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My life, my Home

Reasserting the connection between home and occupant

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Preface

This paper and my interests around home making came about through my own upbringing. Both my grandfathers were builders. My grandfathers prided themselves in the homes that they built for their respective families. The family as a whole was always seen as an entire working force, keeping the roof above their heads. Everyone in the household had a role to play. I remember stories of my mother being asked to help during the building proses. The urgency for labour superseded the concept of gender roles and took a backseat for the moment. You did what you could because it was in the best will of the family.

Both my grandfather's homes are a collection of rooms around a shared celebratory space which is usually the living room and kitchen. The space of celebration was in most cases the kitchen and not the living space. The kitchen usually had the big fireplace for cooking that would draw everybody close in the winter. The need to involve the people doing the dishes in the conversation also drew people towards the kitchen. The kitchen felt free from the structure that the lounge and living room had. Your words and actions would not be judged in the kitchen because the photos of dead relatives in the lounge can't see you. The kitchen also had the door to the backyard where children would play games.

It is for these above experiences I feel it is my responsibility to give everyone else these opportunities and experiences. To build something and to work towards something they could be proud of and at the end of the day, a space they could celebrate.

My Grandmother's kitchen, with the fireplace in the background:



Abstract

The intent of this paper is to uncover an architectural typology for a people who have none. An architectural typology that speaks to a culture and life of the people that live at the margins. I uncovered and have experienced that there is a lack of architectural representation of the people that live at the margins. I have taken on this responsibility to uncover an appropriate typology for these people. The reason for this lack of representation is that the people at the margins endured a plethora of cultural influences some their own some not. It is for this reason hybridity is required for this representation.

To further enrich the outcome of this study, this paper will be examining the housing typology in various incarnations in different locals and times in history. Looking at different incarnations of the housing typology I would like to understand the role architecture plays in the facilitation of social interaction and the aid it brings to societal ills. I am particularly interested in the housing typology because housing in my view is the singular typology people encounter every day. Housing and the community it implies has the biggest impact on the human experience.

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Declaration

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The current lived realities

Introduction

South Africa as a country, still lives with the legacies of its segregated Apartheid history, where most of the population is divided along racial and economic grounds. South Africa has been undergoing a process of rebuilding and social suturing since 1994. Injustice has remained throughout the period of reconstruction since 1994, and aspirations to create a better future for South Africa continue to meet obstacles. In Cape Town current social housing provisions are being constructed in open spaces where developments can easily take root, as well as in the poorer neighbourhoods on the periphery. The National Department of Human Settlement in South Africa has the responsibility of building homes for millions of South Africans who are currently homeless. While social housing developments have had the intention of improving the quality of life for historically disadvantaged people living in South Africa, to date, most of these social housing developments have failed in that attempt.

What this has resulted in is building typologies informed by art and culture of the people living within the city centre and not people who have been moved to the periphery of the city. It is now the case that people live in homes and interact with buildings not informed by their lived practices and culture.



Figure 1: "Whites only" sign prohibits others from using the water slide, Cape Town

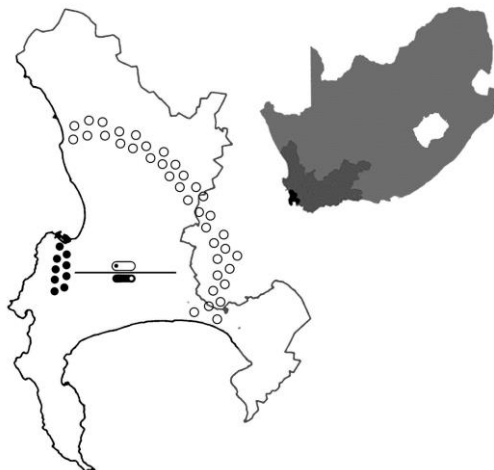


Figure 2: Image depicting division of people and the centre and periphery in Cape Town by Author

The significance of typologies

Typologies are important because of their relationship to history. A history of architecture and a history of people. Typologies provide a sense of continuity, connectedness and association to a place. Through their continued existence in the memory of people, typologies establish a bond that fosters deep meaning. When we encounter typologies, they trigger emotional responses.¹

The above evidence establishes the need for people to have and encounter typologies representative of their culture and lived practices. Typologies connect us to a place, to history and make us feel like we belong. These are things people at the margins/periphery don't have.

Understanding the discourse

Modernism in Africa

In the book *Situated Modernism*, Iain Low explains how European economic interests spearheaded the colonial expansion into African countries. Thereafter the cultural genocide that ensued and resulted in the destruction of existing socio-political systems. Modernism introduced new spatial systems alien to its context. The conflict between the colonizer and the colonized comes from the resistance between indigenous cultural practices and modernity. The decline of indigenous cultural practices and the stagnation thereof led to the loss of African spatial expression and architectural language. Modernism contested the everyday lived practices of African people and revealed the conflict and inappropriateness thereof in the African context.²

Iain Low notes that during the second half of the twentieth century Africa experienced a wave of continuous liberation and independence from colonial rule. This afforded people with the opportunity for new expressions and architectural productions to display their identity. Low notes however that post-independence architecture resulted in architecture that mimicked colonial buildings (Figure 3).³



Figure 3: Left: Slave lodge built in Cape town CBD. Right: homes built in Mitchells plain mimicking forms used at the slave lodge

¹ Barker, A. (2012) *Typological form in the architecture of Gabriël (Gawie) Fagan (1925-)*. South African Journal of Art History. 27 (3), 130–171.

² Lim, W. S. W. & Chang, J.-H. (2012) *Non West modernist past : on architecture & modernities*. Singapore: World Scientific Pub.

³ Ibid

Taking a closer look at Modernism in Africa, what becomes apparent is that Modernism is not purely a case of western against local. It does however reveal an engagement relationship embedded within the everyday and not a separate parallel relationship. Through assimilation and accommodation, modernism over time got compromised and contested. This became quite noticeable whilst analysing the work of emerging local practices after the independence of African countries towards the mid-twentieth century. Architects, whilst being educated with predominantly western professional frames and pedagogies could not resist the engagement required by the local.⁴

Typologies and the margins

To understand the typologies different people live in, we should divide the city into margins and centre (Figure 4). In Europe and America, modern art and architecture arose from the cosmopolitan centres and not from the areas on the margins. This notion stays true as well in the context of South Africa. Due to colonisation the people who live on the margins, live in housing typologies that remain functionally similar to the typologies of people living in the centres of the city. When considering this phenomenon, one wonders if modernism originates out of a specific form of living, how would modernism and for the relevancy of the today the contemporary, originate on the periphery? Would this then not imply a different typology of housing?⁵

In the book *Modernism at the margins* by Daniel Herwitz, he denotes that in South Africa it is accepted that it is not possible for authenticity in the field of modernism to be created in these spaces where people were perceived as being unintellectual and without culture. The places at the margins only stagnate or wait for the centre to set the tone for a way forward. People at the margins would be lucky to travel to the centre and then report back of what they could remember from seeing at the centres.⁶

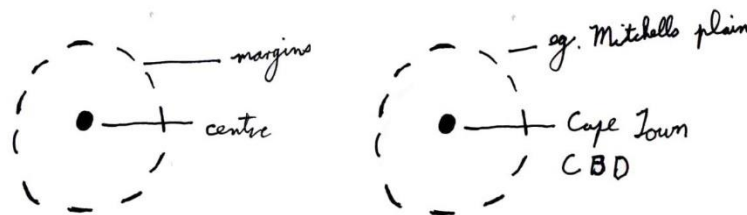


Figure 4: Example of Cape Town CBD as the centre and Mitchells plain as the margins by Author

⁴ Lim, W. S. W. & Chang, J.-H. (2012) *Non West modernist past : on architecture & modernities*. Singapore: World Scientific Pub.

⁵ Judin, H. & Vladislavić, I. (1998) *Blank- : architecture, apartheid and after*. Cape Town: David Philip.

⁶ Ibid

Daniel Herwitz claims that the solutions require the endured so-called dependency of the margins on the centre. It is through this dependency that opportunities for change and improvement could be identified. Due to the lack of a robust art world, the margins have to look towards at the centre and then adapt as it is required. The lack of a robust artworld is not evidence of a lack of culture and artistic nuance at the margins.⁷

This is actually proof of the suppression of indigenous knowledge and traditions that modernity implied. Herwitz claims that modernism at the margins tend to be imitative of creations that originate from the centre. Thus, artists and architects depend on models which are never their own. This is why marginal artists and architects struggle to express their own context within their work. Art at the margins gets dismissed and does not yet get the recognition it deserves until it gets appropriated by the centre. Herwitz notes that throughout the world people living at the margins feel divided between their localities and the culture set forth by the centres that rule. The fissure between identities implies a new form of representation.⁸

“ If art is going to speak to those conditions and so acknowledge the people who live them. It better be different from the European models it inherits.”⁹

The above text highlights the issue that modernism created at the margins. People at the margins had their customs and art dismissed. People at the margins could only refer to modernism as a means of cultural and artistic expression. Thus, in turn, unwittingly aid in the suppression of their own indigenous knowledge. Suppression of their own expression only due to their relation to the centre. The text refers that progression towards an appropriate typology requires people to progress past the modernist ideas that shape the built fabric they live in.

The above information sets the tone for my next engagement and analysis. In order to design for the people living on the margins I have to engage with their existing realities and typologies that they (the people at the margins) live in now.

Therefore, my next inquiry will be an analysis of historical typologies that come about through colonization which informs the housing typologies of today. It is throughout this analysis that I will seek to integrate the colonial ideologies with what I believe the people at the margins need. Creating the ambivalence of a hybrid architecture.

⁷ Judin, H. & Vladislavić, I. (1998) *Blank- : architecture, apartheid and after*. Cape Town: David Philip.

⁸ Ibid

⁹ Ibid

As previously stated, the architecture at the margins has historically been informed by the art and architecture of the centre and not by the culture and architecture of the margins. To understand this discourse, I will be analysing the development, in plan, of Cape Dutch Architecture.

During the 18th Century, indigenous people of South Africa were enslaved and housed in the buildings of the European settlers from the East Indian Company. In 1795 slavery was abolished but people currently still find themselves living within these typologies today. The premise here is that society, history and material culture are all interconnected and this forms the lived reality. The underlying aim of this analysis will be to document the way ordinary people integrated with Cape Dutch architecture (Figure 5) to fit their own life.¹⁰ The following is an analysis of these typologies.

According to Ricoeur, we are never at the beginning or end of a conversation. Rather, we find ourselves in the middle of a pre-existing discourse, attempting to position ourselves so that we might contribute. It is by this rationale that I acknowledge the fact that the starting point of my analysis is not the true origin of the dwelling typology in South Africa.¹¹



Figure 5: Cape Dutch building at Meerlust

¹⁰ Brink, Y. (1992) *Places of discourse and dialogue* : a study in the material culture of the Cape during the rule of the Dutch East India Company. University of Cape Town.

¹¹Ibid

The voorhuis/voorkamer



Figure 6: Floor plan of Meerlust showing the relation of the voorhuis and the kitchen

The development of Cape Dutch architecture as seen by its floor plan had development from straightforward rectangles to more complex shapes like H's, L's, U's and T's. The colonizers carried with them a social pattern that had been firmly established in Europe during the 17th century. "The fixedness of place was constantly being reinforced through social practice." Costume retinue and the method in which a person's relationship to the state and community are examples of these social practices.¹²

¹² Brink, Y. (1992) *Places of discourse and dialogue* : a study in the material culture of the Cape during the rule of the Dutch East India Company. University of Cape Town.



Figure 7: Development of Cape Dutch housing in relation to the *voorhuis*

What becomes apparent is that the preservation of the voorhuis/voorkamer is very important (figure 7). The voorhuis was the place for displaying the family's wealth and achievements. The voorhuis would often lead into the dining area, the space designated for celebrations and gatherings. Guests were not allowed into the kitchen as the space was seen as chaotic and offensive. In stark contrast with the "voorkamer", activities in the kitchen were perceived to be dirty and impure. Space in the kitchen was less demarcated. This is where the owner's concept of control became lost because it was the place for dirty "peasant" life.¹³

Activities in the kitchen space later became associated with carnivalesque activities. As people started taking ownership of this space it became the place for competitions. Who could eat the most snails and drink the most beer? There the carnivalesque activities would often spill out into the backyard and then the streets whilst animals were being slaughtered in the same space. These activities could not happen in the same space where the traditional Cape Dutch family would have their wedding.¹⁴

It's in this polarity that I feel the current housing model needs to adapt. The so-called peasants and their descendants today find themselves living in typologies informed by the traditional Cape Dutch houses. Homes with separate voorkamers and kitchen spaces. The kitchen space is often the space where people spend the most of their time yet this space is relegated to be at the back of the house. History indicated that one room could be programmed to fit several programmes and, in this case, become a space for work and celebration.¹⁵



Figure 8: Comparative image of "voorkamers" historically and now. Left The Rhone screen, looking into the voorhuis of traditional Cape Dutch house. Right voorhuis of a house in Stellenbosch today

¹³ Brink, Y. (1992) *Places of discourse and dialogue* : a study in the material culture of the Cape during the rule of the Dutch East India Company. University of Cape Town.

¹⁴ Ibid

¹⁵ Ibid

Moving towards possible solutions

Gabriel Fagan

The following will be an analysis of the domestic architecture of Gabriel Fagan. Fagan`s work displays an example of how architects have hybridised and adopted to the vernacular architecture. Fagan`s architecture is often described as place-specific or regional architecture. This is because in order to understand his work one needs to understand its context. This inseparable relationship connects his work to a place. Fagan`s work will be analysed to ascertain what are the ideas that have origin in vernacular architecture of South Africa and more specifically the Cape. Fagan`s work permeates with reverences of the Cape vernacular, whilst being modern architecture.



Figure 9: Image of Gabriel Fagan

In order to understand Fagan`s responses it is necessary to define what vernacular architecture is. As I stated above vernacular architecture is an important informant to Fagan`s work. Defining what Vernacular architecture is will bring clarity to my analysis.

Vernacular architecture is a product of architectural responses constantly reworked. The first settlers of a particular landscape would have to construct shelters guided by prevailing environmental factors. These ideas were tried and tested over time and now would be regarded as vernacular architecture.¹⁶

¹⁶ Barker, A. (2012) *Typological form in the architecture of Gabriël (Gawie) Fagan (1925-)*. South African Journal of Art History. 27 (3), 130–171.



Figure 10: Vernacular Architecture of the Cape. Left: A circular matjieshuis, Middle: Rectangular reed-walled cottage, Right: reed-walled cottage,

The Wall

The wall provided Fagan with the opportunity to emulate the stereotomic quality of vernacular architecture. The wall as enclosure evolved from the mat and weave constructions according to Fagan. Examples of this are the beautifully woven reed and branch structures and covered in clay (Figure 10). These typologies change and adapt due to differences in climate and the availability of materials to area, however, still share a common thread of the wall as enclosure.¹⁷

The use of brick goes beyond enclosure but also structure. Fagan argues for this utilization by referencing structures of the Mediterranean climate that employ similar structural logic as they require adequate thermal mass. An example of this technique is the housing Fagan designed in Stellenbosch, Ida's Valley Housing, (Figure 11) which I will expand on later. The barrel-vaulted roofs structures give the design a stereotomic and plastic nature reminiscent of vernacular architecture.¹⁸

Structure was never gratuitously expressed however form was produced through the required structural solution. Fagan's responses also pay homage to traditional Cape Dutch homes. Fagan employs thick walls painted white echoing the affinity to Cape Dutch architecture.¹⁹



Figure 11: Ida's Valley Housing 1975

¹⁷ Barker, A. (2012) *Typological form in the architecture of Gabriël (Gawie) Fagan (1925-)*. South African Journal of Art History. 27 (3), 130–171.

¹⁸ Ibid

¹⁹ Ibid

The Fireplace

Fagan makes use of the fireplace in both its functional and symbolic ways. It continues to provide the dwelling with heat and on occasion becomes a space to cook food. The fireplace remains the focal point of the home either through its central position within the dwelling (Figure 13) or by the sheer scale of the fireplace (Figure 12). Fireplaces built at Cape Dutch Vernacular homes were tacked at the end of structures and primarily utilized for cooking. Symbolically the fireplace remained the hearth of the homes and it would at times be the workspace as well as the nursery.²⁰



Figure 13: House Neethling



Figure 12: House Gabriël Fagan - Die Es

²⁰ Barker, A. (2012) *Typological form in the architecture of Gabriël (Gawie) Fagan (1925-)*. South African Journal of Art History. 27 (3), 130–171.

Idas Valley Housing (1975)

by Gawie Fagan (Low-cost workers cottages on historic erf)



Figure 14:Ida's Valley Housing 1975

The brief was to design cottages for farm workers. The design had to be Architecturally sympathetic towards the 18th-century Cape Dutch farmstead on the same farm, that Fagan had previously restored. The home also had to be economical and robust.²¹

The 4 cottages were oriented north and separated by allowing for adequate parking space. The units were stepped in relation to one another, so that the front stoep had a measure of privacy (Figure 15).²²

The vaulted roofs were set to be an extension of the stereotomic nature that the architect wanted to achieve. As depicted in figure 16 the structure displays itself as a form that exists through a solid form, from which was subtracted from. In another words the form was cut away from.

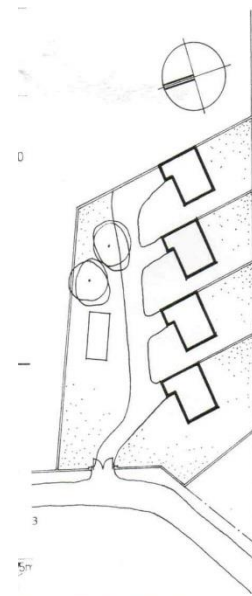


Figure 15:Idas Valley Housing site plan

²¹ Fagan, G. (2005) *Twenty Cape houses*. Cape Town: Breestraat Publikasies.

