

ME[A]TING THE BEEF BAR

A butchery, meat market and informal restaurant as catalyst for socio-economic opportunity and permanence.

The dissertation investigates how architecture can strengthen Marabastad's urban fabric and encourage permanence through the critical observation of the underlying formality within informal networks.

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ME[A]TING THE BEEF BAR

A TYPOLOGY FOR INFORMAL SOCIO-ECONOMIC PUBLIC SPACE

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Submitted in fulfillment of part of the requirements for the degree MArch(Prof)

Department of Architecture

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FOR MY PARENTS MIKE & CLOTILDE

*Thank you for your unwavering faith in me and
your endless love*

THANKS

To my brother, Nick, for always knowing exactly how to make me laugh

To Dean for being my pillar of strength and my helping hand

To Dressa for being my little miss sunshine

To Rik & Clauds for your friendship & mentorship

To Cath & Toni for the final touches

ACKNOWLEDGMENTS

To Neels for your commitment, support & reassurance

To Arthur for showing me what it is to be passionate about architecture

PROJECT SUMMARY

Programme: Beef bar, butchery and meat market

Site description: 11th street, formal shops on the west of 11th street and informal vendors on a fenced off site east of 11th street.

Site location: Marabastad, City of Tshwane

Address: 11th street, south of Belle Ombre Metro Station, west of the sub-station.

GPS co-ordinates:

25°44'20.84" S

28°10'42.84" E

Research field: Human settlements & Urbanism

Keywords: Socio-economic activity, Informality, Self-organisation, Resilient & adaptable architecture, Place making, Social cohesion

DECLARATION

In accordance with regulation 4[e] of the General Regulations [G.57] for Dissertations and Theses, I declare that this is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

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

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

*Dominique Peel
2015*

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ABSTRACT

This dissertation will investigate Marabastad's resilience and how its loose urban fabric and informality has enabled it to survive despite the continuous strain placed on it by physical, social, economic and cultural change. Its autocratic domination by transport and retail networks has resulted in its transitory nature. Marabastad's connection between Tshwane city and its surrounding informal settlements has been the reason for its existence and success as a transport node and retail hub.

The increased growth and establishment of informal settlements has resulted in the development of mini economic, social and cultural nodes on the outskirts of the city and this decrease in economic reliance on Marabastad as a transport node has placed strain on its economic viability.

The dissertation will investigate how architecture can be used as a tool in generating catalysts within Marabastad -reducing its transitory nature and encouraging its permanence. Through the spatial and functional observation and investigation of existing networks and the potential of these, architecture can provide variety and permanence within Marabastad, strengthening its urban fabric and enabling it to sustain itself and be resilient in the future.

Marabastad, rather than being a place of temporality, should be a destination and an anchor point, ensuring its relevance and necessity by identifying and activating new opportunities and in doing so strengthening existing networks. Independent from that of the CBD and the surrounding informal settlements.

1 | INTRODUCTION

Marabastad with its colourful, yet complex history, diverse multi-culture, transitory nature, vibrant and erotic economic opportunity and a future which challenges all of these, has a fragile urban fabric within the City of Tshwane that needs to be preserved. This unique urban fabric which reflects heritage of African, Asian and European influences has been resilient to physical, economic, political and social and cultural change. It has also withstood the juxtapositions of growth and demolition; cultural cohesion and physical segregation; social exclusion and economic inclusion, provisional connectedness and physical isolation; possibility and precariousness.

1.1 | BACKGROUND

1.1.1 BRIEF HISTORY

Marabastad developed North West of Pretoria (now The City of Tshwane) as the first location where Black people looking for work in the city, predominantly as labours, could reside. The area was primarily residential until 1892 when the Asiatic Market was established for Indian people to trade, own buildings & express their culture. In 1892 the "coolie location", South of the Asiatic Bazaar was established for the Coloureds.

The function of Marabastad changed after the first forced removals in 1945 when the Black population was moved to surrounding areas of Atteridgeville, Shoshanguve and Mamelodi (Fig. 1.1). The forced removals were to make way for Indian businesses that had been moved out of the city centre by new legislation. Mixed use typology allowed Indians to trade in stores on the street edge and have residential units behind or above their shops. The Indian businesses acted as thresholds between the informal settlements and the city.

In 1957 The Group Areas Act enforced the removal of all residents from Marabastad,

including the Indians. This resulted in Marabastad altering its character once more as it became a business district. The New Group Areas Act (1958) proclaimed the outskirts of Pretoria. Indians were relocated to Laudium and Coloureds to Eersterus. Where there was once cultural diversity and unity in Marabastad, the population was now socially segregated and physically dispersed.

In 1975 the Freeway scheme was developed and most of Marabastad was destroyed. The Freeway was never built and Marabastad became isolated and suffocated; cornered off on the North by the Delpoort sewage plant; on the East by the Steenhovenspruit, on the South by vacant land and the cemetery and on the West by Es'kia Mphahlele Drive (former DF Malan) motorway.

In 1981 with the establishment of the Belle Ombre Station (Fig. 1.2), Marabastad became an important transportation hub for Black migrant workers travelling to the city. Taxi ranks claimed previously occupied vacant land and informal traders lined the streets. A huge number of people moved through Marabastad to get to the city each day and retail and transport networks boomed.



Figure 1.1. Forced removals - 1945 & 1957 (Author 2015)



Figure 1.2. Belle Ombre Metro Station (Author 2015)

1.1.2 THE INFORMAL SECTOR

Marabastad comprises of formal and informal transport and retail activity.

The informal network contributes largely to economic prosperity in South Africa. According to the World Bank, the informal sector is driven by its positive side effect of reducing the number of unemployed people and has the potential to not only create jobs but also increase the output of national economy (Meagher 1995). The informal sector constitutes between 8 – 10 % of South Africa's economy with street trading being one of the biggest contributors to informal employment (Manning 1993; Rogerson 1996). The majority of informal traders, however, cater for low income groups and therefore have limited market potential. In Marabastad 94 % of hawkers are regarded as survivalist enterprise while only 6% fall into the growth enterprise sector (Brandt 2002).

Unemployment, inequality and environmental degradation remain prevalent problems in Marabastad two decades after Apartheid. The South African government has failed in reducing poverty, providing affordable housing, creating employment and reducing inequalities.

The informal sector is closely linked to the formal sector through production, distribution and service provision. Neither the public (government) sector nor the private sector have been able to provide enough jobs for the increasing population growth and as a result the informal sector is increasingly recognised as the alternative option for the growing unemployment.

South Africa has one of the highest unemployment rates in the world. Since January 2011, however, the informal sector has created 184 098 jobs compared to the loss of 26 098 jobs in the formal sector. The informal sector contributes 5% to South Africa's GDP - an average of R157 billion a year. The informal trade sector is the largest sub-sector with over 1 million people relying on it for employment. (Williams 2014)

The growth of the informal sector in South Africa is influenced by:

- an increase in black urbanization
- slow economic growth
- decrease in formal employment opportunities
- high unemployment
- expensive barriers of entry into the formal economy and
- increased demand for low cost goods and services. (Ndabeni 2013)

The most marginalized and vulnerable groups are driven by necessity rather than opportunity and as a result participate in survivalist enterprises as opposed to growth enterprises.

Informality is often disparaged as a defect in the system which poses a threat to the formal economy and which must therefore be suppressed, if not eradicated. This dissertation argues that the informal economy plays a vital role in the resilience of human settlements, especially in the face of poverty, unemployment and inequitable access to social services. (Ferreira 2013)

There is an urgent need to understand the informal sector within its historical, geographical, political and social context. In developed countries the informal sector is seen as a product of advanced capitalism, whereas, in developing countries the informal sector occurs as a necessity in reducing unemployment and poverty as indicated in Fig. 1.3. (Ndabeni 2013).

Efforts to improve the performance of the informal sector therefore needs to be seen for its potential contribution to South Africa's economy. Policy and infrastructural development can lead to the improved performance of the

informal sector, however, often policy focus is on formalising the informal. This approach is often unsuccessful as it fails to recognise that many survivalist economic activities will not succeed within a formal environment. Informal activities should therefore be acknowledged and facilitated for the role they play in increasing employment opportunities and reducing the vulnerability of the poor. (Ndabeni 2013)

The dissertation will explore how architecture can be a tool in creating enabling environments for the development and promotion of the informal sector.

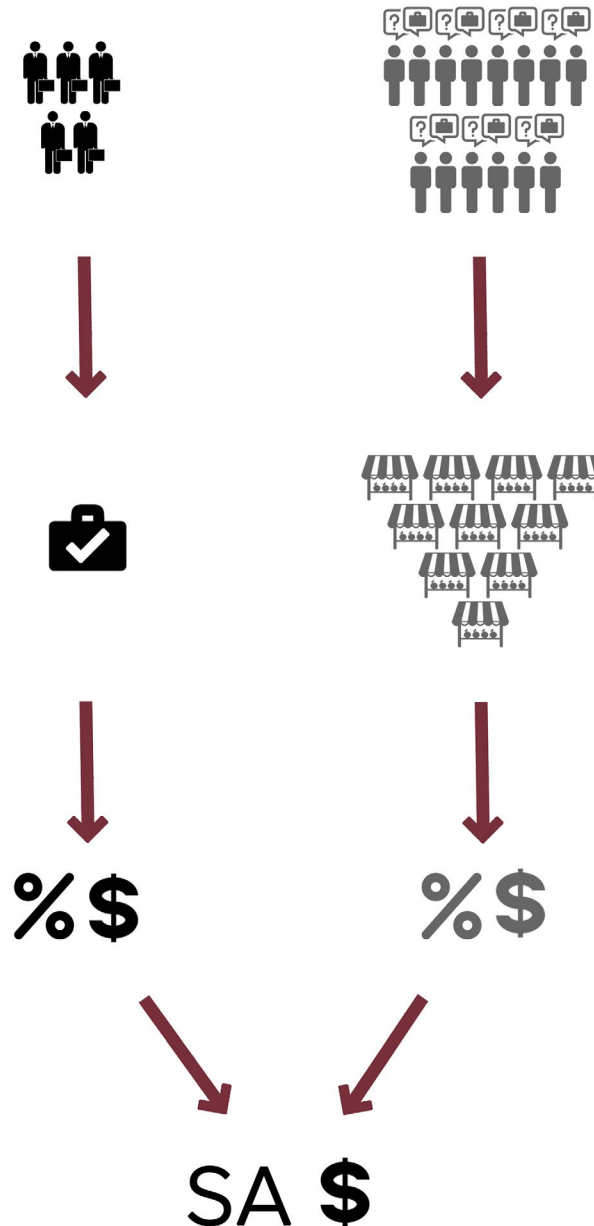


Figure 1.3. Informal sector as viable job creation and economic solution (Author 2015)

1.1.3 THE 'RIGHT' TO THE CITY

The 'right' to the city was established on racial terms that in turn made it clear as to exactly what the city should be and who it should include. Settlement, removal and re-insertion of black people and how they adapted to particular conditions generated an impact on how the city was spatialised (Keith 2005) (Fig. 1.4). Lefebvre indicated that the demographics of settlement patterns, the spatial economies of livelihood and service provision or lack thereof pointed to the methodical construction of segregation as a fundamental urban reality. (Massey & Denton 1993). Colonisation does not refer simply to a specific historical era of territorial expansion but to a process of organising spatial arrangement in terms of core and periphery (Simone 2012:47).

We live in a time of unprecedented change marked by fragments of history and impatient demands to conform to these changes. In post-apartheid, South Africans of all races have been drawn to the city seeking economic opportunity. Exponential population growth is coupled with failure by government to acknowledge the permanence of the Black community in the city by the City Council of Pretoria resulted in the lack of economic opportunity,

maintenance and provision of adequate services within informal settlements and places like Marabastad (Fig. 1.5). Urban areas have not been able to meet their needs of housing and employment within formal infrastructure frameworks (Burdett & Sudjic 2007). This has led to the development and growth of both informal settlements and the informal economic sector (of which the majority of the lower class population rely). Informality, however, is often seen in disparity to formality as it is seen to hinder formal development. The dissertation will explore how connections can be made between the

formal and informal that circumvent the dominant histories, frameworks, and policies that have clearly resulted in Marabastad's haphazard and decaying urban environment as well as its isolation from the city (Simone 2012:47).

A suitable architectural approach can play an important role in the development of such communities which have learnt to survive by being adaptable through an optimistic and opportunistic approach. By identifying opportunities for development informed by the informal, communities can be provided with platforms that enable them to not only survive, but through active participation thrive.

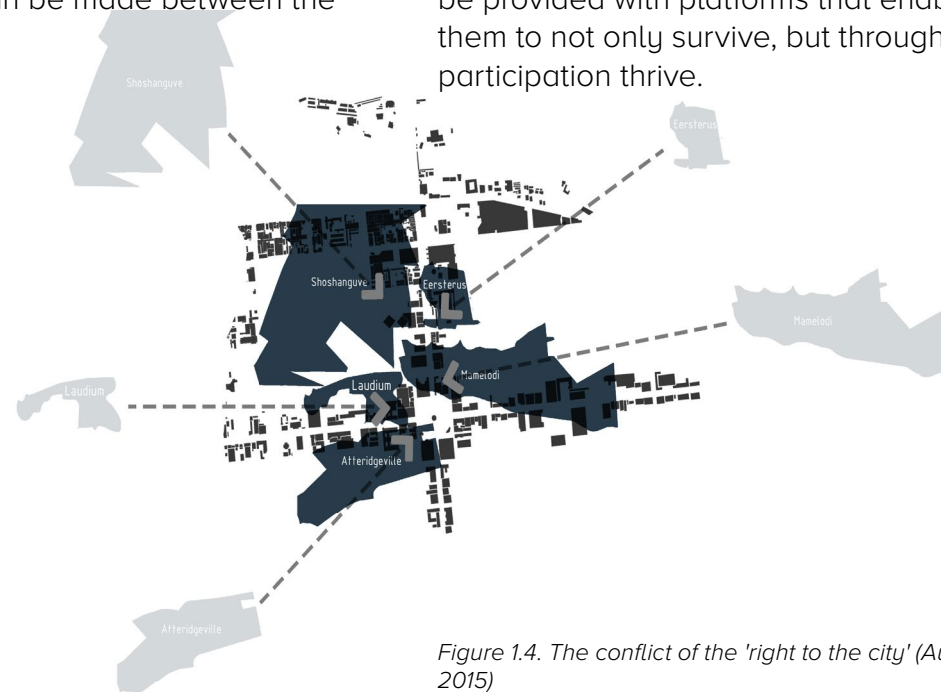


Figure 1.4. The conflict of the 'right to the city' (Author 2015)



Figure 1.5. We won't move (Jurgen Shadeberg)

1.2 | GENERAL ISSUE INTENTION

1.2.1 | GENERAL ISSUE:

Failure to provide opportunity for growth & development of the informal.

Disturbances like informality, environmental degradation and urban poverty impact on all countries to some extent, however Africa is one of the continents most at risk since it is experiencing high rates of urbanisation within the context of pervasive poverty and inequality (Peres & Du Plessis 2013).

Continuous physical, economic, social and political strain on Marabastad has resulted in a resilient community that has survived due to its opportunistic culture and persistent adaptability.

Failure of formal job creation resulted in the determination to make maximum use of the opportunities that were available (Belle Ombre, Fruit & Veg Market to name few). The development of informal trade and transport networks established themselves on the energy of pedestrian movement generated as a result of The Belle Ombre Station in 1981.

Growth and development of the formal sector and its failure to recognize and acknowledge the economic necessity of informality as a survivalist strategy, hindered the opportunities inherent within the informal. Marabastad's urban fabric facilitated by Belle Ombre adapted as best it could to accommodate the temporal and transient nature of the dominating informal trade and transport networks.

The lack of adequate infrastructural support and service provision for existing and potential new informal networks subsequently led to the exploitation of existing conditions. An augmented number of people seeking economic opportunity within Marabastad led to the saturation of informal trade and transport and a consequential decrease in economic opportunity; and the inapt occupation of heritage fabric* and vacant land which has contributed to urban deterioration and decay.

Insufficient economic opportunity in the city and failure to provide affordable housing lead to the rapid growth and development of informal settlements which increased economic independence of informal settlements from the city and consequential

decrease in people moving through Marabastad to the city each day. Marabastad's significance as a transitory and temporary place coupled with its haphazard urban condition not only threatens the degradation of its historical urban fabric and natural environment but also the livelihoods of those who rely on Marabastad for social and economic opportunity.

What will Marabastad's role within this context be when its dominant trade and transport networks (Fig. 1.6) are no longer sufficient to sustain it and its urban condition is unable to facilitate the necessary change?

DOMINATING TRADE & TRANSPORT



Figure 1.6. Dominant transport & trade networks
(Author, Degenaar, Oberholzer 2015)



Figure 1.7. Dominating transport network (Author 2015)



Figure 1.8. Dominating trade network (Author 2015)



Figure 1.9. Urban & environmental decay (Author 2015)

1.2.2 | GENERAL INTENTION

The dissertation will investigate Marabastad's resilience and how its loose urban fabric and informality has enabled it to survive despite the continuous strain placed on it by physical, social, economic and political change.

The intention is to facilitate and encourage the development, growth and prosperity of existing networks (Fig. 1.10) while also encouraging programme diversity by introducing new networks. Promoting diversity will strengthen existing networks and provide a sustainable solution to the lack of 'formal' economic opportunity (Fig. 1.11). Informal networks are opportunistic and adaptable allowing them to remain resilient through their ability to change according to present needs.

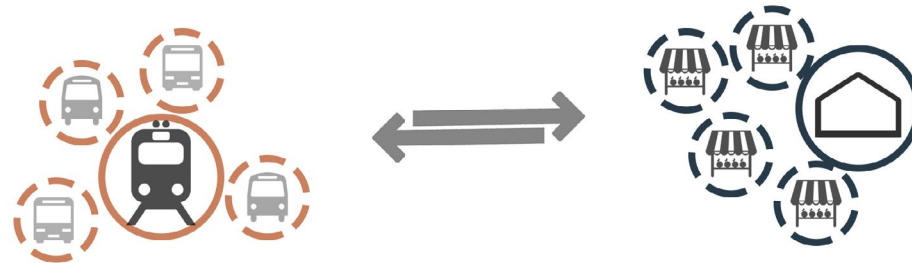


Figure 1.10. Dominant transport and retail networks are vulnerable as they rely on each other for survival

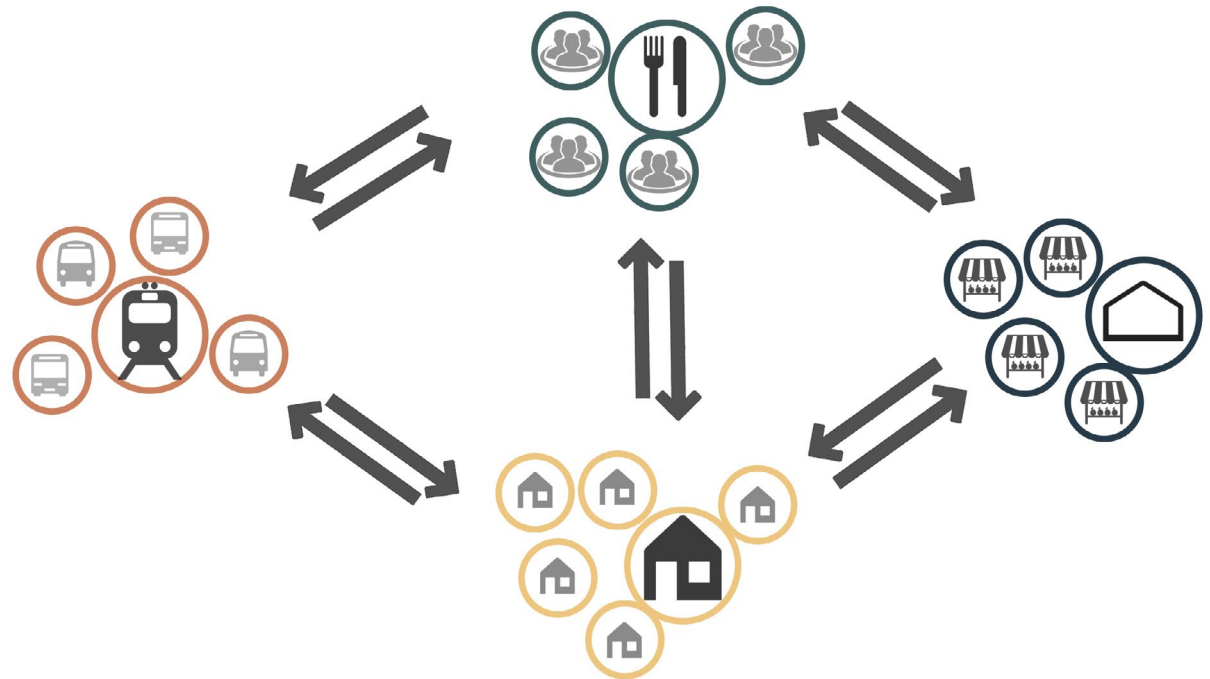


Figure 1.11. Introducing new programmes increases diversity and strengthens existing and new networks (Author 2015)

1.3 | URBAN ISSUE & INTENTION

1.3.1 | URBAN ISSUE

Understanding the dynamics of change and the rate at which change occurs assists to manage or regenerate parts of the urban system within rapidly urbanising South African cities (Peres & du Plessis 2013).

Since the establishment of a democratic South Africa in 1994, the country's major cities have been experiencing an influx of migrants from rural areas and neighbouring African countries, into 'townships' and informal settlements on municipal lands (Soggot & Amupadhi 1997). Within the Apartheid city planning strategy, racial segregation occurred by the deliberate separation of white, coloured and black neighbourhoods usually by geographic features, industrial areas, or large distances (Peres & Du Plessis 2013).

Urban segregation remains a powerful dynamic and there is huge importance in transforming the objectifying and alienating spatial arrangements on the periphery of urban life that racial and cultural encounters produce. To bring black urbanities into

the mainstream of normative urban development, however, is to assume that what the city had once excluded could now be easily included.

Situated on the periphery of the urban core and physically isolated from the city by an industrial buffer zone, Marabastad fosters the migratory labour system between informal settlements and the city each day (Davies 1981). Informal settlements and places like Marabastad played a crucial role in the formation of the apartheid city and embodied the complex process characterised as functional inclusion, spatial separation and political exclusion (Chipkin 1998). Marabastad's urban fringe condition has been born from that of simultaneous inclusion and exclusion - where the city refuses physical integration with Marabastad but remains dependent on it as a buffer zone and transport node between informal settlements. A symbiotic relationship* exists between Marabastad and City where Marabastad has become a transitory place for those entering and exiting the city and therefore Marabastad's informal trade and transport networks benefit economically from the huge number of people moving through it each day (Fig. 1.13). Marabastad's development as a transient and temporary place means



Figure 1.12. Urban segregation defined by core & periphery (Author 2015)



Figure 1.13. Marabastad's dependence on external energies between the city & informal settlements (Author 2015)



Figure 1.14. Growing independence of informal settlements threatens Marabastad's role within the City (Author 2015)



Figure 1.15. Marabastad as destination within the city (Author, 2015)

that it relies on external energy generated by the relationship of informal settlement to the city for survival. Failure to provide infrastructure has led to stagnant socio-economic opportunity and the decay of Marabastad's urban fabric.

The role of informal settlements has changed hugely in the last decade, however. The growth of the city has not provided affordable housing for the lower income groups and therefore informal settlements have been adopted and accepted as the next housing typology (Rustagi 2014). Where informal settlements used to be mere stepping stones to the opportunities of the city, failure of the formal to provide adequate economic opportunity has resulted in the growth and establishment of the informal sector to provide economic stability. An increase in economic opportunity within communities such as Mamelodi, Atteridgeville, Shoshanguve, Laudium and Eersterus has created platforms for socio economic development which resulted in a higher degree of self-sustenance and independence from the city.

The decrease in Marabastad's significance as a transport node and retail hub threatens its dominating networks and

exposes Marabastad's dependency, lack of permanence and lack of diverse programme. As the relationship between informal settlements and the city weakens, Marabastad's relevance as a connection is questioned - its role within the city inevitably needing to change (Fig. 1.14).

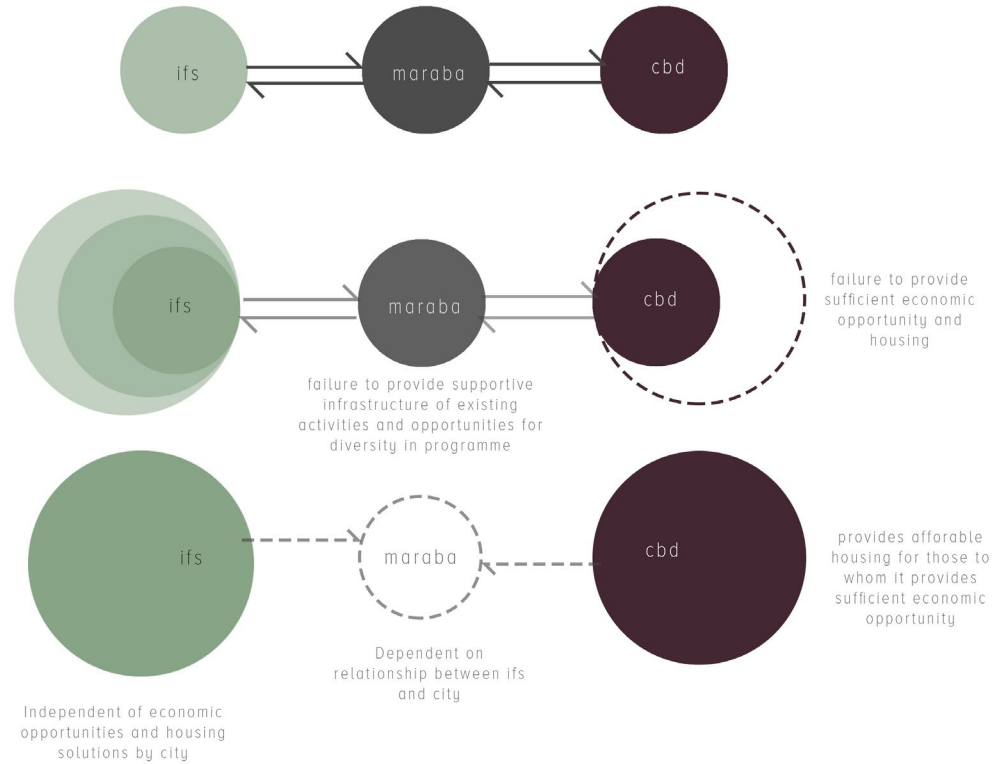
South Africa is a country which has yet to regenerate its cities into integrated environments. South African cities are characterised by complex and rapidly evolving environments within which the ideological legacy of past Apartheid planning still influences the functioning of the city, and where the new political regime has yet to inclusively repair and integrate the gaps left in the city fabric. (Peres & Du Plessis 2013). In its very physicality the city has been largely disjoined and deprived of an overarching institutional logic able of tying its heterogeneous members together in some conviction of common belonging or reference (Simone 2012:33).

Marabastad's fine urban grain has allowed it to be extremely susceptible to change which has enabled its resilience to physical, economic, social and cultural change in the past, however, unless Marabastad anticipates its future role within its context and accommodates appropriately for this,

the predicted growth and densification of the city will threaten the loss of Marabastad's tangible and intangible memory and history.

Rather than being a place of transition and temporality, Marabastad needs to be a destination and an anchor point within its context. Strengthening the interdependency between Marabastad and informal settlements and the city will ensure its relevance and necessity.

SUMMARY OF URBAN ISSUE



Urban intention

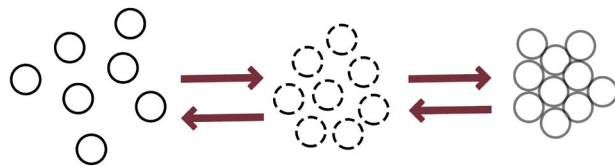
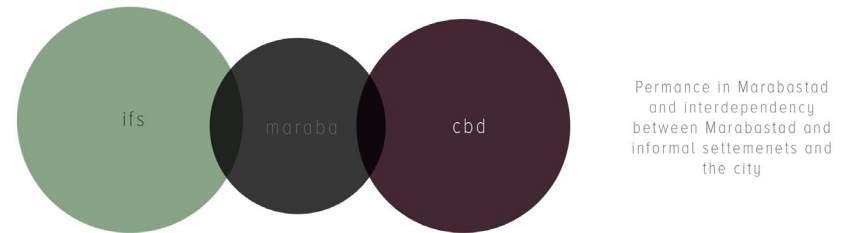


Figure 1.16. Urban issue: Transiency & temporality (Author, 2015)

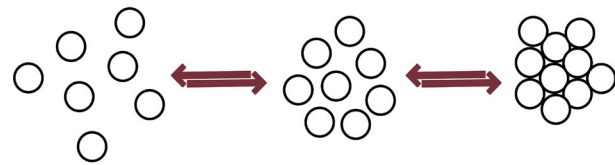


Figure 1.17. Urban intention: Permanence & interdependency (Author, 2015)

Figure 1.18. Urban issue summary (Author, 2105)

1.3.2 | URBAN INTENTION

The precinct still holds opportunity in its heritage, location and its nature as a trade and transport hub.

The urban intention is to provide the necessary infrastructure that will enable existing informal networks to thrive as well as to create new platforms of engagements that will encourage diversity through the introduction of new programmes. This will promote Marabastad as a destination opposed to a transient place (Fig. 1.15). Strengthening its urban fabric through infrastructural support will uplift the urban condition and create a greater sense of permanence - endorsing Marabastad's contribution to its larger context.

Creating a sense of place within Marabastad will promote expression of identity and culture and expose it as a socio-economic and historically significant destination within the City.

Resolving urban issues of inaccessibility, limited infrastructure and urban decay within Marabastad will aid in creating inclusive environments and reduce the growing inequalities of access to economic and social opportunities.

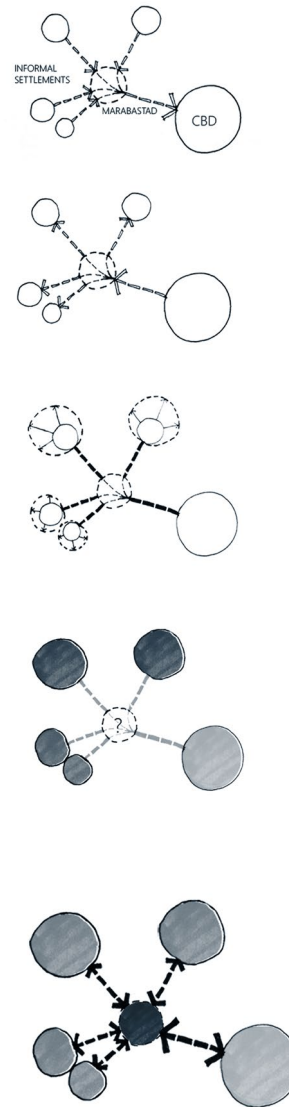


Figure 1.19. Marabastad as destination within the City
(Author 2015)

1.4 | ARCHITECTURAL ISSUE & INTENTION

1.4.1 | ARCHITECTURAL ISSUE:

Failure of formal development to acknowledge informality as an important development informant.

There is hostility by the formal towards informal growth and development in developing cities. Formal development often disregards the informal, their needs and the potential for their co-existence by:

1. Competing with the informal on unfair playing grounds [failure to recognise the potential of the informal to grow and establish itself and the possibility for co-existence] (Fig. 1.21).
2. Inhibiting the adaptability and opportunistic approach necessary for the survival of the informal resulting in the abandonment or appropriation of the formal intervention [failure to identify the real need and facilitate it] (Fig. 1.22).
3. Having no regard for the sense of place, eradicates the existing energy, identity and character of a place [failure to respond appropriately to the informal environment].

4. Eliminating the informal completely by replacing it with a new programme [Failure to recognise the importance and necessity of the informal networks within the economy].

As discussed in the introduction the informal sector occurs as a necessity in connecting urban areas to rural areas; increasing employment and improving the livelihoods of the impoverished - who rely on it. In the context of urbanisation, poverty and high unemployment, understanding how the informal sector works provides insight into how the city operates and identifies opportunities for development.

The dissertation will address how an architectural design intervention can be the tool in facilitating the informal -without destroying it (Fig. 1.23). The appropriate choice of site, programme and architectural language will be key in investigating an architectural solution which improves Marabastad socio- economic opportunities by enabling the development and growth of existing and new informal networks; and increasing its dependence through permanence.

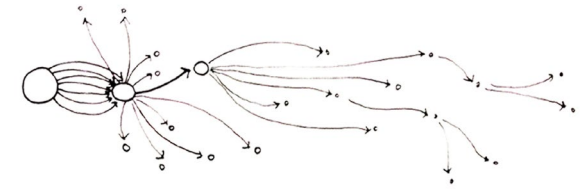


Figure 1.20. Successful informal distribution networks (Author 2015)

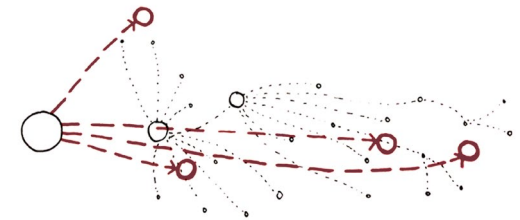


Figure 1.21. Elimination of informal networks by formality (Author 2015)

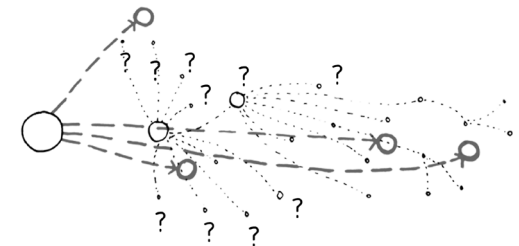


Figure 1.22. Threat to relevance of informal networks (Author, 2015)

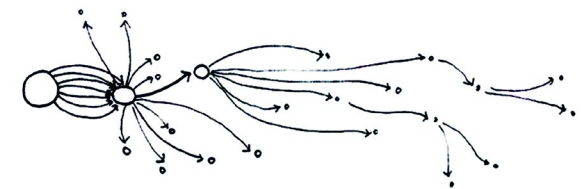


Figure 1.23. Provision of catalytic platforms which strengthen informal networks (Author 2015)

1.4.2 | ARCHITECTURAL INTENTION

The architectural intention is to critically observe informal systems and to provide a design intervention that enables these environments to remain dynamic, adaptable and maintain a high degree of self-organisation and resilience (Meadows 2008:81)

ADAPTIVE CYCLE

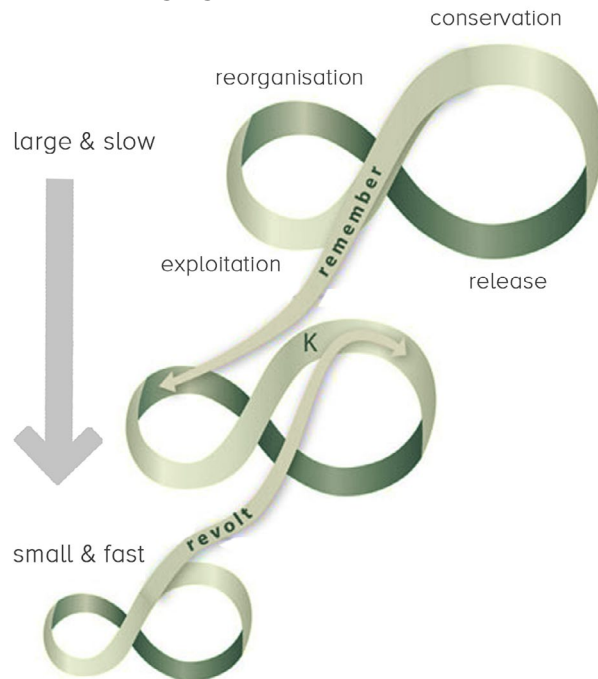


Figure 1.24. Adaptive cycle (Loughborough University)

The architecture will aim to:

1. ENABLE THE CO-EXISTENCE OF THE FORMAL AND INFORMAL

Tension between formal and informal have developed where informal seeks to adapt while formal remains static. The informal should not be romanticised - it remains a necessity and not a choice - however, by discovering patterns in informal activities and understanding what works and why, successful space can be created through architectural intervention that facilitates the informal allowing for establishment and growth. The informal can also demonstrate vibrancy, diversity and creativity to the formal, all of which are characteristic of Marabastad. (Harber 2000: 149). Spire Kostof (1999: 13) stated that "cities, once designed, set about instantly to adapt themselves to the rituals of everyday life". Marabastad functions as a system of many interconnected and delicate formal and informal networks. The intention of the dissertation is to investigate the relationship and potential cohesion between the formal and informal. Defining the scope of architectural intervention where the formal supports the informal rather than impedes or eliminates it, is the biggest architectural challenge. A sensitive architectural approach needs to be taken.

2. THRIVE THROUGH OPPORTUNISTIC ARCHITECTURE

There is a need for an opportunistic approach which adopts indigenous strategies while taking into account existing circumstances (Rustagi 2014). Some of those are as follows:

- Marabastad's urban fabric has adapted to support its temporary and transient trade and transport network, the future relevance of which are both threatened. Observation of existing programmes and the identification of potential new programmes is vital in identifying suitable opportunities for architectural intervention. Infrastructural support as well as diversity of programme will strengthen Marabastad's urban fabric, encouraging a transition from temporality to permanence
- The adaptability of informality is what has allowed it to be resilient by allowing it to adopt an opportunistic approach. An architecture which allows for an opportunistic approach enables greater resilience as it constantly emerges, moving from need to need, opportunity to opportunity, in a series of adaptations allowing a place to evolve into what it needs to be and therefore maintaining its relevance and ensuring survival (Mills 2012)

- The architectural intervention needs to allow for adaptability and flexibility of structure, use of space and programme.

3. FACILITATING INTERDEPENDENCY

Architecture can be a catalytic tool in enabling Marabastad's urban regeneration and permanence. Service provision and implementation of infrastructure will facilitate stability of both formal and informal activities, strengthening its urban fabric and encouraging the upgrade of surrounding areas. The introduction of new programmes will provide multi-functionality and diversity assisting in Marabastad's independence from and relevance to the city and informal settlements ensuring an interdependent relationship.

Marabastad requires an appropriate architectural response that suitably mediates between Marabastad's small scale, fine grain heritage fabric and the City's large scale, large grain urban fabric. A unique urban condition will require a new architectural typology/response that will facilitate the successful physical integration when Marabastad's fine urban grain merges with the city's large urban grain.

ARCHITECTURAL INTENTION

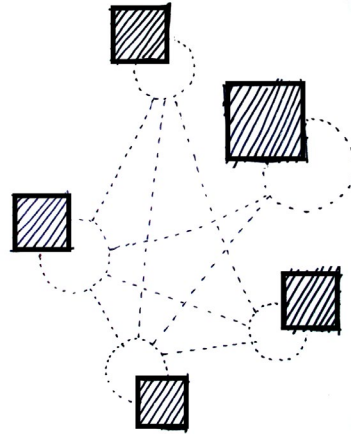


Figure 1.25. Informality attaches to & reappropriates the formal, 'hindering' development (Author, 2015)

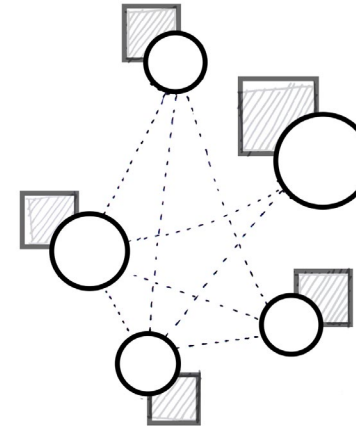


Figure 1.26. Provide platforms that allow the co-existence of formal & informal (Author, 2015)

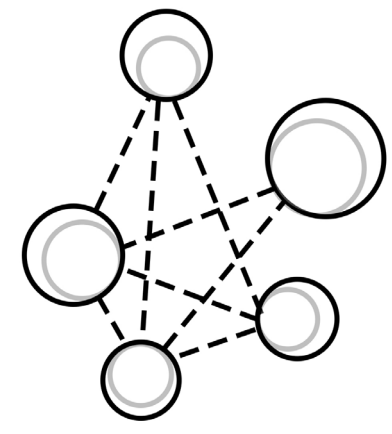


Figure 1.27. Establishment & growth of informal networks (Author, 2015)

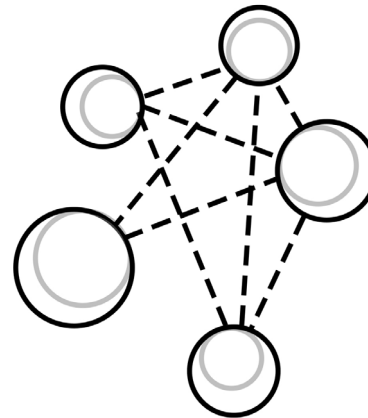


Figure 1.28. Adaptability and self-organisation of informality (Author, 2015)

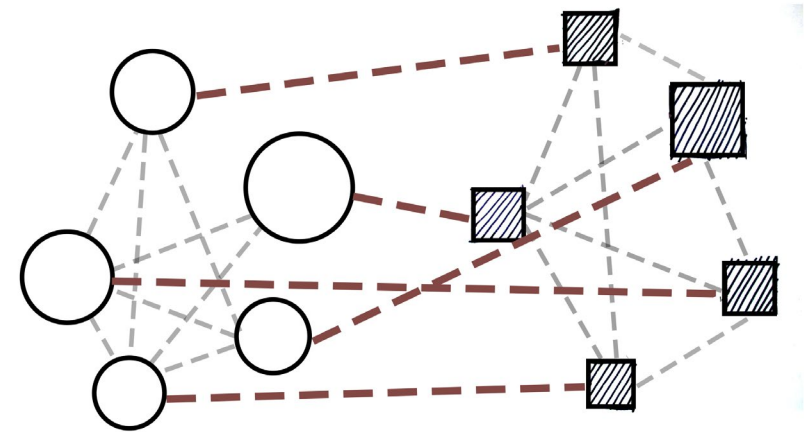


Figure 1.29. Interdependency between formal & informal networks (Author, 2015)

GENERAL, URBAN & ARCHITECTURAL ISSUE

RESILIENT COMMUNITY SURVIVALIST OPPORTUNISM

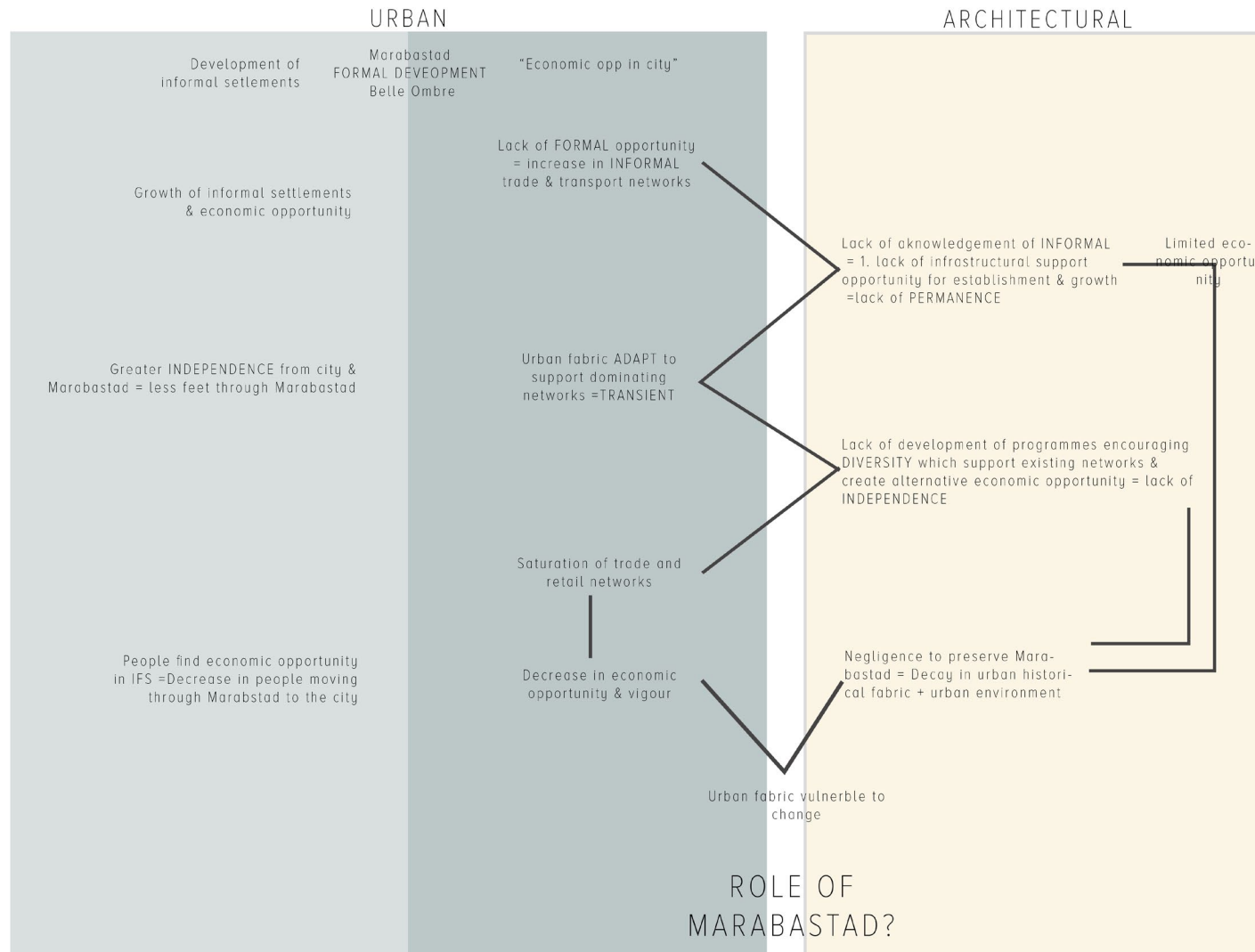


Figure 1.30. General, urban & architectural issue (Author 2015)

CONCLUSION

There is a wide range of discrepant imaginaries about the built environment, how it operates, what it looks like, what it should look like, what takes place within it and what should take place within it. These imaginaries are not coherent, well defined maps that inform how the city is to be navigated and used and this 'illegibility' is what isolates Marabastad. (Simone 2012: 46)

New forms of urbanity, made possible through architectural intervention can be the tool that increases opportunity, legibility and integration, reducing the growing inequalities of access to economic and social opportunities.

GENERAL, URBAN & ARCHITECTURAL ISSUES & INTENTIONS

	ISSUE	INTENTION
GENERAL	Marabastad's urban fabric has developed to support dominating transport and retail networks. Lack of diversity has hindered opportunity, establishment and growth of existing activities as well as the potential for new activities and networks.	Increase programme diversity by providing platforms of opportunity for both existing and new programmes.
URBAN	Marabastad's dependence on external energy for survival has resulted in its transient and temporal nature. Marabastad's ability to establish itself and create a sense of permanence threatens its urban fabric and the livelihoods of those who rely on it for economic opportunity.	Encourage interdependency between Marabastad, the city and informal settlement by promoting it as a destination within its context. Provide catalytic platforms that facilitate the upgrade of the urban environment, allow for prosperity and growth, increase diversity, promote permanence and encourage expression of identity & culture.
ARCHITECTURAL	Failure of formal development to acknowledge informality as a development informant. Formal development negates and eliminates the adaptability and opportunistic approach necessary for the informal to thrive.	Cohesion of formal and informal networks. Development of the 'formal' which promotes informal networks as a solution to economic deficiency. Facilitate the development, growth and prosperity of informal networks as a solution to the lack of 'formal' economic opportunity.

Figure 1.31. Table of issues & intentions (Author 2015)

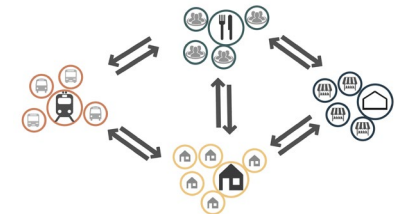


Figure 1.32. General intention

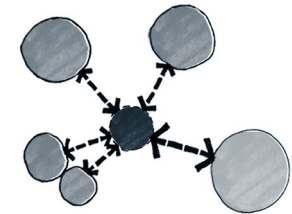


Figure 1.33. Urban intention

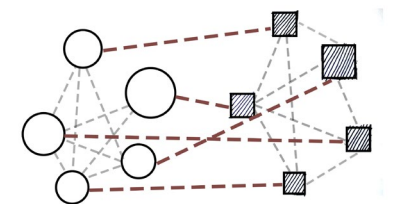


Figure 1.34. Architectural intention

Figure 1.32 - 1.34. (Author, 2015)

1.5 | PROBLEM STATEMENT

Failure by the government to provide infrastructure and services to both the formal and informal activities within Marabastad has hindered positive development and growth resulting in limited economic prosperity and urban decay. The survival of Marabastad as a transitory place is questioned, with its degrading urban condition threatening it further.

1.6 | SUB-PROBLEMS

Architecture can have an impact on the existing environment.

- Architecture as a tool in creating platforms of opportunity, growth and establishment of the informal sector.
- Understanding how existing socio-economic activities and networks functions so that the architectural intervention can enhance these as well as create platforms for new activities and networks.
- Identifying appropriate areas where catalytic architectural interventions can improve the urban fabric.
- Understanding how the Architecture will respond to the tangible and intangible heritage of Marabastad?

1.7 | RESEARCH QUESTIONS

- What will Marabastad's role within the City be when its trade and transport networks are no longer sufficient to sustain it?
- What type of programmes will facilitate permanence by being catalytic to both existing and potential activities?
- How can architecture be a tool in facilitating the resilience of Marabastad's fine urban fabric?
- How can formal architecture assist and create opportunity for the informal without eliminating the informal?

1.8 | PROJECT INTENTION

The dissertation will investigate principles of resilience such as adaptability, diversity and the acceptance of change as an important component for cities (Peres & Du Plessis 2013). It will further address Marabastad's resilience and how its loose urban fabric and informality has enabled it to survive despite the continuous strain placed on it by physical, social and cultural, economic and political change. The general intention

is to maintain Marabastad's relevance (beyond its transient nature) by increasing the interdependency between Marabastad, the city and informal settlements. The dissertation aims to identify social and economic opportunities within Marabastad and investigate how these can inform programmes that are catalytic within its environment. The intention is to create greater legibility and permanence within Marabastad by providing infrastructure that facilitates the establishment and growth of both the formal and informal sectors. Increasing the functional diversity is vital so that a system is able to demonstrate a number of different responses to pressure while still maintaining its functionality (Peres & Du Plessis 2013). Providing platforms of opportunity which encourage diversity through multifunctional programmes will also strengthening Marabastad's urban fabric, facilitating its survival in the future.

The architecture aims to emphasise Marabastad as a meaningful place within the City of Tshwane, adding value to the existing context. With the consideration of Marabastad's rich tangible and intangible memory the programme intends to celebrate Marabastad's economic vigour, cultural and social diversity and somewhat chaotic past. Characterising Marabastad as an anchor

point and destination within the city will ensure its relevance in the future.

Design can be used as a tool for proposing and informing new ways of being in architecture to constitute new realities for Marabastad, where a real understanding of socio-economic conditions is evident in the architecture (Harman 2013).

1.9 | HYPOTHESIS

Architecture serves as a mediator between the formal and informal where development through architectural design allows for adaptability and self-organisation of the informal and in doing so enables the positive establishment and growth of informal activities and networks.

1.10 | RESEARCH METHODOLOGY

Types of research strategies applied in the dissertation:

- Historical Research and background to the study area through literature and academic writing as well as through spatial analysis of the development of Marabastad.
- Site visits and observations of the

current physical environment and present formal and informal activities were documented through photographs, journal sketches and informal interviews with users of Marabastad. An understanding of the existing spatial qualities of both formal and informal activities was a critical investigation during site visits.

- Theory Exploration: The 'right' to the city, Formality and Informality, Opportunistic architecture, Sense of Place and Public Space in African cities
- Precedent Studies: in terms of Context, Typology/Function, Form, Programme, Materiality and technology:

1.11 | DELIMITATIONS & ASSUMPTIONS

- Site visits, observations and informal conversations were tools in gathering data about the formal and informal activities and networks and their relationship to one another. It is assumed by the author that the assumptions made are accurate.
- The dissertation does not aim to formalise the informal or informalise the formal, instead it aims to understand how the formal can be used as a tool in assisting the growth and development

of the informal - using the informal as the primary design development informant. The author cannot guarantee the predicted behavior of the informal, therefore the dissertation does not aim to achieve the perfect solution but rather aims to explore the possibilities that exist between the two urban conditions.

- The purpose of the dissertation is to propose a design solution to the problem identified. It is assumed that the building will be used in the same way that the resources are currently being exploited.

Thorough and critical analysis of the context lead to the synthesis of general, urban and architectural issues from which an appropriate programme was informed. The design solution is not finite and should predict numerous interpretation:



Figure 2.1. Marabastad street life
(Good Shepherd, Eersterus)

2 | CONTEXT

2.1 | HISTORY

2.1.1 | INTRODUCTION

Marabastad, located in the North-west quadrant of the Central Business District of Pretoria, lies between the confluence of the Apies River and the Steenhovenspruit. Marabastad is the site where the first inhabitant settled at a place originally called Maraba's Kraal.

The city of Pretoria and Boer Capital founded on the Elandsport, Daspoort and MW Pretorius farms was established in 1855. Since its establishment migrant workers have been seeking economic opportunity in this environment. As early as 1852, white authorities had attempted to control the movement and development of non-white communities by allocating specific areas for black citizens (Friedman 1994:9).

Marabastad was one of the first locations identified for the settlement of “black” communities. The group of marginalised communities struggled against the power of white authorities who implemented policies that undermined non-white communities and prevented them from

gaining rightful ownership within the city of Pretoria (Aziz Tayob Partnership 2002:145). Local and National governments over the next 2 decades proceeded to enforce laws and regulations which prevented the development of non-white communities within the city, relocating them to the outskirts of Pretoria. The black population was also subject to laws preventing them from trading in white areas i.e. the city.

