

THE WALL & THE VEIL

Reclaiming women's space in a world heritage site

Mia Verster

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My husband, who sacrificed much for this project
And my saviour, who tore down my walls and lifted the veil from
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Figure 1.1 Girl walking down a typical
Stone Town street

Abstract

In the Stone Town of Zanzibar, a World Heritage Site, the amalgamation of various cultures has created a complex architectural as well as cultural heritage. Public space is regarded as male space due to the strong Islamic legacy, and currently women have very limited access to public or recreational spaces, despite prominent spaces having been available for their exclusive use historically. However, cultural practices are slowly changing as women are gaining better access to education, the workplace and decision-making roles, and are thus moving into the public realm. The project investigates the potential of architecture to react to and accommodate this shift. Gender roles are acknowledged as valuable social constructs and the project aims to facilitate the creation of a living, changing heritage. This proposal for a women's centre in Stone Town draws from both the tangible and intangible heritage to develop a contemporary interpretation of traditional values and aesthetics while aiming to empower women in their quest to reclaim public space. The project is located on a street that had formed part of a previous planning scheme to incorporate vehicles into the dense town, and had subsequently developed as a scar in the urban fabric. A public square that has fallen into disuse due to illegal construction and an enclosed garden next to it offers the opportunity to revitalise the area. The proposed project will consist of areas that afford the following activities, each suitably designed to respond to and maximise the gender-related needs and restrictions of the activities: demonstration workshops, shops, restaurant and demonstration kitchen, office space, study area and library, turkish bath, swimming pool, and various garden spaces. The architecture will explore the application of traditional technologies in the construction of contemporary buildings in order to develop an architectural language that fits harmoniously within its surroundings but contributes to the legacy of outstanding architecture in Stone Town.

Abstrak

In die werelderfenisgebied van Stone Town, Zanzibar, het die samesmelting van verskeie kulture 'n ryk kulturele en argitektoniese landskap tot gevolg gehad. Aangesien die Islamitiese kultuur bepaal dat openbare ruimte as manlik beskou word, het vrouens op die eiland bykans geen toegang tot publieke of onspanningsareas nie, ten spyte daarvan dat verkeie prominente areas in die verlede uitsluitlik tot hulle beskikking was.. Die kulturele dinamiek is egter aan die verander, aangesien vrouens toenemend meer toegang kry tot onderwys, werkseleenthede en besluitnemersrolle beklee, en sodoende die openbare ruim betree. Die projek ondersoek die potensiaal van argitektuur om hierdie kulturele verskuiwings te akkomodeer. Die projek erken geslagsrolle as waardevolle sosiale konstruksie en mik om die daarstel van 'n lewende, veranderende erfenis te fasiliteer. Die ontwerp vir 'n vrouesentrum neem dus beide tasbare en ontasbare erfenis in ag en poog om 'n kontemporere interpretasie van die tradisionele te bewerkstellig. Die terrein is gelee in 'n straat wat eens deel gevorm het van 'n skema om motors toegang te gee tot die historiese dorp. 'n Plein wat in onbruik verval het as gevolg van onwettige konstruksie, bied, tesame met 'n ommuurde tuin, die geleentheid om nuwe lewe in die area te blaas. Die voorgestelde projek sal die volgende fasiliteite huisves, ontwerp om die geslags-verwante vereistes van elke aktiwiteit aan te spreek: demonstrasie-werksinkels, demonstrasie-kombuis en restaurant, winkels, kantooruimte, studeerruimte en biblioteek, turkse bad, swembad, en verkeie buiteruimtes. Die argitektuur sal die gebruik van tradisionele boutegniese in kontemporêre argitektuur ondersoek, met die oog daarop om 'n argitektoniese taal te skep wat harmonieus skakel met sy omgewing, maar ook sy eie bydrae lewer tot die ryk argitektoniese tradisie van Stone Town.

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Glossary

Barazza: Stone benches that line the streets of Stone Town.

Boriti: Mangrove poles used in construction.

Bui-bui: The full-length black cloak worn over other clothes when the woman moves into public, leaving only her face exposed.

Dala dala: A Stone Town taxi, specifically a “bakkie” or pick-up truck that has been fitted with benches and a roof at the back.

Darajani: Literally meaning “at the bridge”, the Darajani market was historically located next to the creek that separated Stone Town from the rest of the island.

Forodhani: Literally meaning “customs”, the main market area at the seafront was historically where customs administration took place, and the Forodhani market still carries this name.

Hamman/Hammamni: traditional Turkish bath that is the Turkish variation of the Roman steam bath.

Hijab: A headscarf that covers the hair and neck, leaving the face exposed, and may be of any colour or pattern. The word also refers to Qu’ranic modesty.

HUL: Historic Urban Landscape.

Makuti: Dried palm leaves used in construction, often as roof covering.

Mihrab: a niche in the wall of a mosque, at the point nearest to Mecca, towards which the congregation faces to pray.

Mkunazini: One of Stone Town’s neighbourhoods and the name of the street where the project is located, named after the Mkunazini tree (*Ziziphus jujuba*)

Ng’ambo: Literally, the other side. Refers to the urban development adjacent to Stone Town’s protected area, specifically on the other side of the buffer zone.

Reclaim group: A local Stone Town non-profit organization, Reclaim Women’s Space in World Heritage

Sokumahogo: The small but famous square in the centre of Zanzibar, also known as Jaws Corner, where political rallying and debating typically occurs.

STCDA: Stone Town Conservation and Development Authority.

Taarab: A music genre popular in East Africa

01

POSITIONING

Positioning

the project in the discourse of feminism



Figure 1.2 Girl crossing river

Gender inequality remains one of the most contentious issues of our time, often sparking angry debate and raising difficult questions. As this project revolves around women, I will attempt to answer some of these questions in this section, before diving into the subject matter. This will provide a frame of reference for the approach used in the project.

Zanzibar is a predominantly Muslim island where gender roles and differences are especially pronounced. Women wear the traditional bui-bui (headscarf) over dresses, are seldom seen in public places and do not enjoy the same social or educational benefits as men do. This will be expanded on later in the text, however for now it is important to note that addressing gender inequality is a government priority. In the *Zanzibar Development Vision 2020* (2011) mention is made of the programs and policies put in place to provide equal access to “education, health, the economy and protection under law”, to see women and men represented in equal numbers in government and decision-making roles, and an overview is given of the progress that has been made in these areas over the last four years.

Although these statistics show some improvement, the spatial sphere is slow to change. A study conducted by Gunnarson and Johansson (2004) investigated the access to and use of public space in Stone Town from a gender perspective, and found a massive disparity between genders in this regard. This dissertation draws from their research to some extent, however

the approaches taken and solutions posed are vastly different to those of Gunnarson and Johansson (2004).

Initially, they explain the feminist approach that they followed and how this determined the structure of their research.

Three statements that specifically caught my attention, were:

“We do not believe, as some feminist geographers, that all women have something in common, that we have a specific research method or special understanding of nature.” (Gunnarson and Johansson, 2004:4)

“We do not believe that there are certain characteristics women possess.” (Gunnarson and Johansson, 2004:5)

And finally, one of the aims they set for their research:

“We want to challenge and try to overturn the socially constructed and gendered division of space.” (Gunnarson and Johansson, 2004:6)

They propose the complete annihilation of gender differences and advocate in its place a complete equality - doubtless a lauded ideal in the Western world. Their arguments hinge on the premise that gender differences are purely social constructs, and can therefore be deconstructed to create a degendered society. This dissertation reacts to these assumptions in a critical manner, but does not, however, assume the opposite, which is that gender differences are purely inherent and can therefore not be challenged. Rather, it questions the very application of personal convictions when dealing with gender issues.

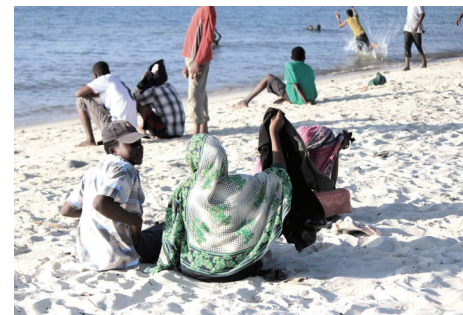


Figure 1.3 Women of Stone Town

Despite Gunnarson and Johansson’s stated attempt to be objective, the course-determining effect of their personal beliefs become evident in the kind of future they envision for Stone Town. In this process, they neglect to consider the intangible value of gender differences from a cultural perspective, or to consider that the people of Stone Town may have a different base interpretation of gender to themselves. The ICOMOS Charter for the Interpretation and Presentation of Cultural Heritage states as one of its objectives to “...safeguard the tangible and intangible values of cultural heritage sites in their natural and cultural settings and social contexts.”

The charter also states that “intangible elements of a site’s heritage such as cultural and spiritual traditions, stories, music, dance, theater, literature, visual arts, local customs and culinary heritage should be considered in its interpretation.”

In conjunction with this, the Nara document on Authenticity (1994) states:

“The diversity of cultures and heritage in our world is an irreplaceable source of spiritual and intellectual richness for all humankind. The protection and enhancement of cultural and heritage diversity in our world should be actively promoted as an essential aspect of human development.

Cultural heritage diversity exists in time and space, and demands respect for other cultures and all aspects of their belief systems. In cases where cultural values appear to be in conflict, respect for cultural diversity demands acknowledgment of the legitimacy of the cultural values of all parties.” (ICOMOS, 1994:46)



Figure 1.4 Walking the streets of Stone Town

This does not imply that social ills and gross inequality should be overlooked for the sake of heritage conservation, but rather that when engaging with gender inequality and gender roles in another culture, care must be taken to protect those sensitivities which are valuable to the people themselves. What one culture may perceive as inequality, another may regard as valuable, which highlights the danger of projecting one's own cultural assumptions onto another culture. In searching for a way to navigate the precarious balance between gender inequality and gender roles, the field of feminist architecture provides a surprisingly sensitive approach.

As I delved into the application of feminism in the design world, I discovered some interesting alternatives to Gunnarson and Johansson (2004)'s approach, and that deals specifically with the relationship between "the self" (or the designer's own cultural bias) and "the other" (the culture he or she is designing for).

As Abu-Lughod (2001) explains, feminist scholarship is an engaged scholarship, meaning it is linked to personal experience, and a great deal has been written about the designer's positionality, which is "the social location from which one analyses the world" (Abu-Lughod, 2001).

The effects of positionality when engaging with a context not one's own are clearly illustrated in the effects of Edward Said's 1978 book *Orientalism* on Middle Eastern gender studies. While the book is lauded for being, for its time, uncharacteristically attuned to gender issues, and thereby laid the foundation for later feminist scholars to pursue this

field further, it has also been widely criticised for reinforcing the clichéd "us-and-them" mindset that the Western civilisation loves to perpetuate (Abu-Lughod, 2001). This is usually accompanied by romantic representations of the exotic east, and emotional images of suppressed, veil-wearing women. The problem with this negative stereotype is that it incapacitates Middle-eastern feminists, who are left in the difficult position of having to disprove the blanket term of the "suppressed" that the West throws over them (indeed, in many instances they do not regard themselves so), while simultaneously fighting against unsatisfactory social systems at home, a which point the West would jump to apply the label of "Islamic suppression". This confirms Said's stance that we cannot divorce political engagement from scholarship, and Abu-Lughod (2001) accordingly makes a compelling call to authors to consider their own positionality in the binary tradition of East-West politics:

"As long as we are writing for the West about "the other", we are implicated in projects that establish Western authority and cultural difference."

The writings of Jane Rendell seem to provide an alternative to this conundrum. Her approach draws largely on the philosophy of deconstruction first advocated by Jacques Derrida (Rendell, 2011) which critiques binary thinking and allows us to "understand how the hierarchical relationship assigned to two terms in a pair is not natural or pre-given but is a social construction that can change according to how we are positioned" (Rendell, 2011). Feminist theory has been effective in applying Derridean deconstruction in architecture, specifically with regards to the tradition of a gendered binary approach to the public/private spheres, where the public space

is often regarded as masculine and the private (or domestic) as feminine. Furthermore, it finds application not only in spaces that are typically defined by their binary nature, but in spaces that exceed binary definition such as “the margin, the between, the everyday, the heterotopic and the abject” (Rendell, 2011). This becomes of particular importance when speaking about women and public space in a culture that greatly values privacy, and with a strong tradition of gendered space, where the margin inevitably becomes the point of engagement. Rendell proposes an approach laced with variables, undecidabilities and multiplicities, which provides a clue as to overcoming the bias of the East/West binary tradition: acknowledging that the particular set of predisposed binaries that arises from one’s own positionality, cannot possibly capture the complexity of layers present in a situation so far removed from one’s origin.

As response to this, I do not seek to provide answers or solutions to all the challenges posed by the context, but rather to expose or make manifest the solutions inherently implied in the social fabric of the place. The men and women of Zanzibar are working towards an equality that they have defined for themselves, and as an outsider I respect their perception of gender differences as well as their heritage, and which aspects of it they wish to retain. This relates to the HUL (Historic Urban Landscape) Approach’s definition of an historic living city, that allows for a changing notion of what is to be considered heritage (Van Oers, 2013).

I do not make the decision about what should change, what should be challenged, or how the future should look. Instead I partner with the men and women of Stone Town as they question and challenge their own situation - seeking to provide not an answer, but rather the architectural manifestation of the answer as they have voiced it. I do not challenge the existing roles, but explore their complexity, specifically as they translate into spatial and architectural solutions.



Figure 1.5 Workshop with Reclaim group, May 2014



*“Some Swahili now want to challenge the status quo here. However, they want to challenge it in their own way and in their own style. Beauty always being in the eye of the beholder.”
(Sainsbury, 2012)*

02

INTRODUCTION

Introduction

to Stone Town and its complexities

Background

Stone Town is one of the best preserved examples of the many Swahili coastal towns that developed along the East Coast of Africa as a result of the trade route to India, and developed as a cosmopolitan hub where various cultures met and converged because of their shared interests (Siravo, 1994). The amalgamation of cultures that occurred on the island, resulting in a unique architecture, created a valuable cultural landscape that led to its inscription on the list of World Heritage Sites in 2000.

As a result of the cosmopolitan nature of the town, gender roles developed in a uniquely local way. The Omani people brought Islam to the island and with it the separation of sexes that is still prevalent today, however other cultures also had an influence on the spatial development of the town. The result was that women were afforded distinct privileges and various prominent spaces in the town were dedicated to their exclusive use. During the 1964 revolution, the Swahili population gained control of the island through a bloody battle. Inhabitants of other cultures were either murdered or fled the island, causing the city to become much less cosmopolitan and women's freedom to move about the town became increasingly restricted. At the same time, tourism to the island started increasing and the decisions to take advantage of this source of income were made almost solely by men. Many of the spaces that were previously set aside for women's use were reappropriated to



Figure 2.1 View from the bay

be income-generators in the tourist industry, and women became increasingly limited to the indoors (Hamoud, 2013). However the memory of a time of greater privilege and freedom still lingered in the minds of the women of Stone Town.

With Stone Town becoming a World Heritage Site in 2000, international attention was turned to the island and various initiatives launched to aid the preservation of its valuable cultural and architectural heritage. Gender issues also received attention in these interactions and this reawakened an awareness of women's needs among the people of Stone Town. The government has also made gender equity a priority. The areas of girls' education and women's representation in government roles have both seen substantial improvement over the last 10 years. In their conversations with Zanzibaris regarding gender issues, Gunnarson and Johansson (2004) found an openness to change among men. Women's voice in the town has without a doubt gained strength. However habits are slow to change and the spatial development of the town does not yet reflect the changing social dynamics. Gender issues are not merely an intellectual pursuit but are ingrained in the deepest beliefs and cultural identity of the people, which can be seen in men's resistance to cede public space to women.



Figure 2.2 Deterioration of green space in Stone Town

Meanwhile, and also as a result of Stone Town's heritage status, the tourism sector on the island continues to expand and places a lot of development pressure on the historic core. Zanzibar has adopted the Historic Urban Landscape (HUL) approach as a means to relieve the tension between development and conservation. This approach takes a holistic view of conservation "based on the recognition and guidance of investment in and development of historic cities, while at the same time honouring the inherited values embedded in their spatial and social structures" (Rao, 2013).

Despite this, the existing Stone Town Conservation Guidelines (Steel & Battle, 2011) do not provide adequate guidance for sensitive new developments. The guidelines focus on superficial aesthetic elements and neglect to discuss wider heritage issues as explained in the HUL documents. The guidelines encourage developers to "look in the street around and copy" (Steel and Battle), which does not encourage the creation of contemporary architecture that can contribute to the existing heritage. The result is that many new developments are insensitive and jeopardize Stone Town's architectural heritage, with no examples of sensitive contemporary buildings in the town.

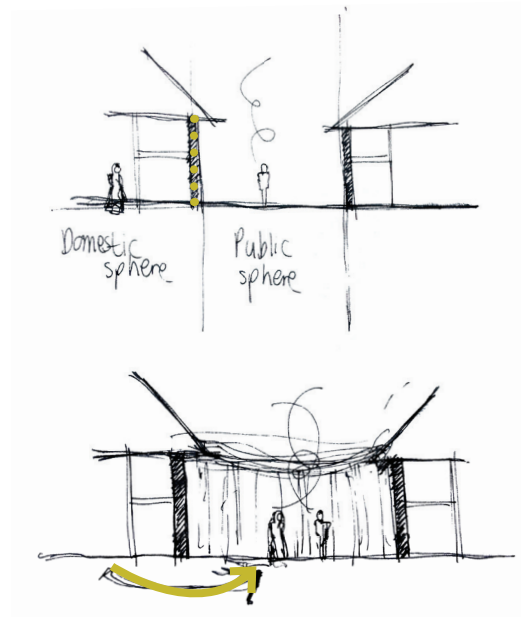


Figure 2.3 Investigating how architecture can reclaim public space for women.

Problem Statement

A revolutionary change of government and the development of the tourism industry have led increasingly to the exclusion of women from the public realm. Prominent facilities that had been available for their exclusive recreational use were allocated to tourism uses, leaving them with no access to public space or recreational areas. However, over the last few years, power relations have begun to shift again and despite gradual improvements in women's position in society, the spatial legacy remains a restriction.

For women to regain access to public space, a sensitive strategy is needed that will fulfill the needs and desires of the women while at the same time honouring the complex cultural factors surrounding gender, space and privacy. While this addresses the social aspects of heritage, the architectural heritage of Stone Town is also under pressure due to poor restoration practices and the construction of new buildings that do not follow good heritage practice guidelines.

The main issue under investigation is therefore how to create a contemporary building that responds sensitively to both the social and architectural heritage of Stone Town.



Project approach

The project aims to be culturally and contextually sensitive in its approach. It draws from the history of Stone Town as well as the current cultural context and engages with the inhabitants to determine a suitable way forward. Architecturally it draws from and makes reference to prominent Stone Town building typologies while avoiding falsification, and thus seeks to interpret the inherent meaning and value of architectural features in a contemporary way.

Figure 2.4 Men playing a board game in Stone Town's streets

03

HISTORY



Figure 3.1 Top: Boys compete at swimming. (Stone Town Archives)

Figure 3.2 Below: Boys standing on a tank

History

bringing us where we are

They came with the trade winds

The east coast of Africa developed on the wings of the trade winds and sea currents, as ships carrying spices, ivory, glass beads and more traded up and down the coast and across the warm Indian Ocean to the Middle East. Stone Town lies at the western tip of an island known as Unguja, which, together with neighbouring Pemba and some smaller islands, form the Zanzibar archipelago off the coast of Tanzania. Arabian traders settled on the island as early as the 8th century (Siravo, 1994), sharing the island with the indigenous population. The amalgamation of these cultures, together with the Omani culture, into the rich, hybrid Swahili culture that flourished in these coastal towns, is a unique and valuable cultural phenomenon. The Swahili society has a complex identity as “a centuries old mercantile society with an unusual social structure” that sets them apart from other African tribal societies (Middleton, 1992). Not only do they have a unique social structure and cultural origin, but the Swahili have also stood apart from neighbouring groups by virtue of having a literate Muslim culture and having economical and political relations to both the interior of Africa and across the Indian ocean to the Arab world.

Spread out along 1000's of kilometers of coastline, the Swahili culture developed enclaves of differentiated identities in different localities. All share the basic Swahili values of urbanity (utamaduni) and civilisation (utsaarubu), as well as their esteem of myth and history, of their religious Muslim faith and of their proud past (Middleton, 1992). Despite living in close proximity to other ethnic groups, trading with them and sharing a language, the Swahili have maintained an exclusive identity. This becomes evident in the phenomena that although their cultures are intertwined, Zanzibari Indians, are never referred to as Swahili, and intermarriage with other groups seldom occur. This cultural purity has been largely eroded in most of the larger and more modern Swahili port cities.

Zanzibar is not the oldest Swahili settlement but differs from others by virtue of the amalgamation of cultures that occurred on the island. By 1503 the Portuguese started an outpost on the island and had a shortlived presence there, while the Omani settled on the island in 1652 (Siravo, 1994). Under Omani sultan Hasan, the town was officially founded at Shangani point and the Old Fort was constructed in 1780. Sultan Sayyid Said of Oman made the decision to move

his entire court to the island in 1832, which led to a massive increase of Oman people and influenced the built heritage of the island accordingly.

Britain and the USA started frequenting the island in 1833 and soon also started a trading post in Stone Town, bringing to the island a new dynamic. Soon the island became the cosmopolitan capital of East Africa. During this time, the town acquired its dense street pattern and the eclectic architecture so unique to Stone Town. In 1892 Zanzibar became a British protectorate and although the Omani sultanate still officially ruled the island, it was under direct patronage of the crown.

During this time, the cosmopolitan nature of the town blossomed and various public works programs were initiated. It was also a time of relative privilege for the women of the town. Although the separation according to sex that was a product of Islamic culture prevailed, spaces dedicated to women included the Old Fort, which was used as a Ladies' Club and an exclusive Ladies' beach. The fort was used as sports facilities such as netball courts and playgrounds for girls. The cinemas in town also hosted exclusive ladies' shows where only females were allowed and where women could thus go unaccompanied by men of their families.

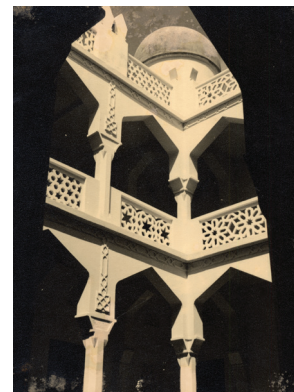


Figure 3.3 Zanzibar history (Stone Town Archives)



Figure 3.4 Top to bottom: Catholic church in Stone Town. The Old Fort. A typical Stone Town street.

In 1964, the political tide turned as the local Swahili population rose up in a revolution, thwarting the power of Omani, English and Indian alike. Although day-to-day living soon returned to normal, a steady process of decline in the infrastructure of the town started. The local economy was seriously damaged by the revolution and the local government ran short on funds for the maintenance of historic buildings. Decay set in, infrastructure and services suffered and the public sphere of the town experienced a loss in quality.

At the same time, however, cheaper flights caused a rise in commercial tourism and Zanzibar soon became a sought-after destination. While this provided a much-needed economic boost, spaces dedicated to female activities were gradually given over to tourism by the decision makers, who were mainly men (Hamoud, 2013). The cinemas closed down, and the Fort was converted into a public performance space and equipped with curio shops.

In 2000 Stone Town was declared a World Heritage site under the following criteria:

Criterion ii : The Stone Town of Zanzibar is an outstanding material manifestation of cultural fusion and harmonization.

Criterion iii : For many centuries there was intense sea-borne trading activity between Asia and Africa, and this is illustrated in an exceptional manner by the architecture and urban structure of the Stone Town.

Criterion vi : Zanzibar has great symbolic importance in the suppression of slavery, since it was one of the main slave-trading ports in East Africa and also the base from which its opponents such as David Livingstone conducted their campaign.

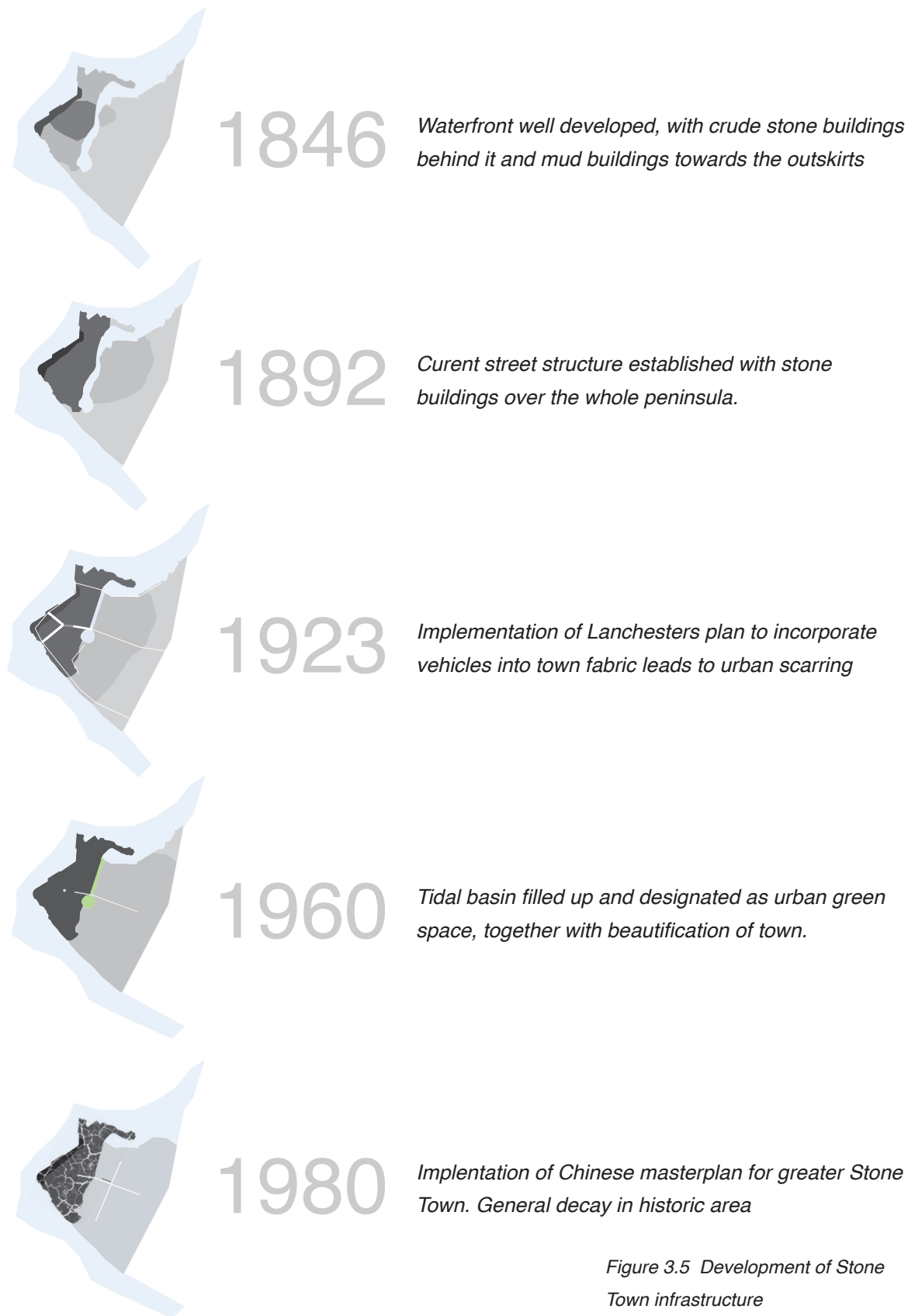


Figure 3.5 Development of Stone Town infrastructure

The result of Stone Town's World Heritage status was a further rise in the amount of tourists visiting the island, but also led to restoration projects and renewal throughout the town. International funding was made available to promote conservation and various research projects have since been carried out to gain an understanding of the town and to develop appropriate conservation strategies.

An architectural legacy

The built fabric of Stone Town grew organically outwards from the first stone buildings at Shangani point, which were initially surrounded by the traditional Swahili mud huts (Siravo, 1994). Figure 3.9 illustrate how the town fabric expanded to fill the entire peninsula and gradually spread across it to the other side of the creek, Ng'ambo, which literally means "the other side" in Swahili. The creek was eventually filled up in the 1950's, with the implementation of Lanchester's 1923 plan, however its memory is retained in the open space that separates the historic area from Ng'ambo. This green strip is known as the Darajani corridor, where locals catch the Dala-dala out of town, haggle over market prices or play a game of soccer. The effect of Lanchester's plan is still clearly visible in the town fabric, especially where the wider roads that he planned influenced the density of the south-eastern parts of the historic area.

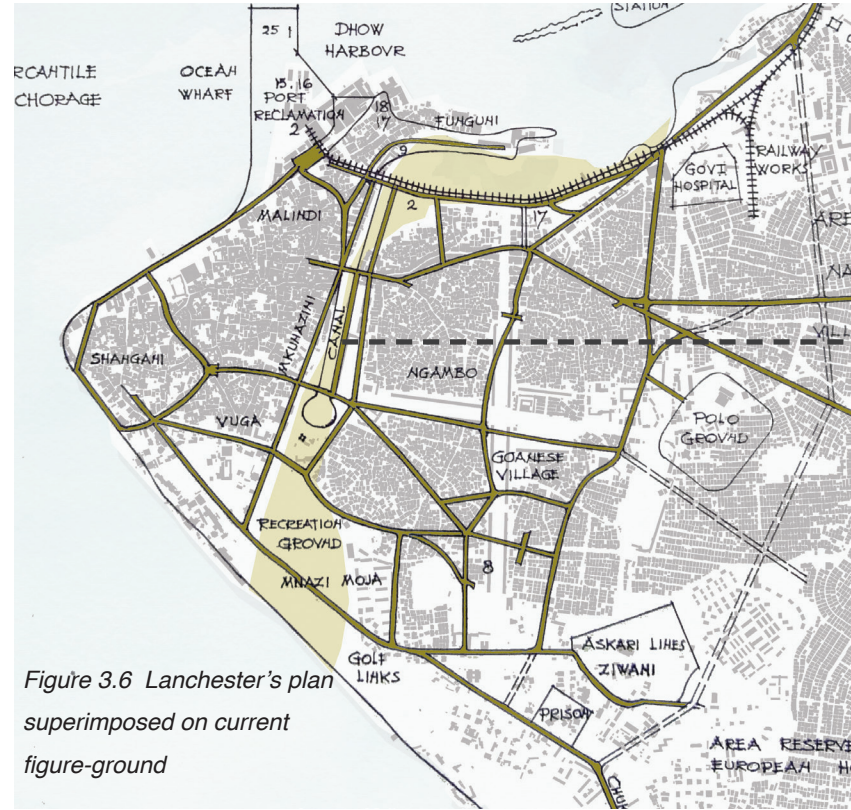


Figure 3.6 Lanchester's plan superimposed on current figure-ground



Figure 3.8 The canal before being filled up in 1960. The reclaimed creek now makes up the green strip or buffer zone between Stone Town and Ng'ambo (Stone Town archives)



Figure 3.7 Current figure ground showing urban scarring



Figure 3.9 Mkunazini street's uncharacteristically wide avenue can clearly be seen on Stone Town's figure ground (left), the result of Lanchester's plan to introduce cars into the town.

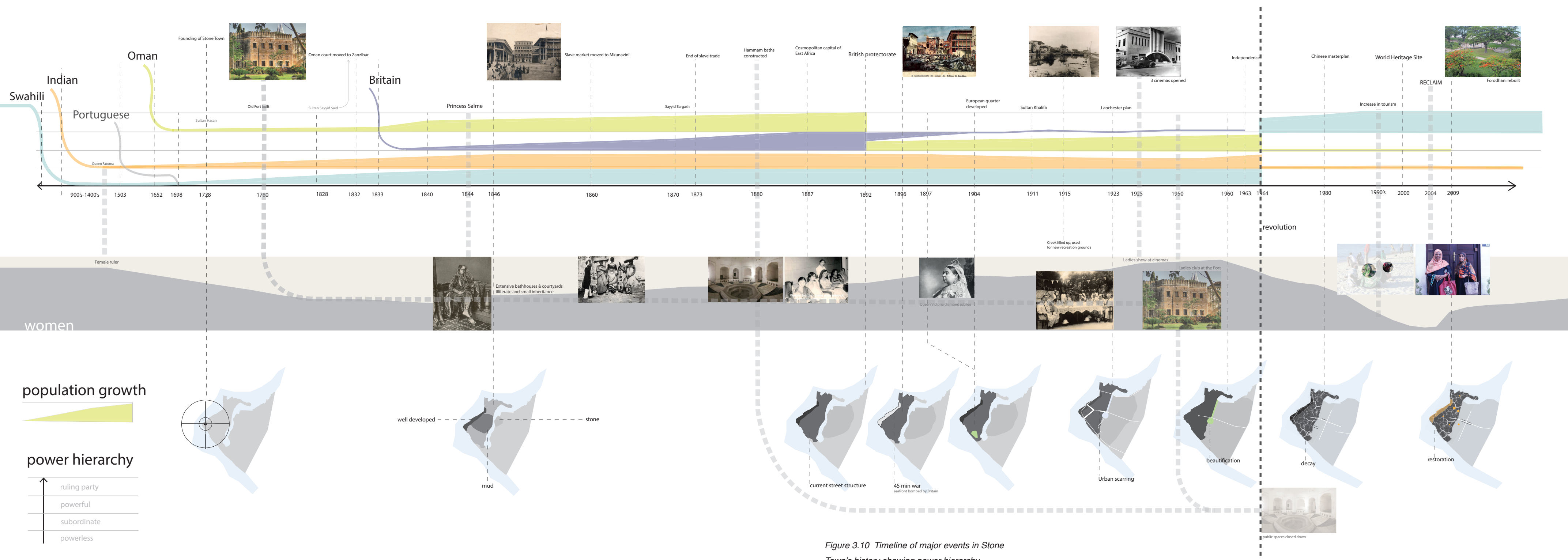


Figure 3.10 Timeline of major events in Stone Town's history showing power hierarchy

The women of Stone Town

Historically, the women of Stone Town's social situation has been greatly influenced by the different cultures present on the island, and the ebb and flow of power between groups have caused women's social privileges to shift accordingly. The power relation shifts over time between different groups within Zanzibar is illustrated in Figure 3.9, and shows how certain events in the island's rich history impacted on both the physical town structure and the role that women played in the society, and aims to illustrate the interconnectedness of social relationships and events in the town.

As far back as the 15th century, Zanzibar was under female rule when Queen Fatima was on the throne, a position of power unprecedented anywhere else in Zanzibar's history. Our next glimpse of a prominent woman comes from Princess Salme, who wrote a memoir of her days at the Stone Town court in the 1800's (Reute, 1907). At this point, the women at court enjoyed the luxury of extensive bathhouses dedicated to their exclusive use, where they spent their days soaking in the spicy fragrances of the island, chatting and napping. Despite this privileged treatment, women were generally illiterate at this time (Salme taught herself to read in secret) and a girl inherited only half as much as her brothers.

As Stone Town became more cosmopolitan, the influences of other cultures afforded women a new dynamic role in society, to the extent that the Old Fort, one of the most prominent buildings on the seascape, was used as a Ladies' Club, a private beach was reserved for use by the ladies of the island and the cinema hosted a weekly ladies only show (Hamoud, 2013). All these instances speak of gendered separation, yet distinct privilege.

After the revolution of 1964, and with the increase of tourism, however, the balance of power in Stone Town shifted again. Many of the dedicated female spaces were reverted to tourism spaces, such as the Old Fort and the Ladies' Beach, while others simply closed down, for example the cinemas and the Hamamni baths, a public Turkish bath where every other week had been designated for female use (Siravo, 1994). Women became more increasingly excluded from the public life of society. One explanation for this is that the decision makers, who were almost exclusively men, valued the income that could be generated from these spaces more than the value they accorded to the ladies who used them (Hamoud, 2013).



Figure 3.11 Spaces that historically belonged to women that are now lost to them

The result is that public space in Stone Town currently belongs exclusively to men, forcing women out of recreational space and into their homes. The qualitative analysis of public space that was conducted as part of a mapping exercise illustrates this, and is introduced in the next section.