²² Ibid

Quite interesting with this project, the architect did not initially plan to have a fireplace, but the residents requested to have one in the kitchen/lounge area.²³

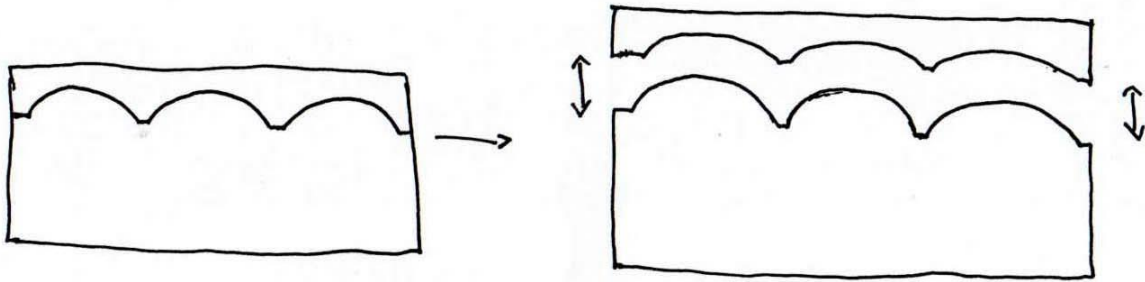


Figure 16: Drawing by author depicting the homes stereotomic nature

The project displayed an iteration of how an architect attempted to be sympathetic towards Cape Dutch Architecture whilst also acknowledging vernacular architecture that came before. This duality of architectural typologies speaks to the hybridity required by the architecture to be of this place. Hybridity also comes through the request made by the residents to have a fireplace.

According to Bhabha, hybridity is a critique of the canon and its exclusion of alternate narratives. Hybridity speaks to the “the migration of yesterday’s “savages” from their peripheral spaces to the homes of their “masters” underlies a blessing invasion that, by “Third-Worlding” the centre, creates “fissures” within the very structures that sustain it.”²⁴. The fissures represent how even in the most challenging of situations life can happen.²⁵

²³ Fagan, G. (2005) *Twenty Cape houses*. Cape Town: Breestraat Publikasies.

²⁴ Chavda, A., GITEEMONI SAIKIA . ASST. PROFESSOR, E. and Sharma, B., 2022. *Mimicry, Ambivalence, and Hybridity – Postcolonial Studies*. [online] Scholarblogs.emory.edu. Available at: <<https://scholarblogs.emory.edu/postcolonialstudies/2014/06/21/mimicry-ambivalence-and-hybridity/>> [Accessed 8 September 2022].

²⁵ Ibid

Willie Bester

Willie Bester was born in Montagu (1956) in the Western Cape. Bester is an artist who through his work contests traditional forms of representation. Bester often engages with ideas of social transformation, whilst engaging with discarded objects to change their enate meaning. The deep symbolism is displayed by the pragmatic way that he reuses materials which are in abundance “reclaiming” them to convey a new message. This type of reclamation represents a distancing and repositioning towards artistic traditions of the Global North. The hybridization of the underpinning views of the Global North. Hybridization by using what is the canon to bring new meaning and value.²⁶



Figure 17: Image of Willie Bester

Willie Bester, in his painting of a Cape Dutch farmhouse, stood in stark contrast with his contemporaries. Bester did not paint the frontal view of the farmhouse. Bester however painted a view of the back of the farmhouse which had the farmworkers and servants. Bester identified more with the experience of the farmworkers and servants. The hybridity in this case is a change in view point. The subject remains the same Cape Dutch farmhouse told from another perspective. In this manner giving the farmhouse new meaning.²⁷

My architectural inquiry should speak to this form of hybridity. Taking the standard plan of a Cape Dutch farmstead and creating the inverse.



Figure 18: Art piece made with metal and found objects (2019)

²⁶ Louw, M. (2019) *Transformation through reclamation and the repositioning of tradition*. South African Journal of Art History. 34 (2), 43–61.

²⁷ Ibid

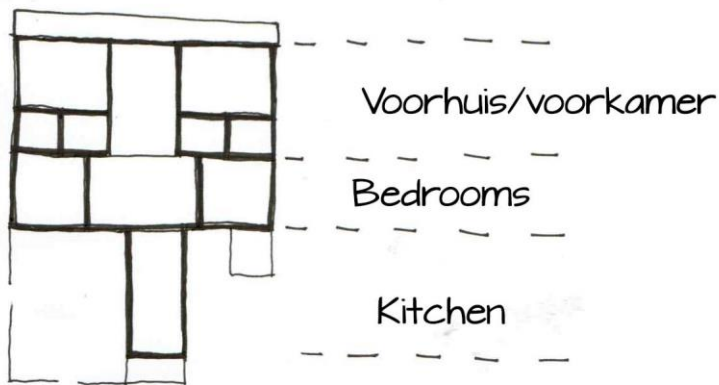
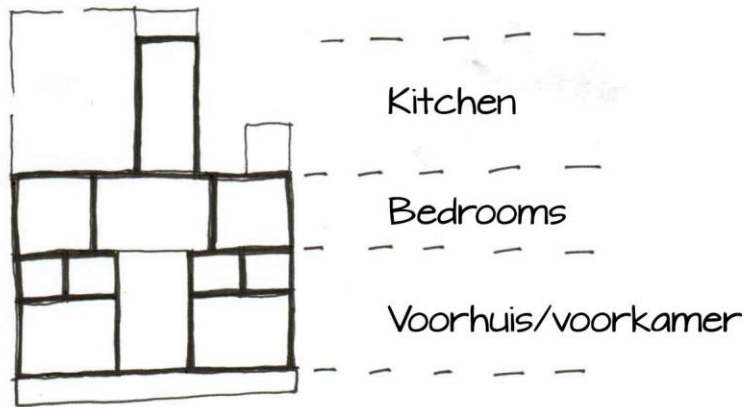


Figure 19: Inverse drawing of traditional Cape Dutch Farmstead

The drawing above (Figure 19) indicated my initial conceptual idea of inversion. The top drawing indicated the traditional plan of a Cape Dutch Farmstead (Meerlust). The bottom indicates the inversion of this plan where I make the kitchen space the celebrated space.²⁸

²⁸ Louw, M. (2019) *Transformation through reclamation and the repositioning of tradition*. South African Journal of Art History. 34 (2), 43–61.

Envisioning appropriate housing responses in a future Cape Town

I see the typology as cultural inclusion and the home as economic inclusion. I see housing as a tool to address spatial inequalities. The following will be an analysis of the current housing environment in Cape Town.

The book “Vision of a future Cape Town” discusses why Cape Town is underperforming in terms of its potential to be a great city. This dissertation seeks to build on that study by focusing more intently on housing. After establishing that there is indeed a housing crisis the dissertation will then investigate possible methods of addressing this problem.

The book expresses the collective frustration of urban designers, architects and planners on the development that has occurred in Cape Town post-1994. According to the group the City of Cape Town has the potential to be a great city, but it is seeming not being developed to its full potential. The group notes that the city’s failure to address apartheid spatial planning that exists within the city has resulted in aimless urban sprawl.²⁹



Figure 20: Aerial view of central Cape Town from Mouille Point towards Devil's Peak

Development in the city today has failed to address what it means to live in a post-apartheid city. The city is still littered with spatial planning displaying apartheid ideologies like separation and fragmentation. The group mentions that proposals that promote a positive change have been made in the past. What has been built however does not reflect any of the suggested proposals. It is for this reason that the book also acknowledges the fact that architecture alone is not the solution but a step in the right direction. A change within the political culture of the city is also needed. Elected officials need to step up and listen to what the people of the city demand.³⁰

The book then goes into a discussion on what poor development and spatial planning have resulted in. The book critiques the overall structure of the city. Compared to other cities in the world, Cape Town is one of the cities with the lowest density. Spaces within the city are noticeably monofunctional. Division on several facets of society is still taking place. The separation of spaces and people indicates the strong relationship the city still has with its racial past. People are also still too dependent on the motor car. The poor state of Cape town's public transport system is contributing to the dominance of the motor car. The above-mentioned issues make up the majority of Cape Town's spatial planning issues.³¹

Furthermore, the book highlights the unsustainable relationship the city has with its natural resources. The urban sprawl is devastating to its agricultural land. Natural sources of water are continuously polluted. Potential natural assets are utilized as dumping sites, resulting in even more pollution. The continued inequality that exists is being worsened by current developments. One of the social ills left behind by apartheid is the level of inequality. In Cape Town, it remains

²⁹ Cooke, J. et al. (2019) *A vision of a future Cape Town* : a booklet to accompany an exhibition. Cape Town: [publisher not identified].

³⁰ Ibid

³¹ Ibid

the poor people who have to travel very far for work. Most of the people's time and money are spent commuting between the city and their home. The city's current spatial planning gives very little consideration to the quality of public spaces. Due to the fragmented nature of the city, public spaces are inaccessible to the poorer people within the city.³² These are some of the issues unpacked in the book.

The city of Cape Town is failing to offer people sustainable and decent housing opportunities. The demand for small size low-cost apartments has increased. This becomes quite noticeable when you look at the emerging city fabric. The apartments however are not affordable for the lower and unemployed people in Cape Town. How long has South Africa and Cape town in particular been facing this housing deficit? After apartheid Cape Town became synonymous with poor health pertaining to poor housing conditions, especially for people living on the periphery of the city.³³

Homelessness

The result of spatial displacement of the past is that people were moved out of the city centres. The government understood this and released land for occupation. This resulted in the shack building typology (Figure 21). People building by their own means predominantly out of corrugated iron sheets. Yet after the deterioration of Apartheid and still today homeless people remain concentrated in urban areas and rural districts. Homeless people tend to remain mobile with no home address which often excluded them from government services and assistance.³⁴

The Street People Programme found 7383 homeless people in Cape Town in 2015. The streets of Cape Town are home to 4862 of those people. These people often occupy land not suitable for human settlement (Figure 22). By occupying these spaces, they contest existing property rights.³⁵

³² Cooke, J. et al. (2019) *A vision of a future Cape Town* : a booklet to accompany an exhibition. Cape Town: [publisher not identified].

³³ Ibid

³⁴ Jadezweni, N., 2021. *Street homelessness in urban Cape Town: An exploratory study of the lived experiences of people living on the streets*. Master of Psychology. Stellenbosch University.

³⁵ Ibid



Figure 21: Blikkies dorp in Cape Town



Figure 22: Tents and shacks of homeless people in and around Cape Town CBD

Collective housing analysis

Collective housing

Collective housing is a form of housing with more communal spaces and facilities than traditional housing.³⁶ Collective housing is an attempt to provide higher quality housing whilst not conforming to existing ideologies of family-centric households. Collective housing is not a utopian idea.³⁷ I believe it offers solutions to the housing crisis we now face in Cape Town. In collective housing, the sharing of certain facilities and services becomes more efficient and also more affordable for the occupant. The extinction of the conventional family is the social situation that the collective housing scheme reacts to.³⁸



Figure 23: Top : Perspective and plan of Meerlust farmhouse. Bottom: Contemporary Housing development with micro apartment in Woodstock. Image indicates contemporary architecture cramming in the program also found in colonial building e.g., Kitchen, Lounge, Bedroom

The current most popular solution to the housing crisis is the micro-apartment. The core problem contemporary architecture faces today is the micro-apartment and its small-scale compatriots (bottom figure 23). Unemployed and lower-class citizens are forced to live on the periphery of any given city as well as in Cape Town because they cannot afford apartments within the city centres. Apartments developed today are simply variations of the accepted models derived from Cape Dutch Architecture (Figure 23) and other colonial typologies. The same programs are inserted into these apartments. This is merely a quantitative exercise of shoehorning kitchens and bathrooms into a smaller space. We should now question the

³⁶ Vestbro, D. U. (2000) *FROM COLLECTIVE HOUSING TO COHOUSING — A SUMMARY OF RESEARCH*. Journal of architectural and planning research. 17 (2), 164–178.

³⁷ Teige, K. & Dluhosch, E. (2002) *The minimum dwelling = L'habitation minimum = Die Kleinstwohnung*. Cambridge, Mass: MIT Press.

³⁸ Ibid

functionality of this accepted model. The common typology built today comes from an era where a woman was not allowed in the workforce.³⁹

Today in more cases than in the past both men and women earn a salary outside the confines of their own homes. The societal change is visible but not yet in the architecture, that we are producing. Societal change should be reflected within our architecture. The architecture produced today needs to aid in the progression of the disadvantaged and unemployed citizens.

To determine what the apartment or dwelling needs we need to establish what the social needs are and then mobilize to satisfy them. At some point in our evolution, old forms of housing should collapse. Service functions such as bathrooms and spaces for eating could be completely fragmented and separated from the dwelling itself and centralized within the community. The living space itself is transformed into a single cell for the family. The collective housing solutions of the past represent the housing solutions to Cape Town in its embryonic state. This is because “everything that will be already exists”.⁴⁰

Peter Behrens

Weissenhof Estate was built as part of the architectural exhibition "Die Wohnung" in 1927. The 1st World War left Europe economically unstable. This gave way to the apparent housing crisis. The exhibition was sponsored by the Deutscher Werkbund and funded by the city of Stuttgart. The exhibition realised that there was a need for housing reform. Therefore, they tasked 17 different architects to design 33 different housing units, under the leadership of Ludwig Mies van der Rohe. The architects were tasked to be innovative in their approach and to create homes that promote a modern, healthy and affordable functional life.

In 1927 architect Peter Behrens designed a multi-story collective housing building. The Weissenhof Estate Terrace House (Figure 24) has twelve apartments. The design allows for each apartment to have adequate sunlight and good cross ventilation. Each Apartment also has its own open patio created by the terracing of units. The units on the ground floor have their own private gardens. The terraces are spacious enough to accommodate beds which allow people to sleep outside when the weather is desirable. Behrens still felt it necessary to acknowledge the street edge. This is why Behrens decided on a steplike configuration to align the house with the street. Behrens rejects the use of long corridors; thus, circulation and the use of space become more efficient.⁴¹



Figure 24: Terrace House, 1927.
Architect: Peter Behrens

³⁹ Teige, K. & Dluhosch, E. (2002) *The minimum dwelling* = L'habitation minimum = Die Kleinstwohnung. Cambridge, Mass: MIT Press.

⁴⁰ Ibid

⁴¹ Ibid

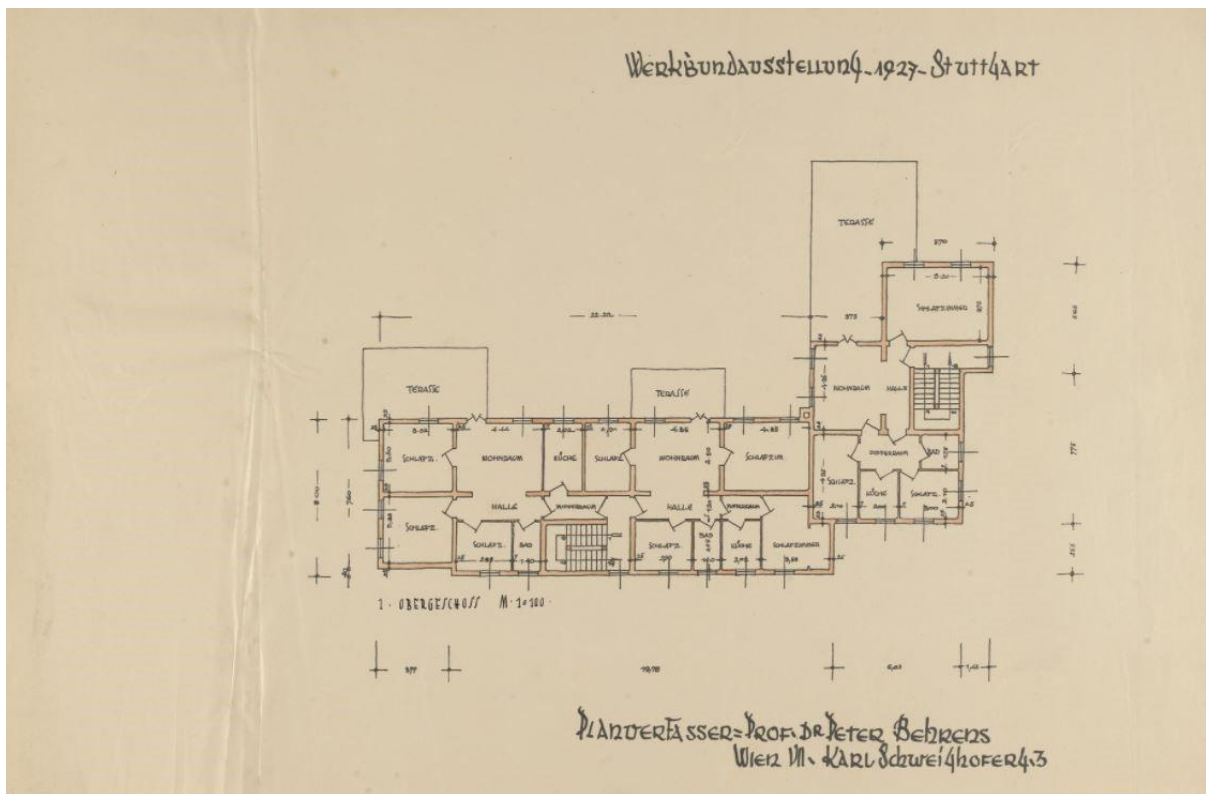


Figure 25: Weissenhof Apartment House (Second floor plan)

Le Corbusier + Pierre Jeanneret

Le Corbusier and Pierre Jeanneret designed a two-family buildings known as Houses 14 and 15 (Figure 26). The architects used reinforced concrete to create the roof garden (figure 29), the free plan, the long window, and the free façade. These methods are the clear ideology of Le Corbusier's five points of architecture. The building has the capability to fragment the open living space into multiple sleeping compartments, with the use of sliding walls. A large built-in closet would house the bed before the subdivision took place. Houses 14 and 15 are symmetrical. The buildings both have 3 levels (figure 28), both with a central extruded staircase. You'd enter the building through the piloti supported mass. Inside the ground floor is all the services the house needs like the cloakroom, boiler room, coal storage room, laundry room, staff room, and storage room. The next floor is the main living area. There is a dining area behind the stairs, and a kitchen and bathroom at the back end. Most of the plan is filled with large and flexible living and sleeping areas that use a lot of sunlight through a row of long windows along the front façade. The rooftop has an outdoor garden and a sun terrace. Also noteworthy is the library and study hidden behind the stairs (figure 30). The location of this space meant that residents could work late into the night downstairs without disturbing others.⁴²