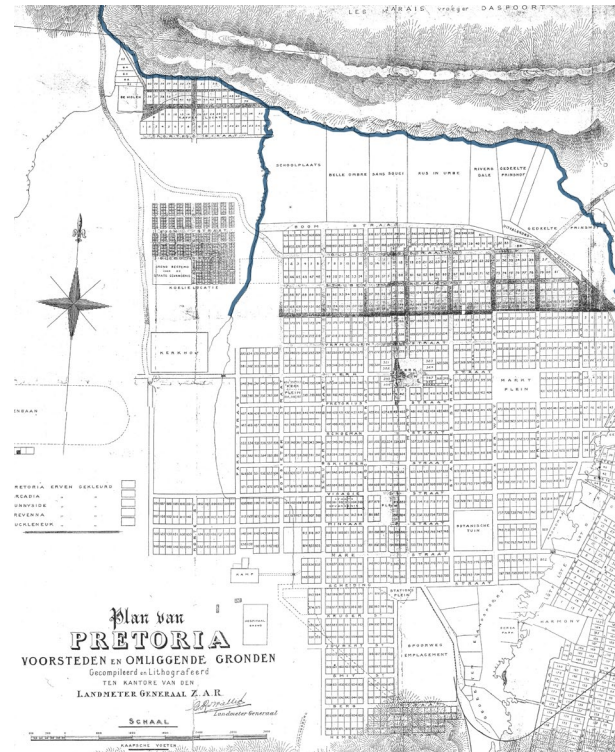


Figure 2.2. Establishment of Marabastad North-west of Pretoria (Aziz Tayob Partners 2002)

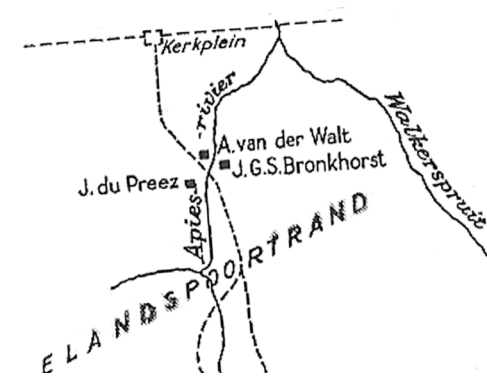


Figure 2.3. Establishment of Pretoria (Author 2015)



Figure 2.4. Proclaimed outskirts of Pretoria (Author 2015)

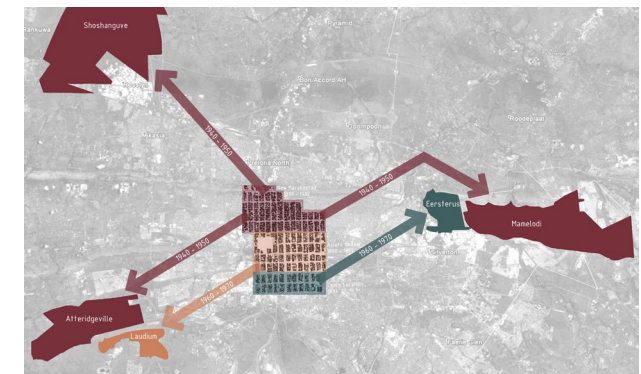


Figure 2.5. Forced removals from Marabastad to outskirts of Pretoria (Author 2015)

2.1.3 | SPATIAL EXPLORATION

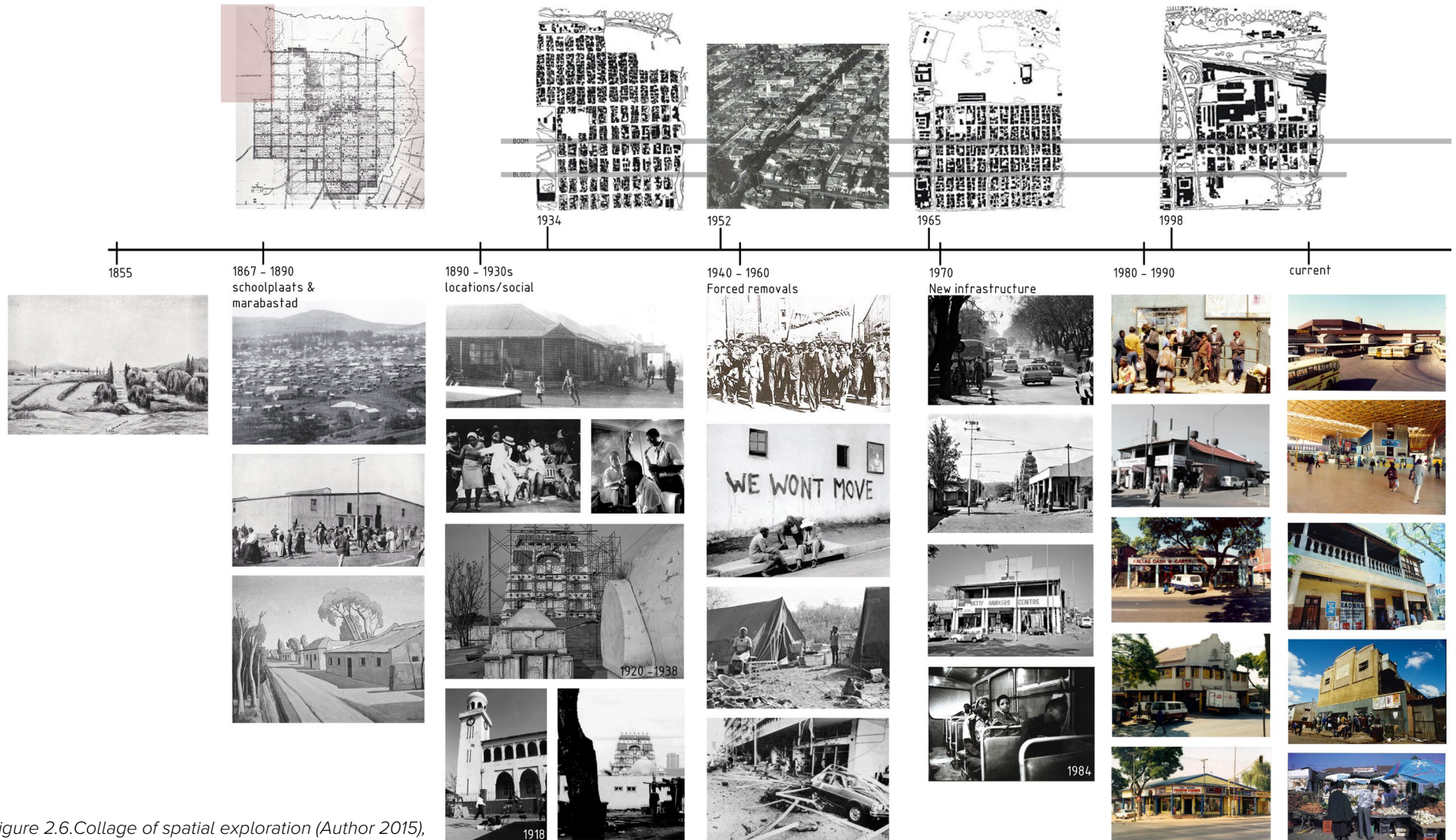
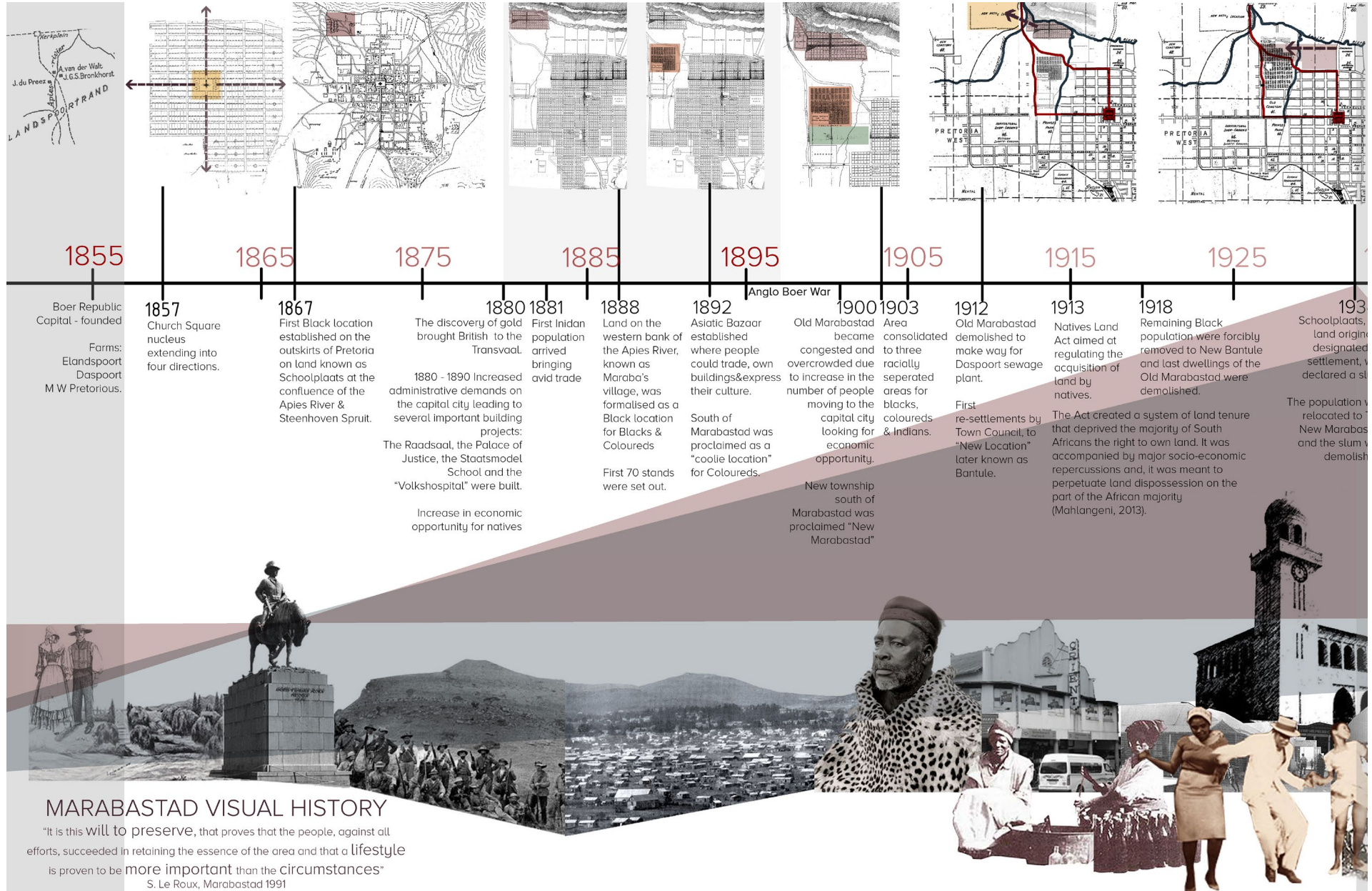


Figure 2.6. Collage of spatial exploration (Author 2015), Images (Aziz Tayob Partnership)

2.1.2 | HISTORICAL TIMELINE



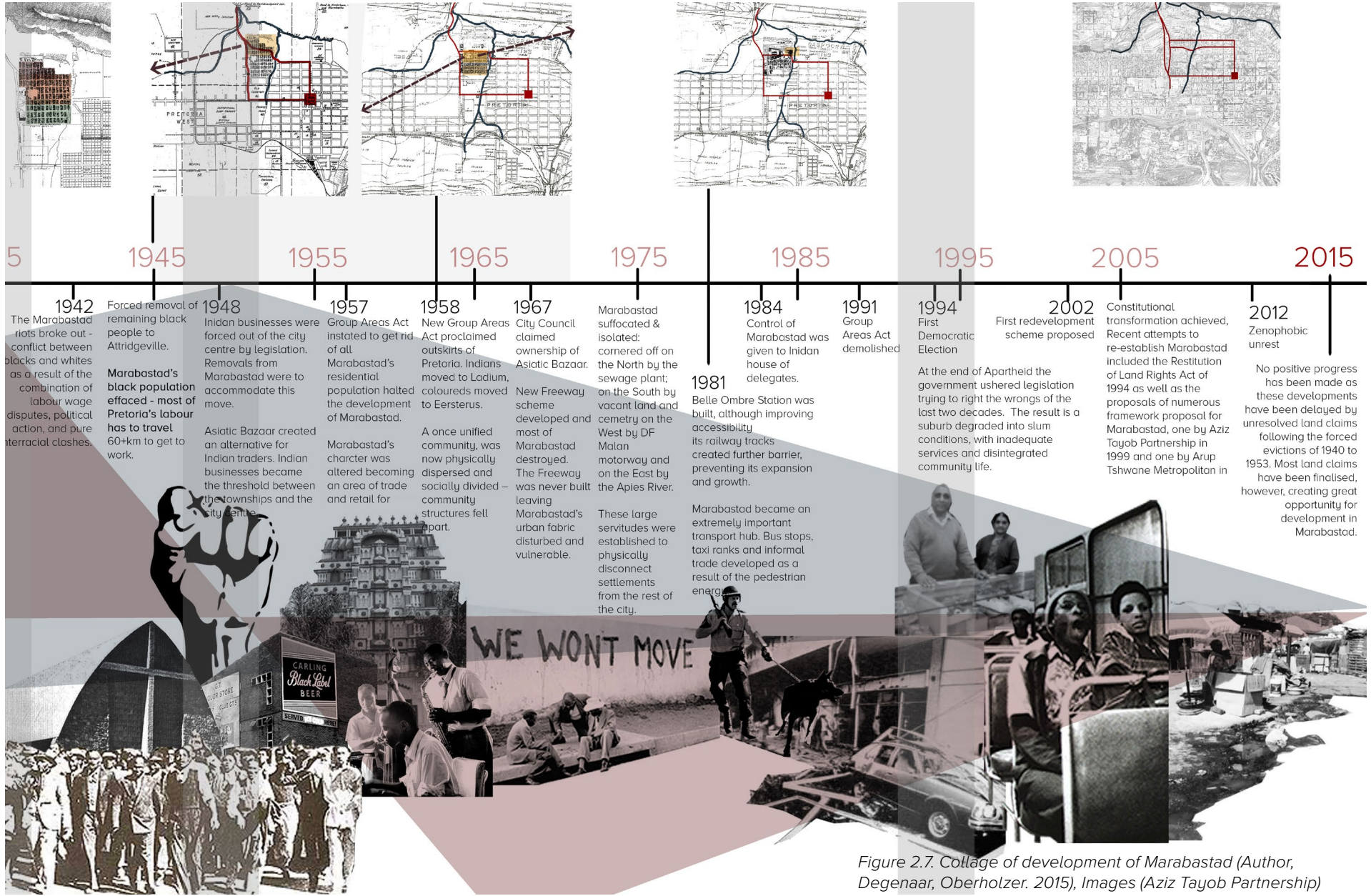


Figure 2.7. Collage of development of Marabast (Author, Degenaar, Oberholzer. 2015), Images (Aziz Tayob Partnership)

2.2 | RESULTANT MARABASTAD

Marabastad has been the victim of physical, social, economic and political upheaval. Despite this, it has without fail found ways of surviving and thriving in the most unexpected ways. It has been resilient to numerous changes by utilizing all and any opportunity available.

Marabastad's community has shaped a life for themselves under harsh and unjust conditions through their opportunistic survival approach - opportunistic squatting, illegal subletting and informal activity have challenged the vision of authorities of a structured city. Ironically the city has been formed as much by the lower class opportunists as by the authorities (Freidman 1994:11)

Informal reactions to the control of local and national government lead to innovative methods of survival, particularly the population registration and geographic separation acts. Development of the informal sector and an increase in participation, specifically in trade and transport, demonstrates the economic resilience and independence of urban black population who were to be considered the most economically vulnerable. (Freidman 1994:155) Informal trading not only provided a source of income, but also evolved to become an important part of the character of Marabastad and black townships.

Informal trade and transport survive by taking advantage of Marabastad's transitory nature. Sidewalks are populated by informal vendors selling a variety of goods from handcrafted beaded goods, batteries, ratex, fruit and vegetables, roasted peanuts, cooked mealies and meat. All unclaimed

land is occupied by trade, taxis, taxi service and the burning of waste.

Today Marabastad is a threshold for migrant workers who travel between informal settlements and the Central Business District of Tshwane each day. Marabastad continuously faces challenges of neglect, lack of maintenance; service and sufficient infrastructural needs; urban decay and increased criminal activity. It is, however, also home to a large number of informal traders and micro-enterprises (Aziz Tayob Partnership 2002:225). The haphazard occupation of land and disorganisation threatens urban fabric of Marabastad as well as the livelihoods of those who rely on it for economic opportunity and vigour.

Marabastad's transitory nature has resulted in temporality which has hindered Marabastad's growth and establishment. The 'community' of Marabastad rely on



the transient nature of transport and its attached retail for economic opportunity. Marabastad's proximity to the Tshwane fresh produce market has created the opportunity for informal traders, who contribute R600 million to the market's annual turnover of R2 billion (Maromo 2012).

The presence of Belle Ombre Metro Station results in thousands of pedestrians moving through Marabastad each day. This not only creates opportunity for informal transport networks but for trade networks too. Despite the huge economic contribution made by the informal trade and transport networks, informality does not correspond with the vision of the local government to make the City of Tshwane "A Capital of Excellence", which lead to the recent efforts to remove informal traders with the aim to clean up the city. Land reclamation has been slow as a result of failure by local government to provide

alternative and adequate services and infrastructural support. This has fueled the culture of opportunism within Marabastad with opportunistic land invasion by informal trade and transport, especially along paths with high pedestrian movement.

From the depth of hardship, suffering, injustice and suppression, has risen a community that has displayed an incredible resilience and ability to survive despite its chaotic past and constantly challenging circumstances. This resilience and ability to survive is due to the ability of a community to recognise and optimise available opportunity.

The biggest challenge may, however, not be the failure of the government to provide services and infrastructure, but rather the failure to recognise informal trade and transport as vital aspect of the city's development, growth and economic

vigour. This misconception has led to the accentuated neglect and abandonment of Marabastad. There is a need to acknowledge informality and accommodate for this through urban and architectural intervention.

"It is this will to preserve, that proves that the people, against all efforts, succeeded in retaining the essence of the area and that lifestyle is proven to be more important than the circumstances" (S. Le Roux 1991).

Marabi culture was born out of hardship, it thrived in a wildly illicit but good-natured social area and harbored a strong sense of community identity. It was characterized by MARABI Jazz, rebellion and resistance to oppression.



Figure 2.8. Resultant Marabastad (Author 2015)

2.3 | MAPPING

1. PHYSICAL BOUNDARIES OF ISOLATION

Physical boundaries act as barriers isolating Marabastad from the city. Marabastad is cut off by the Belle Ombre railway lines, a geographic ridge and the Daspoort Sewage Plant on the North; by the Steenhovenspruit and an industrial buffer zone on the East, by a large expanse of vacant land on the South and lastly by Es'kia Mphahlele drive (former DF Malan Drive) on the West. All of these barriers are evidence of the determinism of the white authorities to isolate Marabastad and the informal settlements from the City Business District.



Figure 2.9. Physical boundaries of isolation (Author, Degenaar, Oberholzer. 2015)

2. URBAN DECAY

Vacant land is occupied by informal networks of transport, trade and waste burning. The unordered population of Marabastad's urban environment has led to a state of urban decay.



Figure 2.10. Waste burning (Cronje, 2014)



Figure 2.11. Motor repairs on vacant land (Cronje, 2014)



- Steenhovenspruit
- Trees
- Open, vacant green space
- Illegally occupied vacant land

Figure 2.12. Natural environment & urban decay (Author, Degenaar, Oberholzer. 2015)

3. RESULTANT HERITAGE FABRIC

Forced removals and physical destruction of Marabastad's urban fabric has resulted in an urban fabric that is dilapidated and disjointed. It is therefore extremely important that Marabastad's resultant urban fabric, specifically that which is historically significant, is preserved.

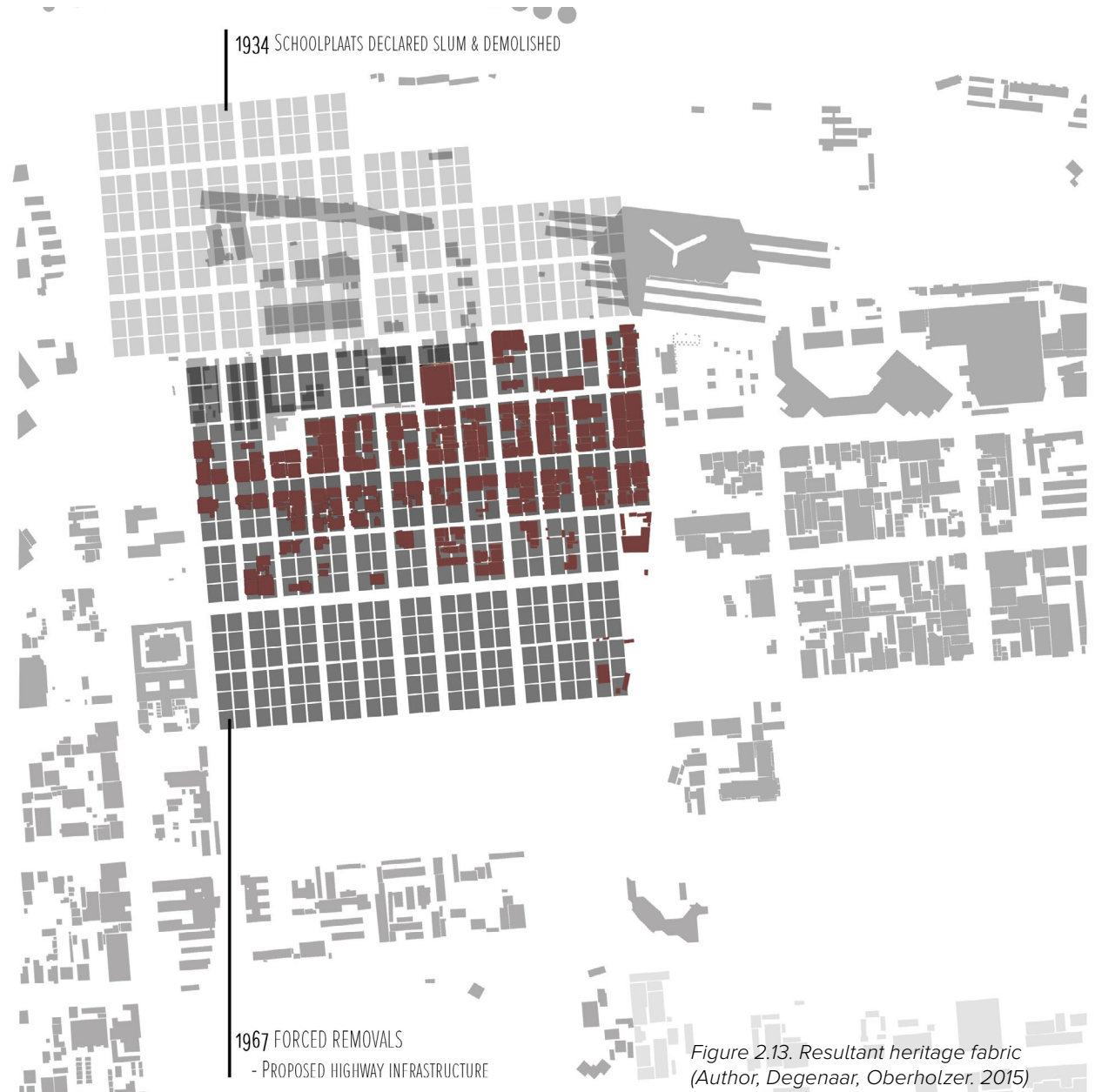


Figure 2.13. Resultant heritage fabric
(Author, Degenaar, Oberholzer. 2015)

4. STEENHOVENSPRUIT

Running from Prices Park in the South and extending beyond The Belle Ombre Station the Steenhovenspruit, despite its canalisation in 1920, remains the most significant resource within Marabastad. The channel currently terminates at Boom Street, from where it runs underneath the electrical substation and Belle Ombre Station. It currently functions as a storm water channel with a catchment area of 42km² (Shand 2012: 33), however it is also victim to waste disposal by traders and general public. There is huge potential for the redevelopment of the Steenhovenspruit for urban upgrade as well as its potential for recreational activity and public space.



Figure 2.14. Steenhovenspruit's submergence underground (Author 2015)



Figure 2.15. Steenhovenspruit channel (Author 2015)

5. CHARACTER OF URBAN FABRIC

Marabastad consists of a very fine urban grain; mostly between Bloed and Mogul Street. South of the existing Marabastad used to be made up of the same fine grain that exists in the remaining urban fabric. Parts of the urban fabric were demolished and the vacant land which remains creates yet another physical boundary isolating Marabastad from the rest of the city. The fine urban grain is also disrupted by the large scale of the Asiatic Bazaar and the Belle Ombre Metro Station – both of which have little consideration for the fragile fine grain of Marabastad. Despite this there is still evidence of a distinct urban character which was once prevalent within the precinct. The fine grain accommodates for pedestrian friendly streets and penetrable, easily accessible spaces.

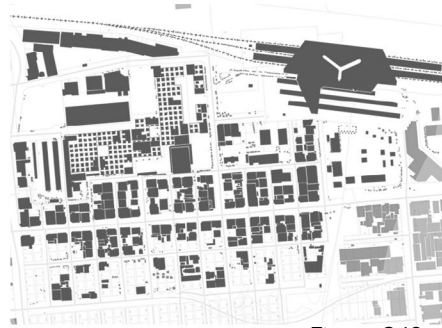


Figure 2.16.

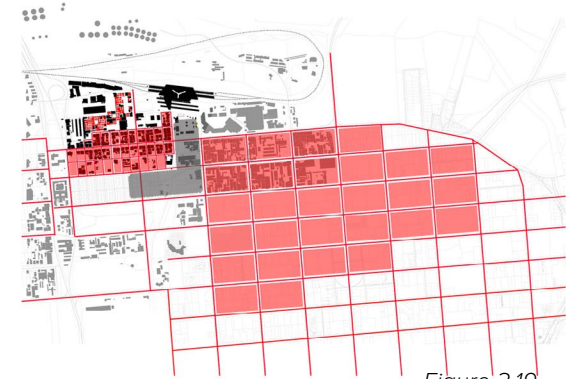


Figure 2.19.

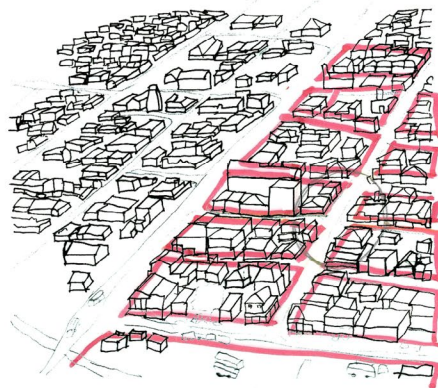


Figure 2.17.



Figure 2.20.

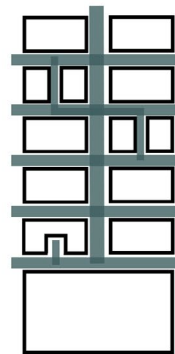


Figure 2.18.



Figure 2.21.

Figure 2.16 - 2.18 Fine grain (Author, 2015)

Figure 2.19- 2.21 Large grain destroys fine grain (Author, 2015)

6. FORMAL AND INFORMAL NETWORKS

Marabastad is extremely important for both the distribution of people and goods. Formal and informal networks rely on each other for this system to function optimally.

Fruit and vegetables are distributed from within a formal network from the Tshwane fruit and vegetable market to the Marabastad fruit and vegetable market. From here fruit and vegetables are distributed throughout Marabastad and the city via an informal network of traders and vendors.

Marabastad is also important in the distribution of people from informal settlements into the city and back. Formal (Belle Ombre Metro station) and informal transport (taxis) work together contributing to the effectiveness of this distribution system and enabling easy access to and from the city.

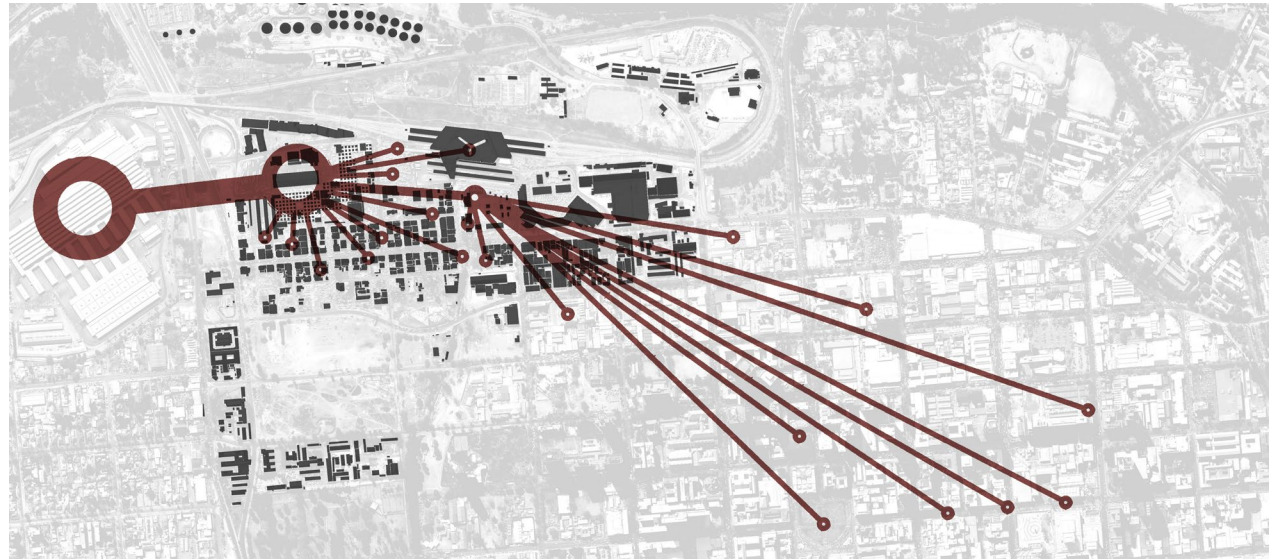


Figure 2.22. Fruit & vegetable distribution (Author 2015)

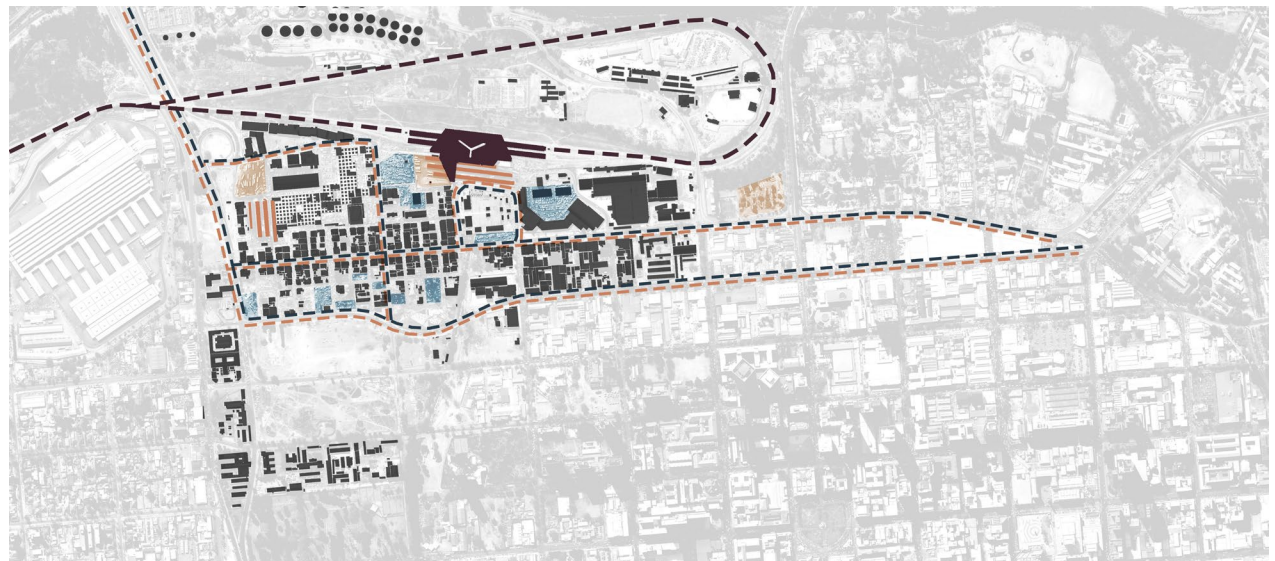


Figure 2.23. Distribution of people through Marabastad (Author 2015)

7. MODAL TRANSPORT INTERCHANGE

Marabastad functions as a modal transport interchange supported largely by the Belle Ombre Metro Station. This station has become the main economic driver, given that it is the cause for high pedestrian movement into and out of Marabastad. Thousands of commuters take the train, long distance buses or taxis from outlying informal settlements into Marabastad each day. They then catch short distance busses and taxis into the city and suburbs.

Marabastad is the confluence of numerous transport modes with The Belle Ombre Metro Station and The Putco Bus Station in the formal sector; as well as numerous informal taxi ranks.

Furthermore the proposed Bus Rapid Transit route is to move through Marabastad. This will increase the pedestrian movement even more, especially along 11th street which will be situated between The Belle Ombre Station and the proposed BRT (Bus Rapid Transit) Station on the corner of Boom Street and 11th Street.

Most public transport nodes in Marabastad fall within 5 minutes walking distance from each other contributing to the successful transient nature of Marabastad. The superimposition of transport on Marabastad's urban fabric and the subsequent large number of pedestrians moving through Marabastad has provided huge trade opportunity.

The following list denotes the number of people travelling through Marabastad daily and by what means of transport (Aziz Tayob Partnership 2002: 138)

1. Putco Bus Station 12 000
2. 7th Street Informal Taxi Rank 500
3. Bazaar Street Informal Taxi Rank 3 500
4. Belle Ombre Station 24 000
5. Belle Ombre Bus Stop 9 000
6. Belle Ombre Plaza Taxi Rank 3500
7. Proposed BRT Terminal 11 150
8. Proposed BRT Stop 11 150
9. Jerusalem Street Informal Taxi Rank 700

Total number of feet moving through various areas of Marabastad 75 000

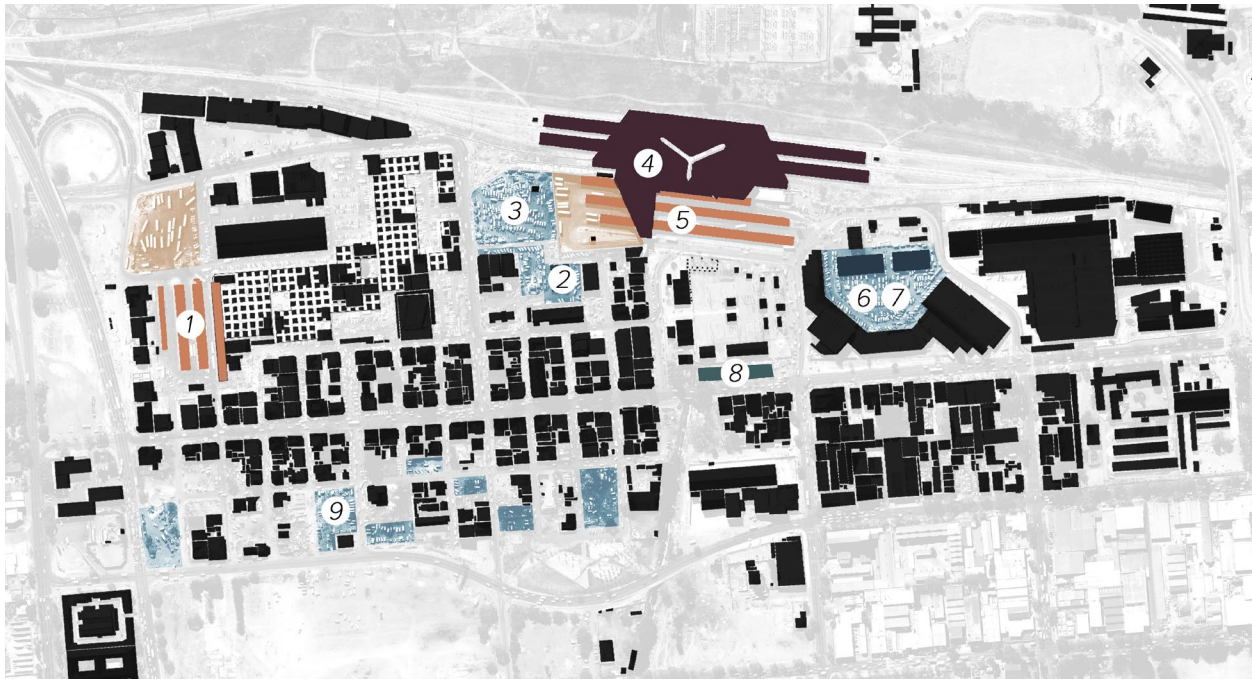


Figure 2.24. Transport nodes

8. FORMAL AND INFORMAL TRADE NETWORKS

Traders have established themselves well within Marabastad and thrive on the transiency and high number of people that move through Marabastad each day. [image illustrating all formal and informal trade]

FORMAL

The majority of formal traders in Marabastad are local Indian traders many of whom have traded in Marabastad for over 40 years. Many foreign (Chinese and Somalian) immigrants also trade formally as they have the capital to buy their products in bulk. Formal trade most commonly takes place in the original surviving buildings of Marabastad, with Boom Street being the prime location for formal and informal trade.

INDIAN TRADERS



Figure 2.25.



Figure 2.26.



Figure 2.27.



Figure 2.28.



Figure 2.29.

Figure 2.26 - 2.30 Indian Traders
(Aziz Tayob Partners)

FORMAL STORES



Figure 2.30.



Figure 2.31.



Figure 2.32.



Figure 2.33.

Figure 2.31 - 2.34 Formal stores
(Author 2015)



Figure 2.34. Trade & retail network (Author, Degenaar, Oberholzer. 2015)

9. THE INFORMAL

Informal traders in Marabastad are diverse in origin and make up 18% of informal trade in Tshwane. Informal traders situate themselves along high pedestrian movement paths latching onto existing infrastructure to define their store. They occupy pedestrian walkways, reappropriate bus stop terminals, stairs, walls, fences, or set themselves up on any available vacant land. Informal trade is a growing economy and one of the largest ways of alleviating unemployment. (Aziz Tayob Partnership 2002:103).

INFORMAL TRADERS

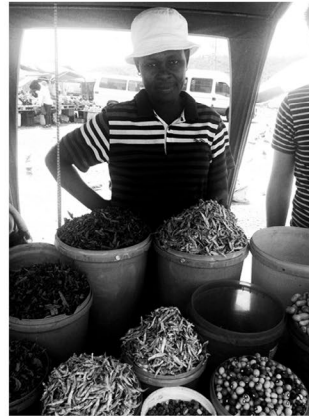


Figure 2.35.



Figure 2.36.



Figure 2.37.

Figure 2.35 - 2.37 Informal traders
(Author 2015)

INFORMAL STALLS



Figure 2.38.



Figure 2.39.



Figure 2.40.



Figure 2.41.

Figure 2.38 - 2.41 Informal stalls
(Author 2015)

10. CULTURAL/RELIGIOUS LOSS

Marabastad was once a place of cultural diversity, a community that embraced the cultures of Blacks, Indians and Coloreds. As a result of the forced removals, communities were forced to their designated areas on the outskirts of the city. This involuntary segregation resulted in a loss of cultural diversity and unique identity. There are fragments of evidence in the remaining urban fabric that allude to a once culturally rich area, however these significant buildings have deteriorated and and been reappropriated. Despite the fact that there are still strong religious bodies within Marabastad, monumental religious building have deteriorated, The reappropriation of the Oriental Plaza and Marabastad theatres show a decline in religion, culture and community cohesion within Marabastad.

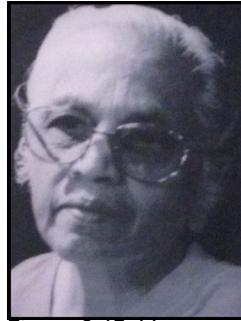


Figure 2.45. Ms Maniben Sita
"I worked as a teacher at the Indian Girls Primary School in the Asiatic Bazaar for five & a half years. When my family moved to the newly proclaimed Inidan township of Laudium in the 1960s, I began private teaching. I refused to teach in a government school because of the Coverrment's Apartheid policy."



Figure 2.44. Mr Omarjee Suliman
"I was educated at the Pretoria Indian High School & later qualified as a radio electrician, electrical wireman & ciinema engineer. I settled at No 377 Cowie Avenue & I established a radio & film workshop at No 378. In the early 1970 we were evicted & moved Laudium."



Figure 2.43. Ms Gertrude Holworthy
"We have seen great & wonderful days in the Cape Location, but it was also a fight to survive from one day to another. Who knows what might have been, was it not for Apartheid that forced us out of town to the Cape Location & finally to Eersterust where I still live today."



Figure 2.42. Mrs Elizabeth Leyds
"I must admit that the cinema dominated our lives. That is why most things in Cape Location were either American or English... I preferred dancing & spent many hours on the dance floor at the Dougall Hall."

Figure 2.42 - 2.45. (Marabastad Exhibition)



Figure 2.46. Mariamman Hindu Temple (Author 2015)



Figure 2.47. Oriental Plaza (Author 2015)

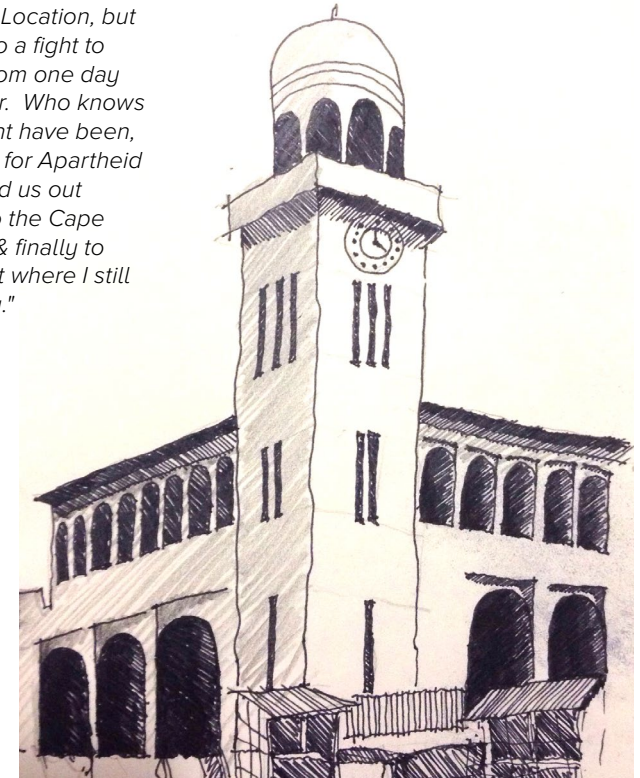


Figure 2.48. Marabastad Mosque (Author 2015)

11. PEDESTRIAN MOVEMENT

The prominent pedestrian movement in Marabastad generally starts and ends at the Belle Ombre Metro Station and bus stop. Commuters catching the train in and out of Marabastad move from Belle Ombre Station infiltrating into Marabastad via Mogul Street and Boom Street or into the city along 11th Street. The main pedestrian artery is Boom Street.



Figure 2.49. Marabastad Mosque (Aziz Tayob Partnerships)



Figure 2.50. Commuting (David Goldblatt)



Figure 2.51. Belle Ombre (Author 2015)

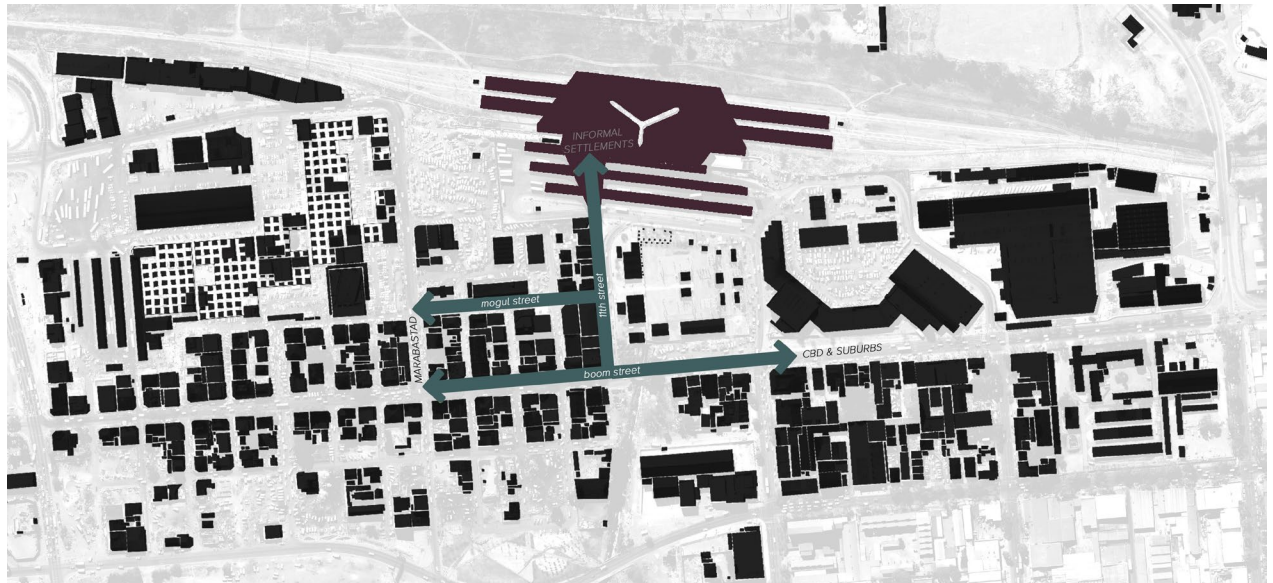


Figure 2.52. Main route to & from Belle Ombre (Author 2015)

12. LACK OF PUBLIC SPACE

There is an obvious lack of public space in Marabastad with the Jazz time square being the only evidence of public space. All vacant land with the potential of being public space is either occupied by informal transport or trade. There are a handful of shebeens scattered around Marabastad, which is the only other form of public space and recreation. There is a need for designated public space which caters for all genders, ages and culture and encourages social interaction between the role players of Marabastad.



Figure 2.53. Lack of public space (Author, Degenaar, Oberholzer. 2015)

13. LACK OF DIVERSITY OF PROGRAMME

Marabastad is dominated by transport and trade which are both activities that happen during the day. Night time activity remains low due to the lack of a residential component. A residential component not only encourages activity with Marabastad in the day and night, but it also creates an element of permanence which is so necessary in Marabastad. The introduction of a residential component means that a greater diversity of programmes can be supported – encouraging stability in Marabastad’s urban fabric.

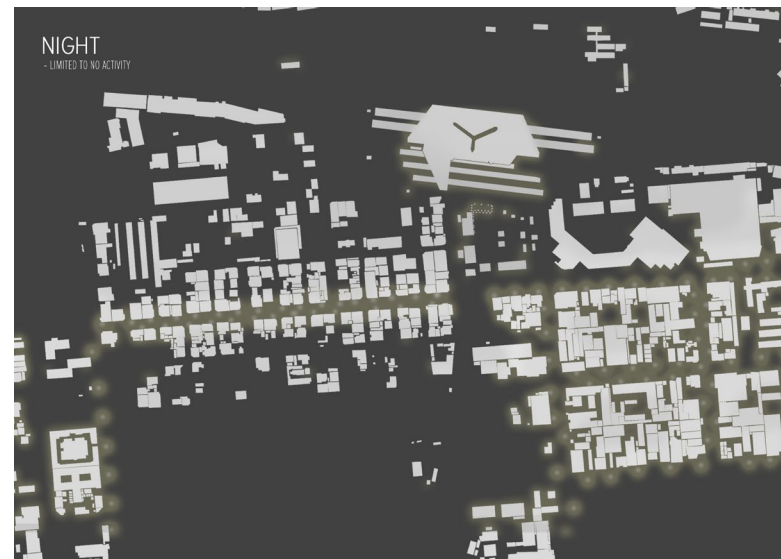


Figure 2.54. Deserted at night (Author, Degenaar, Oberholzer. 2015)

14. REAPPROPRIATION OF SPACE

A lack of service provision and infrastructure has resulted in the reappropriation of existing space. Generally an innovative and creative approach should be celebrated, however often this reappropriation replaces the need of one activity or network by another. For example, normal bus stop shelters have been reappropriated into informal fruit and vegetable stalls.



Figure 2.55. Reappropriated bus stop



Figure 2.56. Infill store in Belle Ombre



Figure 2.57. Vendor occupying side walk



Figure 2.58. Taxi rank occupies vacant land



Figure 2.59. Waste burning on vacant land

Figure 2.60. Figure 2.56 - 2.59. Reappropriation of space

RESULTANT SPATIAL CONDITION

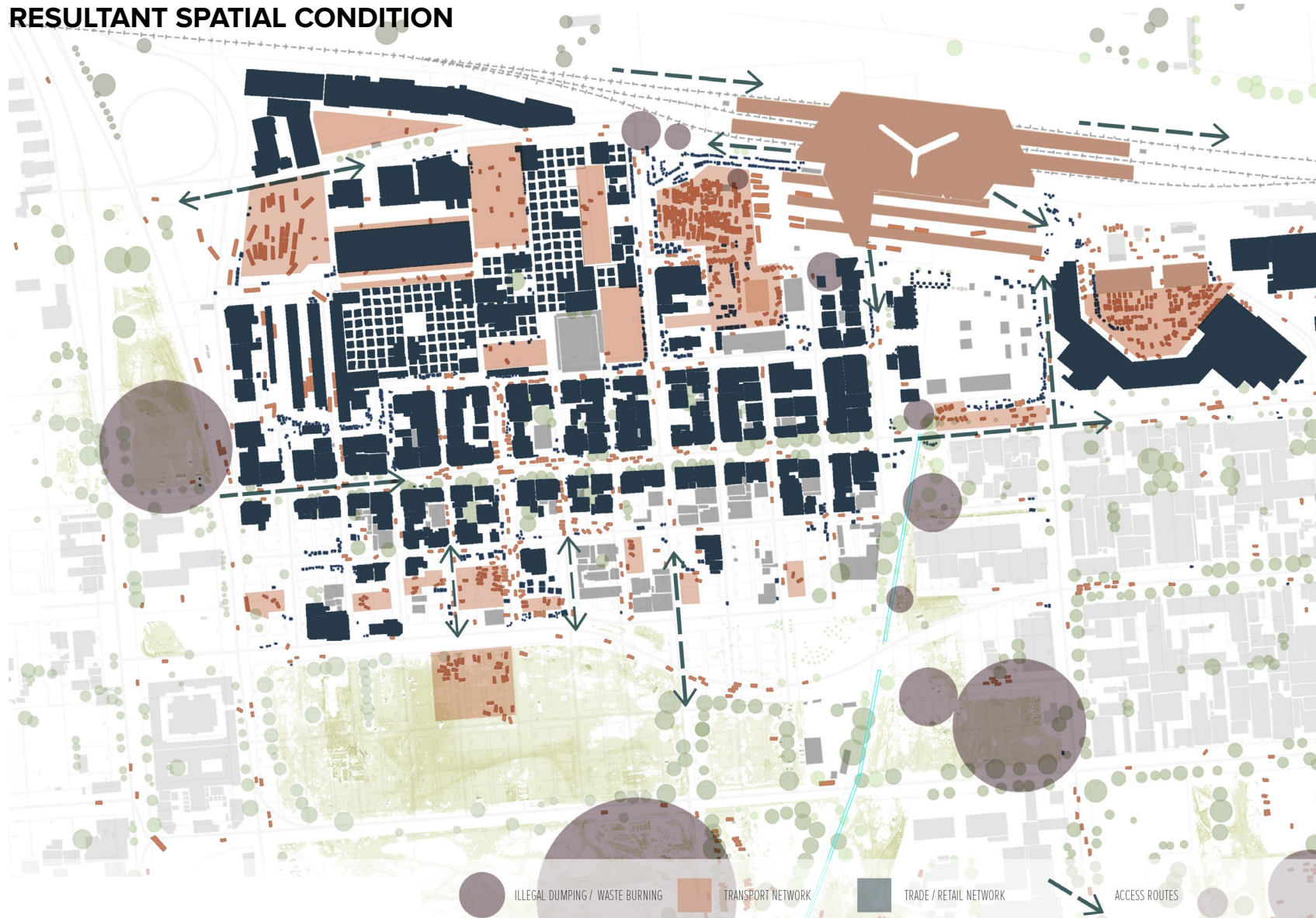


Figure 2.61. Resultant spatial condition
(Author, Degenaar, Oberholzer. 2015)



Figure 3.1. Urban Vision of interdependency & connection (Author 2015)

3 | URBAN VISION & FRAMEWORK

3.1 | URBAN VISION

3.1.1 | INTRODUCTION

Despite Marabastad’s resilience as a transport node and retail hub its networks are still survivalist. Lack of functional diversity and infrastructure prevents networks from thriving and threatens its resilience to change in the future. Marabastad’s prime location within the city and its culture of opportunism and adaptability has the potential of contributing so much more to its surrounding context than it currently does.

The framework is established through the lens of urban resilience.

Resilience is the positive ability of a system to adapt itself to the consequences of change (Peres & Du Plessis 2013).

Urban resilience thinking is a value neutral concept that represents the strengths and weaknesses of a system, to help make decisions on how to navigate (and thrive in) an uncertain future. Urban resilience can be described as the ability and capacity of cities, or social ecological systems, to adapt to slow change, abrupt crises and evolving worldviews or social regimes, in order to sustain human life (Peres & Du Plessis 2013).

Aspects of resilience include: environmental, physical, social , cultural and economic systems. Urban resilience has the potential to integrate all aspects of resilience by strengthening positive parts (adaptability) of a system that need to be more resilient and decreasing the resilience in those aspect (lack of infrastructure and services) which negatively affect the city system (Peres & Du Plessis 2013).

The perception of cities as hybrid environments of manipulated natural landscapes and constructed structures with service systems that fulfill human needs, is a selfish one. The cost of such an aim to the planet and ourselves, needs to be considered. A vision to create resilient and regenerative urban systems that are ethically driven and will lead to an abundant and thriving future is a far more appropriate approach to urban upgrading. The development of appropriate solutions for the planning, design, construction and management of a resilient and regenerative built environment is crucial for a resilient approach (Du Plessis 2014).

3.1.2 | VISION

The vision is to reconnect Marabastad to the City – increase the interdependency between the two, retaining unique character of trade and transport and inherent social aspect too.

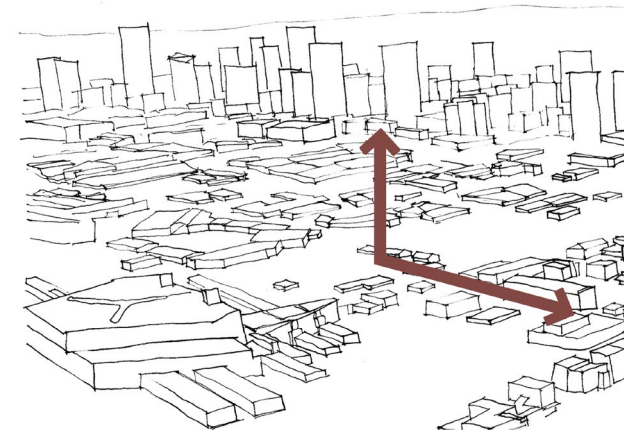


Figure 3.2. Connection between Marabastad & the City (Author 2015)

3.1.3 | URBAN RESILIENCE

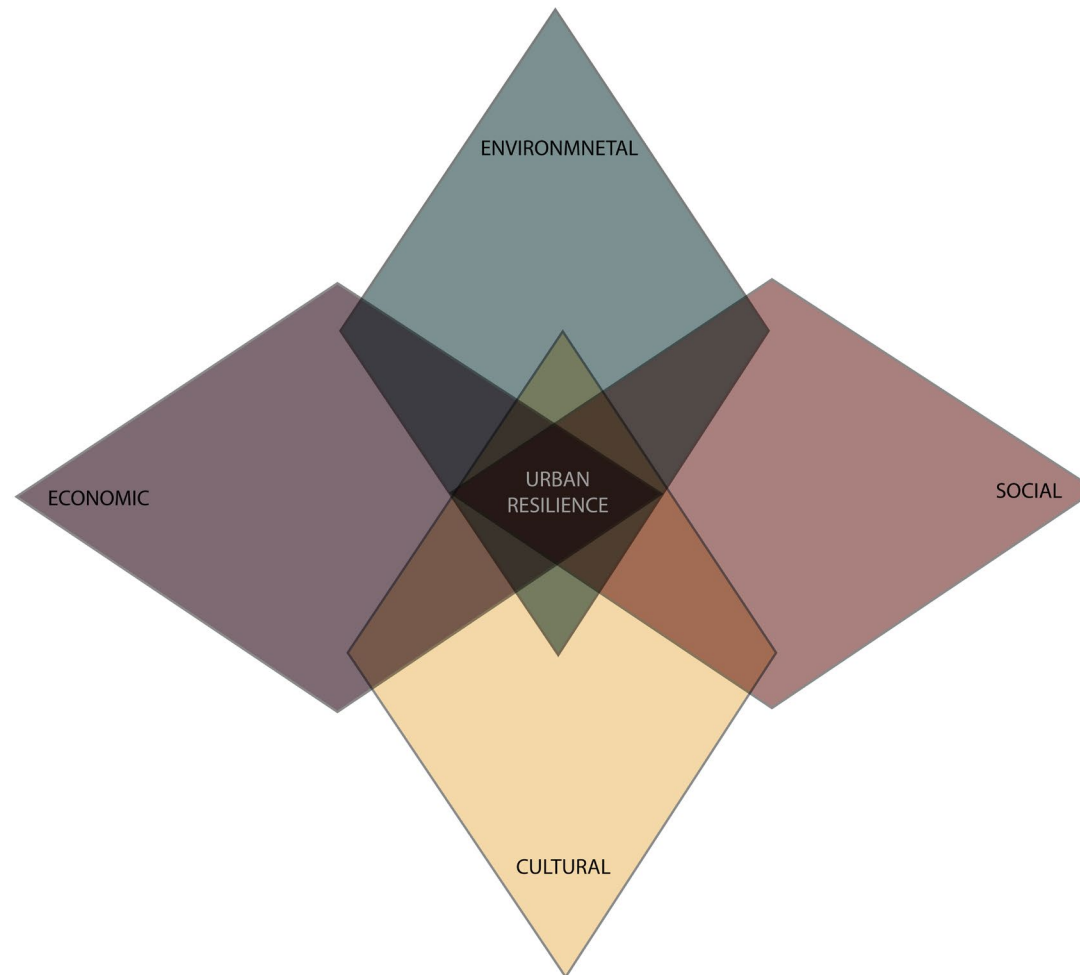


Figure 3.3. Urban Resilience Thinking (Author 2015)

3.2 | FRAMEWORK PROPOSAL

The aim of the framework is to identify strengths, weaknesses, opportunities and threats within the existing urban condition and propose catalytic architectural interventions that support the establishment and growth of existing networks as well as the diversity of functions. Through the analysis of isolators and connectors within Marabastad the framework will focus on environmental, economic, social and cultural aspects that have the potential to contribute to positive change.

Life within Marabastad has been identified by the daily rituals of movement of people through it each day. The space for social activities is lacking as a result of domination by transport and retail networks. The establishment of social space and interaction is evident around the activities of trade and transport, however the opportunity for people to be static and engage with each other is limited. Informal restaurants offer commuters a shaded space where they can sit and eat their meal instead of eating on the go. The encouragement of social interaction between friends and strangers will contribute to a sense of community and establishment of place.

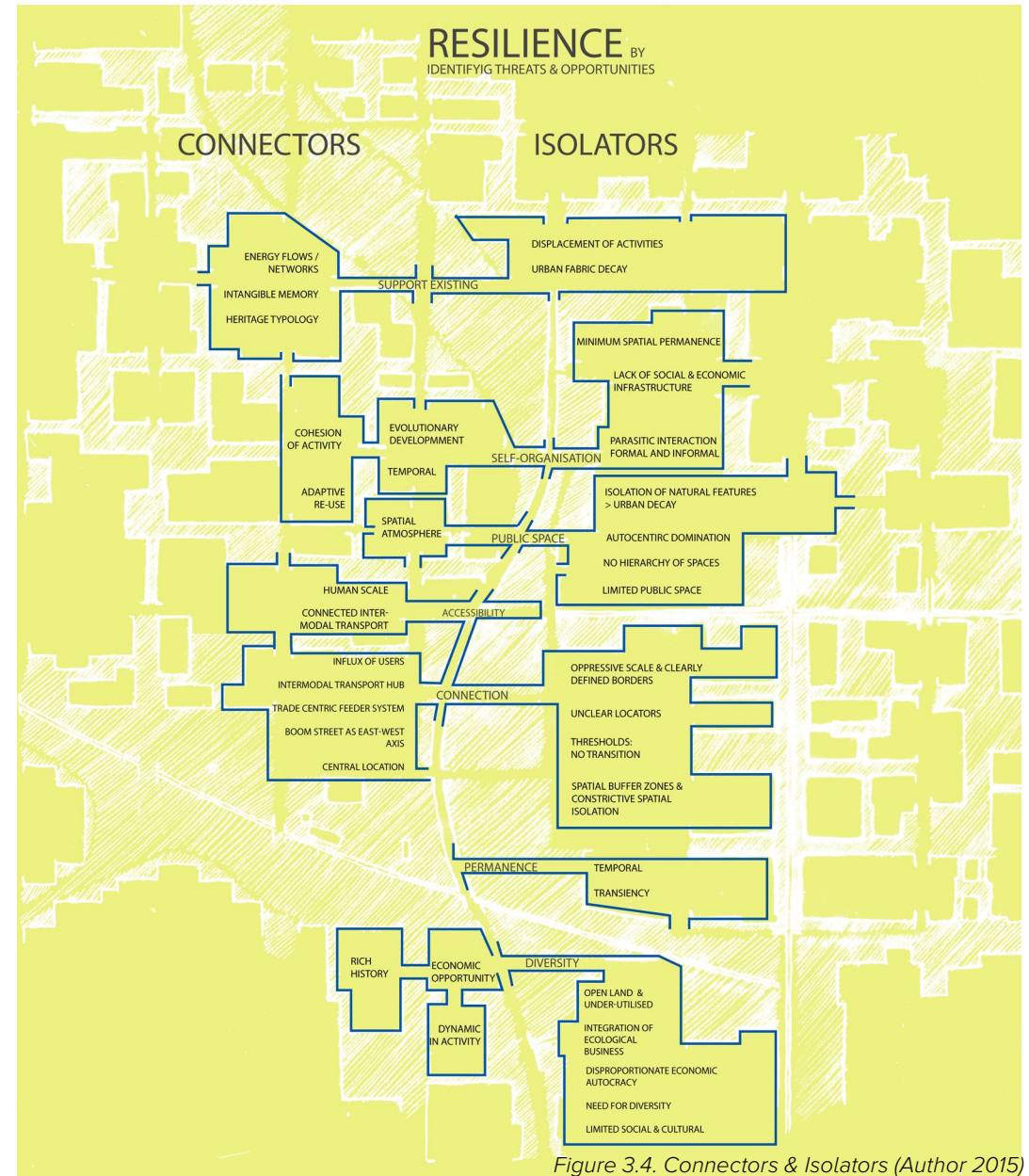


Figure 3.4. Connectors & Isolators (Author 2015)

3.2.1 | URBAN RESILIENCE

+

Economic

Provide platforms that *encourage* establishment & growth of existing activities and creates opportunities for new activities/programmes.