Although this study focuses mainly on spatial issues, the problem goes much wider to include issues of education, decision-making and financial liabilities (Amani et al., 2011). Educational figures show a lot of improvement over the last few years, as do women's representation in decision-making posts. However, achieving gender balance is still identified as one of the main governance challenges in *Review of the Zanzibar Development Vision 2020*. A careful reading of the past and of transpiring events makes it clear that power relations in Zanzibar are once again changing as women become more empowered. The question that arises is how the physical structure will be impacted by this new dynamic, and how architecture can respond to and facilitate the changing relationships.

_Mapping public space

A study conducted by Gunnarson and Johansson (2004) investigated the current state of public space in Stone Town from a gender perspective, specifically measuring the presence of men and women in prominent spaces throughout the day and evaluating the type of interaction that both had during these times. These results were overlaid with a study conducted by Bakker and Clarke (2011) that mapped the current condition of public spaces throughout the town, investigating the quality

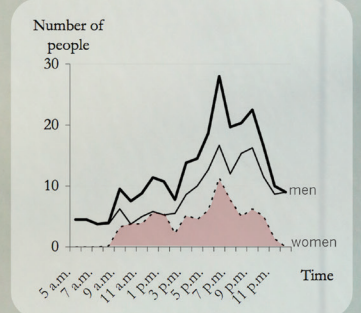
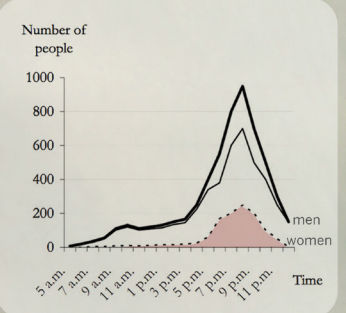
of the space, physical features, known historical features or uses, and other similar criteria. These studies, together with observations by the author, were used to paint a picture of the type of spaces that women have access to, and the assimilated result can be seen in Figure 3.11.

From this analysis it becomes clear that the majority of spaces are male-dominated, with little to no female presence during the day. Although some of the spaces have positive features such as seating and shade, a general loss of quality of public space is evident, which relates to aspects like the removal of taps, trees and seating, the use of public space for car and moped parking, and rubbish dumping. In many instances, children's play-space were sacrificed, and the historical use of spaces for weddings, religious ceremonies and political rallies have been compromised. High tourist activity in prominent and well-placed squares also becomes apparent.

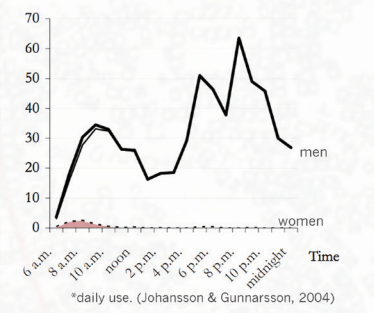
_Conclusion

The architectural and spatial character of the town and the use of gendered space is intricately woven into Stone Town's rich history. Although women currently have very limited access to public or shared space, this was not always the case. The architectural legacy and the memory of women's spaces that existed in the past provide clues as to how women could move forward in reclaiming public space. An understanding of the current state of public spaces in Stone Town provides the basis for selecting an appropriate site, as will be explained later in the text.

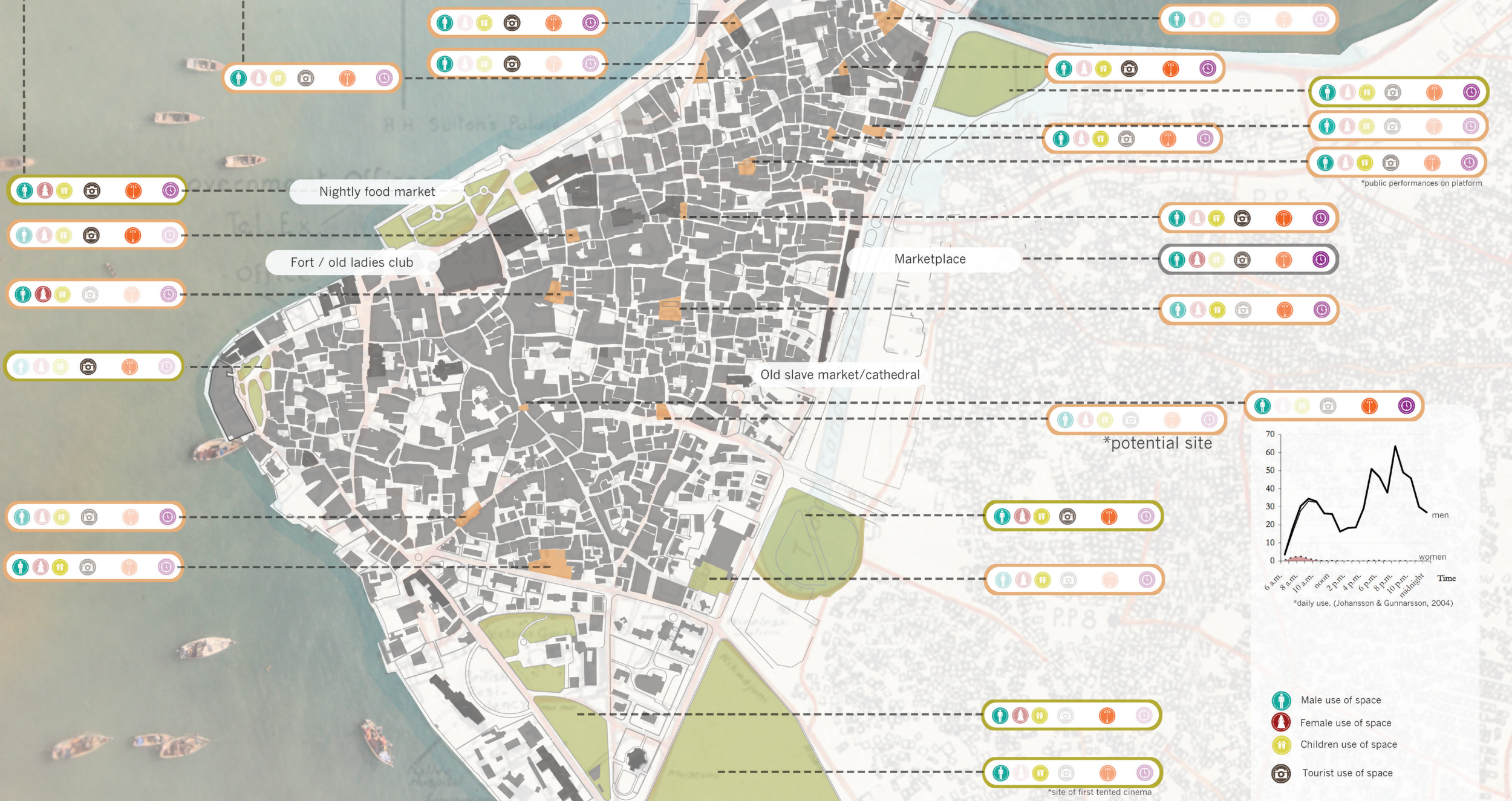
Figure 3.12 Mapping public space



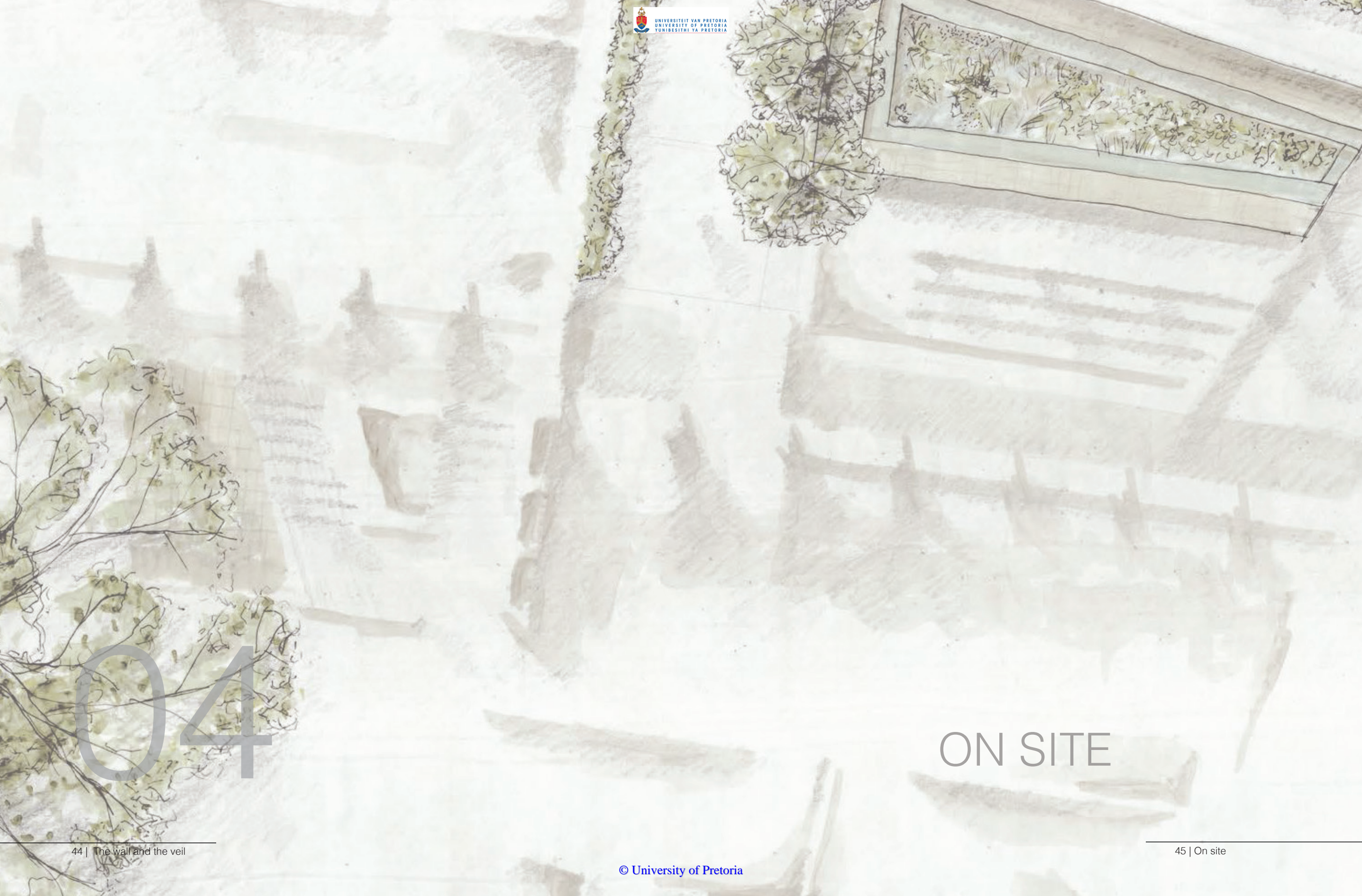
*daily use. (Johansson & Gunnarsson, 2004)



*daily use. (Johansson & Gunnarsson, 2004)



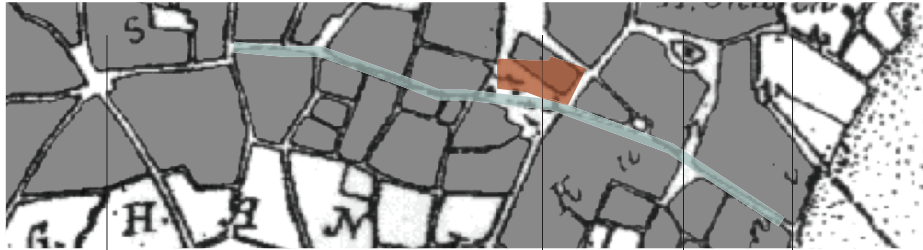
- Male use of space
- Female use of space
- Children use of space
- Tourist use of space
- Quality of space (trees, seating, surfaces, dumping)
- Change in cultural value over time (low intensity = great change)



04

ON SITE

1892



1939



2014



1939 ON 2014

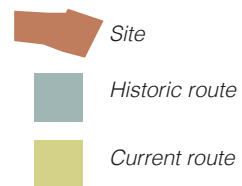
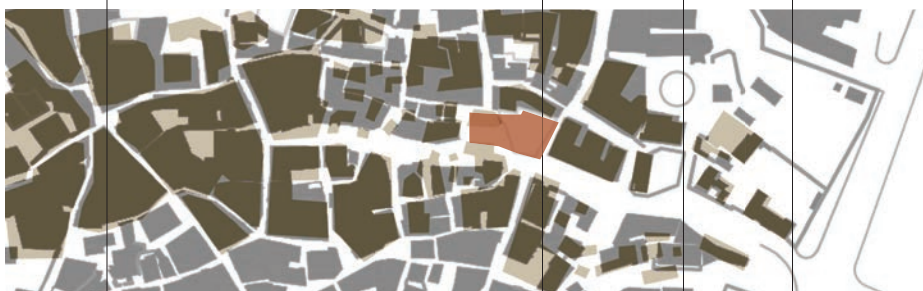


Figure 4.1 Development of precinct

On site *in Mkunazini street*

The approach used to determine a suitable site for this project, was to seek out forgotten space in the city that might be imbued with new meaning as the women take ownership of it, as this approach might be more readily accepted in the town than reclaiming prominent space that has been reappropriated for the tourism industry. The site was chosen for the following reasons (Figure 4.17):

- The density of the surrounding fabric provides strong contextual clues to react to
- The site has a rich history and strong connotations in the memory of Stone Town's people
- The site has fallen into disuse and is in a poor state at the moment, providing opportunity for rejuvenation
- The site is not currently being used by any specific group, affording women the opportunity to take ownership of the forgotten space

Mkunazini street, where the site is located, is one of the streets identified in Lanchester's plan to provide vehicular access to the town. The urban fabric has therefore developed at a lower density than the rest of Stone Town and the street is uncharacteristically wide.

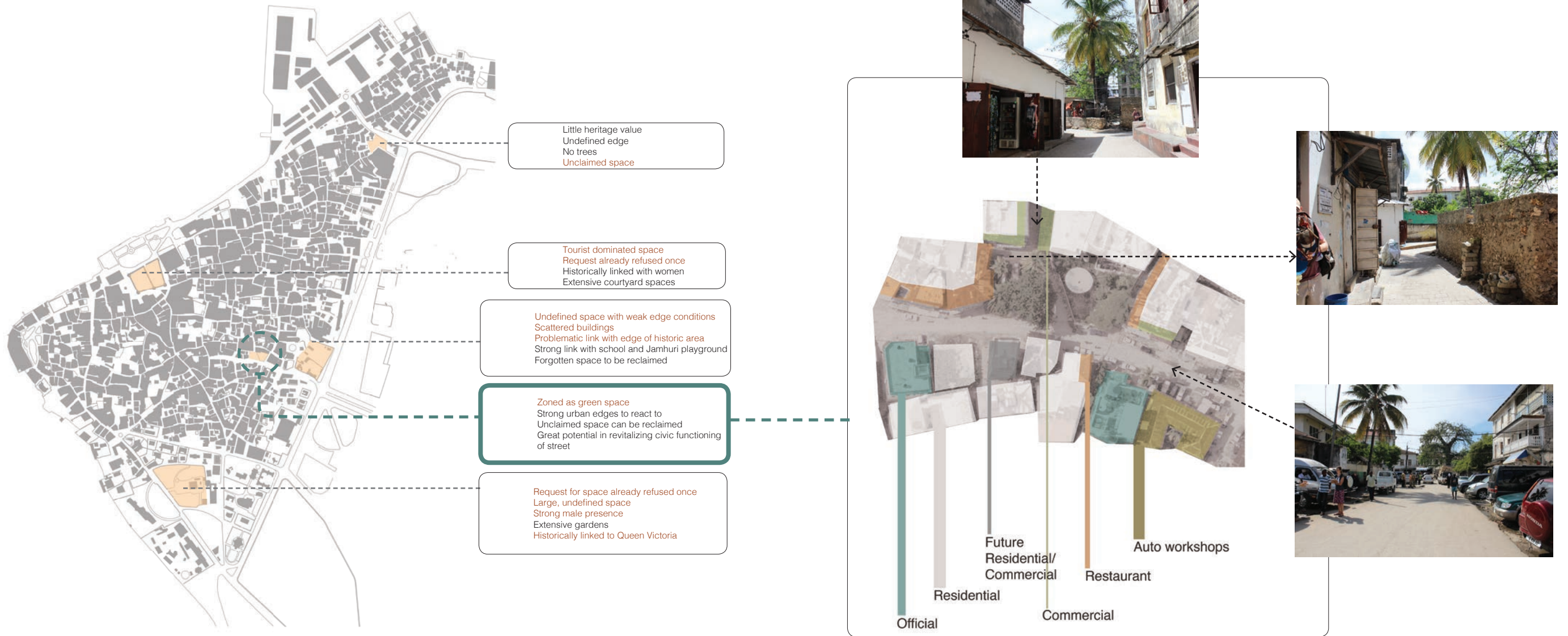


Figure 4.2 Site selection and introduction

_Stone Town framework

Various frameworks have been proposed to facilitate the town's development and this project combines aspects of some of the most recent framework, namely the 1994 Masterplan (Siravo, 1994) and the Traffic Plan (Juma, 2000). The overlaying of these two plans result in the following master framework (Figure 4.3). The framework centers on the principle of a ring road surrounding the town, with a core of pedestrian routes free from scooters and bicycles. The buffer zone towards the east of the historic area is to be retained as an urban green space, integrated with a transport interchange, marketplace and recreational facilities. The site, indicated by the orange frame, has a strong link to the transport interchange and acts as a feeding route into the main pedestrian movement routes through the town, indicated in yellow.

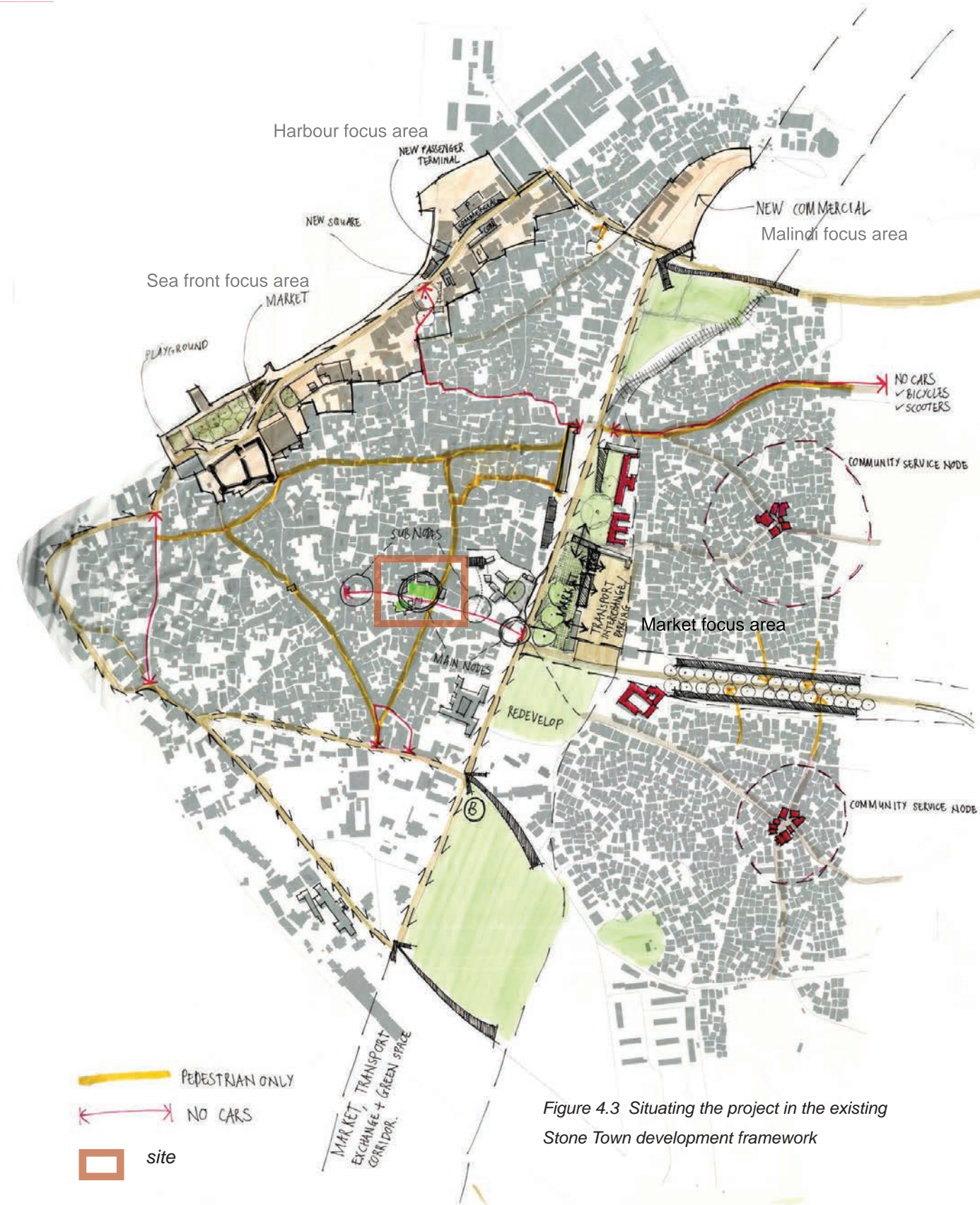


Figure 4.3 Situating the project in the existing Stone Town development framework

_Street framework proposal and development guidelines

According to the Stone Town masterplan, Mkunazini road will be pedestrianised and developed as a green movement route with market stalls. In this way, it will function as a filter into town from the transport interchange located in the buffer zone. This forms the base for the street's framework, which takes the street's history and current uses into consideration.

The following aspects of the street are defining characteristics linked to Stone Town's history:

- Old slave market: was located at the eastern end of the street between 1860 and the abolishment of the slave trade in 1873. Nothing of the infrastructure is left, however the wine cellars of the cathedral are being paraded as "slave storage", which it never was.
- Anglican cathedral: the cathedral was built on the site of the previous slave market and is a grade 1 listed monument. A memorial to the slaves that passed through Zanzibar was constructed in front of the cathedral.
- The baobab tree (*Adansonia kilima*) in the centre of the street has always been a public gathering space. In earlier years children used to play under the tree, and restaurants and ice cream vendors conducted business around the tree. The tree is still an important navigational beacon in

the town, although illegal construction on the edge of the site has caused the square to fall in disuse.

- In previous years the street had Mkunazi trees (*Ziziphus jujuba*) planted down both sides, after which it was named. The Mkunazi tree is a shrub or tree that grows to a maximum of 9m high, is a fruit-bearing with medicinal properties. Many residents recall the trees but they were removed several years ago to facilitate car movement in the street.

Analysis of the street for this project included mapping social and retail activity down the street both in the morning and in the evening (Figure 4.4). Although this is only representative of a single day, it provides a qualitative insight into how the street is currently being used. This activity included documenting the zoning of each building, what business is being conducted in each shop and whether the shops were open or closed, documenting informal activity such as food vendors and tradesmen, as well as how many people were congregated at various activity nodes in the street.

Every building in the street was also documented in terms of its heritage value and development potential, taking into consideration its architectural value according to Siravo (1994) and its heritage status, as well as current condition, height and contribution to the street's urban character. The results of these mapping exercises are presented in Figure 4.5, and this forms the basis of the development of the street framework.

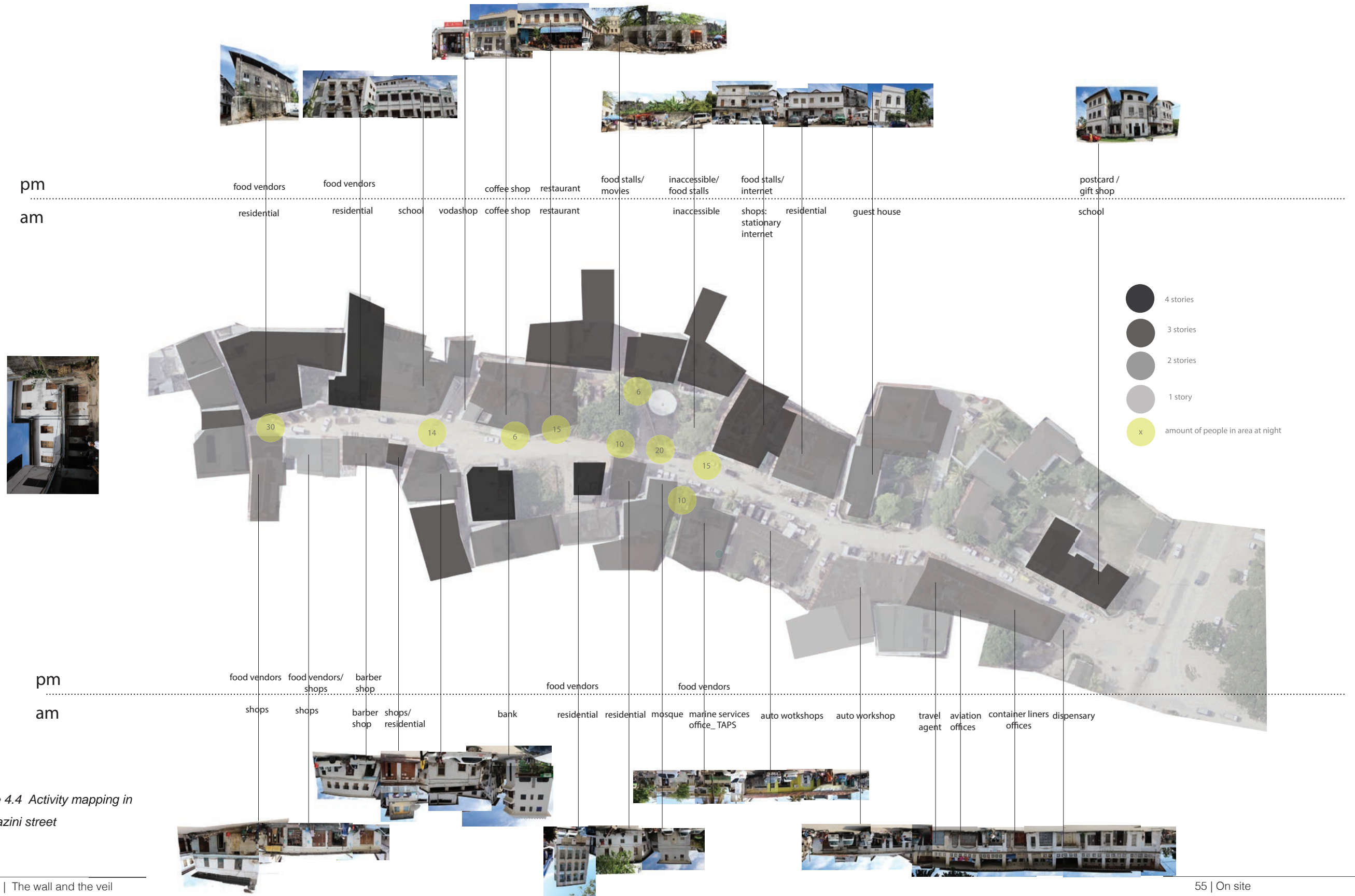


Figure 4.4 Activity mapping in Mkunazini street

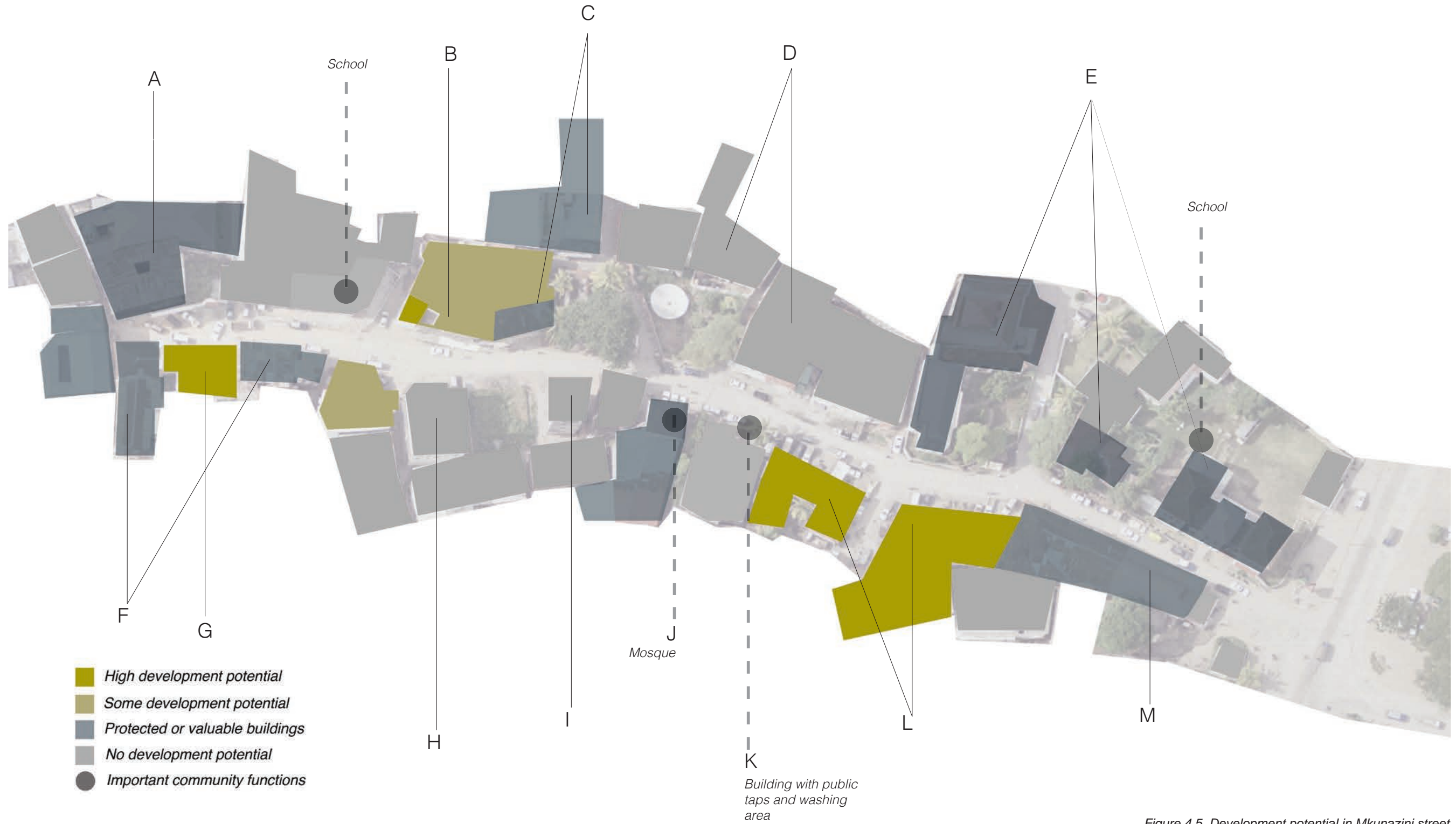


Figure 4.5 Development potential in Mkunazini street

A: Grade 2 listed building as a good example of an Arabian house. Currently used for residential purposes. Three stories high, thus no need to densify. Maintain architectural character, repair with traditional methods and materials according to Stone Town guidelines



B: Single story buildings with possibility of increasing density by adding one or two stories. Structural analysis should be done before this is attempted. Top floors should contain residential or commercial activities. The building has strong modernist architectural features which should not be mixed with traditional features.



C: Architecturally significant according to the 1994 masterplan. Good proportions and architectural detailing and has a strong presence in the open square below. Two Stories high and thus no need for densification. Building should be maintained and protected.



D: Good architectural features as an example of typical Arabian residential buildings. Creates a positive edge to the square and street. No need to densify. Buildings should be maintained and protected.



E: These buildings are Grade 2 listed protected heritage structure and have strong links with the slave trade as they are situated on the site of the one-time slave market. There is a well-functioning museum, which is a strong tourist attraction, while the school is also significant to the community in terms of its educational contribution. These buildings should be maintained in good condition and protected against decay.



F: Architecturally significant building according to the 1994 masterplan. Currently two stories, increasing density is not advised as architectural value may be compromised. Valuable as typical retail infrastructure.



G: Creates a positive edge to the street through strong retail activity. May be densified to two or three stories.



H: Contemporary commercial structure in imitation of traditional architecture. Although the building does not carry much architectural merit it does not detract from the urban character of the street by adhering to guidelines about build-to lines, colour, height and stylistic requirements. No densification required.



I: Residential building with distinct modernist architectural features to be protected. No need to densify although retail activity may be introduced on the ground floor.



J: Grade 2 listed building: Mosque, is a typical example of early Zanzibari Mosque architecture and should be maintained and protected. During the Second World War it became known as the “Router Mosque” as locals would sit on the barazzas around it to listen to news about the war.



K: A commercial building that contributes to the value of the streetscape through its provision of public taps and washing facilities, used by men attending the mosque next door. Its typical 1950’s art deco architecture is valuable and should be respected in any changes to the building.



L: The value of these buildings lies in their strong functional relation with the street, typical of Stone Town shops. This provides a strong commercial and retail energy in the area, which is valuable to the street. At the moment the spaces are used



for automobile workshops, which causes pollution, noise and makes – – the street unfriendly to pedestrians. The new proposal suggests that these workshops be moved to a designated area in the new transport interchange, and the infrastructure be adapted for retail or restaurant use. The basic structure provides a good opportunity for densification by adding two stories, which should be residential or commercial in function. A thorough investigation of the structural integrity should be done before this is attempted. Changes should respect the stylistic features of the existing buildings but should not attempt to copy traditional architecture.



M: Architecturally significant according to the 1994 master plan. This building’s value lies in its commercial street facade with residential space on top - a typical Stone Town typology. Good proportions and design features which should be respected and maintained in future work. Two stories high so little need for densification.



_Street framework

6: Inner market area

5: Inner Restaurant area

4: Reclaimed

3: Central market area

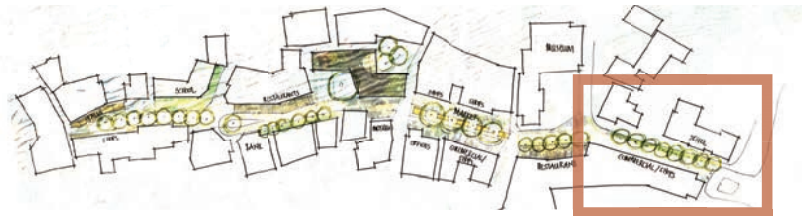
2: Outer restaurant

1: Commercial strip



Figure 4.6 Street framework for Mkunazini street

1: Commercial strip



The entry to the street at this point will be closed off with removable bollards to allow emergency and delivery vehicles access to the street when necessary.

A drop-off will enable cars to drop pedestrians at the entrance to the street.

The two story building on the southern side of the street has a strong commercial presence on ground floor, and creating a pleasant walkway next to these shops will stimulate their business.

The street will be paved with permeable pavers and trees planted down the centre to offer shade.

This section creates a highly walkable link between the entrance to the street and the first major node, namely the entrance to the Anglican cathedral.



protected



Figure 4.7 Commercial strip



2: Outer restaurant area



The next section includes the entrance to the Anglican cathedral complex, where a new entrance can be designed to accommodate and welcome tourists more effectively. The lush gardens of the cloisters provide a good opportunity to create a resting area in this part of the street. To accommodate this, the car workshops that are currently occupying the buildings to the south of the street will have to be relocated, especially taking into consideration that the street will be closed to cars. The proposal is to allow for these functions to form part of the new transport interchange, with workshops making up the edge closest to Ng'ambo, which will allow locals to benefit from the activity at the transport interchange.

Trees will be planted down the centre of the street, with surfaces paved with permeable pavers. The car workshops will be replaced with restaurants and tradesmen, with a wide covered verandah in the front where customers can sit to enjoy the view of the cloisters and watch people passing in the street.