⁴² ArchDaily. 2022. AD Classics: Weissenhof-Siedlung Houses 14 and 15 / Le Corbusier + Pierre Jeanneret. [online] Available at: <[27 | Page](https://www.archdaily.com/490048/ad-classics-weissenhof-siedlung-houses-14-and-15-le-corbusier-and-pierre-jeanneret#:~:text=Built%20between%20the%201923%20manifesto,for%20the%20future%20of%20architectur e.> [Accessed 11 April 2022].</p>
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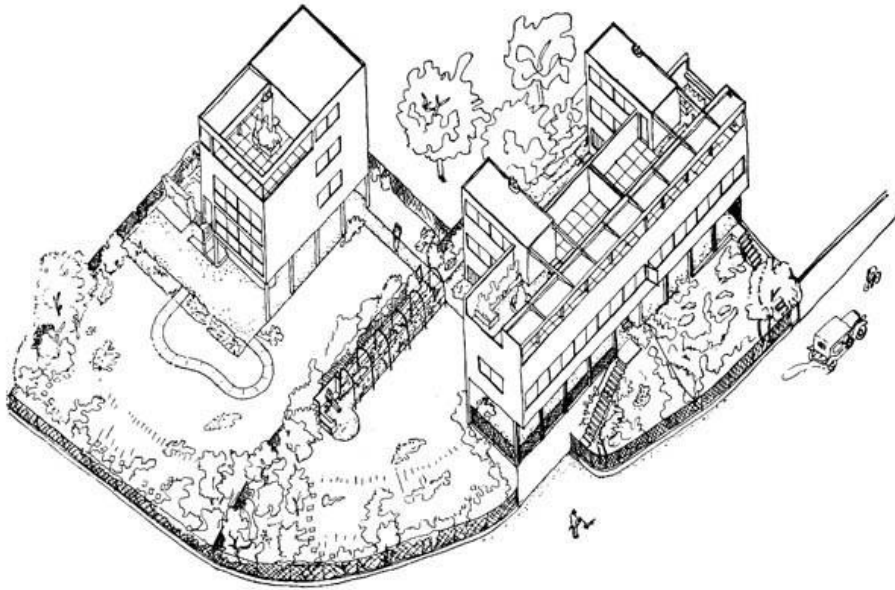


Figure 26:Houses 14 and 15



Figure 27:The two-family structure known as Houses 14 and 15

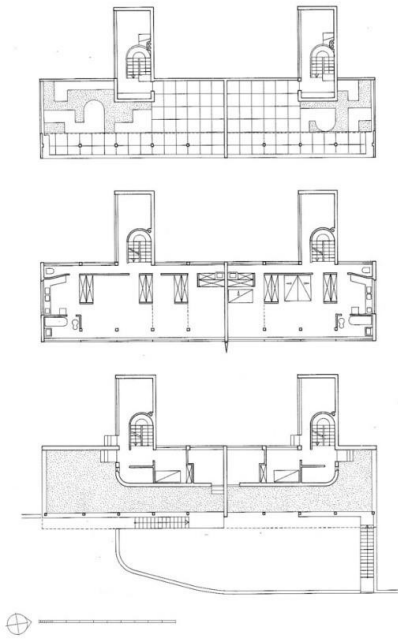


Figure 28: Three different floors



Figure 29: Roof Garden



Figure 30: Library and study hid behind the stairs

Cairo Flats

Melbourne, Australia ,98 Nichol森 street

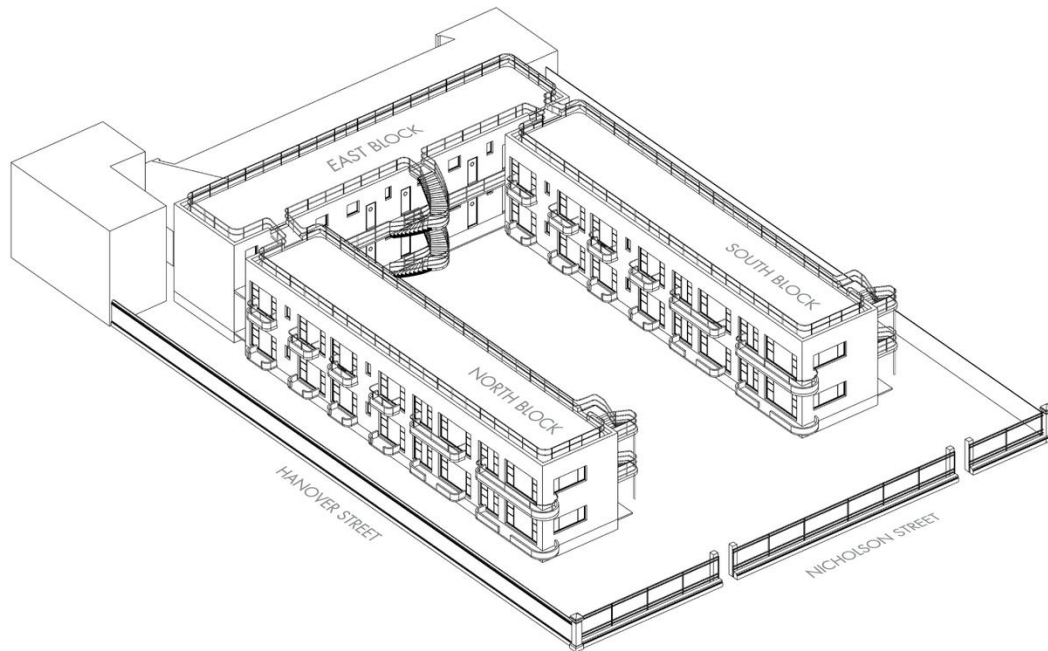


Figure 31:Cairo Flats

To expand on my social housing analysis, I will analyse another housing project, however, this one will be located within the global South. Cairo flats, designed by architect Acheson Best Overend, was built in 1936. The u-shaped building has 28 flats constructed with bricks. Each flat has a projecting curved balcony. The 28 flats are split up between 20 studio flats and 8 one-bedroom flats. In plan, the bedroom and bathrooms of flats are in an interlocking relationship with one another (Figure 32). This assures that each flat and bathroom space gets sunlight and natural ventilation.⁴³

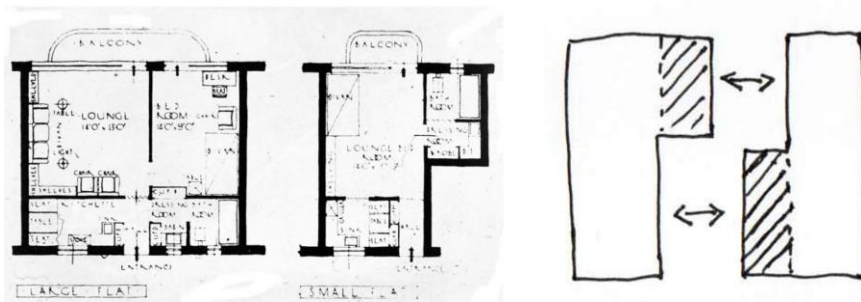


Figure 32:Left: Plan of studio flat and one-bedroom flat. Right: Interlocking relationship of flats.

Each flat is accessed through on an external pathway on the West and South sides. The living room`s wall and ceiling blend together, with no cornices. The living room connects to the

⁴³ Assemble Papers. 2022. *The Cairo: romance and the minimum flat* | Assemble Papers. [online] Available at: <<https://assemblepapers.com.au/2012/06/18/the-cairo-romance-and-the-minimum-flat/>> [Accessed 11 September 2022].

outside by the means of a big window which opens up on to a cantilevering concrete balcony facing north and east. To achieve a minimalist design the architect employed “labour saving devices”, built in and collapsible furniture making the lounge/living space multi-functional.⁴⁴

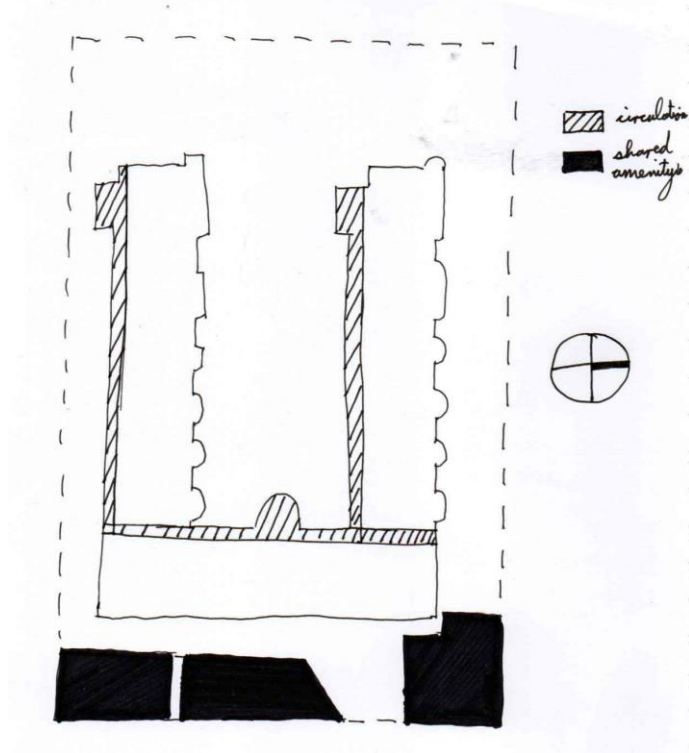


Figure 33: Plan analysis of circulation and shared amenities

The architect’s intent was to magnify the shared spaces both functionally and socially, through gardens and access to communal roof areas. The intent was to “provide maximum amenity in minimum space for minimum rent”. The building has a common dining room, an in-house meal and laundry service, garage space and a communal flat roof area. East and north facades are utilised for celebrated spaces whilst west and South facades are for services.⁴⁵

⁴⁴ Assemble Papers. 2022. *The Cairo: romance and the minimum flat* | Assemble Papers. [online] Available at: <<https://assemblepapers.com.au/2012/06/18/the-cairo-romance-and-the-minimum-flat/>> [Accessed 11 September 2022].

⁴⁵ Ibid

Co-operative housing

As previously mentioned, I intend to provide housing for a broad scope of people and for people who earn very low/inconsistent incomes. To provide homes to these people I will provide Co-operative housing.

Co-Housing is a collective housing model where individuals and different families and live in the same building like a community. Co-housing encourages the sharing of certain resources making Co-housing and the co-operative more affordable than most housing models. Residents are encouraged to share resources amongst one another and also learn and grow through interacting with the people around them.⁴⁶

The following will be an analysis of a Co-housing example. The Satellite apartment Haus A, designed by Duplex Architekten in Zurich (2015).

In plan the design consists out of a series of rooms set apart from each other by shared spaces in-between them. The rooms are divided by small semi-private spaces to assure personal independence, which then leads to larger shared spaces. A typical apartment would have room for 2-4 people. Apartments would have a bathroom, a bathroom a small space for cooking and a small living/dining area. The shared spaces would have a larger kitchen and dining room space and a communal bathroom. In addition to shared and private spaces the building also has two additional independent rooms used for guests or as an office space.⁴⁷



Figure 34: The Satellite apartment Haus A



Figure 36: The rooms divided by small semi-private spaces

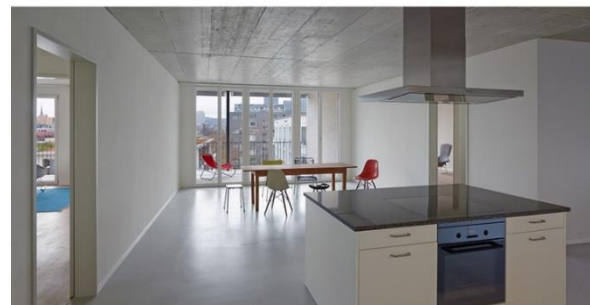


Figure 35: Image of shared kitchen space

⁴⁶ Coliving.com. 2022. *What is coliving?*. [online] Available at: <<https://coliving.com/what-is-coliving>> [Accessed 11 September 2022].

⁴⁷ Duplex-architekten.swiss. 2022. [online] Available at: <<https://duplex-architekten.swiss/de/projekte/mehr-als-wohnen-zurich/?tmpl=desktop#>> [Accessed 11 September 2022].

Theory

Unpacking the housing problem requires a discussion and examination of theories that relate to collective design. The following theories explore and elaborate on what design decisions should be paid careful attention to when designing for a collective in various contexts.

Collective designing is often referred to as designing for the unpredictable, thus it will be necessary to discuss the theories and work of Alvar Aalto. In his work, Alvar Aalto displays the interlinking of order and disorder, which should give me insight into designing for spaces that reflect the true human experience, spaces that communicate the relationship between order and chaos.⁴⁸

In the essay written by Stan Allen, *Field Conditions*, he discussed the tensions between the physical concrete space and the area where with they find themselves. Allen makes an argument that traditional perceptions of space were based on frozen or fixed patterns and static geometries, however, the technology and culture we have today should give us the ability to better understand fluidity and self-organising systems in space.⁴⁹

The title ‘field conditions’ is reasserting the importance that architecture has to be bound to the condition of the given site while still satisfying the given brief. Stan Allen argues that design should move from the individual to designing for a collective. Also, to design a field rather than objects. Field refers to the messiness and unpredictability that exists in the real. An acceptance of that real that forms our reality. The essay argues that onsite constraints should be seen as opportunities thus moving away from Modernist aesthetics and ethics of transgression. This would mean that architects and designers work with the site, bringing the possibility of new creations that value the complexities of different contexts.⁵⁰

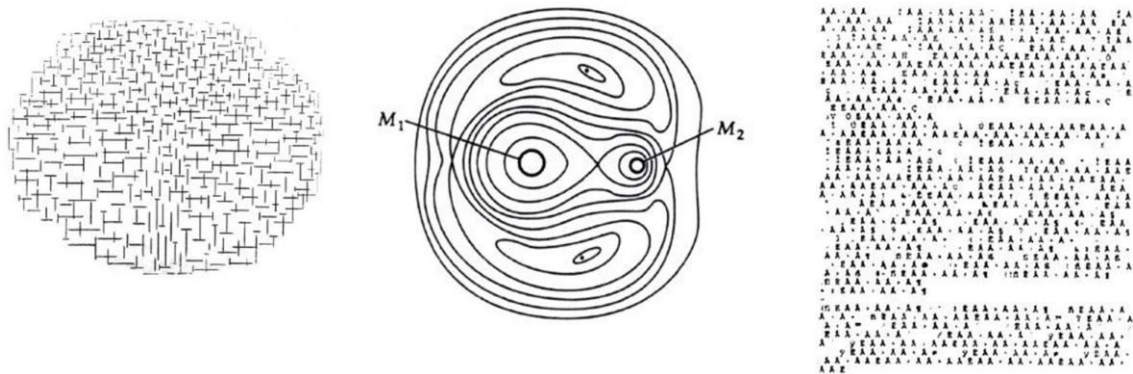


Figure 37: Examples of different spatial matrix

The images above (figure 37) are taken from different media. The common thread that they all share is that they are a spatial matrix aimed at unifying diverse elements whilst still respecting the identity of each other. In this manner, we can now say that these configurations are characterised through their local interconnectivity. There are internal rules the individual follows whilst being

⁴⁸*The Digital Turn in Architecture 1992-2010*(2013) by Carpo, Mario. pp.72 - 78.

⁴⁹ Ibid

⁵⁰ Ibid

part of a collective that are highly fluid. The book *Field conditions* argue against overarching geometrical schemes and instead promotes a bottom-up design approach that strengthens intricate site-specific connections. The form of things is less important than the form between things. This calls for an architectural theory that arises from a complex dialogue with practical work and not an architectural theory that comes from a vacuum.⁵¹

Leon Battista Alberti's most recognized adage "Beauty is the consonance of the parts such that nothing can be added or taken away" communicates the ideas of creating organic geometries that unify. Ideologies of organic geometries that unify are in stark contrast with how classical architecture is organised. In classical architecture, the whole is created by employing geometric systems of proportion and relationships between things are geometric. This type of ideology and pedagogy not only dictates the proportions of individual elements but also the relationship between them. In short, it requires parts to create a whole. The distribution of hierarchy stays constant between the parts and the whole. Thus, there always exists rules of symmetry and formal sequences that dictate how the whole is organized.⁵²

The Venice hospital

An example that I will unpack to display Stan Allen's argument is Le Corbusier's Venice Hospital (figure 38). The Venice hospital project was built between 1964 and 1965. In the plan, Le Corbusier employs a plan syntax of parts being repeated (figure 39). On the periphery, multiple links are created between the parts and the existing city fabric (figure 40). Through a logic of accumulation, the project develops horizontally. Le Corbusier uses a basic block which is a 'care unit' containing 28 beds. Throughout the site, the block is repeatedly placed in different orientations to establish connections between wards. Voids are created by the displacement of the blocks. Open circulation spaces are covered and used as consulting rooms. There is no noticeable singular focus and also no scheme that is unifying.⁵³

This ideology is not intended to reignite the phenomenology of materials and the mystification of construction. But rather to create repeatable links between operations and form through the accumulation of parts.⁵⁴

Dealing with an architectural typology such as housing and housing that supports various programs, I need to unpack the occurrence of crowds. Typologies that deal with various programs open themselves up to fluctuating densities thus creating the need to understand crowds. Crowds are motivated by complex and dynamic desires. Crowds interact in unpredictable patterns. Different types of crowds were proposed by Elias Canetti in the book *Crowds and power*. In the book, Canetti proposes that there are open and closed crowds, a slow and quick crowd and then also stagnating and rhythmic crowds. Furthermore, Canetti proposes that crowds have four defining attributes. Crowds thrive through density, there exists equality within a crowd, crowds want to enlarge and crowds need direction. Canetti also discusses that crowds can be angry and destructive and then to the same degree also be joyous and liberating.⁵⁵

⁵¹ *The Digital Turn in Architecture 1992-2010*(2013) by Carpo, Mario. pp.72 - 78