Social

Provide social infrastructure that promotes social interaction and the establishment of a permanent community.

Cultural

Introduction of programmes that celebrate Marabastad's intangible memory of cultural diversity and the support the conservation of its tangible heritage fabric.

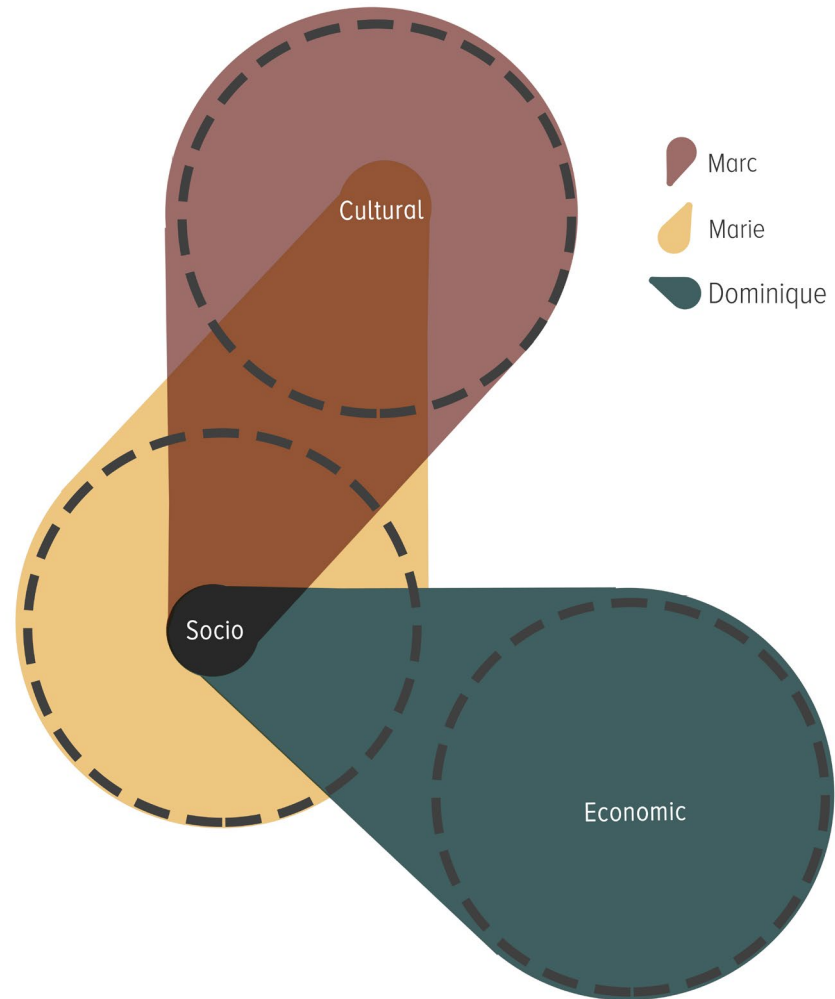
Environmental

Better integration between natural resources and the built environment towards more sustainable and regenerative systems.

Physical

Increase legibility and physical cohesion by establishing hierarchy through the introduction of catalytic programmes and the reclaiming of public space.

-



"The resilience of cities should be viewed as determined by the interplay between different types of networks across spatial & temporal scales".

Figure 3.5. Resilience lens (Author, Degenaar, Oberholzer. 2015)

3.2.2 | FOCUS AREA | SITE CHOICES

The focus area of the urban framework starts at the location of the proposed BRT Station on the corner of Boom Street and 11th Street and The Belle Ombre Metro Station [Site 1] moving across to the Belle Ombre Informal Taxi Rank [Site B] and along Boom Street to the corner of Mogul Street [Site 3].

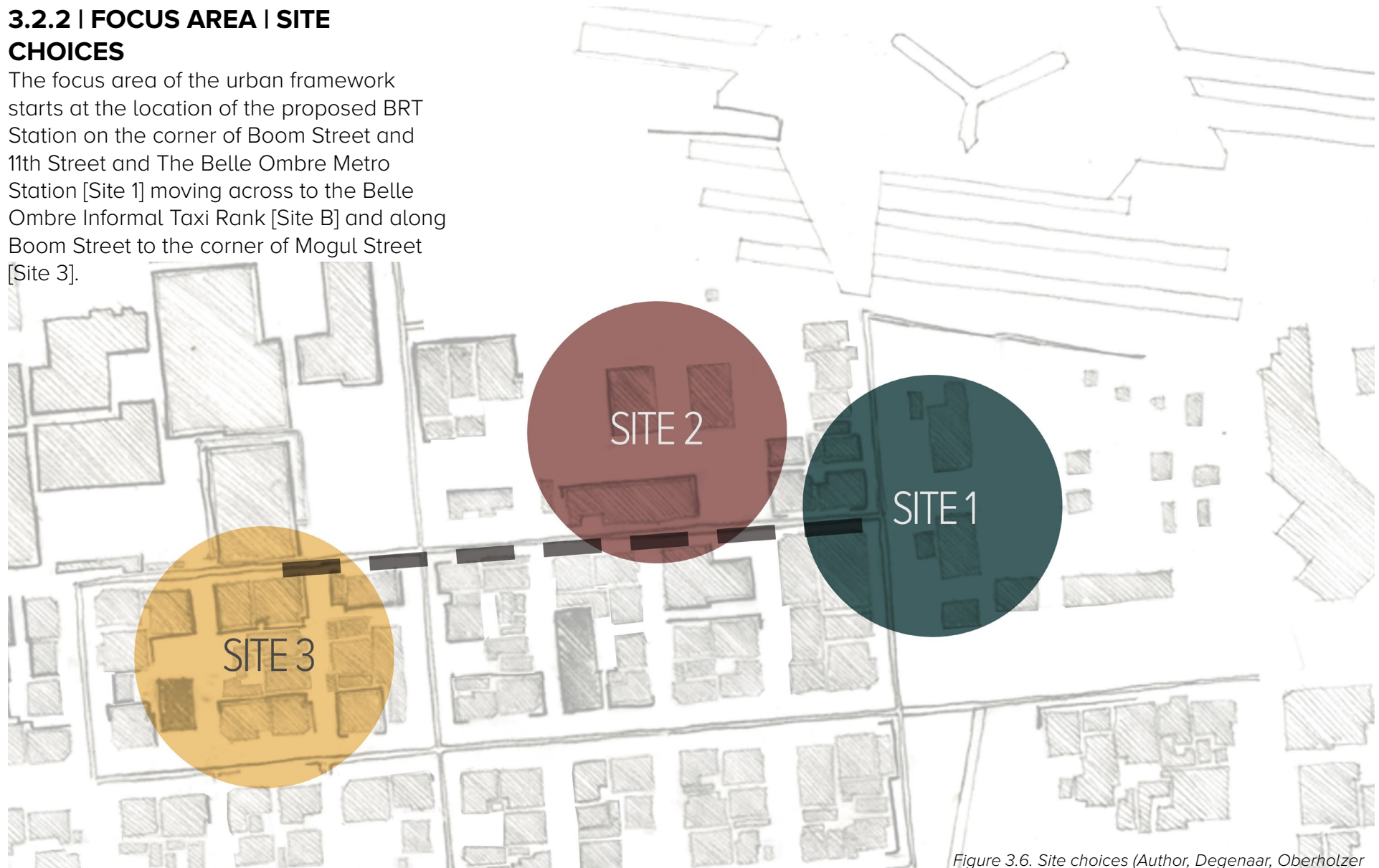


Figure 3.6. Site choices (Author, Degenaar, Oberholzer 2015)

3.2.3 | PROGRAMME ANALYSIS & INTENTION

ANALYSIS

1. Strong relationship between formal & informal networks
2. Lack of diversity of programme
3. Lack of public space

INTENTIONS

1. Introduction of new catalytic programmes

The three sites intend to increase the interdependency between Marabastad and the city by creating catalysts within Marabastad that will connect public space through pedestrian corridors. Enabling programmes which support environmental, economic, social and cultural opportunity by supporting existing activities and introducing new functional diversity through introduction of more permanent programmes such as social and residential components.

2. Provision of infrastructure and services

Infrastructure and service provision for informal activities will clear existing pedestrian walkways and vacant land – increasing the legibility of Marabastad.

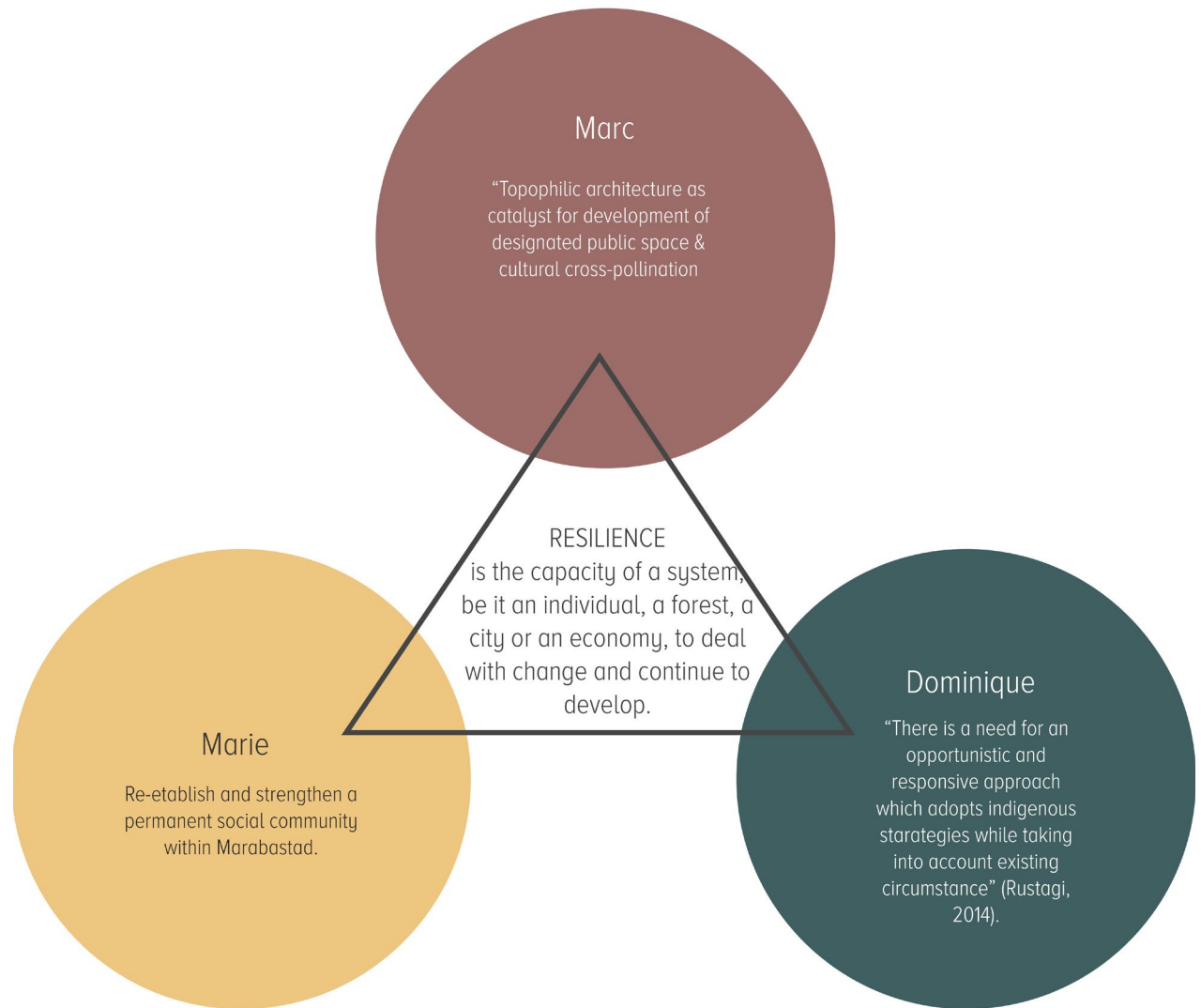


Figure 3.7. Individual resilience intentions (Author, Degenaar, Oberholzer)

3.2.3.1 | PROGRAMMATIC ANALYSIS

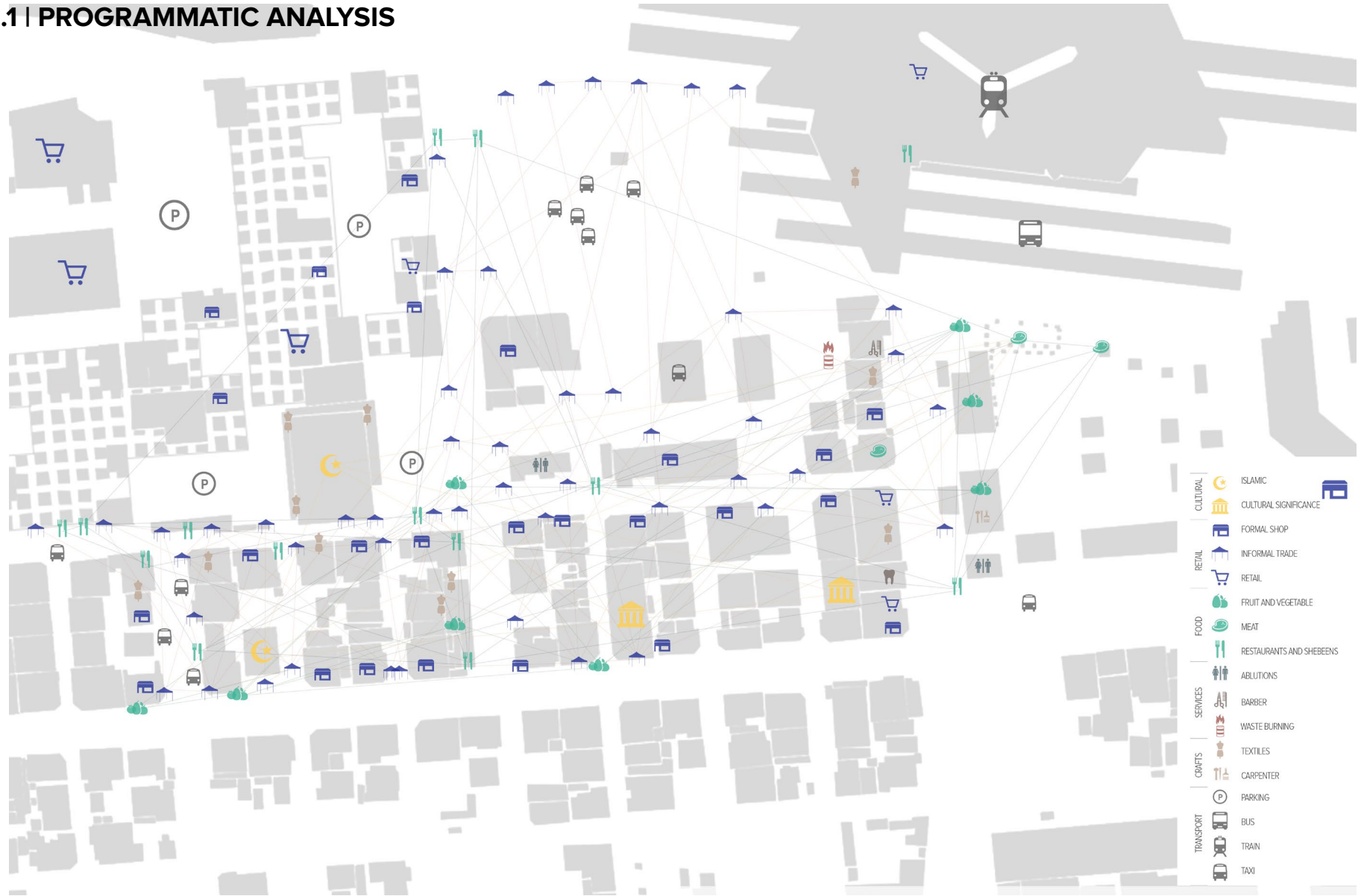


Figure 3.8. Programmatic Analysis (Author, Degenaar, Oberholzer)

3.2.3.2 | PROGRAMMATIC VISION

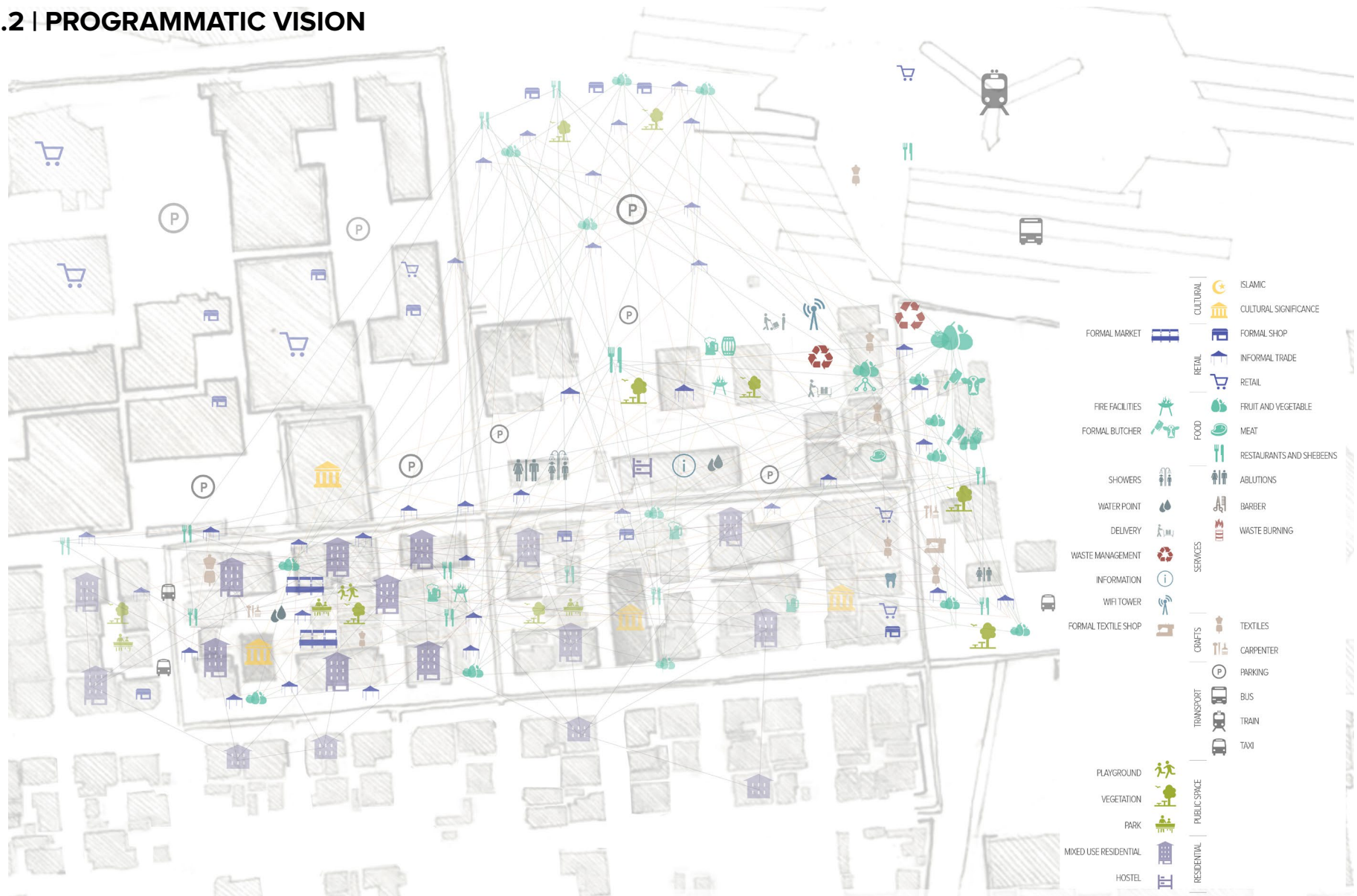


Figure 3.9. Programmatic Vision
(Author, Degenaar, Oberholzer)

3.2.4 | SPATIAL ANALYSIS & INTENTION

SPATIAL ANALYSIS

1. Spatial observations:

- Pedestrian character of the street
- Colonnade on Boom has been taken over by informal traders, forcing pedestrians to walk on the road.
- Scale of buildings
- Setback from building lines
- On-street parking

2. Spatial opportunities:

- Safe overnight storage for informal traders
- Shelter from natural elements provided for traders during the day
- Pedestrianisation of walkways
- Designated public space
- Infrastructure and solutions for the hygienic preparation of food
- Celebration of the Steenhovenspruit
- Maintain the qualities of the informal activities which have allowed Marabastad to be so adaptable and resilient in the past.

SPATIAL INTENTIONS

1. Heritage urban fabric

Boom street is one of the last significant representatives of fine grain heritage fabric and will therefore be restored and maintained as a result of its heritage value.

2. Pedestrian walkways & public space

The Urban Vision also proposes the introduction of designated pedestrian walkways which connect the designated public space and the three catalytic design intervention proposals. Providing designated public walkways will increase access to Marabastad as well as enable safe pedestrian movement.

3 . Proposed extension of 11th Street

The predominant taxi traffic moves from Belle Ombre train station to the informal taxi rank, taking the route down 11th street, right into Mogul and right into 7th Street. With this observation of vehicular movement it is proposed that 11th Street be extended west to connect to 7th Street. This allows direct access between Belle Ombre, the Putco bus station and the Belle Ombre Taxi Rank. The proposed BRT station on the corner of

Boom Street and 11th Street will drastically increase the pedestrian movement along 11th Street. The extension of 11th Street will therefore allow the pedestrianisation of 11th Street from Belle Ombre Train Station to the proposed BRT Station and Boom Street.

4. Steenhovenspruit

The edges of the Steenhovenspruit will be activated with a specific focus on the activation of the river on either side of Boom Street, where the Steenhovenspruit goes underground. New buildings will respond to the spruit's edge and celebrate the natural resource. The spruit will be widened and terraced where possible – firstly as a flooding strategy and secondly to provide public space and allow for social interaction. The terraced areas will contain water during flooding.

3.2.4.1 | SPATIAL ANALYSIS

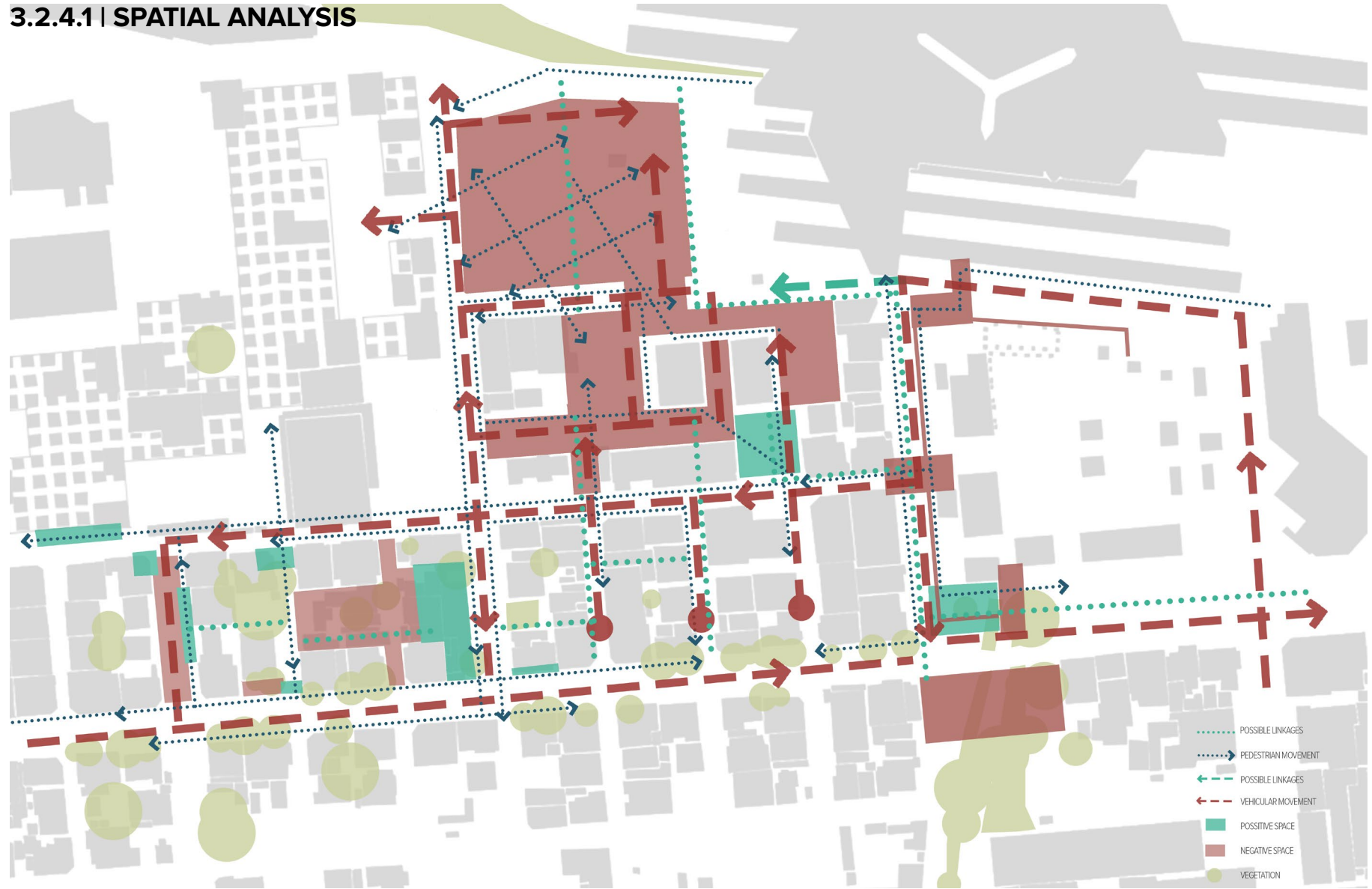


Figure 3.10. Spatial Analysis (Author, Degenaar, Oberholzer)

3.2.4.2 | SPATIAL VISION

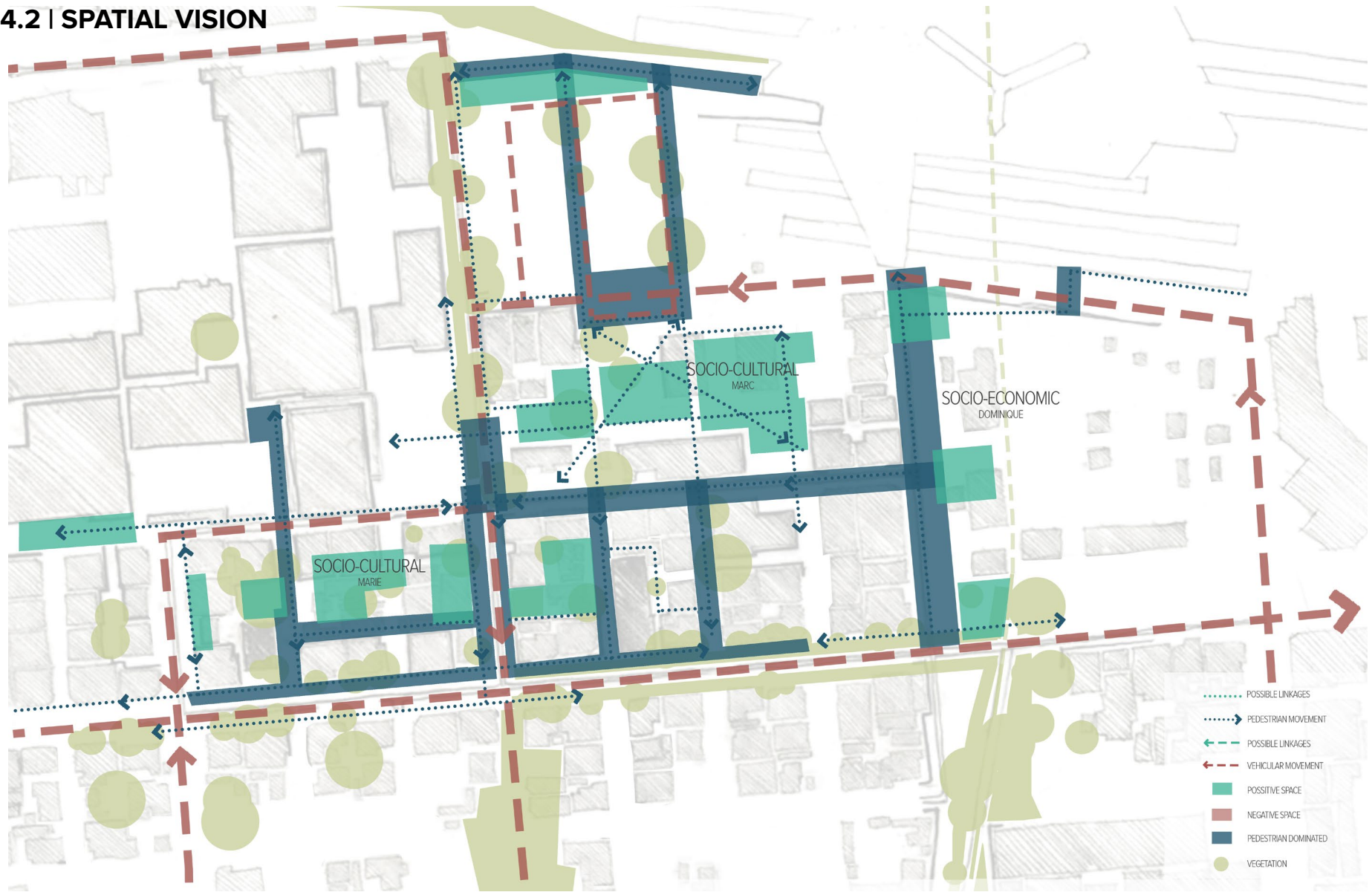
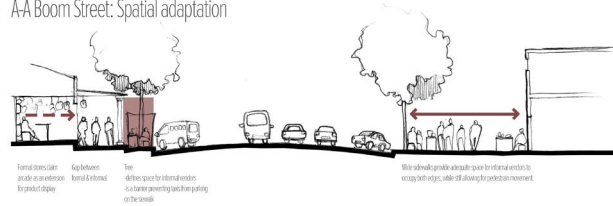


Figure 3.11. Spatial vision (Author, Degenaar, Oberholzer)

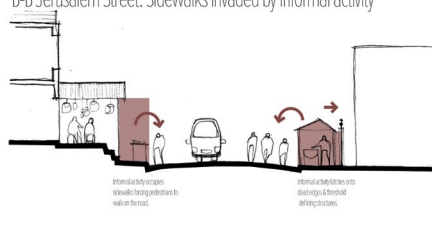
3.2.4.3 | STREET ANALYSIS & VISION

ANALYSIS

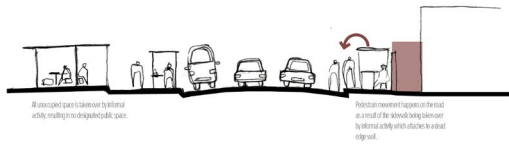
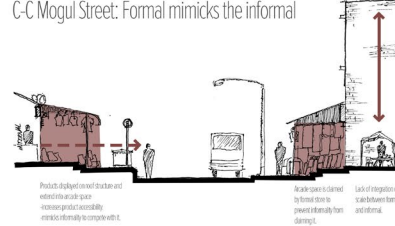
A-A Boom Street: Spatial adaptation



B-B Jerusalem Street: Sidewalks invaded by informal activity

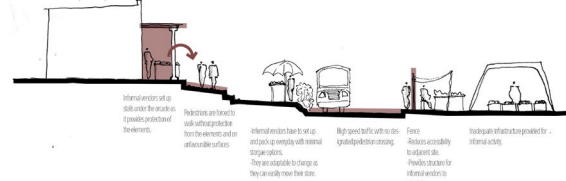


C-C Mogul Street: Formal mimics the informal

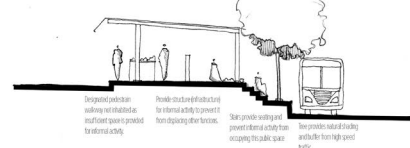


VISION

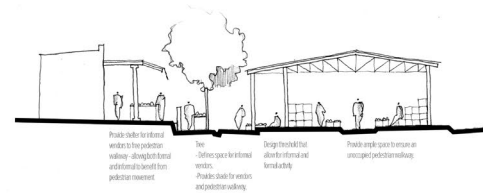
11th Street (East): Lack of infrastructure for informal vendors



Urban vision E: Provision of all functions



Urban vision F: Thresholds



11th Street (North): re-appropriation of existing structures



Urban vision G

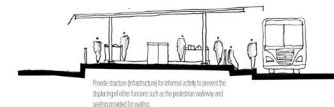


Figure 3.12. Street analysis & vision (Author, Degenaar, Oberholzer)

3.2.5 | CATALYTIC SITE INTERVENTIONS

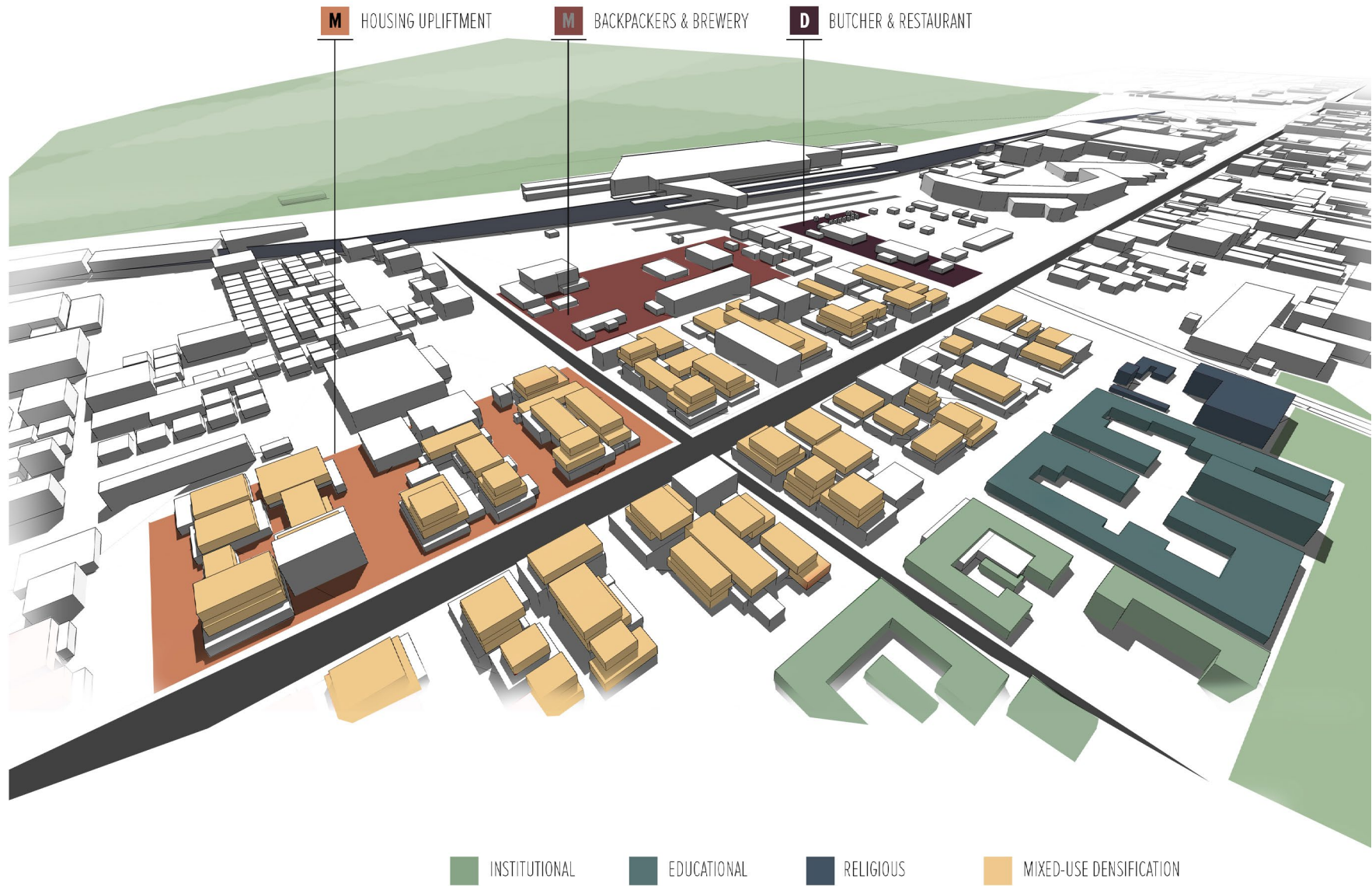


Figure 3.13. Catalytic site interventions
(Author, Degenaar, Oberholzer)

3.2.6 | URBAN VISION



Figure 3.14. Urban Vision
(Author, Degenaar, Oberholzer)

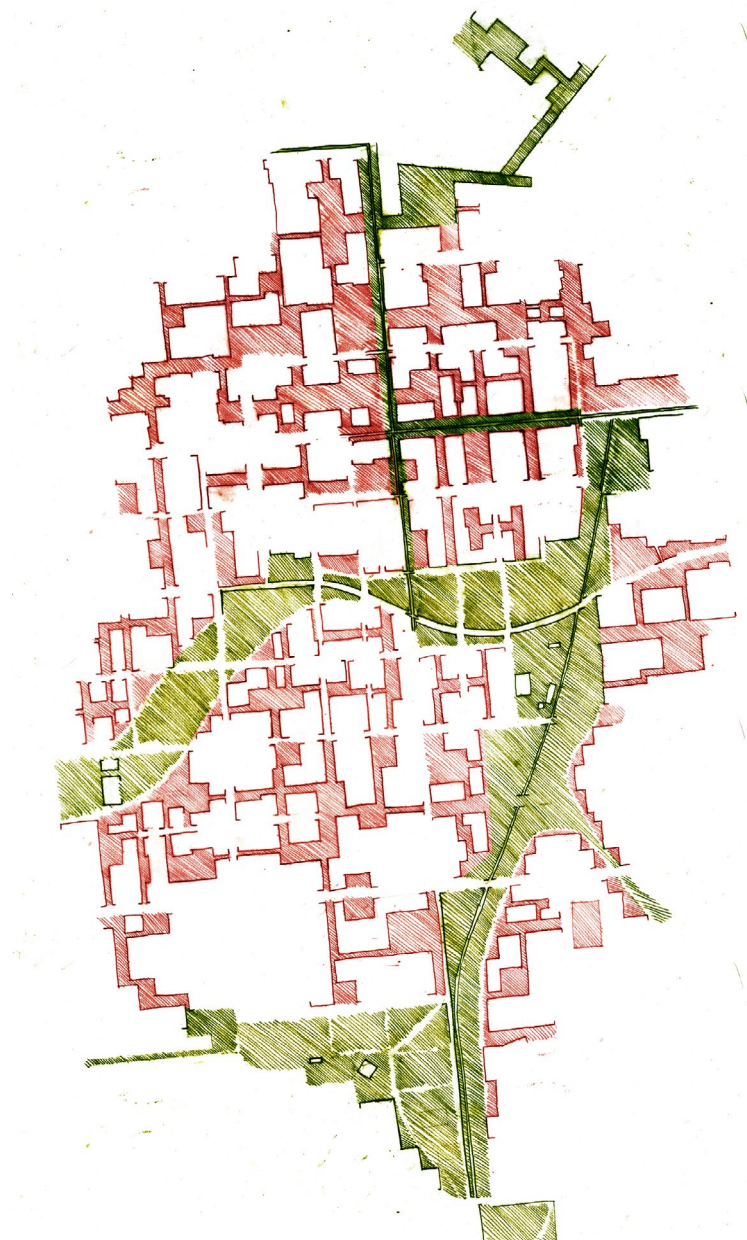
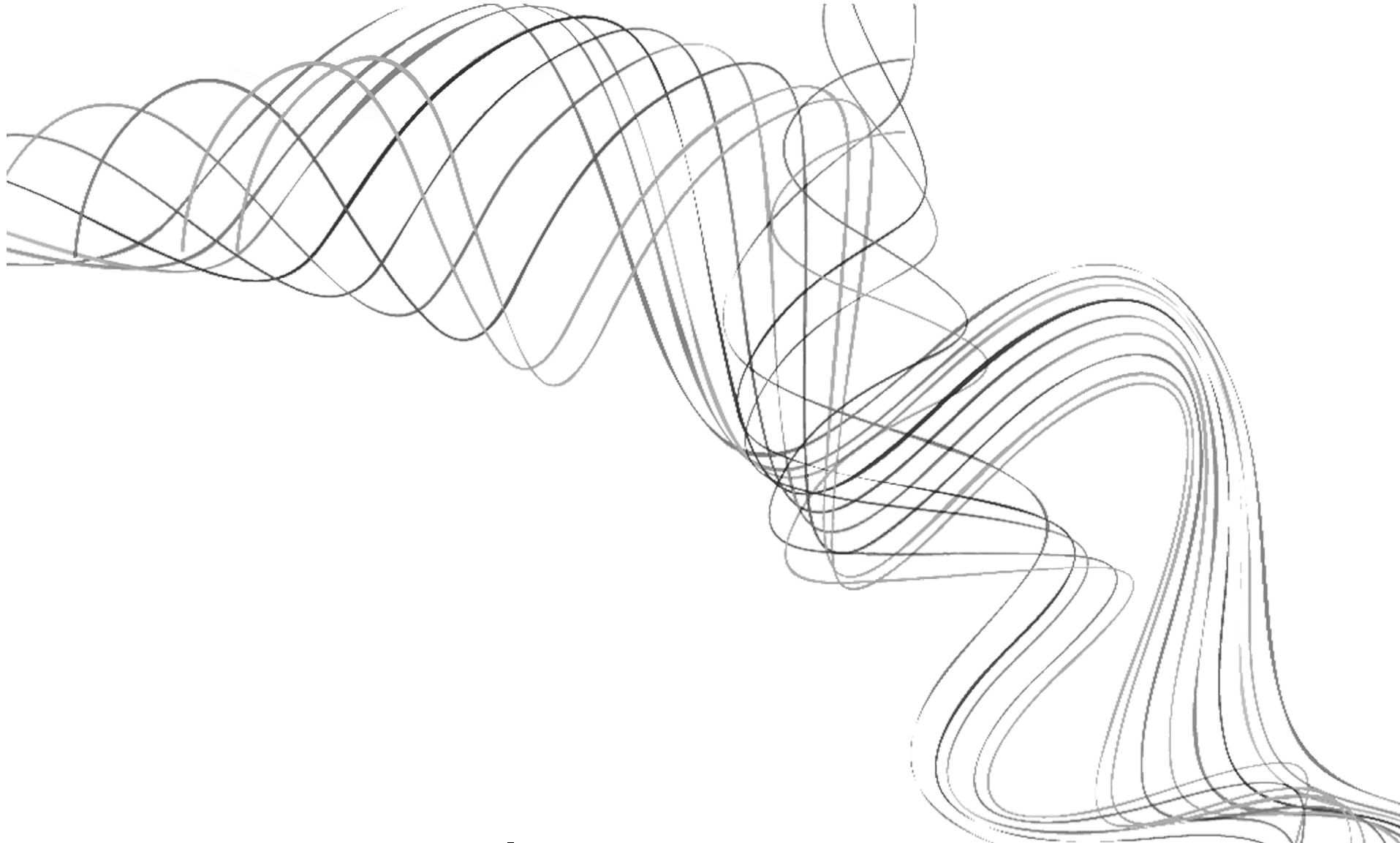


Figure 3.15. Development of Urban vision



4 | THEORETICAL DISCOURSE

4.1 | URBAN APPROACH:

[A condition of functional inclusion, spatial separation and political exclusion]

We live in a country with hugely varying formal and informal spaces. Sometimes, however, these spaces, especially within informal environments, are neglected and ill-defined making them difficult to understand (Relph 1976). Urban sectors, such as Marabastad, are not sustained by institutional support and are therefore often not incorporated into strong definitions of value or use. This results in an urban condition where there are patchworks of decay and renewal, and economic vibrancy and implosion. Marabastad is an example of the sheer volatility of urban life with its varying degrees of speed, its enclosures and exclosures and its relation of movement to rest. These dualities intertwine giving rise to a contrast of vacancies and overcrowded conduits of passage. There is an arbitrary contradiction of how urban environments can be both entrapments and platforms of opportunity. (Simone 2012:47)

The practices of 'invasion' and 'trespassing' reflect how those without secure urban

positions rely on an opportunistic approach to maintain viability of life. Those who must operate in the midst of urban uncertainties, with few resources at hand, form a dynamic relationship between the need to ensure some form of inclusion that would obviate racial divides, and maintain a way of valorising what has been accomplished in the 'shadows'. Marabastad is a prime example of how the excluded and marginalised have demonstrated their capacity to assume the same responsibilities, rights and possibilities as those who are included.

When urban environments start to become significant through economic prosperity, social livelihoods, cultural identity and spatial definition it is imperative to support and stabilise the urban fabric, their activities and the people who are dependent on them (Relph 1976).

It is imperative to formulate impartial strategies of urban development as the converse of this makes it impossible for the city to give rise to its full potential of configurations of space, time and sociality that are vital in defining cities. All cities have the capacity for its different people, spaces and activities to interact in ways that exceed any attempt to regulate

them. Insufficient attention is being paid to the ways in which large populations can do more than just participate from the fringe and periphery of the city. The excluded, the provisional, the marginal, and the ephemeral are all thought to point to a certain collapse of urban civility and justice. These are in fact the very conditions under which new forms of urban life are generated. Exposing previously under apprehended forms of urban life within Marabastad, through the critical observation of informality, will unleash the capacities and resilience of the majority. The city should not just be a framework for fair division of services but something that allows for the constant change and adaption that informality allows when identifying new opportunities for survival.

The ongoing struggle for social justice could only be affirmed on self-reliance, self-organisation, and initiative of informal networks. The right to the city therefore may be the right to be inconsistent, or to look disordered but this does not imply the right to be left alone - rather to engage, to be the object of request, to be realigned and to thrive in unanticipated ways (Simone 2011a, 2011b).



Design can be a tool for proposing and informing new ways of being in architecture and constitute new realities for Marabastad - encouraging permanence and growth while still allowing for adaptability; encouraging cohesion while still allowing

for the expression of cultural identity. “There is a need for an opportunistic and responsive approach which adopts indigenous strategies while taking into account existing circumstances” (Rustagi 2014).

Figure 4.2. Urban renewal & decay (Author 2015)

4.2 | ARCHITECTURAL APPROACH

The dissertation will explore how critical investigation of informality within Marabastad can inform development through the observation of existing needs and opportunities as well as how architectural design interventions can assist spatial, social and economic cohesion, by providing infrastructural needs that consciously acknowledge informality as a development informant.

4.2.1 | OPPORTUNISTIC

South African cities are complex in nature as they have been formed as a result of the multifarious relationship between political, social, economic and natural informants (Figure 3.3). Western top down approaches to urban design and architecture have been found irrelevant and futile for the complex and continuously changing nature of African cities as they do not respond to the complexities of the city (Rustagi 2014). Present development strategies are based on the opportunistic visions of large developmental organisations rather than that of the local opportunistic and responsive approaches evident in the

informal sector. As mention previously, an opportunistic approach in informality has ensured some form of inclusion and accomplishment and therefore secured some form of economic viability.

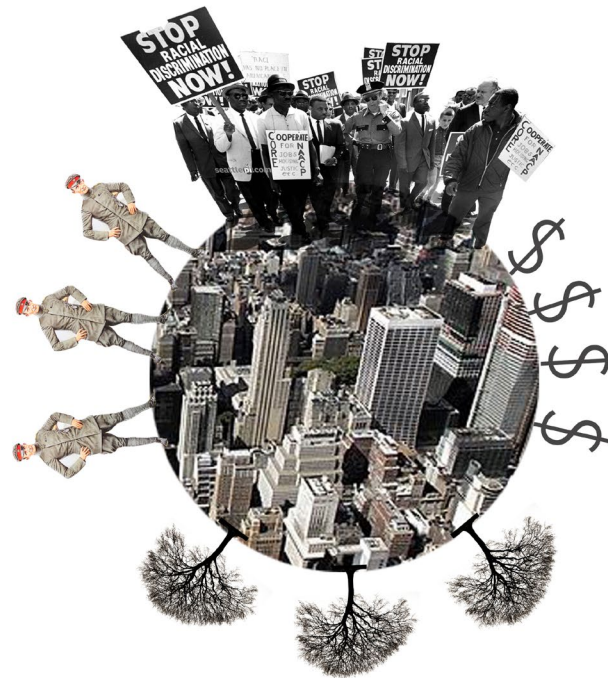


Figure 4.3. Development of African cities through political, social, economic & environmental pressures (Author 2015)

Opportunism is 'the taking of opportunities as and when they arise, regardless of planning or principle' (Oxford Dictionaries, 2014). Places of informality such as that of Marabastad have the ability to capitalise on available opportunities as they are able to adapt quickly.

Opportunism can be used as a strategy in creating opportunistic architecture which enables a constantly changing environment of needs and sees opportunities within these. The role of the architect is to anticipate these changes and to create spaces that support the inconsistency of these types of environments. Hamdi (2010) proposes that the architect keeps in mind the concepts of PEAS: **P**rovide, **E**nable, **A**dapt, **S**ustain (Figure 3.4).

The degree of architectural intervention (that which its provided) will determine the success of the enablement, adaptation and sustainability. The architectural intervention therefore becomes a platform for social transformation. The involvement of the existing actors of a place and their participation is vital in accommodating both present and future needs. Historically time has been an important factor in determining how space is occupied and transformed within the South African context (Crawford 2013).

Ever since its formation, the community of Marabastad have relied on opportunism for survival. (Aziz Tayob Partnership 2002:145) We need to establish communities that are adaptable enough to not only survive, but also to thrive under unstable conditions, that can look at their circumstances with an opportunistic eye and see possibilities for growth and establishment (Figure 3.4).

The dissertation will explore how informality allows for the development of an opportunistic architecture which satisfies the needs of existing activities while allowing for adaptation in the future.

In Marabastad opportunism can be seen as taking advantage of a situation by turning its constraints into opportunities. The lack of infrastructure and permanence, for example, has inhibited stability but in the same breathe it has allowed its adaptability. This is known as symbiotic opportunism, where in bottom up processes, it refers to problem solving or making things work in conditions where minimal resources are available (Crawford 2013). The adaptation of constraints of a place into opportunities can be applied at various scales, e.g. the design of a simple canopy vs. the design of a programme significant element.

The spatial qualities evident in the adaptability and self-organisation of opportunism in Marabastad alludes to an appropriate architectural language. There is a need to respond directly to the existing conditions, strategies and patterns inherent in informal environments.

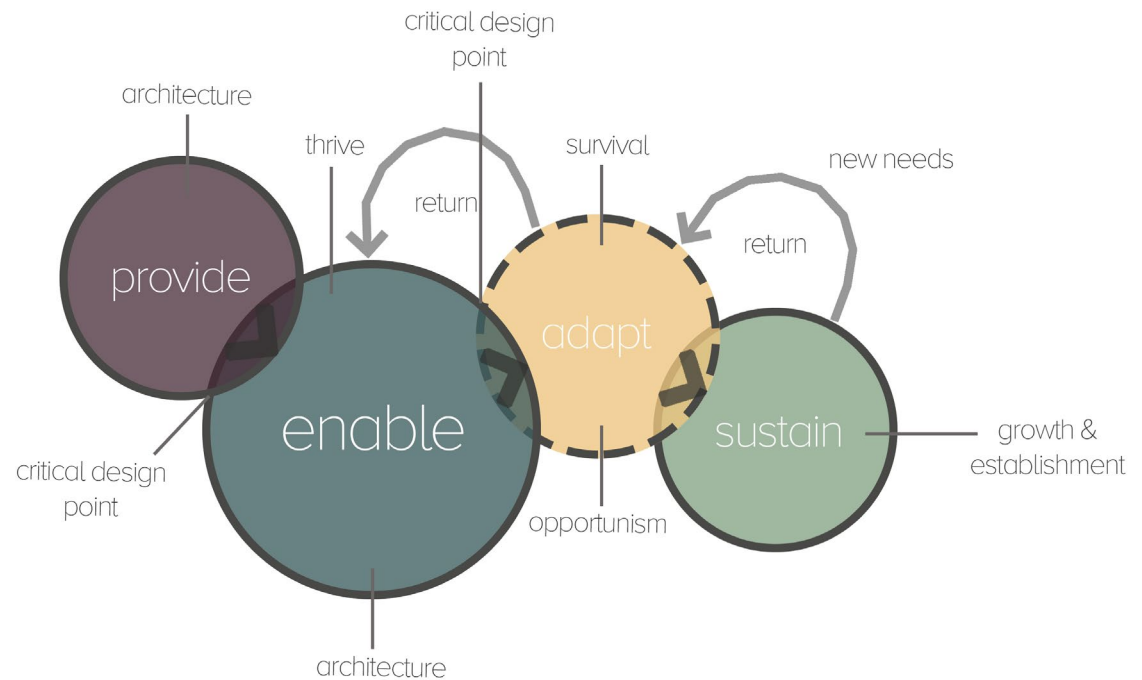


Figure 4.4. PEAS (Author 2015) adapted from Hamdi (2010)

4.2.2 | ADAPTIVE FUTURES

The Adaptable Futures group at Loughborough University is finishing a four year research project on designing for adaptability (Loughborough University year?). The project unpacks adaptability in detail looking at the complex web of dependencies that induce, hinder, and accommodate change. The research asks what we can learn from history, how buildings have been designed for adaptability and how they have been appropriated. It highlights layers, time, and context as primary dimensions regarding adaptability.

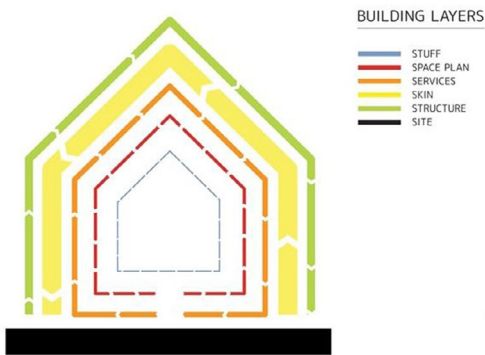


Figure 4.5. Brand's Building layers (Adaptable futures, 2008)

1. Building layers

Brand (1994) envisions the building as a set of shearing layers that change at different rates

The Adaptable Futures' diagram adds a social layer to include the humans in and around the building. The diagram also adds a surroundings layer which encompasses many of the neighbouring locational factors. These additional factors also play a role in how a building and its constituent parts will change over time.

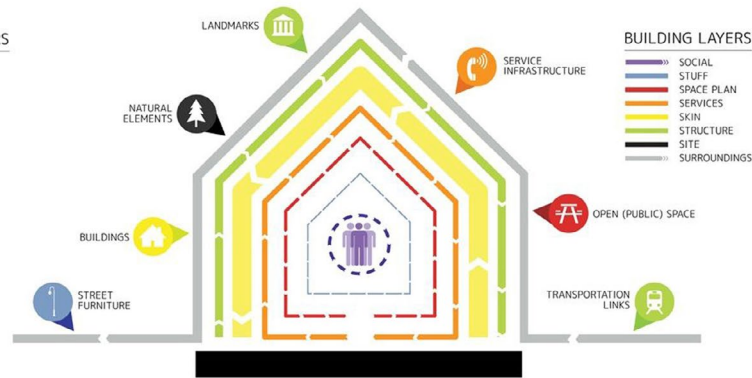


Figure 4.6. Adaptive futures' building layers (Adaptable futures, 2008)

2. Adaptability's blackbox

Adaptability is typically defined by a limited number of physical characteristics while several other physical and social variables are often left out. The diagram illustrates the importance of intergrating/including these outlying variables as they are relevant associations with adaptability.