The section can also be densified by adding a residential storey above.



protected

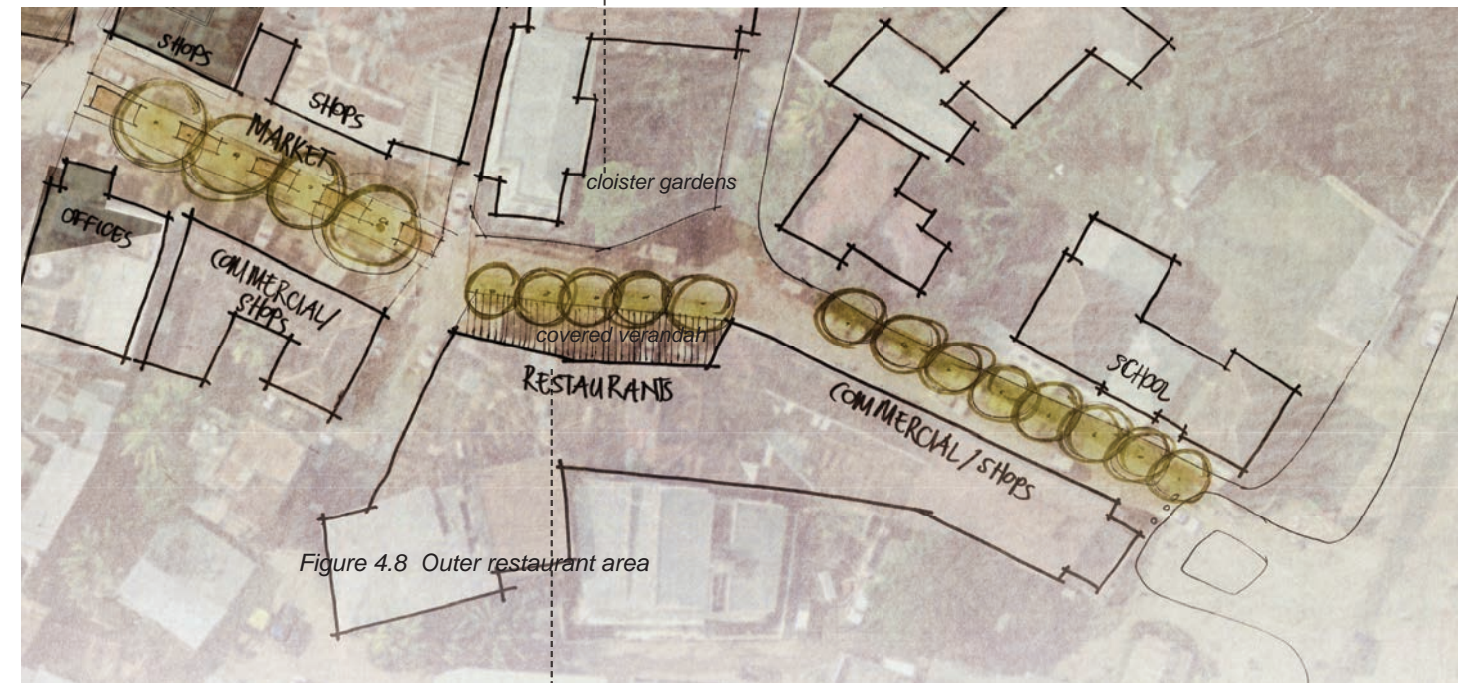


Figure 4.8 Outer restaurant area



potential residential

restaurants with verandah

3: Central market area



One of the widest parts of the street, and a section with a lot of potential to become the main market-area of the street. Similar to the previous section, the buildings on the southern side of the street are being used as automobile repair workshop, creating a noisy and dirty environment at day, and a dark, unfriendly area at night.

The car workshops will be redeveloped into commercial facilities that correspond to the current commercial use on the other side of the street.

Down the centre of the street, large shade trees will be planted, and market stalls laid out under the trees through the use of paving patterns. The market will function in a similar manner to the nightly market at Forodhani, with vendors temporarily setting up shop on specific stalls that they rent from the municipality.



protected



Figure 4.9 Central market area



4: Reclaimed space



The central node of the street that has been chosen as site for the Reclaim Women's Centre, has an important urban function that will be discussed in much greater detail later in the text. On a framework level it is envisioned that the Baobab tree will become a central gathering space for men and women, local and tourists alike. Important in this regard is the presence of Lukmaan restaurant directly to the west of the site - one of the few local restaurants in Stone Town where locals and tourists currently eat side by side - a dream of Lukmaan, the owner.

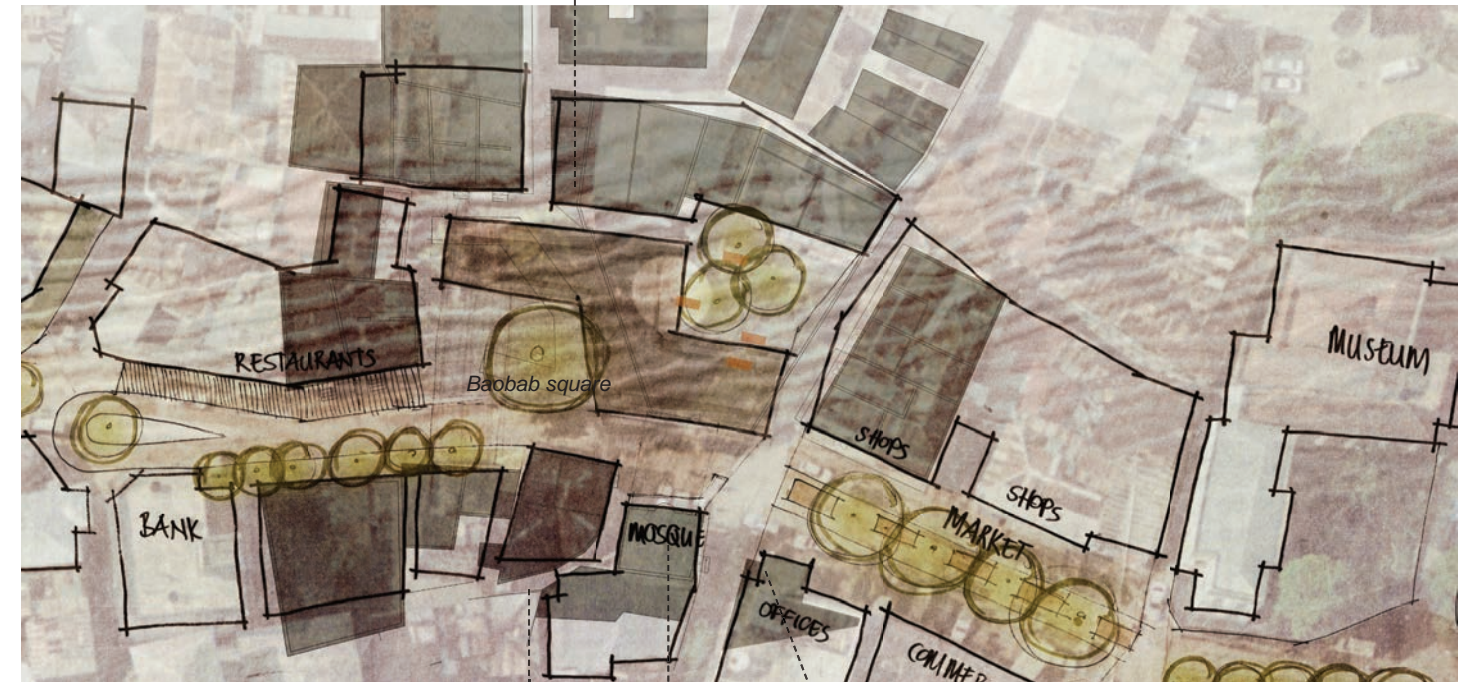
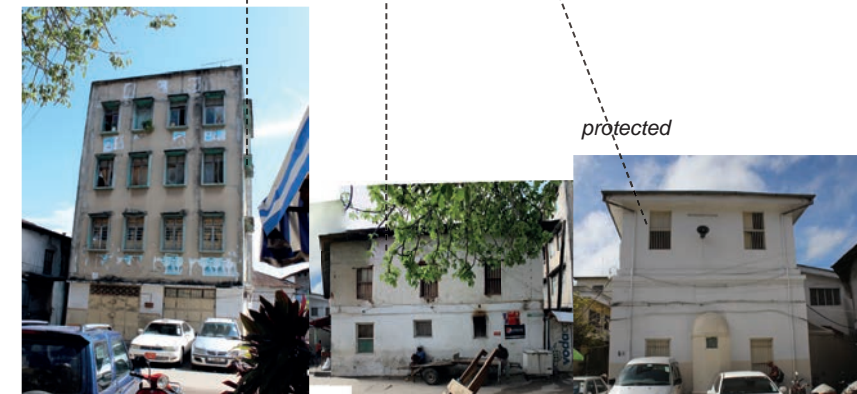


Figure 4.10 Reclaimed space in street



5: Inner restaurant area



The northern side of the street is already well established as a restaurant strip, with locals and tourists mixing in Lukmaan's, a famous local eatery, next door a small food vendor, and Heidi's cake shop, run by a Norwegian woman who has found a home in Stone Town. These restaurants will be encouraged to extend their seating area onto the road and underneath the trees that will be planted down the centre of the road.

The southern side of the road has an empty plot where mixed use infill development is advised.

This section ends with a roundabout and permanent bollards, signalling the end of access for emergency and delivery vehicles.

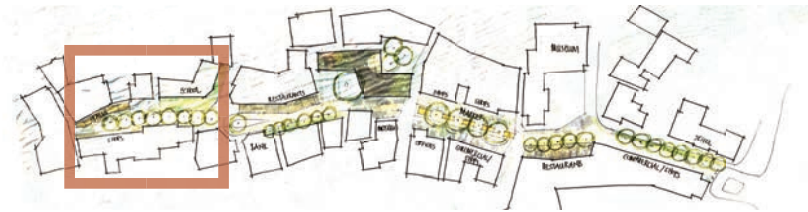


Figure 4.11 Inner restaurant area





6: Inner market area



The final section of the street starts taking on a more typical Stone Town feeling as the narrows down, and will only be accessible to pedestrians. This is a popular area for food vendors and this will be encouraged by allowing for stalls to be erected against the stone wall on the northern side of the street.

Trees planted down the middle of the street will provide shade during the day, enabling vendors to use these stalls at all hours, not only at night time as is currently the case.

Some of the buildings may be densified to two or three stories.



Figure 4.12 Inner market area



_Detailed site analysis and site framework

A detailed analysis of the site was done in order to understand its specific value and how to react appropriately. The site provided some challenging design informants such as its small size, the prominence of the Baobab tree and an important historic pathway going through the site.

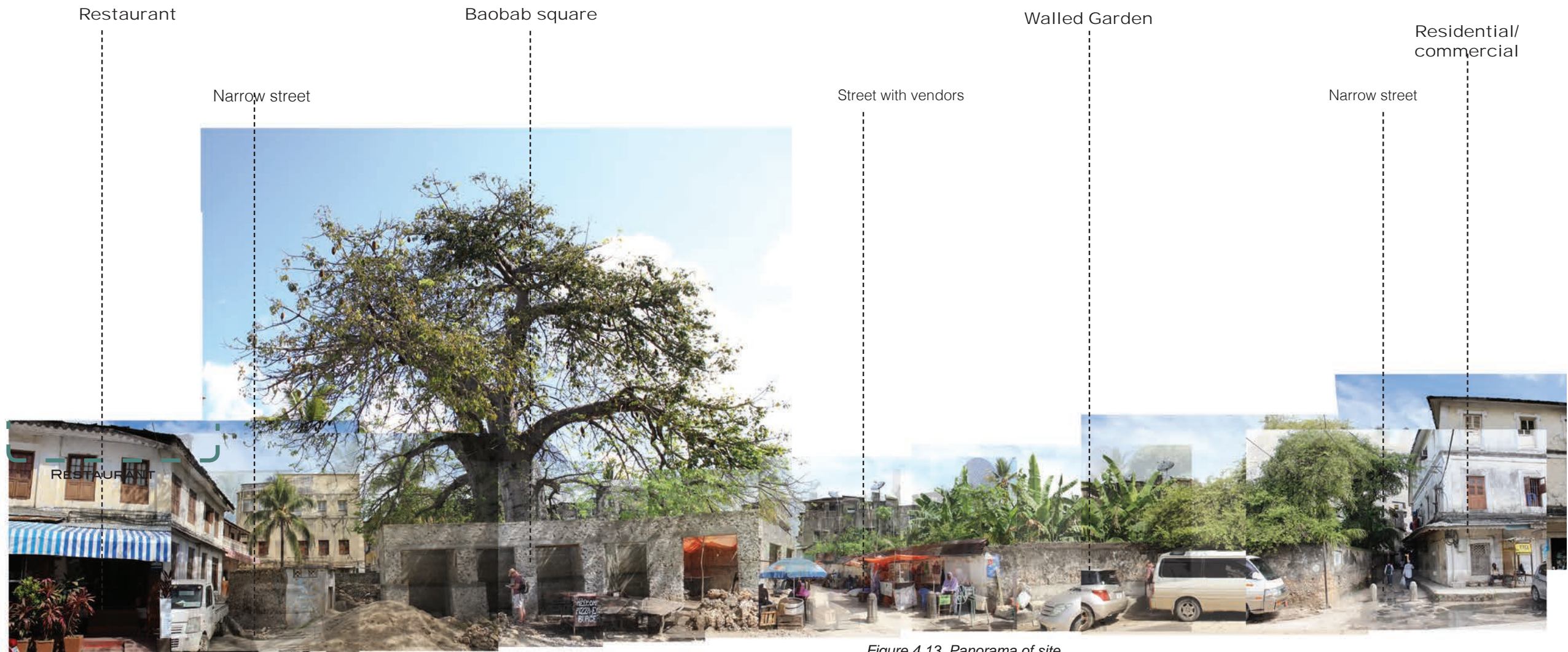


Figure 4.13 Panorama of site



Figure 4.14 Panorama of site from the roof of an adjoining building



Demolished hotel

Illegal construction:
to be demolished

Photo angle



Figure 4.15 Position of demolished hotel on site

Figure 4.16 Position of illegal construction on site



Historic route through the site to be retained through positioning of entrances and movement lines through the building

Important pedestrian artery to be reinforced through wall that creates a strong edge, responding to Stone Town's typical street qualities.

Vehicular route to be pedestrianised as green route. Movement gets drawn into the new square as it passes around opposite building.

Figure 4.17 Framework response to existing fabric and movement routes around site


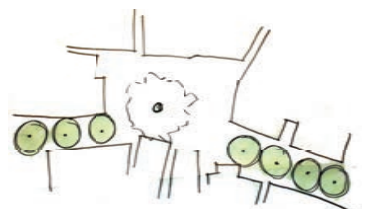

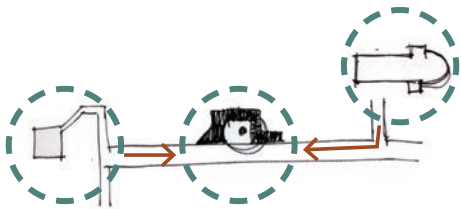


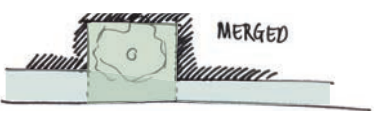
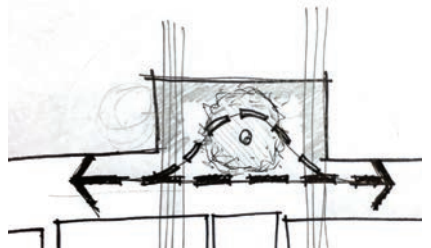
Mkunazini street: analysis and response

Next to the Baobab Square is a walled garden that residents describe as a private place. The garden is in a state of overgrowth and disuse. Both the square and the garden contains graves, however according to Islamic country, a grave site only needs to be respected for 40 years, thereafter the land can be put to any use again. Both grave sites are older than this and no-one in town takes ownership of the graves or visits them .

The site has a prominent location as it is placed close to the Anglican cathedral and historical site of the slave market to its east, thus drawing many tourists into the area, and Sokumahogo square to its west, one of the most popular haunts for local men to play board games and discuss politics. These poles, although placed at sufficient distance from the site, offers great potential for establishing new spatial relations between women and men, and women and tourists.

_Responding to the site

The three main characteristic elements of the site, namely the Baobab square, the walled garden and the wide Mkunazini street, were analysed in order to determine a suitable design response. During a workshop in Stone Town, participants were asked to draw pictures of, or describe in written words, any memories that they have of the street, square and garden, whether good or bad. In addition to this, an analysis of the current urban function of each element was done, as well as of its current condition or spatial characteristics. The design responds to these factors by strengthening the memories and urban functions, and either reinforcing or improving the characteristics.

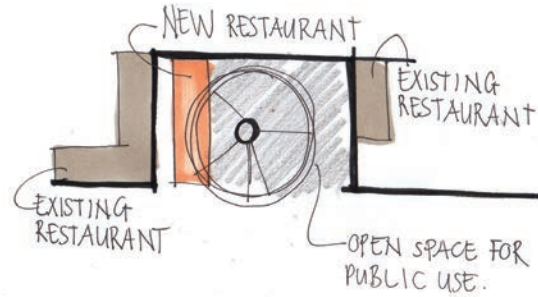
memory	<p>Mkunazi tree was planted down entire street</p> 	 <p>Reinstate</p>
urban function	<p>Nodes and poles</p> 	 <p>Strengthen link by creating new interaction node</p>
character	<p>Damaged fabric</p>  <p>Movement</p> 	 <p>Reclaim damaged space</p>  <p>Draw movement into site</p>

Baobab Square: analysis and response

Walled garden: analysis and response

memory

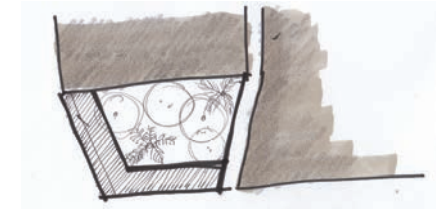
Social space
Children playing, ice cream vendors, restaurant



Strengthen association
Reawaken memory

memory

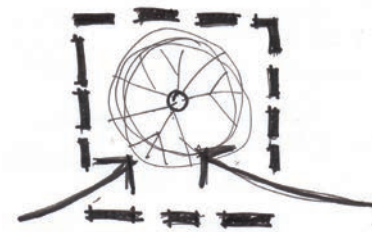
Private space



Retain and strengthen memory by creating a private garden inside the building as wall

urban function

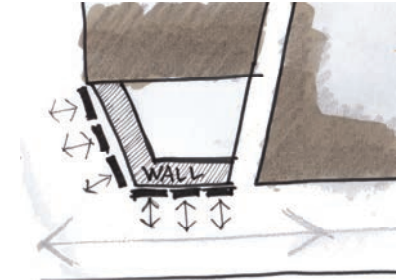
Iconic status
Only Baobab tree in Stone Town
Navigational beacon and meeting place



Retain as public space

urban function

Edge activity



Enable public activity to latch onto the outside of the wall

character

Relation to surroundings



Vegetation as privacy device

character

Private interior



05

HERITAGE

Heritage:

issues and approaches

The Historic Urban Landscape approach (HUL), adopted by UNESCO in 2011, has been the subject of much research in its application on the Swahili coast over the last few years. The HUL approach sees urban heritage as a social, cultural and economic asset for the development of historic cities, and advocates a holistic approach that integrates conservation goals and development goals (UNESCO, 2013). This entails that heritage should not be regarded as a static entity, but as a “moving target” that changes with the city and its inhabitants. This links to the concept of living heritage, which holds that a city is more than its built heritage, “that cultural landscapes are not revealed through observation, but through experience, and that they must continually be practised into existence in order to be sustained – which is also the case for living historic cities” (Van Oers, 2013).

Valuable historic sites often become popular tourist destinations, placing strain on the historic fabric as it tries to accommodate increased traffic, and often leads to a sense of displacement for local people (EAHTR, 2006). In Stone Town, this pressure has led to some worrying developments that compromises the value of the historic town, discussed in the next section. In order to protect not only the tangible heritage of the town, but also the intangible, this project engages directly with the community and aligns itself with their vision of how their heritage should be protected - what should be retained and what should change, as this enables them to take ownership of their heritage instead of having it reduced to a tourist commodity. This was discussed in detail in a workshop conducted in Stone Town in May 2014.



Figure 5.1 Dhow at sunset



Figure 5.2 The old dispensary

The important historic fabric of Stone Town creates a complex design challenge as the question of how to best respond to the architectural and cultural heritage arises. Recent developments within the protected area are cause for concern, both in terms of restoration of existing fabric and construction of new buildings. Both will be discussed shortly as an introduction to the heritage approach followed in the project.

a_Restoration of existing fabric

Although extensive guidelines have been specifically drawn up for Stone Town, explaining how to conduct restoration work to the existing historical fabric, restoration work is often not carried out in accordance with the guidelines. Reasons for this often include lack of knowledge about correct material use, and false perceptions that contemporary materials will be stronger than traditional materials. The danger of mixing cement construction with lime construction is that the properties of the materials differ. While lime construction is permeable to water, allowing the building to “breathe”, and is pliable, allowing movement, cement construction is much more water resistant and more rigid (Steel and Battle). The result is that water becomes trapped inside the walls, leading to more decay, and increased cracking takes place due to parts of the building being more rigid than others. Contemporary materials such as concrete balustrades are also often applied inconsiderately to historic buildings due to the perception that these finished are fashionable.



Figure 5.3 Mambo Msiige as the UMCA Mission, depicted in the Illustrated London News of 1866. The Mambo Msiige is on the right. (<http://amazon.com>)

Figure 5.4 Mambo Msiige viewed from the bay, Dec 2013



Figure 5.5 Mambo Msiige viewed from the street, May 2014



b_New construction

The Stone Town Conservation Guidelines do not cover the construction of new buildings extensively, however where it does address the topic, it advocates the copying of traditional styles, with the intention that new architecture will blend in with the old (Steel and Battle:2011). These buildings often mimic superficial elements such as crenellations or arches in a crude manner without retaining any of the meaning or value of traditional Stone Town architecture.

The most infamous case is undoubtedly the Mambo Msiige - a high-end hotel currently under construction on the sea front just North of Shangani Point. This project is the cause of much controversy and has internationally brought the attention of conservationists to the island. Although the project makes references to some stylistic elements on the island, styles are mixed indiscriminately, the building does not adhere to height restrictions and it severely affects the appearance of the waterfront when approaching the island by sea (Bakker, 2013). The site itself is valuable both in terms of the important buildings that once stood there, namely the Mambo Msiige complex, as well as its role in the open space network of the town. The new development does not honour any of these memories and fills up a prominent public space - which could adversely affect movement and social patterns in the town.

This case study illustrates the damage that new developments may afflict on the town fabric and the heritage status of the town, and shows clearly that the Stone Town Conservation Guidelines (Steel and Battle) do not address this issue in enough depth. This is a universal challenge in heritage conservation and Bakker (2013) explains that “most counties

either rely on archaic Conservation Acts that still define historic urban attributes as singular elements, or use heritage guidelines – appropriately dealing with attributes like aesthetics, architectural or urban form, style, pattern, scale and setting – for demarcated conservation zones of an urban environment. In doing so, they are not dealing with other important attributes like urban interrelationships, social and cultural values, developmental issues and integrated management, or de facto isolating heritage zones artificially and simultaneously forgoing any heritage fabric and qualities located in the broader urban context outside the conservation zone.”

This project aims to address some of these issues in its response to Stone Town’s heritage, and to illustrate how contemporary architecture could be sensitively integrated into the historic fabric. Although the site does not contain any significant structures that need to be restored, the project makes use of certain traditional building techniques and explores the potential of these materials to be applied in innovative ways as an alternative to the blind use of modern materials and technologies. These materials and techniques have great advantages as they are readily available, respond well climatically and blend in well with the existing townscape. Their application is explored in more detail in chapter 8.

In terms of new construction, the project bases its approach on the ICOMOS charter for the Conservation of Historic Towns and Urban Areas, which states that “the introduction of contemporary elements in harmony with the surroundings should not be discouraged since such features can contribute to the enrichment of an area.” (ICOMOS, 1987)

The Valetta Principles for the Safeguarding and Management of Cities, Towns and Urban areas (ICOMOS, 2011), go expands on this as follows:

The basis of appropriate architectural interventions in spatial, visual, intangible and functional terms should be respect for historical values, patterns and layers.

New architecture must be consistent with the spatial organisation of the historic area and respectful of its traditional morphology while at the same time being a valid expression of the architectural trends of its time and place. Regardless of style and expression, all new architecture should avoid the negative effects of drastic or excessive contrasts and of fragmentation and interruptions in the continuity of the urban fabric and space.

Priority must be given to a continuity of composition that does not adversely affect the existing architecture but at the same time allows a discerning creativity that embraces the spirit of the place.

Architects and urban planners must be encouraged to acquire a deep understanding of the historic urban context. (ICOMOS, 2011)

In order to develop an appropriate contemporary architectural language, the following aspects of Stone Town’s architecture were considered:

- Typologies
- Relation to the street
- Materiality
- Roofs

1: TYPOLOGIES

The design itself responds to these aspects by interpreting their essence in a contemporary way, thereby retaining the value of different architectural devices that are prevalent in Stone Town. From an aesthetic point of view, the design seeks to create a dialogue between contemporary architecture and the traditional Stone Town aesthetic.



Figure 5.6 Indian and Omani houses in a typical Stone Town block

Omani courtyard houses

Omani courtyard houses relate to the street through the public meeting room, or sebule, and living room, majilis. The sebule opens to the street with a double timber door with central post and engraving, and leads onto the central courtyard. The family rooms are placed around this, with privacy increasing the further you move into the building.

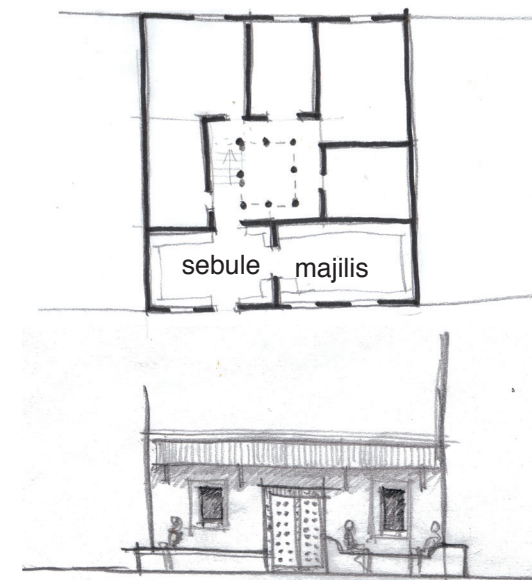


Figure 5.7 Omani barazzas and door

Indian row houses

Indian rowhouses are narrow buildings that relate to the street through the shop on the streetfront, that opens up by means of a double folding door. The family quarters are located behind and above.

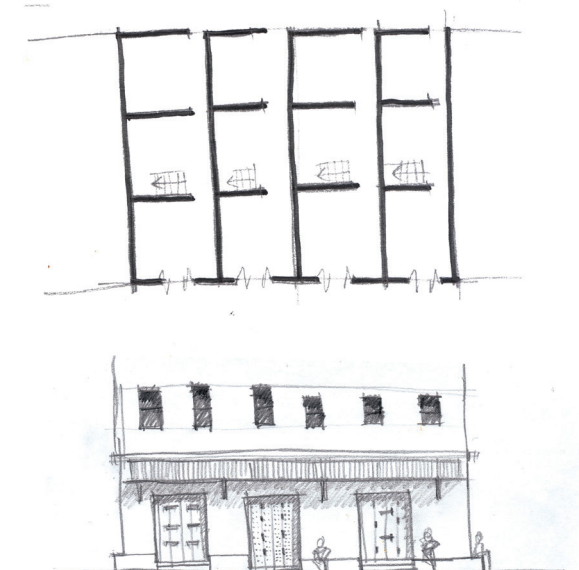


Figure 5.8 Indian barazzas and doors

Figure 5.9 Omani courtyard house



Figure 5.10 Indian shopfront houses (Author, 2016)



TYPOLOGIES

Omani courtyard houses

- ① Courtyard spaces: The private courtyard of the Omani house is a social space used by the family. It often has a well in the centre and allows all the rooms of the house to be ventilated.
- ② Internal privacy: Omani houses are usually undecorated on their exterior, with only small windows, while the private interior is richly decorated.
- ③ Colonnade: The colonnade around the courtyard provides a shaded, well-ventilated walkway that links all the rooms.

Indian row houses

- ④ Shopfront: The Indian shopfront has very close contact with the street and contributes to the lively street culture in Zanzibar. Goods are often displayed by hanging them onto the folding doors that open onto the street.
- ⑤ Balcony: The balconies provide both shelter and shade, and offers a private outdoor living area to the family from where women often watch the activities on the street below.

DESIGN RESPONSE

The design will draw from both typologies and instead of following a specific typology, will draw from the contribution each characteristic makes to the functioning of the building. Both the courtyard space and the shopfront facade are informants of Zanzibari culture, and the customs surrounding them will be taken into consideration in the design.



RELATION TO STREET

- ① Barazzas: The benches that line Stone Town's streets form an integral part of the social life of the town
- ② Steps: Houses and shops are usually two to four steps above street level to keep water out and to create a threshold between the spaces
- ③ Carved doors: The heavy Omani doors are a status symbol of the family who lives or lived there.
- ④ Folding doors: Indian shops open directly onto the street by means of folding timber doors and create a lively interaction zone
- ⑤ Canopies: Overhangs or balconies give shelter against the typical Stone Town showers and create an intimate passage in the street.

DESIGN RESPONSE

The creation of a threshold through the use of steps is an important device that is utilised in the design, and barazza-like seating is provided along the exterior wall.

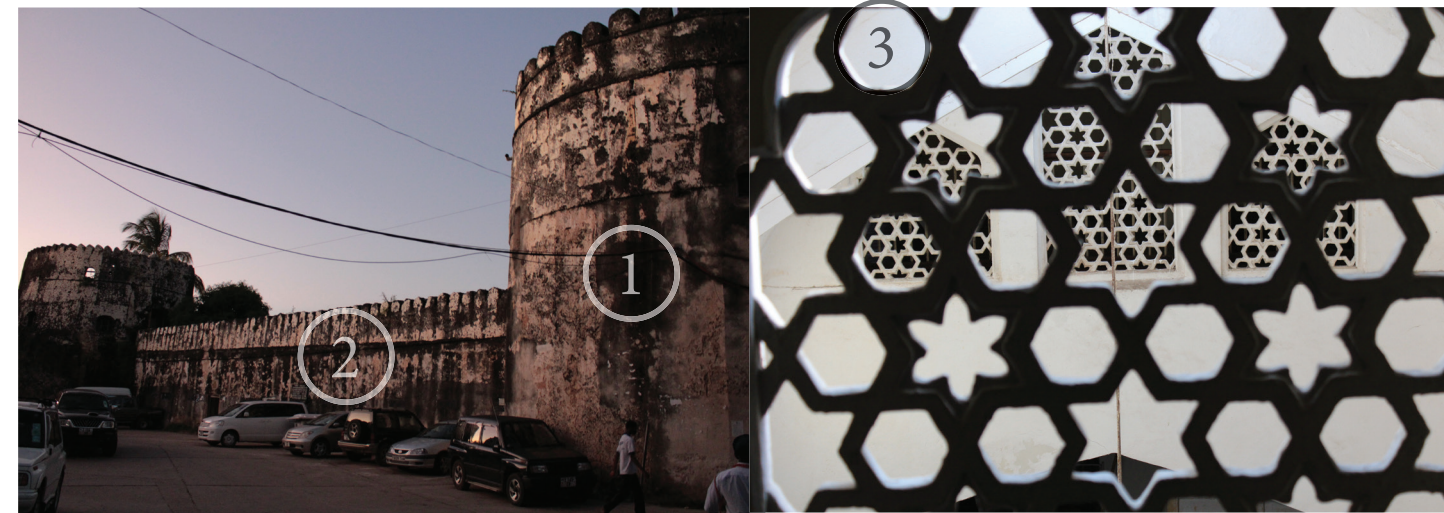
Because of the very direct relationship of the building to the street, doors become important mediators and carry specific meaning that speaks of the relationship of the building to the street. For this reason, doors need to be specifically designed to communicate the desired relationship between inside and outside.

The thick exterior wall will be moulded and carved away to create shelters against sun or rain in a contemporary interpretation of the traditional typology.



MATERIALITY

- ① Heavy, plain walls: Traditional Omani architecture has undecorated, austere exteriors with little or no decoration and small windows to protect the family's privacy
- ② White walls and rough concrete: The coral and lime walls of Stone Town weathers to a rough texture, contrasting with the light, smooth texture of plastered walls
- ③ Light screens: Intricately patterned screens create privacy on balconies and stairways with the Omani influence preferring Islamic patterns in concrete, and the Indian influence leaning towards finely carved decorative timber screens
- ④ Timber: Timber is used extensively in constructing light elements such as screens and shutters and good workmanship allows for detailed carvework.



DESIGN RESPONSE

The juxtaposition of heavy and light elements in Stone Town's architecture is a strong informant of the concept and the project explores the relation between these "walls" and "veils". Aesthetically, the design should be a continuation of the existing textures, and therefore makes extensive use of lime concrete and timber.



ROOFS

- ① 1. Flat concrete roofs: Most buildings in Stone Town originally had flat concrete roofs in the Omani style, with the roof becoming a usable space. The parapet wall often had crenellations.
- ② 2. Lifted steel roof over concrete slab: Steel roofs were often added over the flat roof, supported on columns, to solve waterproofing problems but preserve the ventilated character of the roof
- ③ 3. Standard pitched steel roof: Many buildings now have standard pitched steel roofs
- ④ 4. Parapet steel roofs: In some cases, the parapet of the original roof was remained but the slab replaced with steel
- ⑤ 5. Open roof spaces: Usable, ventilated roof spaces protected with timber screens are an important social space in Stone Town

DESIGN RESPONSE

The design reverts back to the original flat concrete roof and explores the idea of timber screens creating a usable and protected roof space, while applying a contemporary aesthetic to this traditional privacy device.



06

PROGRAM

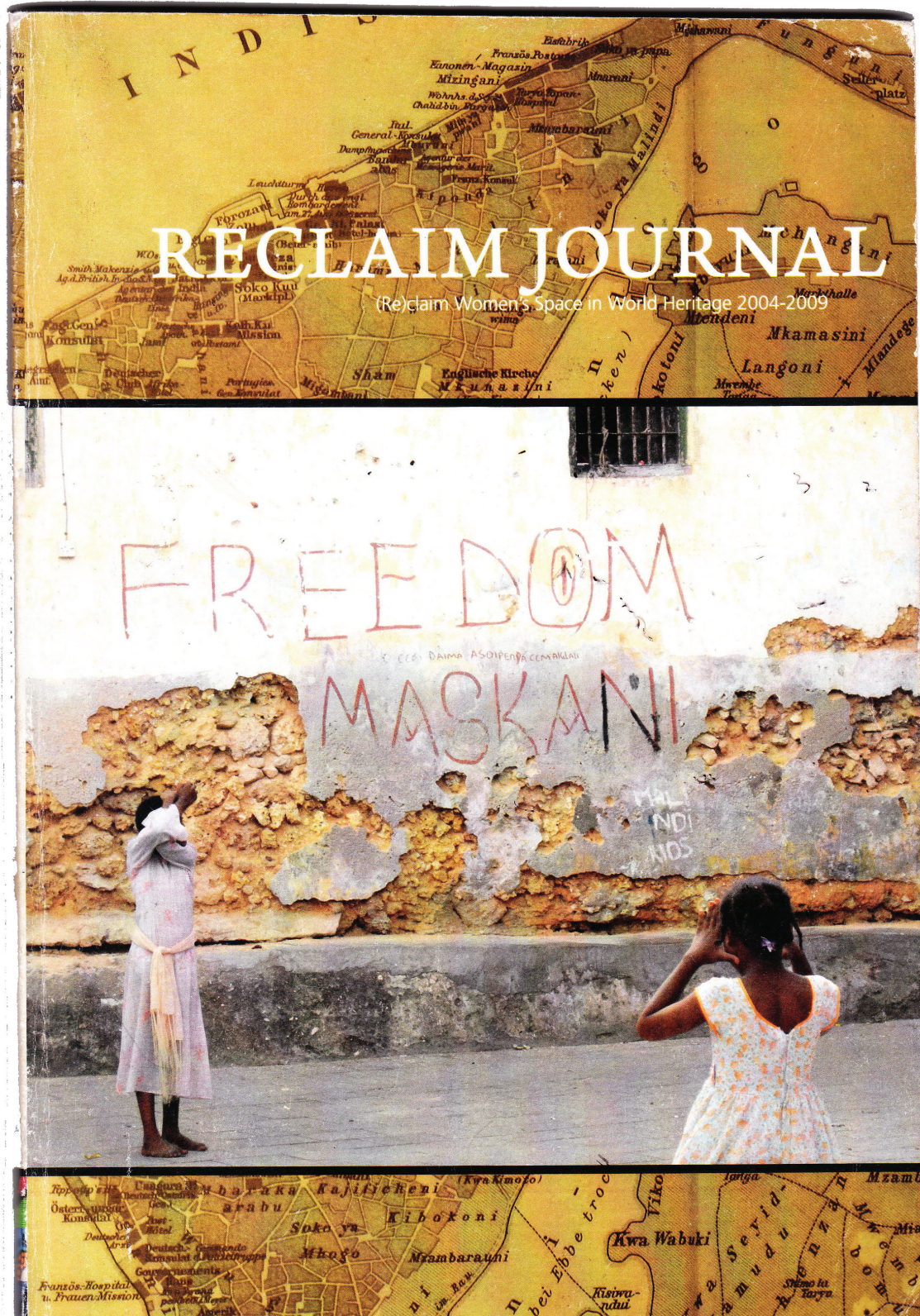


Figure 6.1 Cover of the Reclaim Journal, 2009

Reclaim: *the client and the program*

After Stone Town was declared a World Heritage Site in 2000, it became a focal point of foreign attention and international attention and capital was made available to preserve the outstanding heritage. The town entered a twinning project with the hanseatic town of Visby, Sweden, which is also a World Heritage site, and many ideas and initiatives were shared between the towns. One of these twinning exercises led to the formation of a group of women know as Reclaim Women's Space in World Heritage, an institution similar in nature to one created in Visby. The purpose of Reclaim (as it is informally known) is to promote women's interests in the town, to enable them to play a vital role in the preservation of their intangible heritage, to let their voice be heard in media and leadership roles and to equip women to partake in civic life.