⁵² Ibid

⁵³ Ibid

⁵⁴ Ibid

⁵⁵ Ibid

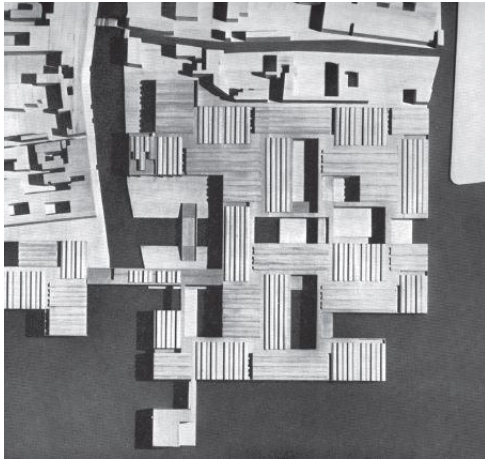


Figure 38: Le Corbusier's Venice Hospital

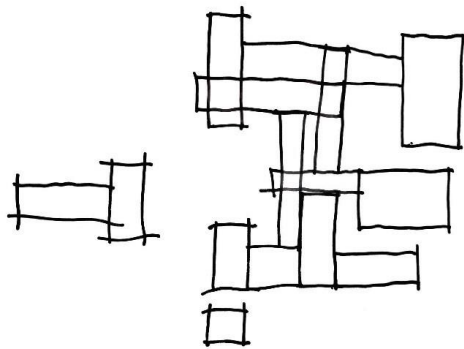


Figure 39: Parts being repeated

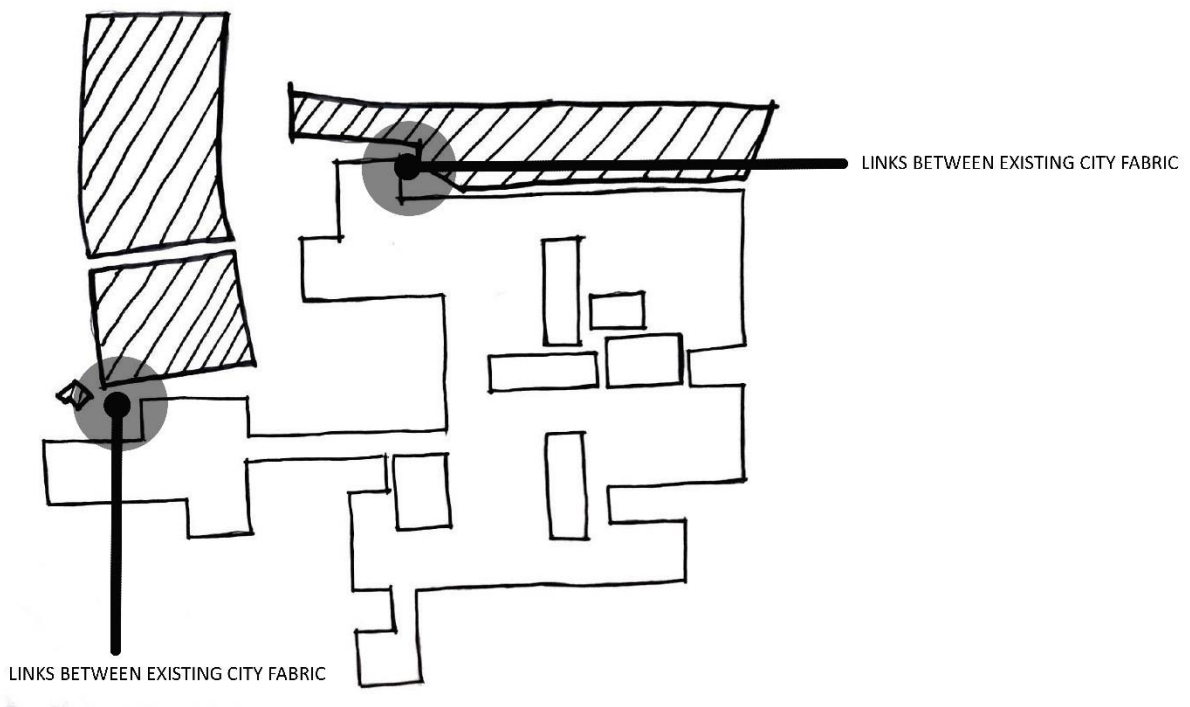


Figure 40: Links between existing city fabric

Lefebvre

The book *Rhythmanalysis* by Henri Lefebvre gives insight into the everyday life that people experience and how space influences that experience. Lefebvre's writings on rhythms and repetition are useful in gaining insight into the essence of the everyday. Lefebvre describes the everyday as mundane and repetitive. The hourly demands and systems of transport and other occurrences that exist in a repetitive nature in the everyday. Lefebvre poses questions about the role space plays in our lives, from the conceptualization of the world to cities and rural environments and to the homes we live in. Lefebvre motivated that quantitative time as by means of watches and clocks is what constructs everyday life. Quantitative time supplies a measuring system for all forms of work. The idea of rhythm is characterised by any interaction with a place, a time and an expenditure of energy. There exists no rhythm without repetition. Repetition however does not exclude differences. Repetition produces differences. Repetitions encounter events or events that arise in relation to the series of repetitions.⁵⁶

Lefebvre notes that there are two types of repetition:

Linear repetitions are characterised by coming from human activities and social practices. This type of repetition is either daily movements or activities imposed by structures.

Cyclical repetitions are characterised by repetitions of rhythms that last for a period and then restarts. Examples of Cyclical rhythms are nature, days, seasons and the tides of the waves.⁵⁷

The measure of time exists through the relationship of linear and cyclical repetitions. The every day exists by the duality of linear and cyclical repetitions. That in return creates the rhythm of the everyday that construct the human reality. What this all means is that at any particular time you may find yourself doing something similar to what everyone else in the world is doing but you're still doing it alone.⁵⁸

Gropius

In the book *rebuilding our cities*, ideas around creating a self-sustaining community are explored. Ideologies around the disappearing nuclear family and the need to create a self-sustaining community are being discussed. Exploring ideas discussed in this reading will render insight into designing for a collective rather than an individual.

Walter Gropius notes that disadvantaged/poorer citizens have been degraded because their only role in society is to be used as an industrial tool. The innovation of technology and machinery has overwhelmed people and kept feeding our human greed which destroys our biological need for human companionship. Human companionship is what keeps a community healthy. This is the reason for the tension that exists between capital and labour. This is why our communities have been deteriorating over the years. Architecture now faces the task of rebalancing life with the impact made by technological advances. To create successful communities the pattern and scale of the communities we create need to become human again.⁵⁹ New interventions should be designed to rebalance the life of the community and humanise the impact of capitalism.⁶⁰

⁵⁶ *The Digital Turn in Architecture 1992-2010*(2013) by Carpo, Mario. pp.72 - 78

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ Gropius, W. (1945) *Rebuilding our communities*. Chicago: P. Theobald.

⁶⁰ Ibid

To illustrate these ideas Gropius employs a pictorial comparison.



Figure 41: New York City



Figure 42: New England town

Illustrated in figure 42 is a New England town. What is visible is that there is a harmonious voluntary order and unity which is a result of the capacity of the community to work together. Figure 41 illustrates almost the complete opposite. The illustration displays the chaotic nature of competing individual acts, as well as a chaotic riot of styles, materials, and colours. It is a true sign of disharmony and deteriorating community life.⁶¹

The disconnect between the citizen and elected officials are often embodied in the “what do I care, it's up to them” attitude people have. This dangerous attitude causes people to act irresponsibly and contributes to social loneliness.⁶²

⁶¹ Gropius, W. (1945) *Rebuilding our communities*. Chicago: P. Theobald.

⁶² Ibid



Figure 43: Painting by Peter Breugel

This is something that would not occur in the depiction painted by Peter Breugel (Figure 43). The streets and squares functioned as an effective platform and display for the entire community's social interaction. Everyone participated as a member of a group. Today, though, our streets have been reduced to a series of traffic lanes for lonely strangers. To rehabilitate a community, extreme actions must first be taken to increase ordinary residents' interest in building the community by allowing them to actively participate in the shaping of the community. Administrative tasks must be humanized. Communities must be self-contained neighbourhood units on a small enough scale to function as an organism for normal social interaction.⁶³

Historical examples from the United States can provide us with useful guidance. The New England Town Meeting, which invites everyone to publicly air their grievances and make suggestions for improvements, is a good example of a sound democratic community structure. Could we meet in Cape Town today for a similar meeting? Not until the city's administration is broken up into adequately scaled neighbouring divisions inside the city. A self-contained community unit of this size would have between 5 and 6 thousand residents, which is the bare minimum for an effective elementary school. A precinct in the city or a county in the country, each holding a cluster of 6 to 10 neighbourhoods with 30 to 50 thousand inhabitants, would be the next largest administrative unit. The city or metropolis would then be the largest entity.⁶⁴

Designing for the human scale demands the assimilation of social systems to fit within the 24-hour cycle of the day. Gropius suggests that daily travelling/commuting time should not exceed

⁶³ Gropius, W. (1945) *Rebuilding our communities*. Chicago: P. Theobald.

⁶⁴ *Ibid*

30 or 40 minutes. The advancement of automobiles and air travel should not be used to circumvent this ideology. People wasting years of their life going to and from work is inhumane. The size of the neighbourhood should not be more than the distances that pedestrians can reach. Our human stride should determine our perception of space and time. It should only take the individual 10 to 15 min to walk to any point of social interest and activity within the neighbourhood. Such a neighbourhood, to be well-balanced within itself, should facilitate multiple programs. Multiple programs like business or industrial parts, but also a local government and shopping centre, recreation as well as facilities for education and worship. Monofunctionally is wasteful.⁶⁵

With these amenities, the neighbourhood would have a better chance of improving social interconnectivity, which is what originally drew people to urban life. People's social initiatives would therefore begin at a local level and progressively spread to a larger territory. The next larger administrative unit is the county or city precinct, which then supports other programs such as hospitals, high schools, and other functions that the neighbourhood cannot financially afford.⁶⁶

The following will be the argument Walter Gropius makes for what he claims is the proper size for a shelter or unit. Also, Gropius continues to make an argument for how these units should be designed programmatically. What should inform the size of the shelter is the functions that are important to the family. The pre-industrial patriarchal family is no longer the dominant family type that we find.⁶⁷

The family is no longer the self-contained organism that existed before technological advancements. The need for the family to educate their own children and care for their own sick no longer exists. People also no longer produce their own food or make their own clothes. The community and its structure have now taken over all these responsibilities. The above listed evolutionary changes had a big impact on the design of the human shelter. What the modern family requires is a home where they could rest, relax and raise the young. The new family reduced in size with fewer chores should take full advantage of what Gropius called "Wife-Saving" devices.⁶⁸

Wife-Saving devices are tools meant to improve the efficiency and comfort of the modern home. The tools implied above are dishwashers, deep-freezers, air-conditioning in the winter and garbage disposals. House-work usually relegated to the wife is now a service supplied by the community. Gropius argues that the shelter should represent the social and biological demands of the family, be tailored to the family's financial income, be technically up to date, and be "beautiful". The shelter should also have 1 one extra room where the entire family can practice their hobbies. This type of room is recommended when individuals have to perform the most mundane and repetitive work every day. Thus, they need active recreation to facilitate their creative and inventive needs. Rather than promoting passive recreations such as movies and bars, which have no productive effect, the shelter needs to incentivise the practising of one's own creative potential.⁶⁹

⁶⁵ Gropius, W. (1945) *Rebuilding our communities*. Chicago: P. Theobald.

⁶⁶ Ibid

⁶⁷ Ibid

⁶⁸ Ibid

⁶⁹ Ibid

Aalto

By analysing the work and design ideologies of Alvar Aalto I intend to expand on my journey of discovery on architecture that displays the essence of the human life and experience. The work of Alvar Aalto makes reference to this because in his work he displays the interlinking of order and chaos. The following will be an examination of reoccurring patterns found in the work of Alvar Aalto. Patterns of discontinuity mirror the inherent essence of the human existence, which is one of the reasons behind Alvar Aalto's work being referred to even years after his death. Discontinuation is to separate, interrupt and to leave off. The duality that exists in discontinuation is one of ruination and incompleteness which creates a strong connection to human life. Ruination is suggestive of something being missing. Incompleteness is suggestive of growth and the ongoing attempt towards completion. This is the underlying tension in the work of Alvar Aalto.

The work of Alvar Aalto borders the rational and irrational. There exists a balance between order and disorder. His work whilst being completely built is made to convey ideas of fragmentation, differentiation and incompleteness. Aalto however still produced designs that had rational explanations that denounced the form. Aalto could still express to people that while his work was romantic, its form still originates from a function. There is a constant awareness in his work of the emotional and psychological impact his work has on people. Discontinuity is achieved by establishing order and then breaking or opposing it. Incompleteness manifests itself by means of fracturing and opposition.⁷⁰

The straight line gives a stable reference for the regularity, which is then disrupted by the winding and curving line. Angles, curves, steps, and offshoots are all referenced in an orthogonal section. The stable reference, on the other hand, is not always straight or orthogonal. This can be unpacked by analysing a door handle designed by Aalto (Figure 44). A hefty rectangular base is combined with a curvaceous handle. Curves and fans are referenced in architectural designs by a straight line or orthogonal foundation. Often, like a jewel in its setting, a selected element is accentuated against a more neutral background.⁷¹

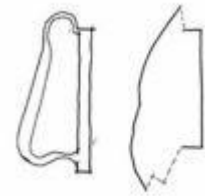


Figure 44: Door handle designed by Aalto

A reference usually manifests itself as a straight line or orthogonal plane or volume, but can also be any seemingly fixed structure or pattern like grids, axes, broad curves, and compositional rules, which establishes an expectation for the finished whole. This sense of order is then broken. Instead, what is communicated is the duality of order and chaos. What is then created is a composition of tight rules and exceptions, as well as 'broken,' 'cut off,' or 'unfinished' grids, battens, surfaces, and enclosures. The piece appears unfinished rather than a cohesive whole, providing several possibilities for its completion.⁷²

⁷⁰ Radford, A. & Oksala, T. (2007) *Alvar Aalto and the expression of discontinuity*. Journal of architecture (London, England). [Online] 12 (3), 257–280.

⁷¹ Ibid

⁷² Ibid

This method has a significant impact on how we view the task. A low table in Aalto's own home (Figure 45) in Riihitie, Helsinki, has all the trappings of a rectangular top yet ends in a curve reminiscent of a grand piano. The seeming intertwining of order and disorder, as well as the continuous sense of incompleteness, reflect the essence of progress. Nature is believed to be the best teacher (*Natura optima dux*), and for Aalto, nature represented steady change and development through its aleatoric recurrence.⁷³

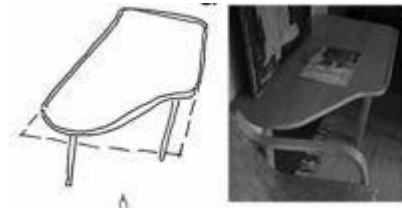


Figure 45:Aalto's table

The other way in which we can communicate and examine disorder and incompleteness is how it also connects with decaying and reunification characteristics found in nature. This is noticeable in the 'experimental house' Aalto's own house at Muuratsalo (figure 46) where the courtyard theatrically conveys a sense of the romantic ruin.⁷⁴



Figure 46:Muuratsalo Experimental House / Alvar Aalto

⁷³ Radford, A. & Oksala, T. (2007) *Alvar Aalto and the expression of discontinuity*. Journal of architecture (London, England). [Online] 12 (3), 257–280.

⁷⁴ Ibid

Concluding thoughts

The above discussed theories and ideas made it clear that in order to design for the masses, one requires the utilization of a repeated model. Having a repeated model organized throughout a site makes the scheme appear to be equal. Equal in the sense of what is provided to the resident. The analysis of different spatial matrixes and the work of Le Corbusier displayed the repetition of a model's integration with one another, whilst respecting the space between them, is a productive method of planning for a large housing development.

The theories and ideas of Lefebvre, Gropius and Aalto addressed how design responds to the commonalities of human experiences. The theories point in the direction of a design based on the experiences people share. Common experiences such as the morning routines of getting dressed and ready for work. The commute to and from work. The space children need to grow and learn and spaces for self-improvement.

Technical case study analysis

In the analysis of modernist housing examples, it became quite clear that the use of concrete was quite important for architects at that time in history. Concrete seemingly allowed for much larger buildings to be erected. Buildings with multiple floors, that would allow buildings to accommodate for a higher density of inhabitants. Higher densities are something post war countries desperately needed. The use of concrete however in my opinion dehumanised these buildings. Buildings appear to be cold and out of scale even when they were constructed to appear smaller.

Humanising architecture is thus an important aspect that I would like to investigate. I believe that the use of brick humanises architecture. Brick is a building material that you can hold in your hand. It is for this reason that someone would immediately have a sense of scale towards a building built with bricks. Brick has a distinct tangible quality that humanises the buildings. Bricks also have the quality of aging over time. This ties into Alvar Aalto's ideas of how materials that age over time communicate the relationship between order and chaos.

Bricks are however used as a secondary material in relation to concrete in contemporary architecture because of concrete's ability to allow buildings to be higher. Bricks often limit the height of a building because of how poorly it performs against lateral forces. Masonry construction is often unfavoured when compared to concrete and steel structures in relation to their performance under seismic conditions. This is especially significant in the context of Cape Town where earthquakes have occurred in the past.⁷⁵

In the following technical case study, I will be analysing a building that used bricks as its primary construction material. The building I am analysing is a housing development in Ireland.

⁷⁵ iitk.ac.in. 2022. [online] Available at: <https://www.iitk.ac.in/nicee/wcee/article/5_vol1_853.pdf> [Accessed 13 April 2022].

The Timberyard Social housing building



Figure 47: The Timberyard Social housing building

The Timberyard social housing building (figure 47) was built in the historic area of Liberties Dublin in 2009. The site is a previously demolished area. The new building was intended to heal the wounds left by the demolition works. The site is set within a working-class area. This area is characterised by having buildings constructed with brick. The development is comprised of 47 dwellings and community facilities accessible through the ground floor. The scheme at its apex is six stories high facing the newly constructed main road. The building then reduces in scale by stepping down towards existing 1 to 2 storey homes. To emphasise the continuity of the brick surface, windows are offset from each other. The offsetting of windows communicated the complexity of the residential units. Projecting bay windows and recessed porches modulates the brick surfaces and create the interface between the public and private spaces. The triangular courtyard provides a secure social/ play space for the residences. The courtyard also provides passive surveillance for pedestrians walking through the site.⁷⁶

⁷⁶ archdaily. 2022. [online] Available at: <<https://www.archdaily.com/240896/timberyard-social-housing-odonnell-tuomey-architects>> [Accessed 12 April 2022].