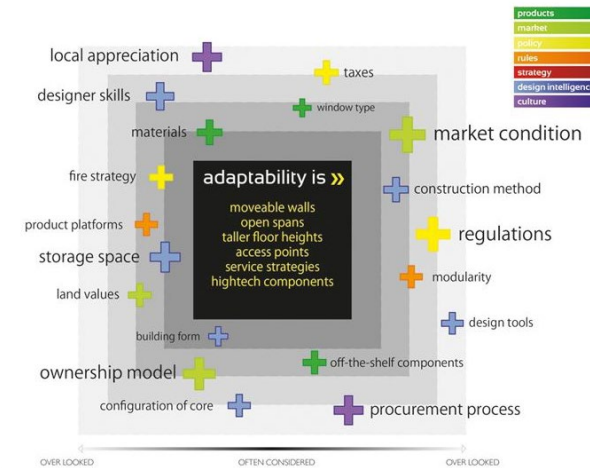
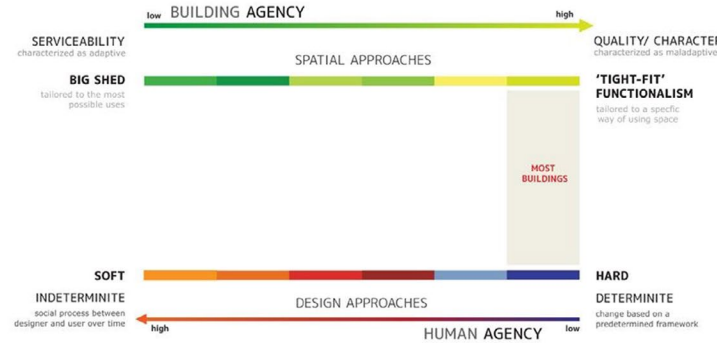


Figure 4.7. Adaptability blackbox (Adaptable futures, 2008)

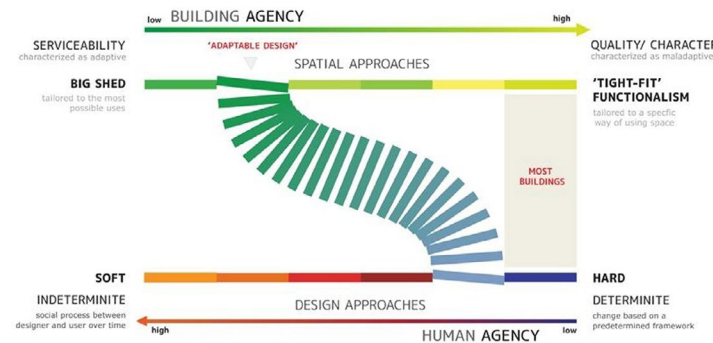
3. Building agency

Adaptability is a nuanced balancing of human, spatial and physical agency. The relational condition is constructed on the framework of two spectrums encompassing an approach to design: the top one (green to yellow) as a spatial approach and the bottom one (orange to blue), as a component-based approach.



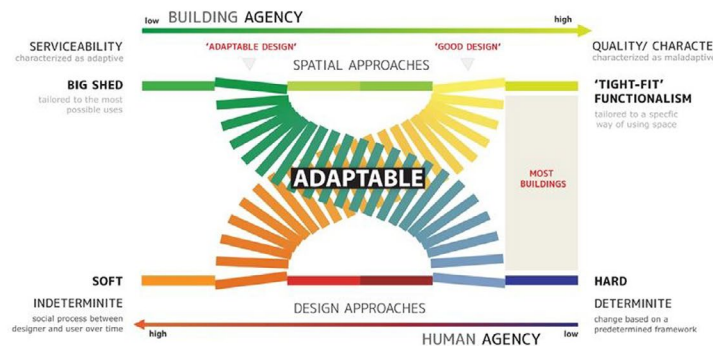
The top spectrum is a spatial approach and the bottom one as a solution-based approach.

The top and bottom arrows indicate the increasing/decreasing relationship between human and building agency in relation to the spectrums



Most buildings find themselves to the far right as a product of highly efficient methods and solutions tailored to an initial use.

That which is labelled as adaptable is often a bland, yet determinate solution.



What gets labelled as good design is often a highly tailored yet more indeterminate design.

It is at the intersection of the two perceptions where one can find a more nuanced and balanced approach for adaptability.

Figure 4.8. Building agency (Adaptable futures, 2008)

4. Frame cycle

The purpose of the frame cycle is to make explicit the nature of adaptability desired.

The centre defines adaptability.

The six strategies or motivational goals move clockwise from relatively high-frequency changes to those that occur over decades, if at all (e.g. adjustable, versatile).

The types of outcomes that might be sought are indicated by the two tones of grey around the circle.

The potential solutions and benefits in terms of products, systems or tactics are indicated by the black text around the outside.

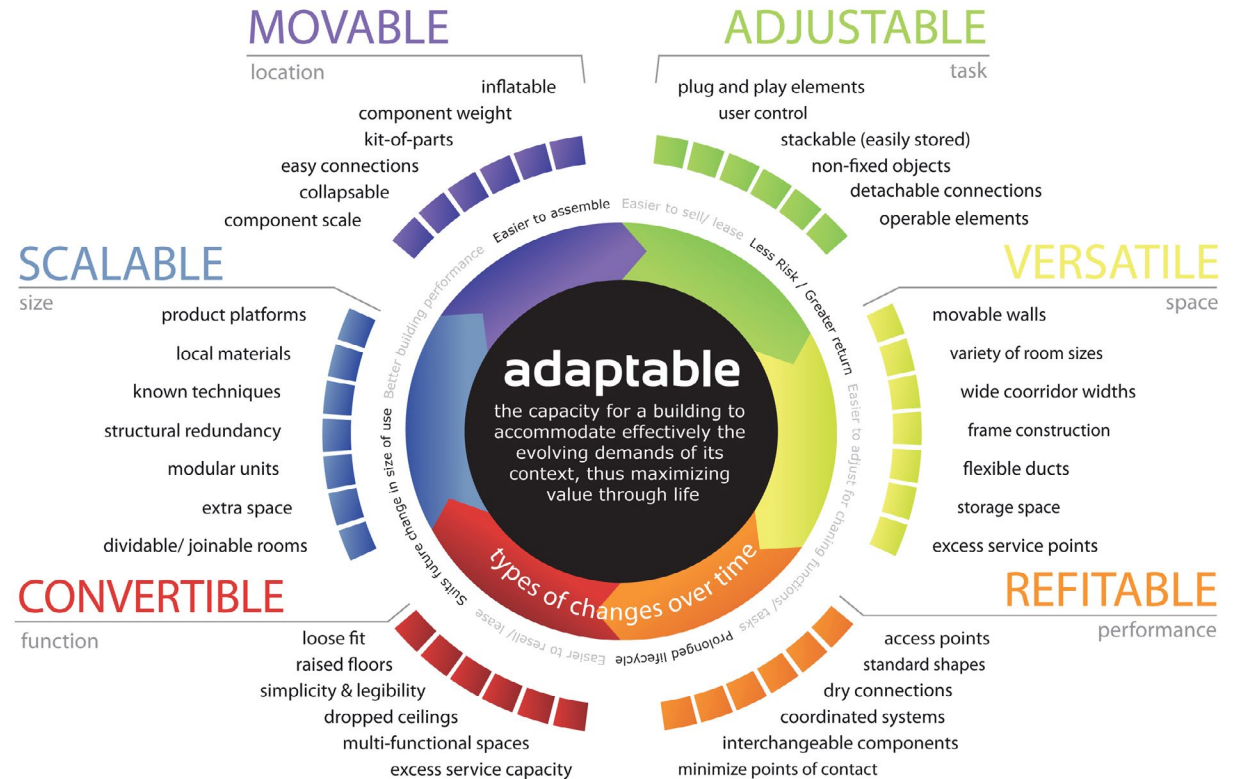


Figure 4.9. Frame cycle (Adaptable futures, 2008)

4.2.3 | FORMALITY VS. INFORMALITY

Sustainable growth of the informal sector in South Africa is due to rapid urbanisation with the steady migration into urban centres; failure by the formal sector to provide infrastructural support and service provision as well as to create sufficient employment and lastly due to competitive pressure through globalization. The burden of unemployment has led to the informalisation of jobs in the informal sector (Rogerson 1995; Simon 1998) (Sethuraman 1997). As mentioned previously 94% of informal enterprises within Marabastad are regarded as survivalist enterprises while only 6% fall into the growth enterprise type (Brand 2002). City environments often do not have the adaptive capacity to leverage changes that support socio-economic and environmental systems beyond survivalist conditions.

Informality exists as the inextricable experience of possibility and precariousness that defines the activities of the urban majority. Does this then mean that informality portrays a wider economic response to crisis or does it represent a dynamic, efficient, and democratic alternative for development

(Meagher 1995)? Informality sits in a predicament of either being too prolific or too transitory to gain institutional support through infrastructure or having enacted without the necessary resources of time, money and political support to become a 'norm' (Simone 2012). So where is the middle ground between the formal and the informal?

It is important to understand that formal and informal are not separate aspects of the environment, rather, they co-exist in a complex system of interdependency (Anderson & Jenkin 2011). Nevertheless, there is tension between the formal and the informal. Informal activities often foster make-shift architecture using available materials and attaching themselves to, or reappropriating existing formal structures and infrastructure. The architectural challenge lies where the informal seeks to adapt, remaining resilient to change, while the formal remains static (Cardosi 2011).

Where informality is so often seen as a mere strategy for survival, it in fact has the potential of prompting the path for development because it informs and alludes to the needs of a place as well as to spatial appropriateness (Anderson & Jenkins 2011). Informality constantly

emerges through a dynamic, flexible process, moving from need to need, opportunity to opportunity, in a series of adaptations (Mills 2012). It allows a place to evolve into what it needs to be. This unconventional and informal approach to 'architecture' holds the very solutions to the shortcomings of formal development (Rudofsky 1964) towards a new 'vernacular' architecture that is able to define the identity and characteristic of a place by responding intuitively to the needs and opportunities of its socio-economic environment. Informality is shaping our environments and the more we learn from this 'vernacular architecture' the more successful we will be in designing space that works and accommodates the real needs and opportunities of a place. Spatial solutions within the informal should indicate a suitable architectural language within the context of Marabastad. This process entails a thorough understanding of informality and how formality can be used as a catalytic tool for informality in creating new platforms of opportunity, connection and engagement (enabling informality to shed light from the. The socio-economic opportunities that exist within the informality of Marabastad offer huge potential if only provided with the platform to do so (Manning 1993).

CO-EXISTENCE OF FORMAL & INFORMAL

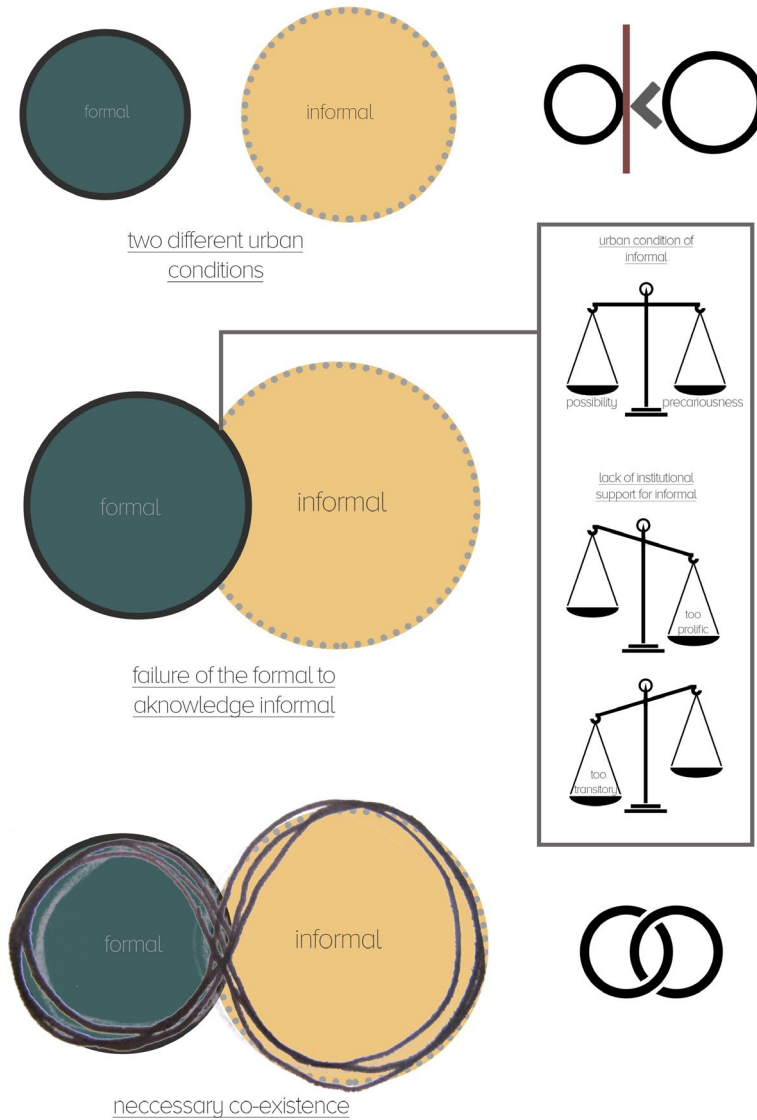


Figure 4.10. Relationship between formal & informal (Author 2015)

TWO URBAN CONDITIONS

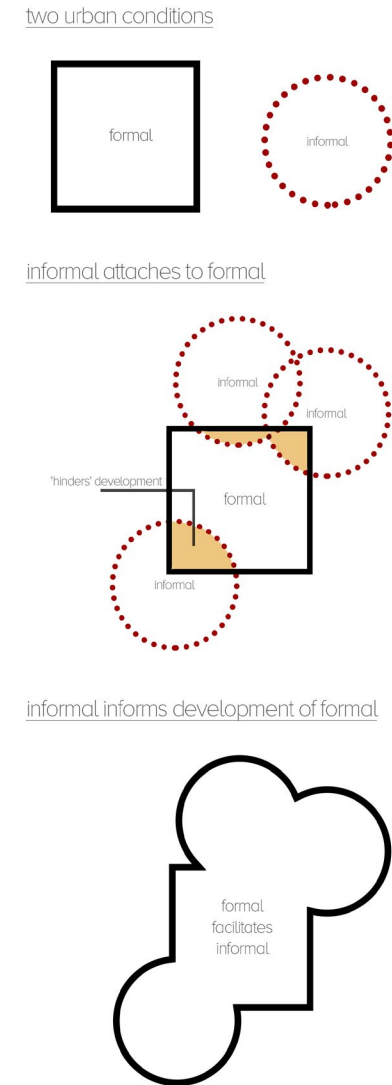


Figure 4.11. Two urban conditions: Informal informs formal development (Author 2015)

Resolving the ambiguity between the formal and informal will enable architectural design interventions to provide adequate infrastructure for the informal sector, increasing the potential of possibility over precariousness and enabling a transition from survivalist to growth enterprises.

The dissertation aims to show how the acceptance of informality and the value of its activities is the solution to providing economic stability and positive growth within environments like Marabastad, that sit vulnerably and precariously on the fringe of the formal urban condition.

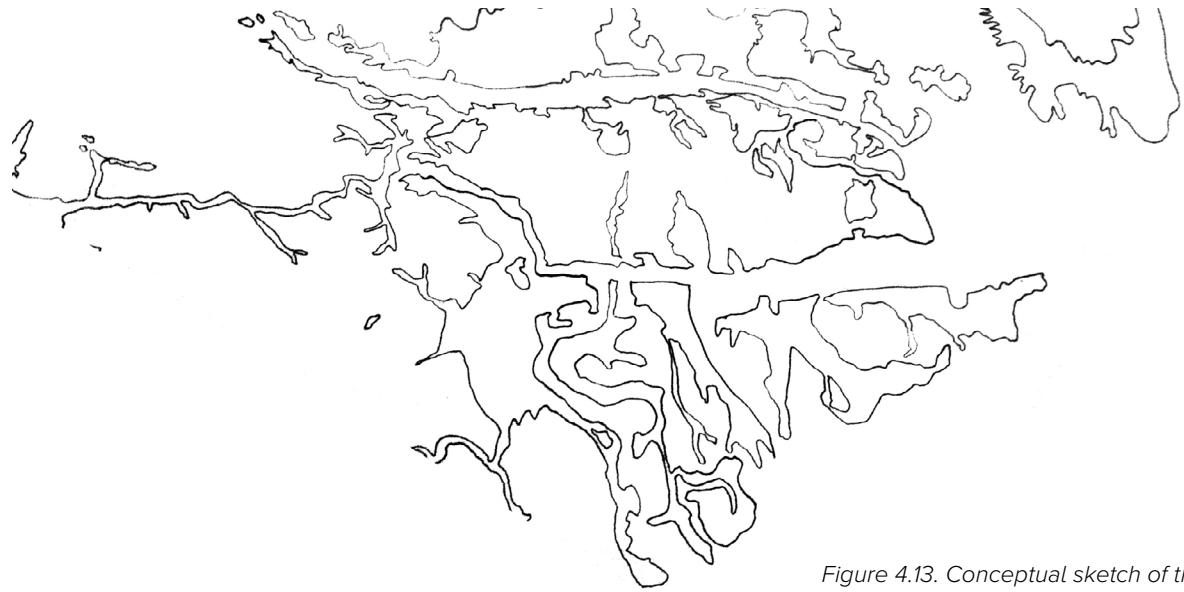


Figure 4.13. Conceptual sketch of the informal (Author, 2015)

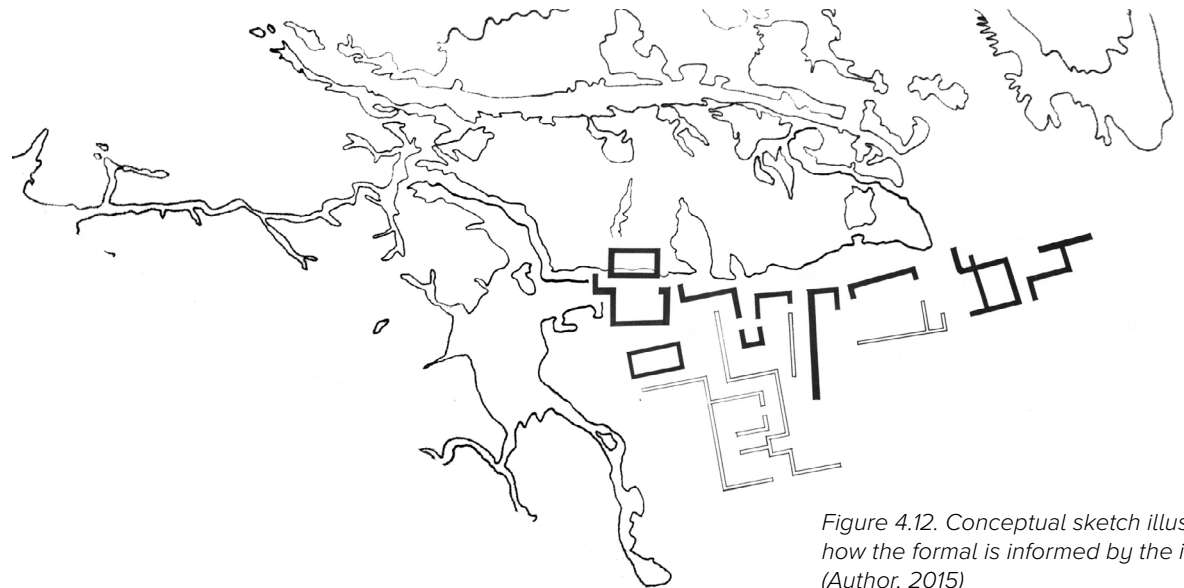


Figure 4.12. Conceptual sketch illustrating how the formal is informed by the informal (Author, 2015)

4.2.4 | PUBLIC & SOCIAL SPACE TOWARDS SENSE OF PLACE

PUBLIC SPACE

Marabastad's urban fabric has undergone many transitions over its history. It has been witness to settlement and establishment, relocation, demolition, forced removals, re-settlement and re-establishment.

Political motives during Apartheid resulted in a lack of spatial planning, leaving Marabastad's urban fabric vulnerable and ill-defined. The invasion of all vacant land and subsequent domination by retail and transport networks resulted in the elimination of all social public space as well as a lack of hierarchy of space, contributing to further illegibility.

Where Marabastad once provided a sense of belonging to blacks, coloureds and Indians, it now experiences a loss of identity and attachment by all cultures and race. David Brower as cited by Gussow, states the redevelopment of such attachment and ability to experience a place is vital in creating a sense of place through identity and character (Brower 1971:15).

A place is a centre of action and intention, "a focus where we experience the meaningful events of existence together" (Norberg-Schultz 1971:19). "Public space is the city's medium for communication, with the new and the unknown, with history and with the contradictions and conflicts that arise from all those" (Christ 2000:17).

There is therefore a need for designated public space (Blak 2013) that is not occupied by retail and transport, able to revitalise Marabastad's urban environment by establishing hierarchy through definition of place (Bremmer 2010:252). Marabastad consists of various degrees of public space from historically significant spaces and buildings, to formal retail, street vending and pedestrian walkways. Krier (1989:47) explains that the success, significance and authenticity of a place lies in the modification of the old space, which is based on the requirements of the existing activities that occupy the space (Vycinas 1961). It is therefore important to understand the urban condition of Marabastad, as the solutions stand firmly in the existing condition.

Limited social interaction of selling & buying



Figure 4.14.



Figure 4.15.



Figure 4.16.



Figure 4.17.

(Figures 4.14 - 7.17. (Aziz Tayob Partners)

Encouraging public space for social interaction as was in the past



Figure 4.18.



Figure 4.19.



Figure 4.20.



Figure 4.21.



Figure 4.22.

(Figures 3.18 - 3.22, Aziz Tayob Partners)

SOCIAL SPACE

Although there is huge importance in creating public space within the context of Marabastad there is also huge importance in encouraging social space. Public spaces are those spaces that are merely accessible to the public, i.e. the street vendor selling tomatoes on the sidewalk is occupying a public space. Social spaces on the other hand are spaces that encourage the interactions and encounters of people within a space beyond daily routine and activities. A social space is identified as an integrating space that accommodates, adapts and relates to surrounding spaces. “A city sidewalk by itself is nothing. It is an abstraction. It means something only in conjunction with the buildings and other uses that border it, or border other sidewalks very near it.... Streets and their sidewalks, the main public places of a city, are its most vital organs. Think of a city and what comes to mind?” (Jacobs 1961:39).

Place making is the art of creating public places that uplift and help connect one another "Making a Public Space a Living Space" (Oxford Dictionary).

The ‘community’ of Marabastad is made up of several different cultures and races and each day they share the place

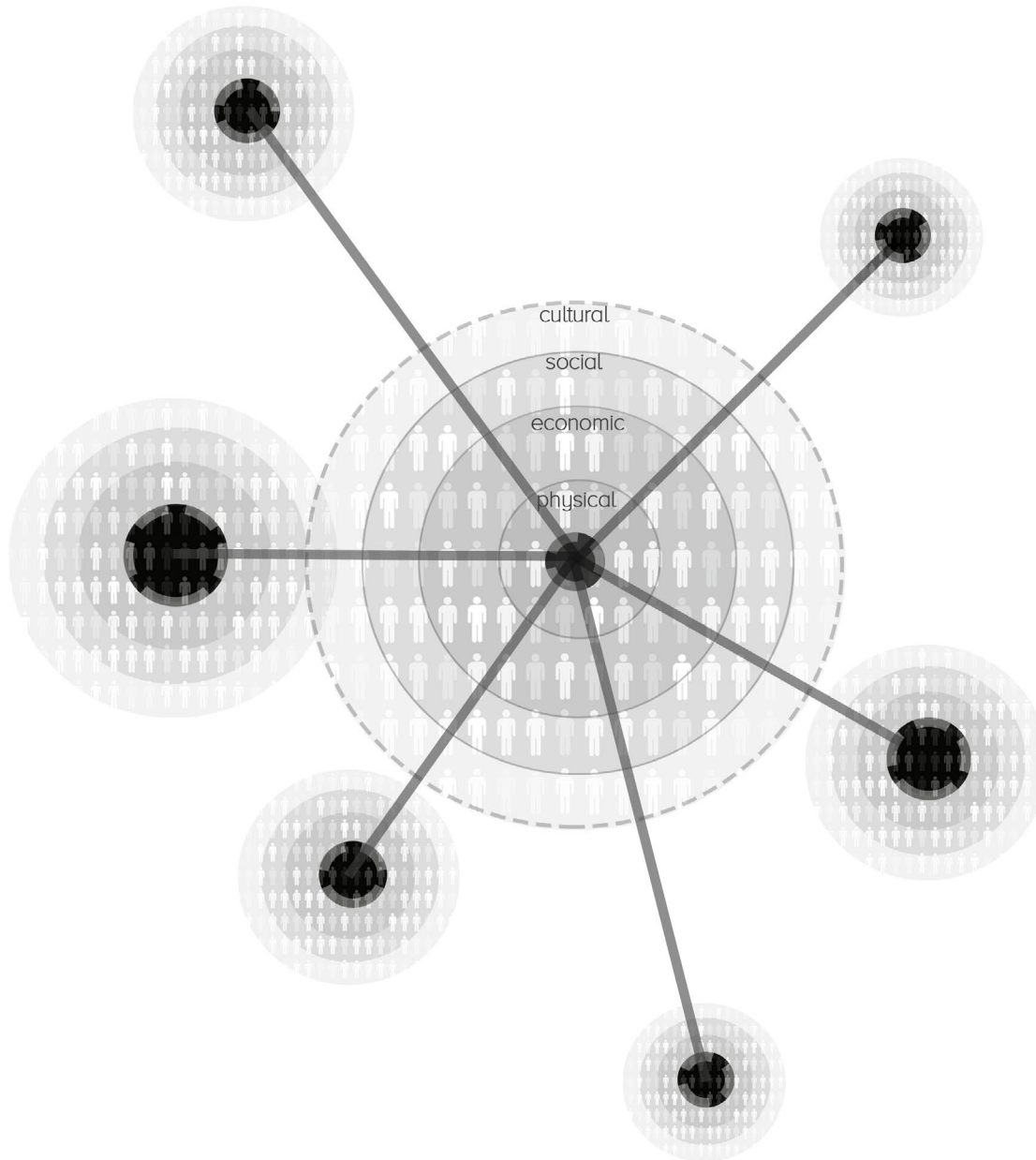
regardless of their forced geographical separation (Figure 3.23). Understanding the history of a place like Marabastad with its diverse cultures, is imperative in creating successful public and social space. There is a necessity for social interaction and cohesion between cultures and races which encourages a sense of identity, belonging and foremost, community. Social spaces should be easily accessible to all cultures and races, where the frequent movement of people and their interactions will contribute to the success of the public space.

Jan Gehl in his publication, *Life Between Buildings* (Gehl, 1987; Therakomen, 2011) states that social activity happens every time two people are together in the same space. To see and hear one another is in itself a form of social interaction. By this definition social interaction is evident throughout Marabastad, however, it is limited by its embedded transitory nature and lack of designated public space. The actual meeting where one is merely present is only the seed for more comprehensive forms of social activity. Marabastad’s temporality restricts its ability for meaningful social interaction between different users of the space.

Architects can affect possibilities for seeing, meeting and interacting with people encouraging a sense of identity and place while also promoting the social and economic activities which define this very space (Therakomen 2011). Spontaneous daily activities lead to possibilities for interaction and architecture responsible for creating these platforms of interaction.

It is imperative to understanding what defines place in creating socio-economic environments that enhance the way in which multiple informal networks participate, calculate their chances, keep open multiple futures, maintain accessible environments, continuously adjust how they survive, accumulate resources collectively, and how they contest specific constraints on their maneuverability. Architecture needs to create space that crosses these social, economic, cultural and racial boundaries (Mehrotra 2011).

In informal environments like that of Marabastad it is the people and their activities that define place over the building they occupy (Figure 3.24). The architectural intervention therefore needs to allow for participation by users by providing flexible and adaptable space.



“...We cannot reduce society to individual interactions... Individual interactions are endlessly replaced. But certain underlying patterns in these interactions persist. It is these patterns that we name society. The patterns can be the result of any number of different patterns formers...include[ing] the spatial form of society... Space is the one thing that can generate and restrict encounter and interaction probabilities, indeed, and this is how space becomes involved in society” (Hillier 1996: 402).

Figure 4.23. Social public space

The need for a new public typology is necessary where public space can support both economic vigour and social interaction and where culture can be expressed and racial diversity celebrated.

Aymonino & Mosco (2006: 21-23) identify four points that define public space:

- 1) A strong relationship with its surrounding context
- 2) Multiple potential and variety of use
- 3) Evoking a positive sense of participation
- 4) A space that is open to all.

There is a need for “looseness of space”. Loose space is defined as “space that has been appropriated by citizens to pursue activities not set by a predetermined programme” (Figure 3.24) (Franck & Stevens 2006:42). The looseness of space strengthens the concept of programmable urban surface, which responds to the everyday identity of space, allowing for self-organisation, adaptation, development and growth.

DEFINING PLACE

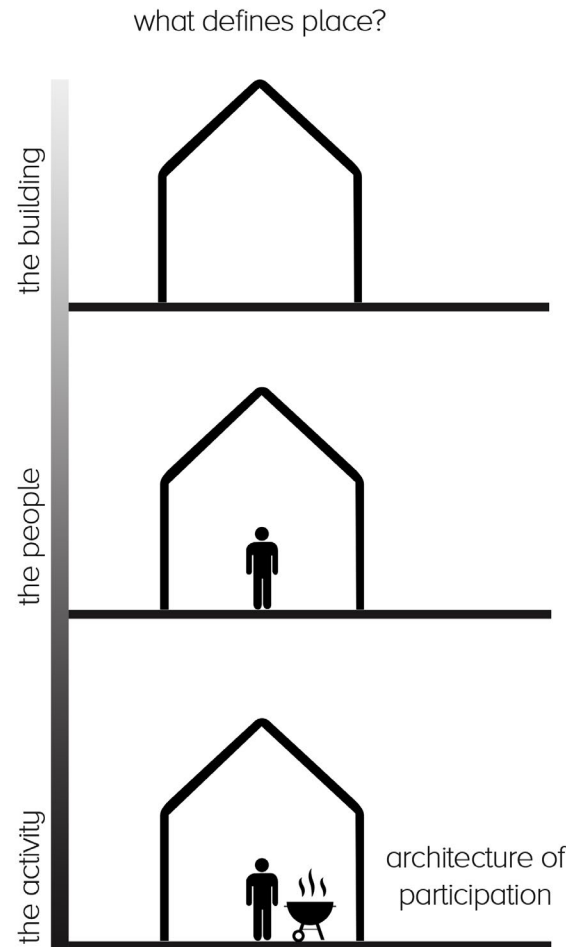


Figure 4.24. Defining place
(Author 2015)

FINTITE VS FLEXIBLE BUILDINGS

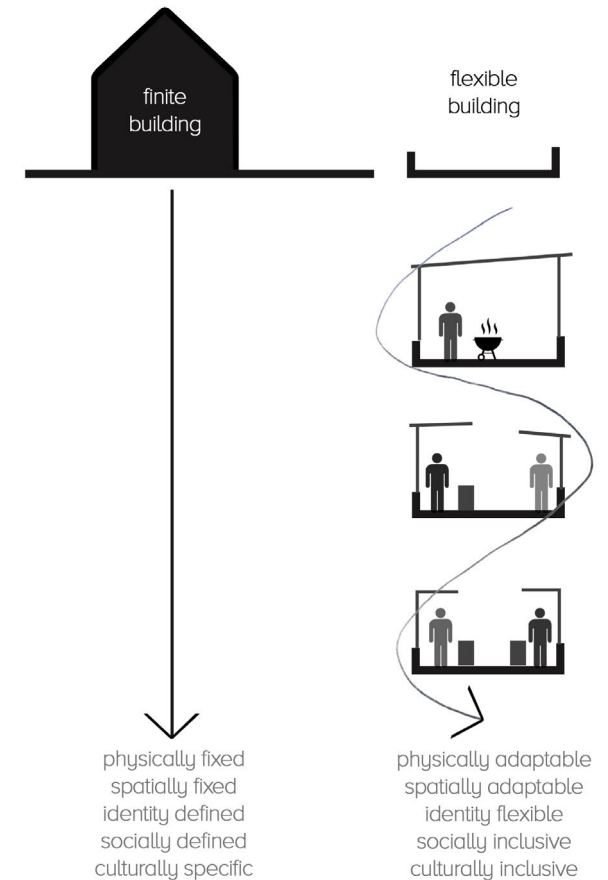


Figure 4.25. Finite vs. flexible buildings
(Author 2015)

MARABASTAD'S USERS & NETWORKS DEFINE A SENSE OF PLACE

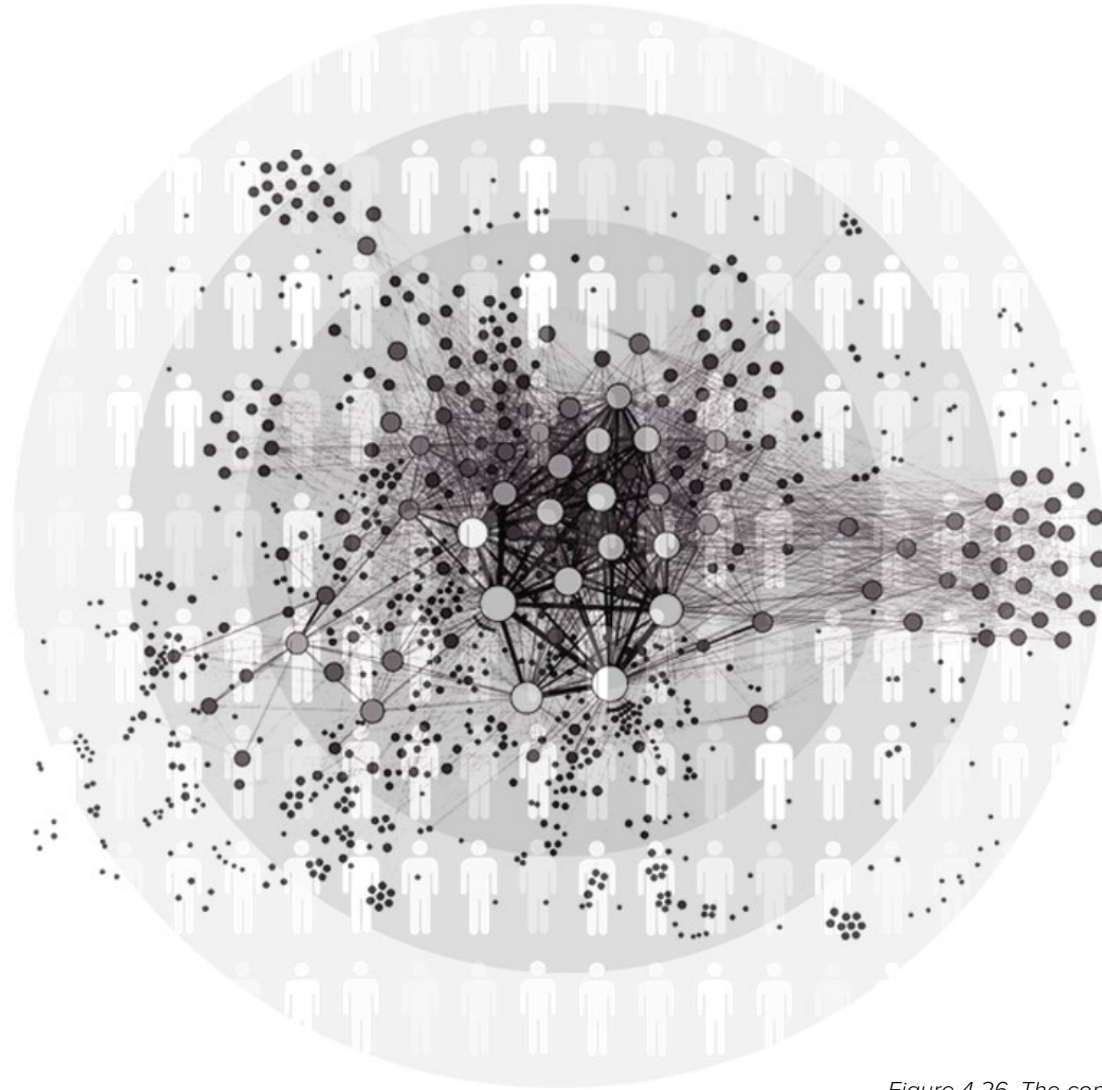


Figure 4.26. The connectivity between people and networks in Marabastad (Author 2015)

4.2.5 | SPACE AS RITUAL: AFRICAN CITIES

Eurocentric influences, as a result of colonialism and globalisation, are evident in the design of African urban environments. This approach is somewhat a-contextual however, as the formation and development of African cities has been very different from that of European cities. Dominating formalistic approaches in architecture and urban design are based on Modernism's separation of subject and object and the subsequent loss of human and bodily experiences as informants of spatial construction.

The isolation of the human subject from the object has left it solitarily confronting the chaos of the built environment (Siegfried & Kracauer 1884 – 1972). The abstraction of the built form towards the creation of the "object" and the suppression of cultural identities has resulted in the loss of the human aspect as the prime informer of the production of space. The human needs to be included in production of space so that it becomes both the subject and the object. In opposition to the disregard of the human by formal solutions architecture and urban design can be based on experience rather than solely needs. (Borden 2001:11)

Lefebvre (1991: 36) proposes the restoration of the sensory, sensual and non-visual in architecture.

Rejection of the formal approach to space and consideration for the human is therefore imperative. Doreen Massey (2005) suggests three ways in which to recognize the human when considering urban and architectural space: firstly, understand space as a product of interrelations; secondly, understand it as a sphere that allows for the existence of multiplicity and thirdly, acknowledge space as always being in a state of incompleteness.

This approach supports the concept of informality as a means of creating space as a temporal condition where space and time co-exist. Spatial differentiation can therefore be defined as events happening over time, despite being geographically static (Massey 2005: 29, 30, 188). By accepting space as temporal, spatial definition of informality within South Africa can be celebrated. This condition allows space to be adjustable and variable, allowing public space to be continuously occupied in different ways (Massey 2005:66, 84). This self-organising system recognizes the citizen's right to inhabit a flexible and mutable city (Koolhaas 2001: 661, 674). In the case of

African cities this means that space can be maintained through connections rather than through exclusion.

The urban landscape needs to be a dynamic, responsive and active urban surface which allows processes and events to move through them and encourages the new relationships and interactions between object and space.

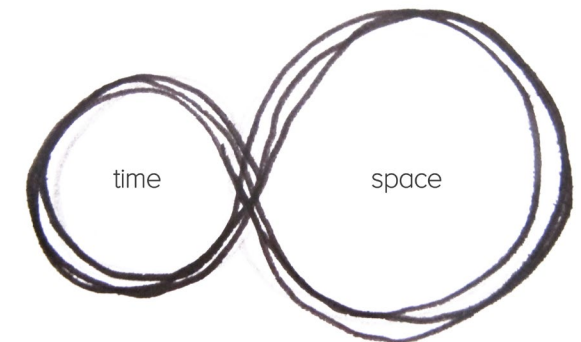


Figure 4.27. Informality as a means of creating space as a temporal condition where space & time co-exist (Author 2015)



Figure 4.28. Architecture as object (Author 2015)

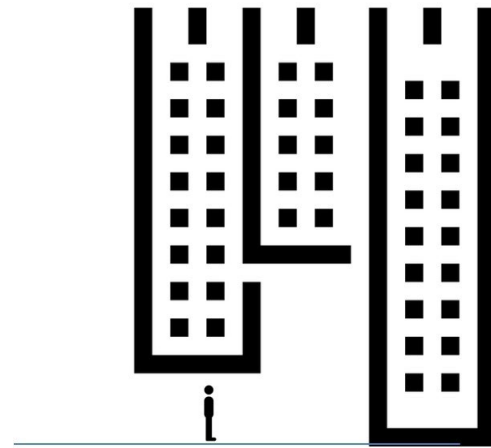


Figure 4.29. Architecture that enables human to be the subject and the object of space (Author 2015)

SOCIO-SPATIAL RECOGNITION

Human behaviour and social practices are inherently spatial and the organisation of space is therefore a social product defined by agents operating within a specific social structure (Wolch & Dear 1989: 7). Urban environments are therefore not defined only by physical boundaries but also by human boundaries that outline the possibilities and limitations of human behaviour. Intentions to fill in gaps, increase densities, mix land uses and stitch the fragmented city together can therefore only be partially resolved through architecture. Architectural intervention should allow the life of the city to take its own form. Forty (1995: 314) warns that “if the task of reintroducing identity, community and continuity into the life of the city was consigned to architecture alone, the emphasis will remain on formal and aesthetic solutions, undermining the conditions conducive to the establishment of an affirmative contemporary social urban culture”.

RECLAIMING IDENTITY

The complex contemporary South African urban condition, founded on its diverse cultural identities, demands strategies capable of tolerating contradictory impulses and with the capacity to capture a layered society with all its perceptions, patterns and

structure (Caples & Jefferson 2005:6). Feasible urban strategies need to allow South African cities to reflect community, democracy, participation, transparency and humanism. Strategies should include processes of rebuilding, incorporating, connecting and intensifying what already exists.

This will enable cities to reclaim their identity and address issues of diversity among social groups experienced in the every day. Urban spaces must be able to accommodate human beings as social beings who belong to a self-organising and multifaceted society. Open urban systems need to be founded on a social and collective space where heterogeneous society is capable of expressing itself. This communal space should be adaptable so as to readily accommodate spontaneous [re]appropriation allowing for huge programmatic potential.

“Disorderly” African public space should allow for indeterminate social engagement that encourages cultures of engagement, social transformation, new coalitions, inclusion and hybrid identities that work against exclusivity (Sennet 1992).

SOCIAL FUNCTION OF ARCHITECTURE IN THE URBAN REALM

It is the social construction that enables a variety of uses, and an open system that connect the city. An architecture able of resisting its nature as a formal, self-determining practice has the ability to reassume spatiality as a social function through cultural expression and place making. The success of architecture does not lie in the physical or material elements but rather the effect these have on the experience of the users. Meaning cannot be predetermined by architecture but rather by the experience of it users.

NON-ARCHITECTURE

By regarding space in terms of movement, time and flux, the city can be perceived in view of social, cultural, political and economic spatial landscapes (instead of physical) where public interaction is maximized and social exclusivity is undermined. An urban condition which defines public space through events, prevents necessary, optional and social activities from being marginally influenced by the physical elements

In reactivating the African city, the quality of urban space of existing activities needs to be improved and reprogrammed as

democratic places that support different levels of social events. Spaces that contest functional hierarchies through adaptability can be seen as democratic, where experience is not reliant on the dominant requirement of use. An African City, in accordance with Koolhaas et al (2000: 653), is one that does away with the conventional notion of 'city'. It is where the public realm is continuously occupied in different ways and spaces are dynamic and flexible, constantly regenerating themselves.

CONCLUSION

In conclusion design and planning should act within social, cultural, economic and political disciplines in uncovering and responding to the spatial problems of African Cities – reintroducing the body and the lived experience as central concerns. Spatial strategies to be considered:

- Create adaptable, fluid public space that allows for movement and event and is not determined by or reliant on pragmatics.
- Reconsider the relationship between object and space by enabling thresholds to also define spatiality.
- Blur boundaries and edges so as to allow interrelationship between internal and external space as well as private and public space.

public space as facilitator of points of contact



Figure 4.30. Public space as a catalyst for social interaction (Author 2015)

5 | SITE & PROGRAMME

5.1 | SITE

INTRODUCTION

Fritjof Capra explains that an urban landscape like that of Marabastad is a living network of people (Capra, 2002). Marabastad’s living network is in constant flux and it functions quite differently from a static environment. Although the networks within Marabastad grow and change continuously, unlike conventional cell development, which is created by the cell itself, Marabastad’s parts – its people, products, economic stability and social and cultural identity rely on external sources for its existence and survival.

It is therefore imperative to identify both a site and a programme that encourage permanence and an interdependent relationship between Marabastad and informal settlements and Marabastad and the city; a site within the precinct that provides optimal conditions for a catalytic programme, allowing its energy to infiltrate into the surrounding urban fabric; and a site on which existing informal activity has opportunity for diverse programmatic development and growth



Figure 5.1. Reliance on external energies for survival (Author, 2015)



Figure 5.2. Intention of interdependency (Author, 2015)

5.2 | SITE REQUIREMENTS

5.2.1 | IN ALIGNMENT WITH THE URBAN VISION:

Facilitating the existing activities and networks: The mapping attempts to reveal existing threats and opportunities within the fabric of Marabastad. Identifying a site where infrastructure is able to facilitate the establishment and growth of existing activities and networks as well as allow for the development of new activities and networks is imperative. Architectural design intervention can be a catalyst in improving the livelihoods of those who rely on Marabastad as well as strengthen its urban fabric.

Creating public space: There is a need for designated public space which links the urban fabric and improves legibility. Public space also provides opportunity for public interaction and social cohesion amongst a diverse community. By ensuring accessible public space through the provision of adequate infrastructure, opportunities are bound to arise on-site that would cater for the needs of people (Hamdi, 2004).

Designated pedestrian walkways:

Designated pedestrian walkways need to be provided along busy pedestrian routes to increase pedestrian accessibility and safety from high speed traffic.

Opportunities were identified by investigating existing as well as preceding and potential activities and networks. In doing so an understanding of what Marabastad was in the past, what it is currently and what it could be in the future could be explored.

5.2.2 | LOCATION REQUIREMENTS

The site needs to be:

- Suitably positioned with the intention of uplifting surrounding urban fabric. It should be located where it is able to improve the legibility and accessibility of the precinct.
- In close proximity to natural resources with the intention of uplifting the natural environment. e.g. Steenhovenspruit
- In close proximity to the city in assisting and promoting the interdependency and physical integration of the two urban conditions

- In close proximity to various modes of public transport ensuring the site's connectivity to surrounding areas. A site that connects various transport nodes often guarantees high pedestrian movement.
- High pedestrian movement (which is different from vehicular movement as it allows for direct economic and social interaction) generate increased energy flow and ensures a constant flow of people through the site throughout the day.

5.2.3 | URBAN REQUIREMENTS

Support existing urban fabric:

The chosen site should have potential to strengthen the remaining urban fabric as it has heritage significance. Existing infrastructure and services should be upgraded and expanded with the intention of uplifting the current urban environment.

Existing formal and informal:

As stated in the theoretical discourse, one of the main design intentions is to investigate how architecture can be a tool, promoting the co-existence of the formal and the informal. Elements of formality

have established themselves within the informality of Marabastad and the analysis of this can inform appropriate development. It is therefore necessary that the chosen site has both formal and informal qualities.

Socio-economic opportunity in existing trade and transport networks:

The 'community' of Marabastad relies on economic vigour generated by trade and transport networks. The site therefore needs to support the existing economic opportunity while also promoting new socio-economic opportunities. Places where trade and transport currently exist ensure the relevance of developing an economic node further and encourage social integration.

Informality:

Informality develops and adapts according to the needs of a place. The presence of informal activity is therefore useful in identifying these needs. Informality is also often not provided with sufficient infrastructure and this hinders its establishment and growth. Observing the numerous degrees of informality will also allude to how space is used through adaptation and re-appropriation. This will inform appropriate solutions to spatial, functional and infrastructural needs.

A site where activities require a range of spatial solutions will inform a richer response through a variety of architectural interventions and implementations. Informality develops along high movement routes, therefore alluding to nodes of energy and high pedestrian movement.

5.2.4.1 PROGRAMMATIC REQUIREMENTS

- **Growth and establishment:**

Opportunity in the existing environment needs to be identified where an architectural intervention would be catalytic within its context by enabling the growth of existing activities and networks; while also creating potential for the establishment of new activities and networks that will promote programmatic diversity. Within the urban framework, the introduction of numerous catalytic interventions within Marabastad will uplift the urban condition by promoting diversity, adding richness and strengthening its urban fabric. Marabastad has the potential of becoming a destination within its context through encouraged stability, permanence and independence.

- **Cultural identity and cohesion:**

Where Marabastad was once a place of cultural and racial expression that

offered blacks, coloureds and Indians a sense of belonging and community, it now experiences a loss of identity and attachment by all cultures and races and a complete lack of public and social space. Understanding Marabastad's cultural history - what it was in the past, what it is currently and what it could be in the future - is important in proposing suitable site conditions for a public and social space. These places have the potential of becoming places of livelihood where everyday activity extend beyond the current transitory nature of Marabastad (Hamdi, 2011).

- **Potential for public space:**

Marabastad lacks public space as a result of the dominant occupation of trade and transport networks. Public space needs a catalytic activity. The development of public space around existing activities that have the potential of mediating activity and anchoring the energy, can facilitate in the creation of infrastructure, to aid activities and networks (Capra, 2002:234).

- **Socio-economic environments:**

Spaces with various layers of informality could become the site of not only economic engagement but social interaction and activity too (Hamdi, 2011). In accordance

with the urban vision, there is a need to promote not only economic development, but also social and cultural development. Identifying a site where social activity is evident (even if only slightly) or where there is potential for social integration will provide a platform for further development of the social sector. Existing activities on-site or in the surrounds should be catalysts in supporting and promoting social engagement through public space.

CONCLUSION

The support and facilitation of existing activities and networks would allow for the development and expansion of the existing urban fabric and create platforms for further opportunity, introduction of new programmes and increased diversity. Furthermore these spaces with various layers of informality could become sites of not only economic engagement, but social interaction and activity too. These places of informality have the potential of becoming places of livelihood where everyday activities extend beyond the current economic vigour and transitory nature of Marabastad (Hamdi, 2011).

5.3 | PROPOSED SITE

The proposed site is along 11th Street, from the Belle Ombre Metro Station, along the West of the sub-station up until Boom Street.



Figure 5.3. Site in macro-context



Figure 5.4. Site in micro-context



Figure 5.5. Significant buildings & sites adjacent site

5.3.1 | SITE DESCRIPTION

There are a variety of formal and informal activities on-site:

- On the north of the site is the African Affal Depot, which is an informal butchery - specialising in cow heads, skin and hooves.
- West of the informal butchery is an informal meat market where the cow meat and other cow 'affhal' (intestines, stomach, and lungs) are sold from numerous small informal stalls.
- Buildings (some of which have heritage value) on the West edge of the site, are occupied by formal trading. Formal activities situated along the western edge of the site (From North to South) include: a hairdresser, clothing stores, empty shed, herbalist, formal butcher, wholesaler, textile stores, supermarket (selling non-perishable goods) and a dentist.
- On the corner of 11th street, fruit and vegetables (that come from the Marabastad market) are repacked and distributed within Marabastad, to the CBD and to the informal settlements.



Figure 5.6. Informal bovine butcher (Author 2015)



Figure 5.7. Informal meat market (Author 2015)



Figure 5.9. Fruit & vegetable distribution (Author 2015)



Figure 5.8. Formal shops (Author 2015)

- On the east of the site there are two light roof structures, one with a small formal fruit and vegetable market which sources its products directly from the distribution point and the other adjacent shelter it is a small craft market.
- Attached to this more formal structure are numerous informal vendors selling fruit, vegetables and sweets.
- There are public ablutions on the South-west of the site.
- Situated adjacent the ablutions on the most Southern side of the site bordering Boom Street are 4 informal restaurants.
- The Steenhovenspruit runs underground west of the substation.



Figure 5.10. Fruit & vegetable market (Author 2015)



Figure 5.11. Craft market (Author 2015)



Figure 5.12. Informal restaurant (Author 2015)



Figure 5.13. Steenhovenspruit goes underground (Author 2015)

5.3.2 | SITE JUSTIFICATION

- Both existing formal and informal activity are evident onsite.
- The Steenhovenspruit runs east of the site. The proposed site is significant because it is the site where the Steenhovenspruit goes underground. There is an opportunity to access this natural water source on-site. The site and programme intend to create an interface in which the public are able to enjoy and more easily access this natural resource and acknowledge the submergence of the Steenhovenspruit. This public interface will also be functional in assisting during flooding. (Aziz Tayob Partnership, 2002:207) Exposure to the functional use of the water on-site from the Steenhovenspruit will also be celebrated.
- The site is located on the fringe of Marabastad and therefore in close proximity to the CBD. The proposed intervention is intended to become a significant space within Marabastad improving legibility and accessibility. It therefore offers the opportunity of being a gateway between Marabastad and the city, encouraging physical



Figure 5.14. Steenhovenspruit goes underground (Author 2015)

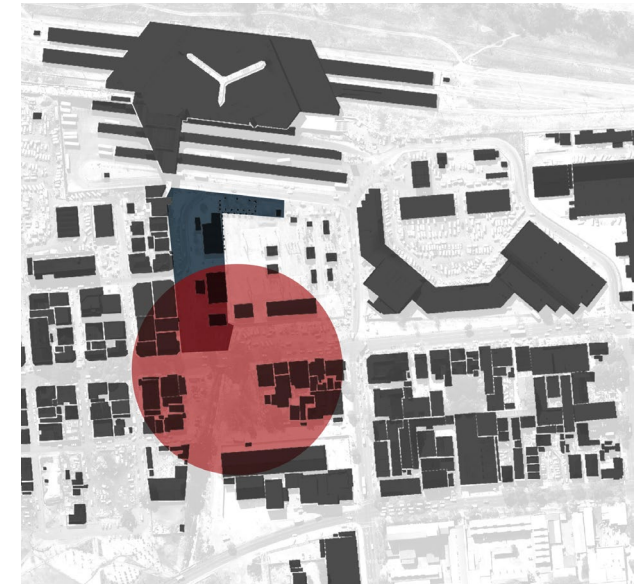


Figure 5.15. Site as gateway to city (Author 2015)

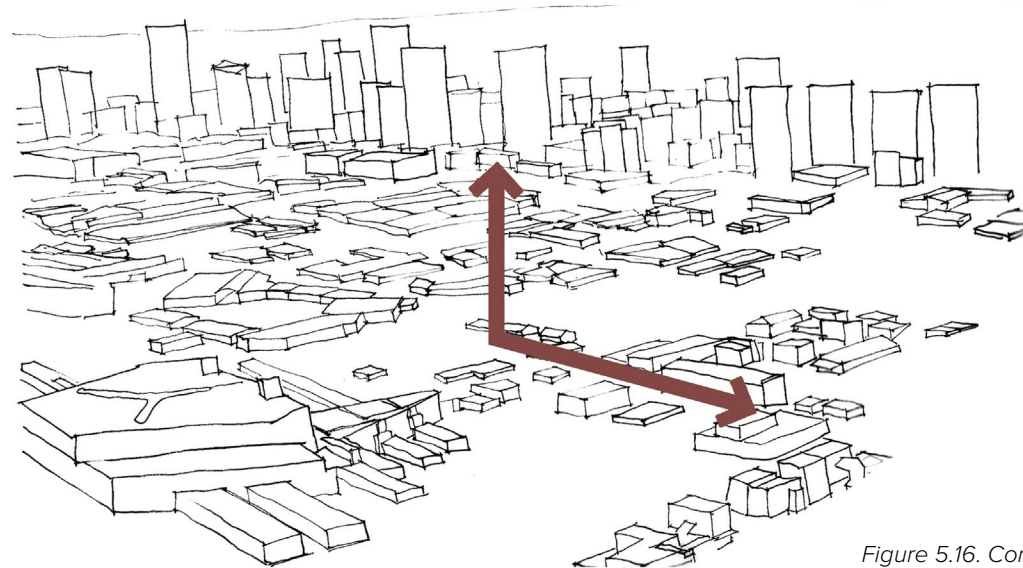


Figure 5.16. Connection between Marabastad & city (Author 2015)

integration by providing a good location for a catalytic programme.

- Most growth enterprises are close to the Belle Ombre Station. In alignment with The Tshwane City Vision for 2055, a proposed BRT station will be located South-East of the site along Boom Street. The implementation of the BRT station will result in a significant increase in pedestrian traffic between the Belle Ombre Metro Station and the new BRT Station, across the proposed site. This will ensure high pedestrian traffic as well as a constant flow of people through the site. The development of the site as a designated pedestrian walkway promotes the use of both the Belle Ombre Station and the BRT therefore supporting transport infrastructure.
- With the predicted increase in pedestrian movement along 11th street and the high speed traffic on this road, the urban framework proposes the site as a designated pedestrian walkway (from Belle Ombre Station to Boom Street). This is achieved by proposing a new vehicular road from Belle Ombre Plaza straight through to the informal taxi rank west of the Belle Ombre

Station, allowing vehicles (especially taxis) to move more directly to the taxi rank and enabling a safe pedestrian space.

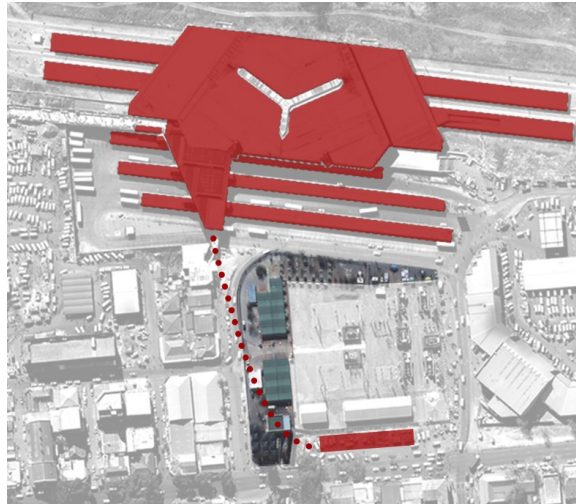


Figure 5.17. High pedestrian movement between modes of public transport (Author 2015)

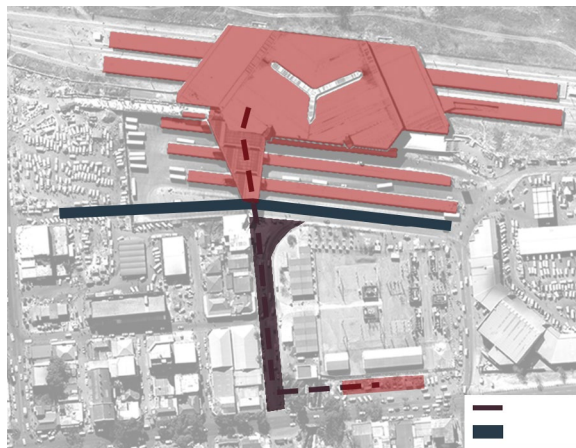


Figure 5.18. Proposed pedestrian walkway & extension of 11th street (Author 2015)

5.3.3 | SITE CONDITIONS

- The site comprises of both formal and informal activities - providing the design challenge to integrate these two effectively.
- The site has numerous layers of informality and through the observation of underlying formality within this informality, appropriate development can be prompted.
- Informality was identified where potential for intervention would be catalytic to existing networks as well as promote new networks encouraging functional diversity.
- The activities that exist on-site offer huge diversity and the potential for cohesion between programmes.
- The chosen site has numerous generators of activity which involve the participation of the community and is therefore ideal in creating public interactive space that encourages participation and social cohesion as well as improving livelihoods (Relph, 1976:128). The development of public space around existing activities that

have the potential of mediating activity and anchoring the energy can facilitate in the creation of infrastructure to aid existing networks and deal with existing resources (Capra 2002:234).