The work that Reclaim is doing is at the forefront of new social developments in Stone Town. Working with an established society that represents the Stone Town women and has good relationships with other stakeholders provides the opportunity to engage with the community in a relevant way. It allows the design to align itself with internal efforts to reclaim public space for women, instead of imposing foreign ideas about gender and space in this sensitive heritage environment, which forms the base of the theoretical approach as set out in chapter 1.



The Client

Reclaim consists of three activity groups: Narration, Conservation and Production. The Narration group aims to capture and perpetuate the intangible heritage of Stone Town, as it exists in traditional stories and memories of events and spaces. Their activities include story-telling evenings, the production of plays and short films and the archiving of memory mapping and traditional stories. The Conservation group works to protect the built heritage of Stone Town by organizing workshops where the building and restoration methods applicable to Stone Town can be explained. The production group focuses on women working in the crafts, market and trading sector with the aim of uplifting and equipping these women to compete on the international tourist market. They also provide English lessons and basic business skills training. One component of the Production group is the Tourist Kitchen, where one of the ladies gives traditional Zanzibari cooking lessons to tourists who then feast on the meals they prepared with friends or family.

Currently, the women have the use of a facility next to the Stone Town Conservation and Development Authority (STCDA)'s offices, which consists of one large multi-functional room, a small kitchen, a storeroom and an office. They obtained this space after a long process of lobbying, during which process their first choice of space included the Old Fort and the Victoria Gardens. These spaces were denied because of their importance and income generating ability in the tourism industry. However, the women still dream of a more extensive facility where they will be able to host all their activities, meet on a social level, organize

Figure 6.2 Clockwise from left: textile shelves in women's workshop; Clothing shop; Sewing workshop; Educational workshop; Zainab's kitchen; Women at wedding ceremony; Women dancing and singing at wedding ceremony

RECLAIM

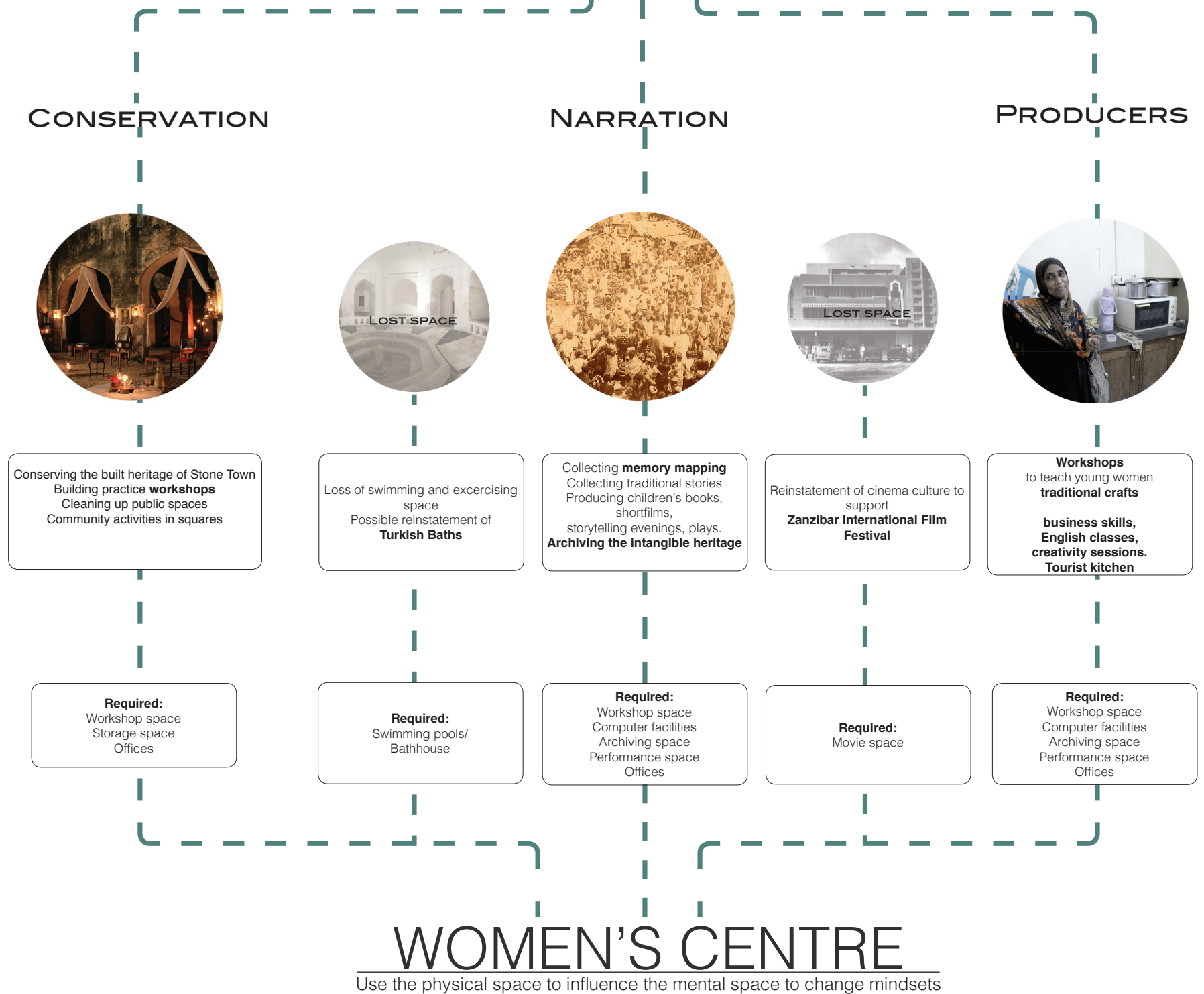
women's space in world heritage
EST 2004

recreational activities and strengthen their voice in the Stone Town society. The Reclaim Journal (Abdull, 2009) contains an accommodation list for the desired facilities and their aspirations to “use the physical space to strengthen the mental space in order to change mindsets” (Abdull, 2009) is articulated clearly.

While various activities have been spawned and the functioning of the women as part of society has improved, the spatial challenge remains largely unsolved and the lack of physical space proves to be a stumbling block to the fledgling organization.

The program

The program is based on the Reclaim Group's explicit needs as captured in The Reclaim Journal (Abdull, 2009), however a layer of interpretation and refinement has been added to address the complexity of the context. The privacy and access requirements of each space was discussed with some of the local men and women during a workshop in May 2014, and haptic qualities were deduced from these discussions. Suitable architectural devices were developed around these programmatic requirements, which will be explained more fully later in the text.





Workshop

During a workshop conducted with women from the Reclaim group and a few men that they invited on their own initiative, who support their efforts, the question was posed: which traditions surrounding women in Stone Town should be retained, and which should change? The consensus reached by group, as communicated during the workshop, is summed up in the following table:

Aspects that should change:

- Women should be allowed to work
- A special space should be available for women to meet
- Girls should be able to play sports, indoor games and learn to swim
- Women should be allowed to participate in social events
- Women should have security when travelling and when attending social events
- Women should have access to university education
- Women should be independent, be valued for who they are, should be able to protect themselves and be brave
- Girls should not get married too early

Aspects that should be preserved:

- Taarab music that women perform traditionally
- Traditional dress for women: allow for change and modernisation but preserve the culture.¹
- Zanzibari cuisine: keep traditional foods and expand to include fresh ideas
- Traditional way of beautification through oils, myrrh and henna, as well as traditional hair weaving, especially the preparations leading up to a marriage ceremony
- Rituals surrounding newborn babies
- Traditional process of getting married with parents as facilitators of the match.²

This confirmed the initial development of the program and also that the participants wished to retain certain aspects of their culture that relates strongly to gender roles and to the spatial separation of genders.

¹This point sparked quite a hefty debate on what exactly this would mean, which was not carried to conclusion due to time limitations. However they agreed that traditional dress and modesty is important, and the wearing of the veil was not questioned. See appendix 1 for an enlightening article by Sainsbury (2014) regarding the issue.

²This does not seem to be an arranged marriage but rather one where the parents act on behalf of the children and according to their desires, if the parents agree that it is a good match

Figure 6.3 Reclaim workshop, May 2014

PRIVACY CONCEPTS

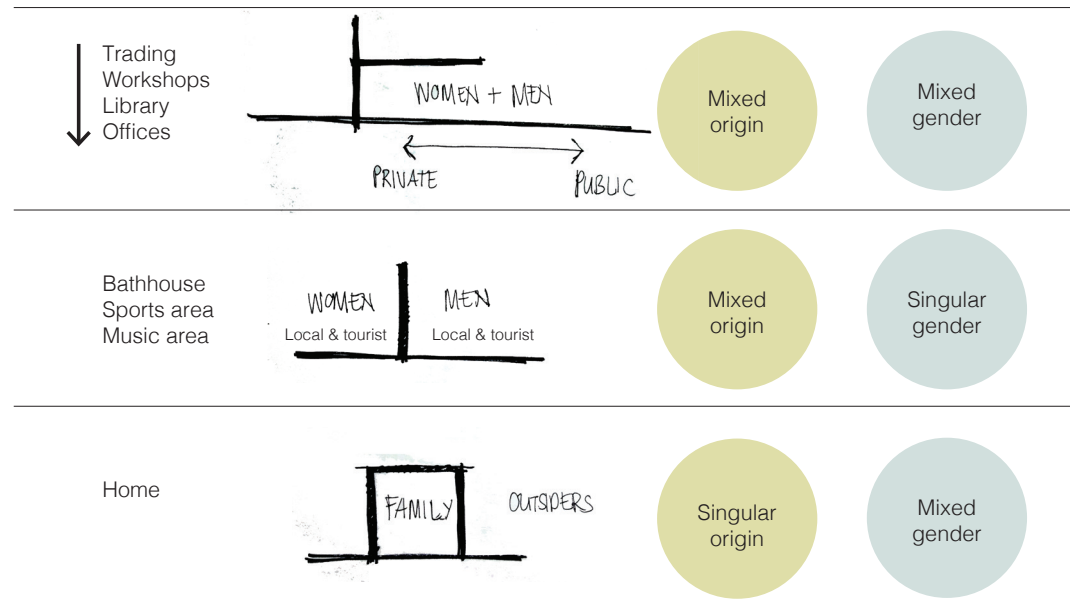


Figure 6.4 Privacy concepts in Stone Town

During the workshop, privacy requirements of the possible spaces were discussed in order to determine how spaces should relate to each other, to the public realm and to the different users of the building (Figure 6.4). The participants made it clear that, in a public building like this, they do not make a distinction between local people and tourists, and the tourists are welcomed into any space that a local person of the same gender would be welcomed into. The home is the only place where tourists are excluded, while gender separation is suspended inside the safety of the family home. Therefore, tourist women would be welcomed into the most private parts of the building, such as the turkish bath. Most of the other spaces were identified as being open to both men and women, even though some of the spaces are more private, such as offices and reading rooms. It became clear that the women were willing to allow men into the building, but on their terms and in areas that they deemed suitable. This gave rise to the idea of privacy filters, that would narrate the different levels of privacy and access throughout the building.

The different spaces that the program required was then separated into three categories (Figure 6.5), namely

- “Engage” - spaces that are exclusively private and only accessible to women,
- “Share” - spaces that have varying levels of privacy that may change according to the specific activity it is used for, and that are accessible to men and women,
- “Exchange” - spaces that are completely public.

These three conditions (engage, share and exchange) have different privacy requirements, which were used later in the design process to develop suitable privacy devices for the different spaces.

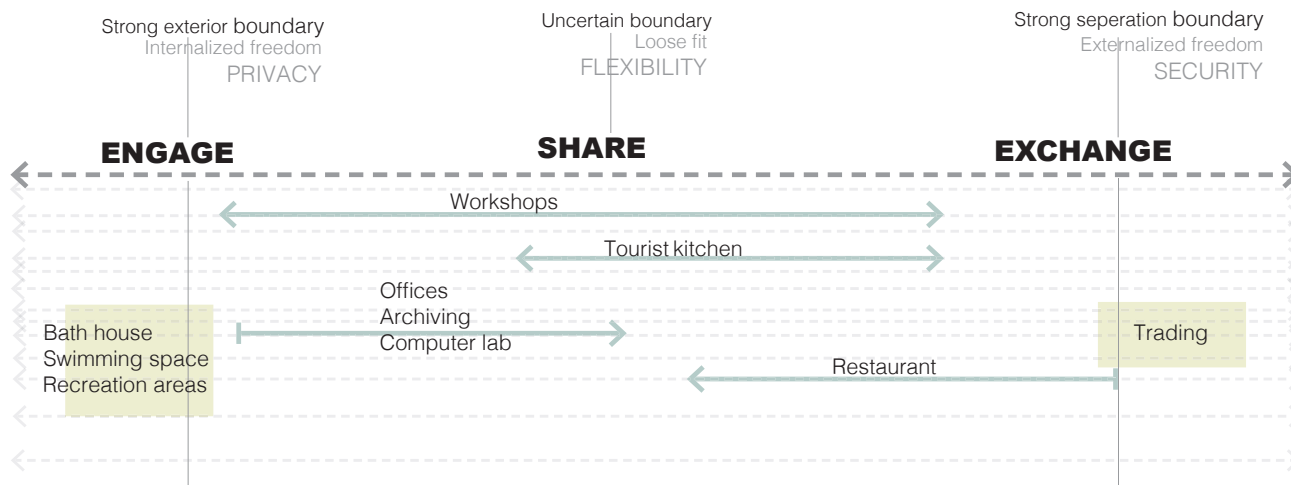


Figure 6.5 Privacy requirements of the program

Initial estimated program requirements

These figures were used as an initial rough estimate to help determine the floorspace needed for the project, and to evaluate whether the site will be able to accommodate it.

Indoor spaces

Workshops	100m ²
Tourist kitchen and dining space / restaurant	70m ²
Offices (5x12m ²)	60m ²
Library / archiving space / computer lab	100m ²
Bathing House	100m ²
Trading / commercial	80m ²
<u>Residential (five flatlets for rental income)</u>	<u>200m²</u>
Subtotal	630m ²

Outdoor spaces

Performance space / Open air recreation	150m ²
<u>Socializing and playground</u>	<u>70m²</u>
Subtotal	220m ²

Total 850m²



07

DESIGN DEVELOPMENT

Design development

theory to architecture

The design developed as a response to various aspects of the context as illustrated in Figure 7.1, most of which have been analysed in earlier chapters, namely:

Site features

- The Baobab tree
- The walled garden
- Mkunazini street
- The surrounding buildings (height, density, form)
- Historic pathways through and around the site
- Connotations in Stone Town's memory as communicated in the workshop

Stone Town's architectural heritage and cultural heritage

The project draws from the interaction between the built fabric (or tangible heritage) and cultural uses (or intangible heritage) to generate a concept. Put simply, buildings influence behaviour, and behaviour influences buildings. The reciprocal relationship between the two becomes the point of entry for the new building, as it aims to enable the built environment to react to the changing behavioural patterns surrounding women's use of public space. The concept is therefore a response to both cultural practices and existing built form, and explores the potential for change in their relationship.

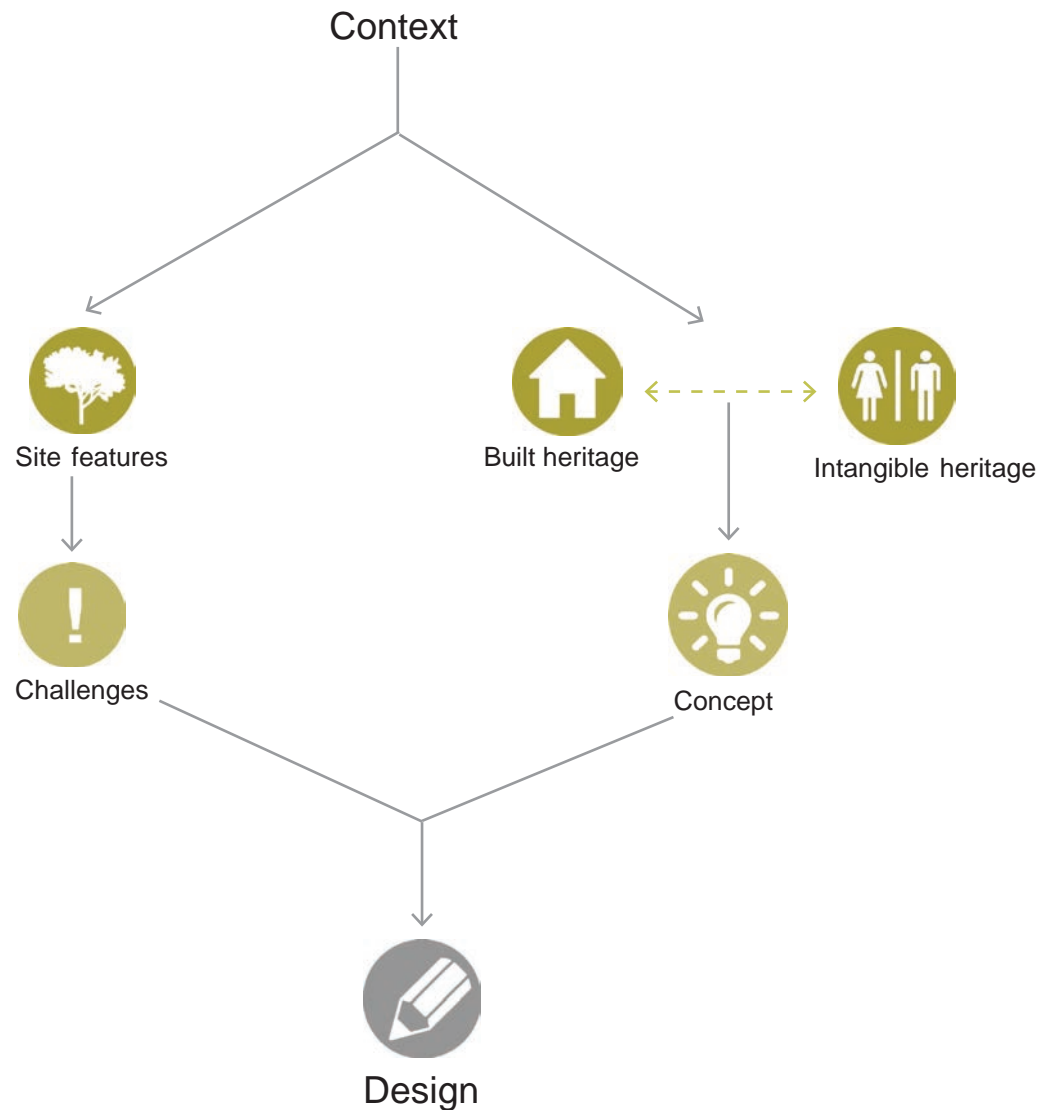


Figure 7.1 Design development process as a response to context

_Concept

In Stone Town, the privacy that women require is traditionally achieved by means of two devices, namely being surrounded by walls, or being covered with a veil. Inside the privacy of their homes, women are free to remove their veils and move around freely, while the bui-bui or hijab is donned when moving through the public realm. While the veil is often regarded as a suppressive device from a western perspective, a different view is taken by Muslim women, who often view it as an empowering device (Rendell, 2011). The veil allows them to move through public space and to enter places that they wouldn't be able to enter without it. In this way, the veil becomes a type of "privacy capsule", taking the place of the wall that would surround them inside their houses.

The traditional interchangeability of the wall and the veil is investigated as concept, as the interaction between built environment and cultural practice surrounding women is very pronounced in this regard. Where the cultural practices (or intangible heritage) surrounding women are starting to change, and the need develops for the built environment (or tangible heritage) to change accordingly, the project investigates the potential of walls and veils to develop new relations to each other. Conceptually, the project explores the possibility of creating new intermediate privacy conditions by combining the wall and the veil (Figure 7.2). This relates to the theoretical approach proposed by Rendell (2011) which promotes the creation of intermediary conditions instead of perpetuating binary traditions. The concept allows the wall and the veil to contribute their unique inherent properties to the project.

Historic reading of the VEIL & WALL

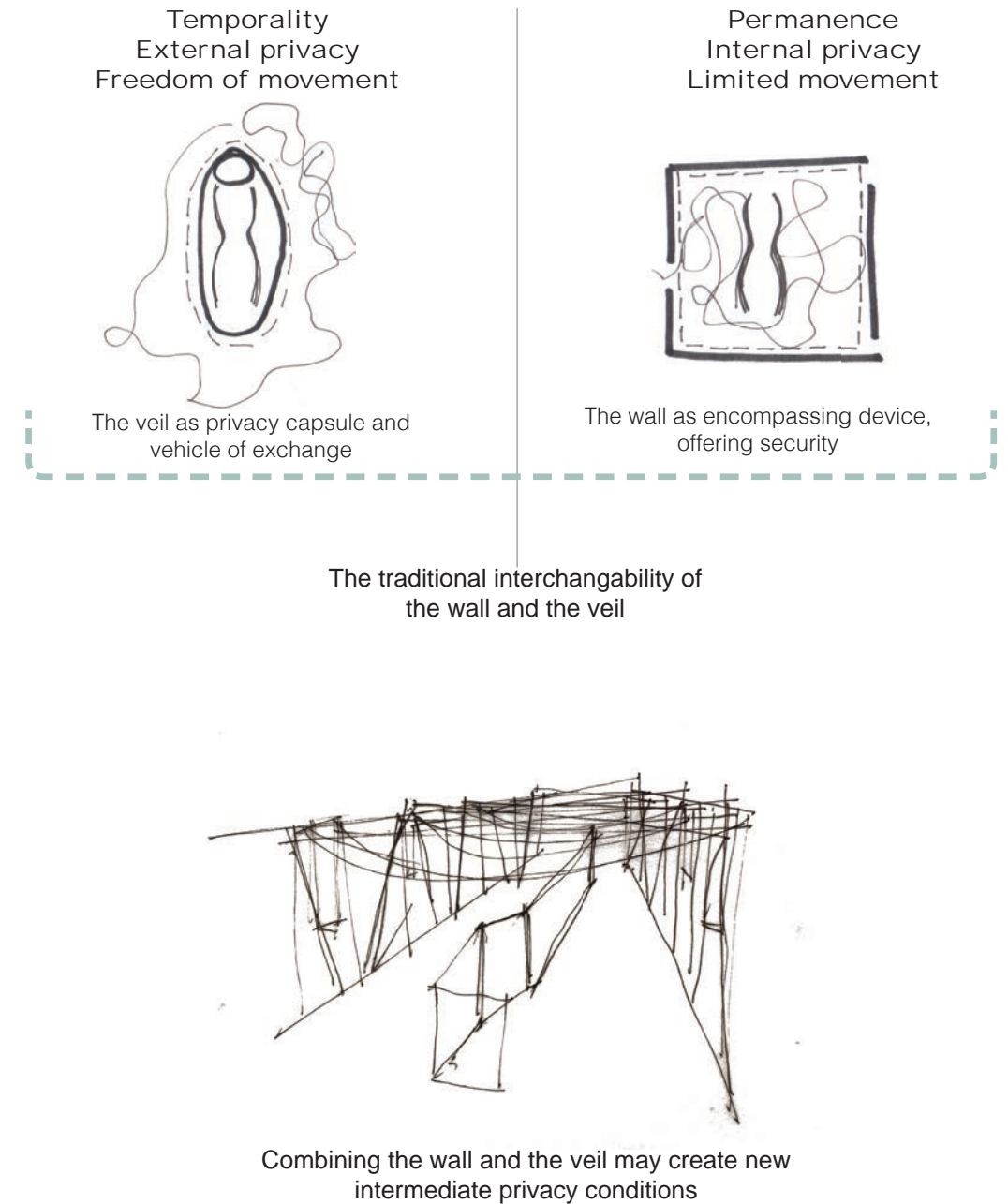


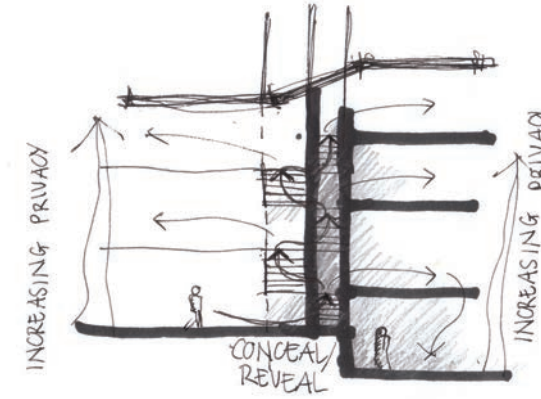
Figure 7.2 Conceptual approach

1:Wall

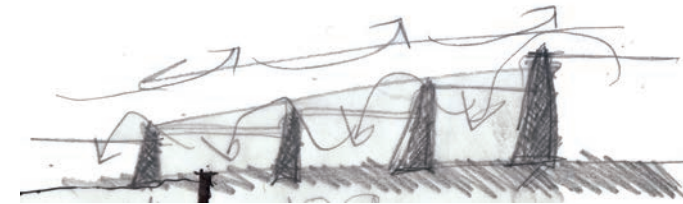
The different manifestations of the wall in Stone Town's architecture (Figure 7.8) provided some insight into the required materiality and characteristics of this element in the design, which is explored in Figure 7.9.



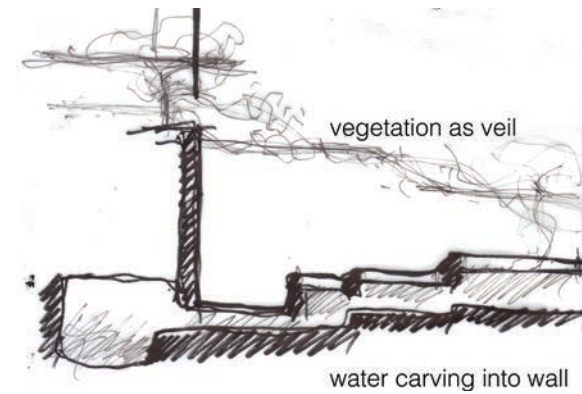
Figure 7.3 Architectural expression of the wall in Stone Town



The wall as filtering device to increase privacy levels



The wall creating different levels of water inside the building



The wall as heavy, earthen element being carved into

Figure 7.4 Architectural expression of the wall in the project

1:Wall

The materiality of the wall explored by building a series of clay miniatures (Figure 7.6). This exercise enabled the internalisation of the heaviness of the wall, as well as its ability to create openings and thereby create different compositions. The exploration also explored the wall's ability to be carved and molded, as well as how two walls could relate to each other when they define space together (Figure 7.7).

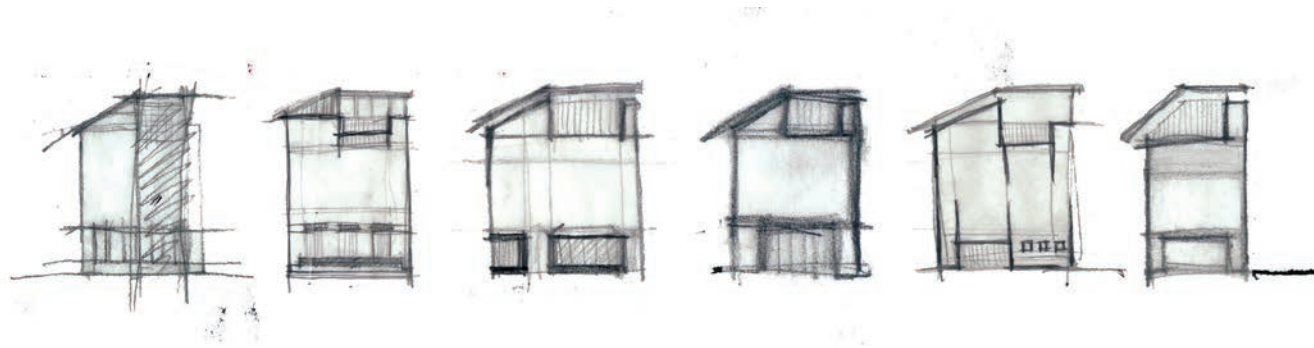


Figure 7.5 Clay models exploring the wall as facade

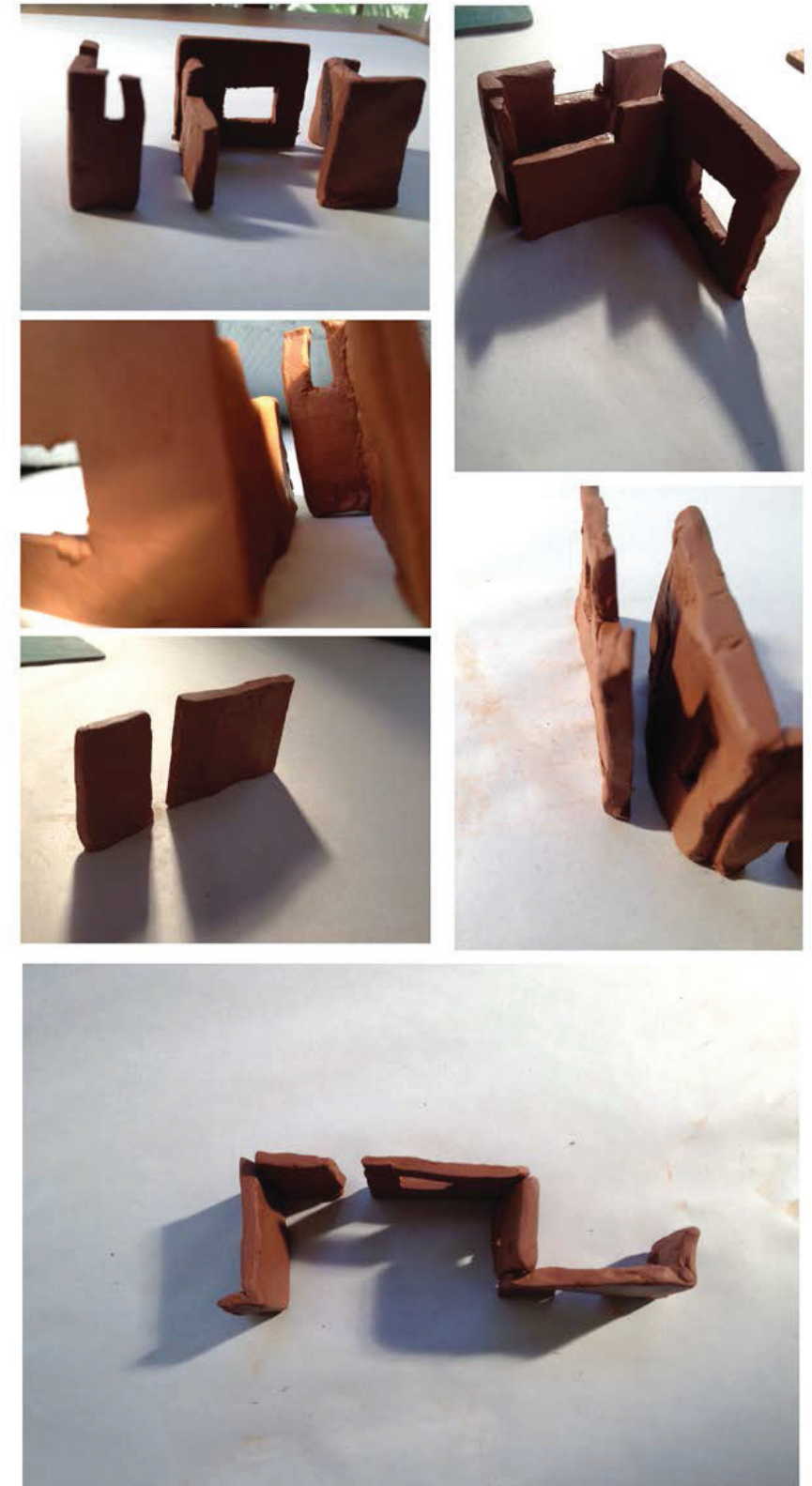


Figure 7.6 Clay models exploring the materiality and spatial effect of the wall

1:Wall

The wall responds to surrounding buildings by pulling back to create shelter, accentuate public space or acknowledge important buildings such as the mosque opposite the site.

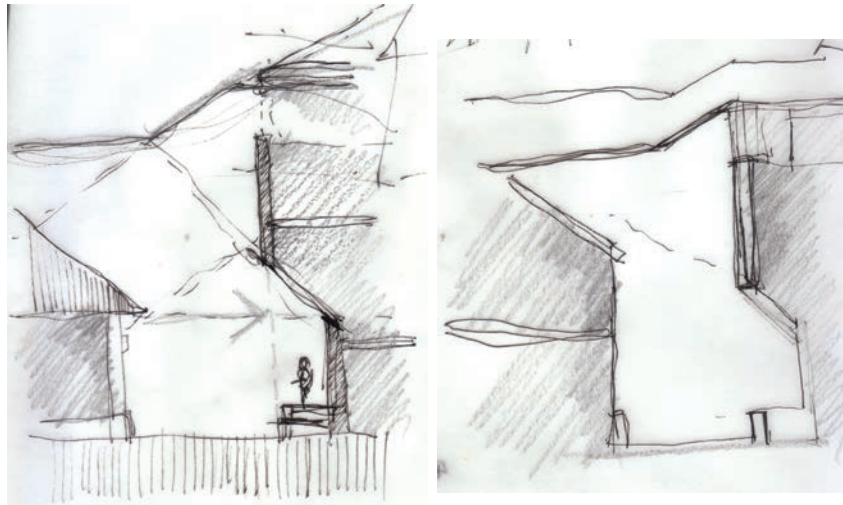


Figure 7.7 The wall's spatial's response to surrounding buildings in creating shelter

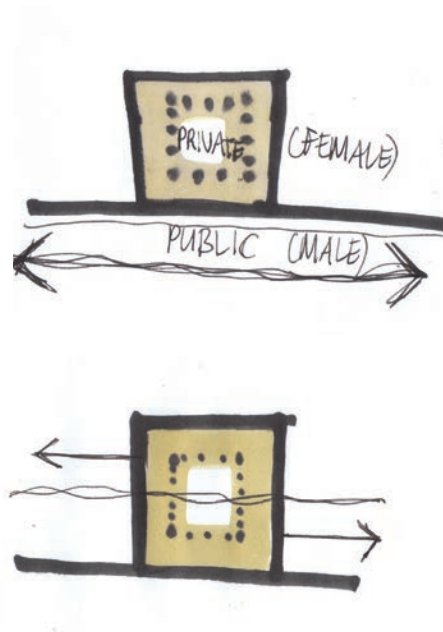


Figure 7.8 Exploring the site as an ensemble of walls

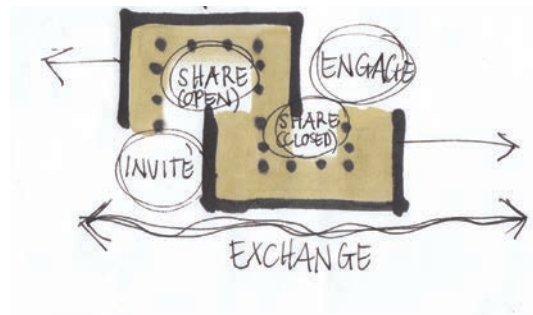
1:Wall

The traditional courtyard typology is explored in the following process, which pulls the wall, which is the boundary-defining element) apart in order to create new privacy conditions.

