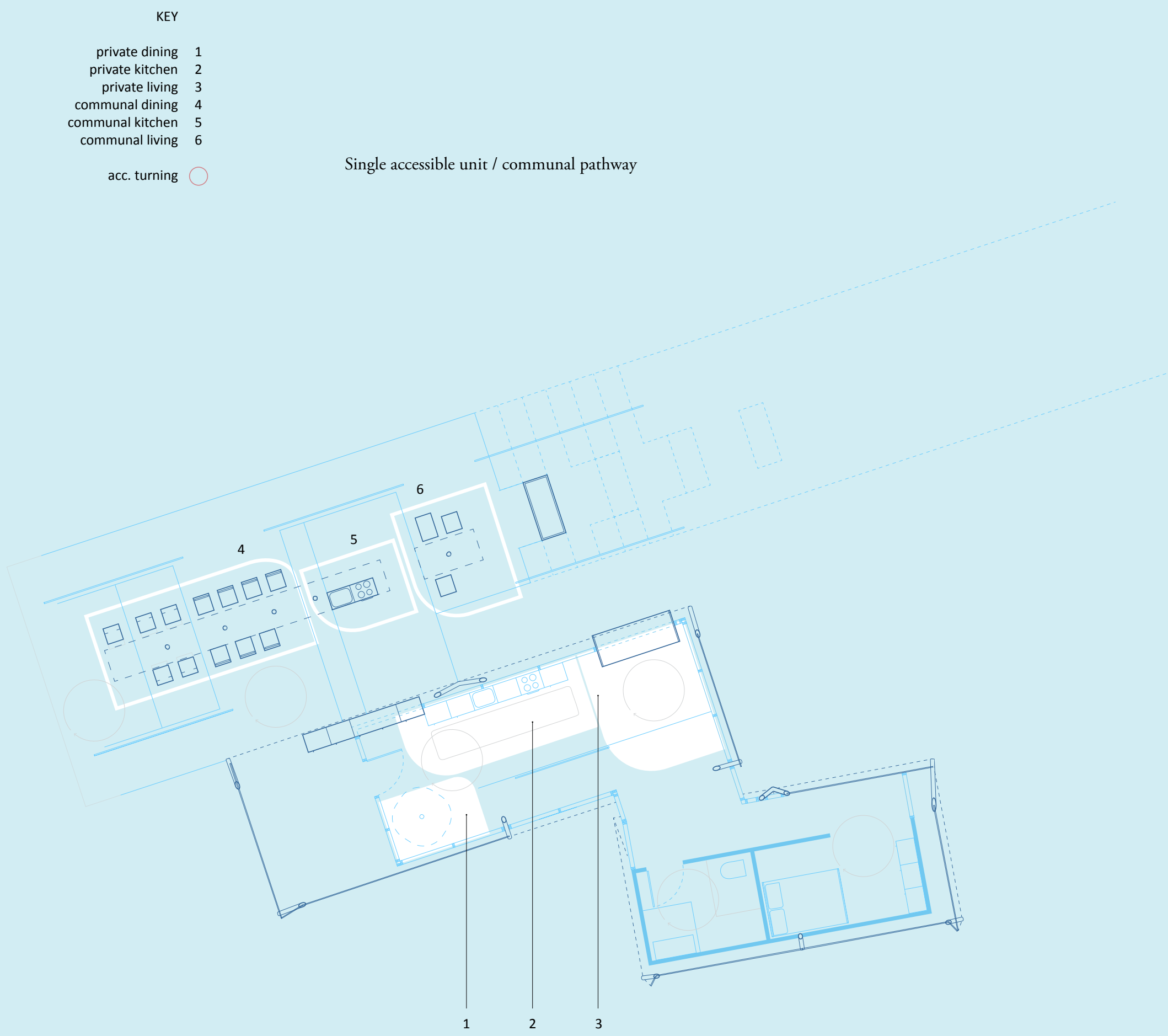


S 02



S 01





SCALE HIERARCHY

To mediate residential isolation, sedentary areas within the home are reduced in scale and relocated to the adjacent communal and public areas. Low activity areas such as the living and dining rooms are scaled down within each unit and instead residents are encouraged to occupy the seated working, dining and preparation areas along the pathways bordering their house. These communal areas remain exposed to the outside aiming to encourage visiting thoroughfare. In winter a shared work space is provided within the open air lecture theatre as well as a functioning café which doubles as communal living, dining and kitchen areas at night.