5.4 | SITE ANALYSIS

Conditions of the site: threat and opportunities – what to latch onto and what to improve.

NEGATIVE SITE CONDITIONS

- Orientation
- Site slope
- Vehicular pedestrian movement
- Physical inaccessibility
- Scale difference and sub-station visually impeding
- Existing structures
- Lack of infrastructure

POSITIVE SITE CONDITIONS

- Natural elements
- Pedestrian movement
- Transport nodes and routes
- Trade – formal and informal
- Edges

GENERAL OBSERVATIONS

Lack of designated public space and social interaction
 Lack of infrastructure
 Lack of platform for growth and development of the existing
 Lack of efficient use of resources

5.4.1 | NEGATIVE SITE CONDITIONS

A_ORIENTATION

- Site orientation with short axis East-West

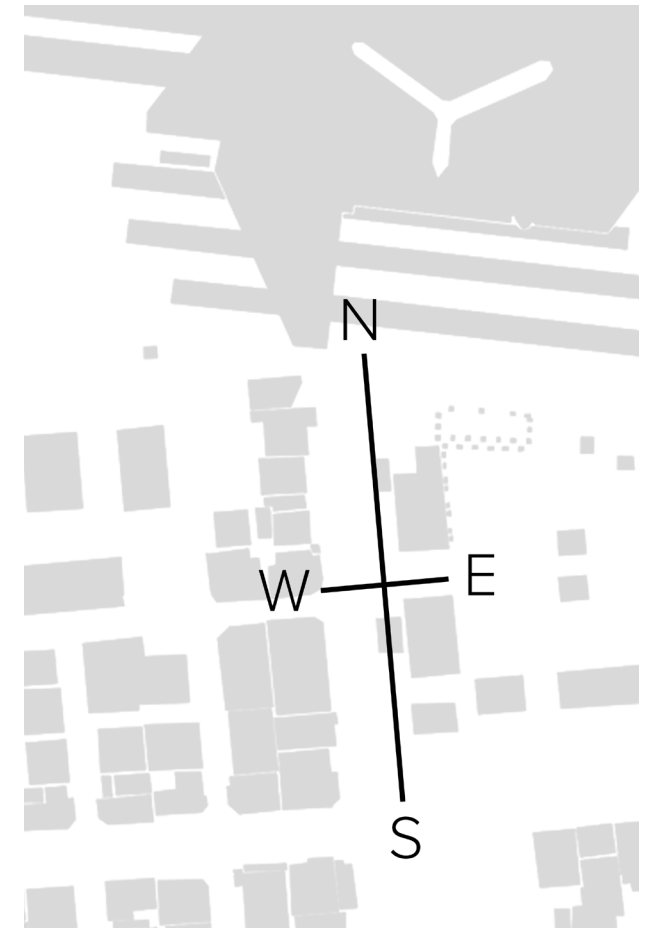


Figure 5.19. Site orientation (Author 2015)

B_SITE SLOPE

- Site slope of 4m

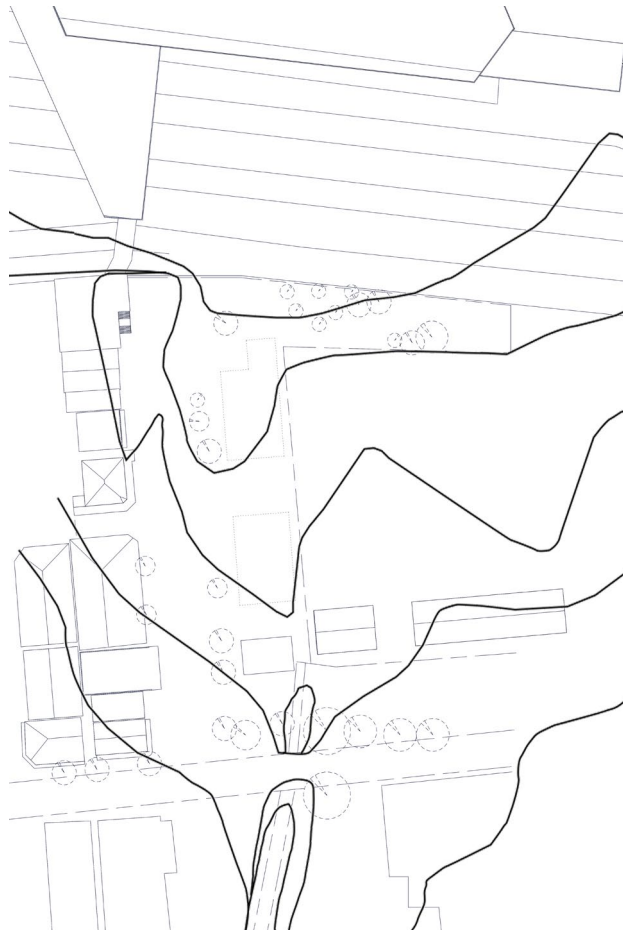


Figure 5.20. Site contours (Author 2015)

C_VEHICULAR & PEDESTRIAN MOVEMENT

- Detour route for vehicles through site
- High speed traffic
- High pedestrian traffic



Figure 5.21. Vehicular & pedestrian movement conflict (Author 2015)

D_PHYSICAL INACCESSIBILITY

- Fence reduces access to activities, hindering economic opportunity
- Lack of sufficient designated pedestrian walkway

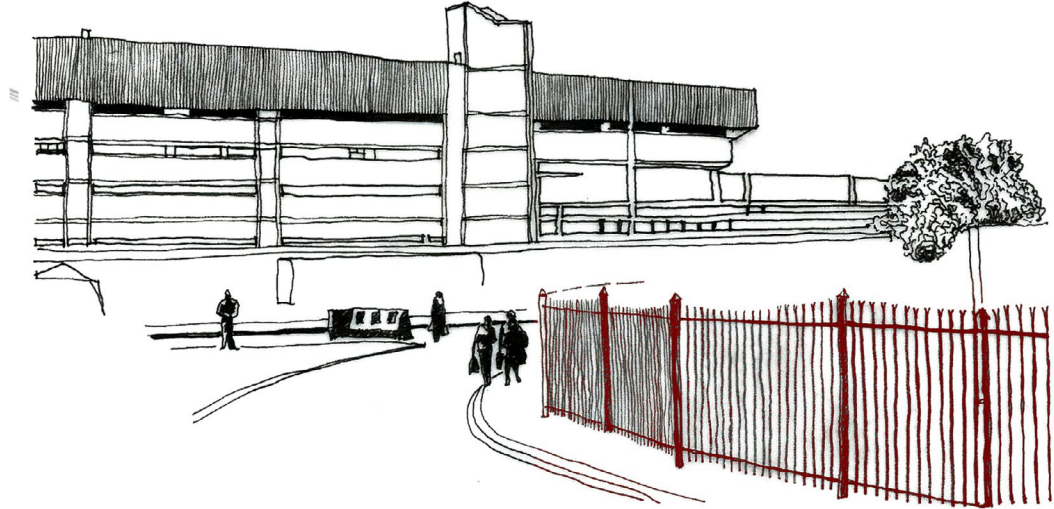
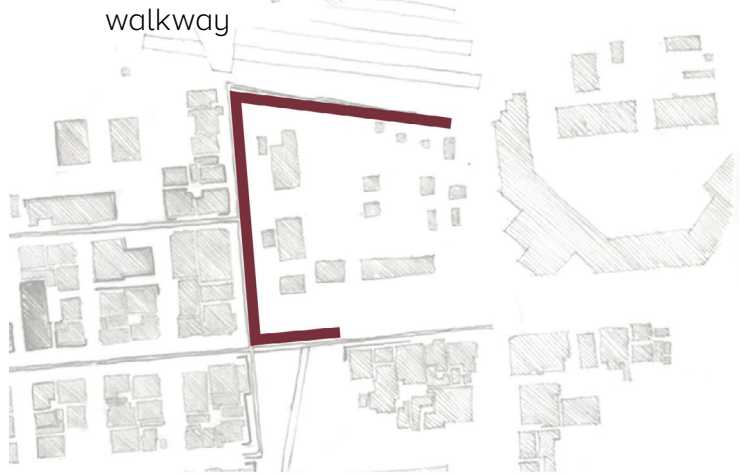


Figure 5.22. Fence as barrier (Author 2015)

E_SCALE DIFFERENCE

- Consideration of varying scales: large scale of the City, the sub-station, Belle Ombre Station and small scale of Marabastad



Figure 5.24. Belle Ombre Metro Station (Author 2015)



Figure 5.25. Sub-Station (Author 2015)

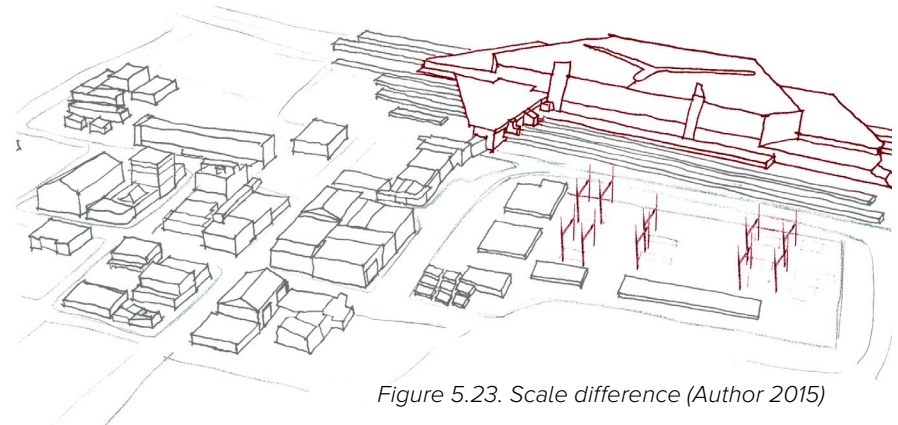


Figure 5.23. Scale difference (Author 2015)

F_EXISTING STRUCTURE

- Temporary
- Does not facilitate all programmatic needs

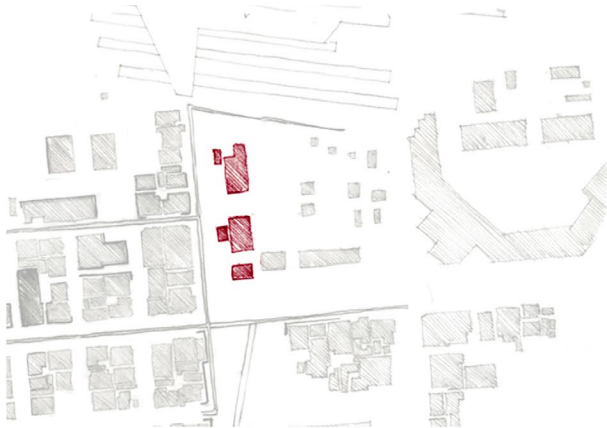


Figure 5.26. Figure ground of existing structures (Author 2015)



Figure 5.27. Location of existing structures (Author 2015)

G_LACK OF INFRASTRUCTURE



Figure 5.28. Make-shift meat storage (Author 2015)



Figure 5.29. Unhygienic meat preparation (Author 2015)



Figure 5.30. Lack of shelter from elements (Author 2015)

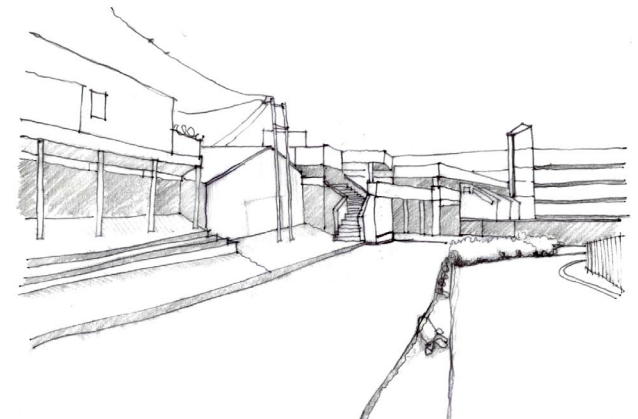


Figure 5.31. Drainage not considered for site slope (Author 2015)

POSITIVE SITE CONDITIONS

A_LOCATION

- Location ideal for gateway between City and Marabastad

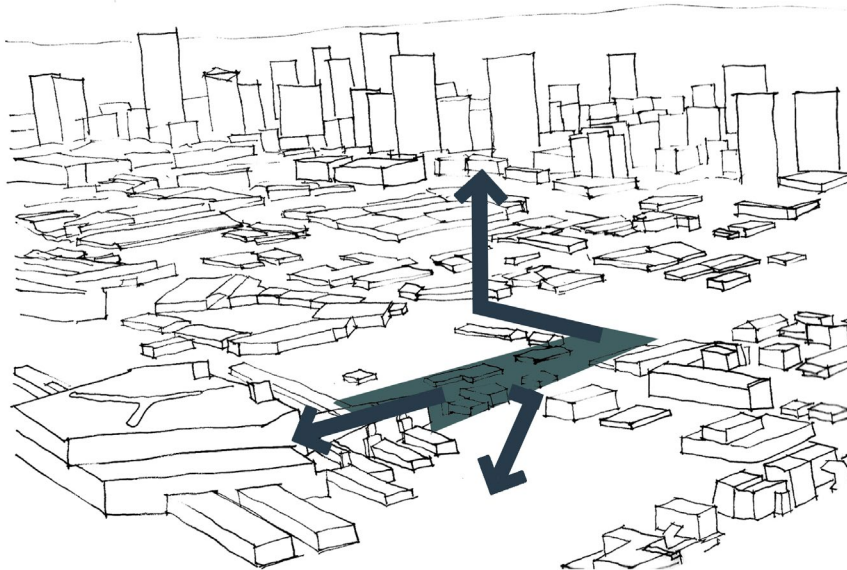


Figure 5.32. Location within the City (Author 2015)

B_EXISTING STRUCTURE

- Material can be re-used

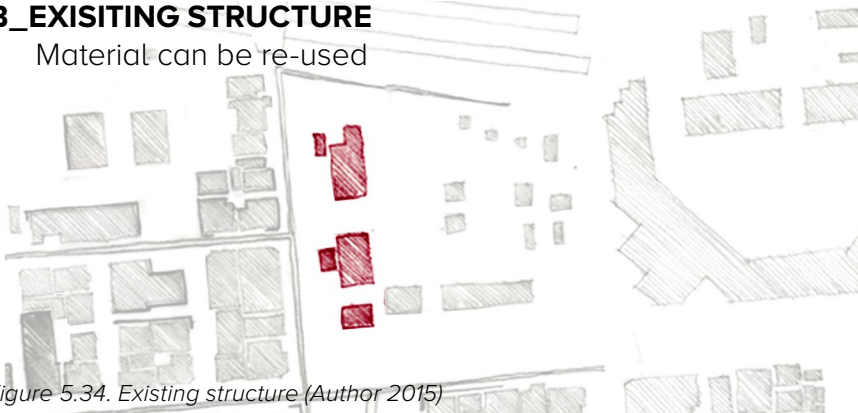


Figure 5.34. Existing structure (Author 2015)

C_NATURAL ELEMENTS

- Accessible water from Steenhovenspruit
- Existing trees providing shade



Figure 5.33. Natural elements (Author 2015)

D_SELF-ORGANISATION AND ADAPTABILITY



Figure 5.35. Fine grain adaptability (Author 2015)

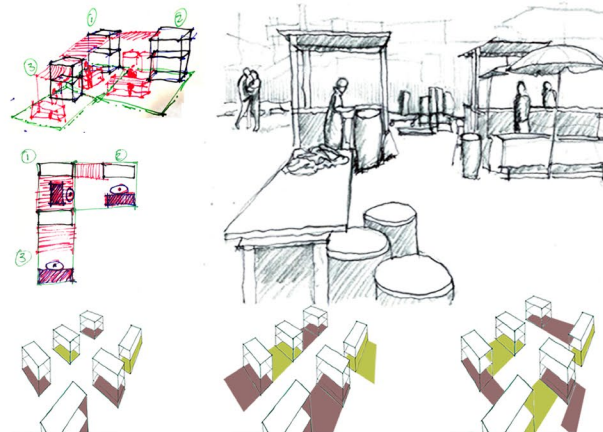


Figure 5.36. Self-organisation of informal elements (Author 2015)

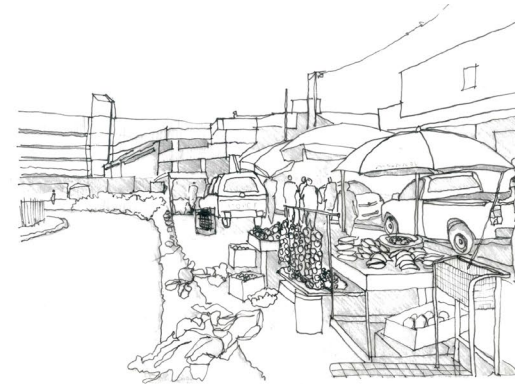


Figure 5.37. Temporality allows adaptability (Author 2015)

E_FORMAL AND INFORMAL ACTIVITIES



Figure 5.38. Co-existence of formal & informal activities and networks (Author 2015)



Figure 5.39. Formal activity (Author 2015)



Figure 5.40. Informal activity (Author 2015)

5.5 | PROGRAMME

INTRODUCTION

The intention of the design intervention is to re-house the existing informal activities, and through provision of appropriate infrastructure provide a platform for socio-economic establishment and growth.

Create permanence and socio-economic opportunity by:

1. Unleashing the capacities and resilience of the majority through an opportunistic approach which supports under-apprehended forms of urban life seen as informality and encourages its development and growth within Marabastad.
2. Encouraging economic and social cohesion that improves the livelihoods of those in Marabastad by creating public space that exceeds the limited social interaction evident in the transitory nature of transport and retail networks – instilling a greater sense of permanence within Marabastad.

The programme is directly informed by the site conditions, activities and networks on-site. The intention of the programme is to support the growth of existing activities and

networks and promote the establishment of new programmes and networks. Provision of appropriate infrastructure through architectural design intervention will assist in creating platforms for establishment and growth of multi-functional programmes adding diversity and richness to the site. In alignment with the urban vision and with consideration of Marabastad's rich tangible and intangible memory, the intention is to celebrate Marabastad's economic vibrancy and cultural diversity. The programme therefore intends to identify social and economic opportunities and provide opportunities for their co-existence within the programme. Supporting socio-economic opportunities will increase livelihoods of those in Marabastad. The activities on-site are part of important networks and combined, have the potential to support a socio-economic programme.

5.5.2 | INVESTIGATION OF PROGRAMME

1. THE AFRICAN AFVAL DEPOT

Description:

The African Affal Depot is an informal butcher specialising in bovine heads. A group of 6 men work under a simple covered structure with two concrete counters; one on which they store the delivered bovine heads and the second on which they skin the bovine heads. The skinned heads are then transferred onto the tar surfaced ground where they are 'stored' before being chopped up for their meat. An old tree stump is used as a surface for the chopping process. A lack of infrastructural support has compromised the health and safety of the bovine butcher.

Programmatic and architectural issue:

- There are too few working counters, resulting in unhygienic alternatives for meat preparation and storage.
- The existing concrete counters are not appropriately sealed preventing them from being cleaned properly – a process which is imperative when working with raw meat.

- The tar floor surface also prevents cleanliness as its texture catches meat and blood.

Infrastructural:

- Lack of an effective, filtering drainage system results in blood and pieces of meat and cartilage running into public space and collecting in pedestrian passage ways.
- Lack of allocated waste deposit bins and refuse collection has resulted in an increase in flies and undesirable smells in a public area.
- Limited access to water and a complete lack of access to hot water contributes to inefficient cleaning procedures
- The lack of sufficient storage and cold rooms results in the meat sitting in hot conditions before and after its preparation – decreasing its shelf life and health safety.

Successful aspects:

- The existing structure allows sufficient ventilation which is important in a space where meat is prepared.

- The process of preparing the bovine head meat is a sociable one with high interaction between different butchers.

Programmatic intention:

- Provide larger working spaces that cater for all steps of the meat preparation process.
- Consider appropriate use of material that allow for cleanliness.
- Provide water points that provide clean hot and cold water: cold water to be used for meat preparation and hot water for cleaning.
- Ensure adequate drainage of meat and unclean, bloody water.
- Maintain good ventilation of the space
- Maintain social interaction between butchers.

In an environment that is largely saturated by monotonous economic solution, the African Affal Depot which skins, chops and sells the bovine head meat, has been innovative in having identified a unique economic opportunity within the community of Marabastad. The African Affal Depot

Bovine head skinning on unhygienic, unsealed concrete surface



Bovine heads stored on unhygienic surface after delivery

Inadequate drainage

Bovine head chopping on tree stump



Selling of bovine head meat

Bovine head stored on dirty, tarred ground after skinning

offers the opportunity for formalisation where infrastructure can provide better hygiene and food health and safety; as well as an opportunity for exposure and further growth of a successful business network.

Figure 5.41. Informal butchery (Author 2015)

2. THE INFORMAL AFVAL MEAT MARKET:

Description: The informal meat market is an exterior space in an area populated with trees. The site was provided with stalls in 2000, however the stalls were too small and did not facilitate all the meat market's functional needs. This has led to a re-appropriation of the provided stalls and the attachment of new makeshift stalls resulting in a disorderly space.

Issue:

- Insufficient space provided by stalls has resulted in the attachment of new makeshift stalls for selling meat.
- Lack of storage provision led to the original provided stall being used for meat preparation and for storage.
- Meat is stored in soiled water, in plastic refuse bins as a result of a lack of cold rooms for storage.
- Lack of adequate services such as water and proper drainage.
- Lack of well-considered ventilation has led to an increase in flies which sit on the meat creating unhygienic conditions for the selling of meat and questionable health issues.

Successful aspects:

- The site allows for the re-organisation of individual space which is necessary in allowing the specific needs of each vendor to be met.

Programmatic intention:

- Allocate a larger space which accommodates meat storage, preparation and selling.
- Provide water points that provide clean water. There is a need for cold water used for meat preparation and hot water for cleaning.
- Ensure effective drainage with filter systems to prevent contaminated water from entering natural systems and water storage.
- Provide allocated waste disposal points.
- Ensure sufficient ventilation of the space to reduce flies.

There is an opportunity to observe the existing conditions and provide both infrastructural and spatial needs for the informal meat market. Provision of sufficient infrastructure will ensure the hygienic preparation and selling of meat and create awareness of the importance of health

and safety. The provision of appropriate infrastructure, increases the opportunity for an established meat market, where a greater variety of meat can be sourced and sold under hygienic conditions.



Figure 5.42. Informal meat market (Author 2015)

3. INFORMAL FRUIT AND VEGETABLE MARKET STALLS

Description:

As with the stalls provided for the meat market, two roofed structures, with indicated stalls were provided as a fruit and vegetable market. An increase in vendors and therefore an increase in the demand for space has resulted in an increased number of informal stalls – able to set themselves up in optimal spaces on-site they obstruct the vendors occupying the formal structure. A palisade fence intended to allow the site to be locked at night makes access to the market difficult in the day decreasing the economic potential of the activities.

Issue:

- The lack of storage results in vendors either having to unpack and repack their stock, to store in containers on-site or having to sleep on-site to watch their stock. Squatting threatens the urban condition.
- The site is fenced off reducing accessibility by pedestrian movement to activities using the formal structure. This has resulted in the informal inhabitation of more accessible space onsite with the decreasing use of the provided structure.

- Lack of services such as water compromises the hygiene of the market space.
- Lack of lighting compromises the safety of the site at night.

Programmatic Intention:

- Provide storage for vendors that relieve them from having to unpack and repack and transport stock each day.
- Provide more vendors opportunity to sell products by increasing market size.
- Increase accessibility of site activities (fruit and veg vendors) by relocating the market along the pedestrian movement route.
- Provide hygienic water and drainage services.
- Include sufficient lighting within the design to improve surveillance and safety.

There is an architectural opportunity to support the dominating fruit and vegetable activities and networks. Provision of more space for an increase in the number of vendors will be justified and feasible by

increasing the pedestrian accessibility to the fruit and vegetable market. The intervention will need to increase access to the site without compromising safety.



Figure 5.43. Fruit & vegetable market (Author 2015)

4. FRUIT AND VEGETABLE SORTING AND DISTRIBUTION

Description:

The open, unsheltered space occupied by fruit and vegetable re-packaging and distribution is located alongside 11th street at the West access point from the Belle Ombre Station. Fruit and vegetable distribution is a seemingly disorderly process and considered a back of house activity that does not require the direct interaction of the public. It is, however, located in a prime spot with public exposure, in a space that would be more appropriate for activities which require pedestrian movement. The area lacks storage space for packaging materials.

Issue:

- Occupies a highly public location more suitable for trade activities.
- The fruit and vegetable distribution area also lacks shelter from natural elements (sun and rain).
- Lack of waste removal and lack of storage for produce boxes and packaging results in storage of un-used packaging along the pedestrian path, visually blocking the meat market and fruit and vegetable market.

Intention:

- Creating an open plan structure that offers shelter from sun and rain.

- Situate the point of fruit and vegetable distribution in close proximity to the fruit and vegetable market to facilitate easy movement of products between the two programmes. Allow for easy movement of products through provision of ramps.
- Provide storage for packaging where it can be easily collected for recycling.

Opportunity for architectural design solution in providing an appropriate roofed structure for sorting and distribution of fruit and vegetables. The structure should facilitate the re-use and recycling of produce packaging. Encouraging the site as a point of distribution will support the existing fruit and vegetable markets on-site.



lack of shelter

lack of drainage

lack of storage

Figure 5.44. Fruit & vegetable distribution (Author 2015)

5. INFORMAL 'RESTAURANTS'

Description:

The site is occupied by 'informal restaurants' along Boom Street. Meat is 'braaied' (cooked over an open fire) in portable 'braais' by the 'owner' of the 'restaurant'. Each 'restaurant' is made up of a table or two where condiments and juice are served to accompany the meat. The evidence of social activity and interaction is a positive platform, encouraging social cohesion, more meaningful interaction and a sense of community within Marabastad.

Issue:

- Lack of infrastructure results in having to pack up the restaurant each day.
- Numerous portable, open braais pose a fire safety risk.
- Lack of gas for cooking limits food preparation options.
- Lack of water accessibility for cooking results in use of the ablutions as a water point.

Intention:

- Create stronger connections between butcher, meat market, fruit and vegetable market and informal restaurants so that they are able to support each other.
- Safe communal fire places for braaing.
- Safe implementation of gas for cooking will improve the opportunities for food preparation.
- Provide water and drainage services to assist in hygienic preparation of food and efficient functioning of food preparation spaces.

Successful aspects:

- Social interaction between restaurants is positive and should be further encouraged.
- The existing programmes of butchery, meat market and fruit and vegetable market provide the ideal programmatic and urban opportunity to introduce a public space which encourages social interaction and in so doing, further enhances the economic opportunity.

- The importance of designing designated public space is imperative as currently all vacant space is occupied by either retail or transport. There is an opportunity for economic and social cohesion where the meat market and fruit and vegetable market provide products directly to an informal restaurant. Meat can be chosen by the customer and cooked at the informal restaurant, where their meat will be served with salad, fruit, vegetables and starch.

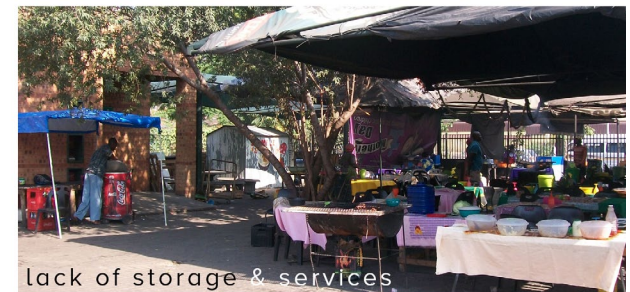


Figure 5.45. Informal restaurant (Author 2015)

CONCLUSION

{Meating the Beef Bar}

The collaboration of an informal butcher, meat market, fruit and vegetable market and informal restaurant serves as a platform for socio-economic prosperity.

There are many layers of informality which add richness to the site by informing a multi-functional programme. With the consideration of Marabastad's rich tangible and intangible memory, the programme intends to celebrate Marabastad's economic vigour as well as cultural and social diversity.

The activities on-site are part of important networks which need to be supported through a socio-economic programme. Marabastad's richness in culture, food and trade will be enhanced by collaborating these aspects into a programme that not only supports Marabastad as an economic destination within the city but as a social destination too. This will encourage the movement of people to Marabastad (and not only through Marabastad) where they can enjoy the character of a place with social and economic vigour, reminiscent of its past and promising for its future.

TABLE 1: SERVICES & INFRASTRUCTURE REQUIREMENTS

	X	X	X		X	X	X		X	
	X	X	X			X	X		X	
	X	X	X			X	X		X	
	X	X	X				X			
	X									X
	X									
	X	X	X	X	X	X	X		X	X

Figure 5.46. Programmatic services & infrastructure (Author 2015)

TABLE 2: SPATIAL REQUIREMENTS

					<p>KEY</p> <ul style="list-style-type: none"> Large scale Small scale Permeable edges, gradient indicates adaptability Solid edges, gradient indicates adaptability Private Public

Figure 5.47. Programmatic spatial requirements (Author 2015)

5.5.3 | PROGRAMMATIC FLOW

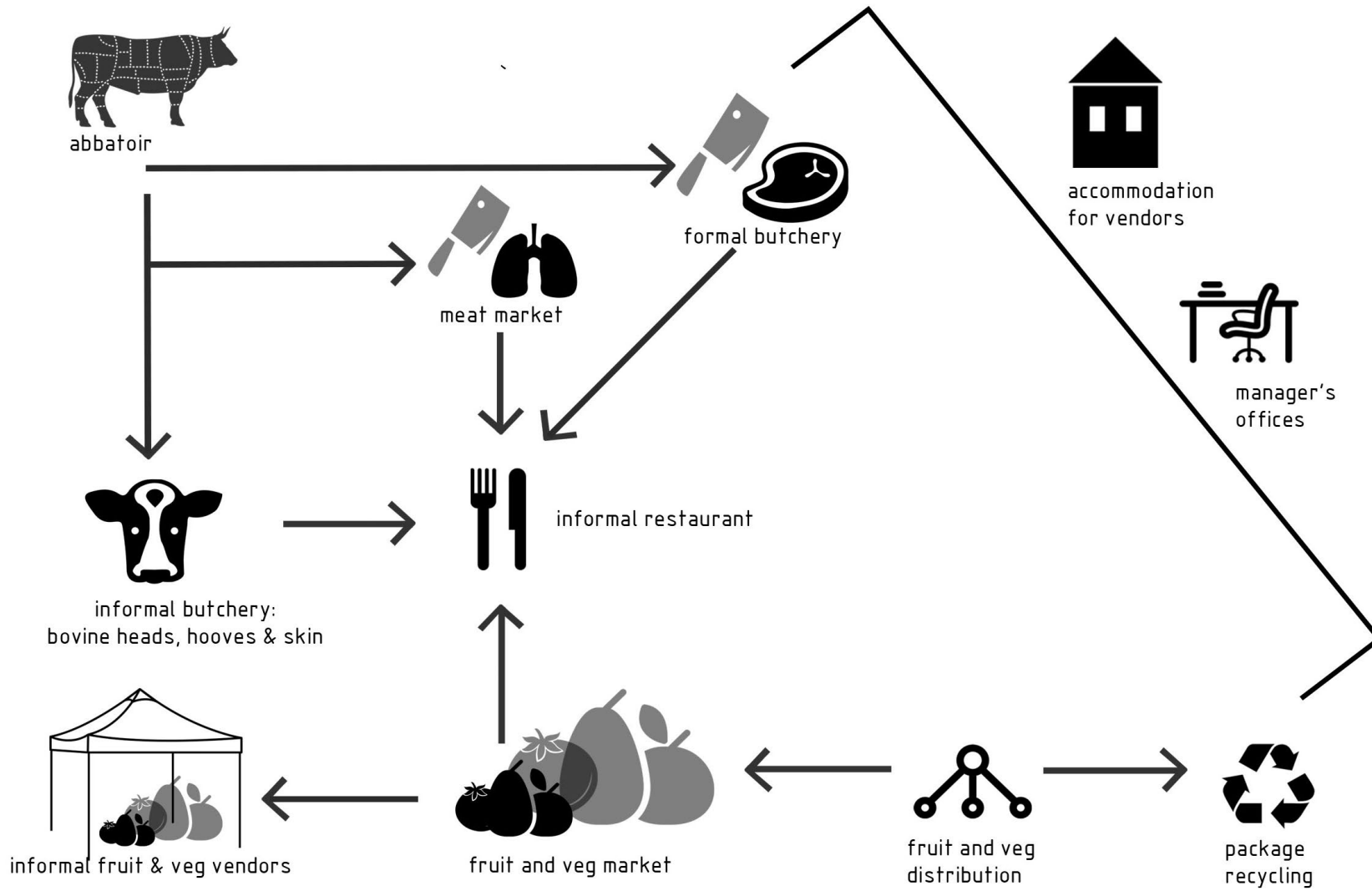


Figure 5.48. Programmatic flow (Author 2015)

6 | PRECEDENT STUDIES

6.1 | URBAN CASE STUDY

6.1.1 | FLEXIBLE INFRASTRUCTURE: LAGOS

The West African City of Lagos, the capital city of Nigeria is an example of an African city that represents flexibility and layering of space. It demonstrates an authentic African urban expression, achieved by reversing essential characteristics of the ‘Modern city’ by encouraging the impartial existence of its inhabitants. It is a city that is characterised by energy, intensity, spontaneity, incongruities and juxtapositions (Koolhaas 2000:652), much like that of Marabastad.

Contributing towards the indeterminacy of Lagos’s urban condition is its flexible infrastructural system. This has been categorised by Shephard and Comaroff (2002: 144-145) as consisting of three main components.

- Parasitic infrastructure, due to its ability to modify and manipulate the existing formal infrastructure in order to provide more services.
- Mobile infrastructure relies on cars,

trucks, buses and bicycles to take care of waste, power, transport, telephonic communication and factory production.

- Nodal infrastructure where services and goods are centralized and service a wide area.

Lagos’ urban conditions are not unique in the African context, but its evolving urban centre has succeeded on levels greater than many other African cities in contesting the dominant Modern and Euro-centric norms. It has therefore become an example of the possible approaches towards African city development and can be regarded as a precedent in reconfiguring the way in which African cities function.

Lagos illustrates how focus on cities should be less about their form and more about accommodating forces and flows that move diverse components of the city around, and from which, because of continuous reactions, integrations and symbioses, a creative transformation occurs constantly.

By enabling infra-structural networks, this approach will allow the uninterrupted formation and transformation of conditions on an urban surface.



Figure 6.1. Lagos urban fabric (Udoma, 2015)



Figure 6.2. Innovative development (Udoma, 2015)

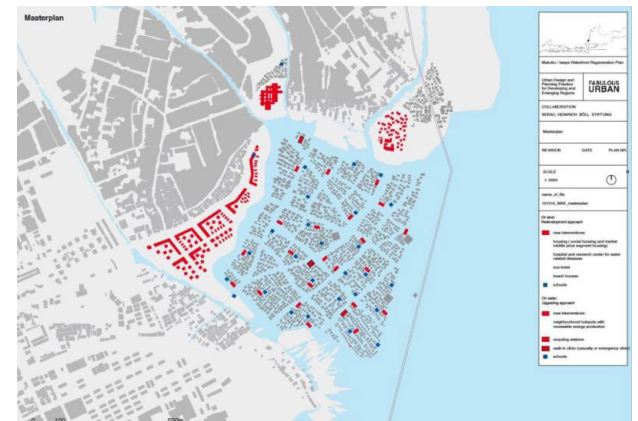


Figure 6.3. Urban vision: infrastructural nodes illustrated in red and blue (Udoma, 2015)

6.1.2 | AFRICAN PUBLIC SPACE: KHAYELITSHA SERVICE CENTRE AND PAY POINT

Designers: Piet Louw, Anton Roux
 Location: Khayelitsha
 Client: City of Cape Town
 Date of completion: 2002

“The building is driven by the realization that where there is no significant informing context, it becomes necessary to create one, to plant seeds that can become the beginning of the public places, through the placement of the architectural elements” (Deckler, Graupner & Rasmuss 2008:77)

Intention

- Investigate architecture of public responsibility to make meaningful public spaces within informal environments.
- How a building can be a device in defining urban space.

Background

With the formation of the Government of National Unity in 1994 came a commitment to provide services to South Africa's poorer areas and the subsequent realization that there was a lack of dignified and convenient places for payment of rates and levies. These activities were being carried

out in a series of container-type kiosks, with residents often citing the lack of facilities as a reason for not paying. The Tygerberg Municipality embarked on a programme to create pay points in strategic locations that would also become places of civic significance.

Design

The four Service Centre buildings share common architectural language by rising above the informality of their context and creating civic significance. The nature of the buildings is administrative, including halls with pay points and offices. The designers decided to not use the internalised typology that these kinds of facilities require, but rather to work carefully with the edge conditions to optimise public opportunity (Phaidon 2004).

Analysis

Tectonic

- The programme is small, however, these building are successful in being bold within their context as they are robust and simple.
- Despite their forms being strong and direct, drawing on the mono-pitch roofs and block building of the surrounding shacks, the external spaces are elegantly framed, mediating well

between the scale of the building and individual identities that respond to their specific local context.

- The ground floor is raised which contributes to defining important spaces.
- The buildings have layered facades and portico spaces providing adaptable public forecourts and seating that acts as social gathering and recreation space as well as a smooth transition between different functional spaces.
- The architecture speaks a language of unity, rhythm and proportion.

Programme

- The space was designed to integrate places of civic significance.
- The pay point for governance tax and services acts as an activity generator.
- The built form enables interaction and social engagement though the provision of covered gathering spaces, steps to sit on and a courtyard.
- The building's function ensures a constant flow of people through the site.

Conclusion

Despite the building's small programme it acts as an important urban device in defining public space. The successful architectural language within its context creates an aesthetic approachability.

The building is successful in attaching public space to daily civic function and its dual function ensures that the building is frequently occupied beyond the primary function as a pay point. This building is an example of how architecture can be a successful tool in responding to public and social needs within informal environments as well as creating meaningful public space.



Figure 6.7. Paypoints

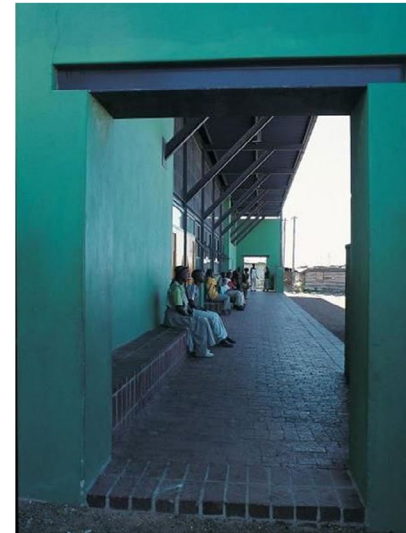


Figure 6.8. Layered facades & public interfaces

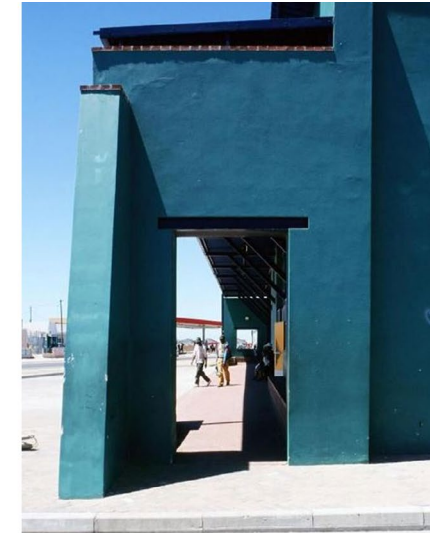


Figure 6.9. External spaces framed elegantly

Figure 6.1 - 6.3. Paypoints with public interfaces (Phaidon 2004:640)



Figure 6.4. Meaningful public space (Phaidon 2004:640)



Figure 6.5. Landmark in the landscape (Joubert 2009)



Figure 6.6. Response to surrounding context (Joubert 2009)

6.1.1.3 | URBAN RENEWAL PROJECT: WARWICK JUNCTION

Architects: Architects Collaborative cc, Lees & Short, Laren Beni, Mike Legg Architects cc, OMM Design Workshop, Langa Makhanya & Associates, MA Gafoor Architects, Emmett & Emmett, Matic Van Zyl, Lee Saunders & Kooblal & Steyn
 Location: Berea, Durban (2001)
 Client: the eThekweni Metropolitan

“Widely recognised as a model of sensitive integration of street traders into urban plans” (Challenging city imaginaries: Street traders’ struggles in Warwick Junction, 2009: 101).

Intention

- African market upgrade as a tool for urban renewal
- Interconnection between retail and transport.

Background

Warwick Junction terminates the N3 highway and serves as an entry point and primary transport node for 460 000 commuters travelling by bus, mini-bus, or train into the Durban CBD. It is therefore the prime position for informal trade and

supports the highest densities of vending in the eThekweni Metropolitan area (Unknown, s.a.:3). Located in the city centre, the area facilitates 5 000 to 8 000 vendors (Skinner & Valodia 2003), with many of these sleeping overnight on the pavement next to their stock.

The Warwick Junction Market occupies the area between and around the Warwick Avenue Mini-bus Taxi Rank, Victoria Bus Rank, and Berea Train Station. These form a movement triangle across the market area, resulting in high volumes of pedestrian traffic across the various different markets spaces. The area supports a wide variety of traders, currently including clothing, fruit, fish, meat, spice, vegetable, lime/ochre, cooked mealies, bovine head vendors and herbalists. Each of these sectors occupies a different area of the market within the precinct including the English Market, Early morning Market, Bovine head Market, Berea Station Market, Brook Street Market, Music Bridge Market, Lime Market, Muthi Market and associated street markets.

Intervention Summary

- Protection of markets from vehicular invasion through use of bollards and the provision of alternate parking facilities.
- Provision of water and sanitation

facilities

- Muthi (traditional medicine) Market for approx. 1 000 vendors
- Early Morning Market refurbishment
- Five off-street mini-bus taxi ranks completed
- Herb Traders Market
- Improving mielie cooking facilities
- Improved bead selling facilities
- Infrastructure for Brooks Street vendors (designed by Architects Collaborative)
- Provision of facilities for bovine head cooking
- Informal Economy Policy’ reviewed and amended.

Intervention intentions

- Shelter from sun and rain for trading
- Night time personal shelter from weather
- Secure goods storage
- Water and sanitation facilities
- Access to electricity
- Lighting allowing night time trade and security
- Security policy
- Health and safety facilities.

Outcomes and observations

- Social organisation on internal co-operation among vendors at the Warwick Junction triangle has shown itself strong among the different groups of vendors.

- Fixed furniture made the area difficult to keep clean and provided hide outs for criminals. A simple collapsible trestle table was the solution, allowing mobility.
- Provision of sanitation facilities was problematic with high incidences of blockages. Management of the facilities was suggested. A small fee is paid for use of the facilities which supports an attendant responsible for cleanliness, basic maintenance, and safety of the facility and the provision of toilet paper.
- The Markets are multi-levelled and this change in level often defines a change in formality. Generally the higher levels attract more formal businesses with the ground floor being open and allowing for self-organisation of informal traders.

Conclusion

One of the most significant aspects of the renewal is the acceptance of informal trading and the formal recognition of the street as a legitimate market area through the demarcation of pavement spaces to individual vendors (Working in Warwick: 10). This allows the vendors a measure of security, allowing entrepreneurs to buy larger volumes of stock, and create business plans in a more stable environment, while allowing regulation of health and safety standards through engagement of authorities with known communities, as is the case at Warwick Junction. Police are then able to provide market security, rather than fighting against the market participants. The demarcated spaces allow a movement corridor on the

pavement where pedestrians are safe from passing vehicular traffic. Vendors pay rent on these spaces as they would with any market stall, and so they are therefore legally recognised and legitimised by formal structures.

The built architectural fabric is not unimportant, however, the intangible “... social configuration and cultural influence [of the market] on the surrounding urban fabric is significant (Ganther 2009: 2). Markets are mainly controlled by their participants, and although they might be inherently chaotic this allow for a “...rapid, improvised change that is characteristic of modern societies...” without excluding lower-income participants (ibid.:14).

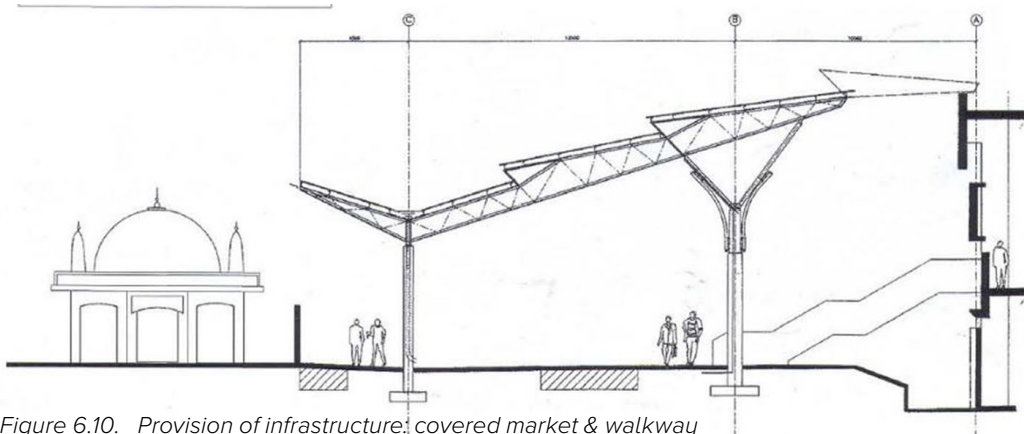


Figure 6.10. Provision of infrastructure: covered market & walkway



Figure 6.11. Covered market space



Figure 6.12. Muthi Market

Figure 6.7 - 6.10. Warwick Junction iTRUMP

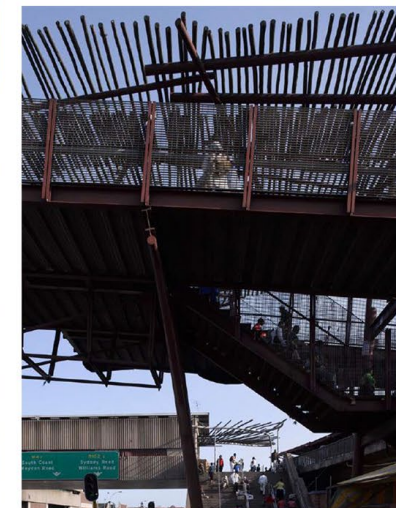


Figure 6.13. Market on the pedestrian bridge

6.2 | PROGRAMMATIC PRECEDENT STUDIES

6.2.1 MARKET SPACES

Markets have always formed an important function within the city. They offer opportunity for both economic and social activity. “Public space produces some of the most vibrant, complex, and most locally identifiable spaces experienced in urban Africa” (Ganter, 2009: 1) The market place allows for adaptation to changing demands, inter-trader support and opportunity for enterprise.

Spatial character

Spaces within market systems seem to facilitate shifting functions and it is therefore important to allow for this shifting flux of needs.

Anchor

Vendors in all the analysed markets often group together into market sectors, with the largest sector often acting in the same way as an anchor tenant would in a shopping centre. These groupings are often off the street, forcing prospective customers to move through a series of smaller sectors

and individual stores before arriving at the anchor (Dewar & Watson, 1990: 42).

Market Levels: There are also different market levels within the sectors with vendors operating at different levels of formality, from the mobile pavement trader to the enclosed market shop. Vendors at lower levels may not want to change levels for business reasons (Personal Correspondence, 11 July 2011).

Equality in the Market

The self-organization of market social structures means that these organizations are fairly democratic. Vendor’s stalls seem to be fairly uniformly sized and distributed where stalls of the same sector and level are grouped, with the main size change being across market levels. Smaller less formal stalls seem to be closer to faster moving pedestrian traffic.

Theoretical Guidelines: The following illustrations describe the general situations found in the studied markets, and confirmed by the research on African and International markets by Prof. David Dewar and Vanessa Watson (1990: 42-53)

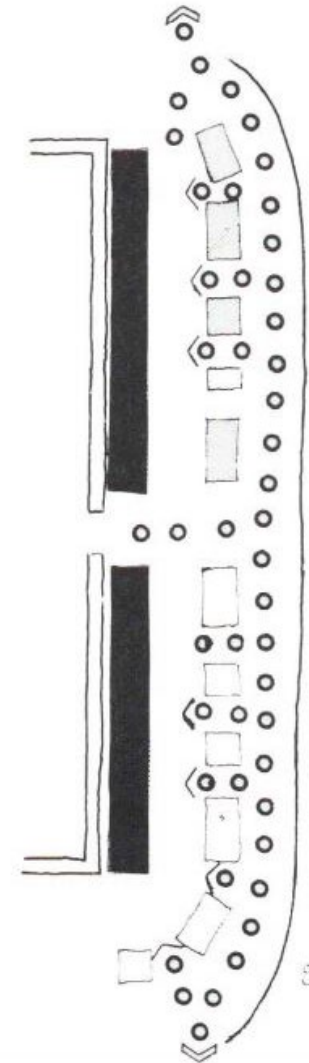


Figure 6.14. Market scenario 1 (Dewar & Watson, 1990:49)

Some stalls survive by 'intercepting' customers who are drawn to stalls behind them

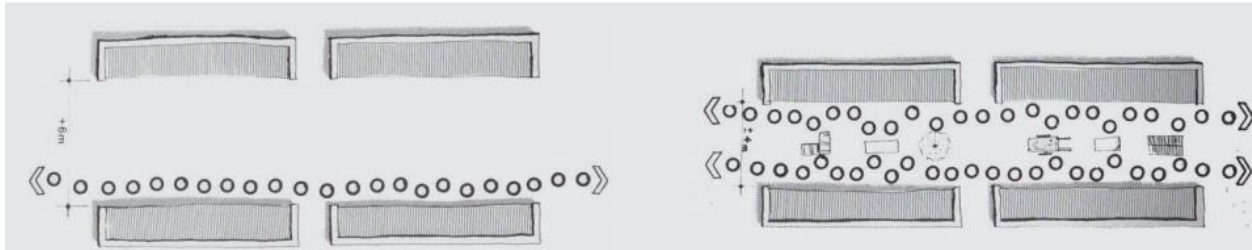


Figure 6.15. Market scenario 2 (Dewar & Watson, 1990:49)

A circulation space that is too wide (+6m) causes customers to favour one side.

Figure 6.16. Market scenario 3 (Dewar & Watson, 1990:49)

Loose stalls in circulation spaces wider than 4m promotes cross movement

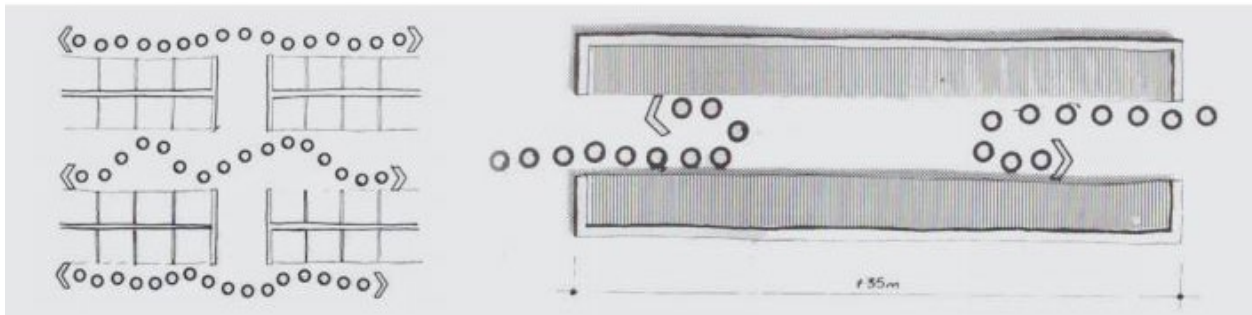
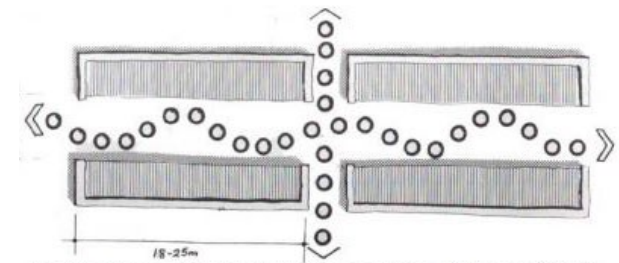


Figure 6.17. Market scenario 4 (Dewar & Watson, 1990:49)

Dead spots caused by end walls

Figure 6.18. Market scenario 5 (Dewar & Watson, 1990:49)

Ineffective customer penetration, due to stall run being too long, ie. +35m



Illus. 54: More appropriate stall-run dimensions (Dewar & Watson, 1990: 50)

Figure 6.19. Market scenario 6 (Dewar & Watson, 1990:49)

More appropriate stall-run dimensions

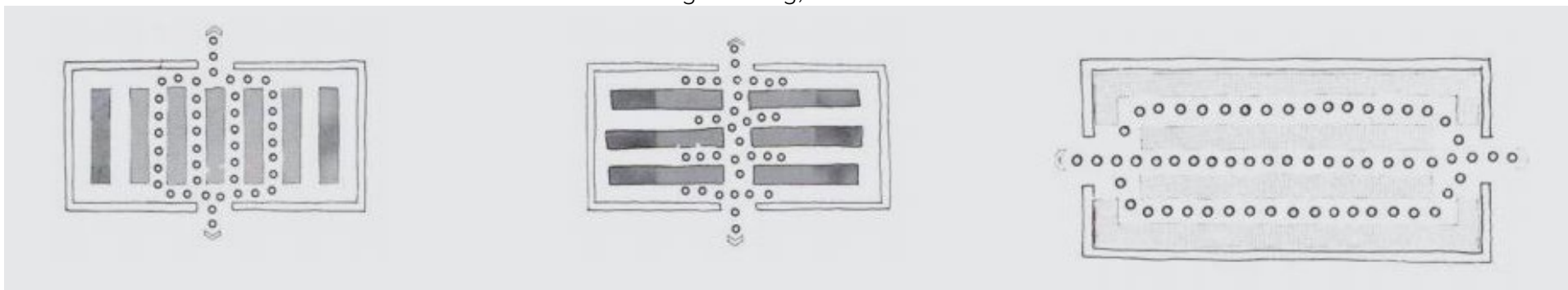


Figure 6.20. Market scenario 7 (Dewar & Watson, 1990:49)

Ineffective customer to stall exposure because of stall run layout

Figure 6.21. Market scenario 8 (Dewar & Watson, 1990:49)

Ineffective customer to stall exposure because of stall run layout

Figure 6.22. Market scenario 9 (Dewar & Watson, 1990:49)

Entrance position & grain of stall-runs working with customer flow

6.2.2 | BOVINE HEAD COOKS: WARWICK JUNCTION

Architects: MA Gafoor: Kooblal & Steyn

Location: Berea, Durban (2001)

Client: the eThekweni Metropolitan

Date of completion:

Intention

- The relocation of an evolved traditional Zulu cooking practice into a specialist bovine head cooking facility.
- Providing infrastructure and service support for existing activities and networks.
- Economic opportunity generated by providing appropriate infrastructure.
- Investigate the requirements for bovine cooking in informal environments

Background

Traditionally, the slaughter of the bovine would be confined to the middle aged Zulu males. The head would specifically not be handled by women or children and a select few males would eat the boiled facial meat. Despite this, bovine head cooking has become a common practice even among women. The assimilation of a significant Zulu male tradition into an urban practice where female cooks are in the majority has been overridden on account of economic opportunity.

The cooks commenced their enterprise in Warwick Avenue alongside the western boundary wall of the Early Morning Market. Their numbers increased progressively and it became known as the location for this delicacy. A traditional delicacy was being provided by bovine head cooks to commuters within the area, but as the size of the cooking community increased, so did the urban management challenges.

Original issues

- Open fires in large drums became a safety risk
- Degreasing of sidewalks was problematic
- Discharge of cooking effluent into storm water reticulation blocked systems and attracted rodents
- Lack of solid waste disposal resulted in rotting wastage
- Sidewalk congestion due to occupation by vendors
- Health and hygiene issues raised regarding food preparation.

Design intervention

The officials within the Warwick Junction Project acknowledged the bovine cooks as a viable informal economy activity and an essential livelihood for the women who

undertake the activity. A development approach and matching infrastructure strategy was therefore necessary. City Health, ITSBO (Informal Trade and Small Business Opportunities), iTRUMP (inner Thekwini Regeneration and Urban Management Programme) worked together with the informal traders themselves to find solutions.

Through extensive site observation, short term interventions and interviews with the bovine cooks the following design interventions were made:

- The relocation of the bovine cooks to an existing roofed trading node north of the English Market on Warwick Avenue, presented opportunity to congregate the majority of existing enterprises preparing cooked meals in the form of a food court.
- Pretreatment 'buckets' designed to separate fats and gelatin from liquid waste, were allocated to each pair of traders.
- Running down the entire length of the facility was a central drain, connected to a purpose designed interception gulley, prior to the drain discharging into a sand, oil and grease trap, connected to the local authority sewer. The gulley

and the trap are de-sludged as part of a regular maintenance plan.