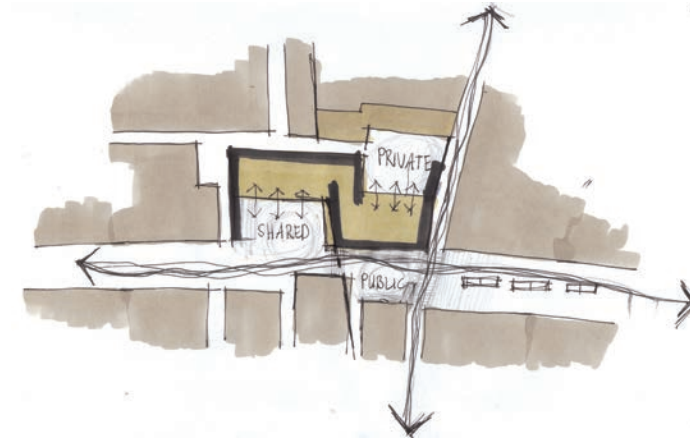
Creating new privacy conditions



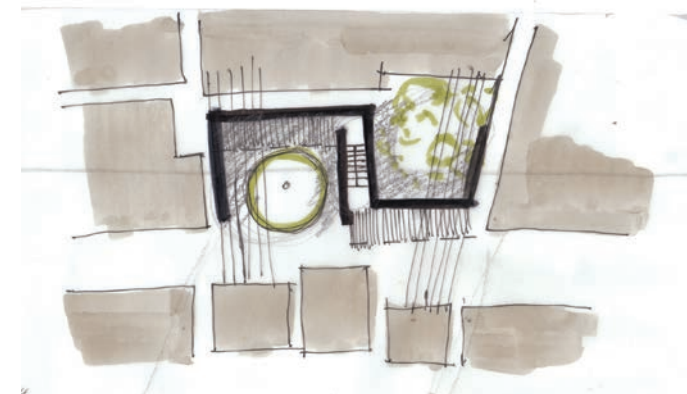
Traditional binary conditions:
private space associated with females,
public space associated with males



New intermediate privacy conditions
created to accommodate changing
privacy needs and to enable women to
move between different conditions



New privacy conditions created on site
correspond to the historical character
of the site, thereby reinforcing the
memory of the square as gathering
place and the garden as a private
space



The wall as privacy device combines
with the veil to create different spatial
characteristics with stairs functioning as
a filtering device.



Architectural development of the
concept as response to the context

2:Veil

While the wall represents heaviness, stability and permanence, the veil is seen in lightness, movement and temporality, and presents different faces of itself as one moves through the building to encounter it. These different expressions of the veil is explored over the following pages and its translation into architectural form is explained through diagrams.

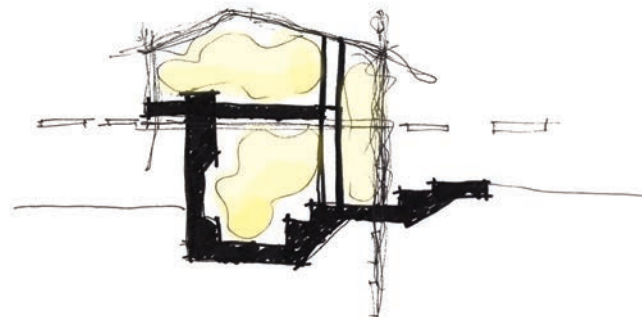


Figure 7.9 Girl on a balcony in Stone Town

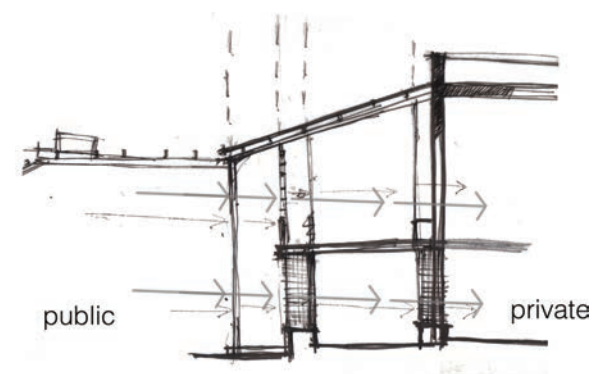
defining women's space inside public space



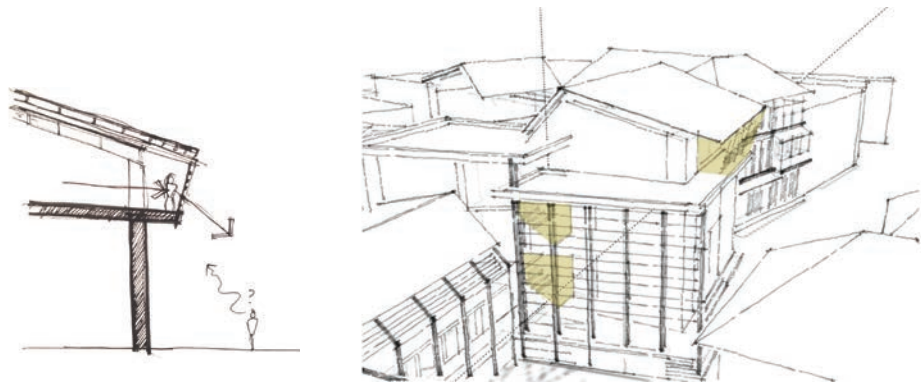
establishing dialogue & relationship



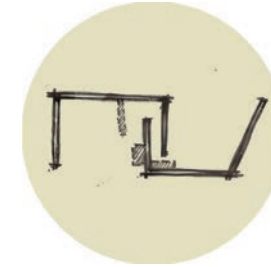
enabling public interaction
by creating a permeable
threshold



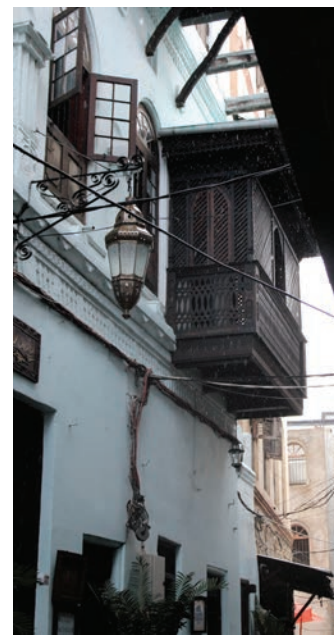
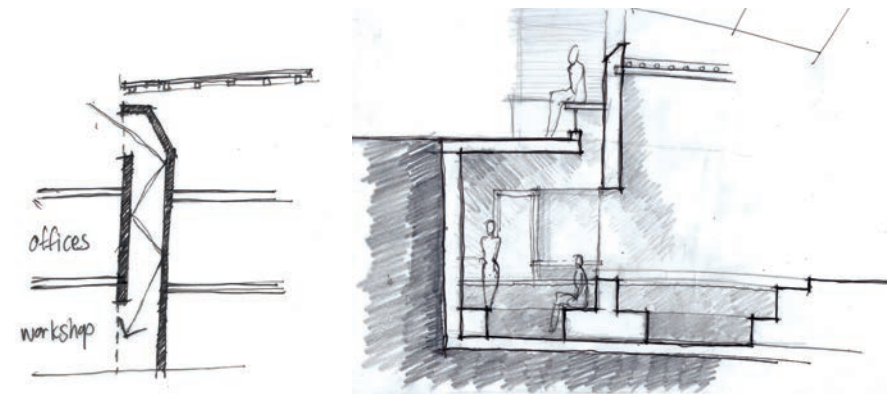
**an enabling device
a privacy capsule**



**lightness
permeability**



drawing light into
private spaces



_Site plan

The main features of the site have been discussed at length in previous chapters, while this section deals with how the architecture developed in response to the context and the concept. The site plan illustrates the existing features of the site.



_Design exploration

The wall and the veil was explored extensively through model building in the process of addressing the challenges posed by the site as well as in developing an appropriate spatial response to the site. At this point, concept meets site in the creation of architecture.