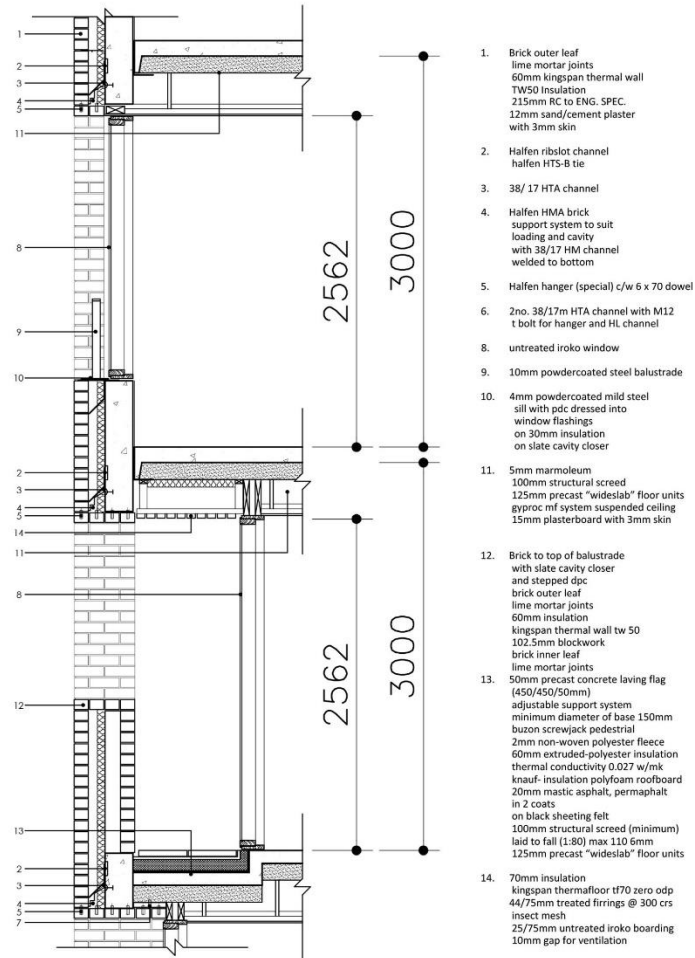


Figure 48: Timberyard social housing section

The above discussed project has piqued my interest in masonry construction even more. The previous example still has concrete as the primary structural element. Perhaps this configuration of concrete and masonry is appropriate but to completely satisfy my curiosity The modern trend of building configuration is what I deem a perverted use of concrete where what is built is a concrete structure that looks like a parking lot structure. Thereafter the building is dressed with bricks and timber to address a certain program.

Flying buttresses

The concept model in figure 49 indicates my initial curiosity towards a structural system that within itself has an identity but also a structural system that would allow for other programs to exist within it and be attached to it. Flying buttresses could perhaps be that sort of structural system.

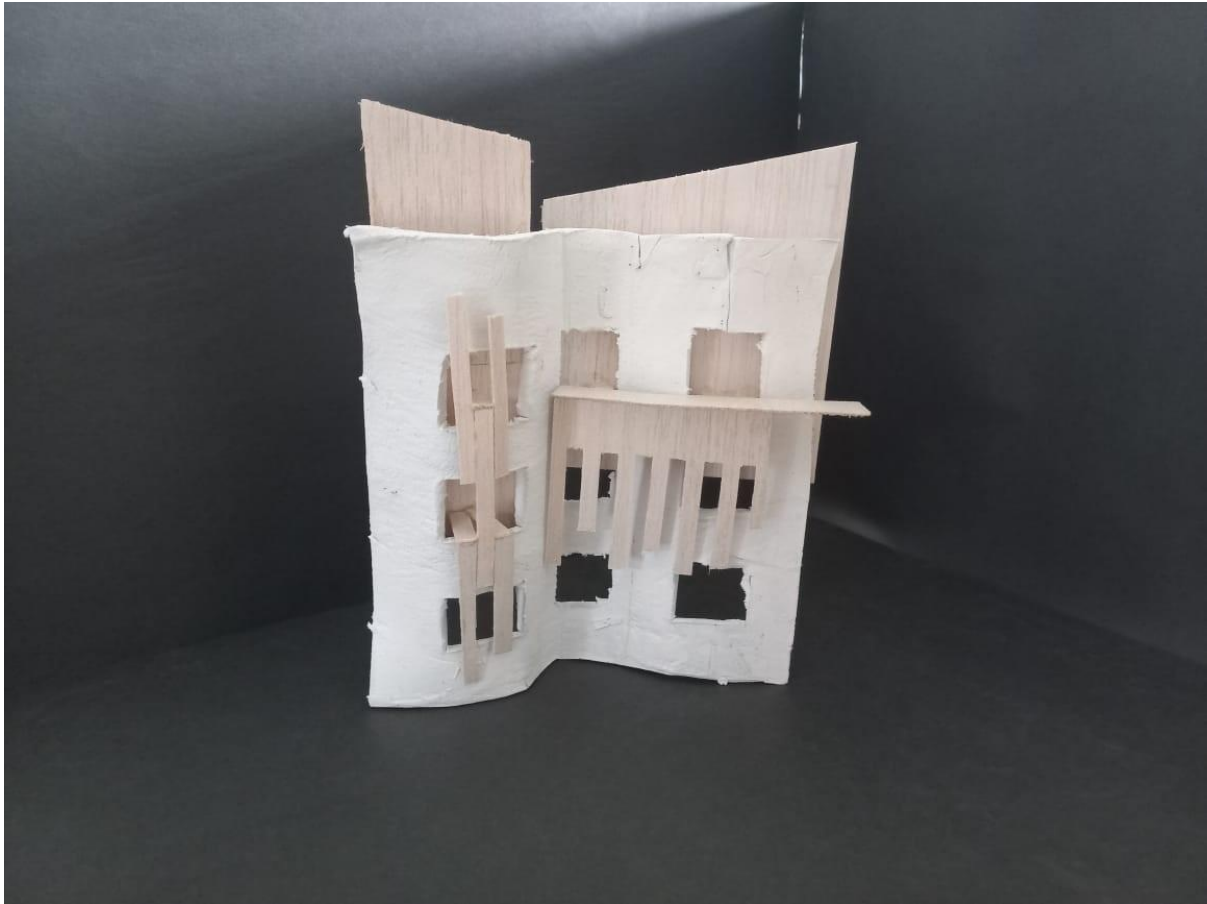


Figure 49: Concept model

The following will be an inquiry into the workings of flying buttresses. To build higher buildings people used flying buttresses/buttress systems to construct higher buildings whilst bringing in sufficient light into spaces. This building method was predominantly utilized when constructing cathedrals. The earliest conception of flying buttresses was a structure that could counterbalance the force enacted on the wall by the vaults. Flying buttresses were initially characterised by an arch like strut that looked like a quarter of a circle which later evolved to a straight one. Straight struts performed better than arched ones in terms of its performance against wind forces. The straight strut however could not carry its own dead weight efficiently. It was then realized that the strut requires a combination of the two elements. This type gave birth to the 3rd form of flying buttresses (Figure 50). This is known as a classical design of a flying buttress. This flying buttress system is visible when you look at the exterior of the Amiens Cathedral (Figure 51). The flying buttress system of Amiens cathedral (built between 1220 to 1288) displays how the straight strut is efficiently balancing the wind forces acting on the roof whilst the circular arch is

supporting the dead weight of the straight strut. This elegant combination of layered structures is displayed on the exterior of the building like a classical ballet performance.⁷⁷

It is this structural configuration that inspired Viollet-le-Duc's design, when he was tasked to rebuild the flying buttress of Evreux Cathedral when it was in the process of reconstruction. The flying buttress system works entirely in compression. When built correctly with several "flyers" this system could handle almost any horizontal force. Over many years the buttressing systems have been refined. According to Viollet-le-Duc the buildings that display the most structurally sound example of flying buttresses are the ones that occur at Limoges, Clermont-Ferrand and Narbonne. The buttressing system of Narbonne (Figure 52) utilizes 2 rampant archers at an angle of 72 degrees, instead of being a quarter of a complete circle. These improvements were meant to minimize movements within the high wall. By utilizing the geometries of arches, the Narbonne builders increased the compression strength of the buttressing system whilst using less material to construct the buttressing system. Fewer materials were required because the span of the arches could increase.⁷⁸

This investigation displayed to what extent materials like bricks could be pushed. The problem I have with flying buttress structural systems is that they are inherently symmetrical. What drew me initially to this structural system is the possibility of flipping the structural system inside out and inhabiting the structural system (Figure 53 right). How exciting would it be to navigate around this structural system? This beautiful structural system becomes more than just external structural motives but the skeleton that provided space for a dwelling.

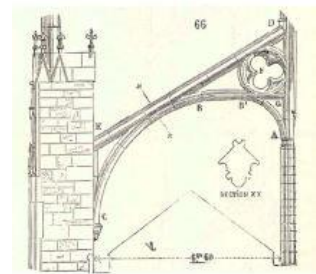
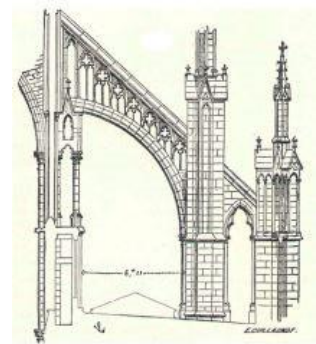
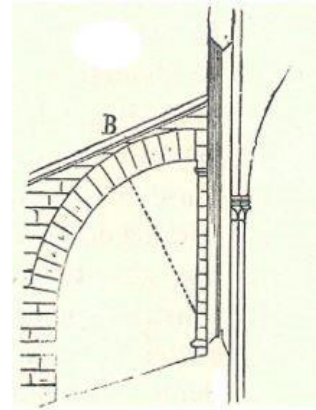


Figure 50: Evolution of flying buttresses



Figure 51: Flying buttresses at Amiens Cathedral

⁷⁷ Quintas, V. (2017) *Structural analysis of flying buttresses*. European journal of environmental and civil engineering. [Online] 21 (4), 471–507.

⁷⁸ Ibid



Figure 52: Narbonne Cathedral Exterior with Buttressing

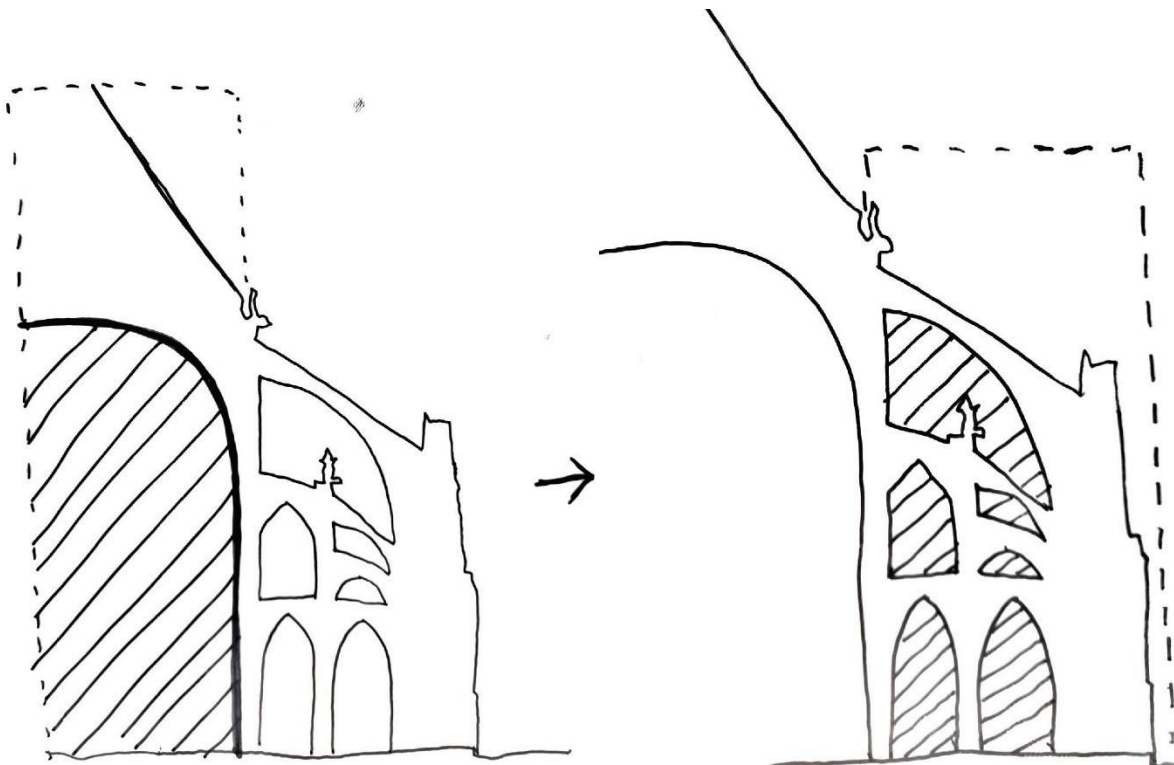


Figure 53: Flying buttresses become space for a dwelling.

Conclusion

My views on appropriate architecture for people at the margins have forever been changed. The initial thoughts that I had is that because the culture, that one's dictated the Cape's spatial planning, has completely been lost. Thus, an appropriate architecture would either not exist or be something completely new to the space and people.

This paper can, in the future be utilized as a collection of footsteps to follow and direct you to a plethora of design solutions for the community, whom this paper has proven to have little to no representation in the world of art and architecture.

Moving forward, the success of my design will be determined by the conceptual ideas discussed in this paper. Ideas around creating a self-sustaining community and a typology that acknowledges the vernacular typologies of the past and the cultural systems they implied. Together these ideas are meant to add to addressing the transgression of the past and aid current societal ills.

Site and context

My chosen site is in Woodstock, Cape Town. The Site is located on the boundary between the City and Woodstock at the gateway to the CBD. The city of Cape Town has acknowledged that there is a lack of affordable housing within the CBD, and therefore the city of Cape had Identified this Site as a part of other 11 sites as possible sites for the development of social housing. The site`s proximity to economic resources and transport nodes makes the site appropriate to develop for social housing.

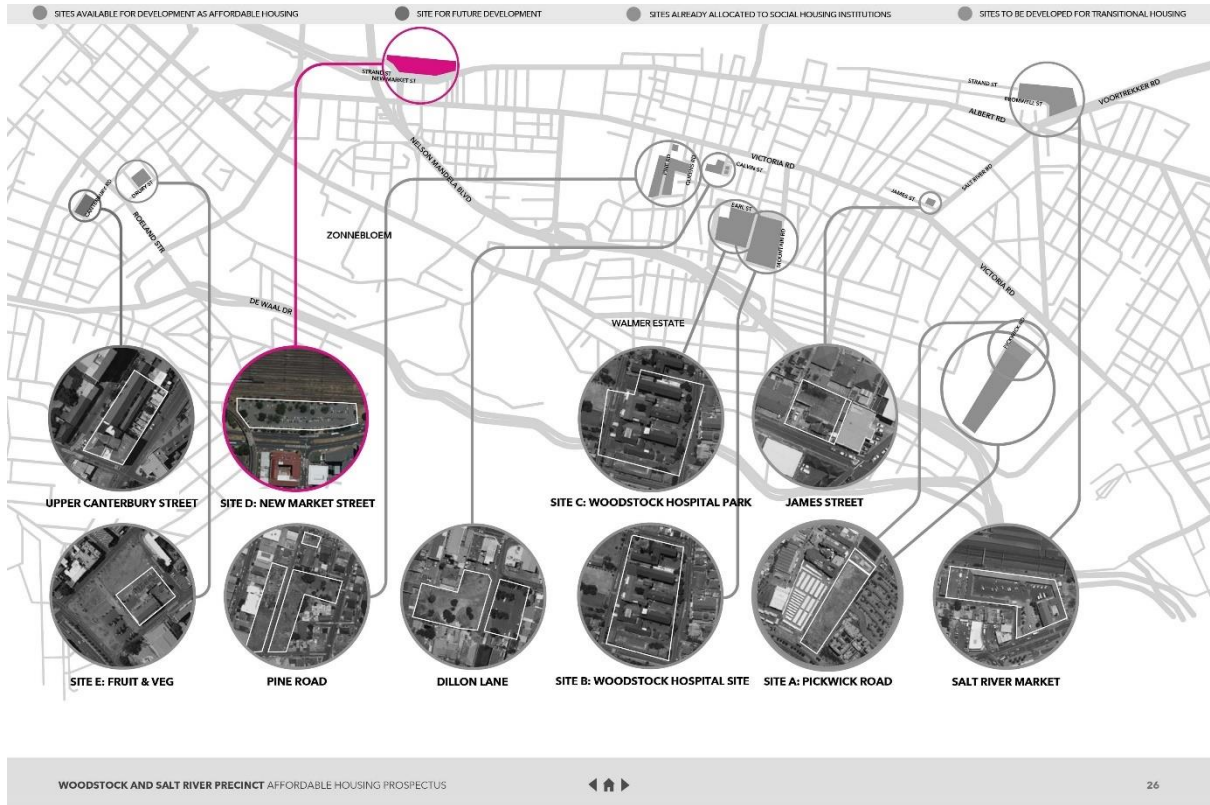


Figure 54: 11 Sites released by local government for social housing

Woodstock

Woodstock was established on land granted by the then government to Pieter Papendorp. The suburb at the time was named Papendorp in 1788. Papendorp expanded outside the city limits establishing itself along the main road of the town. Due to its sporadic expansion, Papendorp was recognized as a village and then renamed Woodstock in 1809.⁷⁹

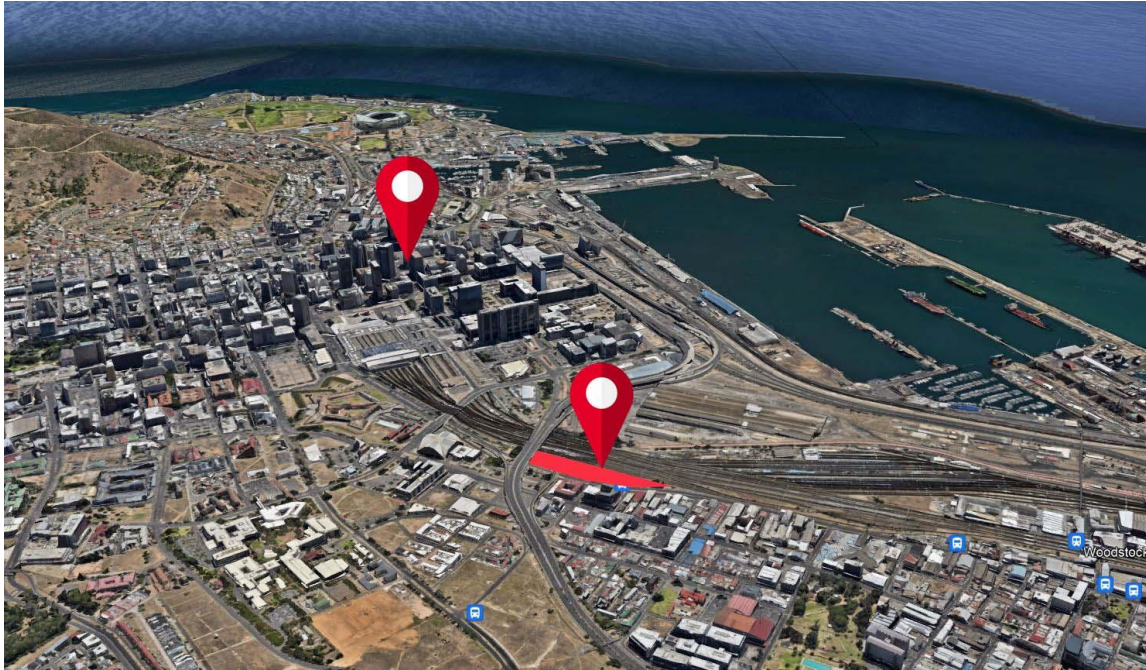


Figure 55: Woodstock site in relation to Cape Town CBD

The site evolved from a popular leisure destination where the beach provided many people with a livelihood, to a place with a more industrial character. This change was brought on through the establishment and later expansion of the railway line. The evolution of Woodstock and neighbouring suburb Salt River, from leisure destination to industrial heavy areas changed the demographics of the suburb and invited more working-class people.⁸⁰

⁷⁹ Sahris.sahra.org.za. 2022. [online] Available at: <https://sahris.sahra.org.za/sites/default/files/heritagereports/New%20Market%20HIA%20Final_compressed.pdf> [Accessed 11 September 2022].