- Specialist solid waste removal is provided by the local authority.
- The floor of the cooking facility is graded towards the central drain to facilitate the easy pressure cleaning of all the surfaces.
- Concrete tables inlaid with either stainless steel or decorative mosaics were provided and similar material was used to provide the “cooking benches” that had protective raised sides to act as windscreens for the primus stoves.
- The entire area was conduited for the later provision of electricity through a prepaid meter system.
- Water was provided at two convenient points that could be secured when unattended. The water point was operated by a “bailiff” who sold water to the individual cooks as a business in its own right. The bailiff contracted with the local authority and paid for the bulk consumption. The cost differential translated into the bailiff’s income.
- The Bovine Head Cooking Facility occupied approximately 1/3 of the sheltered area and the remainder was reallocated to those exiting enterprises trading in prepared plated food.

Conclusion

The interventions and provision of appropriate infrastructure have established the activity as an enterprise and created new economic opportunity. There is no doubt that this sort of design process requires a degree of trial and error, however, through observation of the process undertaken to accommodate the bovine cookers at Warwick Junction, more informed design decisions can be made sooner in environments such as these.

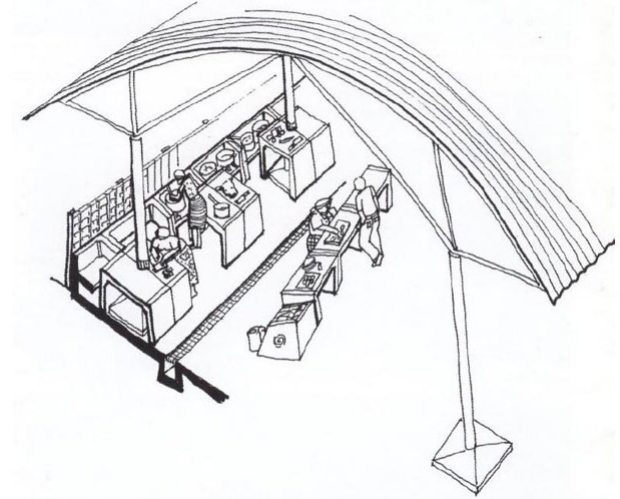


Figure 6.23. Bovine butchery layout

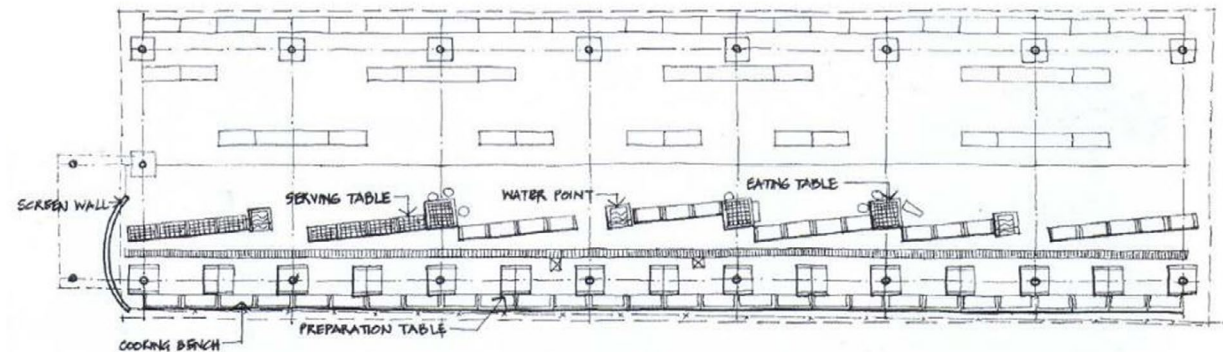


Figure 6.24. Layout plan of bovine butchery



Figure 6.25. Skinning of bovine head



Figure 6.26. Butchering of bovine head



Figure 6.27. Bovine head chopping



Figure 6.28. Food preparation



Figure 6.29. Informal restaurant serving bovine meat



Figure 6.30. Serving & eating of bovine meat

6.2.3 | MEAT MARKET: THE CENTRAL MEAT MARKET, GUGULETHU

Architects: Carin Smuts Studio
 Location: Gugulethu, Cape Town
 Client: City of Cape Town
 Date of completion: 1994

Intention

To investigate the following:

- The importance of public space in promoting socio-economic opportunities of existing activities.
- How the provision of the formal should still leave room for the informal to establish itself.

Background

In 1994, The Central Market became the first project in Gugulethu on the list of small business development initiatives. Informal businesses in the area and a management team worked with Carin Smuts (CS) Studio architects to develop the project. The main objective was to solve the immediate problem of the traders and public space by providing shelter from the elements for a meat market which had successfully operated in the open.

Design

The design process was complex and involved many workshops, meetings and negotiation. The ‘Eurocentric’ market proposal was transformed into a more appropriate and locally expressive market through active involvement by all traders. The traders proposed an L-shaped building which would form a boundary and block prevailing South-west winds. The boundary wall, ‘thickens’ to accommodate the formal activities: spaza shops, cold rooms, public toilets and offices. The North and East sides of the Market were left open to allow for an effect public interface. Roller shutter doors allowed the Market to be completely closed at night for security. Stainless steel tables, sinks and indoor fire places allow for the hygienic preparation of meet and braaing. The roof resembles a giant wave and its aesthetic establishes The Gugulethu Meat Market as an iconic place within the landscape which promotes it as a socio-economic viability.

Analysis

The L-shape is successful in defining the boundary of the market and accommodating the more formal functions but it is also successful in defining the inner informal meat market space. The architecture provides the formal but still

allows for a transition to the informal. Keeping construction minimal by creating envelopes that will allow for self-organisation and adaptation. Once the programme is set it should not impose the goal but rather propose an infrastructure that the inhabitants will then be able to adapt and self organise. The fitting out is done by the inhabitants.

The L-shape also prompts how people move through the space with the open North and East sides allow for easy access to the Market. Socio-economic engagement is encouraged by the market’s free plan. Meat preparation, cutting and braaing all happen in one place which allows for members of the community to interact and engage with one another.

Although the formalisation of trade has been extremely successful on the whole, it is still necessary to analyse how specific design elements have been re-appropriated to better accommodate trader needs. The arcade on the East, designed as a pedestrian walkway, has been occupied by informal fruit and vegetables traders. It is an unclaimed covered space and offers opportunities of socio-economic vigour which result from the meat market. It is important to note that design elements

need to be tools in either allowing for or preventing re-appropriation and adaptation of certain spaces. Where the local authority has acquired an asset, as in the case of the Gugulethu Central Meat Market, it also has a measure of influence on rents, rates, and maintenance levels. While grocery shops and spazas are paying their rents regularly, sometimes in advance, the meat traders are not meeting their own, lower rent payments.

Conclusion

The Gugulethu Central Meat market is a good example of how architecture can be a tool in enhancing specific existing activities and functions. Providing infrastructure for existing functions, like that of a meat market, provides better conditions for food preparation and health safety. There is a need for architects to be a part of an economy of self-development towards a sustainable development as opposed to sustainable architecture. The architecture needs to be flexible, expandable and made to accommodate a society that needs development rather than codes of practice.



Figure 6.31. Interior of meat market



Figure 6.32. Braai area



Figure 6.33. Pedestrian arcade



Figure 6.34. Informal f & v markets



Figure 6.35. Roof resembles a giant wave



Figure 6.36. Central Meat market truss structure

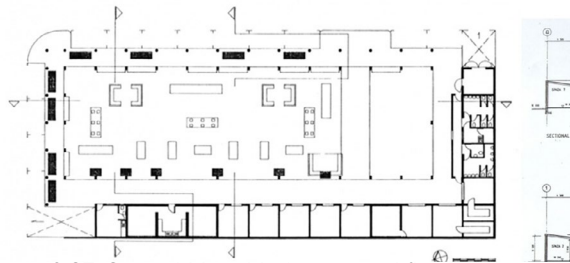


Figure 6.37. Central Meat Market ground floor plan

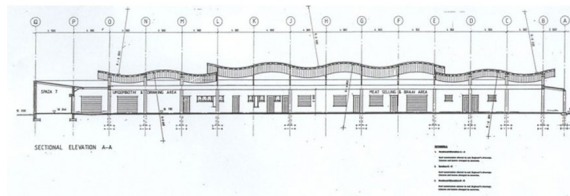


Figure 6.20 - 6.27 Gugulethu Central Meat market images (CS Studio Architects)

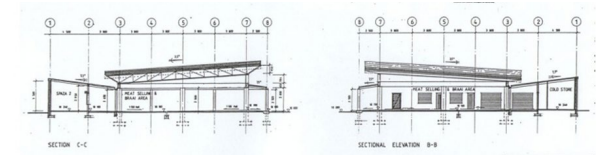


Figure 6.38. Central Meat Market sections

6.2.4 | TRANSPORT INTERCHANGE: BARAGWANATH PUBLIC TRANSPORT INTERCHANGE AND TRADER'S MARKET

Designers: Urban Solutions Architects and Urban Designers

Location: Soweto, Gauteng

Client: City of Johannesburg

“The building takes the form of a colonnade, linking taxi stands and bus bays along a major traffic artery”. (Phaidon 2004)

Intention

- Investigate how the upgrade of infrastructure and support structures facilitates existing transport and retail networks and generates greater economic opportunity through increased legibility.
- Investigate the requirements (materials, scale etc.) of a building through which thousands of commuters pass each day.

Background

The improvement of transport connections between Soweto and Johannesburg is one of the components of the development scheme that aims to integrate Johannesburg's south-western townships into the city's urban economy and landscape. The upgrade of the existing

Baragwanath Public Transport Interchange shapes one of the busiest transport nodes in South Africa through which 70% of all Soweto's commuters pass in order to get to work or home. The site stretches for 1,3 kilometers and is on average 50 metres wide. The oblong shape of the site posed a challenge in accommodating the requirements of all the functions of the building.

Understanding the competition for space between traders and transport in the area was the critical design challenge. In the past, few formal facilities were provided for any of these sectors. Minibus taxis and especially traders have for the most part been marginalized, with few proper amenities and support structures.

Design

The development accommodates 500 street traders and their associated amenities, including storage facilities, management offices and support infrastructure. The trader stands vary in size to accommodate the different types of formal and informal businesses. The transport facilities also include 22 bus ranks and 650 minibus taxi parking bays. The planning principle was to provide an arcade as a structural spine along the

length of the site. The arcade which is constructed of sculpturally formed concrete elements connects commuters from one public transport node to the next and becomes the binding element into which all the various functional requirements are attached. The arcade is the focal point along which traders and public amenities and spaces are positioned. The enormous length of the arcade is spatially differentiated in reference to the functions that happen along it. Landmark structures have been positioned at focal points and public entry points to ensure a greater sense of orientation.

Analysis

The design acknowledges the importance of the new facility as a hub and gateway to Soweto and this importance is evident in the scale and boldness of the architecture. Concrete construction is used to provide a robust, permanent structure for this public building which is necessary for a space through which thousands of people move each day. The concrete structural spine offers variety in the different types of functions that plug into it while also providing space that allows for self-organisation and adaptability of activities. Its rhythm is punctuated by market halls and trading kiosks. A varying degree of

physical and visual accessibility throughout the spine creates numerous different spaces and urban conditions. The material occasionally erupts into sculptural tile-adorned pavilions which serve as orienting markers, avoiding monotony and increasing legibility. The Baragwanath Public Transport Facility presents a public catalyst for the development of new urban spaces and fabric in a previously marginalised environment.

Conclusion

The following are noted with regards to a transport node:

- Appropriate architectural scale in defining the threshold of and gateway to the city
- Necessary robustness of a building through which thousands of people move each day.
- The importance of landmarks in creating greater legibility.
- Accentuating pedestrian movement and economic possibility through an arcade typology
- Investigation into how a core structure can allow for self-organisation of different types of activities to plug into it.
- Providing appropriate infrastructural support for existing networks can increase economic prosperity.



Figure 6.39. Traders' Market

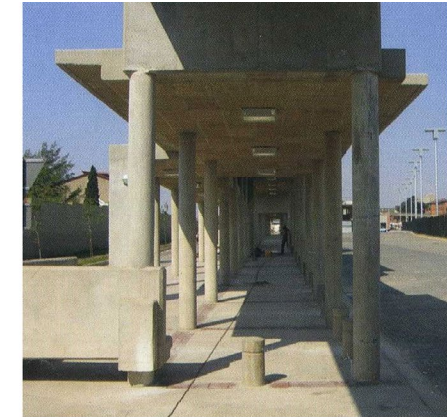


Figure 6.40. Robust walkway



Figure 6.41. Public seating



Figure 6.42. Landmark



Figure 6.43. Predominant entrance



Figure 6.44. Space defining concrete elements



Figure 6.45. Taxi terminal

Figure 6.46. Figure 6.25 - 6.31. (Contemporary South African Architecture in a Landscape of Transition)

7 | DESIGN CONCEPT & INFORMANTS

7.1 | CONCEPT: RESPONSE TO THEORY

7.1.1 | HOW CAN THE INFORMAL INFORM DEVELOPMENT

Where informality is so often seen as a mere strategy for survival, it in fact has the potential of prompting the path for development because it informs and alludes to the needs and opportunities of a place as well as to spatial appropriateness (Anderson & Jenkins, 2011).

This unconventional and informal approach to 'architecture' holds the very solutions to the shortcomings of formal development (Rudofsky, 1964) as it alludes towards a new 'vernacular' architecture that is able to define identity and characteristic of a place (by responding to its needs and opportunities)?

Anderson and Jenkins suggest that in all formal elements there is a level of informality that cannot be avoided. Formal and informal are not separate aspects of the environment, rather they co-exist in complex systems of interdependency (Anderson & Jenkins, 2001). The formal

should not try to eradicate the informal but rather it should facilitate it. The informal needs to be considered as an inevitable and vital component of the formal by being acknowledged as significant informant in shaping the environment (Tovivich, 2009).

The activities on site range across a spectrum from formal to informal. The potency of the architecture therefore lies in understanding functionally and spatially successful examples in the existing urban conditions and how these prompt design and inform a new architectural language. The power of the architecture lies in allowing activities to latch onto and adapt structures according to their specific current needs.

Where formality remains static, informality maintains a high degree of self organisation.

Successful space has been defined by the informal in certain ways through adaptation and these examples of adaptability need to inform an appropriate architectural approach and the degree to which architectural intervention can facilitate development.

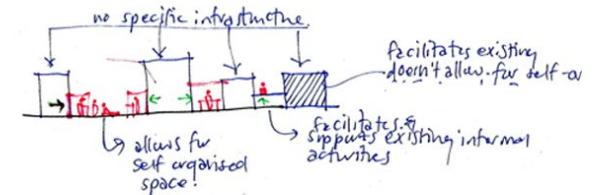


Figure 7.1. Informality attaches onto existing formality (Author, 2015)

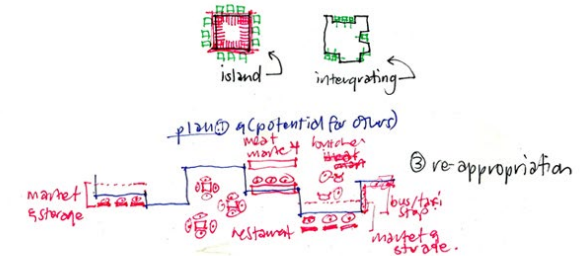


Figure 7.2. Formal development that facilitates informality (Author, 2015)

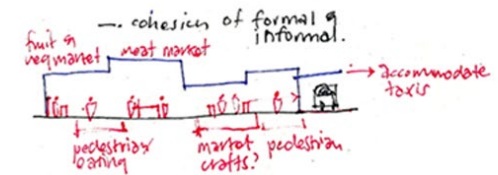


Figure 7.3. Structural shell allows for informal self-organisation (Author, 2015)

7.1.2 | SELF-ORGANISATION: “SHADOW ARCHITECTURE”

The role of the architect is defined as follows: PEAS: Provide, Enable, Adapt, and Sustain Hamdi (2010).

Informal activity driven by socio-economic opportunities has resulted in numerous unconventional spatial solutions. Where the formal has not satisfied the informal, the informal has adapted the existing



Figure 7.5. Existing simple roof structure allowing self-organisation. (Author, 2015)

condition accordingly. Informality has shown an impressive ability to be adaptable and in doing so *“has solved the spatial shortcomings in the formal environment”* (Rudofsky, 1964). This adaptable, self – organising architecture has given rise to a new vernacular architecture which is able to respond quickly to environmental, social, economic, and physical change.

“A city however perfect in its initial shape will never be complete, never at rest” (Kostof, 1999: pp13).

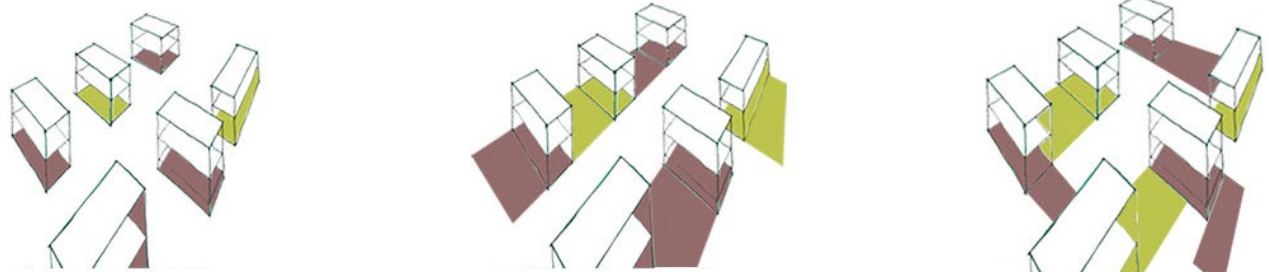


Figure 7.4. Loose fit, fine grain allows for self-organisation (Author 2015)

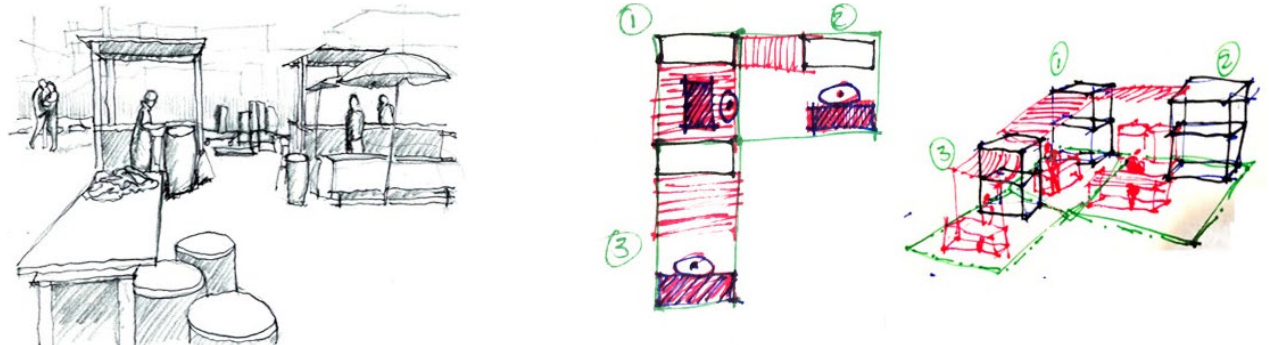


Figure 7.6. Re-appropriation of existing structures through self-organisation (Author 2015)

Buildings are often designed with a final product in mind. The success of the building, however can only truly be measured when the building is occupied and adaptations and re-appropriations of space take place (Mills, 2012).

It is therefore imperative for the architectural design intervention to leave room for a degree of self-organisation to enable adaptability.

7.1.3 | REVEAL & CONCEAL

The programme consists of activities that should range in physical and visual accessibility and therefore the architecture aims to reveal or conceal activities accordingly. The bovine butchery, for instance, is not an activity that the user should involuntarily be exposed to and therefore the architecture will aim to conceal it while still acknowledging the importance of it. The informal restaurant space, on the other hand, should be revealed with the intention of encouraging social interaction by all users. The degree to which an activity is revealed or concealed is determined by the architecture and will vary according to the requirements of each activity.

The site also deals with different speeds of pedestrian movement throughout the day. In the morning the pedestrian movement from north to south through the site is faster than the reverse movement in the afternoon. Therefore the design and architecture will reveal the activities that support the faster pedestrian movement on the path out in the mornings, and reveal the activities that require slower movement in the afternoons. The architecture supports the needs of each type of activity and

their economic opportunity within the programme.

"A tangible method implies an intangible message where layering of thresholds is applied to announce the privacy level of space". Newman (1973) suggests using a series of spatial territories that provide subtle thresholds to private spaces. Thresholds have the ability to reveal and conceal various elements of an activity. Thick, robust, solid structure vs. transparent, loose, adaptable, flexible and self organising structure.

Degrees of revealing and concealing will be explored through different levels of sensory exposure:

1. Physical [feel]
2. Visual [see]
3. Auditory [hear]
4. Olfactory [smell]
5. Gustatory [taste]

The implementation of this concept will be achieved through:

- appropriate material choice
- transparent vs. opaque.
- the method in which the materials are constructed.
- alluding to a certain way in which people move through the site.

Deciding what elements, activities and programmes should be revealed and concealed will determine the extend to which the user will be drawn into the matrix of layered space and the level of exposure the user experiences of the relative activity. These exposures refer to both human and non-human factors. Softening certain thresholds creates unexpected social interactions in spaces where interaction may never have occurred.

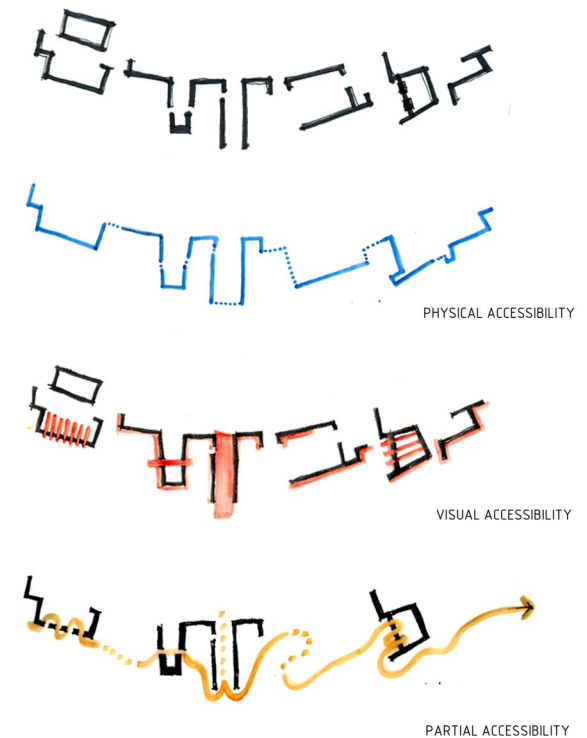


Figure 7.7. Reveal and conceal concept (Author 2015)

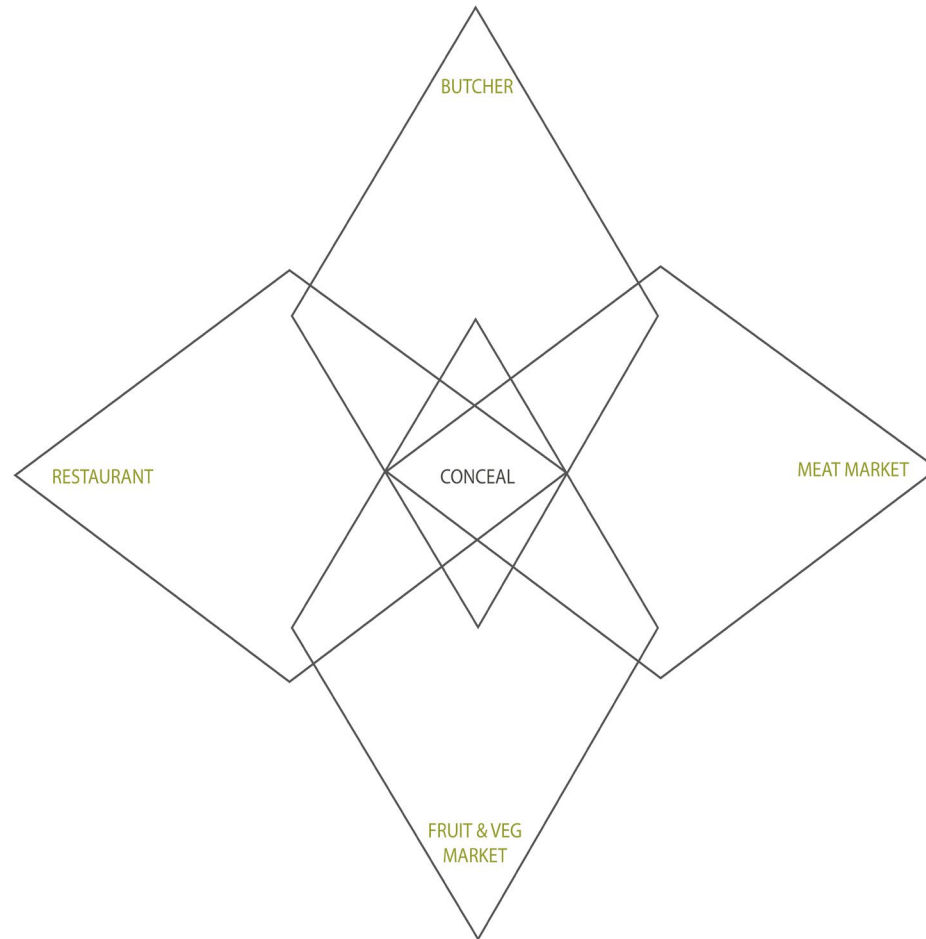


Figure 7.8. Enclosure & exposure
(Author 2015)

7.2 | PROGRAMME INFORMED

7.2.1 | ACTIVITIES INFORM PROGRAMME

“First life, then spaces, then buildings – the other way around never works” (Gehl, 2012)



Figure 7.9. Bovine butchery (Author 2015)

7.2.2 | PROGRAMMATIC REQUIREMENTS

7.1.2.1 | TABLE 1: SERVICE & INFRASTRUCTURAL NEEDS:

Structure, storage, water, ventilation, natural light, gas, fire, drainage, waste removal, electricity, security (lock up facilities)

	Structure	Storage	Water	Ventilation	Natural light	Gas	Fire	Drainage	Waste removal	Electricity	Security
Abattoir	X	X	X				X	X	X		X
Meat market	X	X	X					X	X		X
Formal butchery	X	X	X					X	X		X
Informal butchery	X	X	X						X		
Meat market	X										X
Informal restaurant	X										
Informal fruit & veg vendors											
Fruit and veg market	X	X	X	X	X	X	X	X	X		X

Figure 7.10. Service & infrastructural needs (Author 2015)

7.1.2.2 | TABLE 2: SPATIAL REQUIREMENTS:

Spatial requirements: large or small volume, public or private, permeable or solid thresholds, fixed or flexible.

	Large scale	Small scale	Permeable edges, gradient indicates adaptability	Solid edges, gradient indicates adaptability	Private	Public
Abattoir	Large scale		Permeable edges	Solid edges	Private	Public
Meat market	Large scale		Permeable edges	Solid edges	Private	Public
Formal butchery	Large scale		Permeable edges	Solid edges	Private	Public
Informal butchery	Large scale		Permeable edges	Solid edges	Private	Public
Meat market	Large scale		Permeable edges	Solid edges	Private	Public
Informal restaurant	Large scale		Permeable edges	Solid edges	Private	Public
Informal fruit & veg vendors	Large scale		Permeable edges	Solid edges	Private	Public
Fruit and veg market	Large scale		Permeable edges	Solid edges	Private	Public

Figure 7.11. Spatial requirements (Author 2015)

7.2.3 | PROGRAMMATIC FLOW

This examines where programmes sit in relation to each other.

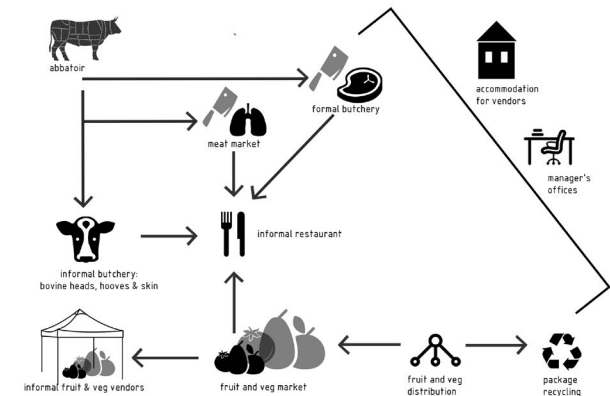


Figure 7.12. Programmatic flow (Author 2015)

CONCLUSION

Design informants are made up of programmatic informants as well as space making informants. Observation of how space is made will inform an appropriate architectural language with regards to what should be latched onto, what should be facilitated and improved and what should be replaced.

7.3 | SITE INFORMANTS

7.3.1 | FINE GRAIN, LARGE GRAIN

Due to the site's location the building will have to respond appropriately in integrating the fine grain of Marabastad and the large grain of Marabastad and the city. With the consideration that fine grain increases accessibility and large grain decreases legibility, programmes can respond according to the level of accessibility required for that programme.

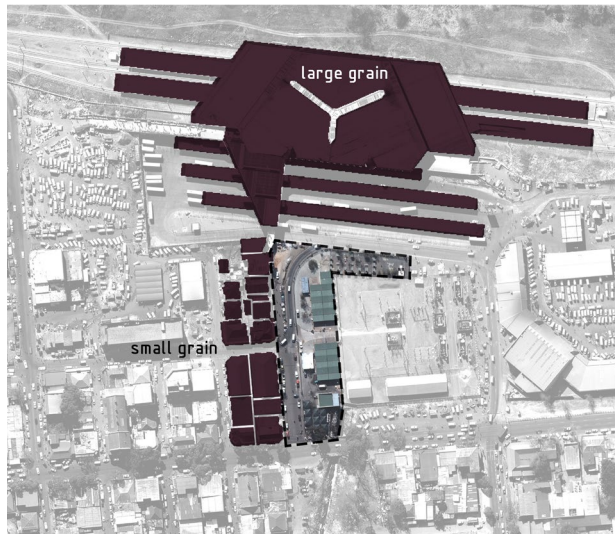


Figure 7.13. Small grain & large grain (Author 2015)

7.3.2 | STEREOTOMIC TO TECTONIC

There is a transition from stereotomic to tectonic on the site. The design intervention needs to mediate between the small scale stereotomic condition of Marabastad's fine grain and the large scale stereotomic condition of The Belle Ombre to the large scale tectonic condition of the power sub-station. The architectural language needs to respond to these different conditions and find solutions in integrating the three conditions successfully.

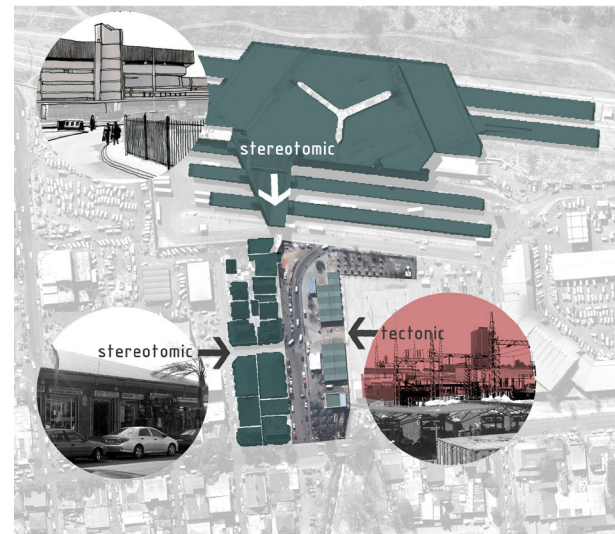


Figure 7.14. Stereotomic & tectonic (Author 2015)

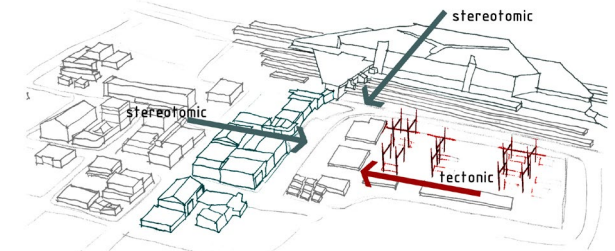


Figure 7.15. Transition from stereotomic to tectonic (Author 2015)

7.3.3 | SMALL SCALE, LARGE SCALE

The architectural design intervention will have to mediate between the small scale of Marabastad and the large scale of the Belle Ombre Station, the power sub-station and the city.

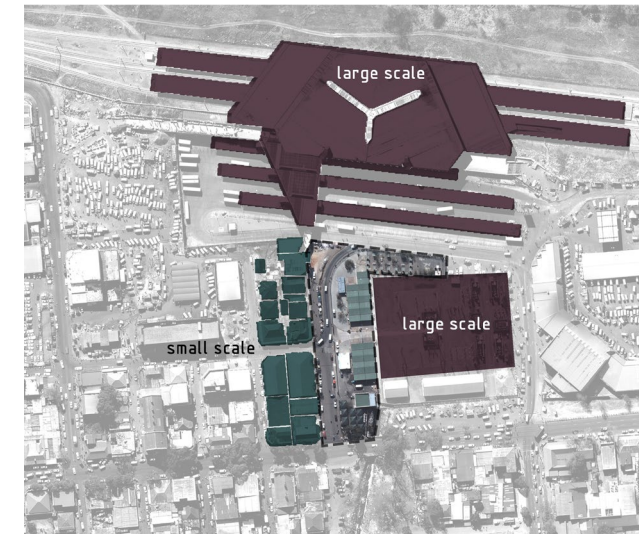


Figure 7.16. Small scale & large scale (Author 2015)

7.3.4 | SITE CONDITIONS

7.3.4.1 ORIENTATION:

Buildings should face North to optimise natural sunlight, however, the site's longest axis is orientated along the north-south axis.

Habitable spaces should maximise on natural sunlight by facing north. Programmes that deal with raw meat require cooler temperatures and should therefore avoid western orientation. Buildings that optimise on northern light can also create southern shade.



Figure 7.17. Northern orientation (Author 2015)

7.3.4.2 | SLOPE:

Site slope defines where programmes sit in terms of accessibility.

Water run-off on-site is an important consideration when considering placement of programmes onsite. Grey rainwater run-off should be separated from black(bloody) water.

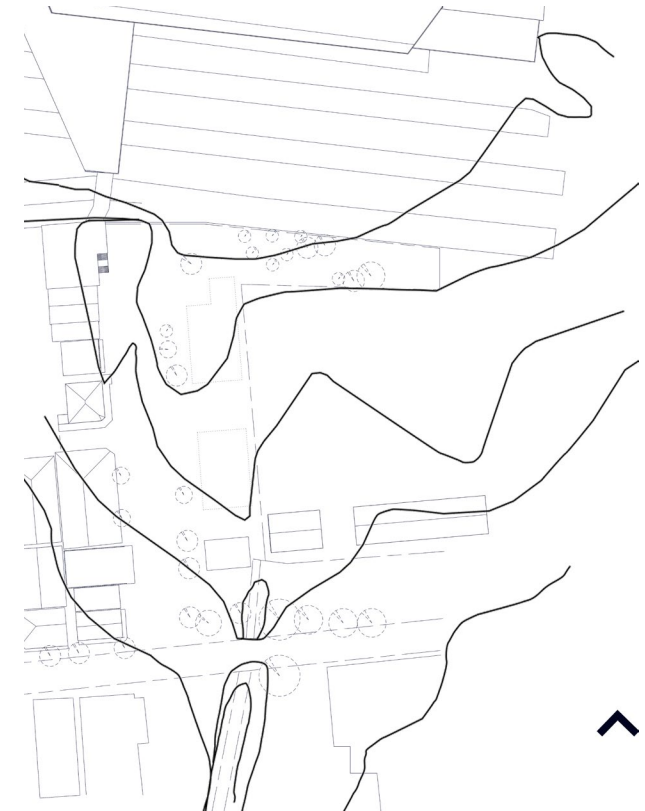


Figure 7.18. Site slope (Author 2015)

7.3.5 | MOVEMENT:

VEHICULAR: Thresholds and connections to Boom and 11th Streets

PEDESTRIAN: Pedestrian movement through the site: faster and slower public spaces. Current movement of pedestrians, predicted and intended future movement.

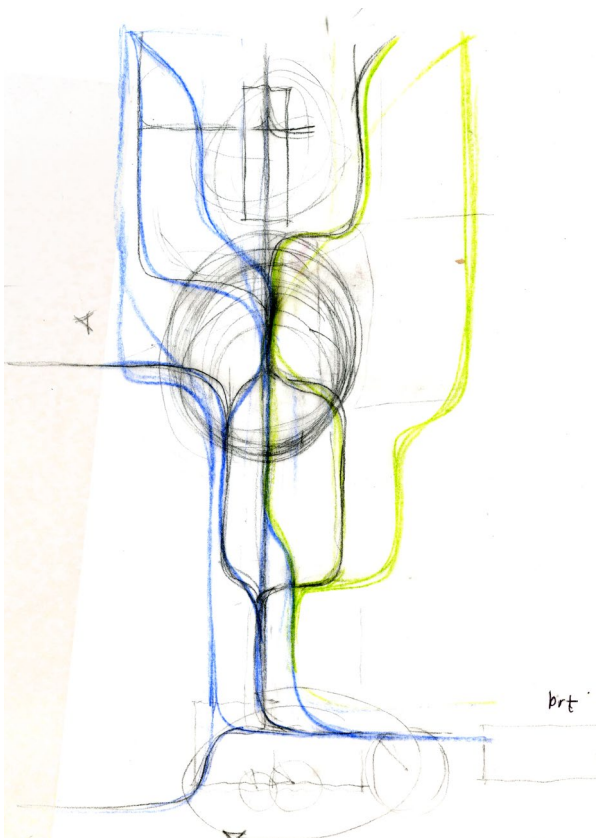


Figure 7.19. Fast (blue) & slow (yellow) pedestrian movement (Author 2015)

7.3.6 | PRIVATE VS. PUBLIC

Programmes with more private functions are situated further from



Figure 7.20. Accessibility: private vs. public programmes (Author 2015)

7.3.7 | EXISTING ARCHITECTURAL HERITAGE FABRIC

Responding to existing heritage fabric in terms of architectural style, material use and spatial definition.

7.3.8 | FRAMEWORK

Connections within Urban Framework and to Marc Degenaar and Marie Oberholzer.

8 | DESIGN DEVELOPMENT

DESIGN DEVELOPMENT INFORMANTS

[A] ORIENTATION

[B] EXISTING STRUCTURES

[C] PUBLIC SPACE

[D] SITE SLOPE

[E] PEDESTRIAN MOVEMENT

[F] PUBLIC VS. PRIVATE

[G] SCALE

[H] FORM

[I] STEREOTOMIC & TECTONIC

[J] FINE GRAIN, LARGE GRAIN

[K] FORMAL & INFORMAL

[L] REVEAL & CONCEAL

EXPLORATION 1

1.1_ SCALE MEDIATION

The models explores how architecture can mediate between the varying scales of Marabastad's fine urban fabric, the city's large urban fabric and the large scale of Belle Ombre Metro station and the sub-station.

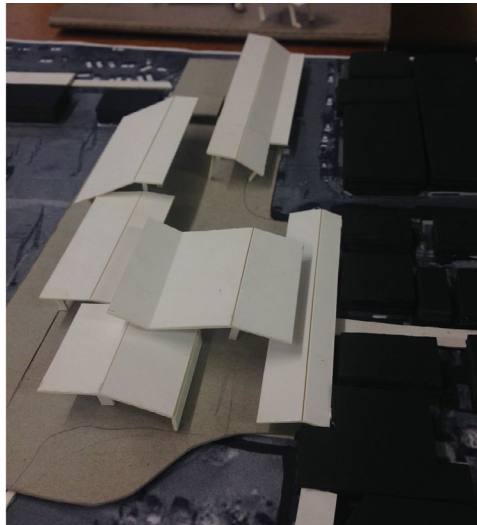


Figure 8.2. Roof exploration responding to varying building scales



Figure 8.4. Scale response to Belle Ombre by roof

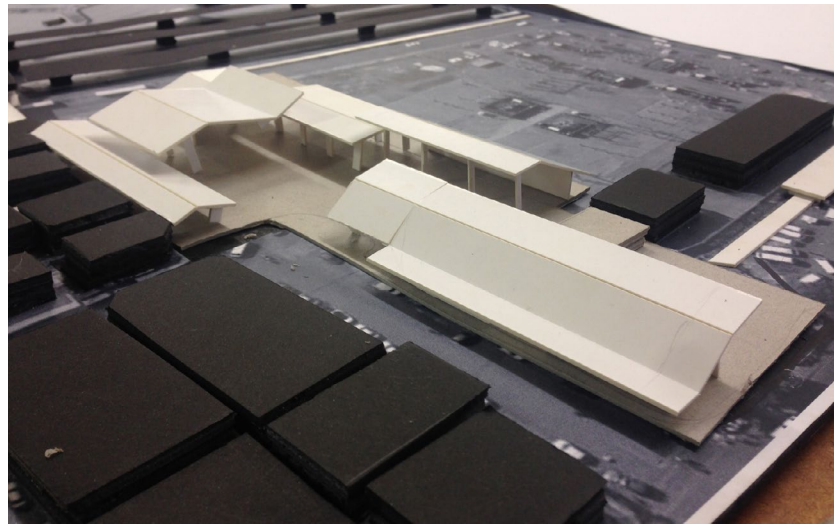
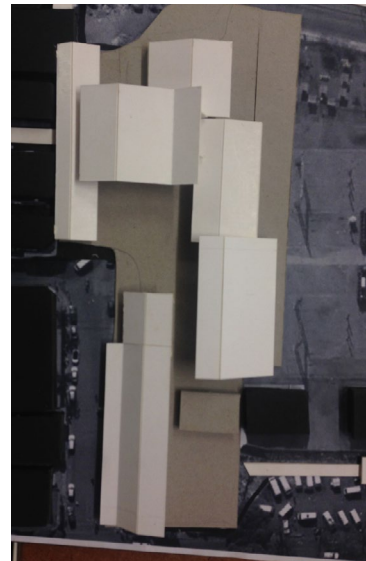


Figure 8.3. Buildings define central public space



1.2_ PUBLIC SPACE

The placement of buildings creates 'negative' spaces which become public space. The activities which surround the public space provide energy ensuring activity within public spaces.

Figure 8.1. Aerial illustrating how negative space becomes public space.

EXPLORATION 2

2.1_NORTH ORIENTATION

The site's long N-S axis required careful consideration of building placement & orientation to optimise on natural sunlight.

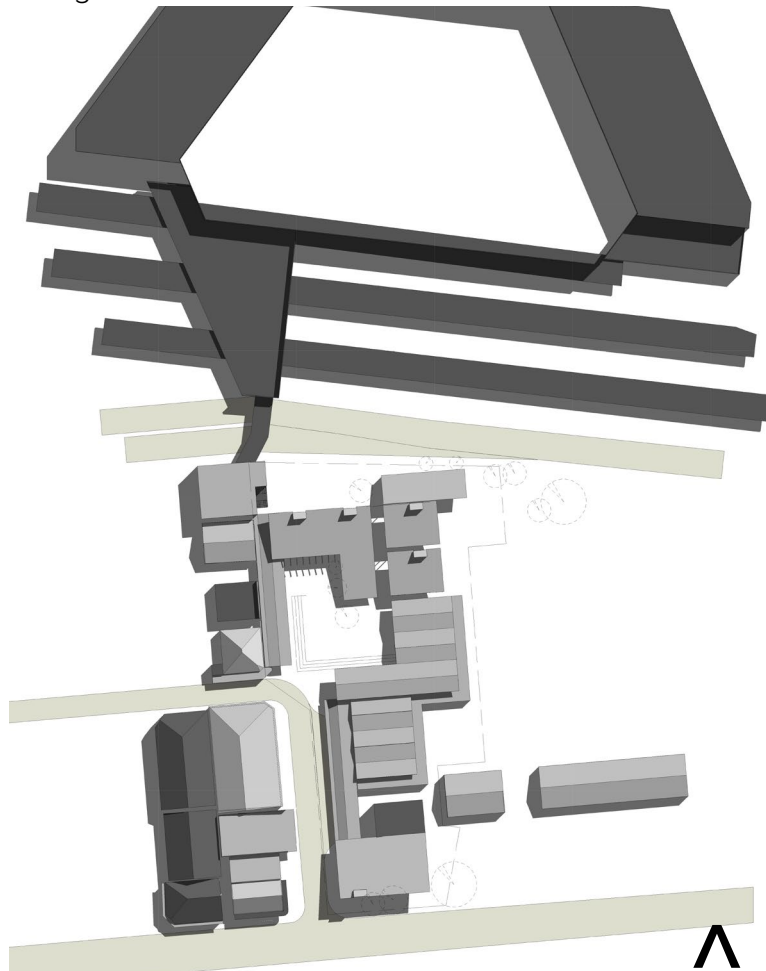
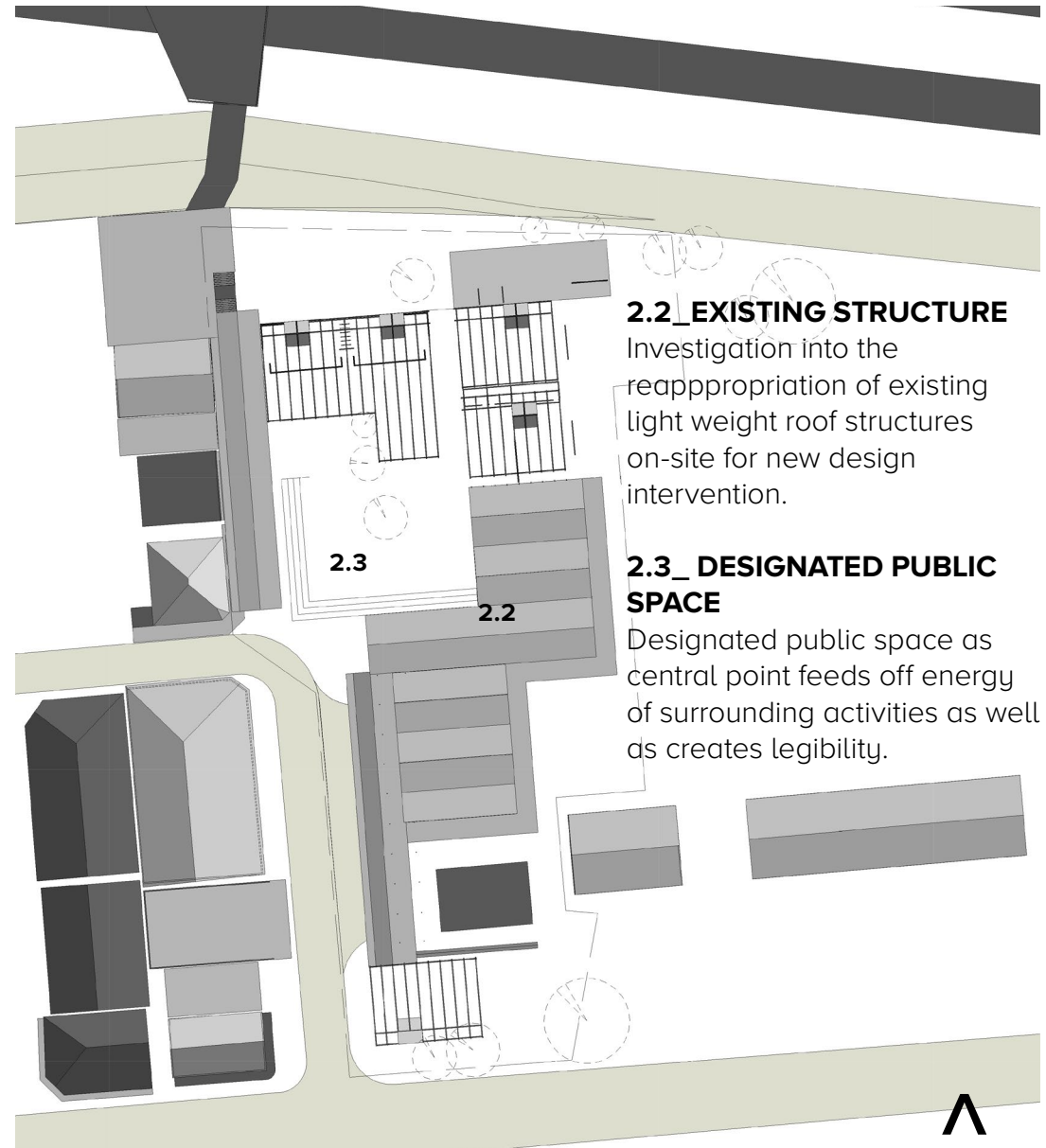


Figure 8.6. Roof plan of first design iteration



2.2_EXISTING STRUCTURE

Investigation into the reappropriation of existing light weight roof structures on-site for new design intervention.

2.3_DESIGNATED PUBLIC SPACE

Designated public space as central point feeds off energy of surrounding activities as well as creates legibility.

Figure 8.5. Plan of first design iteration

2.4_SITE SLOPE

The site has a 4m slope towards the North. Exploration of how various levels can differentiate between private & public spaces as well as faster & slower routes was explored.

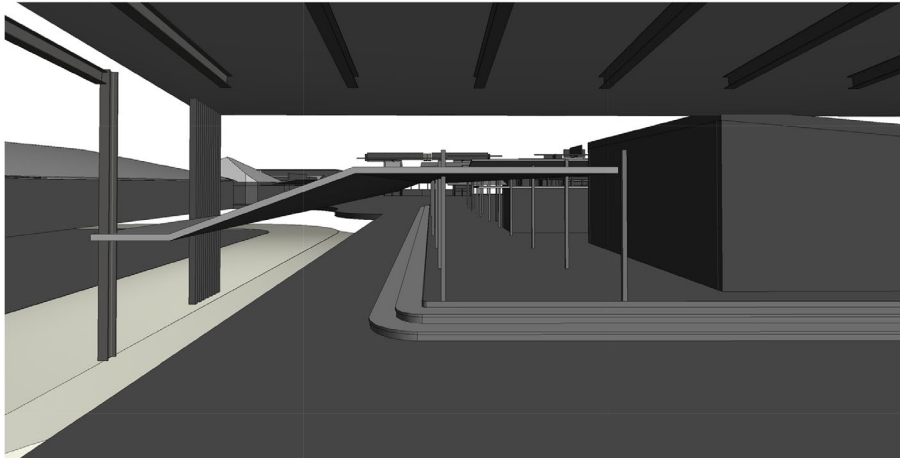


Figure 8.8. Level difference

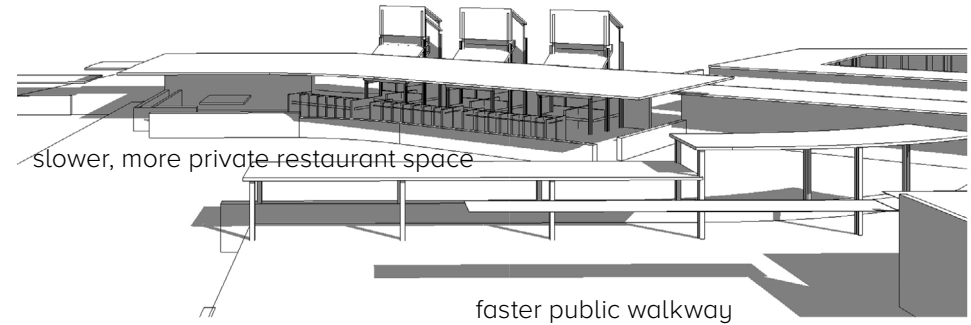


Figure 8.9. Change in levels differentiate types of space

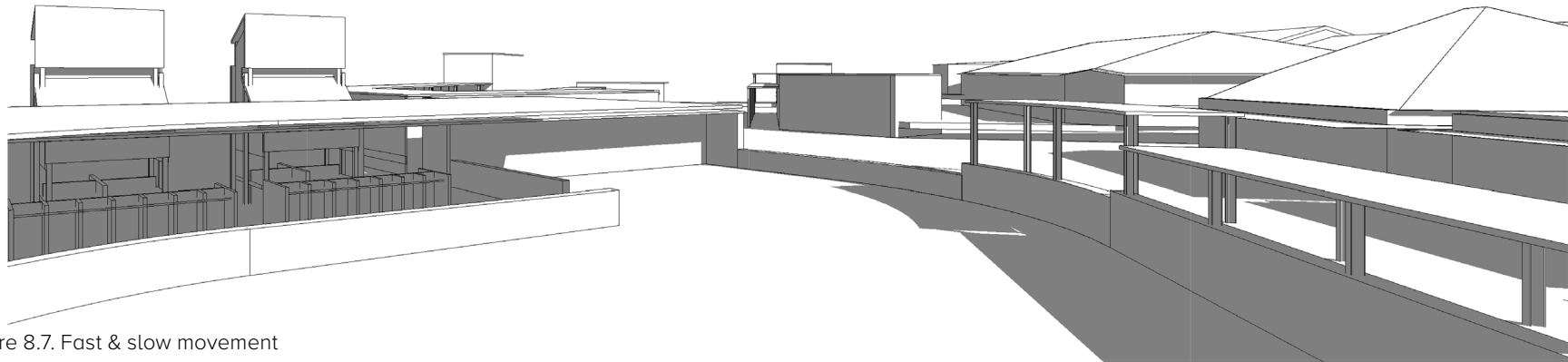


Figure 8.7. Fast & slow movement

2.5_SLOW & FAST MOVING SPACES

Change in level differentiates between fast pedestrian movement to and from the Belle Ombre metro station and slower pedestrian space on the lower level. Programmes such as informal vendors are located on faster routes while slower spaces such as the restaurant are located along slower movement routes. The site slope and level changes assist in defining these different spaces.

2.6_PEDESTRAIN MOVEMENT

Situating appropriate programmes and buildings along the pedestrian movement path.

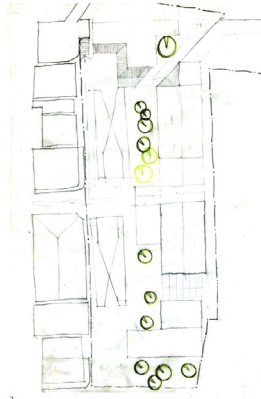


Figure 8.10. Creating designated public space

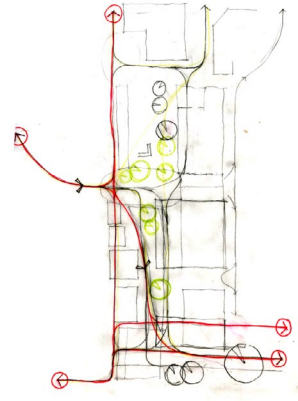


Figure 8.11. Pedestrian movement through the site

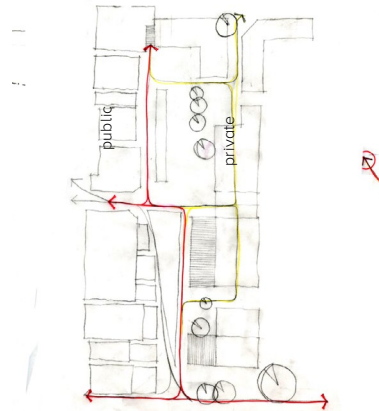


Figure 8.12. Paths of accessibility.

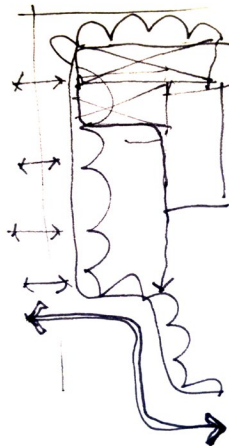
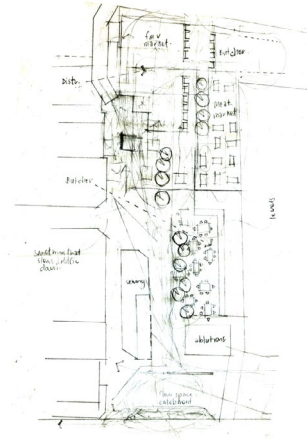
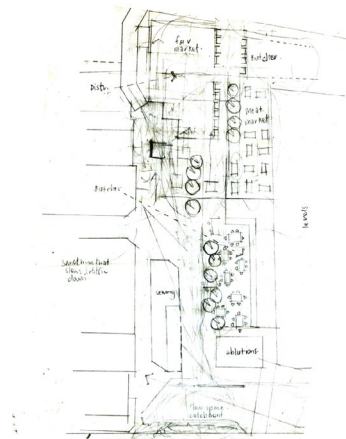


Figure 8.13. Degrees of accessibility



Degrees of accessibility for public & private programmes: public programmes situated along pedestrian path for easy accessibility, while private programmes set back.