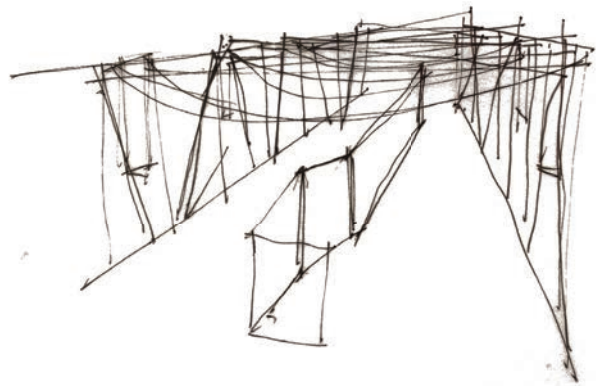


Figure 7.10 Concept sketch

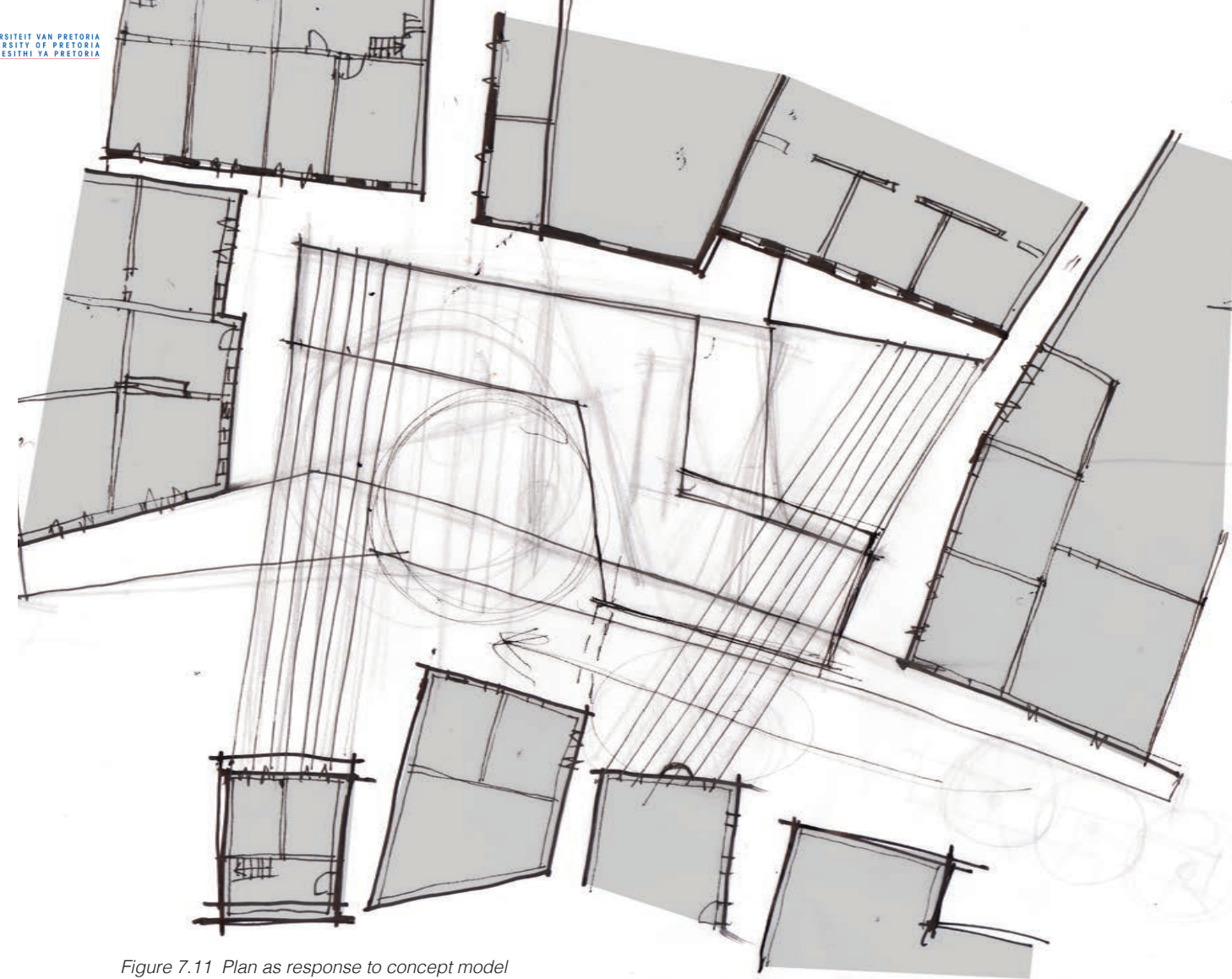


Figure 7.11 Plan as response to concept model



Figure 7.12 Concept model

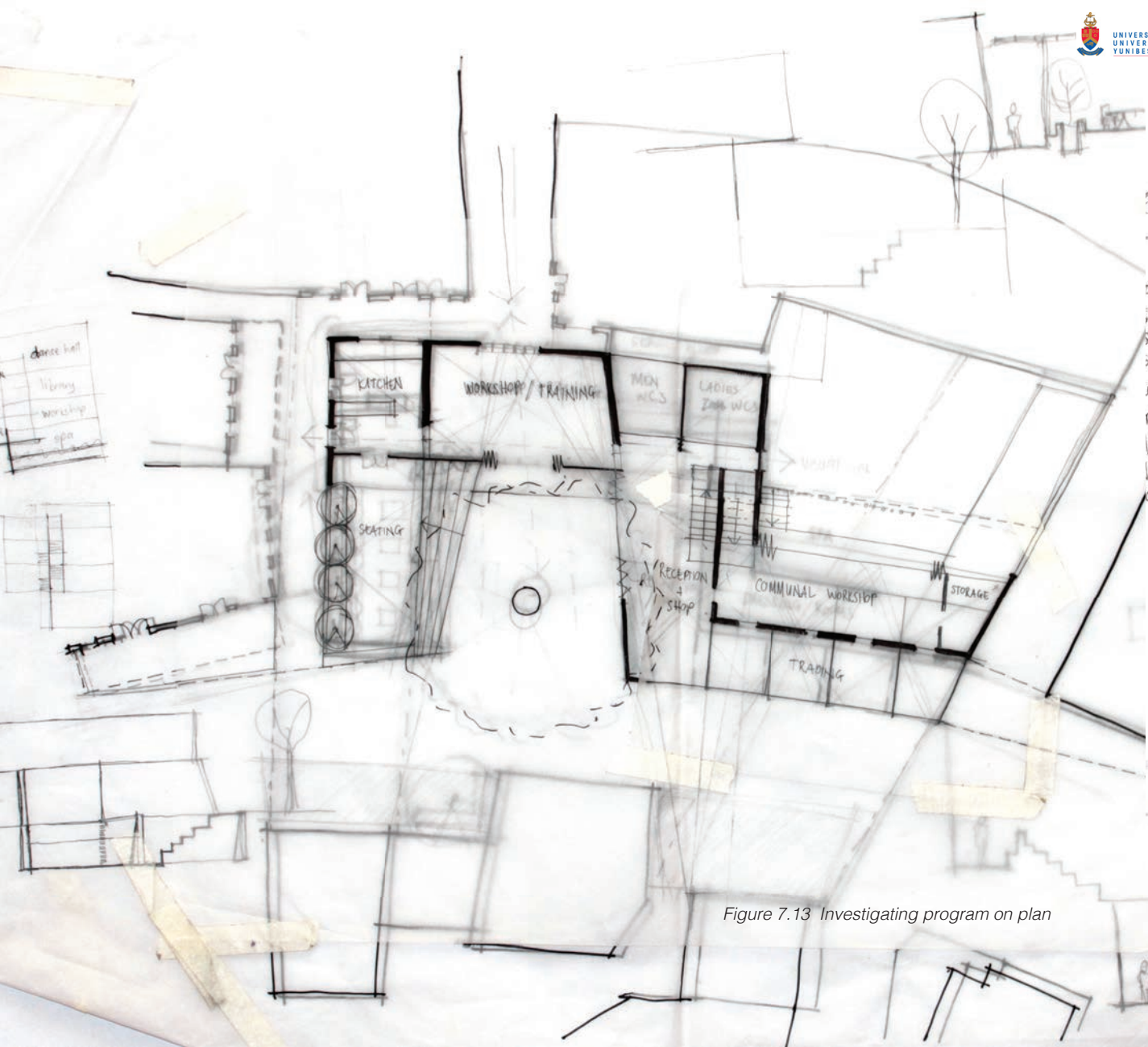


Figure 7.13 Investigating program on plan

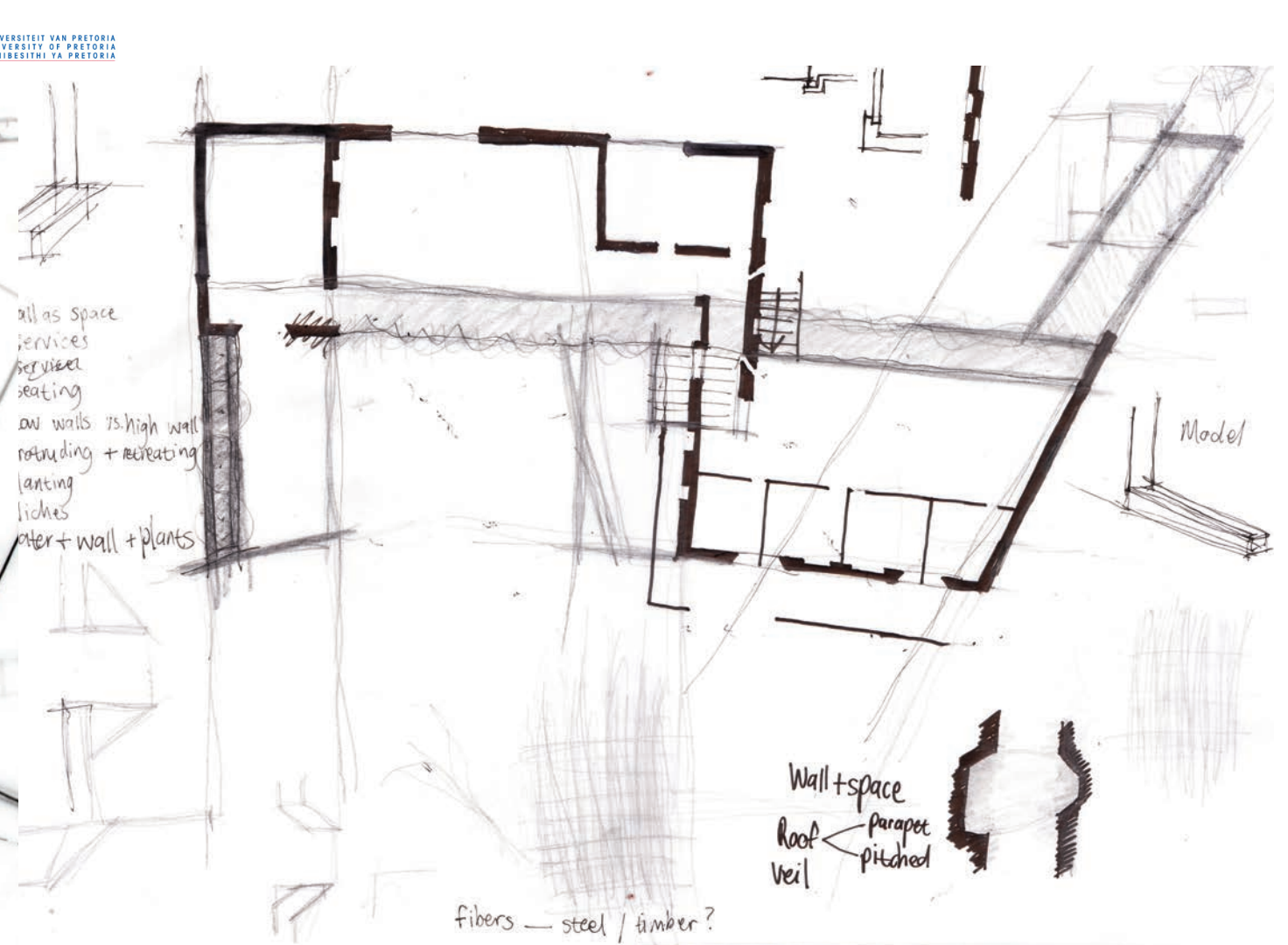


Figure 7.14 Exploring the wall on plan

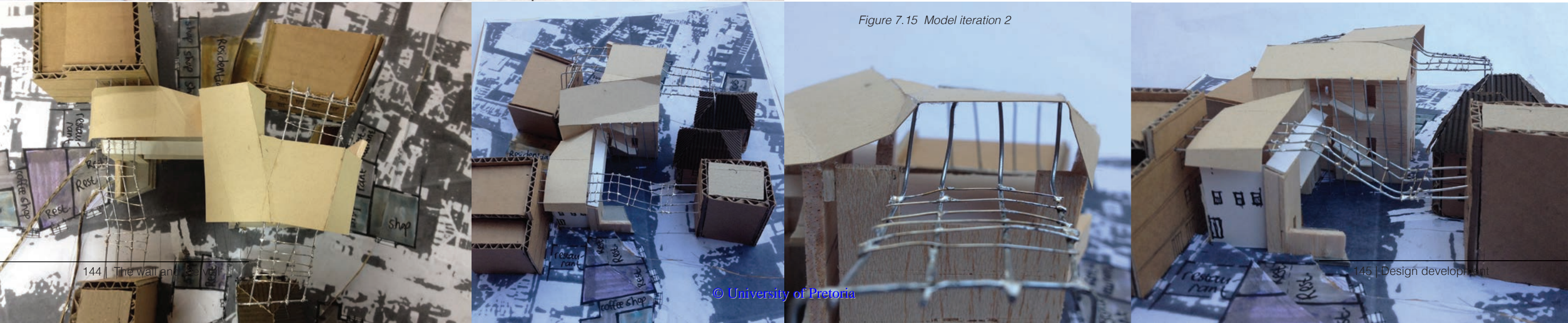


Figure 7.15 Model iteration 2



Figure 7.16 Plan starting to respond to fine grain of context

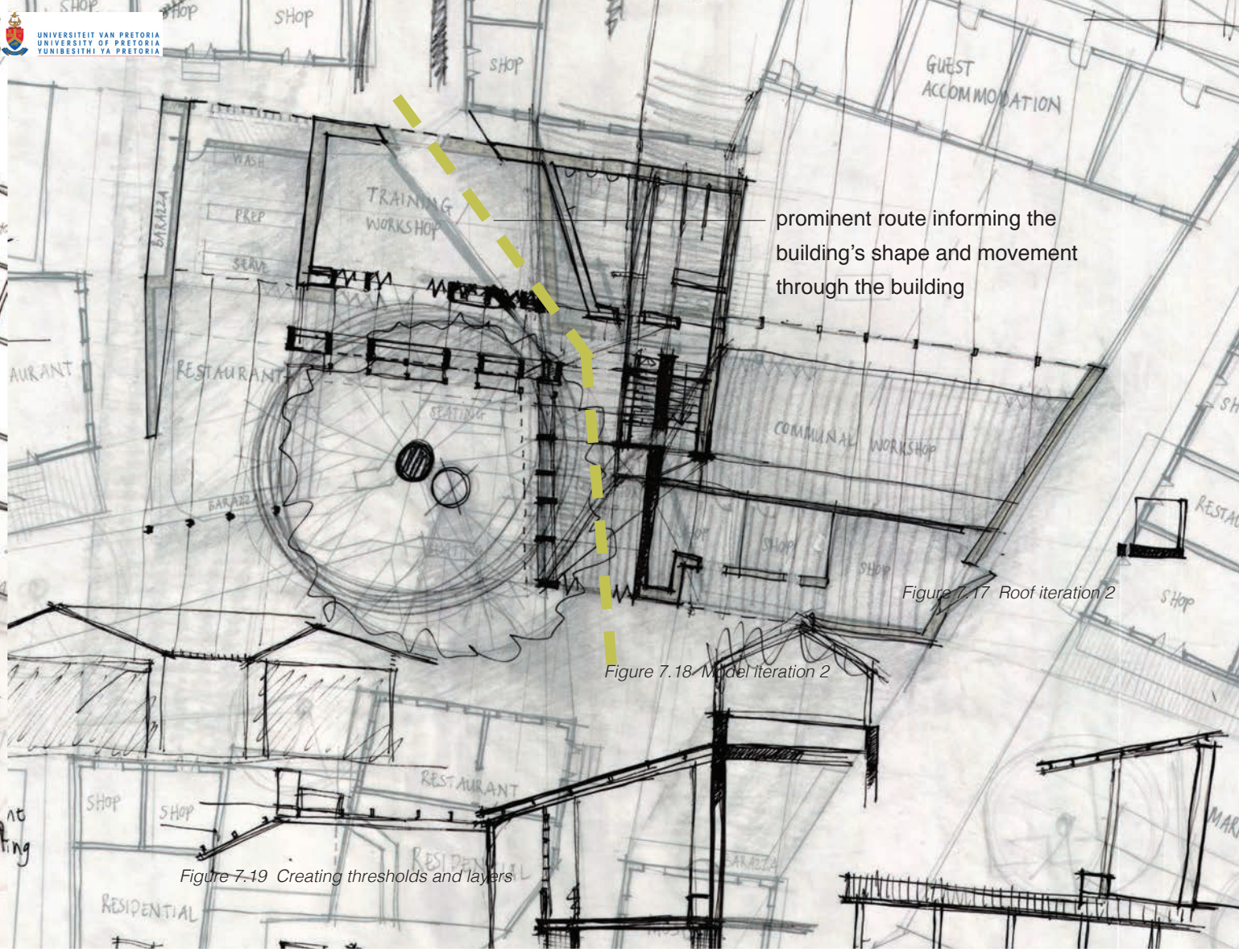


Figure 7.17 Roof iteration 2

Figure 7.18 Model iteration 2

Figure 7.19 Creating thresholds and layers

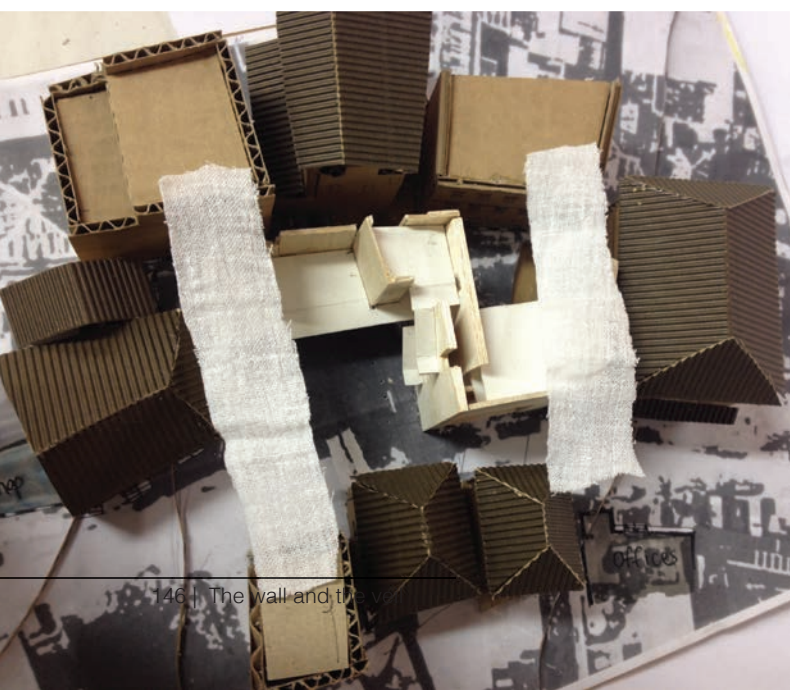


Figure 7.20 Model iteration 3: roof as veil



147 | Design development

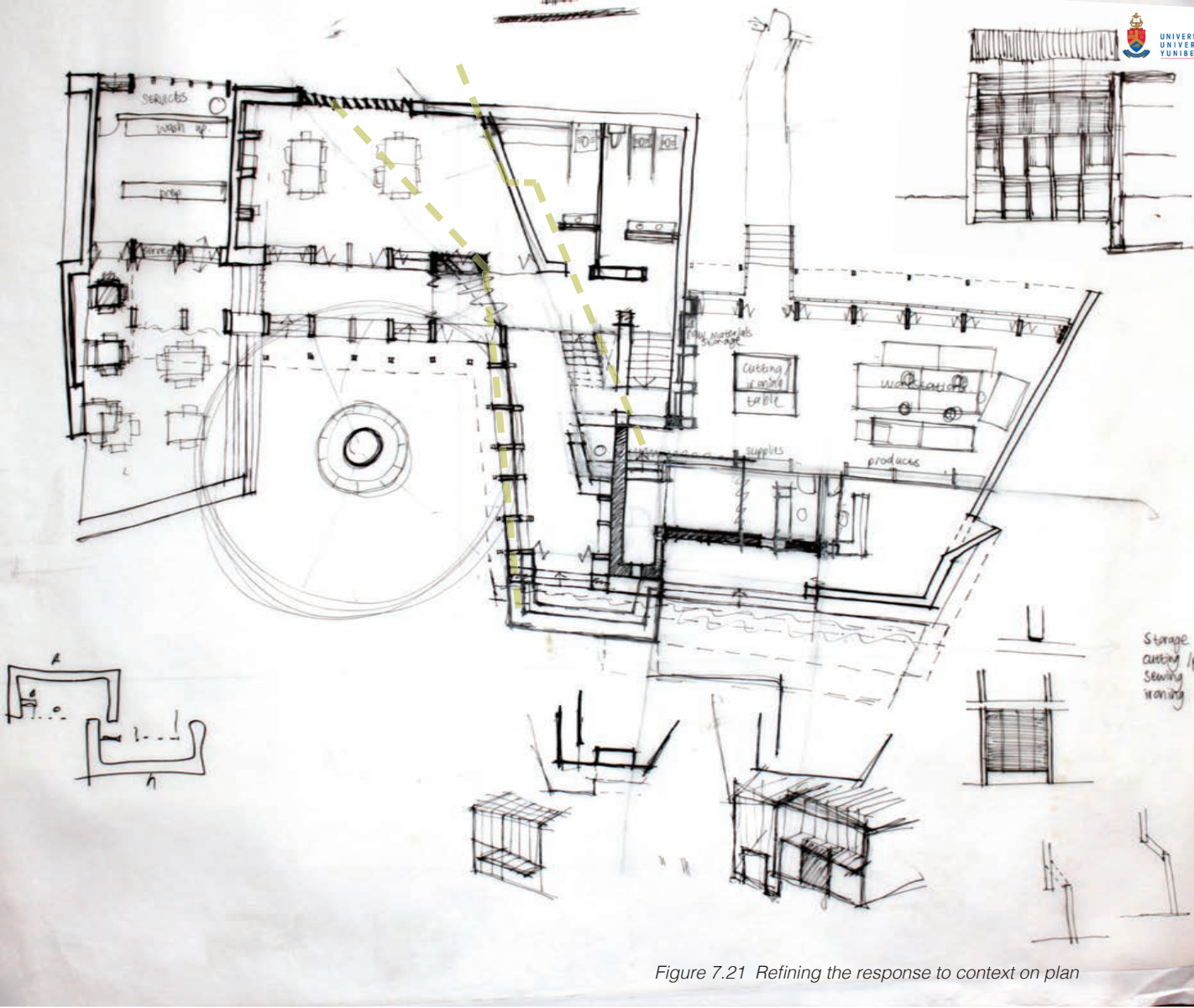


Figure 7.21 Refining the response to context on plan

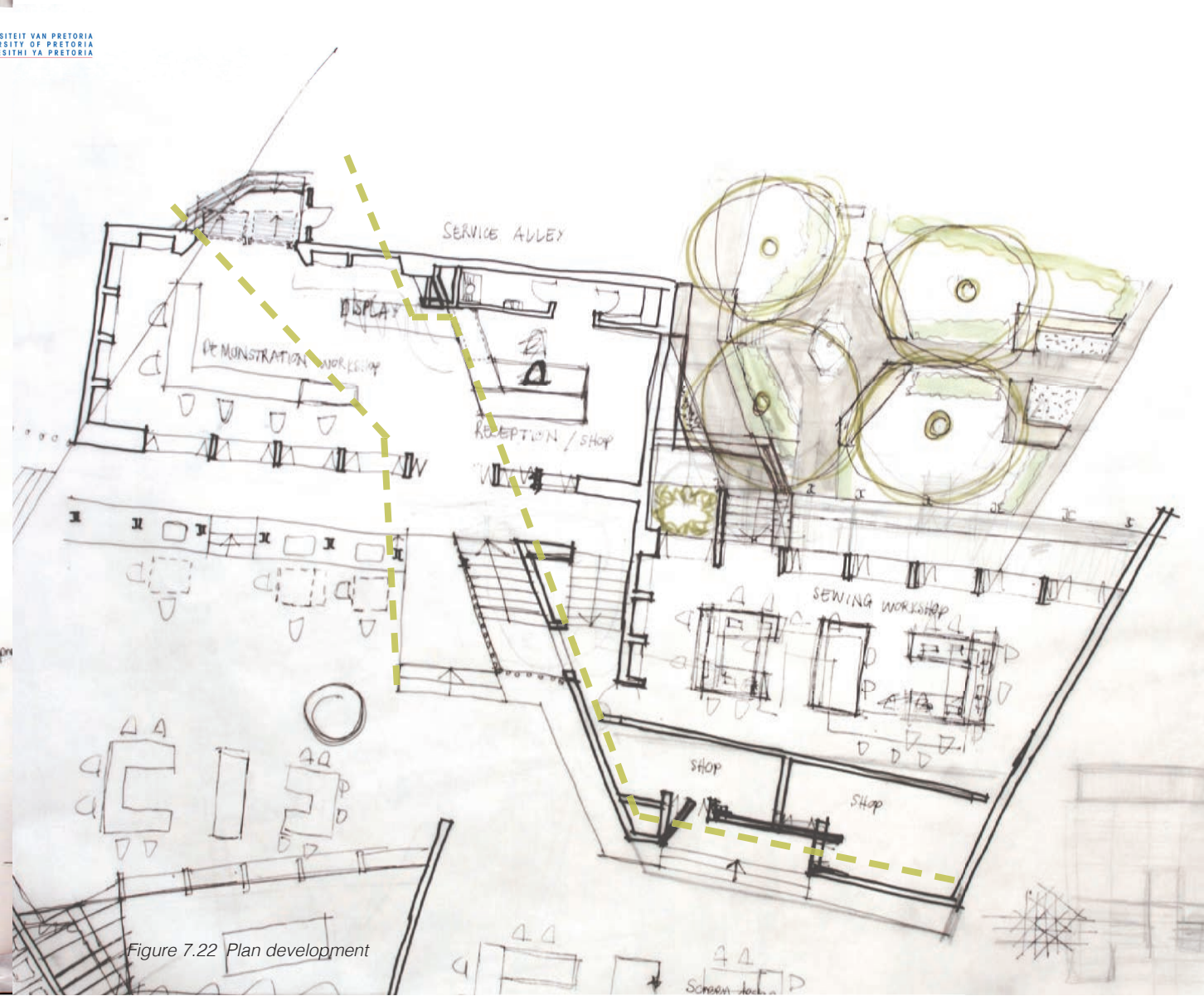


Figure 7.22 Plan development

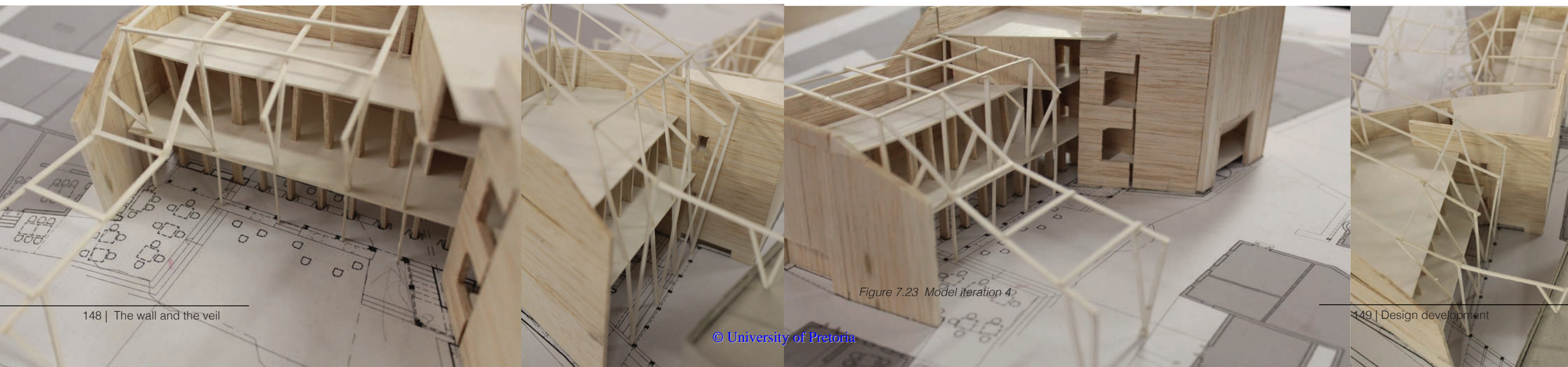


Figure 7.23 Model iteration 4

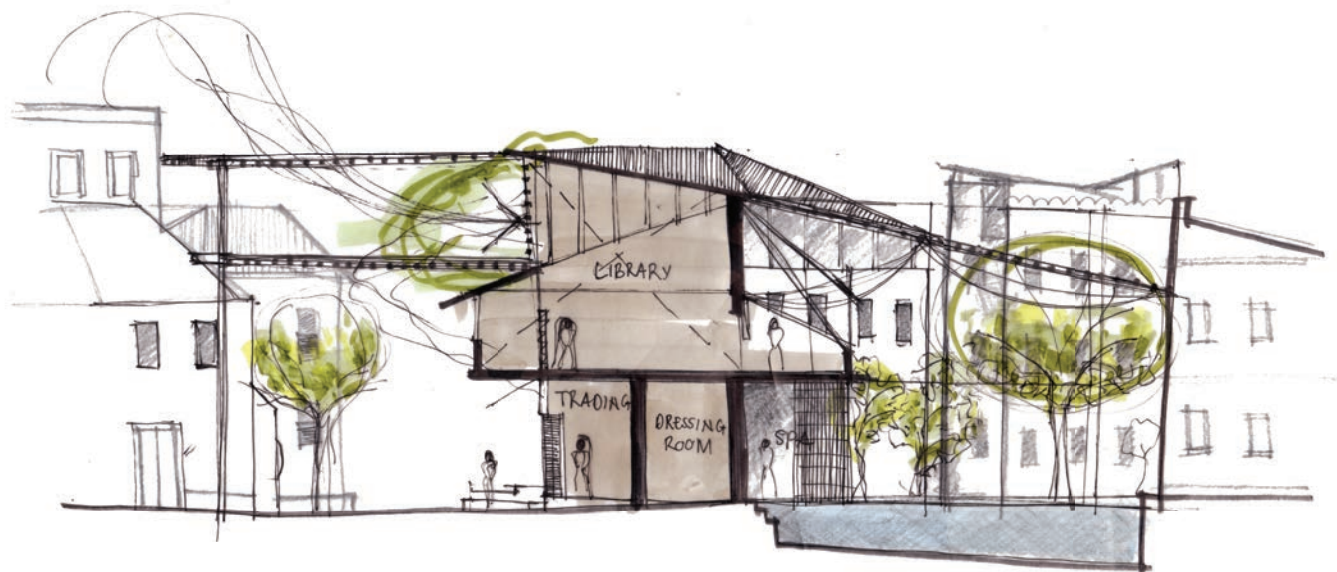


Figure 7.24 Conceptual section, May

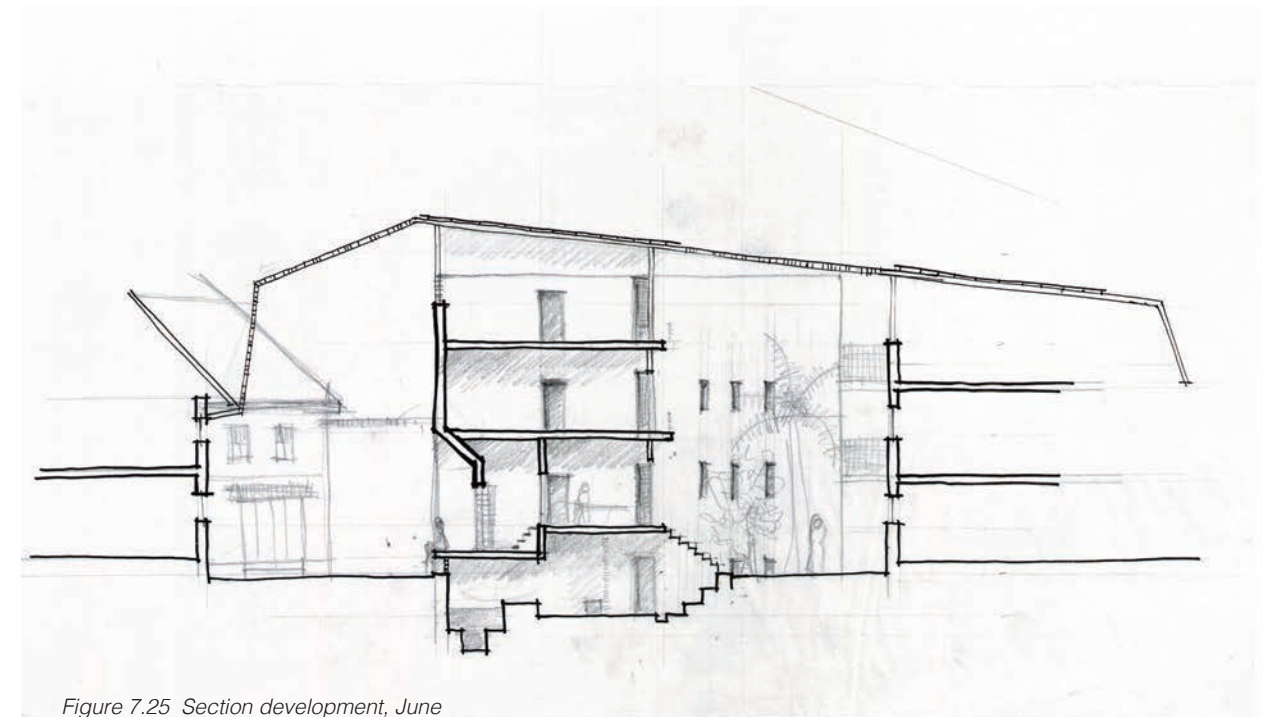


Figure 7.25 Section development, June

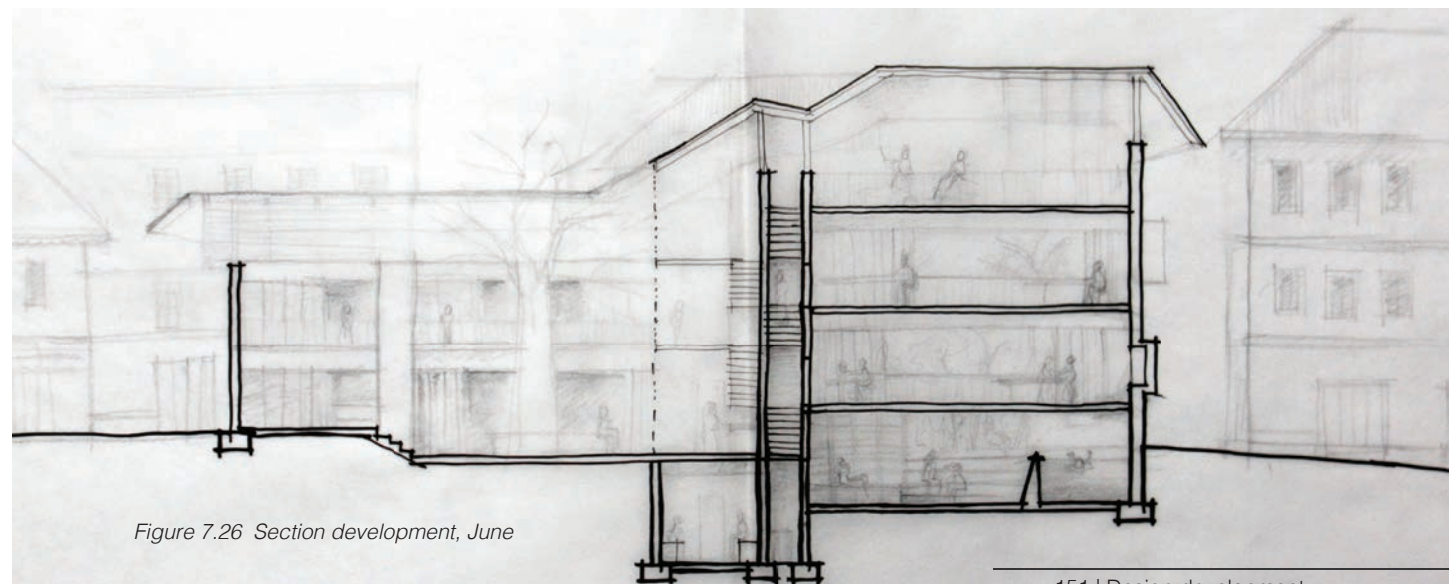


Figure 7.26 Section development, June

_Unpacking the program

The privacy requirements of the program, as explained in Chapter 6, informed the placement of functions in the building. The volume around the garden takes on an internalised character while the volume around the square takes on an externalised character, and the link between them houses service spaces. The ground floor has a commercial quality, the first floor is more academic and administrative, and the top floor and basement become sanctuary-like spaces.

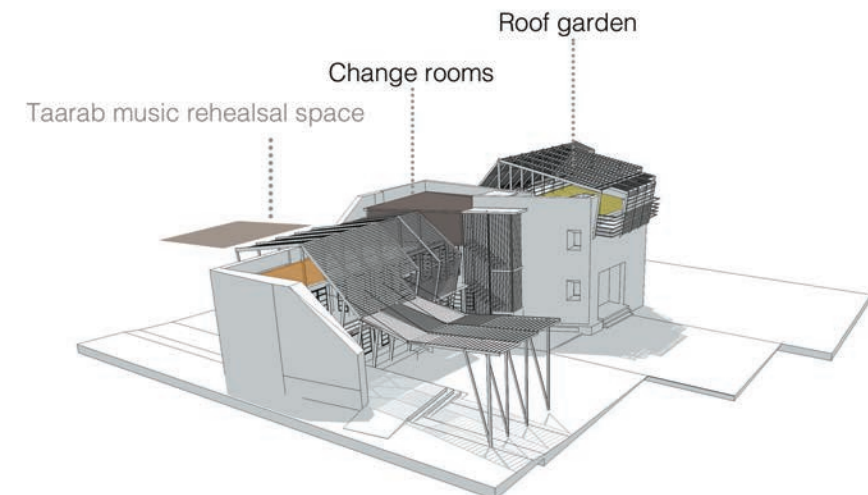
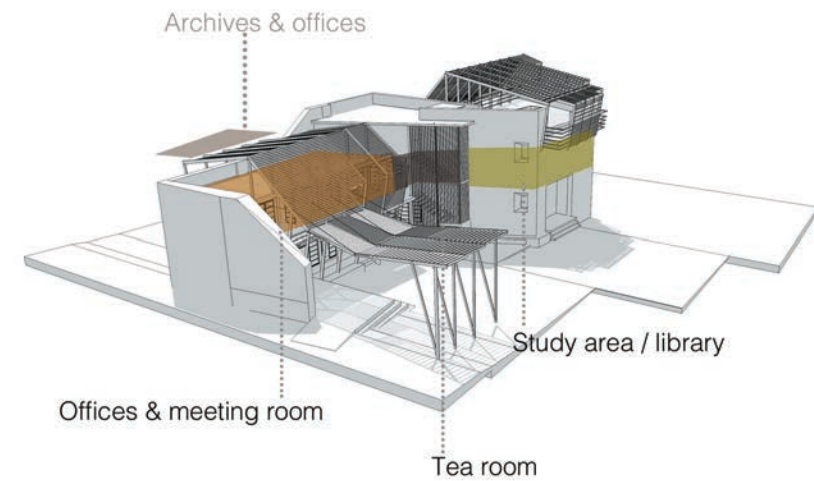
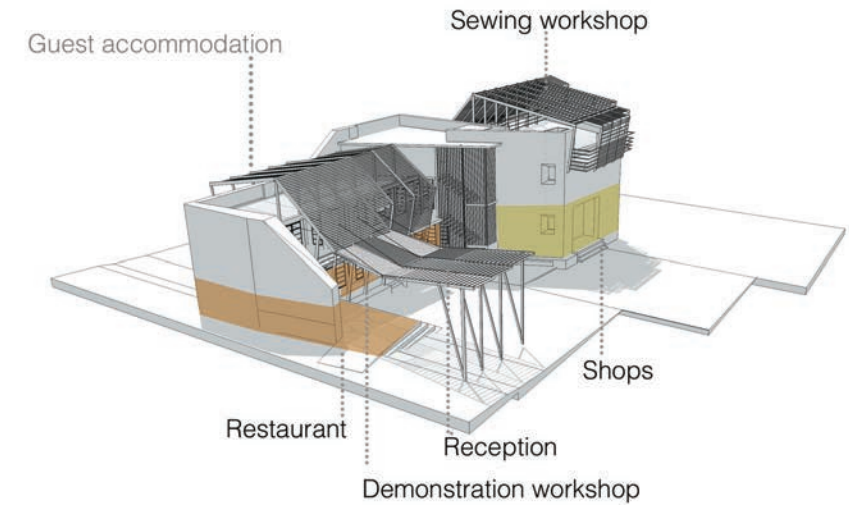
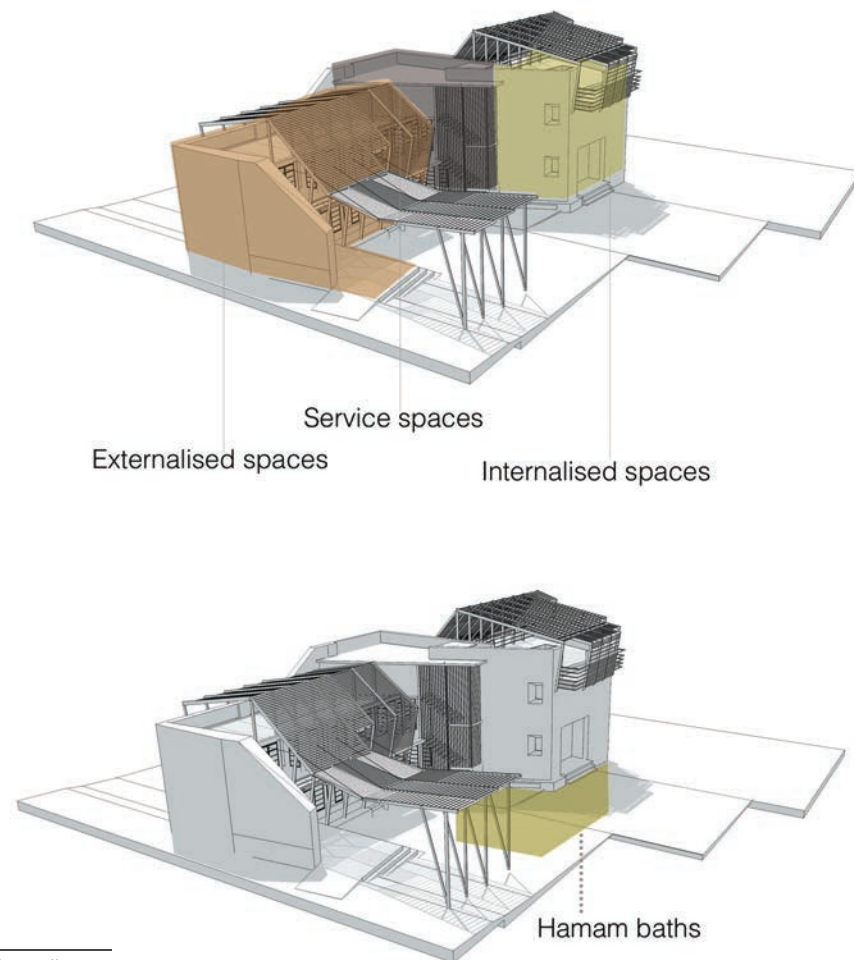


Figure 7.27 Relation between the program and the building



Figure 7.28 Hamamni baths, Stone Town

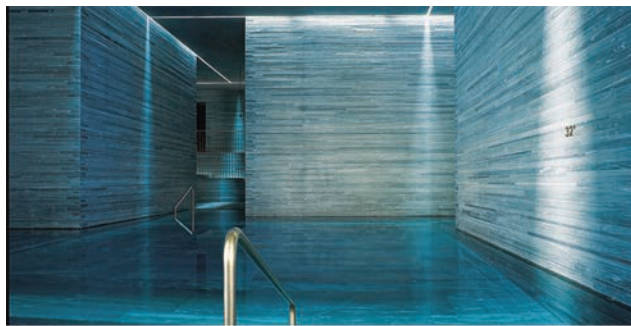


Figure 7.29 Therme Vals by Peter Zumthor

_Space, light and ritual

The Turkish bath area, or Hamam bath, allows the women to perpetuate the rituals surrounding traditional beautification, and gives tourists access to this aspect of the culture. In designing this space, the traditional design of Turkish baths in Stone Town was considered, including the old Hamamni baths in town, and the baths at the Mtoni Palace outside Stone Town. A prominent design feature is the heaviness and materiality of the spaces that is accentuated by the controlled admission of light through narrow openings. This device was also applied by Peter Zumthor in the design of Therme Vals, where the combination of wall, water and heaviness creates a dreamy, cave-like experience.

The design therefore investigates ways to draw light into the deep spaces of the bathhouse through the selective placement of lightwells, small windows and narrow slits.

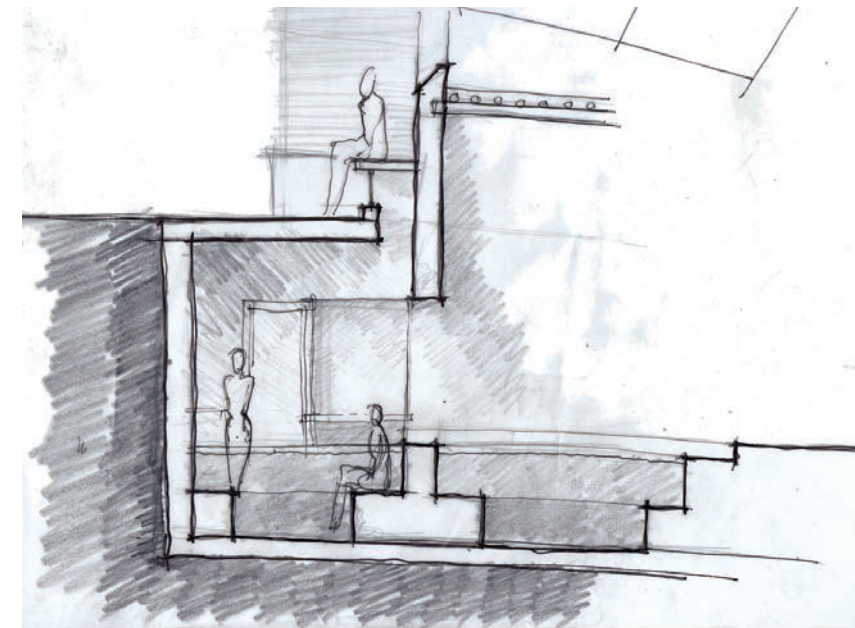


Figure 7.30 Allowing light into the bathhouse

The layout of the bathhouse is based on the traditional ritual of bathing, illustrated in figure Figure 7.26 where the women move from the preparation area to a steam room, followed by immersion in a hot bath and then a cold bath. After bathing aromatic oils are applied to the body and the women paint decorative henna designs onto each other. From there they move to the more open steps where they can braid each other's hair in the traditional manner.

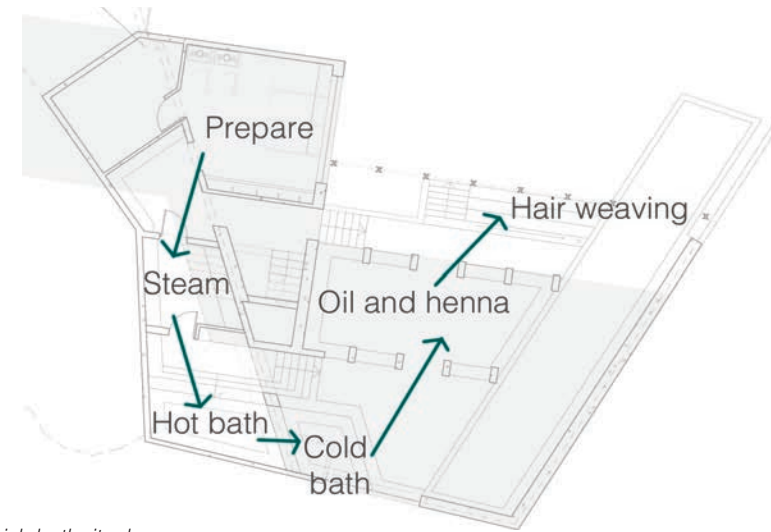


Figure 7.32 Turkish bath ritual

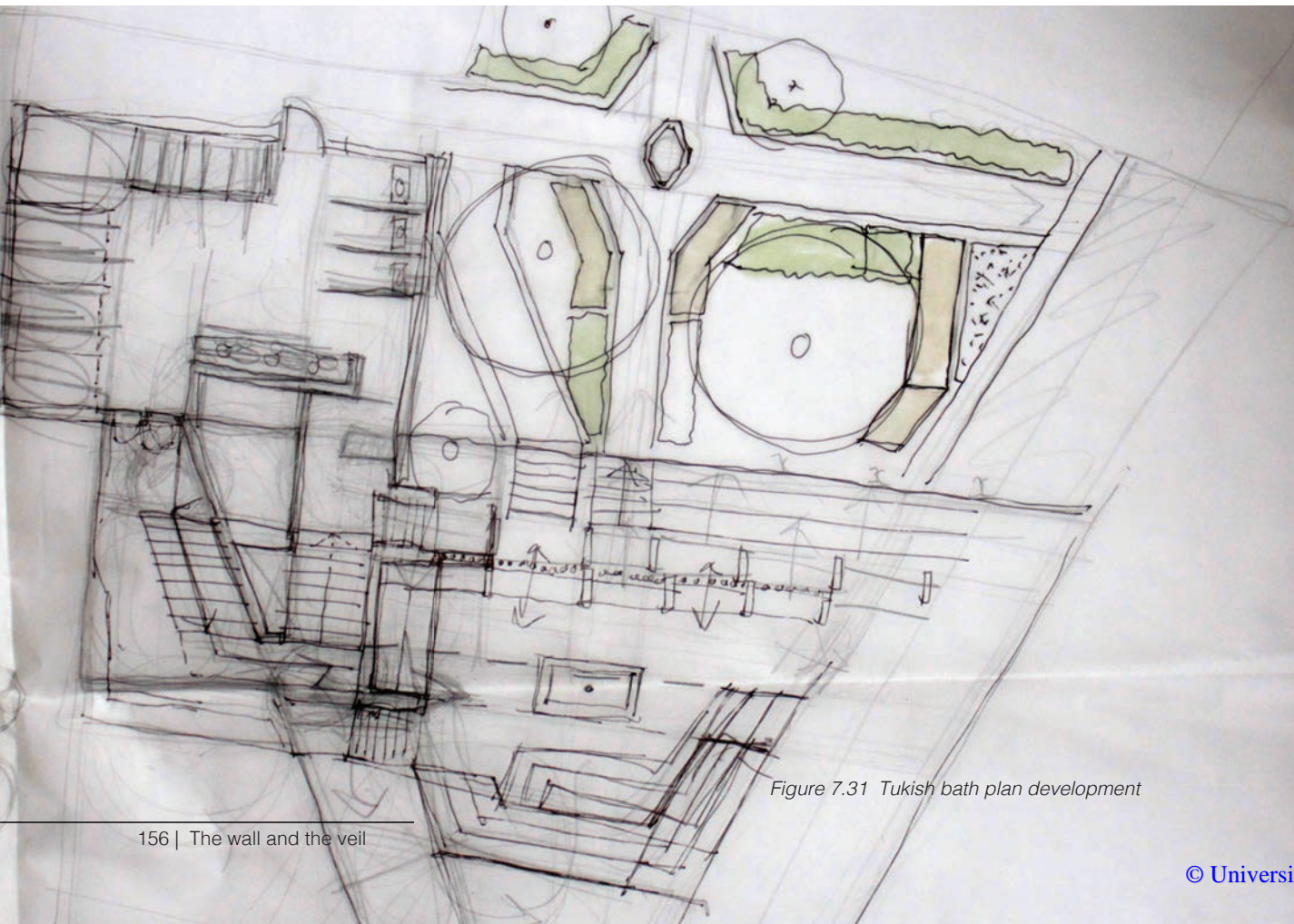


Figure 7.31 Turkish bath plan development

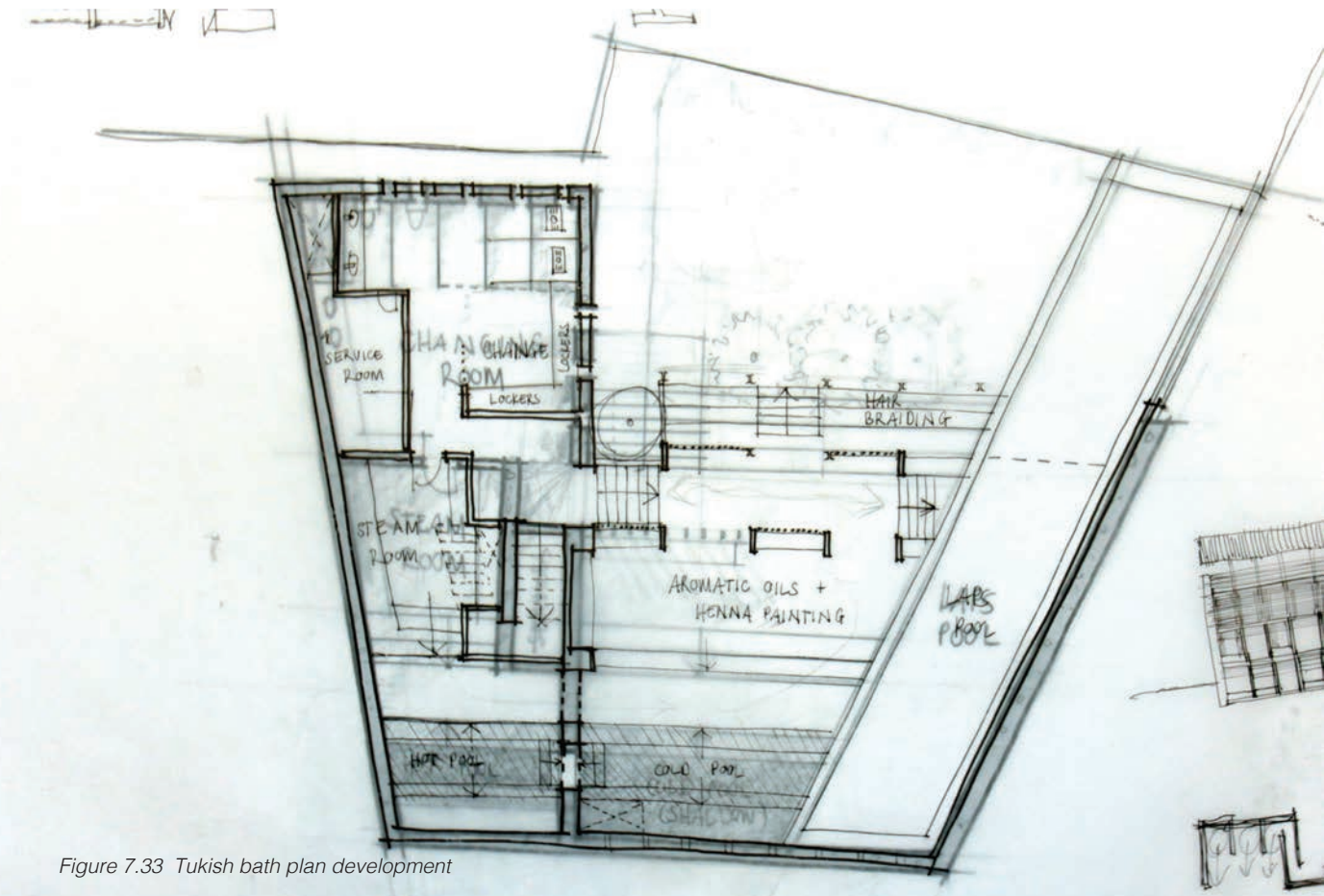


Figure 7.33 Turkish bath plan development

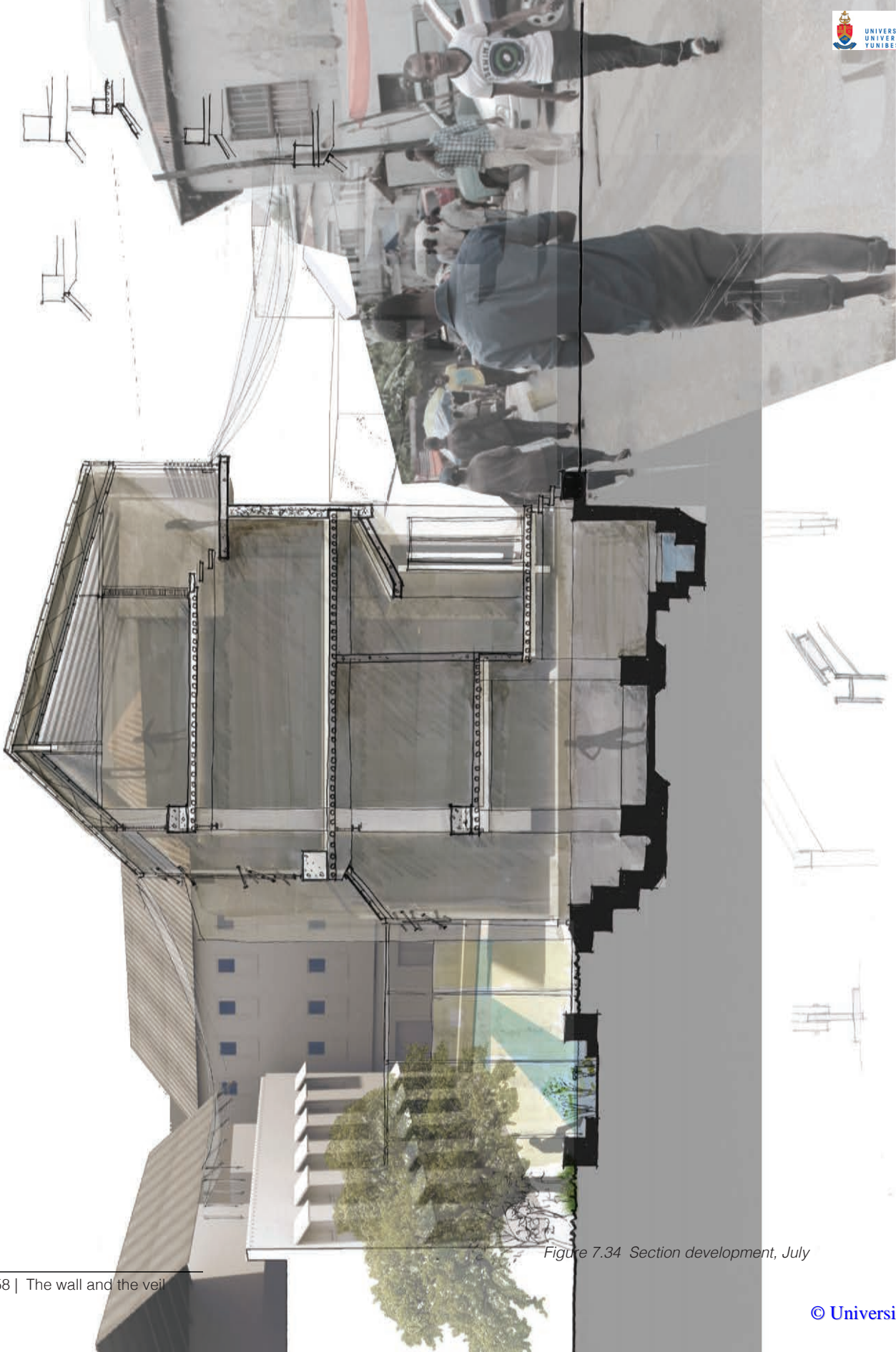


Figure 7.34 Section development, July



Figure 7.36 Section development, July

08

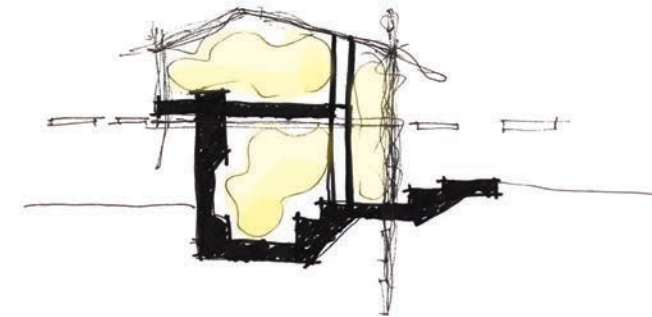
TECHNICAL DEVELOPMENT

Technical development

making the building

Traditional
Heaviness
Permanence
Stability
Carved

Concrete
Stone
Earth



Contemporary
Lightness
Temporality
Movement
Draped

Steel
Timber
Palm leaves

Figure 8.2 Technical concept

The technical concept is an extension of the design concept and explores the characteristics of the wall and the veil by combining, separating or juxtaposing them to create different conditions, and ultimately, combining to create space. The wall is expressed through the traditional, heavy lime concrete construction, earth and stone, and represents permanence and stability. The wall responds to spatial requirements by being carved into to create niches, levels and shelters. The veil, on the other hand, represents lightness, movement and temporality. It takes on a more contemporary feeling and is expressed through materials like timber, steel and woven palm leaves.



Figure 8.1 Stone Town street on a rainy day



Lime concrete mix:

1/4 part cement
2 parts lime
2 parts sand
3 parts broken brick / coral stone
and fines up to 18mm



Figure 8.3 Bath floor and wall finishes



Figure 8.4 Traditional construction with coral and lime

1:Wall

_Materiality, material and construction

The wall is constructed from lime concrete that uses recycled coral as aggregate. Coral has traditionally been used as aggregate in traditional lime construction as it is readily available from quarries on the island (Siravo, 1994). Due to the large number of buildings that have decayed to the point of collapse, there is a large amount of coral available that can be reused. Coral is porous and reacts well with lime as binding material, although the lime produced on the island is not of satisfactory quality to be used as sole binding agent. For this reason a lime concrete mix is used, containing a quarter part cement for every two parts lime (Morton, 2014). The result is a lightweight, porous, breathable concrete that works well in the hot and humid Zanzibar climate by not adding a lot of thermal mass to the building. Haptically, this material has a softer touch than standard concrete that blends well with Stone Town's weathered lime buildings, and faded white colour indigenous to Stone Town is achieved by adding white pigment to a lime/cement render applied afterwards.