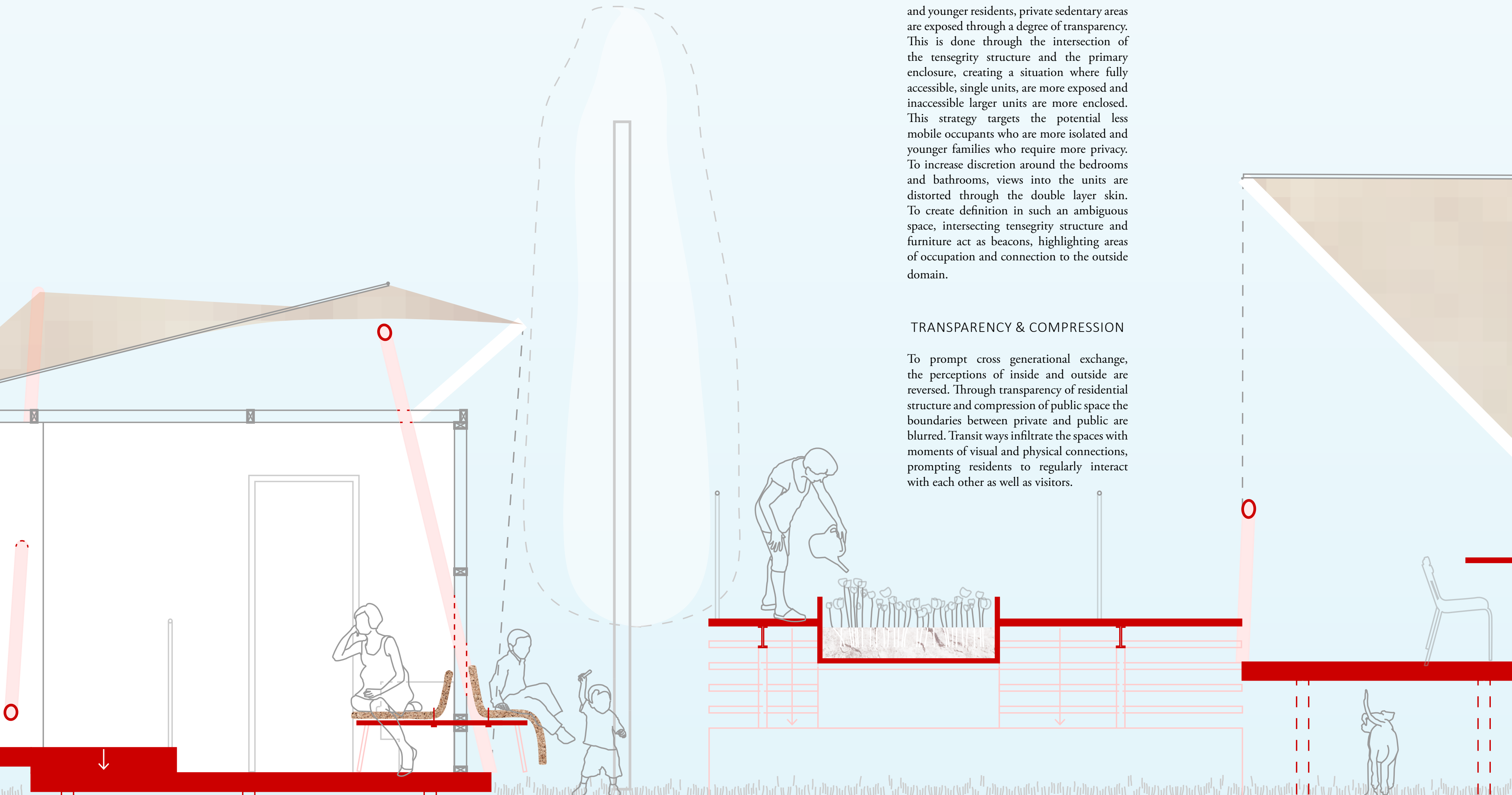
Fig 52

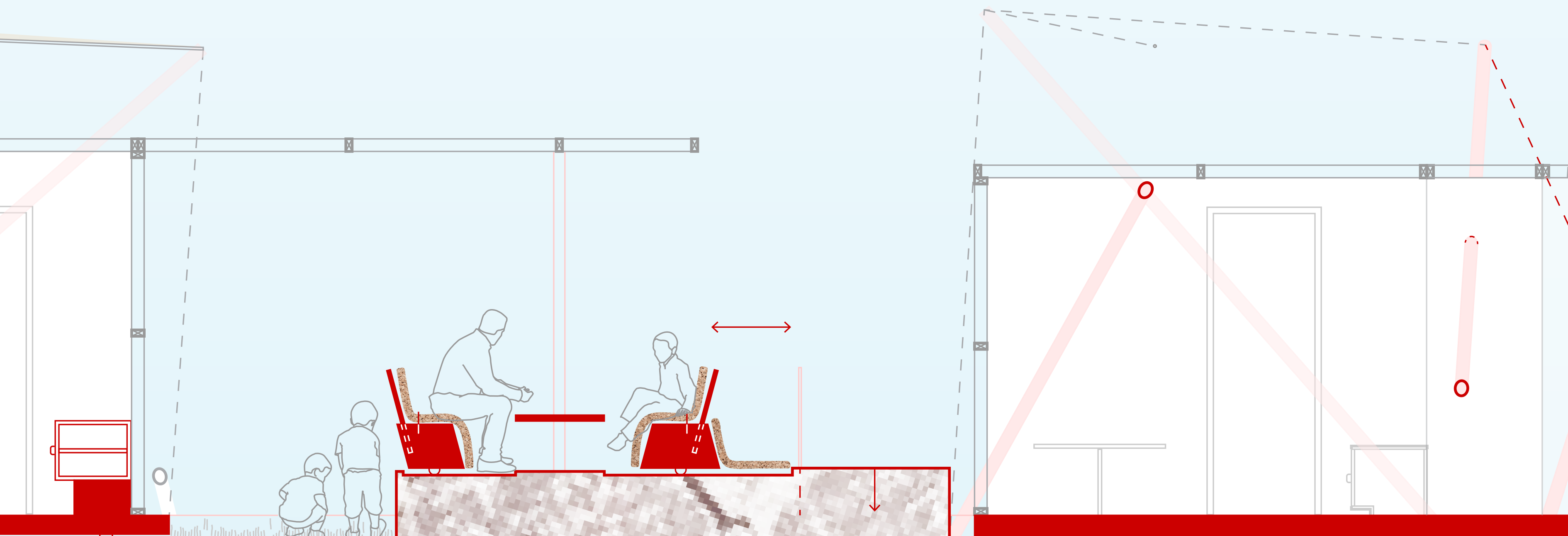
DISTORTION

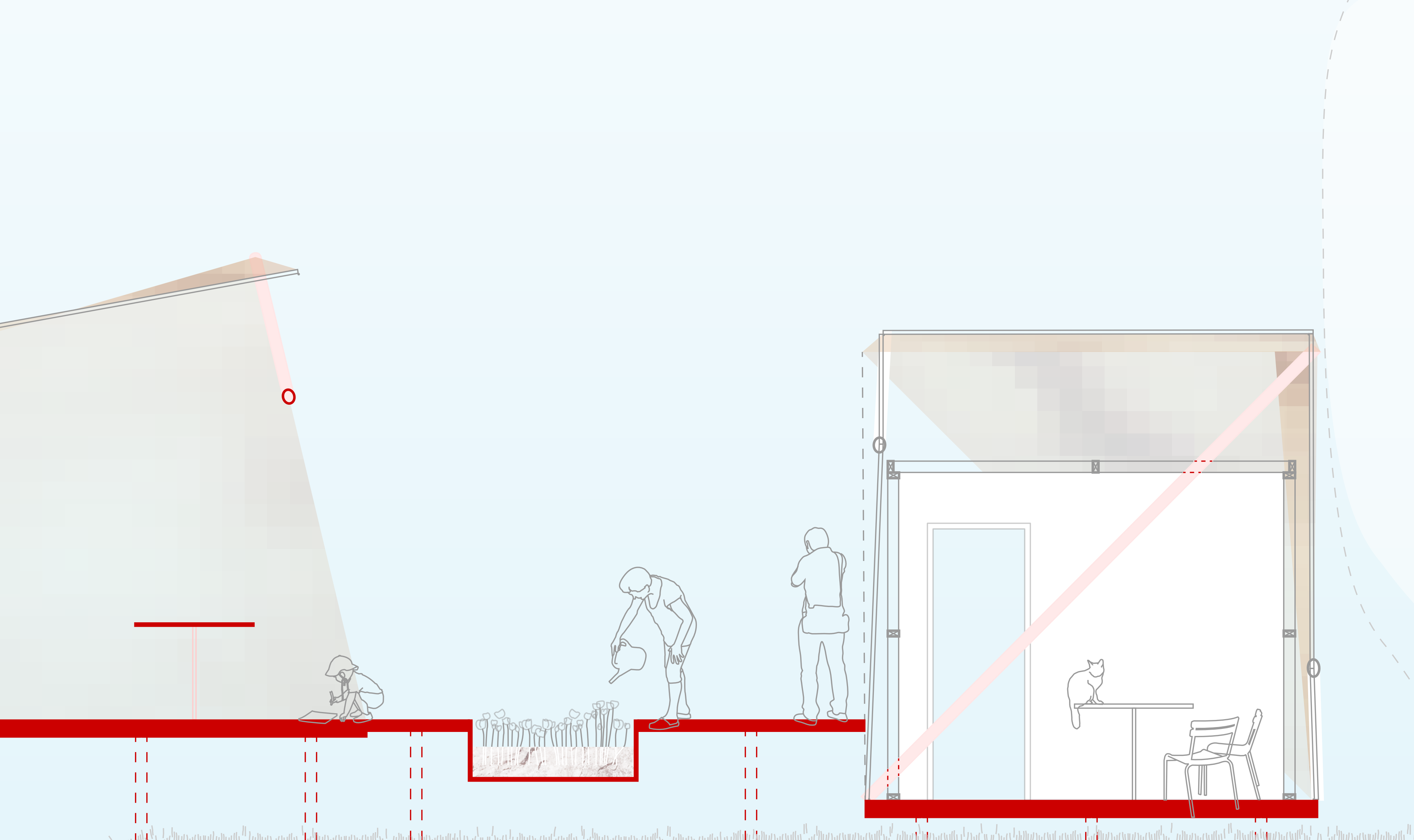
To increase the connection between the older and younger residents, private sedentary areas are exposed through a degree of transparency. This is done through the intersection of the tensegrity structure and the primary enclosure, creating a situation where fully accessible, single units, are more exposed and inaccessible larger units are more enclosed. This strategy targets the potential less mobile occupants who are more isolated and younger families who require more privacy. To increase discretion around the bedrooms and bathrooms, views into the units are distorted through the double layer skin. To create definition in such an ambiguous space, intersecting tensegrity structure and furniture act as beacons, highlighting areas of occupation and connection to the outside domain.