⁸⁰ Ibid



Figure 56: Historical photograph of Woodstock beach

During the 20th century, Woodstock would be forever changed after land reclamation started from the mid 1930`s. Land reclamation and the then expansions of the railway line. With the beach now gone, Woodstock changed to a predominantly commercial and industrial space. The remaining fisherman lost their livelihood and the people of Woodstock lost their place of recreation and leisure. The site before it became vacant after the construction of Nelson Mandela Boulevard (in 1956-60) was a government store and Timberyard.⁸¹

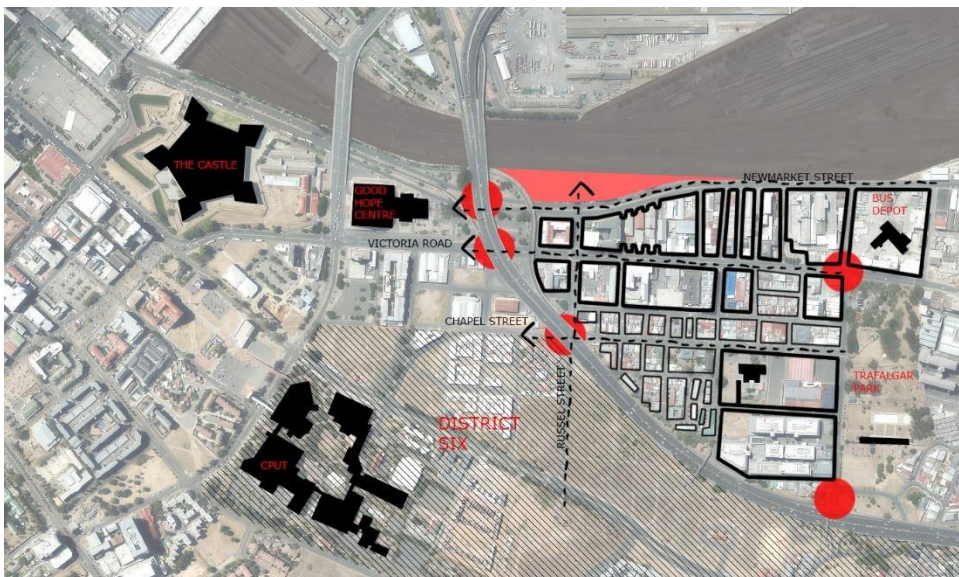


Figure 57: Site analysis page 1

⁸¹ Sahris.sahra.org.za. 2022. [online] Available at: <https://sahris.sahra.org.za/sites/default/files/heritagereports/New%20Market%20HIA%20Final_compressed.pdf> [Accessed 11 September 2022].



Figure 58: Site analysis page 2

The Larger area is a mix of high-rise commercial buildings and Victorian era residential row housing homes. The streets are not friendly to pedestrians. Quite a few sites have long high walls and retail shops have no canopies for pedestrians.⁸²

The ones coastal town of Woodstock which evolved from a cluster of farm and fishing cottages. Now filled with densely packed rowhouses and commercial buildings.⁸³

The site is in close relation to historical sites such as fortifications that were built along the beach and the Castle. The site was within 200m of the high-water mark which makes the site on the edge of what would have been the Woodstock beach. North of the site there is a railway line and to the immediate west, the site is bounded by a freeway of ramp. Views north however extend over the reclaimed land to the shoreline. Views south are of the mountains. The site also experiences North-western and South-eastern winds. Russel street remains the street that connects the site to the existing residential area and what remains of the district 6 residential area. West of the site before the Goodhope Centre was built, there was a market place. The market place was where farmers used to offload their produce. A space for commercial activity and this is where New-market Street, that bounds the site to the south, got its name.⁸⁴

⁸² Sahris.sahra.org.za. 2022. [online] Available at: <https://sahris.sahra.org.za/sites/default/files/heritagereports/New%20Market%20HIA%20Final_compressed.pdf> [Accessed 11 September 2022].

⁸³ Ibid

⁸⁴ Ibid

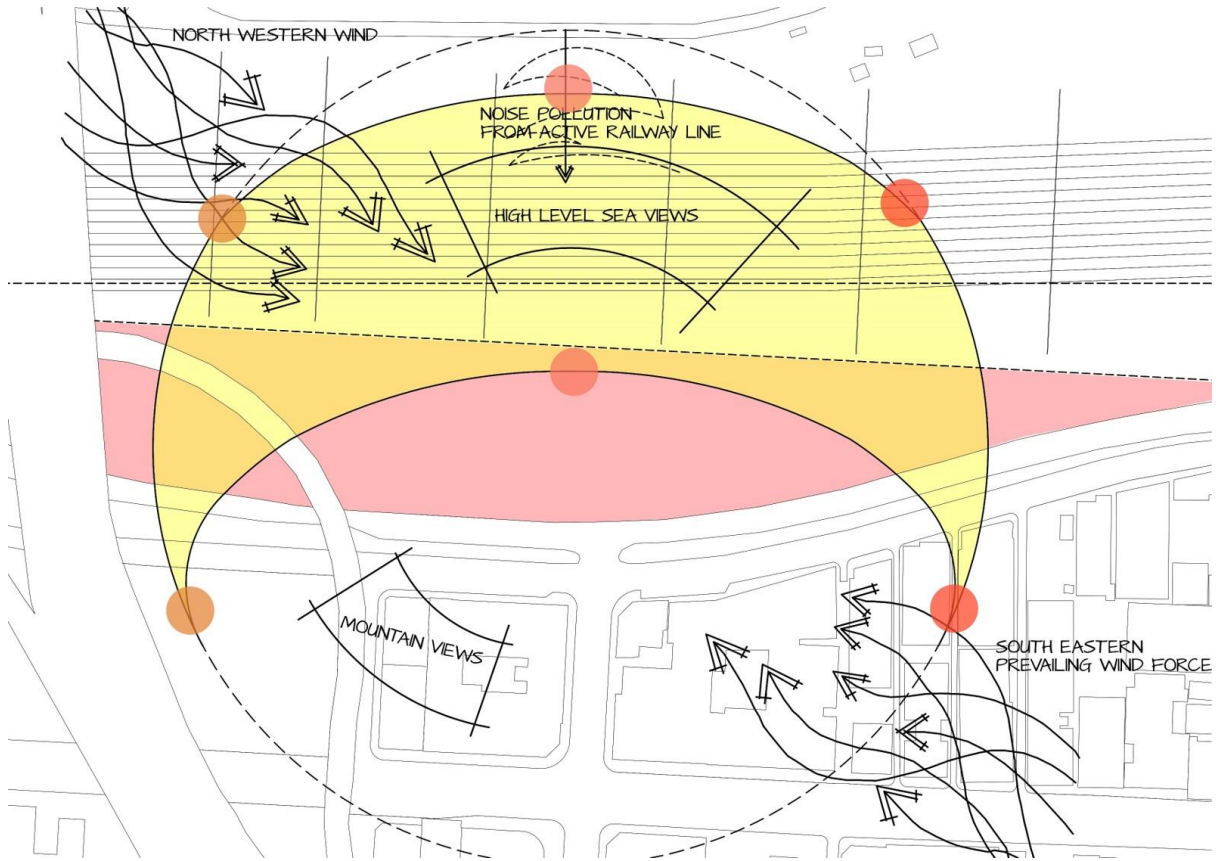


Figure 59: Site analysis page 3



Figure 60: Pictures of the site and surroundings

Current design drawings

The wall as enclosure and origin

My first move is to create an outer wall-like structure on both sides of the site. The structures are meant to protect against the South- Easterly winds and Sound pollution from both sides (South and North). The scheme claims land up until the edge of what would have been Woodstock Beach. Internally I have a repeated model that responds to the fine grain of the existing Residential area. The wall on the outer edge, that retains New Market Street with commercial functions on the ground floor.

The edge on the railway side has workshops and spaces for informal trading. This edge is meant to pull people from the existing residential area through the site.

The site is accessed through Russel Street and the ramp that takes you up from the transport hub to the left.

Plan Development

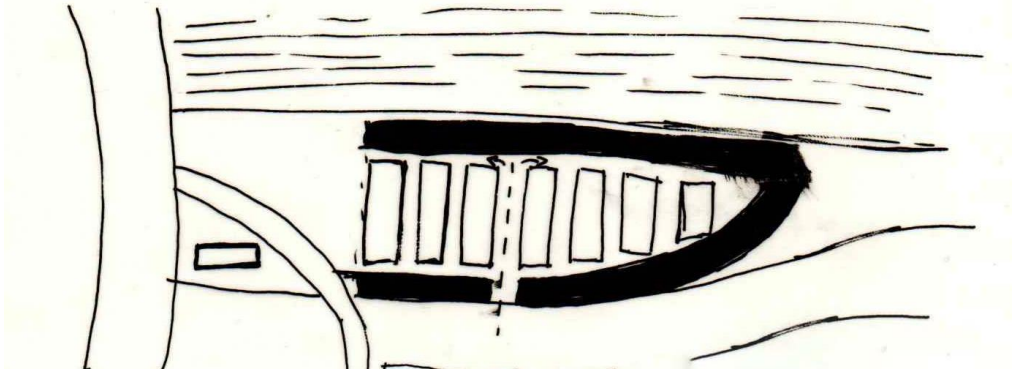


Figure 61: Design drawing 1

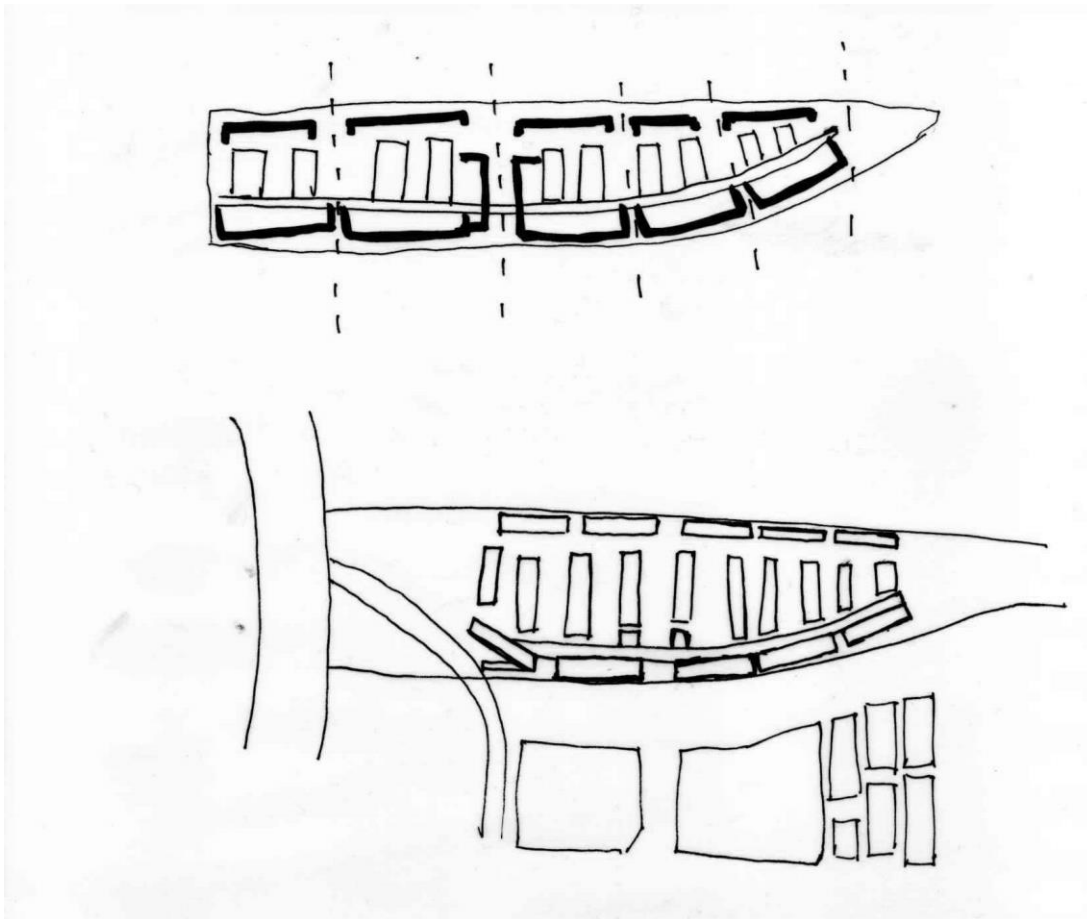


Figure 62: Design drawing 2

Form as structural solution

Form exists as a structural solution. The site required an intervention that could retain the edge on both sides. The walkup structures in the centre needed to slope downwards on one side to allow sunlight in the residential spaces. In reaction to this, I am developing a buttress system that structurally accommodates this.

Section Development

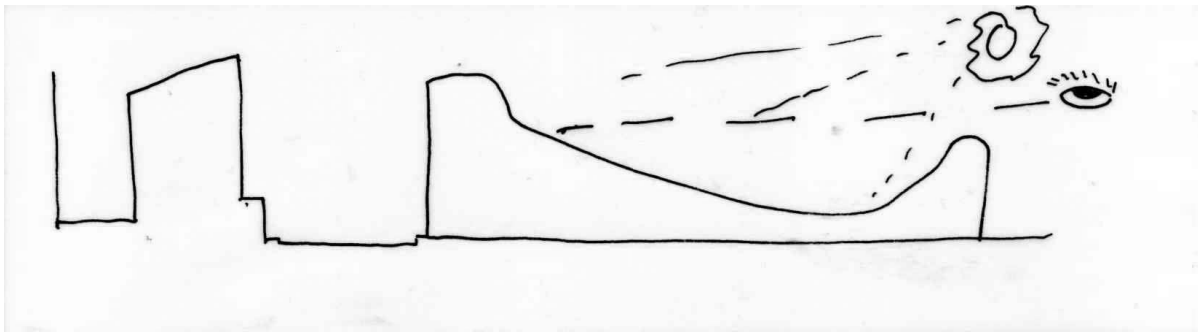
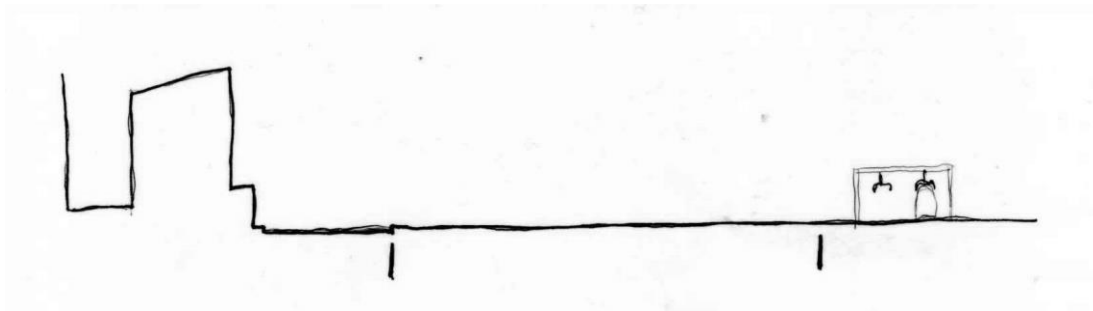


Figure 63: Design drawing 3

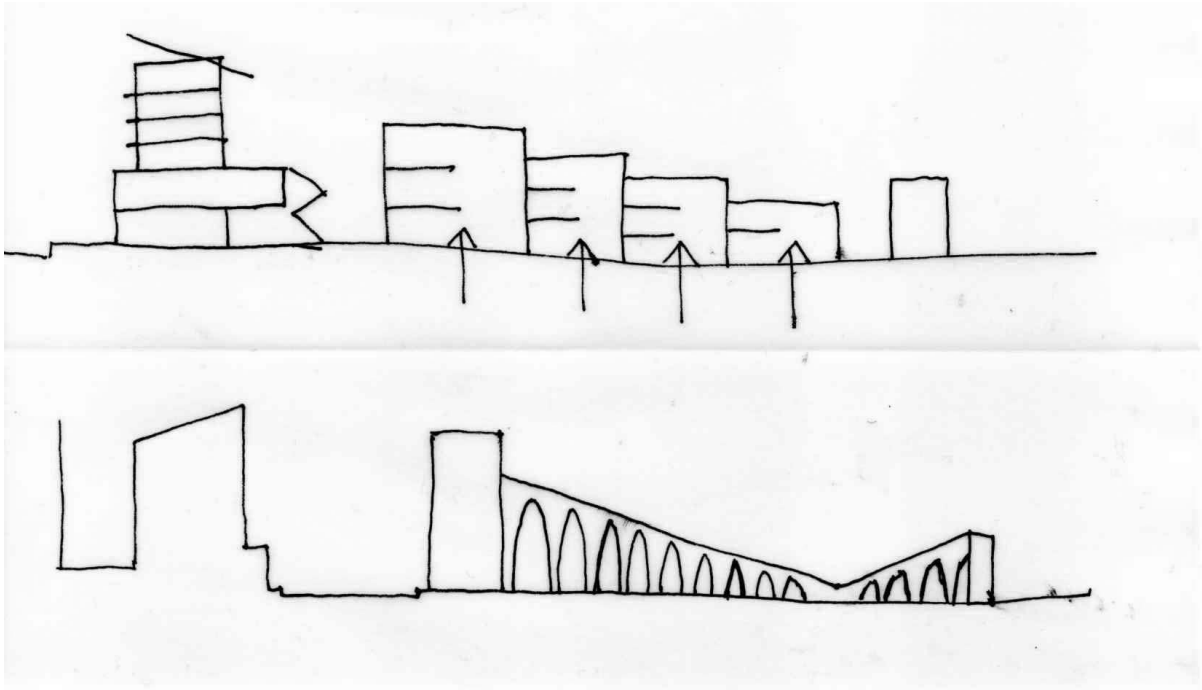


Figure 64: Design drawing 4

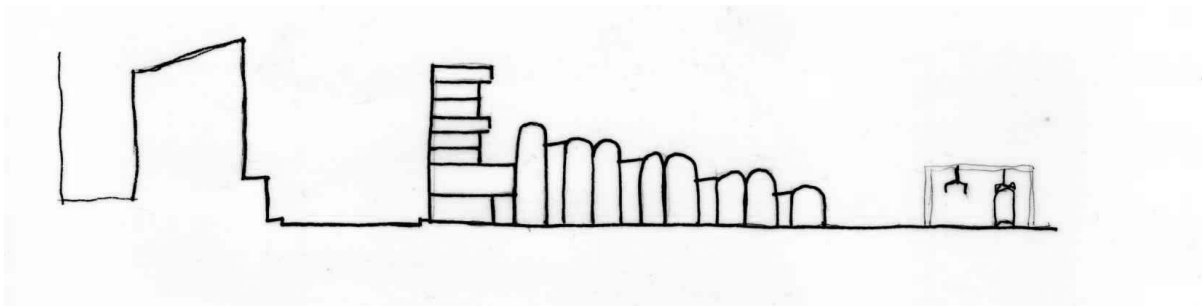


Figure 65: Design drawing 5

Plan

The plan of the walk-up housing is developed as the inverse of the Cape Dutch Vernacular typology. Co-housing will be provided above the commercial functions. My project consists of 2 types of housing. The 2 types are opposite of each other. A wall of housing that creates a wall against the main road. This type is high density, sort term accommodation with small units. This is where people share the function of eating and socializing. This happens in the kitchen and then kitchen always has a fire. The kitchen is shared and it's a place of socializing and eating. A space to be warmed together. They then have separate rooms. The opposite of this is the walk-up housing where every unit has its own kitchen with a fireplace. The fire place here is still central, but everyone has their own. The place where they eat is the centre of the home. The fireplace provides the family warmth but also warmth in the form of gathering.