Figure 8.5 Recycled aggregate lime concrete with sliding formwork and lime/cement plaster render



Figure 8.6 Woven palm leaves to be used in steel frames display the temporality and movement of the veil

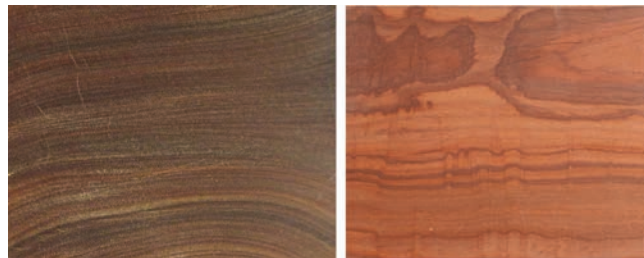


Figure 8.7 African Lignum Vitae Figure 8.8 East African Padauk

2:Veil

_Materiality, material and construction

The veil is expressed through the use of light materials such as timber, steel and woven palm leaves. Woven palm leaves, also known as *Makuti*, are a popular construction material on the island as the leaves are freely available. The panels thus created are breathable, working well in the hot and humid climate. Light steel frames that can easily be removed provide the structure for the leaves to be woven onto as a showcase of the women's creativity and skill. These panels will have to be rewoven every three to five years - in this way representing the temporality of the veil and the movement associated with it.

The timber that is used to construct the shading devices over the roof spaces is sourced from mainland Tanzania. The main structural frame uses African Lignum Vitae (from the tree *Acacia nigrescens*), a deep brown hardwood with good durability and stability. The slats will be manufactured from East African Padauk (from the tree *Pterocarpus angolensis*), which has a reddish-brown colour and good workability. Timber will be treated with Alkaline Copper Quat (ACQ), a copper and ammonium compound that prevents bacterial growth and will protect the timber from rot, as well as a water repellent coating.

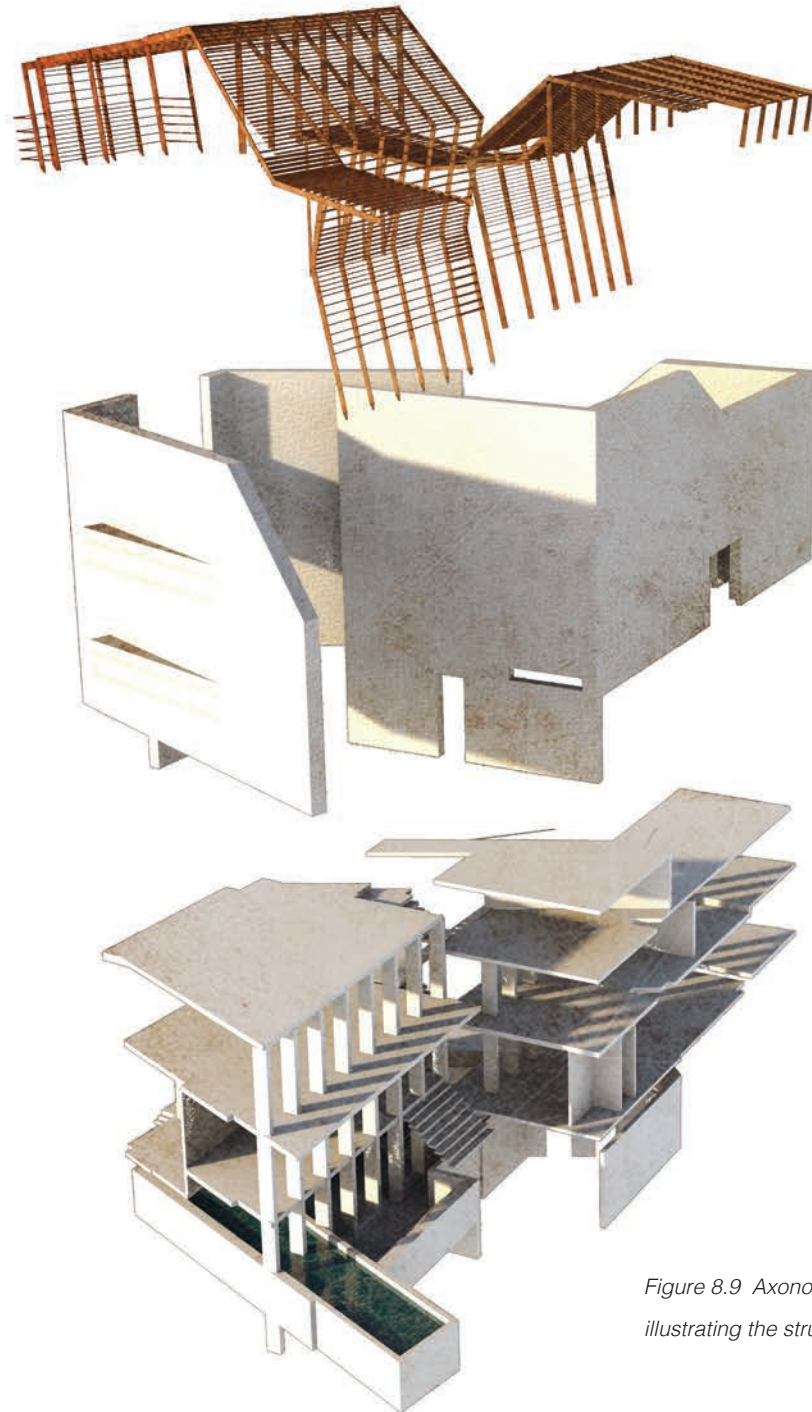


Figure 8.9 Axonometric explosion illustrating the structural systems

_Structural system

The structural system used to construct floors is based on a traditional construction method used throughout Stone Town. Mangrove poles (*Boritis*), which have a maximum span of 3m, are laid at 150mm intervals, and large pieces of coral is packed on top of this to create a type of formwork, after which the lime concrete is cast over this. In this design, concrete beams cast *in situ* provide support to enable spans longer than 3m.

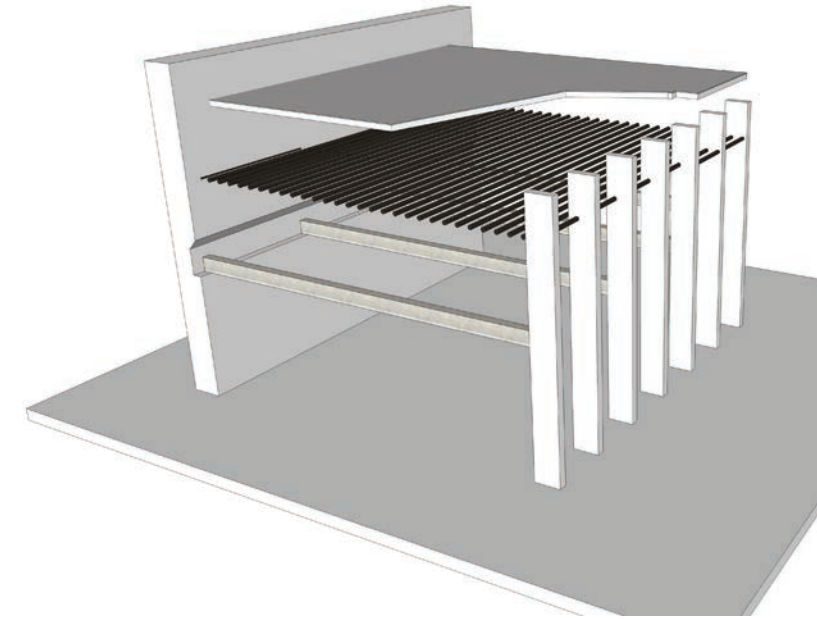


Figure 8.10 Traditional floor construction with mangrove poles



_Climate

Zanzibar is situated slightly south of the equator, so that although the northern side of the building gets more sun, the southern side of the building is also exposed to direct sun for a few months of the year (Figure 8.9). The climate is hot and humid, with temperatures ranging between 22°C and 32°C for most of the year, and humidity ranging between 70% and 90%. Zanzibar has two rainy seasons: the short rains of November and December, and the monsoon season (or long rains) of April, May and June.

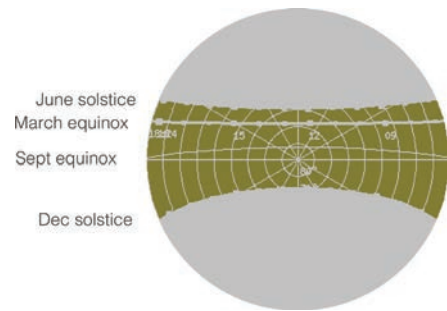


Figure 8.11 Zanzibar solar chart

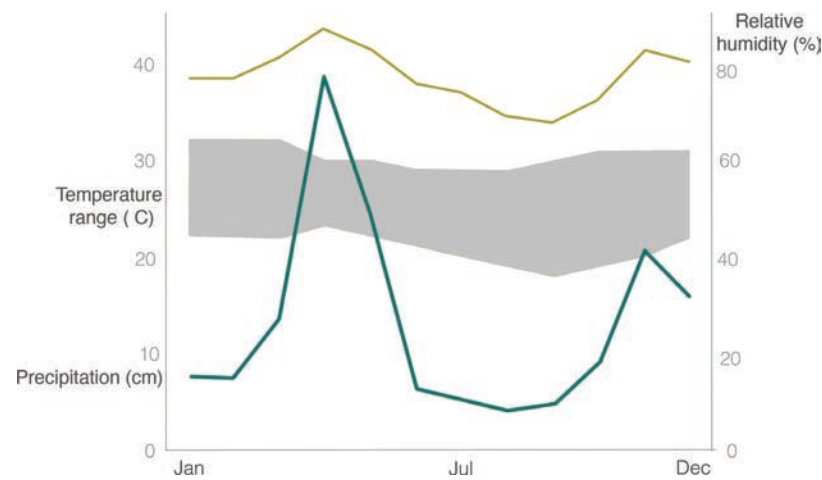


Figure 8.12 Rainfall, temperature and humidity in Zanzibar

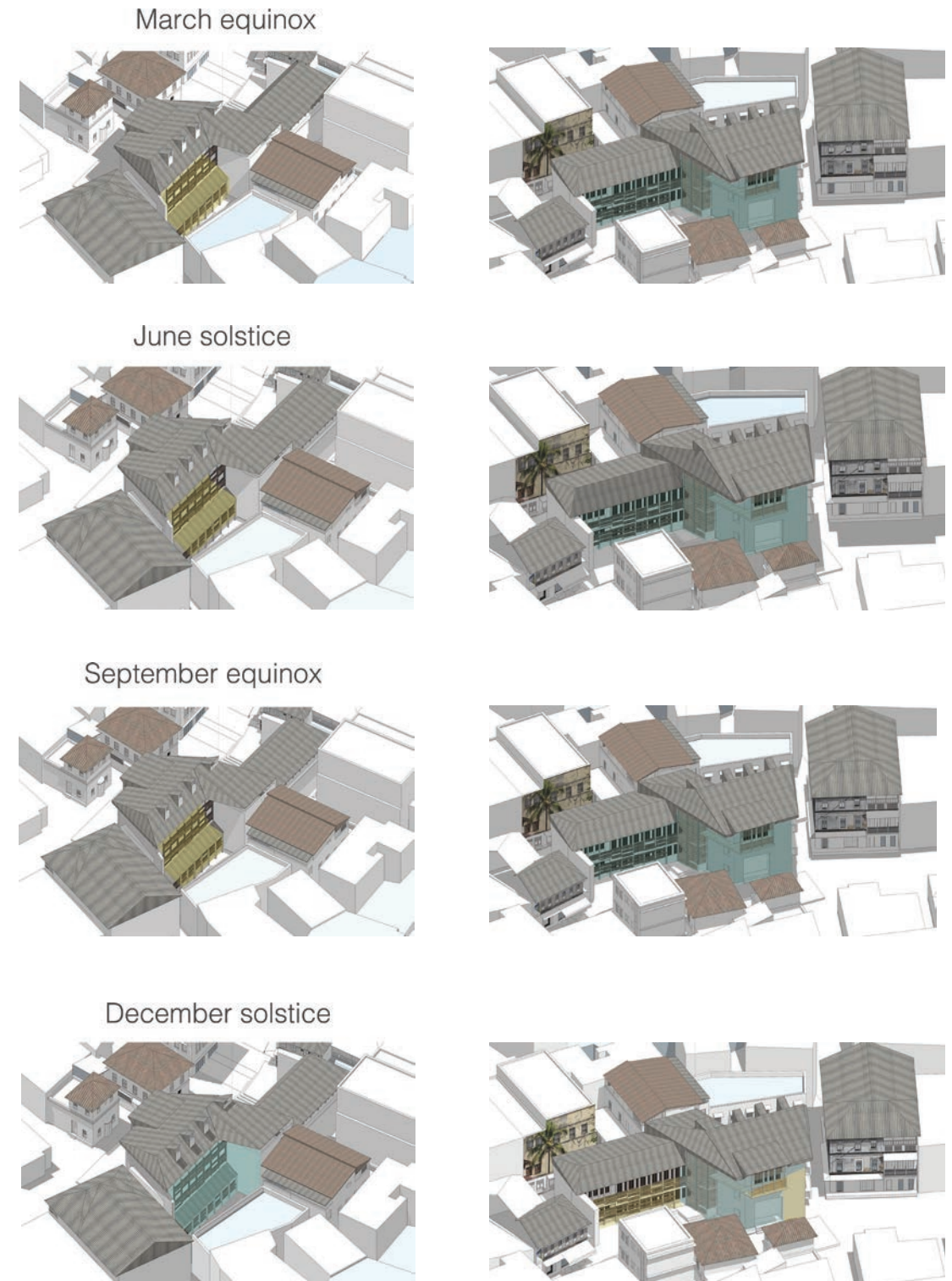


Figure 8.13 Solar studies

_Response to climatic considerations:

a) Ventilation: The project makes use of ventilation and light-weight construction as its main cooling principle, with light movable screens and pergolas providing shading on both the northern and southern sides of the building. The main ventilation strategies are wind scoops, permeable screens, and a ventilation stack that draws air out of the building. The building allows for both day-time and night-time ventilation. Ventilation strategies are illustrated in the next section.

b) Shading: The solar studies (Figure 8.9) indicate that both the southern and northern sides of the building get sun, therefore shading is provided on both facades.

c) Rainwater collection: Rainwater calculations were done to determine how much water is required through the year, and how much needs to be stored. The tanks will be placed on the roof of an adjoining building that will accommodate some of the Women's centre's functions (Figure 8.10).

d) Vegetative shade: The Baobab tree on the site provides shade to the square, which is used as a pleasant public space. This idea is extended to the roofspaces, where vegetation provides shade underneath the pergolas to create a pleasant private outdoor space (Figure 8.11).

e) Sun angles: Energy requirements were calculated in order to determine how many solar panels would be needed. Solar panels are placed on the adjoining building's roof (Figure 8.14).

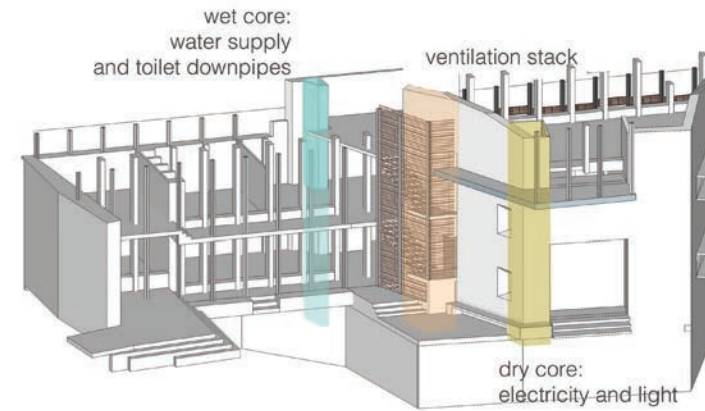


Figure 8.17 Main service cores

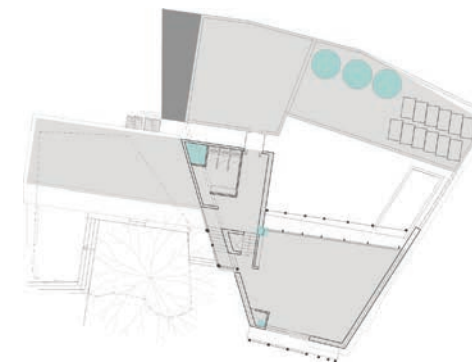


Figure 8.14 Placement of water tanks on adjoining building's roof, as well as wet core and downpipes

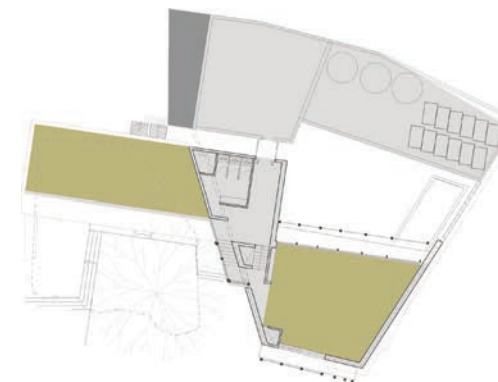


Figure 8.15 Potted green roofs

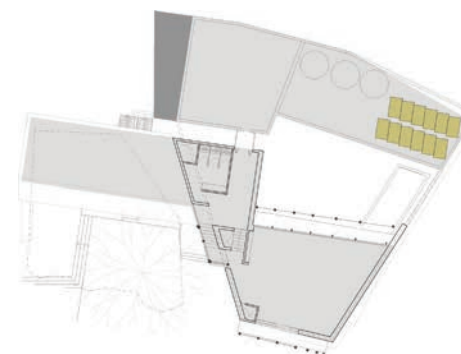


Figure 8.16 Position of solar panels

_Ventilation strategies

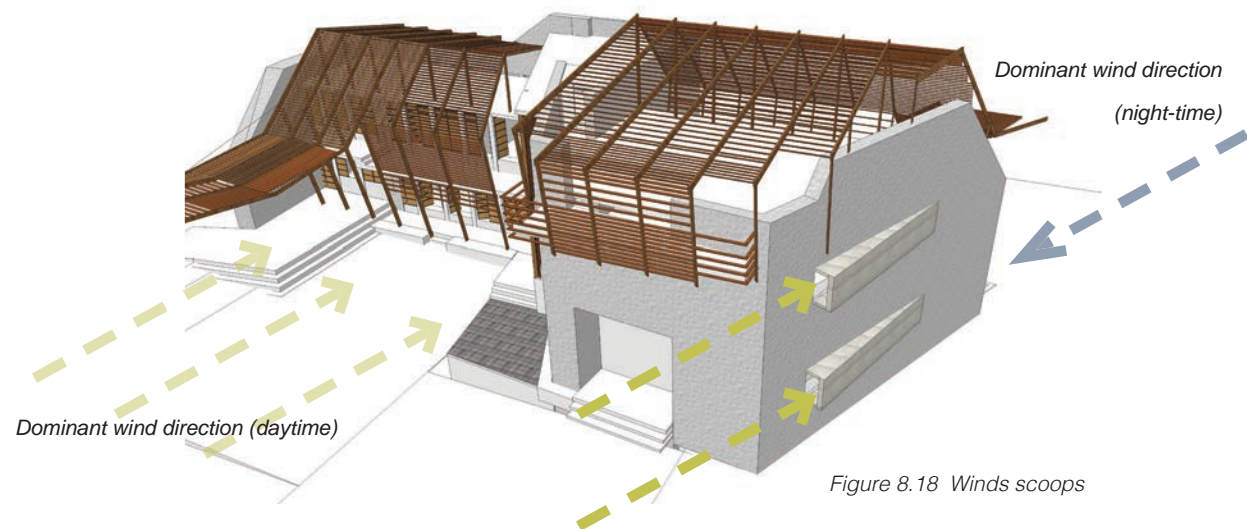


Figure 8.18 Winds scoops

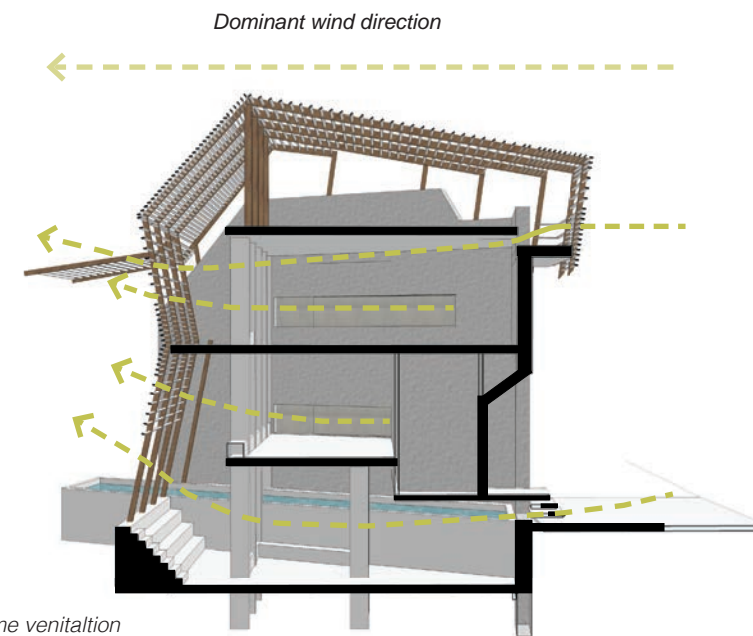


Figure 8.20 Daytime ventilation

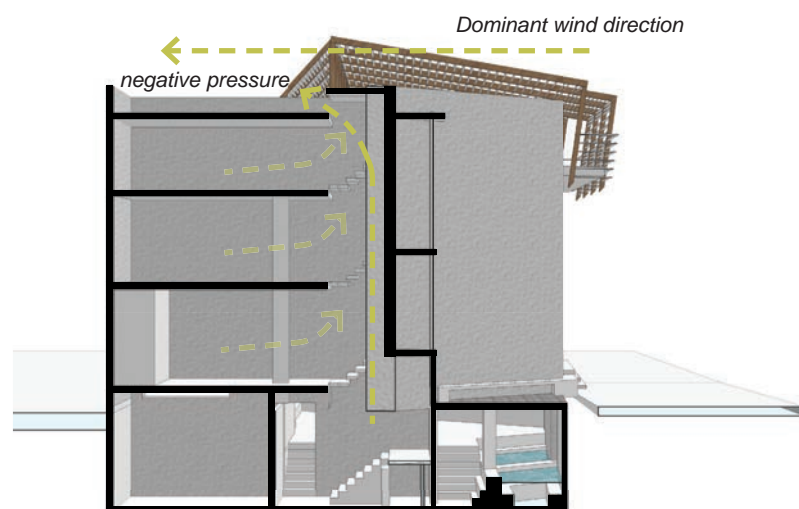


Figure 8.19 Ventilation shaft creating negative pressure

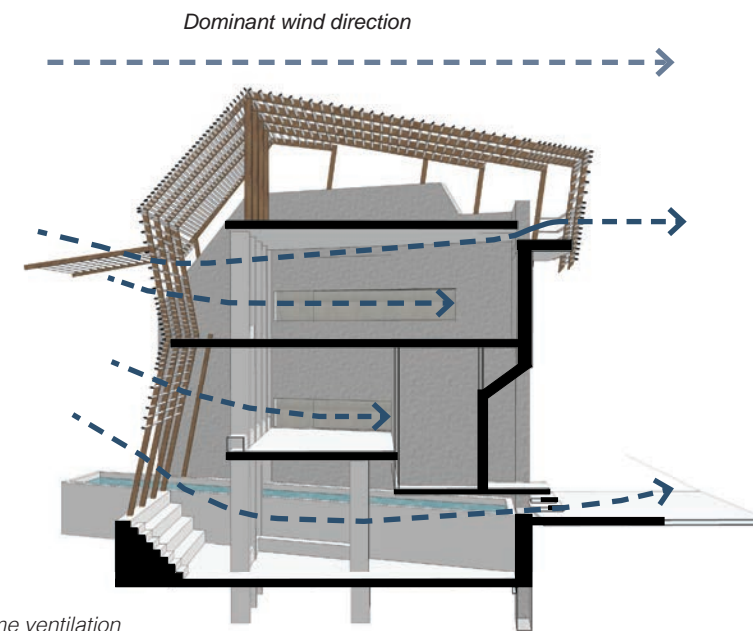


Figure 8.21 Night-time ventilation

_Water collection

In order to determine how much water needs to be stored, the following calculations were done (Figure 8.15):

- Water collected per month based on collection area and typical rainfall for that month. These areas include the flat concrete roofs and the garden area. Water falling directly into the swimmingpool was taken into consideration when determining how much water would be needed to keep it topped up.
- Water use per month based on expected use as determined by season. The rainy months of April, May and June see a sharp drop in tourist numbers, meaning that less people will visit the workshop, restaurant and bathhouse.
- The months that showed a negative nett water gain are June through to October, as well as January and February. The figures of each of these stretches were added together to determine how much water would have to be stored ahead of time. Even during these “dry months”, Zanzibar still receives a fair amount of rain, and due to the extremely high rainfall in May, the total required can be stored from the excess of the month of May alone. Three tanks with a 1,2m radius and 3m height will be able to store the required 32,2m³ water.

Water is pumped throughout the building by means of solar driven pumps. The need for solar panels was calculated by taking into consideration the volume of water that needs to be pumped daily, as well as lighting, power for computers, cooking and refrigerating in the kitchen, swimming pool pumps and filters.

Month	Required					Total use	Rainfall	Collected			Directly into pool	Nett outside pool	Nett available
	Outside pool	Inside pools	Bathrooms	Kitchen				Roof	Paving	Total collected			
January	2000	500	18000	7500		28000	50	20710	7560	28270	1550	-450	-180
February	2000	500	18000	7500		28000	60	24852	9072	33924	1860	-140	5784
March	2000	500	18000	5600		26100	140	57988	21168	79156	4340	2340	55396
April	2000	500	18000	4500		25000	320	132544	48384	180928	9920	7920	163848
May	2000	500	18000	4500		25000	280	115976	42336	158312	8680	6680	139992
June	2000	500	18000	7500		28000	50	20710	7560	28270	1550	-450	-180
July	2000	500	18000	9000		29500	20	8284	3024	11308	620	-1380	-19572
August	2000	500	18000	7500		28000	30	12426	4536	16962	930	-1070	-12108
September	2000	500	18000	7500		28000	40	16568	6048	22616	1240	-760	-6144
October	2000	500	18000	7500		28000	60	24852	9072	33924	1860	-140	5784
November	2000	500	18000	7500		28000	170	70414	25704	96118	5270	3270	71388
December	2000	500	18000	9300		29800	130	53846	19656	73502	4030	2030	45732

Figure 8.22 Rainwater collection calculations

Peak Sunhours	4,5			
Inverter Efficiency	90%			
Interior Lights	Watt	Quantity	Hours	Watt-hours
Interior 3 W LED bulb	4	100	5	2000
Interior 5 W LED bulb	5			0
				0
Appliances				0
Adjustable laptop charger	36	20	8	5760
				0
Fridges				0
Double door Fridge/Freezer 220L	85	1	24	2040
AC Appliances				
Double door Fridge/Freezer 220L	85	1	24	2267
Oven	300	1	4	1333
Microwave	100	1	2	222
Other	150		6	0
Total				13622,2

System Design

Load	Wh	9027
Required Panel watts	W	2507
Panel size	W	235
# Panels	#	11
Actual panel watts	W	2585
Panel sizing result		OK
Autonomy	Days	1,5
Depth of Discharge (DOD)	%	50%
System Voltage	V	12
Required Storage @ System Voltage	Ah	2257
Battery voltage	V	12
Battery capacity	Ah	230
# Batteries in series	#	1
# Batteries in parallel	#	10
Charger Size	A	269
Actual autonomy	Days	1,5
Battery sizing result		OK

Model	Max Head (m)	Maximum Flow (L/h)	PV Panel Size (W)	Practical Head (m)	Practical Flow (L/h)	Practical
						Daily Flow (L/day)
SP-JS3-0.9-32	32	900	160	20	540	2700
SP-JS3-1.3-5C	50	1300	180	35	750	3750
SP-JS3-1.8-6C	60	1800	240	45	1050	5250
SP-JS3-1.8-8C	80	1800	280	60	1020	5100
SP-JS3-1.8-1C	100	1800	360	80	960	4800
SP-JS3-2.1-1C	100	2100	580	80	1200	6000
SP-JS3-2.1-12	120	2100	700	100	1020	5100

Figure 8.23 Solar panel requirements calculations, copyright of Sunray Power, 2013

_Water systems

Three separate systems are created in the basement level to meet the requirements related to the different water bodies in the buildings, namely:

- a fresh water swimming pool
- a heat exchange system linked to a salination plant for the hot and cold pools
- a steam generator

The overflow from all three systems are directed to the sump, from where it is pumped into the town's storm water system.

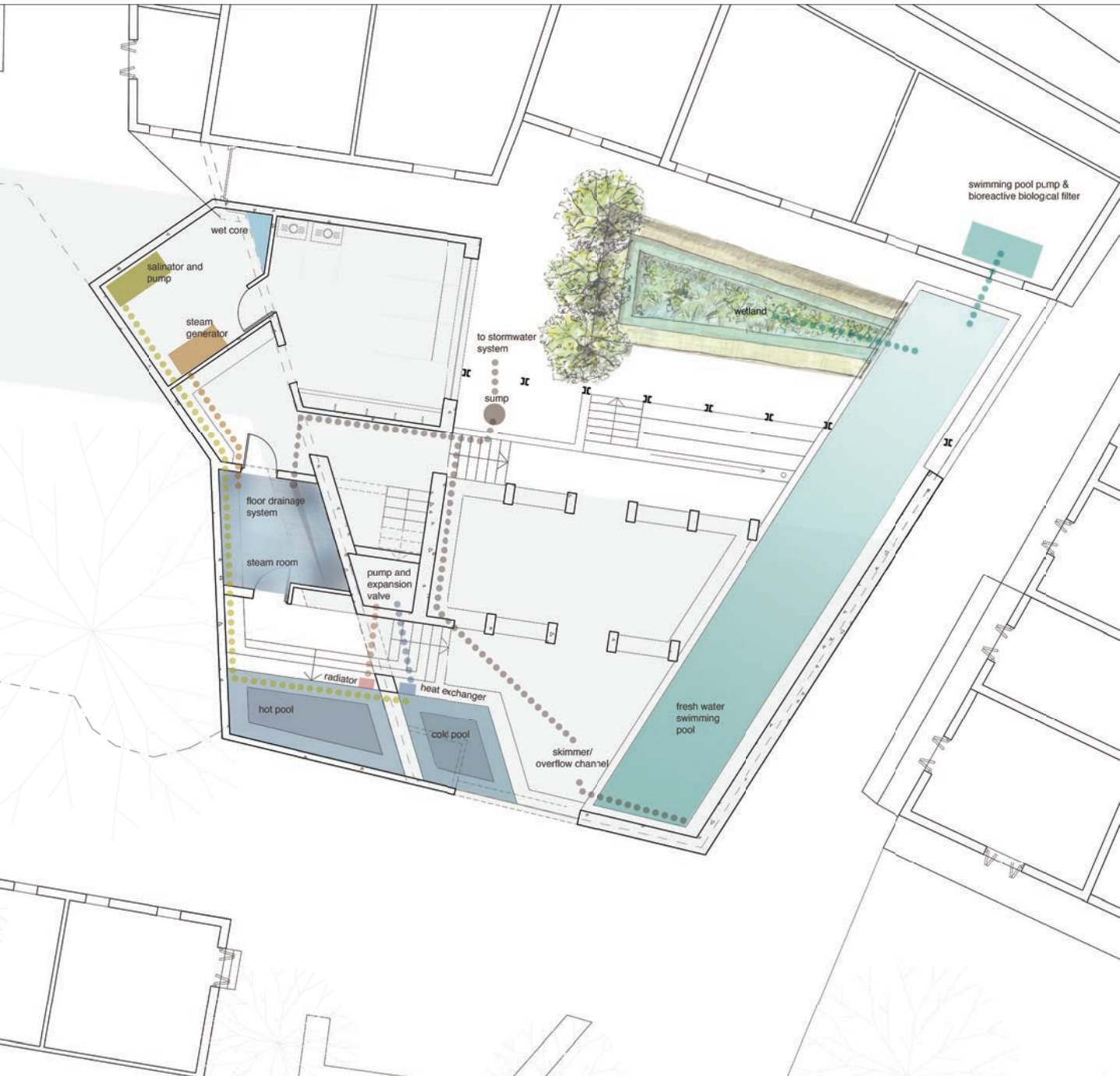


Figure 8.24 water systems

Heat exchange system

The hot and cold pools are linked via a pump room at the bottom of the stair shaft, where a heat exchanger enables the transference of heat energy from the cold pool to the hot pool by means of a refrigerant. This creates a stable, low-energy system. Figure 8.21 illustrates the closed loop that is created.

A salinator and filter is also installed in the service room, preventing algae growth and removing particulate matter.

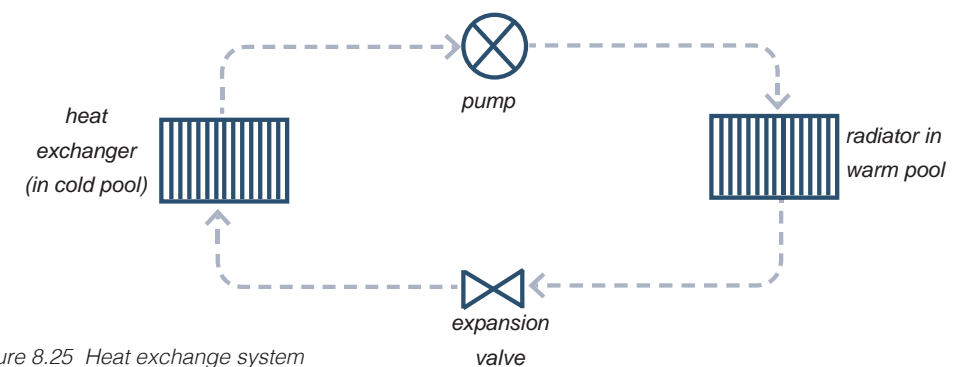


Figure 8.25 Heat exchange system

Natural swimming pool

The natural swimming pool, or fresh water swimming pool, consists of two distinct areas, namely the regeneration zone, or wetland, and the swimming zone. The two are linked in order to allow the wetland in the garden to act as a filtering system. Water continually circulates through the wetland, where beneficial micro-organisms break down waste, that is then absorbed by the roots of selected plant species, leaving no nutrients available for algae or bacteria to develop (Aquadesign, 2014).

At the deep end of the pool, a skimmer or over-flow channel is installed that will remove floating debris like leaves, as well as oily substances like suntan-loion. A bioreactive biological filter is also installed in the pumproom (Figure 8.19) that will remove additional particulate matter of up to 100 micrometers.

Figure 8.26 fresh water swimming pool and wetland



Figure 8.27 skimmer in fresh water pool



Aponogeton distachyos

Adiantum capillus-veneris (Maiden hair fern)



Nelumba nucifera

Nymphoides sp.



Nymphaea sp.