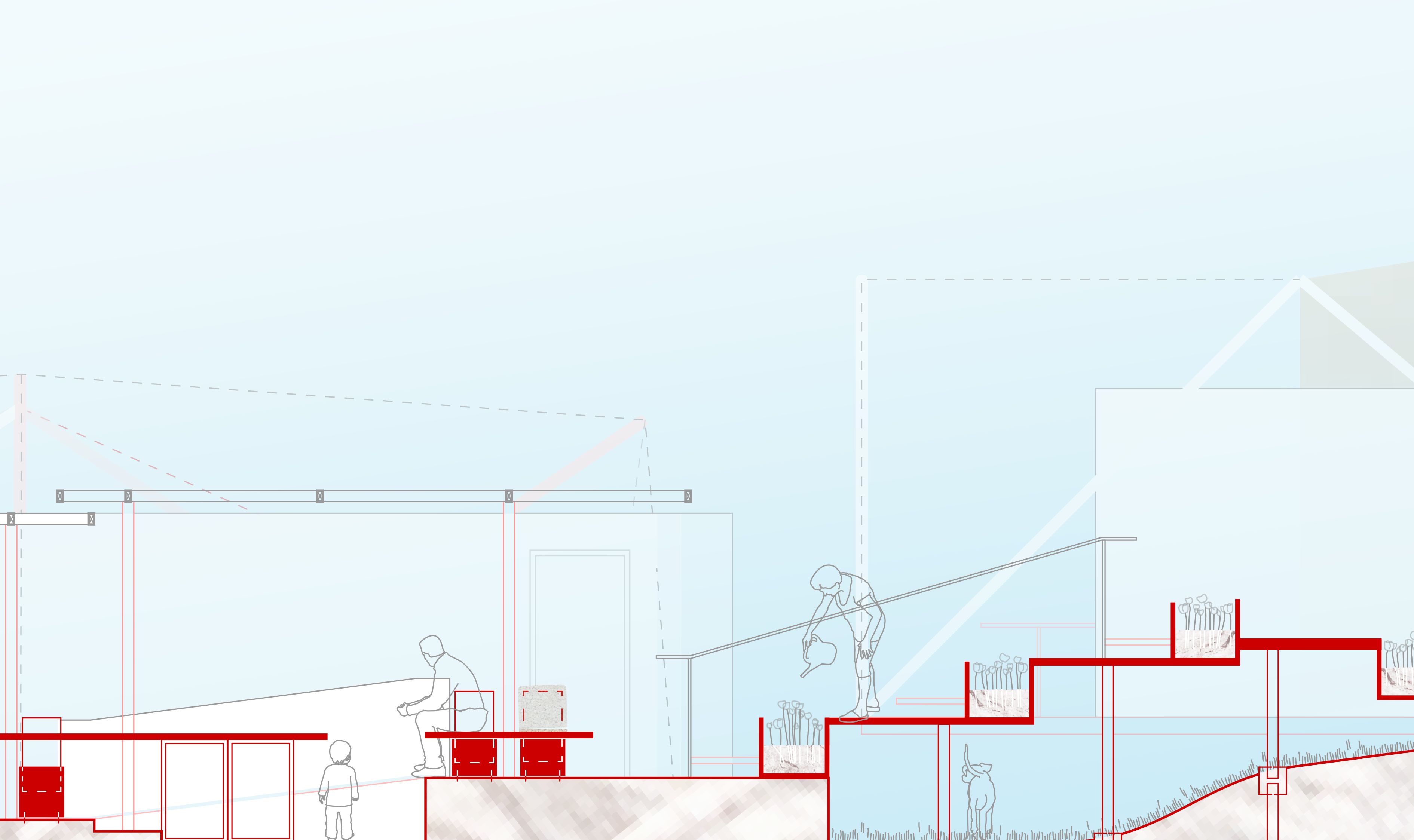
TRANSPARENCY & COMPRESSION

To prompt cross generational exchange, the perceptions of inside and outside are reversed. Through transparency of residential structure and compression of public space the boundaries between private and public are blurred. Transit ways infiltrate the spaces with moments of visual and physical connections, prompting residents to regularly interact with each other as well as visitors.









REFLECTION

Currently the elderly outnumber the young creating a generation disconnection. This results in many isolated, unsupported, elderly members living alone. The thesis aims to mediate this population fluctuation by creating an all age inclusive architecture that integrates public and private space. The design achieves this by blurring the boundaries between inside and outside to encourage residents and visitors to constantly interact.

The site is located along a busy pathway consisting of an integrated living, working and entertaining program. The busy location activates the design with interaction and has become integral to the social success of each space. The detailing of enclosing the residential and communal areas in such an exposed situation has been particularly insightful. Moments of visual and physical interaction between occupants and visitors have driven the design strategy to allow multiple generations to age in place.

The design objectives of transparency, distortion and diversity have increased the potential of multigenerational occupation and eliminated the aging stereotype within the residential and communal infrastructures. The mediation between exposing and enclosing private space has also demonstrated solutions to reducing isolation within the home while maintaining a level of comfort. The adaptability of these spaces has highlighted the potential for the residential design to be reconfigured at a much smaller granny flat scale on a variety of different sites. The flexibility and ephemeral nature of the structure allows the units to widely adapt and integrate around a large amount of natural and built forms.

The reduction, exposure and relocation of private sedentary space has been highly reliant on the soft boundaries created by the tensegrity skin and compressed communal space. Adjacency and partial enclosure has created opportunities for residential activity to extend into the pathways between the units. This extension is not as prominent into the lecture theatre, crèche and café because of the disconnection created by the road as well as public use constraints. The programs are integral to populating the site with a variety of different generations but lack in the integrated residential and communal blurring of inside and outside. There is potential for this research to be implemented on another site as a residential and communal program that is instead dependent on an existing set of public spaces. This would encourage the design to grow in scale and develop through a higher density requiring a more intensive detailing between inside and outside space.

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