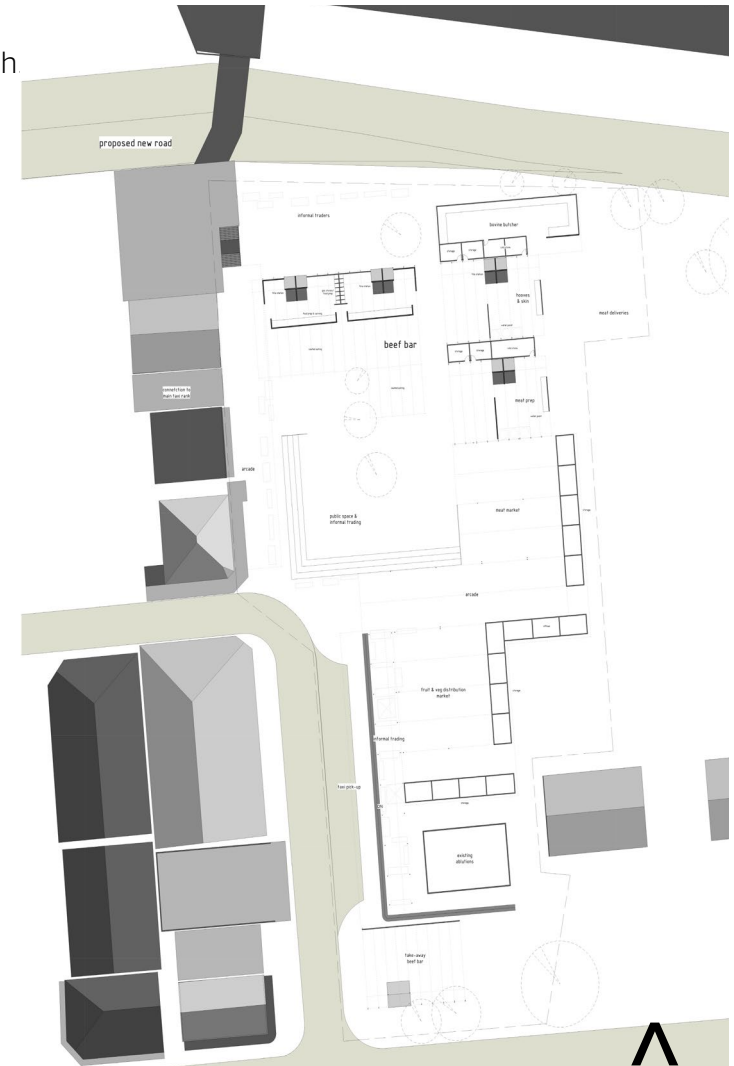


Figure 8.15. Ground floor plan of first design iteration

2.7_PRIVATE VS PUBLIC

Public programmes located along busy pedestrian paths, while private programmes situated further from the main pedestrian movement

2.8 DESIGNATED PUBLIC SPACE

Adjacent public activities create new programmatic opportunity. The communal braai areas create opportunity for a restaurant space which generates energy for designated public spaces within Marabastad.

2.9 THRESHOLDS

Public edges (i.e to restaurant) are easily accessible

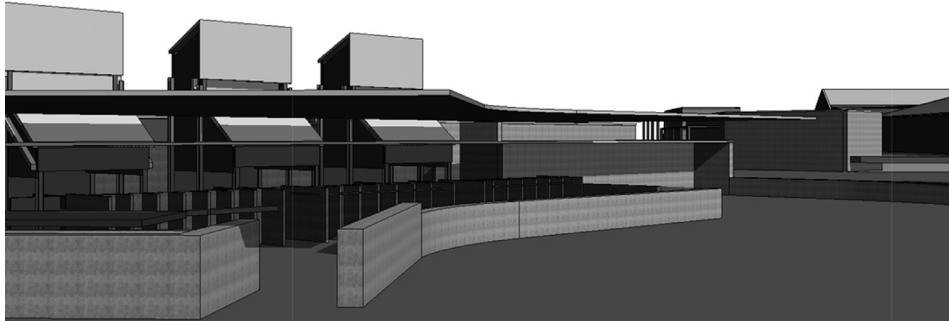


Figure 8.16. Designated public space

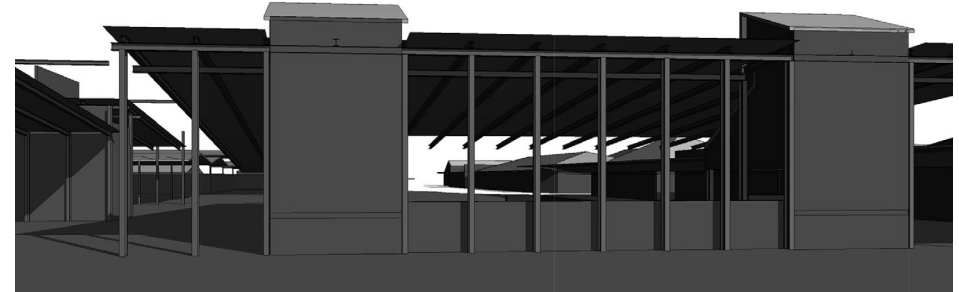


Figure 8.17. Edges & thresholds

2.10 FINE GRAIN, LARGE GRAIN

Frame structure allowing for adaptability, change and self-organisation.

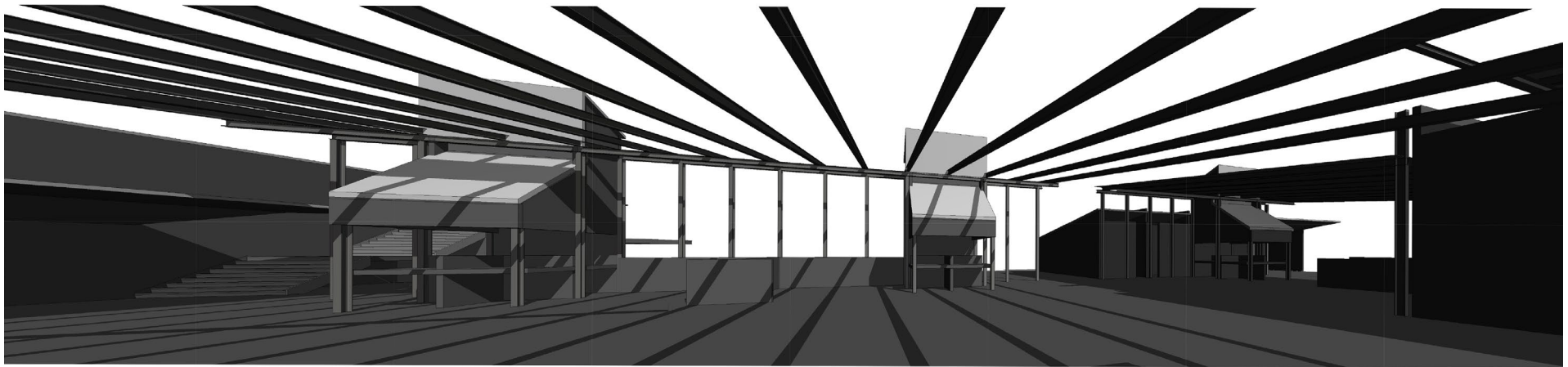


Figure 8.18. Fine grain, large grain

2.11_SMALL SCALE TO LARGE SCALE

Descending roof heights allow for a transition from large to small scale. They also create clerestoreys which allow light into deep spaces.

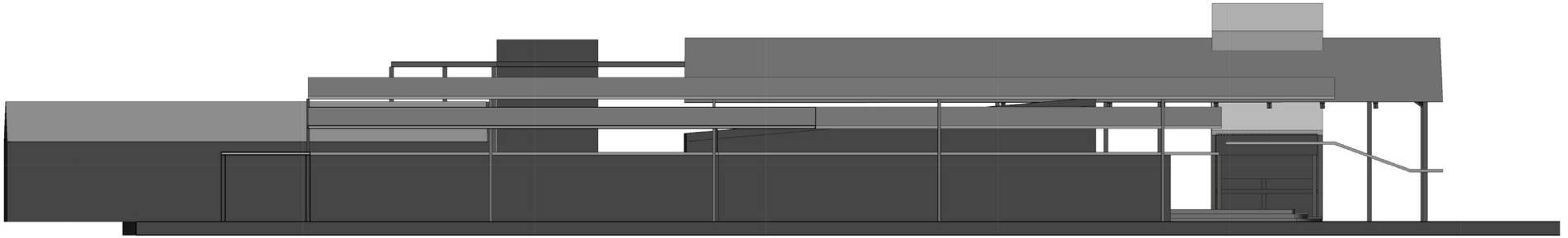


Figure 8.19. Scale transition through varying roof levels transition

2.12_ STEREOTOMIC & TECTONIC

The building needs to respond to both the stereotomic language of the Belle Ombre Metro station as well as the tectonic language of the sub-station. Exploration of an architectural condition that facilitates the transition between the two is important.

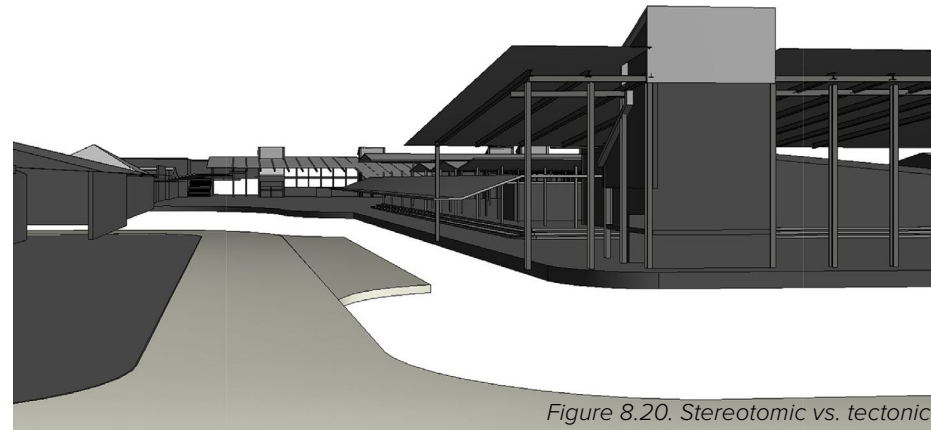
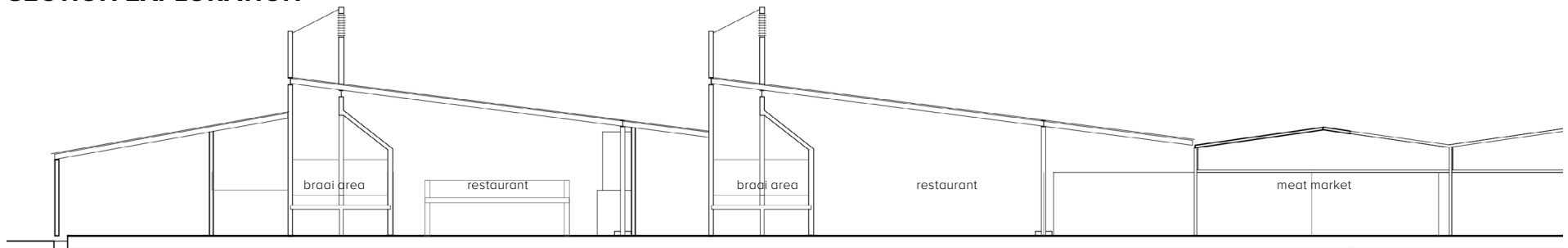


Figure 8.20. Stereotomic vs. tectonic

SECTION EXPLORATION



2.13_LANDMARKS

Creating new landmarks within the landscape announces public space & creates legibility within the urban environment.

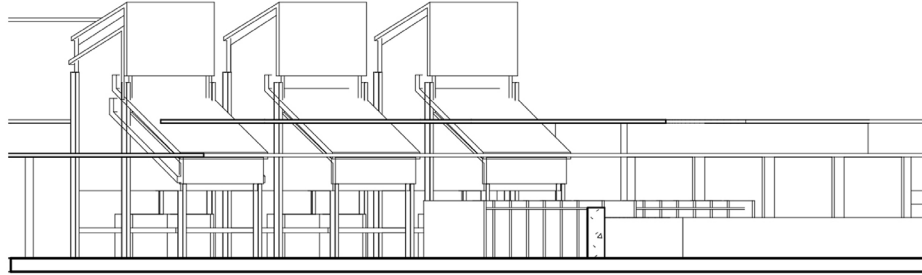


Figure 8.23. Landmarks

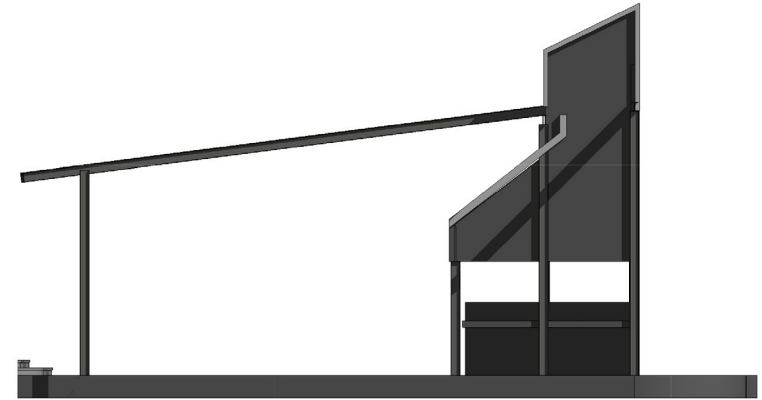


Figure 8.21. Furnace chimney

2.14_FORMAL & INFORMAL

Providing infrastructural needs for existing activities that also allow for adaptation in the future.

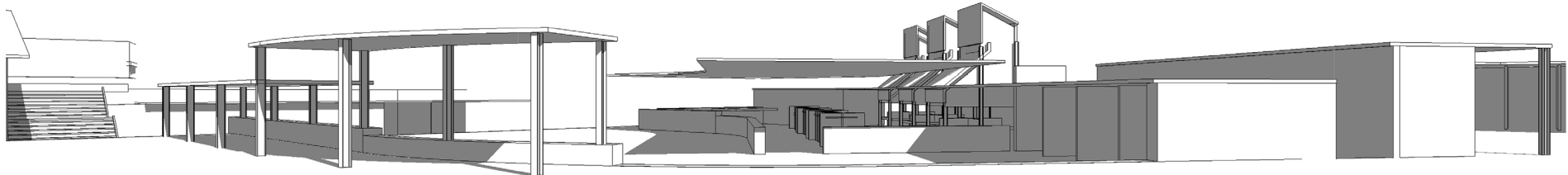


Figure 8.24. Formal & informal

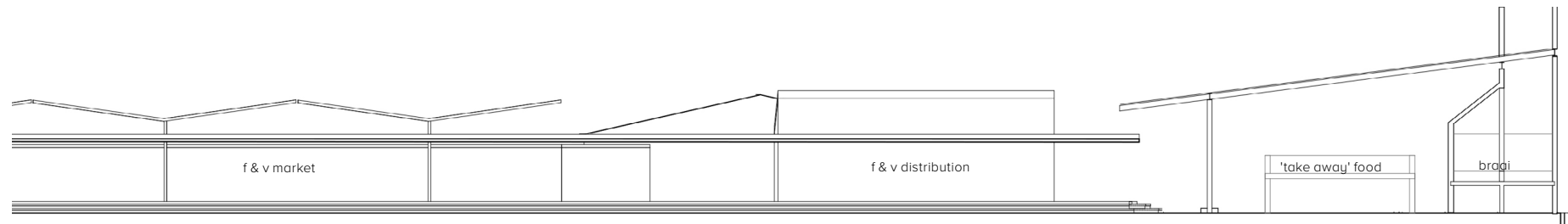


Figure 8.22. Section exploration

EXPLORATION 3

3.1_ REVEAL & CONCEAL

The design intervention needs to promote programmes that require faster moving pedestrian traffic from north to south in the mornings & slower moving traffic from south to north in the afternoons.

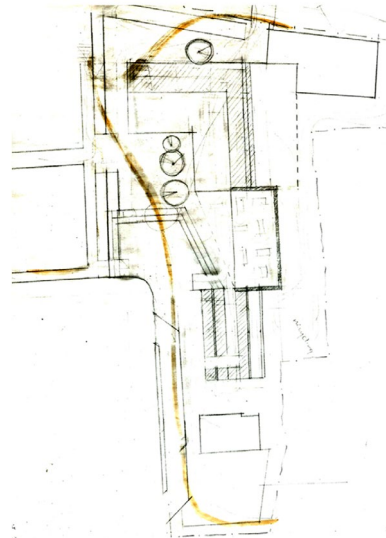


Figure 8.25. Pedestrian movement

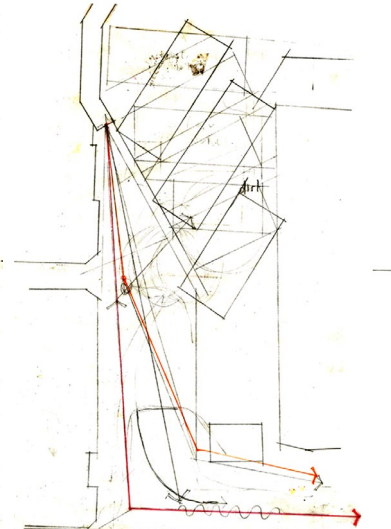


Figure 8.26. Orientation to north

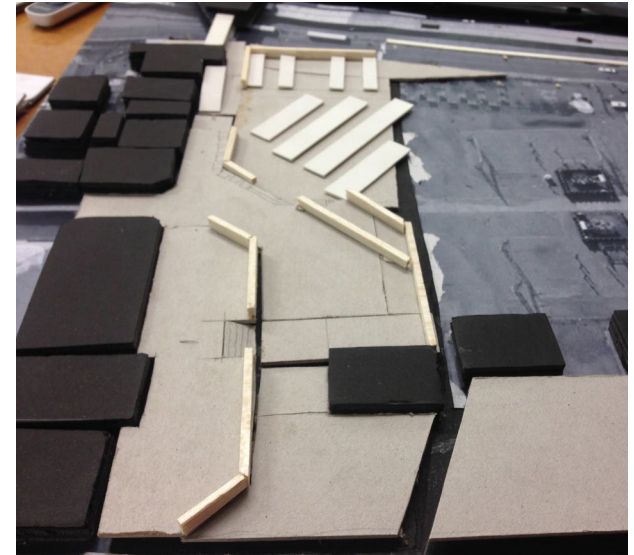


Figure 8.29. Pedestrian movement informs form

3.2_ORIENTATION

The building's placement & orientation needs to take sun direction, pedestrian accessibility and programmatic needs into account.

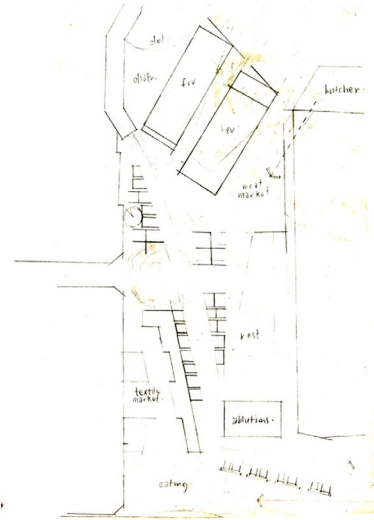


Figure 8.27. Aligned along pedestrian

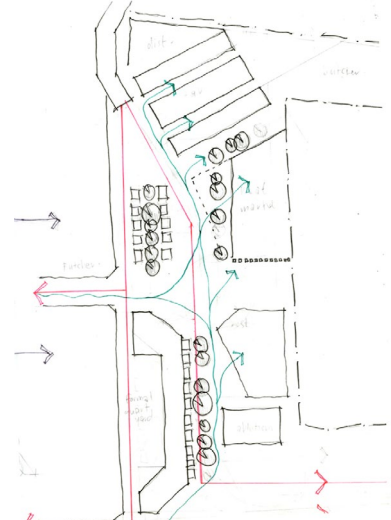


Figure 8.28. Formal & informal routes

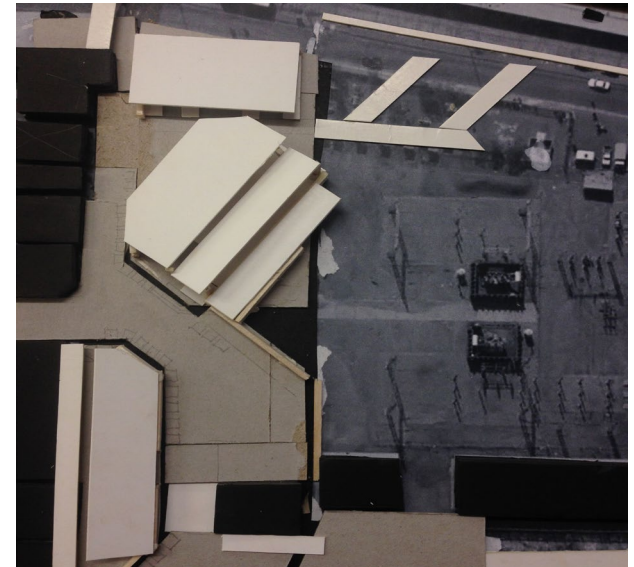


Figure 8.30. Building's orientation

EXPLORATION 4

4.1_EXPLORATION OF PLAN

Exploration of the plan informed by:

- a) the movement of pedestrians through the site
- b) providing service cores which support surrounding activities

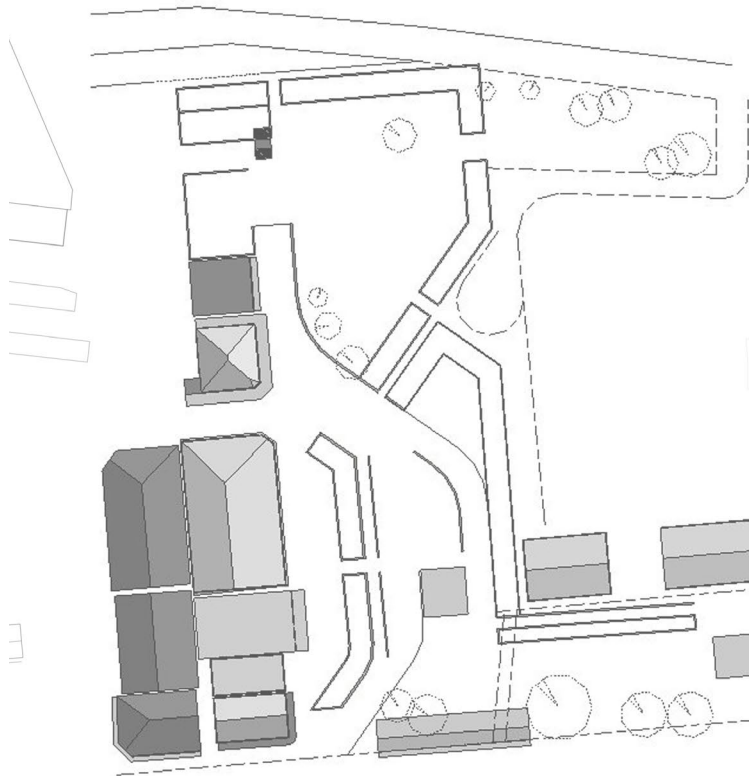


Figure 8.31. Form exploration 1

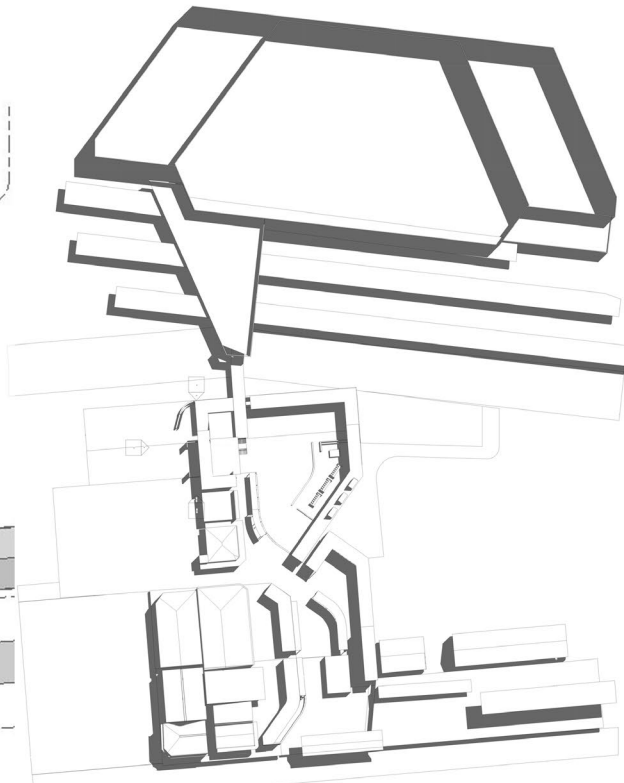


Figure 8.32. Form exploration 2

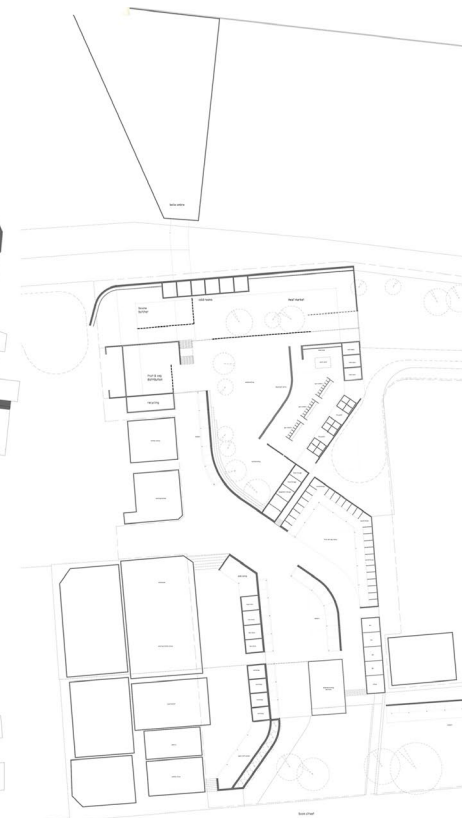


Figure 8.33. Form exploration 3



4.2_CONCEPT SKETCHES: Form exploration

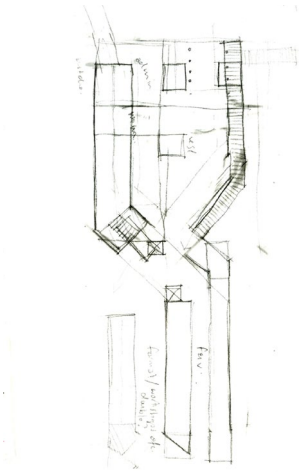


Figure 8.34.

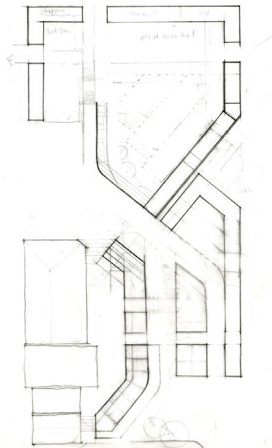


Figure 8.35.

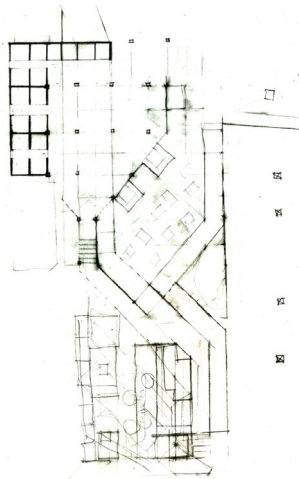


Figure 8.36.

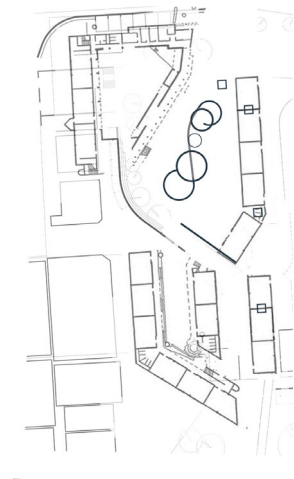


Figure 8.37.

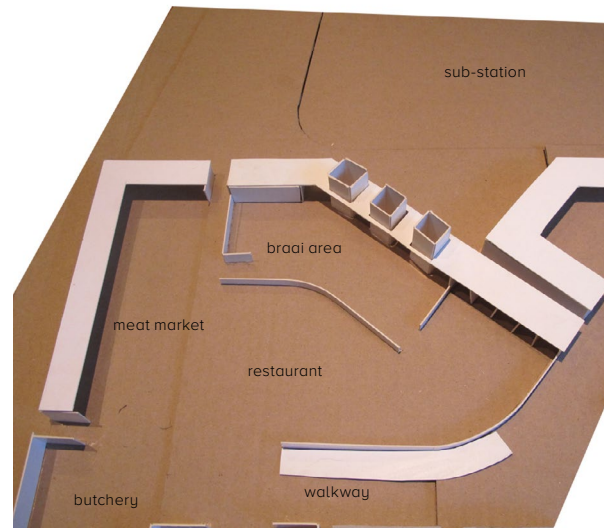


Figure 8.38. Braai chimneys & restaurant

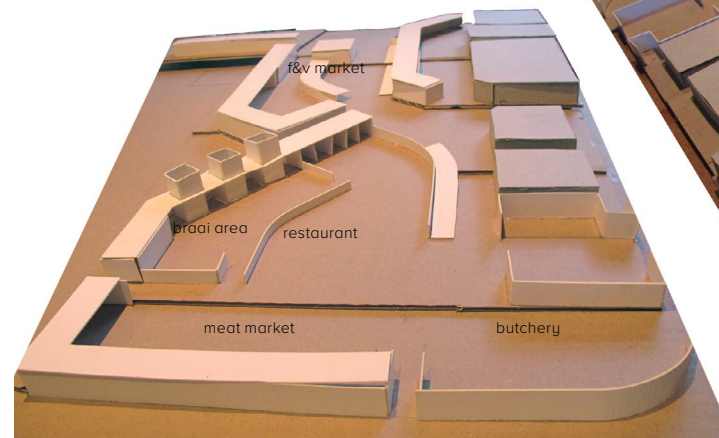


Figure 8.39. View from Belle Ombre towards Boom Street

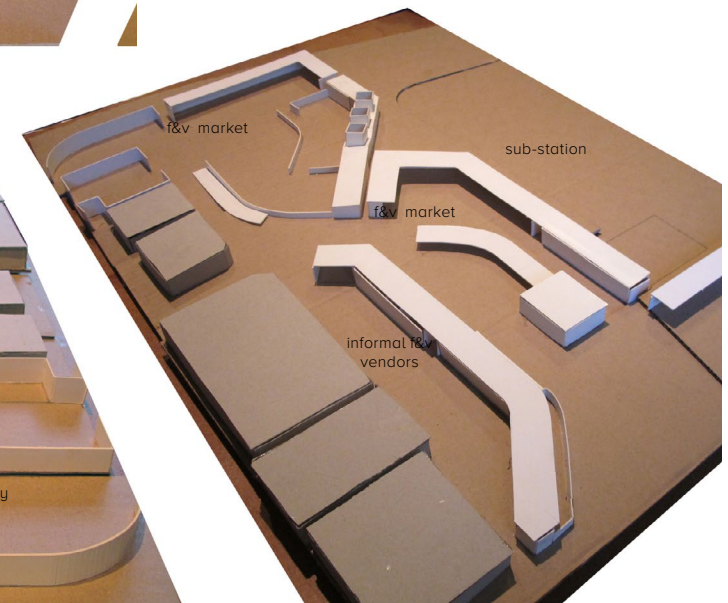


Figure 8.40. Aerial view from Boom Street

4.3_THE MODEL

The model explores:

- a) how the form of the buildings is informed by the existing pedestrian movement.
- b) as well as the provision of core formal structures which facilitate informal activity and allow for its self-organisation and adaptability.

SECTION EXPLORATION

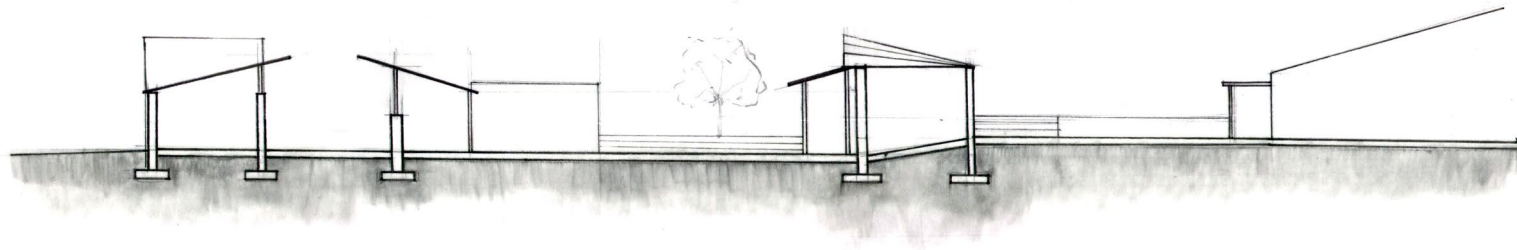


Figure 8.41. Section through fruit & vegetable market

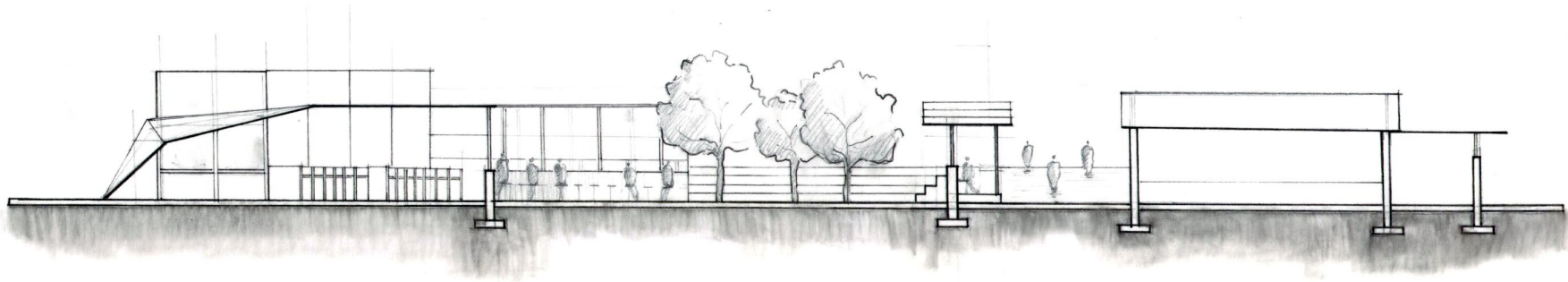


Figure 8.42. Section through offices and bitchenery

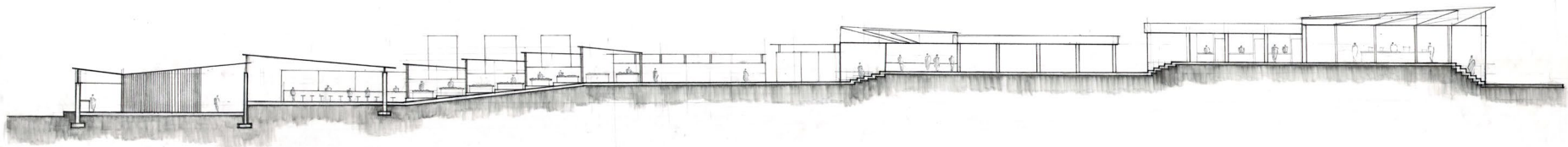


Figure 8.43. Section illustrating site slope

EXPLORATION 5

5.1_THE BRAAI

The communal braai areas are repositioned in the centre of the site and becomes an economic and social landmark.

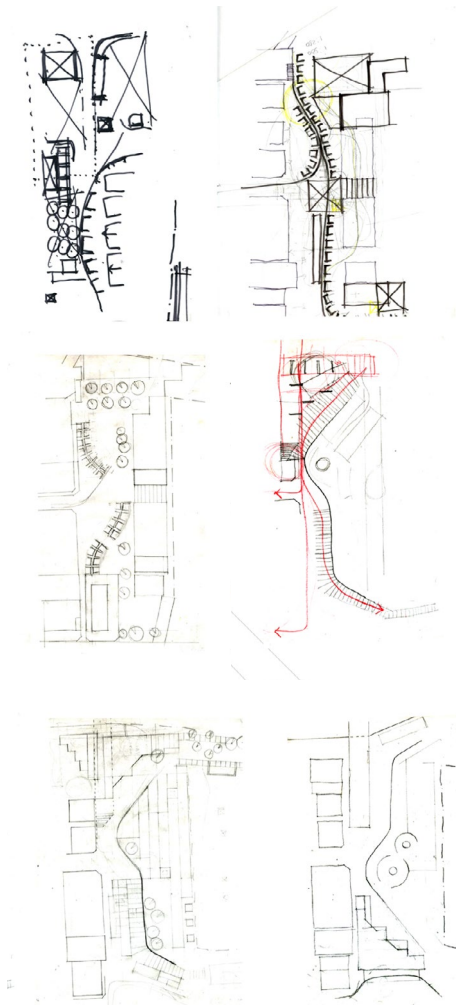


Figure 8.46. Concept sketches

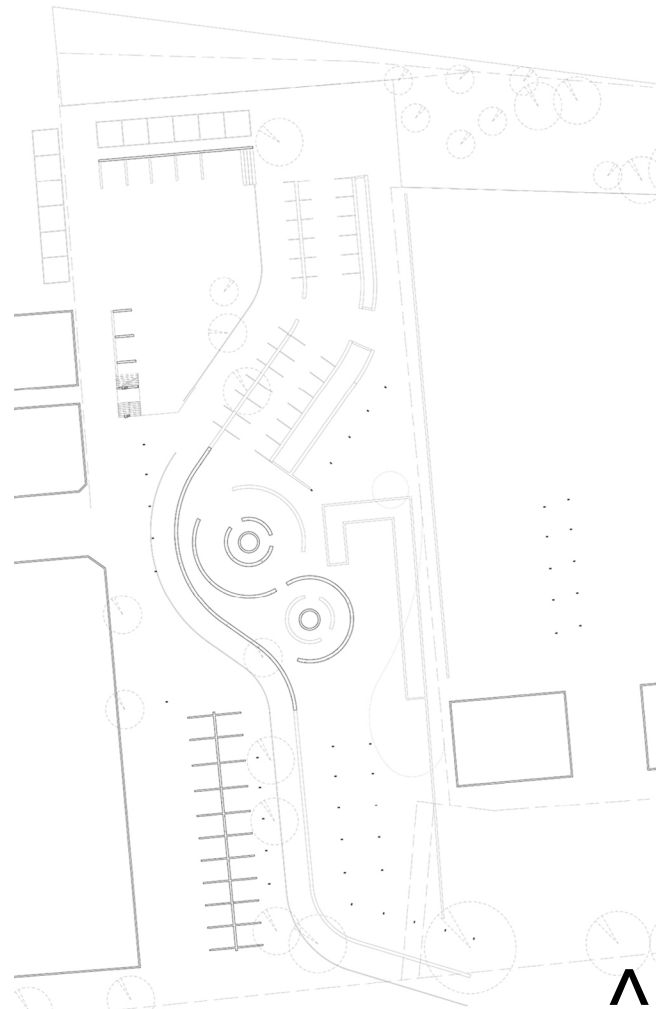


Figure 8.44. Braai place as central public space



Figure 8.45. Cylindrical braai informs surrounding public area

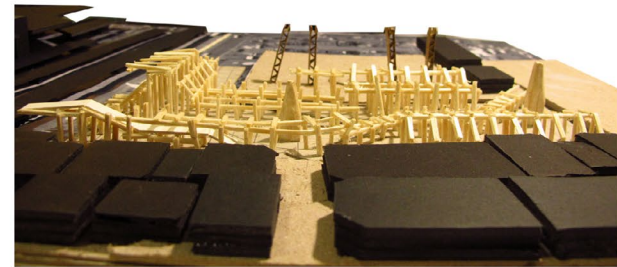
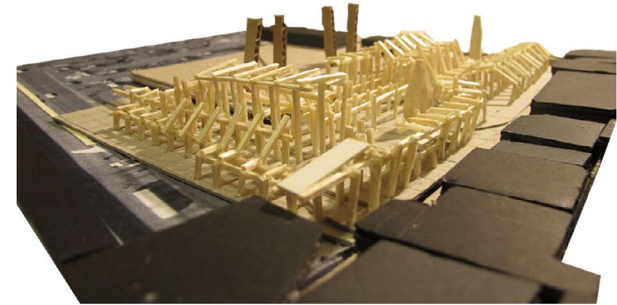
EXPLORATION 6

MODEL EXPLORATION

6.1_ LANDMARK

Stereotomic language of braai chimneys contrast the tectonic architectural language of the structure and become a landmark within the context creating a sense of place

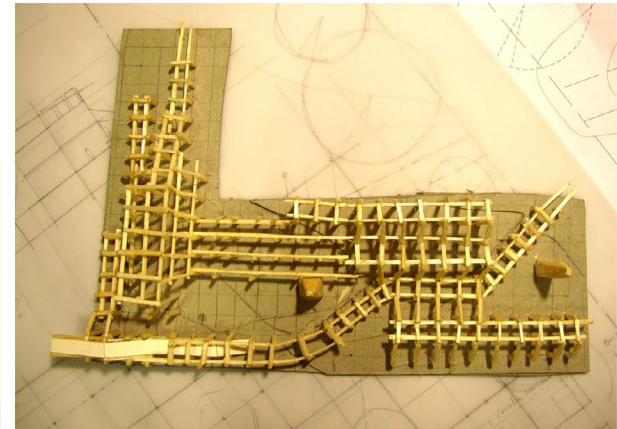
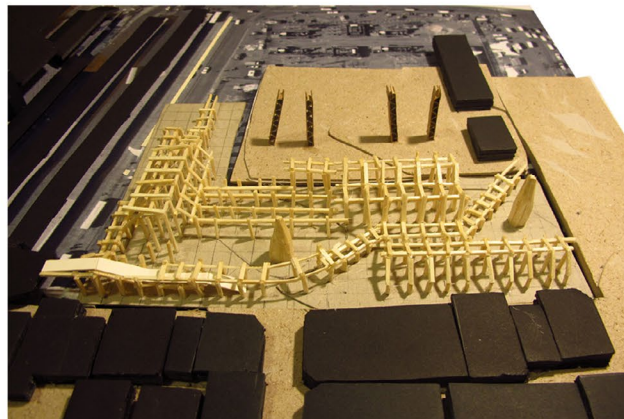
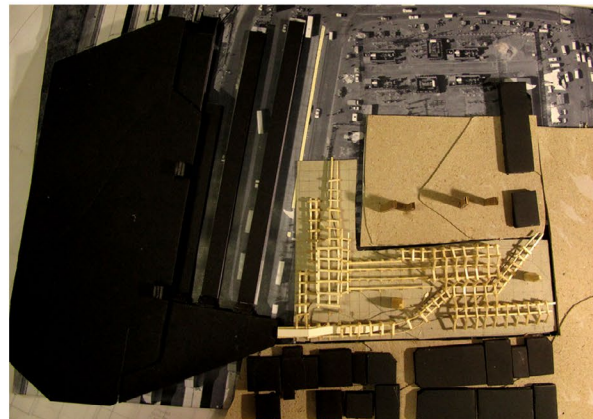
Tectonic response to sub-station on the east of the site



6.2_ STEREOTOMIC & TECTONIC

Exploration of tectonic architecture used to define space, both large and small scale.

Figure 8.47. Tectonic structural exploration



6.3_ SMALL SCALE TO LARGE SCALE

Response to both large scale of Belle Ombre and small scale of existing hertigae fabric.

Placement of braai defines public space and creates increased legibility.

Ground plane is informed by the movement of pedestrians through the site.

EXPLORATION 7

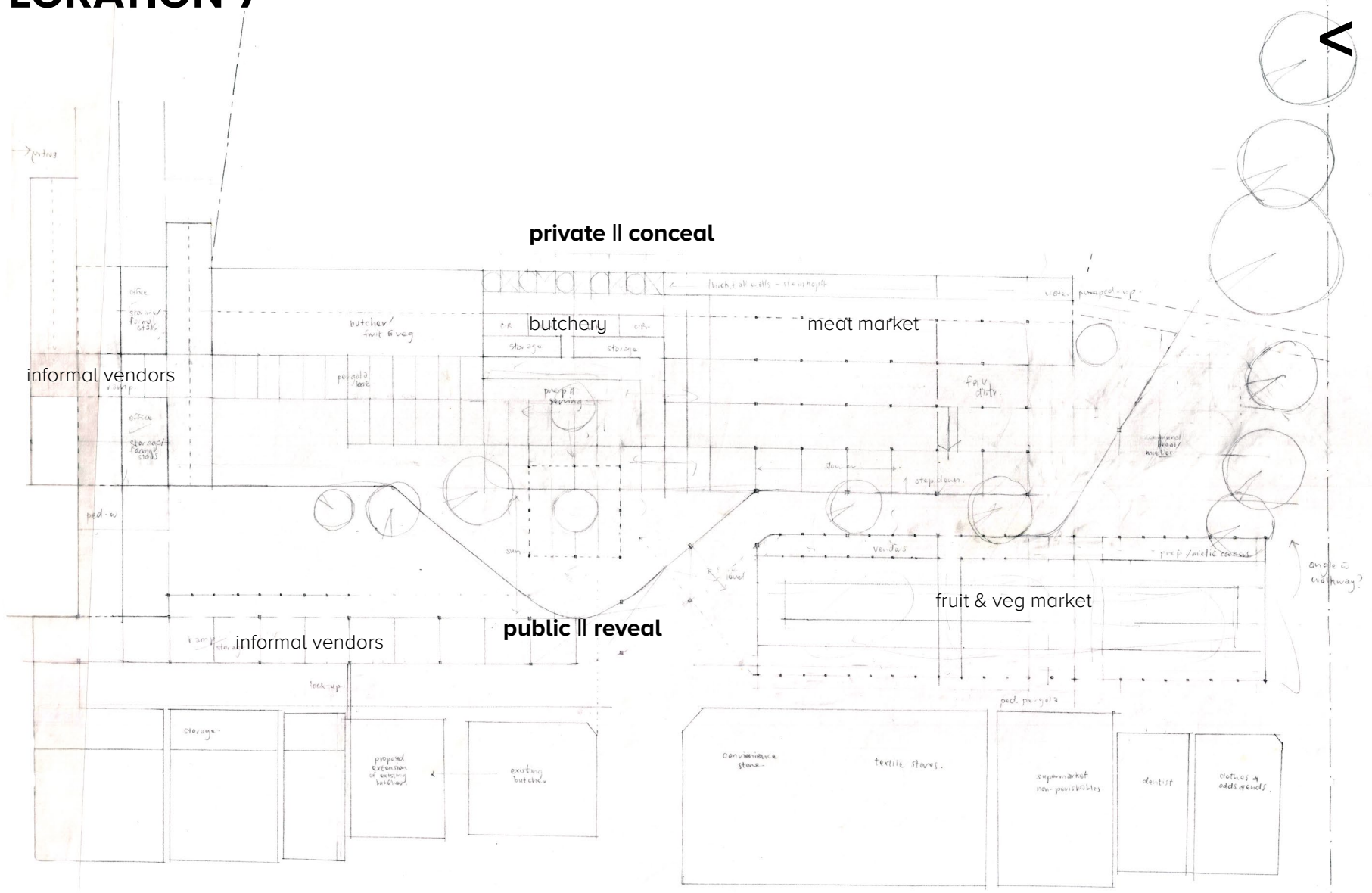


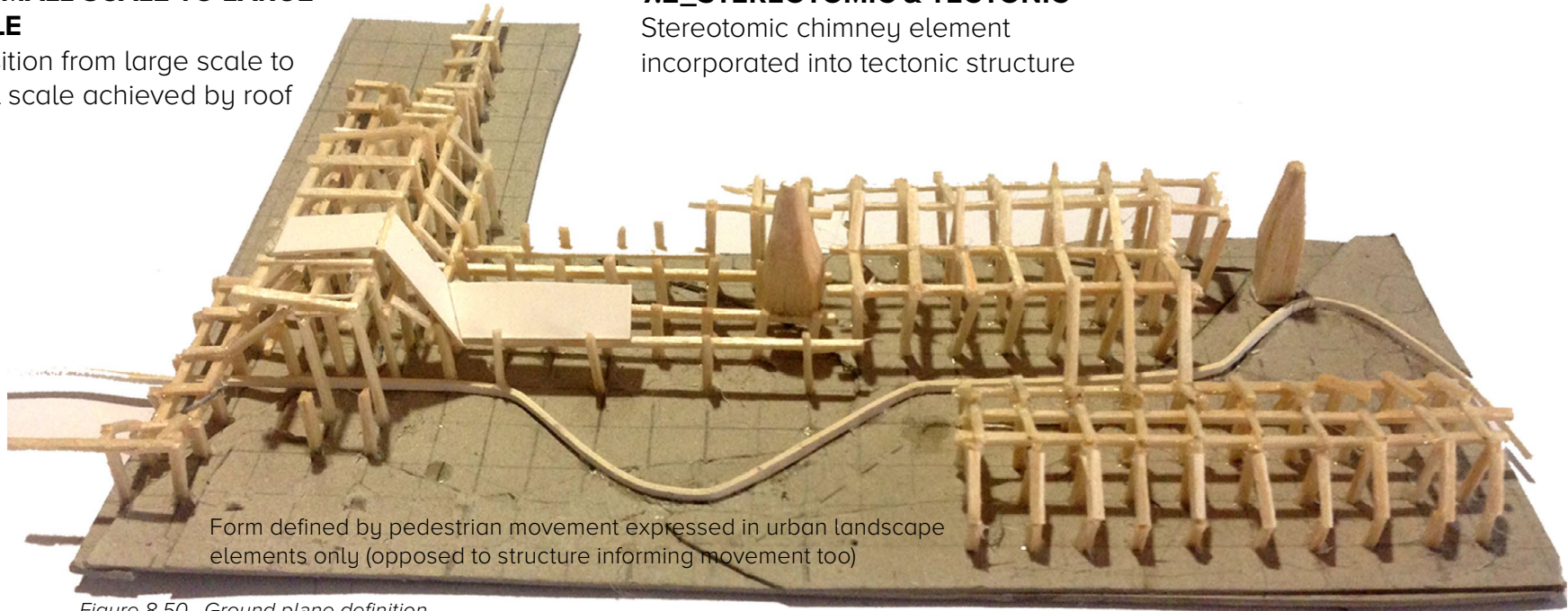
Figure 8.49. Exploration plan

7.1_SMALL SCALE TO LARGE SCALE

Transition from large scale to small scale achieved by roof

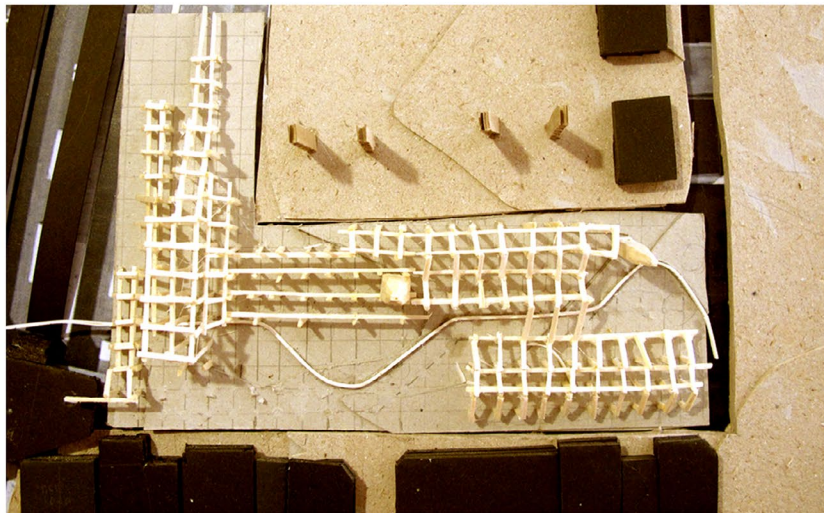
7.2_STEREOTOMIC & TECTONIC

Stereotomic chimney element incorporated into tectonic structure



Form defined by pedestrian movement expressed in urban landscape elements only (opposed to structure informing movement too)

Figure 8.50. Ground plane definition



7.3_PEDESTRAIN MOVEMENT

Fast and slow movement defined by urban landscape

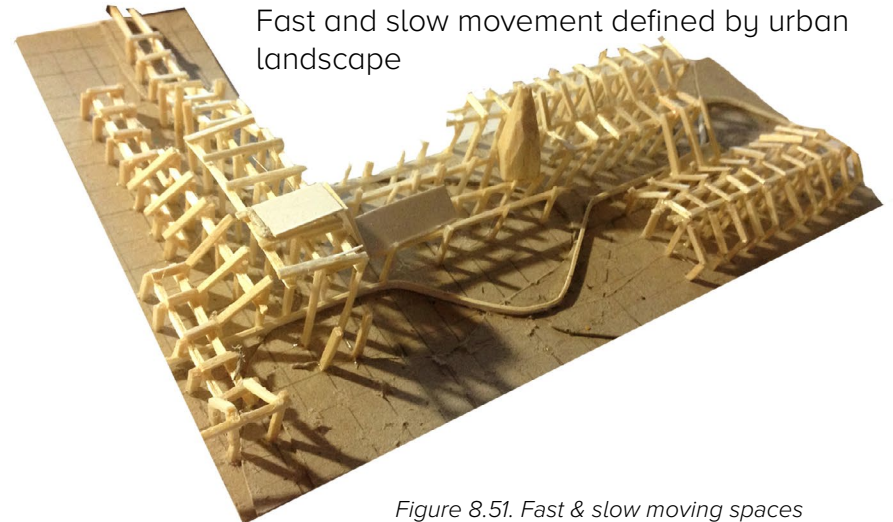


Figure 8.51. Fast & slow moving spaces

7.4_FLOOR PLAN

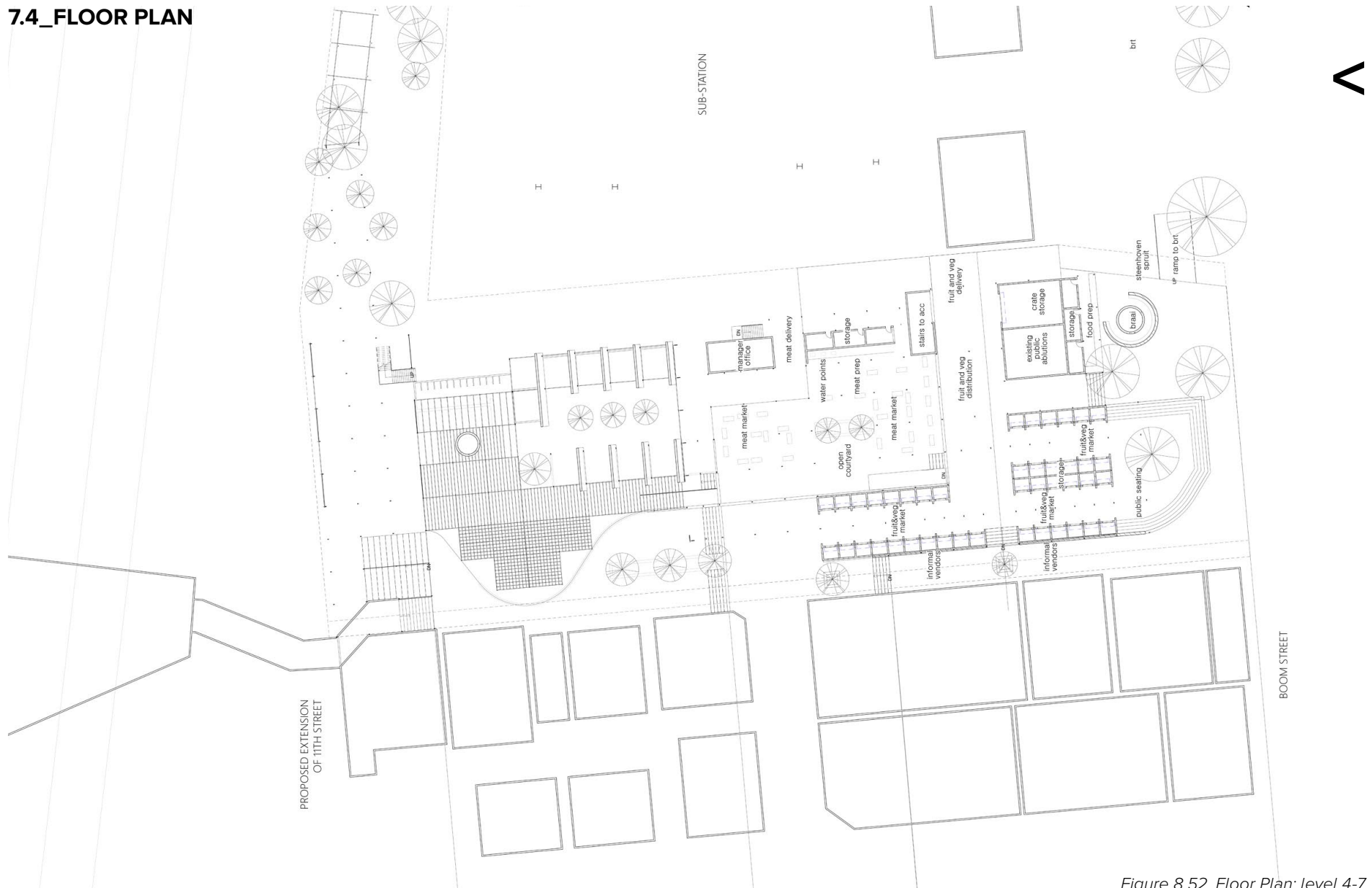


Figure 8.52. Floor Plan: level 4-7

7.5_PERGOLA ROOF PLAN



Figure 8.53. Pergola plan

7.6_SITE PLAN

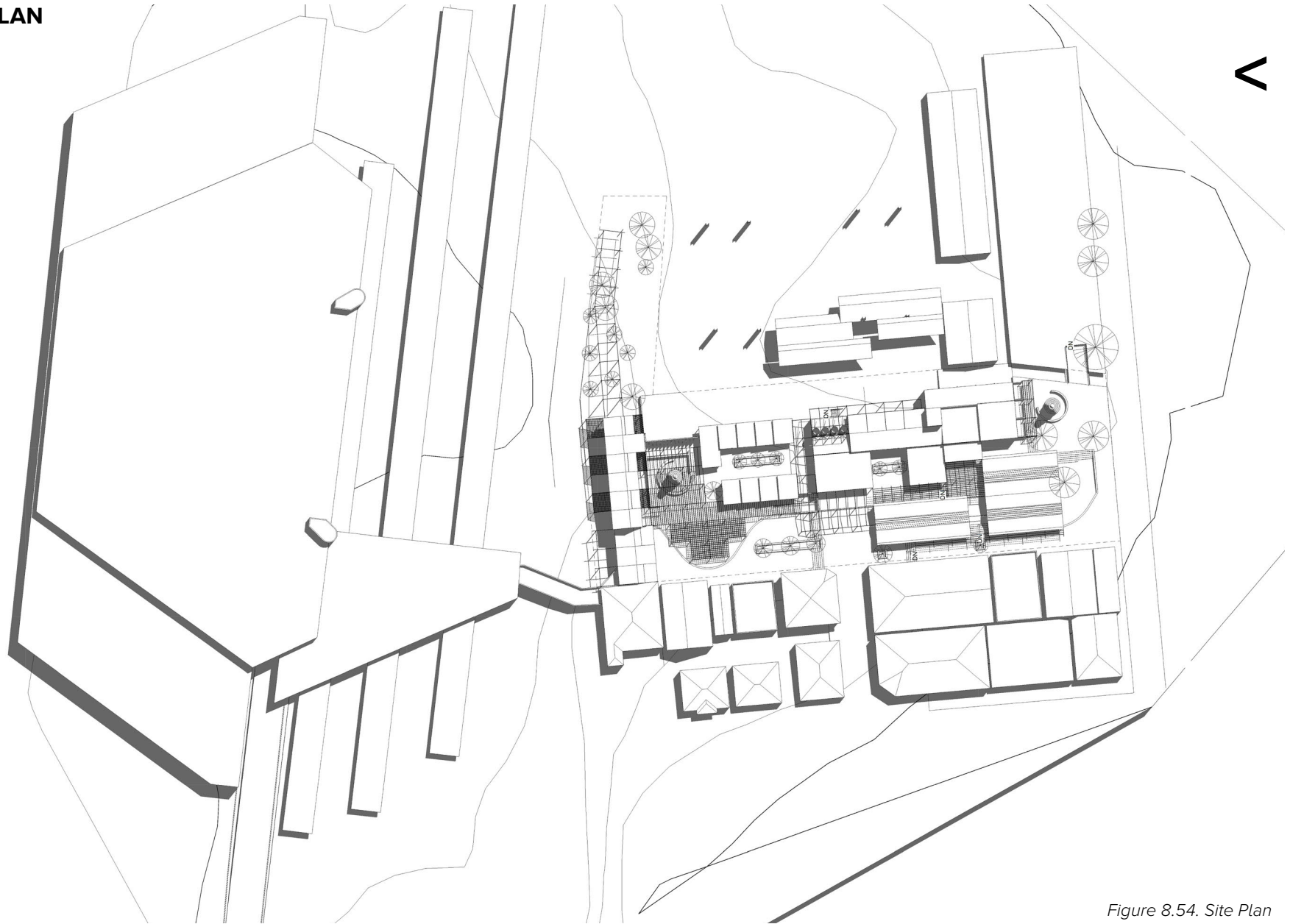


Figure 8.54. Site Plan

7.7_MODEL EXPLORATION

Exploration of heavy stereotomic structure vs. lighter tectonic pergola structure