Zantedeschia aethiopia



Ipomoea reptans

Cyperus papyrus



Figure 8.29 Ground floor plan

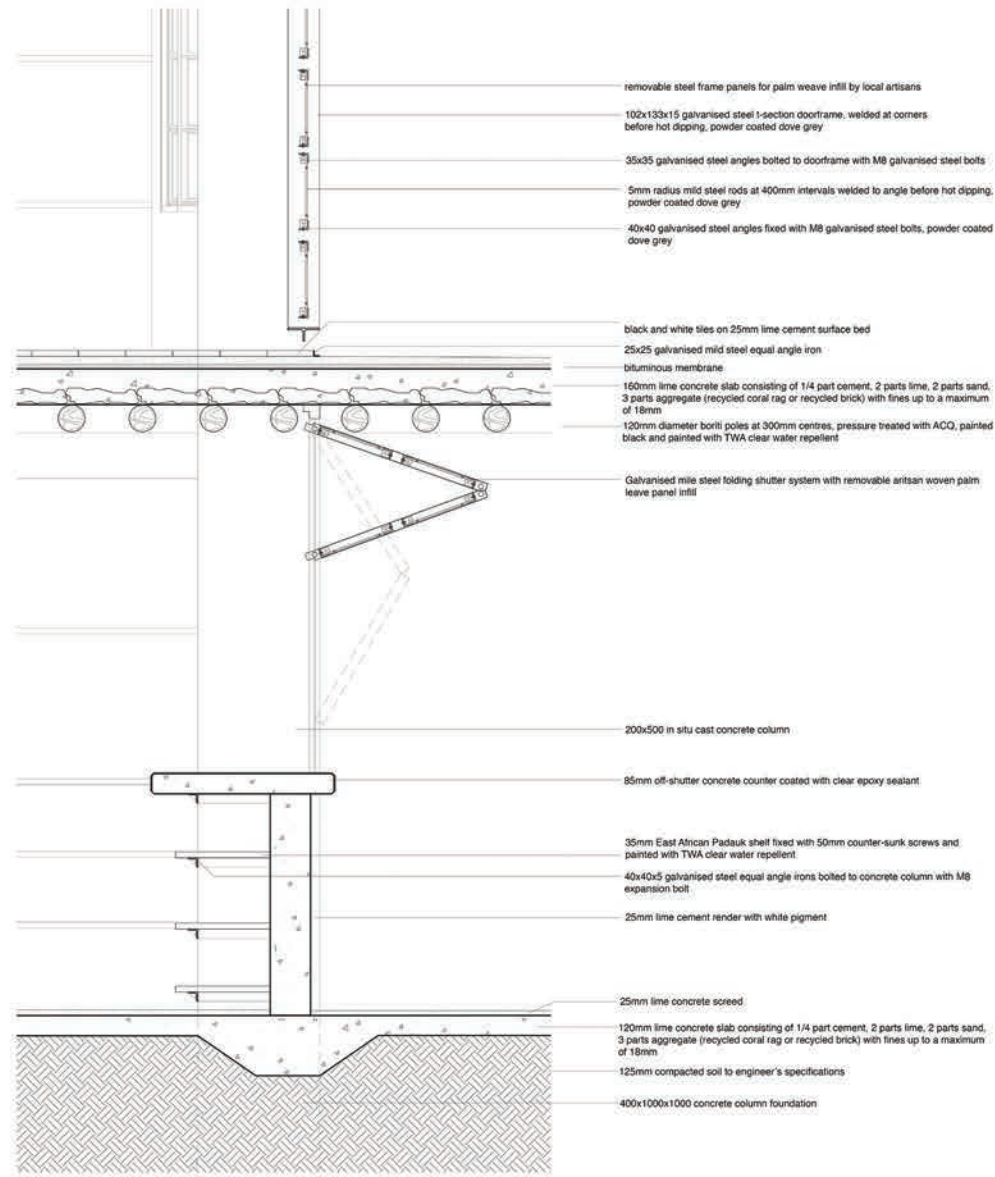


Figure 8.30 First floor plan



Figure 8.31 Second floor plan



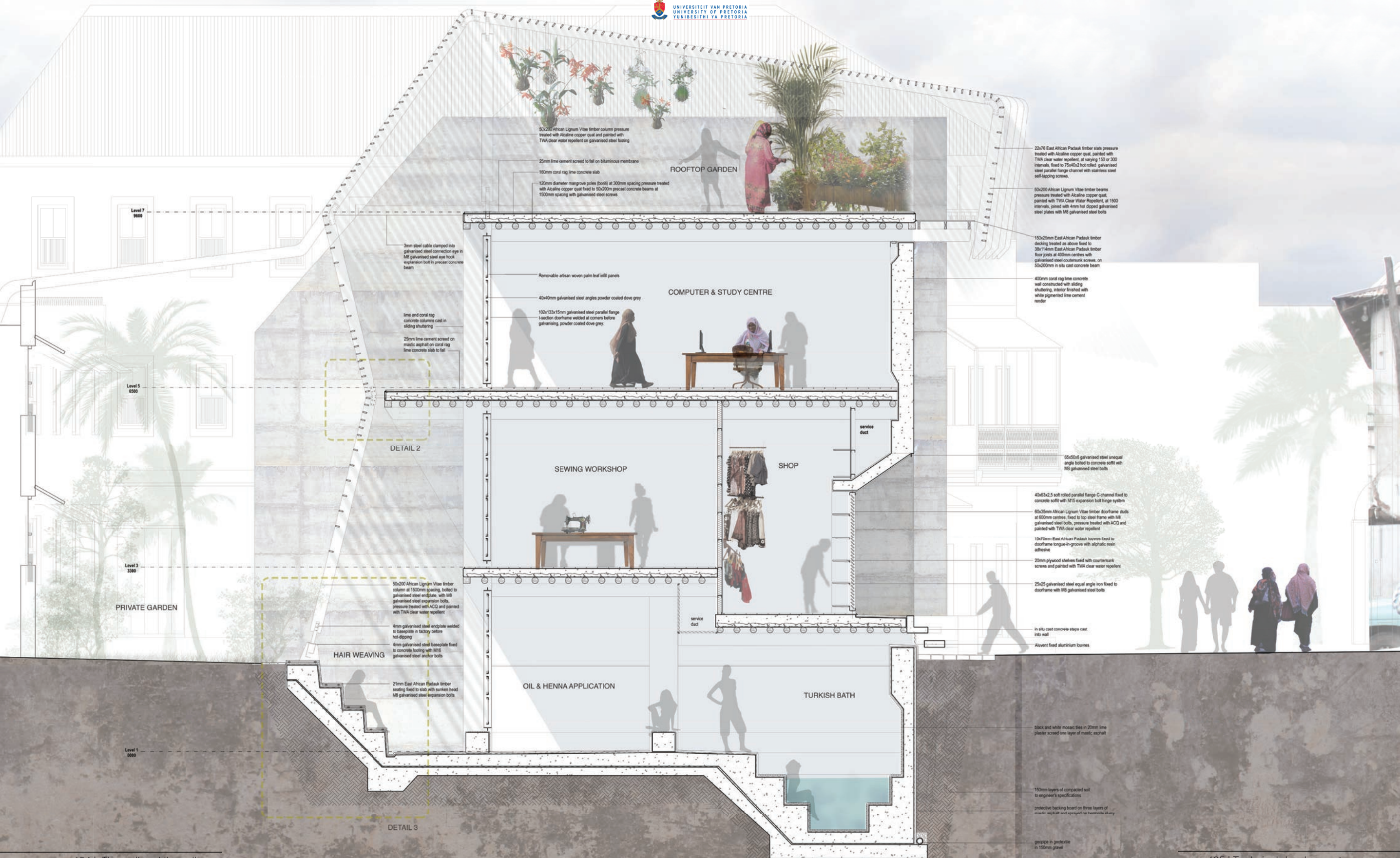


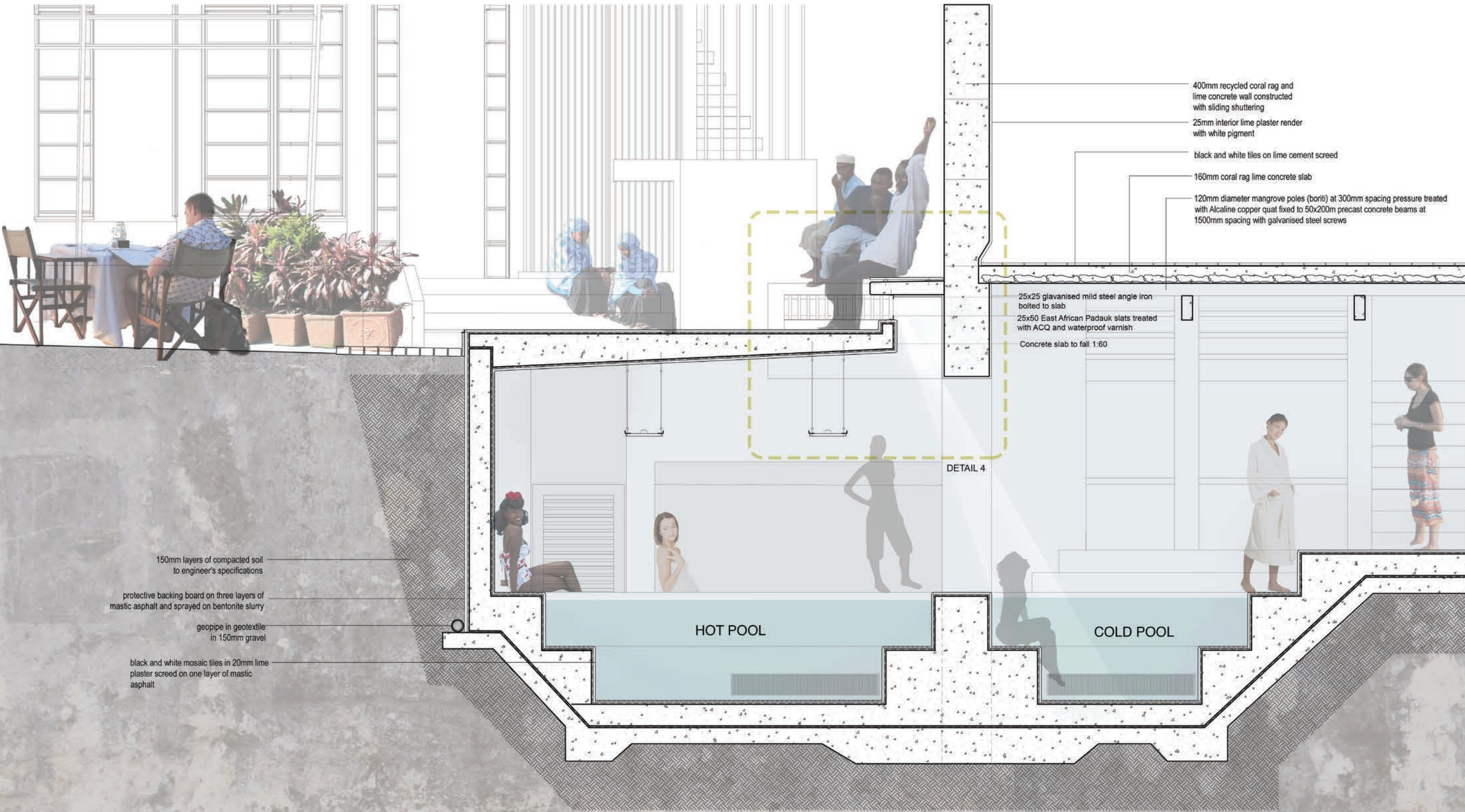
DETAIL 1, SCALE 1:10





COFFEE MENU:
COFFEE 2000
LATTE 3000
ESPRESSO 2500
JUICE 3000
MAKE SANDWICH FROM 1000
FRESH JUICE 1000
TAKE OFF THE DAY 3000
BREAD FROM 6000
SANDWICH FROM 5000
SMILE IS FREE
WELCOME





400mm recycled coral rag and lime concrete wall constructed with sliding shuttering
 25mm interior lime plaster render with white pigment
 black and white tiles on lime cement screed
 160mm coral rag lime concrete slab
 120mm diameter mangrove poles (boriti) at 300mm spacing pressure treated with Alkaline copper quat fixed to 50x200mm precast concrete beams at 1500mm spacing with galvanised steel screws

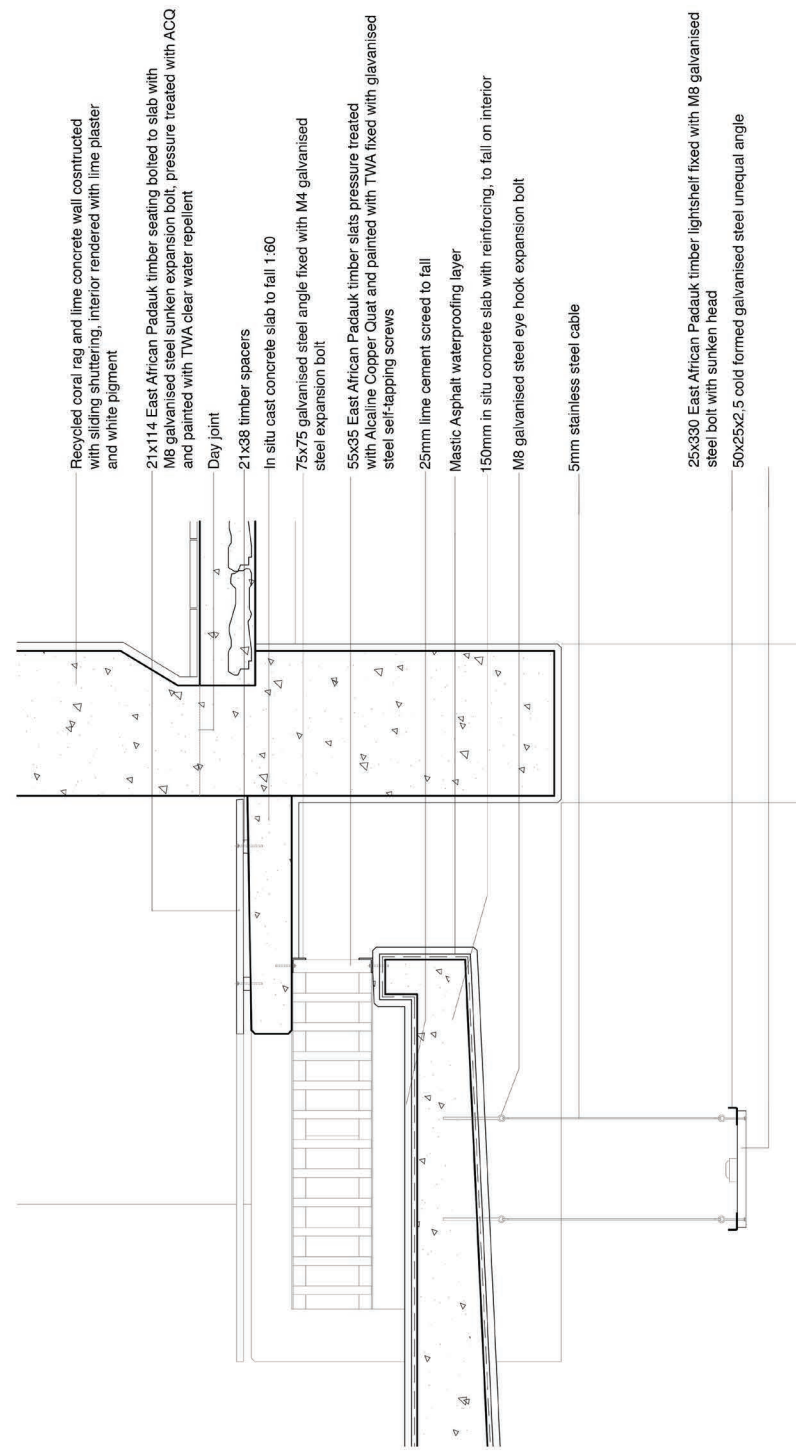
25x25 galvanised mild steel angle iron bolted to slab
 25x50 East African Padauk slats treated with ACQ and waterproof varnish
 Concrete slab to fall 1:60

DETAIL 4

150mm layers of compacted soil to engineer's specifications
 protective backing board on three layers of mastic asphalt and sprayed on bentonite slurry
 geopipe in geotextile in 150mm gravel
 black and white mosaic tiles in 20mm lime plaster screed on one layer of mastic asphalt

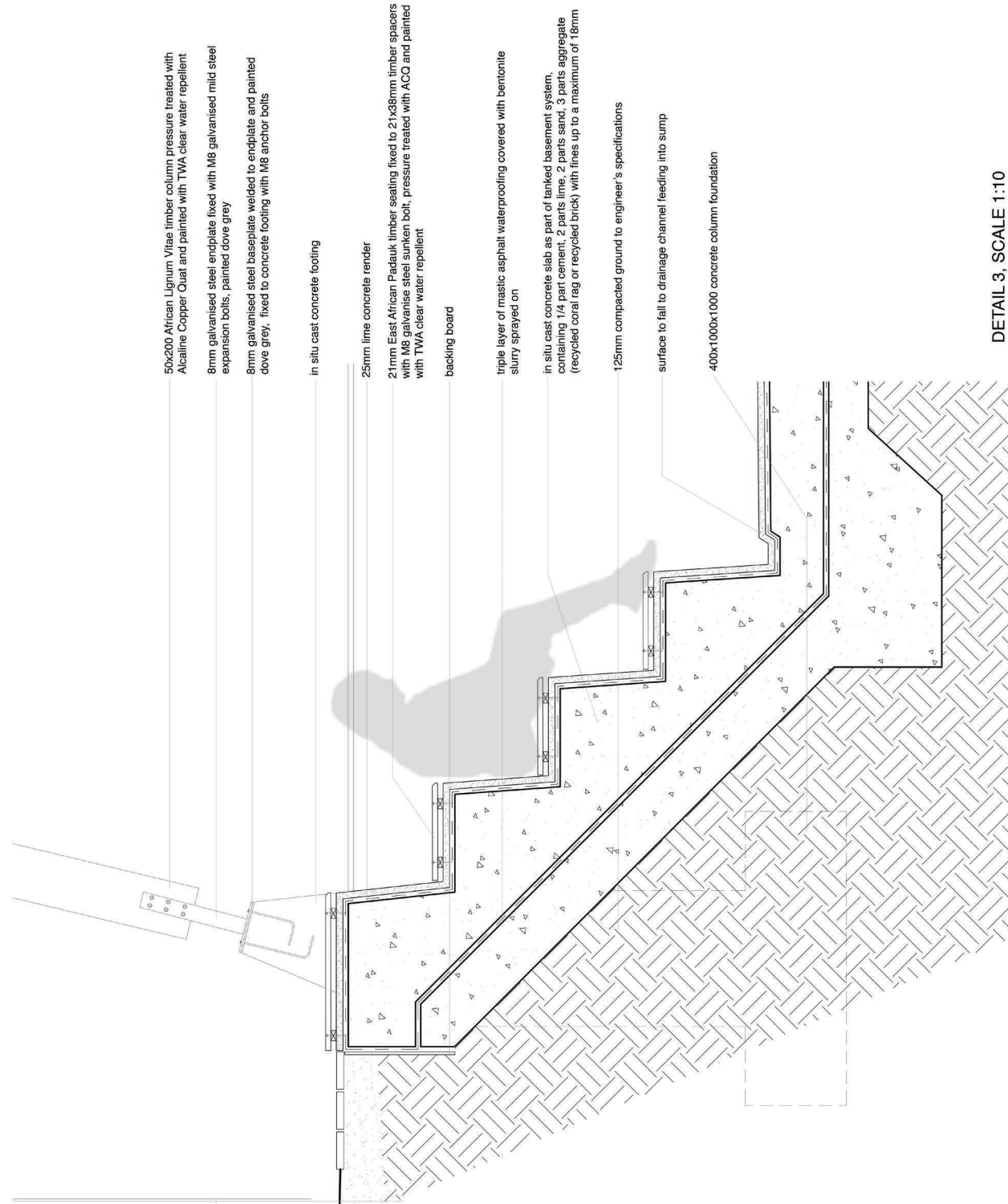
HOT POOL

COLD POOL



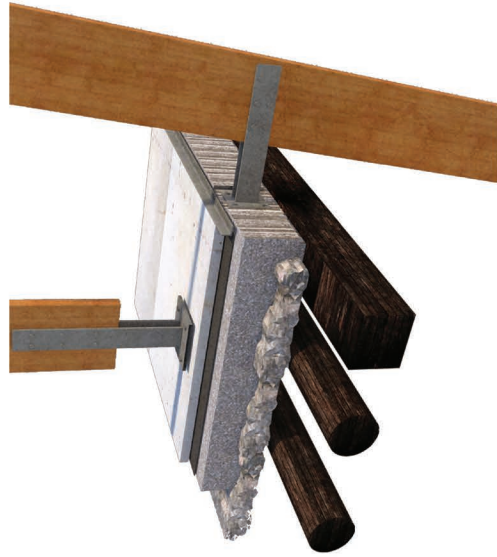
DETAIL 4, SCALE 1:10



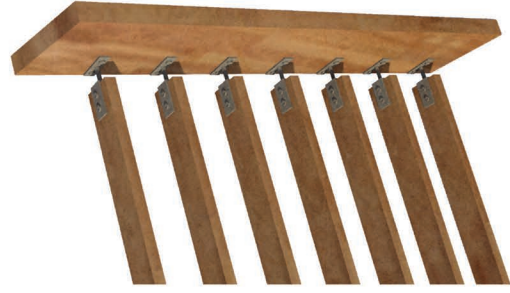


DETAIL 3, SCALE 1:10



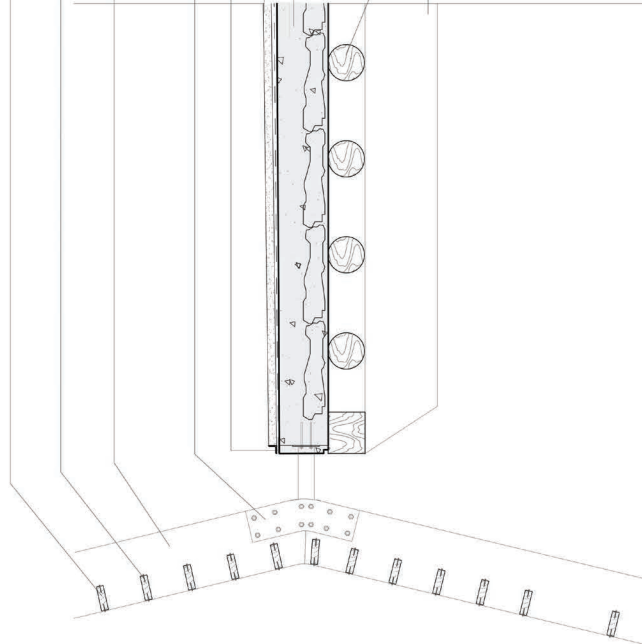


SLAB EDGE DETAIL



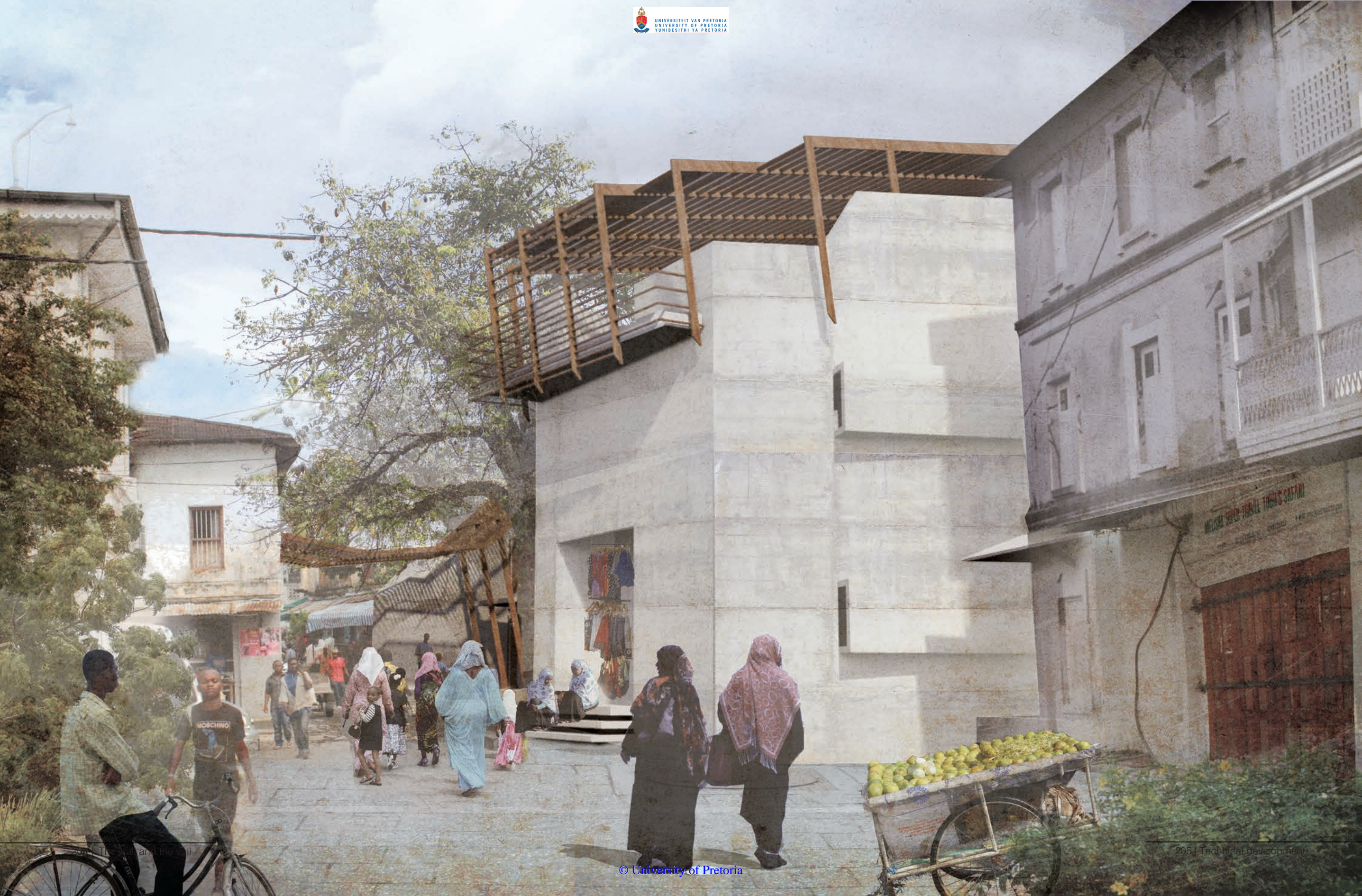
SCREEN CONNECTION DETAIL

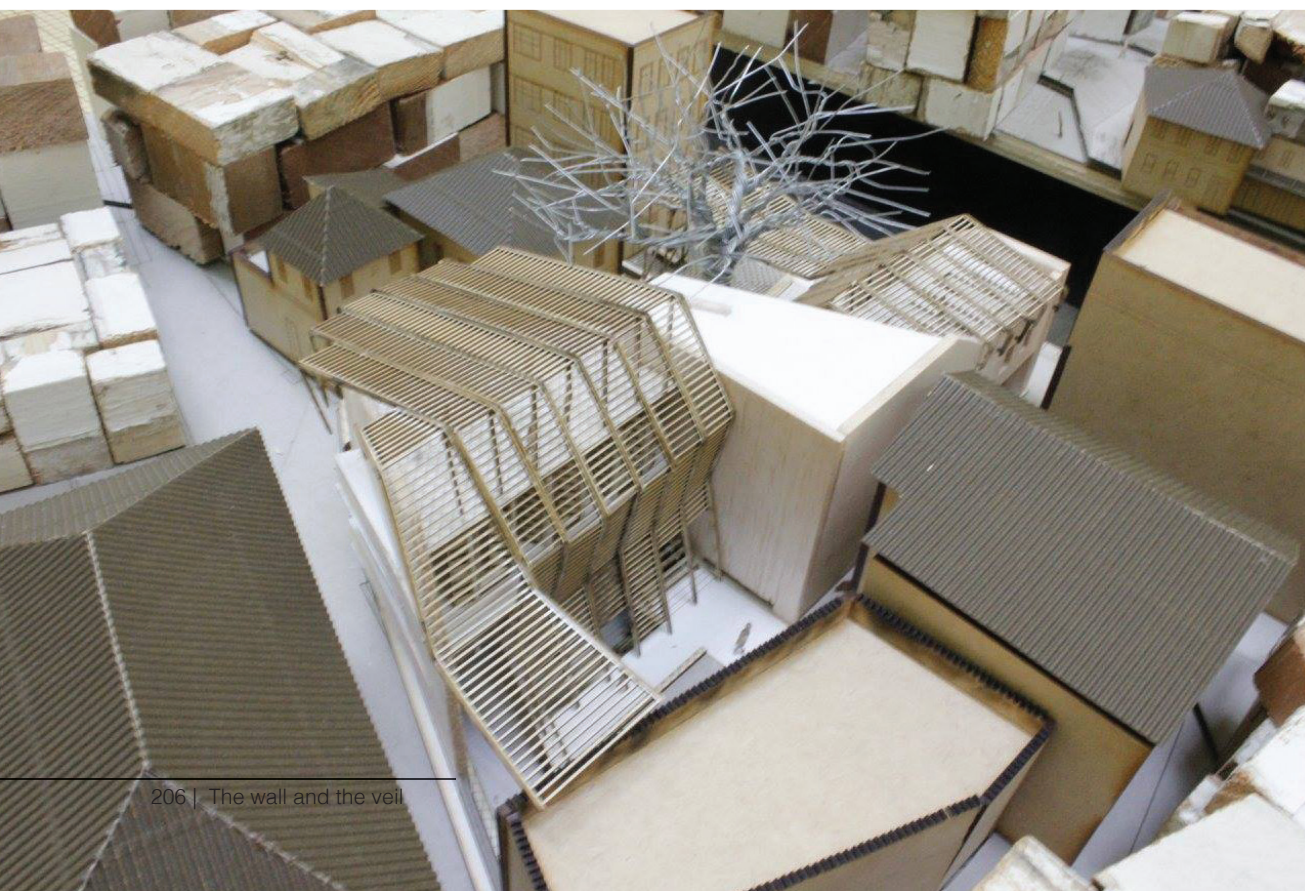
- 22x76 East African Padauk timber slats pressure treated with Alkaline Copper Quat and painted with TWA clear water repellent, at varying 150mm or 300mm intervals
- 70x40x2 hot rolled galvanised mild steel parallel flange channel fixed with stainless steel self-tapping screws
- 50x200 African Lignum Vitae timber beams pressure treated with Alkaline Copper Quat and painted with TWA clear water repellent at 1500mm intervals
- 4mm galvanised mild steel plates fixed with M8 galvanised steel bolts, powder coated dove grey
- 25x25 galvanised mild steel equal angle iron
- 20mm lime concrete screed to fall on mastic asphalt waterproofing layer
- 160mm recycled coral rag and lime concrete slab, edge shuttered with rough timber and forming a 25mm deep ingress for attachment of steel plates, shadowline chased out after removal of shuttering
- 120mm diameter *boriri* mangrove poles pressure treated with ACQ, painted black and painted with TWA clear water repellent, at 300mm centers
- 50x200 in situ cast concrete beam at 1500 centers



DETAIL 2, SCALE 1:10









Conclusion

In reflecting over the course of this project, the complexity of the subject matter reveals itself. In program and in realisation, the solution may appear simple, however the richness of the cultural heritage that surrounds the project and the risk of missing the nuances of a culture so complex and so far removed from one's own, leaves one in awe.

The original theoretical intent was to align the project with the internal momentum of change within Stone Town, instead of with my own convictions regarding gender roles. This was an incredibly enriching experience, and especially gratifying was finding Sainsbury's (2012) article on style and the veil in Stone Town, while preparing the final draft of this document. As a Westerner who has lived in Stone Town for many years, Sainsbury offers a unique glance into Stone Town culture, and confirms my own observations namely that women place high value on traditions and that the change they are bringing about looks different to what the western mind would like to predict. "Some Swahili now want to challenge the status quo here. However, they want to challenge it in their own way and in their own style. Beauty always being in the eye of the beholder." (Sainsbury, 2012)

From an architectural perspective, the project aimed to situate itself within the golden mean where heritage conservation, development, Stone Town culture and good design would

meet. Stone Town's built heritage provides a treasure chest of architectural references that may be analysed, interpreted and responded to, and although this project merely scratched the surface of what such a study could become, it is a good illustration of the potential of contemporary design to sit harmoniously in its setting. Even though the architectural expression may seem cautious or even conservative when compared to similar projects in other areas of the world, it is unlike anything that has been built in Stone Town, and it may possibly be met with some resistance by the local populace, who favours falsification of the traditional. This is, however, part of the didactic quality of the building, as it aims to create a precedent for contemporary design in Stone Town. The use of traditional building techniques and materials in the construction is an extension of this idea, and aims to revive the use of materials that are local, freely available, climatically sensible and contextually appropriate.

I believe that women's role in Stone Town will still undergo many changes in the years to come, and that this building will be able to adapt and accommodate their changing needs. I hope that this design will encourage them in their endeavours. What I have learned from working in Stone Town stretches beyond the objectives of the M.Arch degree. Stone Town will always be a part of me.

Asante sana.
(Thank you)

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Addendum A

To bui-bui or not to bui-bui

Jaki Sainsbury

I had an interesting conversation with my shoga (girlfriend) yesterday. Apparently the ubiquitous bui bui (black cloak) that covers Swahili women is a bit of a contentious issue with many of the locals who wear it. Shoga is in her early-twenties and quite a fashionista, like many other young Swahili women, who are walking proof that style is not killed by 'conservativeness'. According to her, the bui bui has been transformed from something of a fashion novelty in Zanzibar into a widely-demanded element of feminine modesty on the island. Demanded mostly by male relatives, according to Shoga.

She is not a fan of the black cloak, but feels the strong pressure that is put on young women to wear this cloth. Shoga joked that in the old days, "people here dressed very differently". When I asked her what good Swahili style was, she emphatically drew some invisible lines all over her body to define what was proper and what was slovenly. "The Quran says women should wear hijab, but that's it. Everything else [ok]. I love style! [Respect] style!"

A few points came out about the 'bui bui' trend as we were watching a modelling contest on TV. In trying to understand why a culture of many-coloured-kangas and fabrics would suddenly want to black-out, I pressed her for more info. "Maybe because [of] religion, maybe because we're Muslim- and many tourists now walk without clothes".

I'm usually more defensive of European dress-sense with my Swahili friends, and will be the first to differentiate between

beach 'swim-wear' and 'underwear'. I've argued my right to be 'Western' here even with my Swahili husband. I don't cover my head up except for the odd special occasion. But this morning I got a revealing picture of what the locals fear is destroying their cultural modesty; a woman walking through the pouring rain in town, with a rain jacket on top and underwear barely covering her bottom half.

Why she bothered with a jacket I don't know. It was a spectacle, but she was oblivious, because the Swahili are professionals at keeping their poker faces on. I know I sound like a prude. But once you live on the island for long enough, your senses become very alerted to things like bare bum cheeks wiggling around in high-traffic urban areas. (I once caught a local man drawing water from a well stark-naked, but as the old woman next to me explained 'he is not really ok, mentally'. His bum was nothing new to the villagers. They just avoid the well when he goes there). He is left alone, just as this girl was today. That kindness is part of Swahili culture.

There's argument all over the West about the way Muslims should dress in those societies. Many Westerners fear their culture is going to be changed by the presence of hijabs and burqas in their public places. And I'll admit it, I'm still surprised when I see ladies wearing burqas in my own country (Australia) even though many of my neighbours in Zanzibar wear them everyday. It's almost like somebody rearranging the furniture in your house. Somethings out of context. Someone's changing your arrangement.

For many reasons, there's been a long tradition of modesty here in Zanzibar. Women and men are expected to present

themselves with pride and aibu (shame). That might seem archaic or even outrageous to some; just some silly religiosity or old fashioned-ness that many people in 'liberal' societies cannot fathom. I will just sum it up as a penchant for gentility. In a cosmopolitan place, where you rub shoulders with all religions and ethnicities, less-is-more. Swahili culture is complex and subtle; if you don't pay attention you'll miss something. Probably many Swahili miss the fluctuation within Western culture (because we're at the beach here in Zanzibar, and tourists feel much more casual). We're not in bikinis all the time. If they took a look at a mzungu going for a corporate job interview, maybe they would get a better idea of Western modesty. But as Shoga mentioned, some Swahili now want to challenge the status quo here. However, they want to challenge it in their own way and in their own style. Beauty always being in the eye of the beholder.

For tourists, modesty doesn't mean covering yourself in a tent. It just means blending in, in much the same way you would wear neutral colours on a bush safari. Whether wearing a bikini or a burqini, just remember your surroundings. Bare-assed tourists give all travellers a bad name here in Zanzibar. There's very much an appreciation for guests that respect the customs of the island.

As for the bui-bui, Shoga is thinking about whether she will wear it any more. She knows she'll get harassed by some people, but she's willing to take a few jibes from strangers for the sake of her own creative expression. Shoga says she likes dressing up "with respect," cheekily adding that "I'm not an old woman yet. The more women that start taking [bui bui] off, the less anyone will notice it any more". Her fashion tip is simple: keep yourself respectful (thus stylish) in Zanzibar.

In Accordance with Regulation 4(e) of General Regulations (G.57) for dissertations and theses, i declare that this thesis, which i hereby submit for the degree Master of Architecture (Professional) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

I further declare that no part of my thesis has already been, or is currently being, submitted for any such degree, diploma or other qualification.

I further declare that this thesis is substantially my own work. Where reference is made to the work of others, the extent to which that work has been used is indicated and fully acknowledged in the text and list of references.

Mia Verster
October 2014