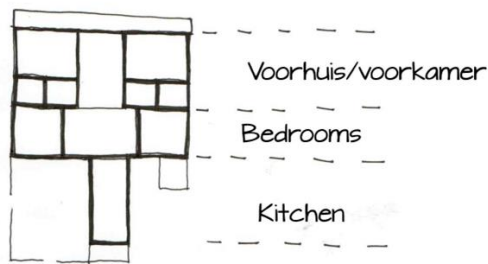


Figure 66: Design drawing 6

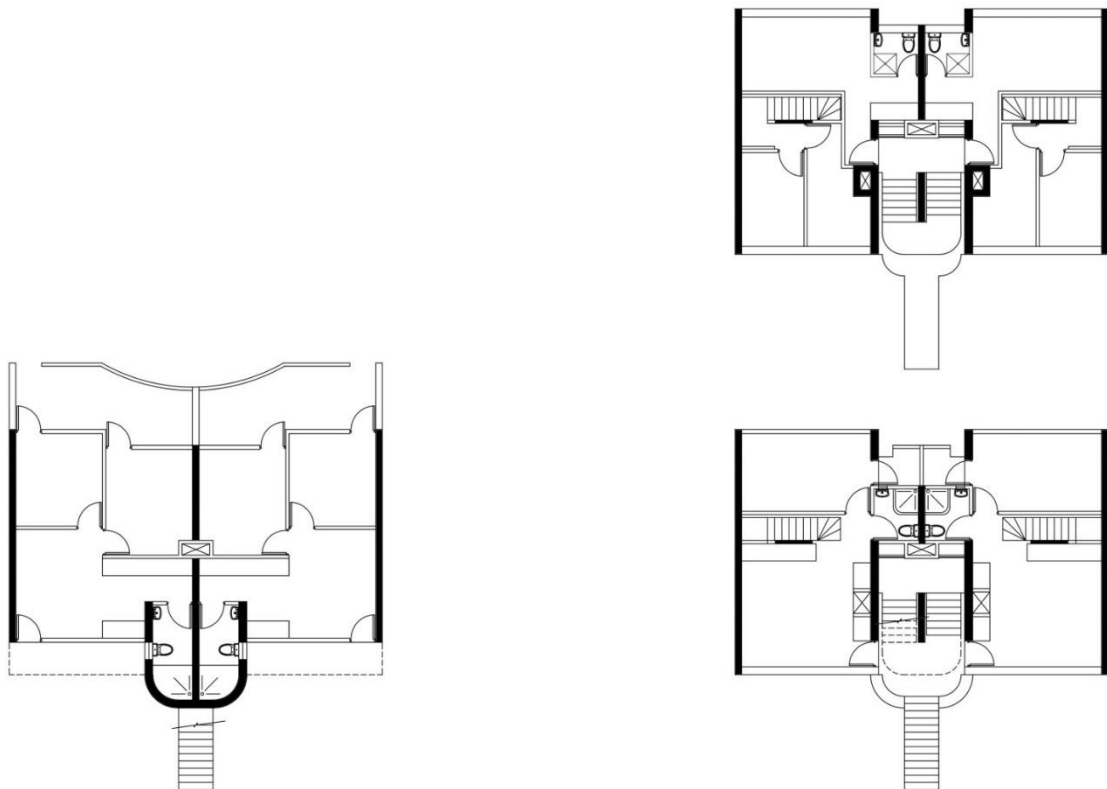


Figure 67: Current walk up floor plan

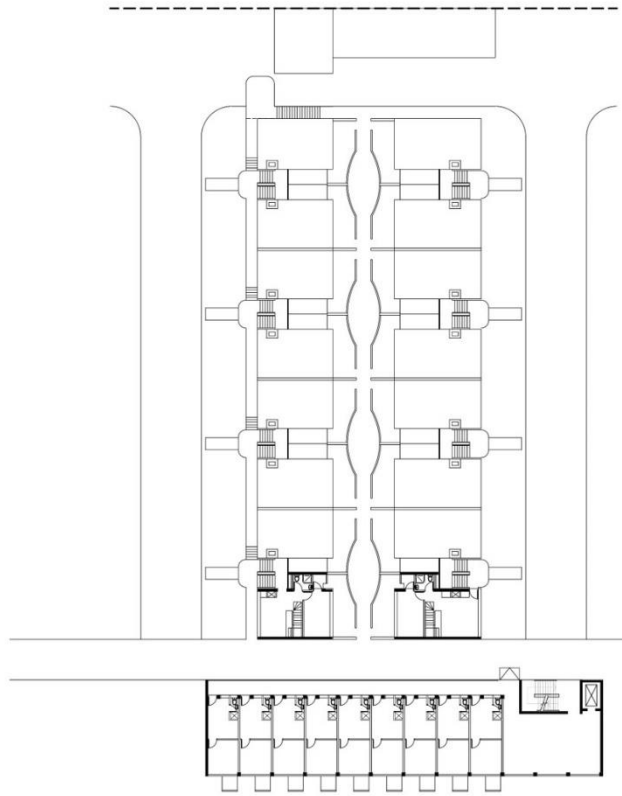
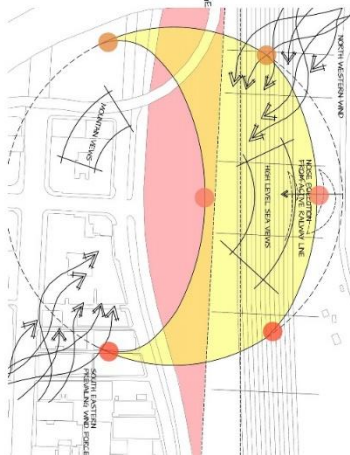
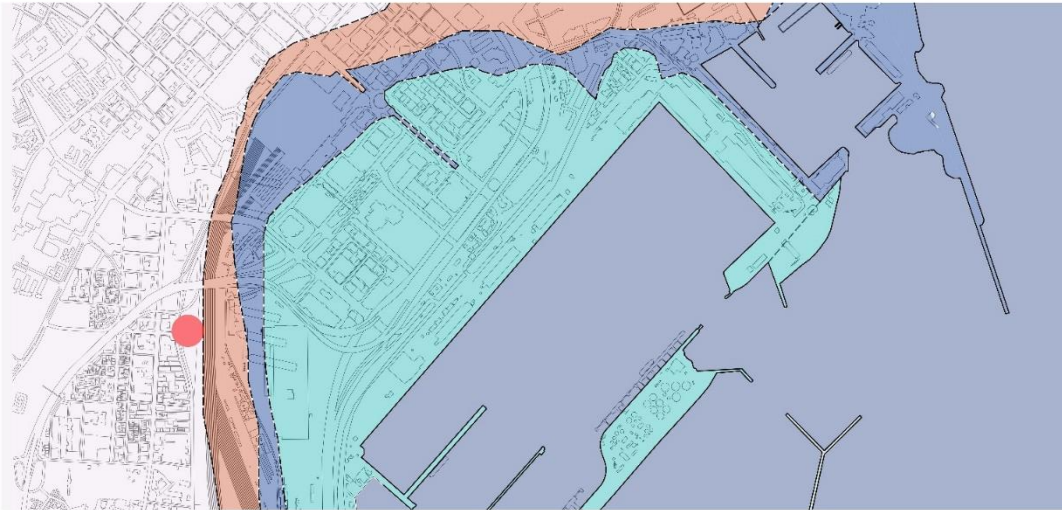


Figure 68: Strip plan showing all unit types

Final design drawings



A circular matjeshuis, Ou Tun, Kamiesberg



Rectangular reed-walled cottage, Ouderdal, Fontein



Lijian reed-walled cottage, Ouderdal, Fontein



Houses at Iles Valley (1975) (Gavin Fagan architect)



House Elliot, Newlands, Cape Town (Julian Elliot architect)



House Arramson, Newlands, Cape Town (Sam Arramson architect)

Design Principles

WALL

emulating stereotomic and plastic qualities of cape Vernacular masonry architecture, both structure and enclosure dominance of wall and opening large openings for views form is a pure product of the structural solution

ROOF

stereotomic tradition of brick-vaunted roofs wall as enclosure had its origins in mat and weave making

FIREPLACE

Hearth of the home focus point destruction of chimney and wall heat and food preparation tucked on the ends of slates

Figure 69: Concept page



Figure 70: Ground floor

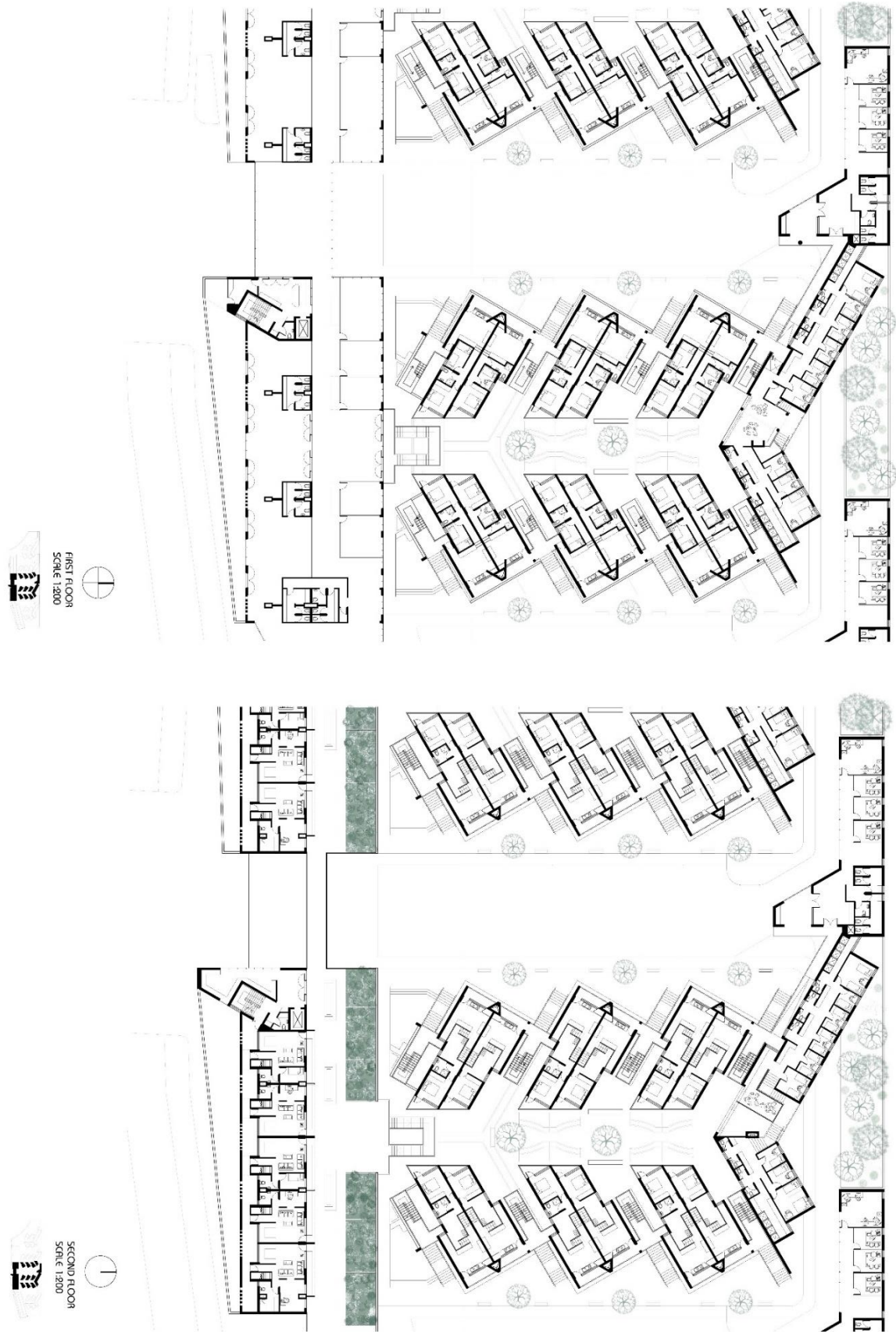


Figure 71: 1st and 2nd floor

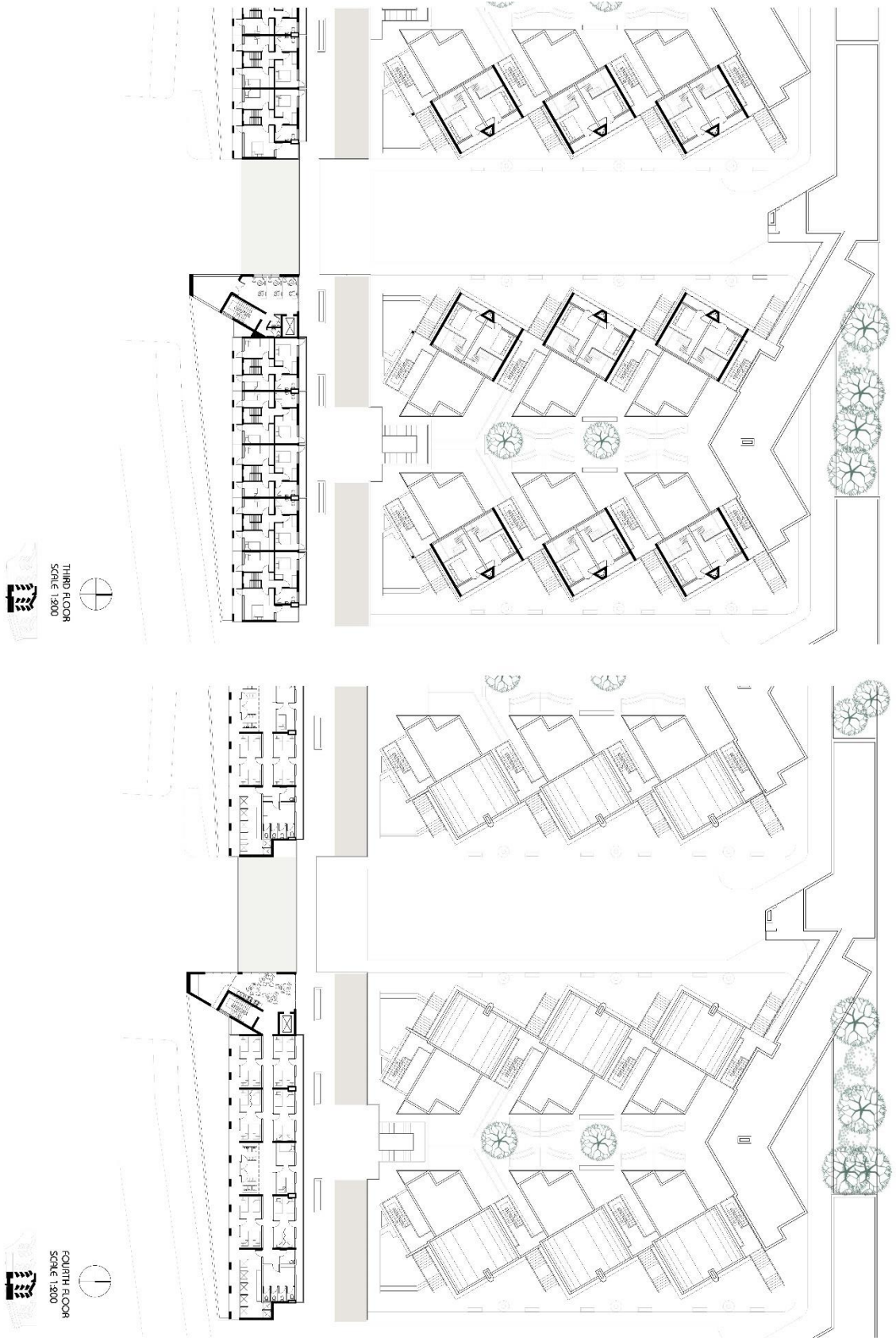


Figure 72: 3rd and 4th floor

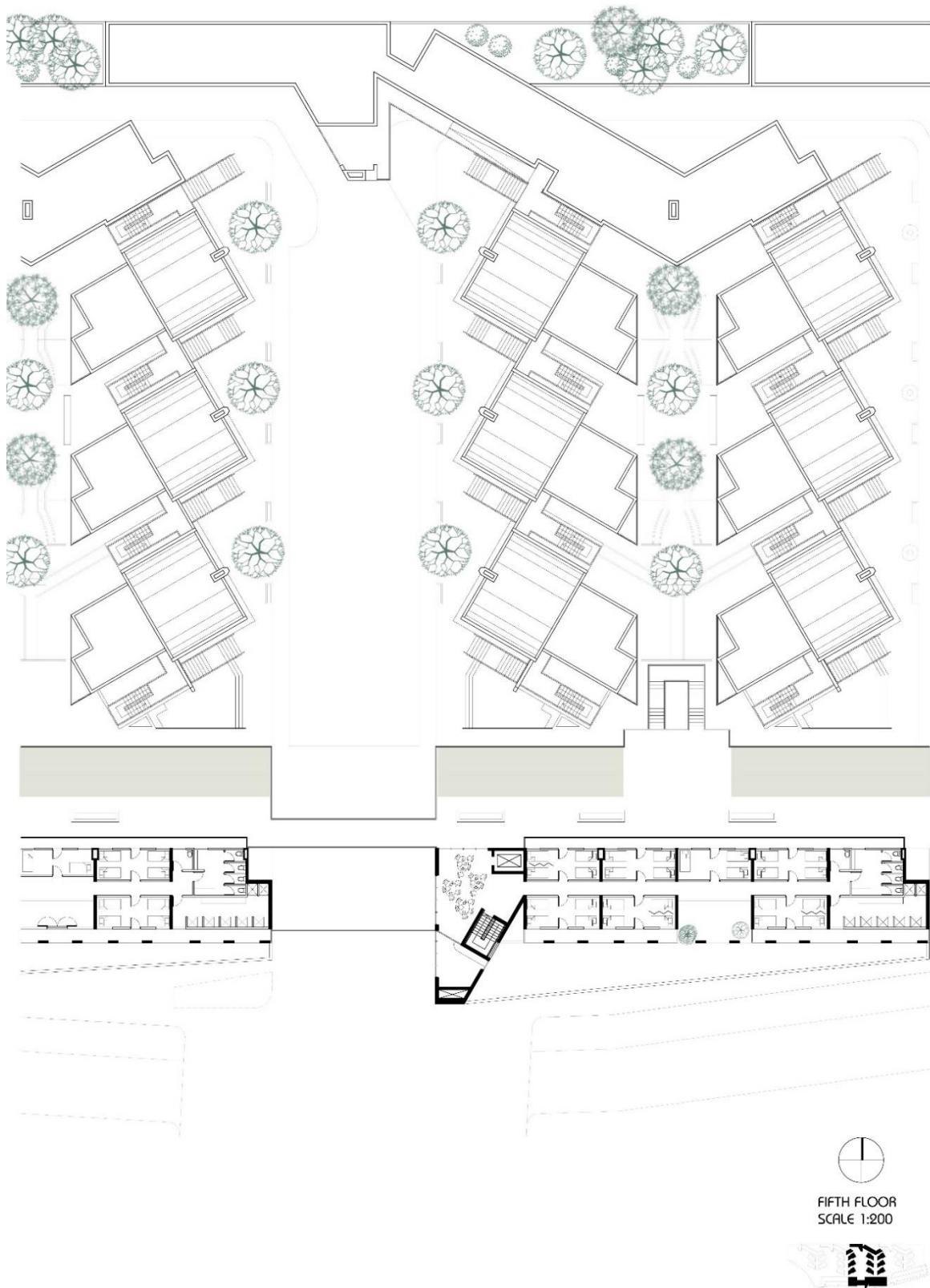
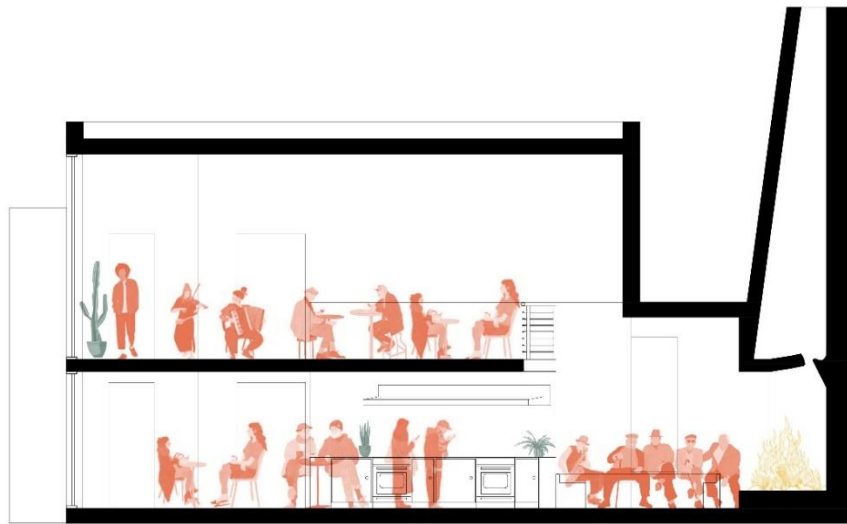


Figure 73: 5th floor



Figure 74: Elevation and Section



SECTION
SCALE 1:50



STREET VIEW
SCALE 1:100



Figure 75: Street view



Figure 76: Site plan

WALK - UP HOUSING

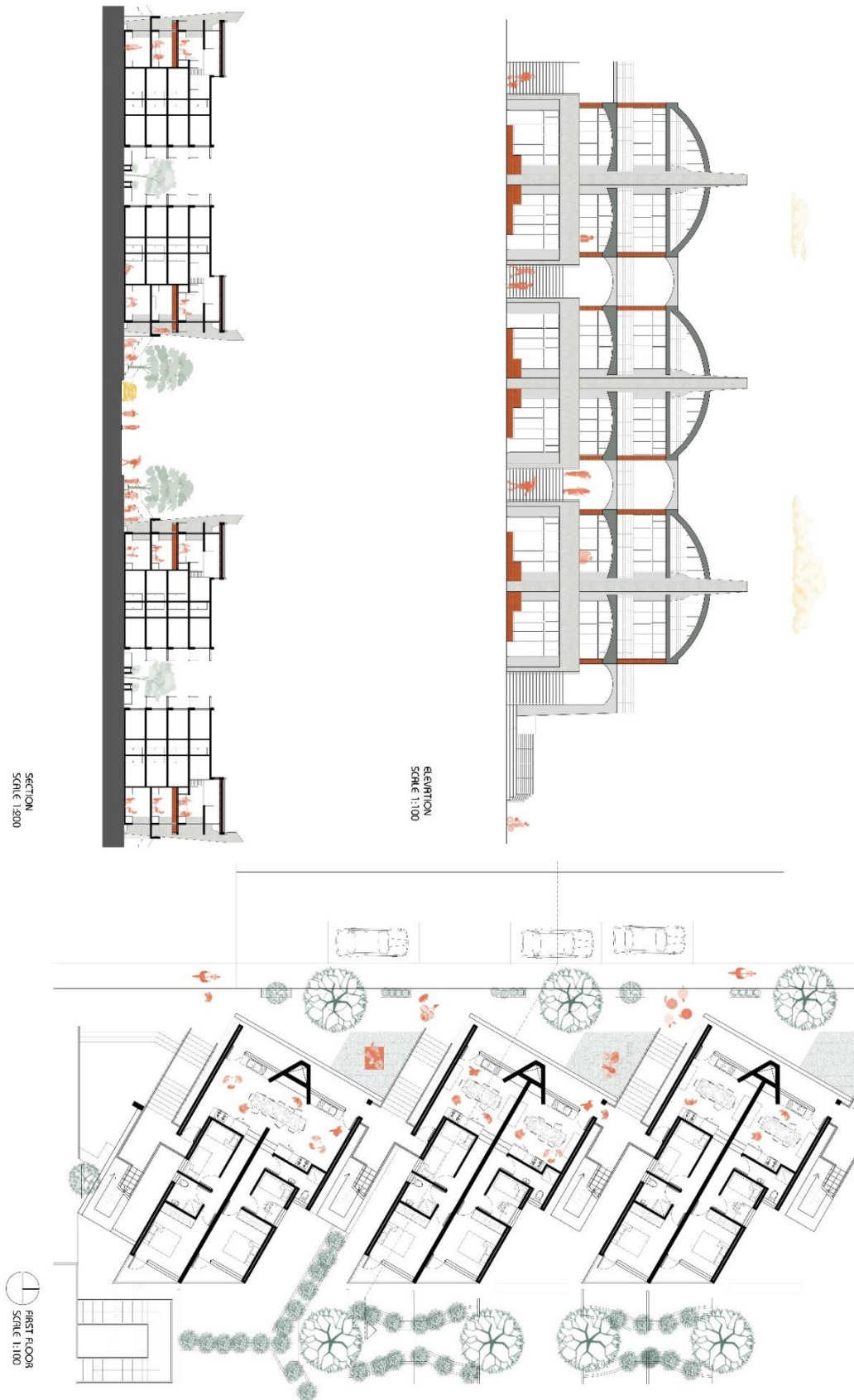


Figure 77: Walk -up housing

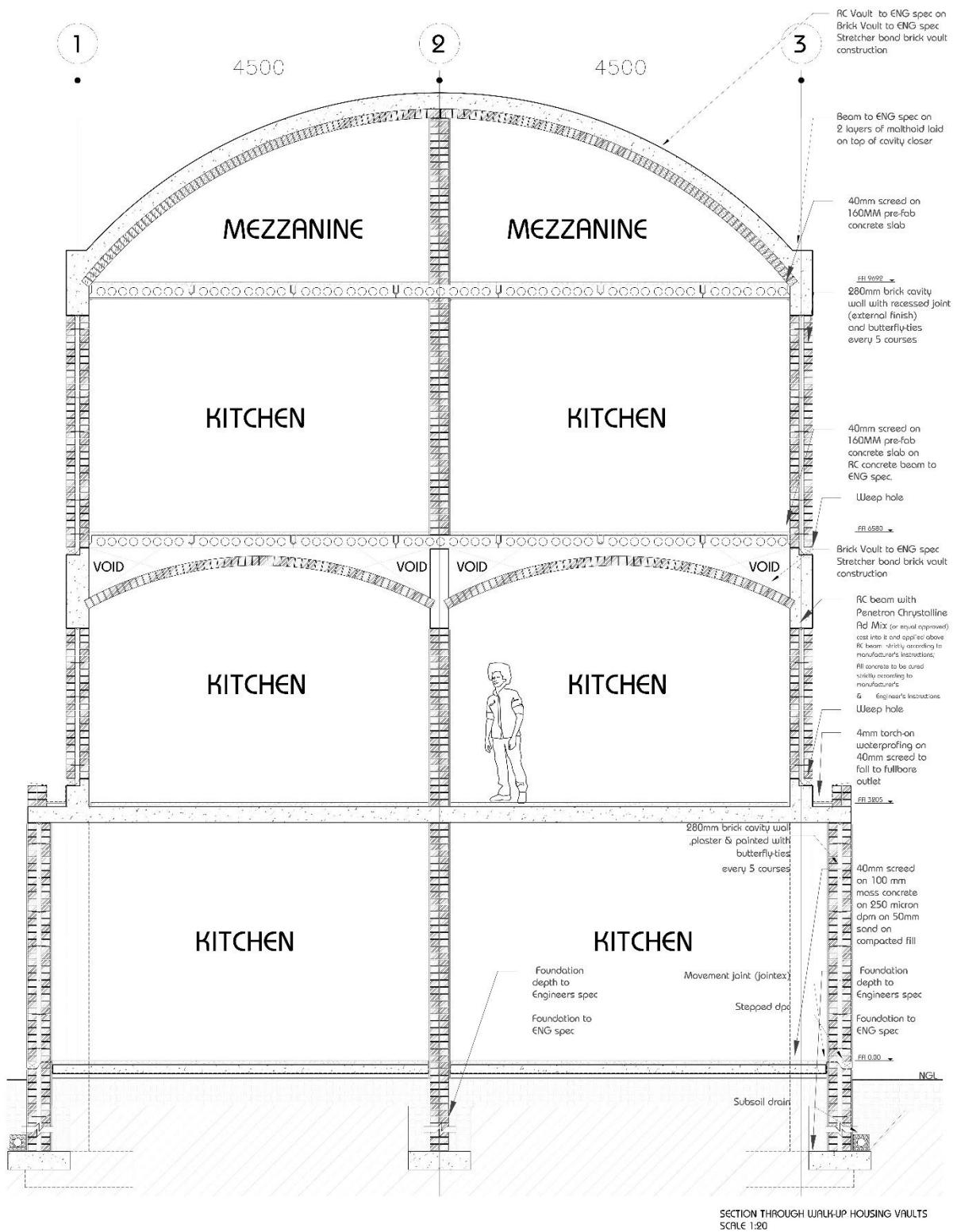


Figure 78: 1.20 Section

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- Figure 1-** Laing, A., 2022. "Whites only" sign prohibits others from using the water slide, Cape Town | UCT Libraries Digital Collections. [online] Digitalcollections.lib.uct.ac.za. Available at: <<https://digitalcollections.lib.uct.ac.za/collection/islandora-16131>> [Accessed 11 April 2022].
- Figure 2-** Image depicting division of people and the centre and periphery in Cape Town by Author
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- Figure 4-** Example of Cape Town CBD as the centre and Mitchells plain as the margins by Author
- Figure 5-** Mmdusa.net. 2022. Meerlust Estate | Portfolio | Maisons Marques & Domaines. [online] Available at: <<https://mmdusa.net/portfolio/meerlust-estate>> [Accessed 12 September 2022].
- Figure 6-**Base drawing: Brink, Y. (1992) Places of discourse and dialogue : a study in the material culture of the Cape during the rule of the Dutch East India Company. University of Cape Town.
Edit by author
- Figure 7-** Base drawing: Brink, Y. (1992) Places of discourse and dialogue : a study in the material culture of the Cape during the rule of the Dutch East India Company. University of Cape Town.
Edit by author
- Figure 8-** Left: Brink, Y. (1992) Places of discourse and dialogue : a study in the material culture of the Cape during the rule of the Dutch East India Company. University of Cape Town. Right voorhuis of a house in Stellenbosch today, Photograph by Author.
- Figure 9-** Artefacts.co.za. 2022. FAGAN, Gabriël Theron (Gawie). [online] Available at: <<https://www.artefacts.co.za/main/Buildings/archframes.php?archid=2121>> [Accessed 12 September 2022].
- Figure 10-** Barker, A. (2012) Typological form in the architecture of Gabriël (Gawie) Fagan (1925-). South African Journal of Art History. 27 (3), 130–171.
- Figure 11** - Artefacts.co.za. 2022. Ida's Valley Housing details. [online] Available at: <<http://www.artefacts.co.za/main/Buildings/bldgframes.php?bldgid=9264>> [Accessed 12 September 2022].
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- Figure 13** - Barker, A. (2012) Typological form in the architecture of Gabriël (Gawie) Fagan (1925-). South African Journal of Art History. 27 (3), 130–171.
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- Figure 21** - Photo: Ashraf Hendricks. Bohatch, T. and Hendricks, A., 2022. “This is not a place for human beings”. [online] GroundUp News. Available at: <<https://www.groundup.org.za/article/not-place-human-beings/>> [Accessed 12 September 2022].
- Figure 22** - Photo: BRENDAN MAGAAR African News Agency (ANA), 2022. [online] Available at: <<https://www.iol.co.za/weekend-argus/news/concerns-over-influx-of-homeless-to-cape-town-cbd-04383e03-21b8-4f99-bcdc-d0e1fed448f6>> [Accessed 12 September 2022].
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Figure 24 - Vielfalt der Moderne | Architektur und Kunst 1900 - 1935. 2022. Stuttgart Weissenhof Estate Behrens | Vielfalt der Moderne. [online] Available at: <<https://vielfaltdermoderne.de/en/stuttgart-weissenhof-apartment-building-peter-behrens/>> [Accessed 11 April 2022].

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Figure 27 - ArchDaily. 2022. AD Classics: Weissenhof-Siedlung Houses 14 and 15 / Le Corbusier + Pierre Jeanneret. [online] Available at: <<https://www.archdaily.com/490048/ad-classics-weissenhof-siedlung-houses-14-and-15-le-corbusier-and-pierre-jeanneret#:~:text=Built%20between%20the%201923%20manifesto,for%20the%20future%20of%20architecture.>> [Accessed 11 April 2022]. Drawing by author

Figure 28 - ArchDaily. 2022. AD Classics: Weissenhof-Siedlung Houses 14 and 15 / Le Corbusier + Pierre Jeanneret. [online] Available at: <<https://www.archdaily.com/490048/ad-classics-weissenhof-siedlung-houses-14-and-15-le-corbusier-and-pierre-jeanneret#:~:text=Built%20between%20the%201923%20manifesto,for%20the%20future%20of%20architecture.>> [Accessed 11 April 2022].

Figure 29 - Quintas, V. (2017) Structural analysis of flying buttresses. European journal of environmental and civil engineering. [Online] 21 (4), 471–507.

Figure 30 - ArchDaily. 2022. AD Classics: Weissenhof-Siedlung Houses 14 and 15 / Le Corbusier + Pierre Jeanneret. [online] Available at: <<https://www.archdaily.com/490048/ad-classics-weissenhof-siedlung-houses-14-and-15-le-corbusier-and-pierre-jeanneret#:~:text=Built%20between%20the%201923%20manifesto,for%20the%20future%20of%20architecture.>> [Accessed 11 April 2022].

Figure 31 - Cairoflats.com.au. 2022. History — Cairo Flats. [online] Available at: <<https://cairoflats.com.au/History>> [Accessed 12 September 2022].

Figure 32 – Left :Architectuul. 2022. Cairo Flats | Architectuul. [online] Available at: <<https://architectuul.com/architecture/cairo-flats>> [Accessed 12 September 2022].

Right: Interlocking relationship of flats, by Author

Figure 33- Plan analysis of circulation and shared amenities, by Author

Figure 34- Archilovers. 2022. Haus A | Duplex Architekten. [online] Available at: <<https://www.archilovers.com/projects/220150/haus-a.html>> [Accessed 12 September 2022].

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Figure 38 - 2013. The Digital Turn in Architecture 1992-2010 by Carpo, Mario. pp.72 - 78.

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DISSERTATION TITLE: My life, my Home ,*Reasserting the connection between home and occupant*

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This dissertation is presented as part fulfilment of the degree of Master of Architecture (Professional) in the School of Architecture, Planning and Geomatics, University of Cape Town

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