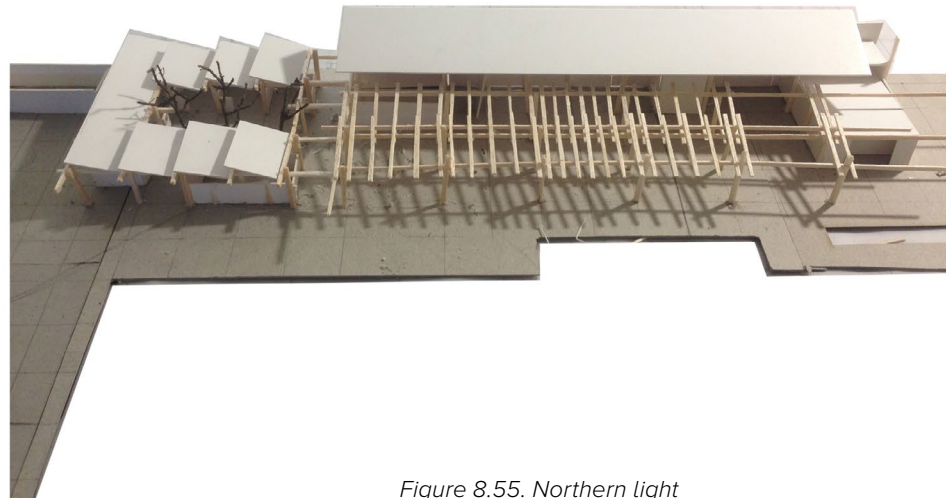
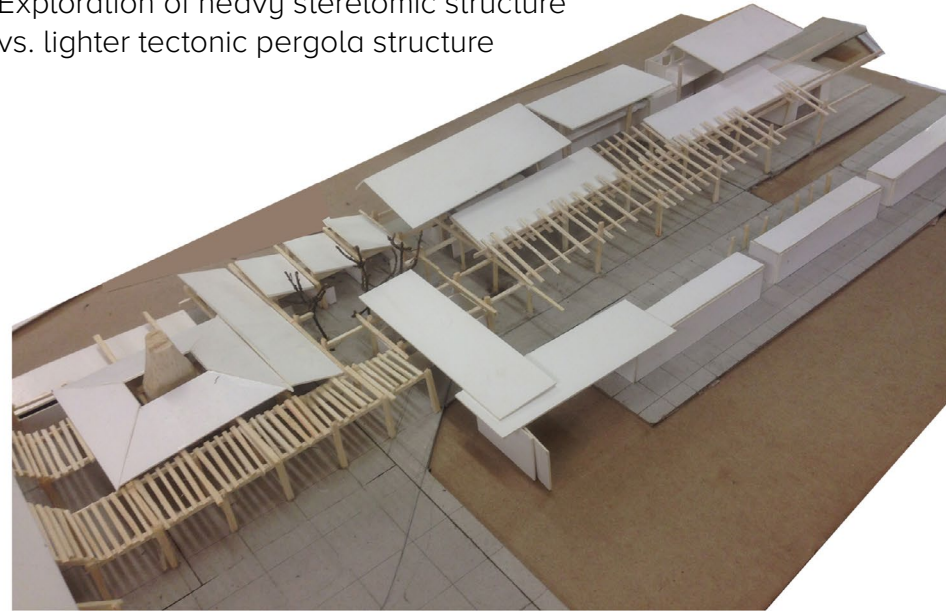
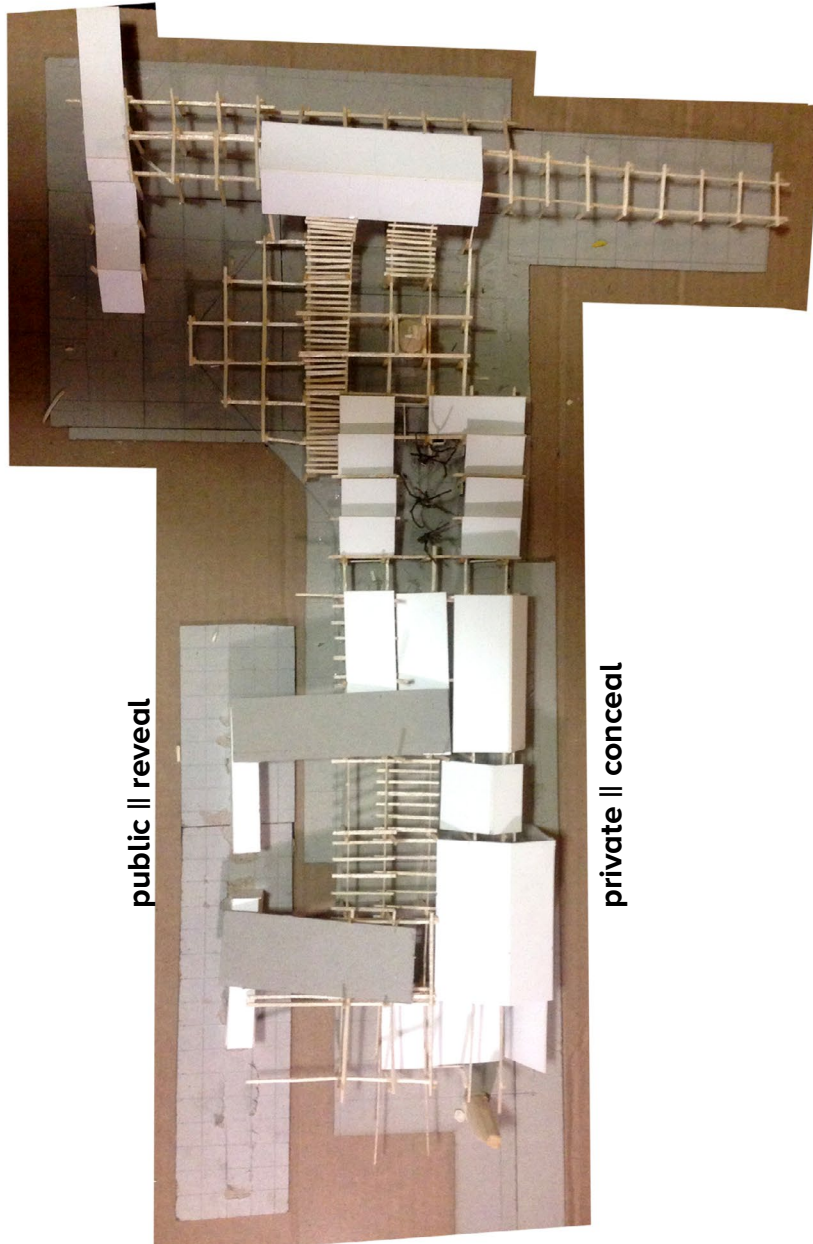


Figure 8.55. Northern light

EXPLORATION 8

8.1_PLAN EXPLORATION OF STAIRS

Exploration of incorporating public seating and steps where level changes occur. Urban defining elements become public space.

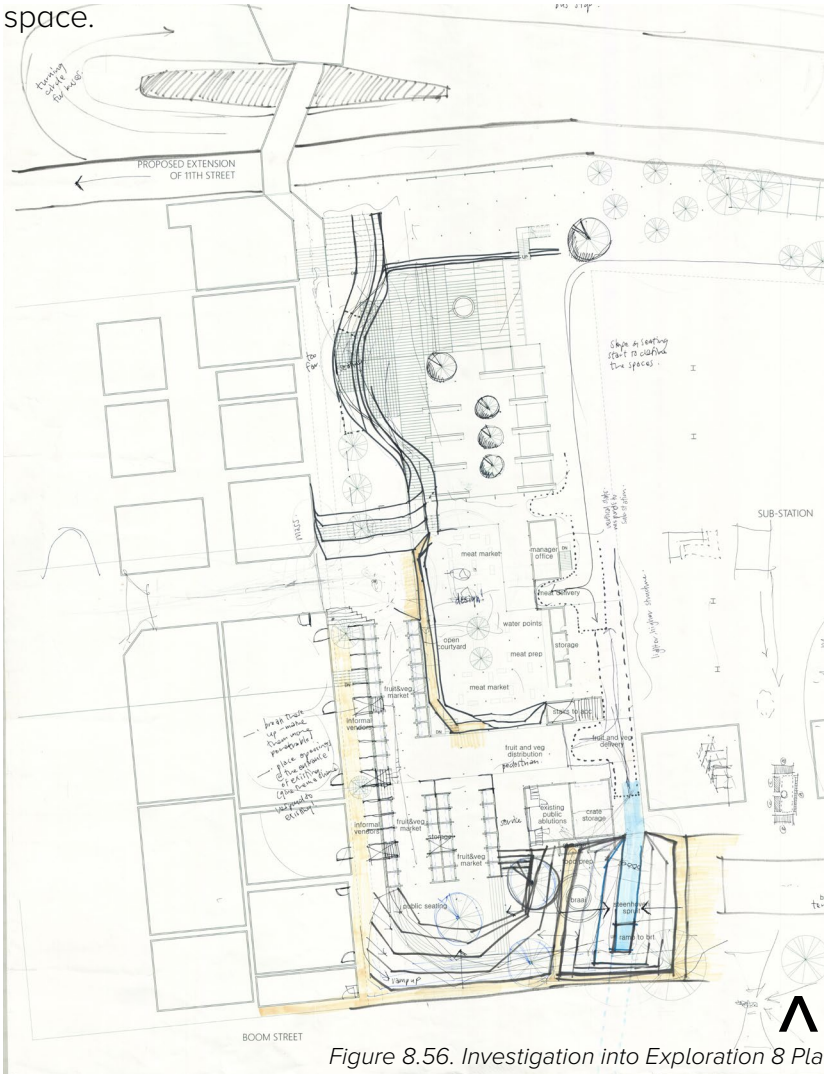


Figure 8.56. Investigation into Exploration 8 Plan_1

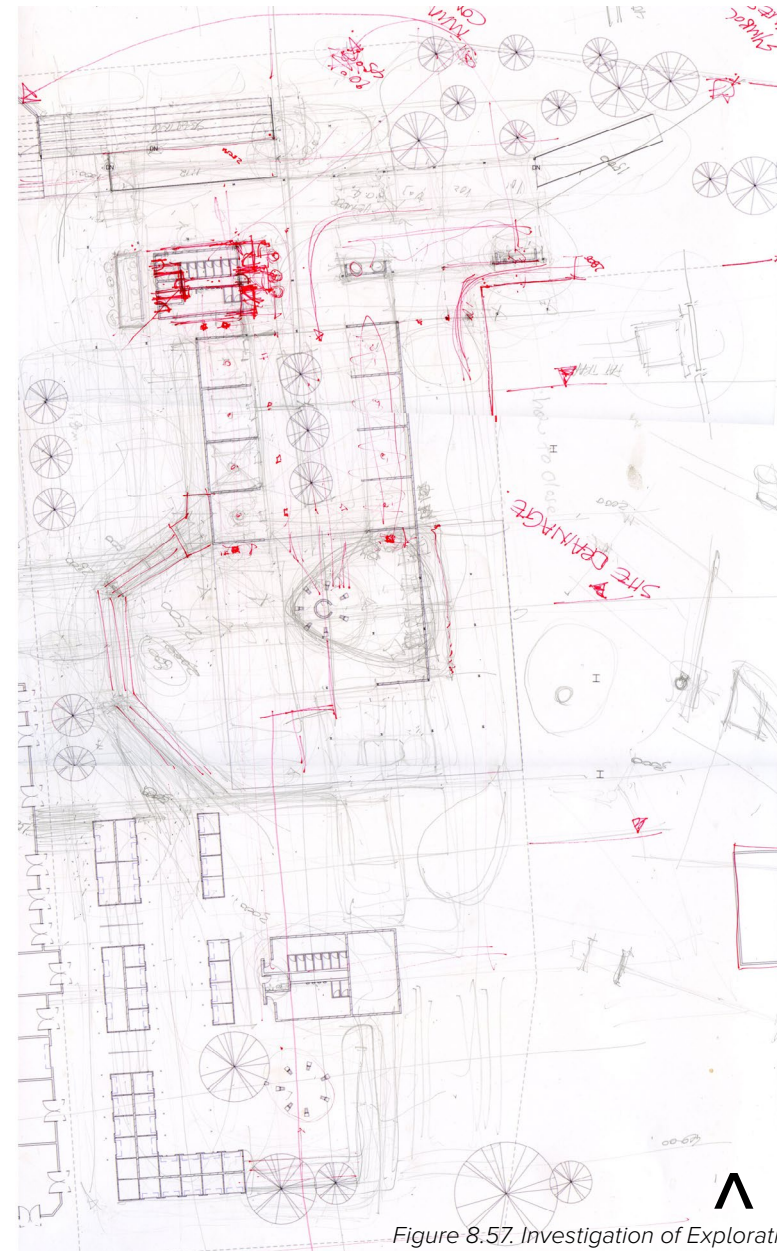


Figure 8.57. Investigation of Exploration 8 Plan_2

8.2_URBAN DEFINING ELEMENTS

Stairs define urban landscape and emphasise braai areas as significant public space

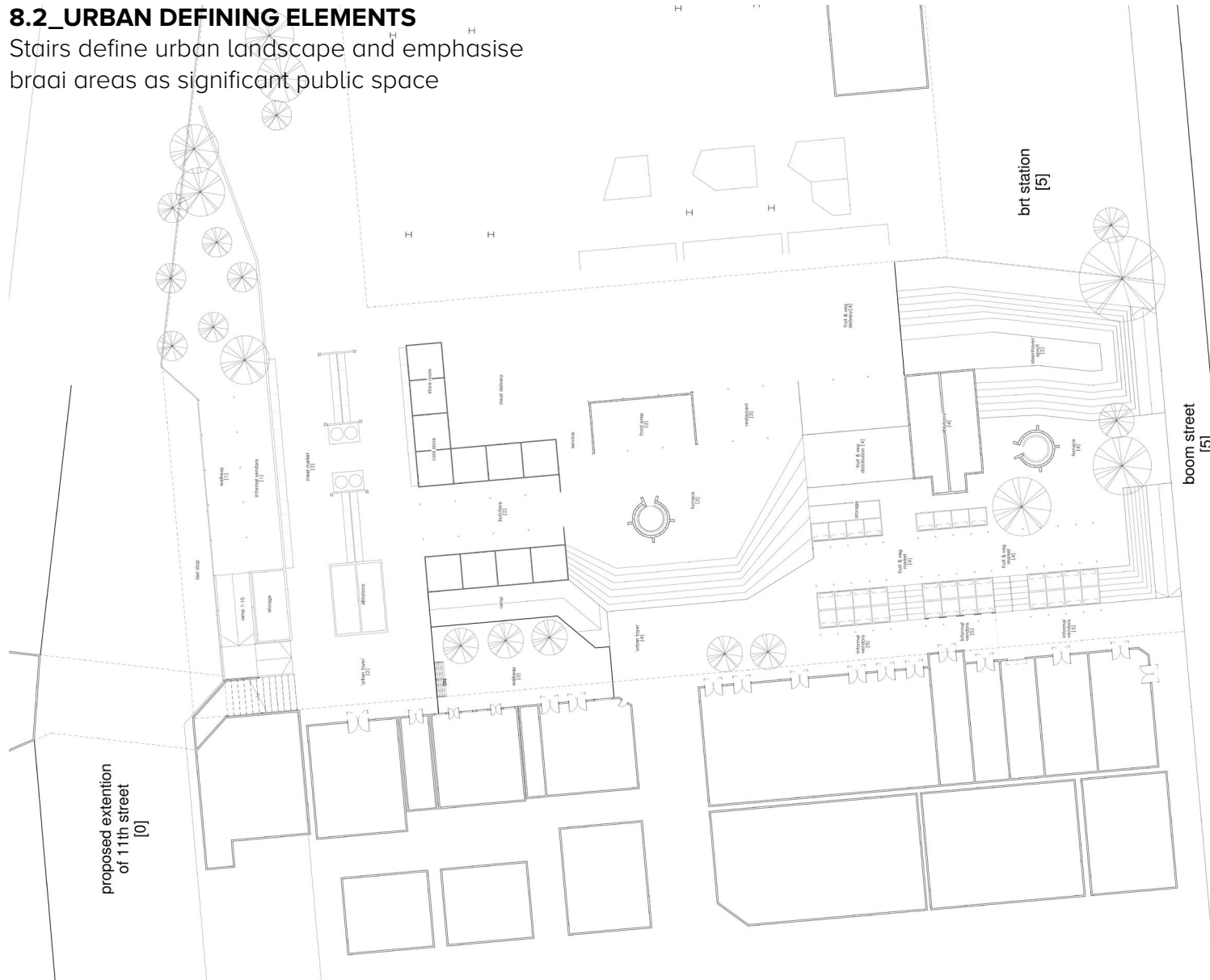


Figure 8.58. Exploration 8 Plan_3

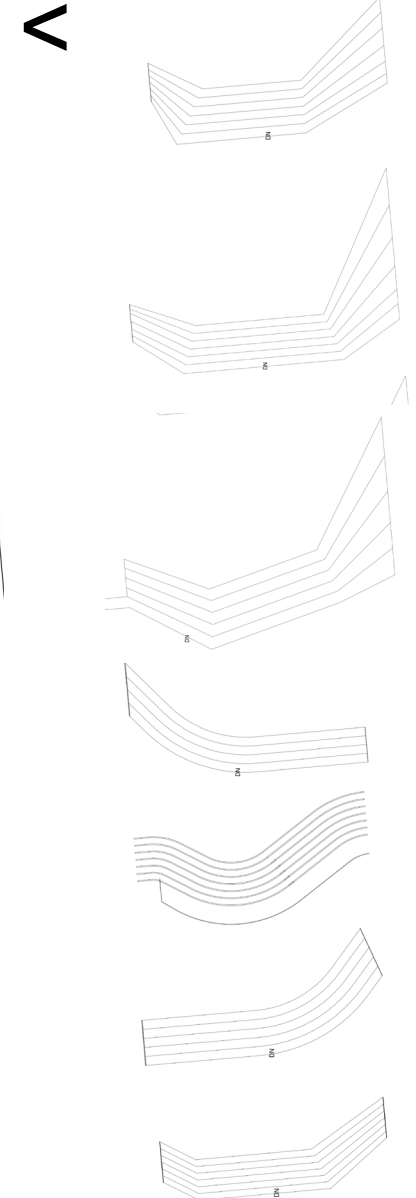


Figure 8.59. Stair iterations

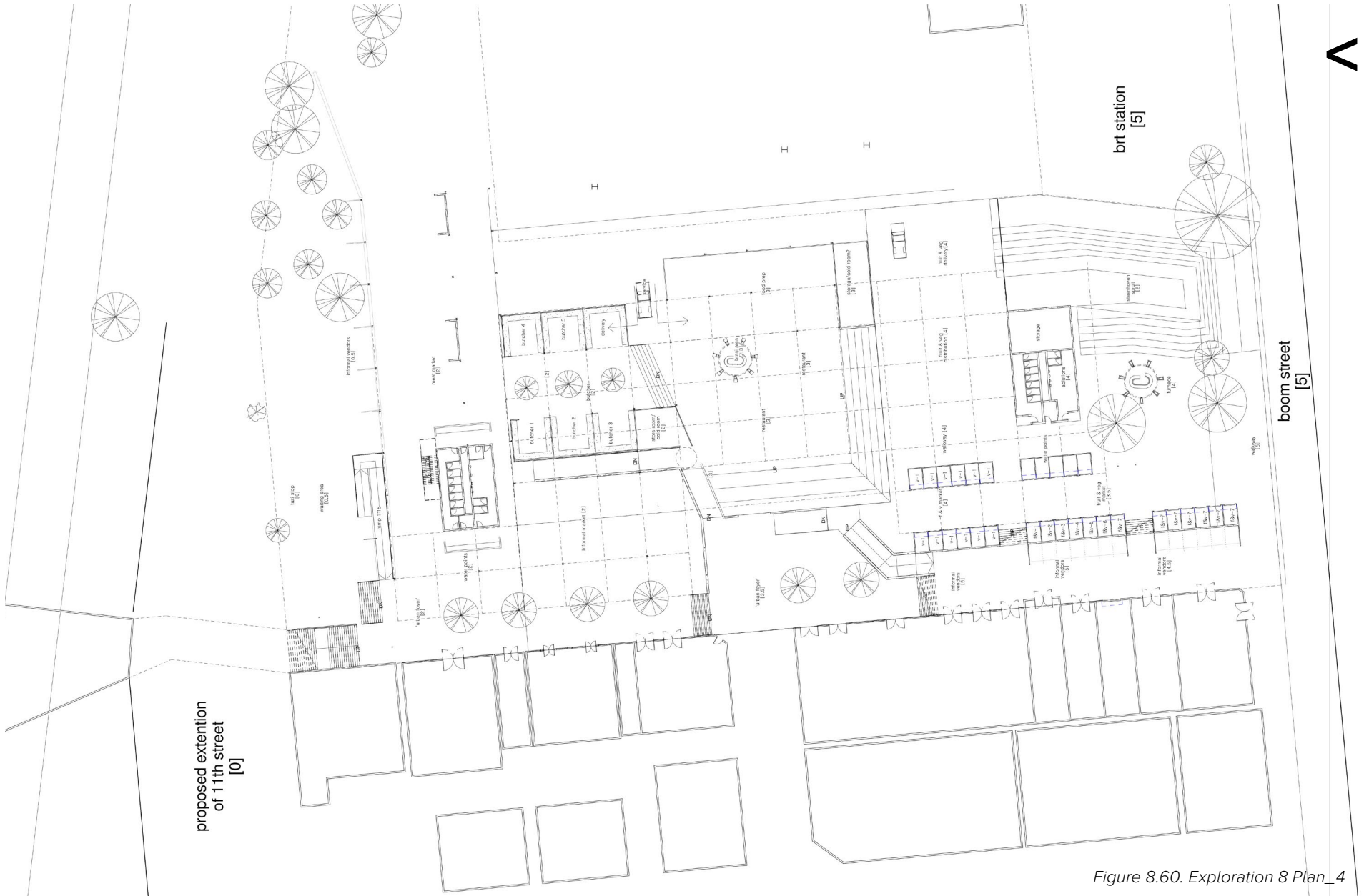


Figure 8.60. Exploration 8 Plan_4

MODEL EXPLORATION

Structural element exploration

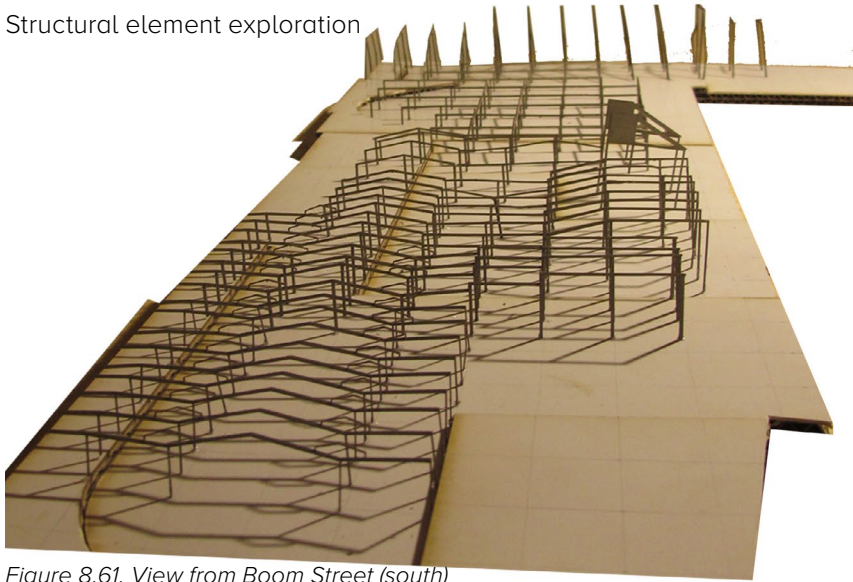


Figure 8.61. View from Boom Street (south)

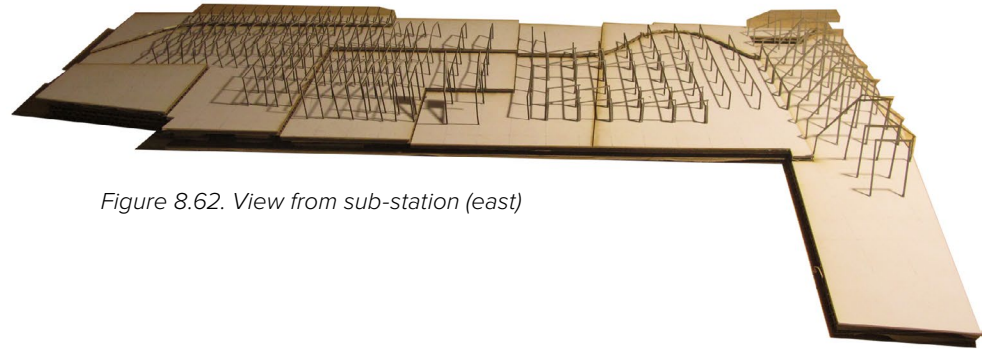


Figure 8.62. View from sub-station (east)

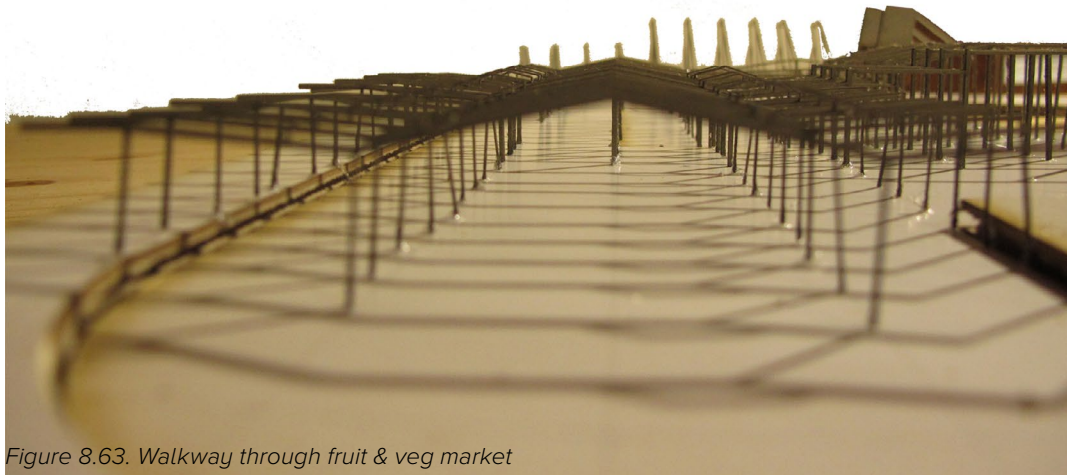


Figure 8.63. Walkway through fruit & veg market



Figure 8.64. Accommodation

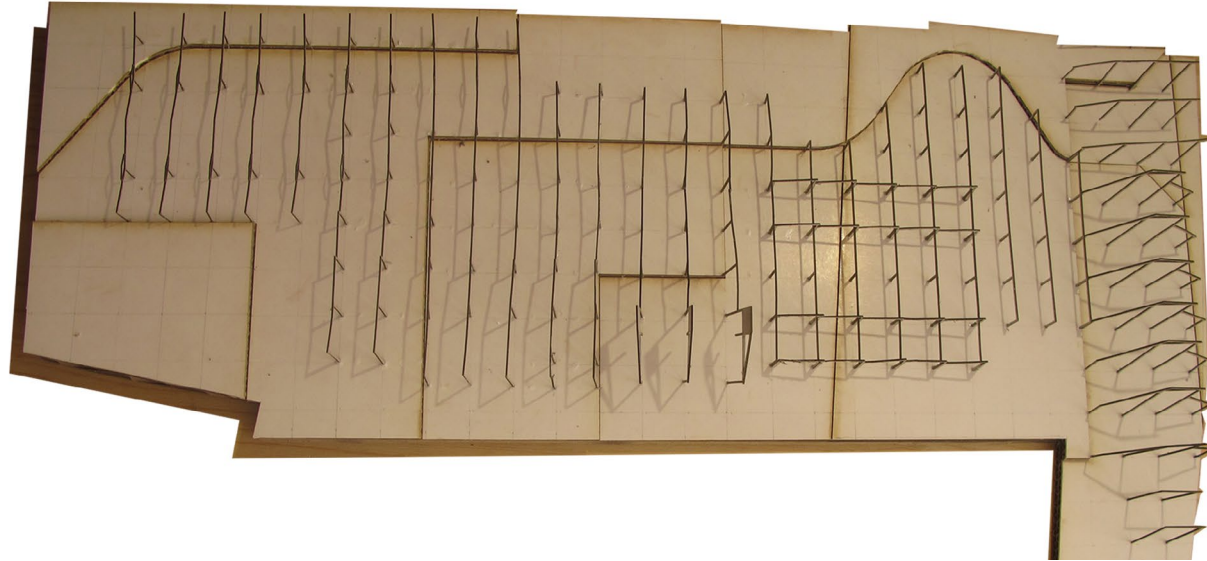


Figure 8.65. Aerial view of model

Figure 8.66. Food preparation & restaurant

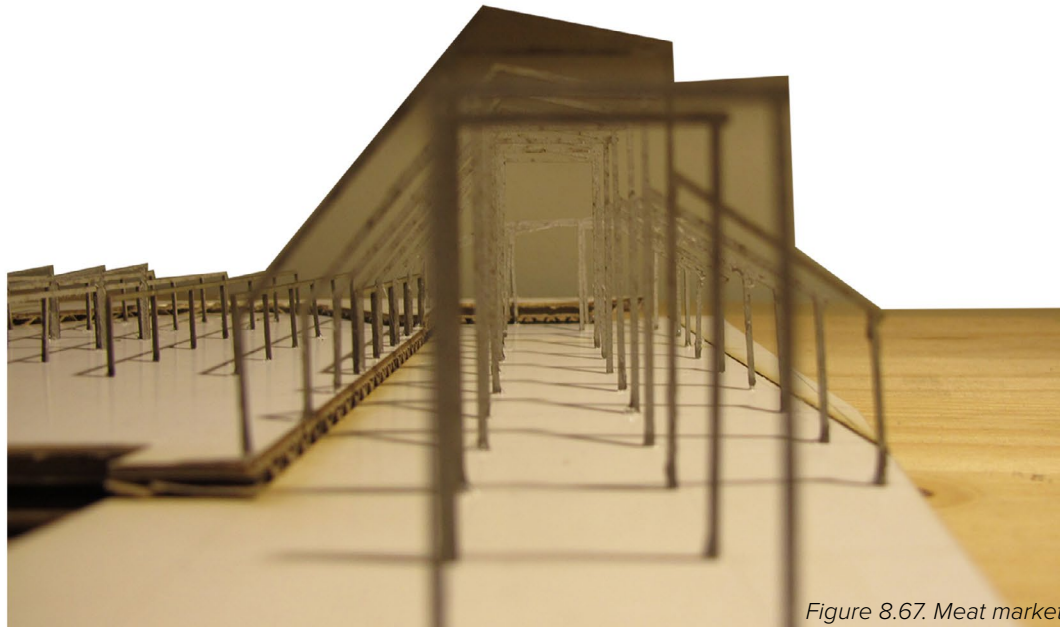
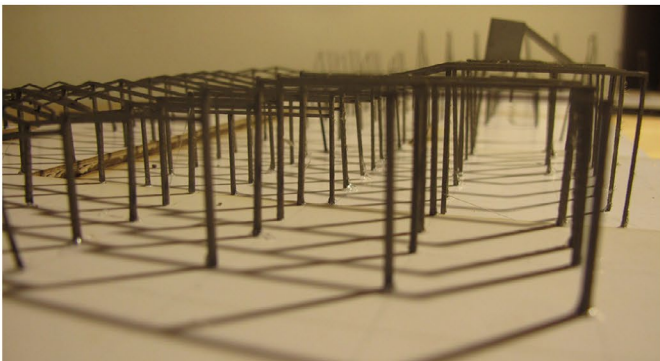


Figure 8.67. Meat market

PERSPECTIVE EXPLORATION



Figure 8.68. Informal market

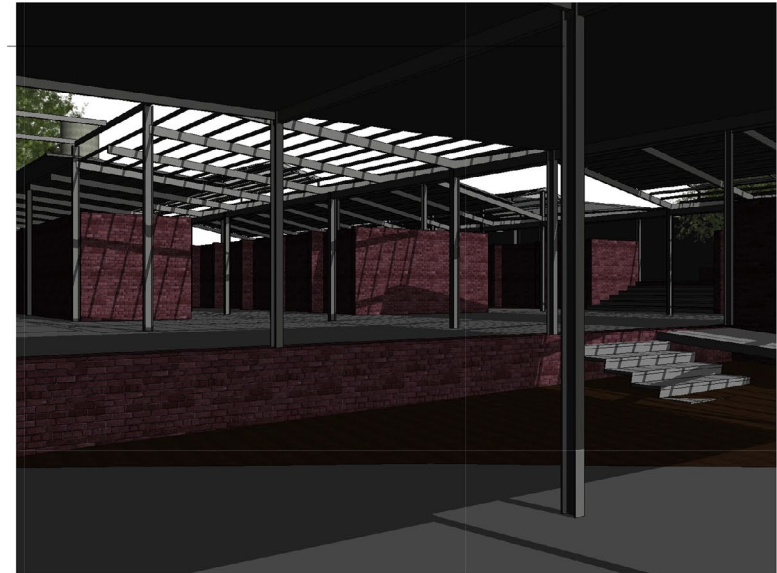


Figure 8.69. View from informal market to fruit & veg market

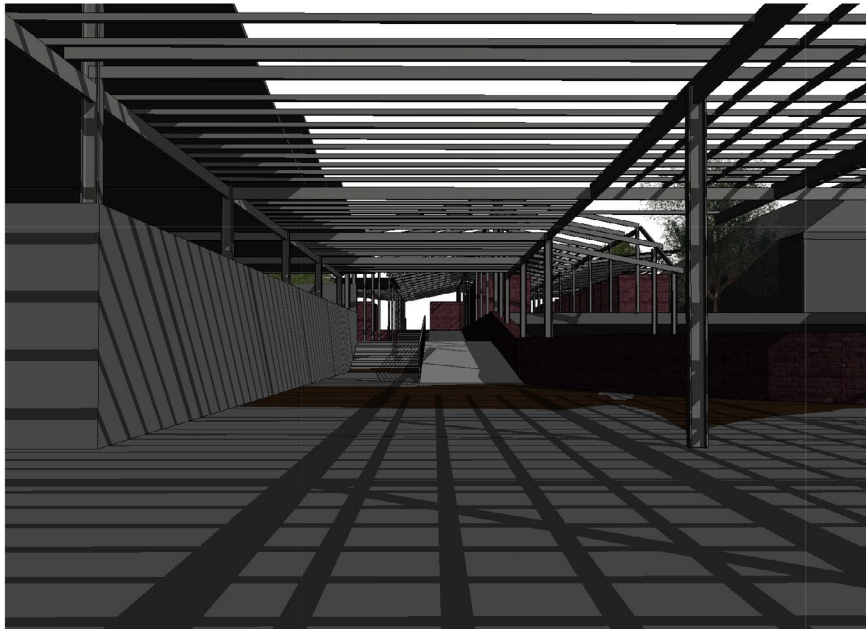


Figure 8.70. Walkway from meat market, past butchery (on the left) towards fruit & veg distribution

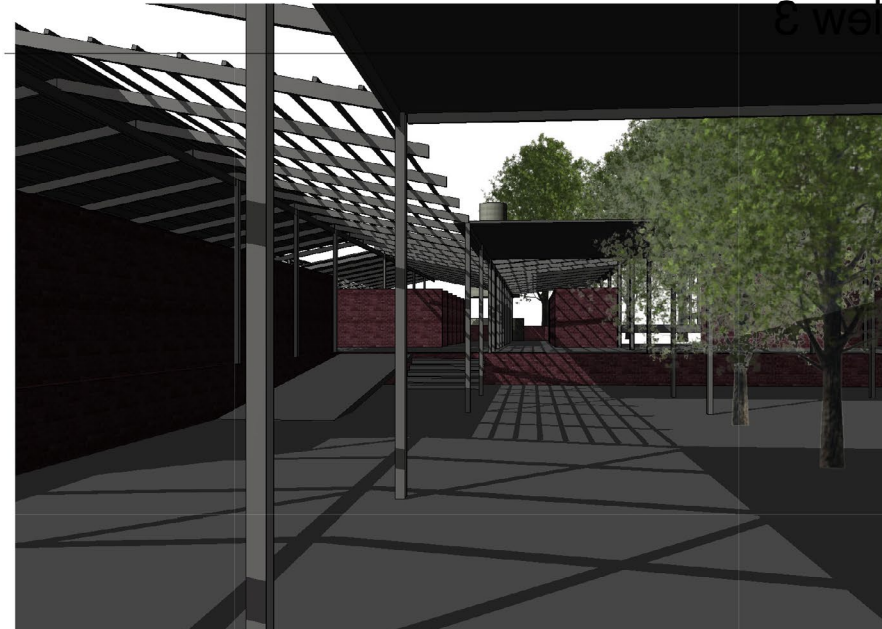


Figure 8.71. View of informal market and walkway

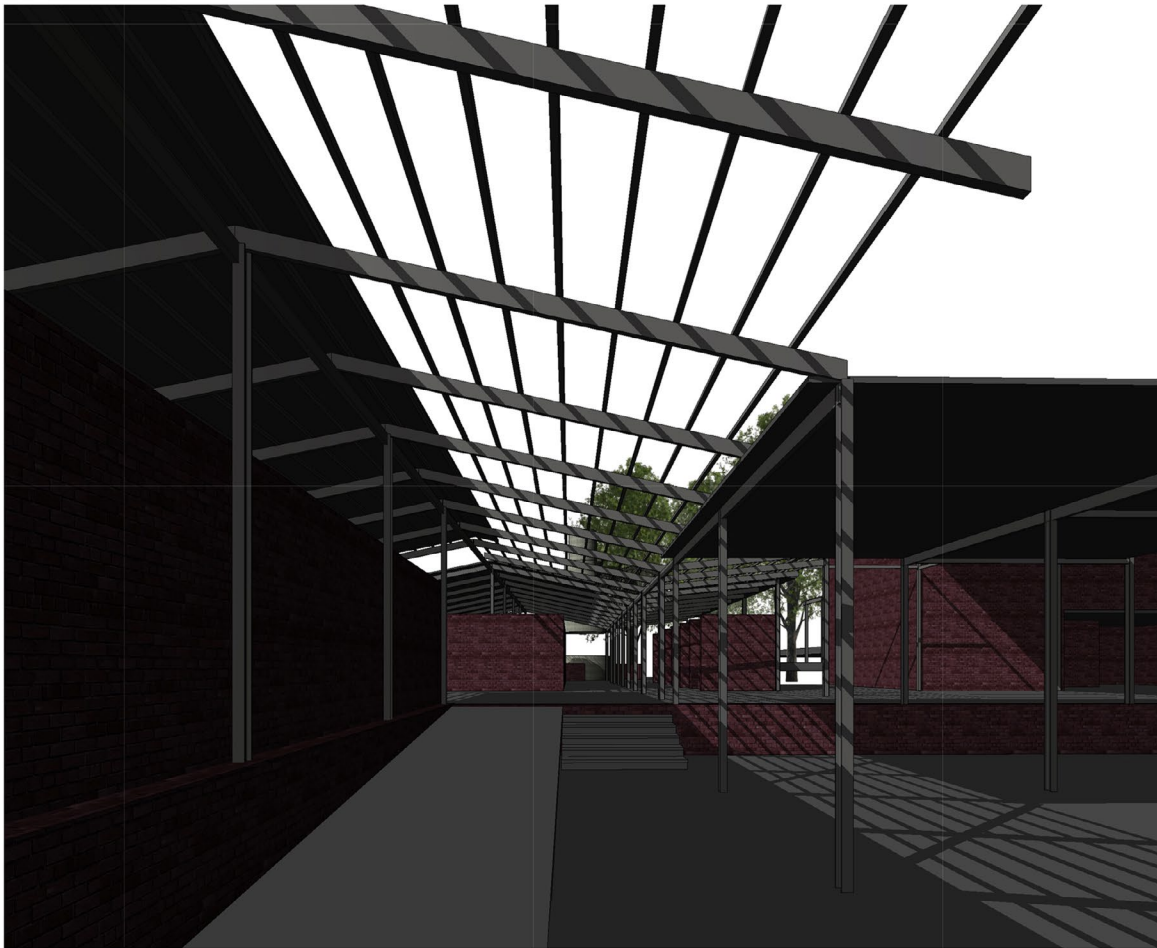


Figure 8.72. Ramp from meat market to braai area and restaurant

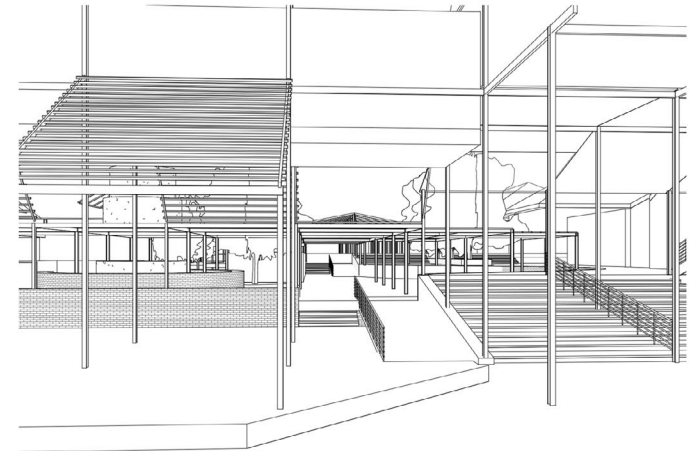


Figure 8.73. Northern taxi stop off looking towards site: meat market (left) and informal market (right)



Figure 8.74. Informal vendors at northern taxi stop

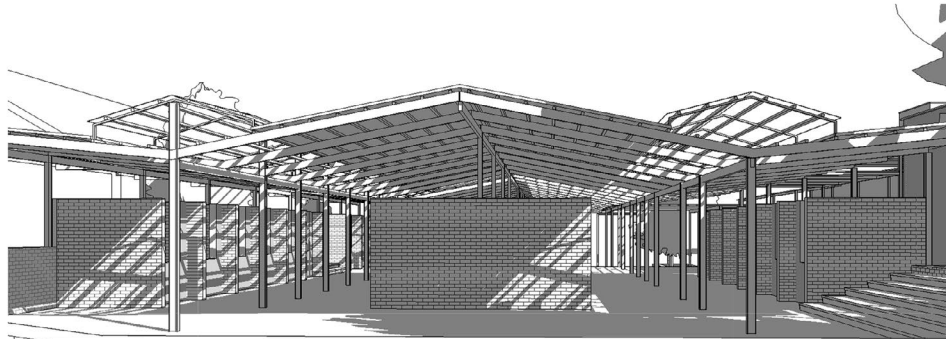


Figure 8.75. Fruit & vegetable market

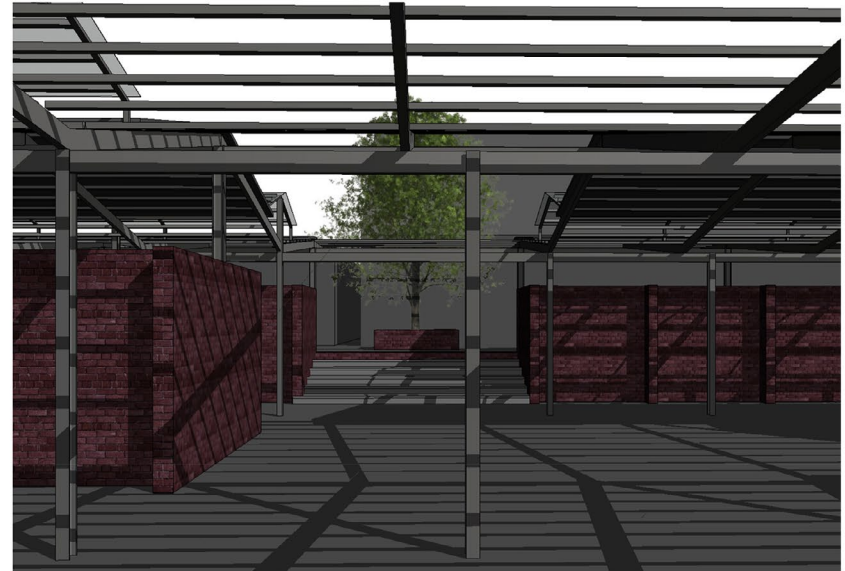


Figure 8.76. View from fruit & vegetable market towards formal stores

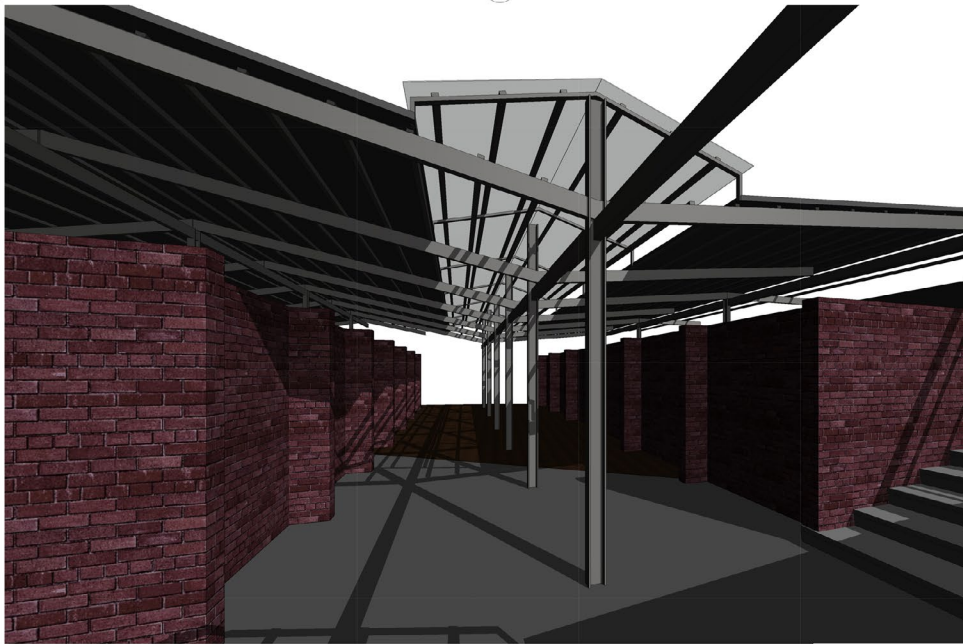


Figure 8.77. Walkway through fruit & vegetable market

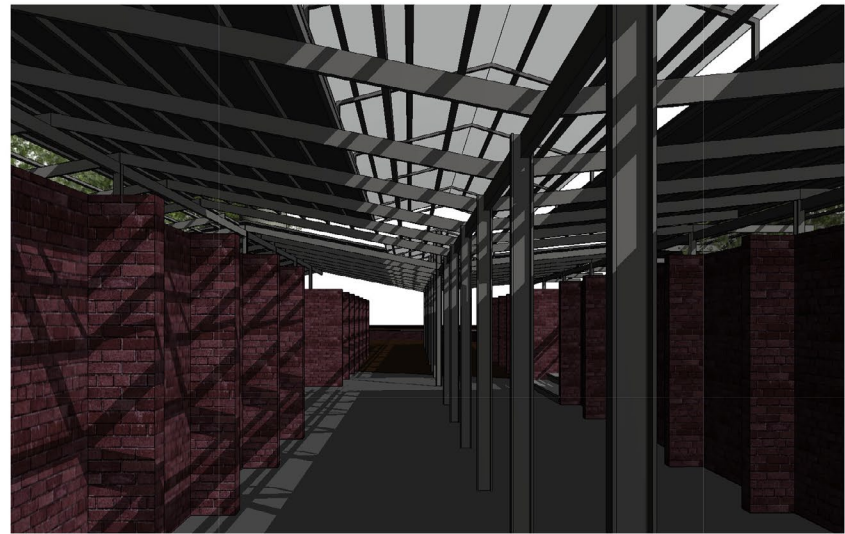
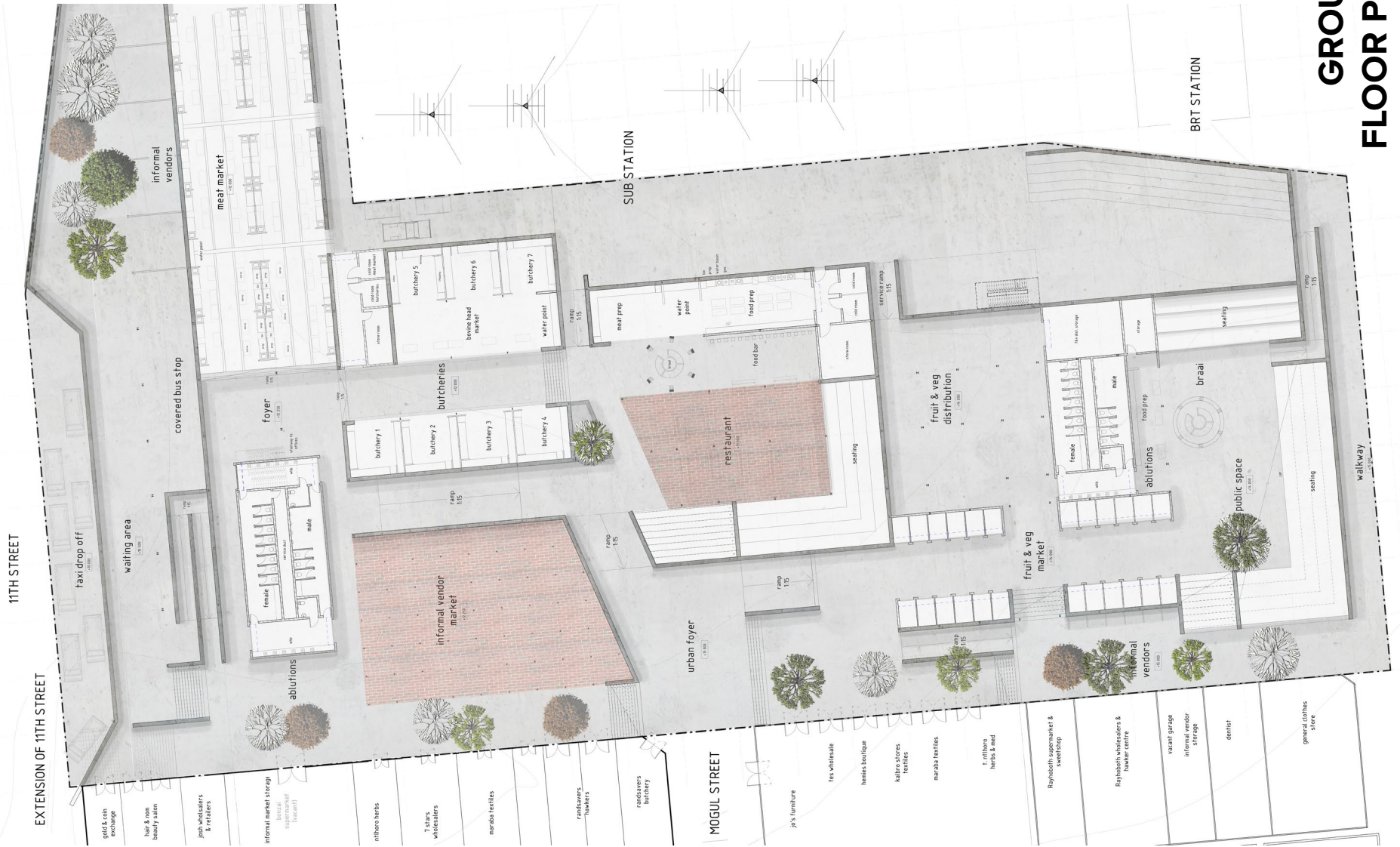


Figure 8.78. Natural light enters fruit & vegetable market





**GROUND
FLOOR PLAN
1:100**

11TH STREET

EXTENSION OF 11TH STREET

SUB STATION

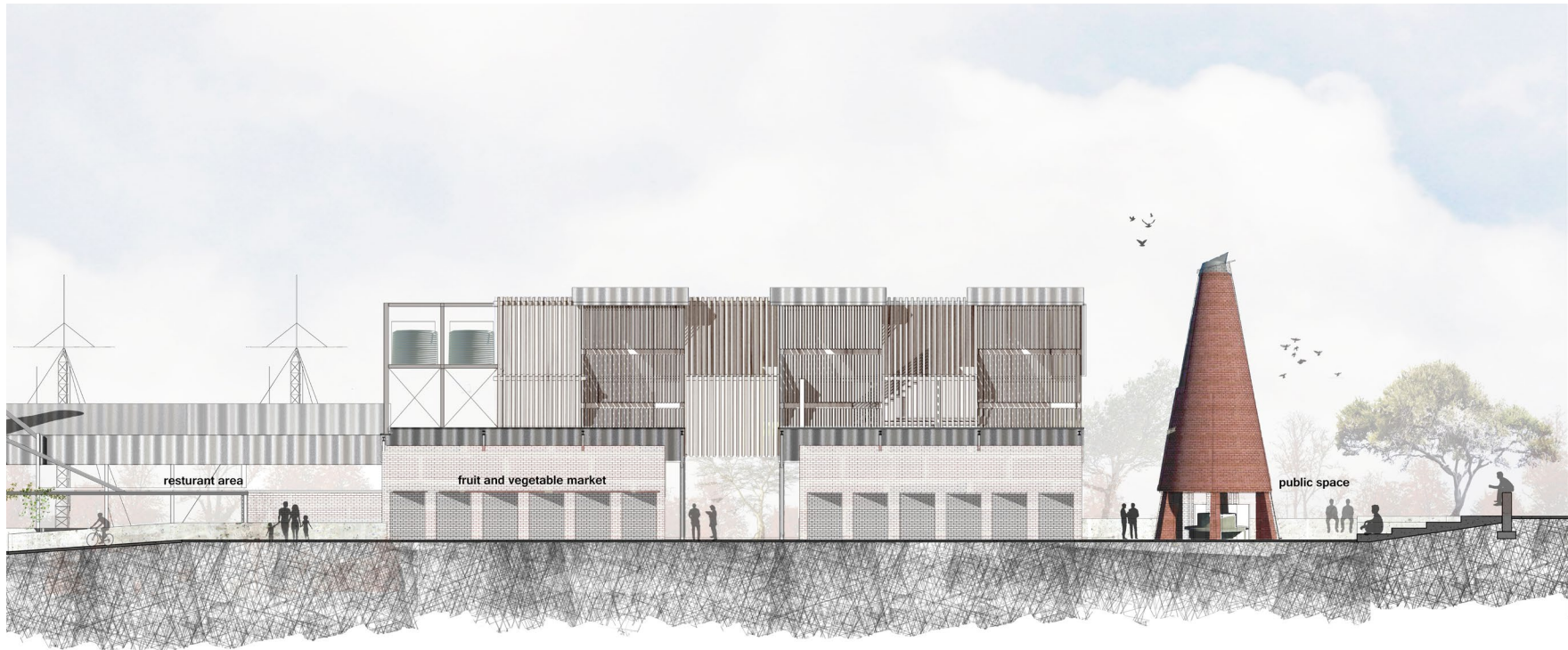
BRT STATION

BOOM STREET

MOGUL STREET

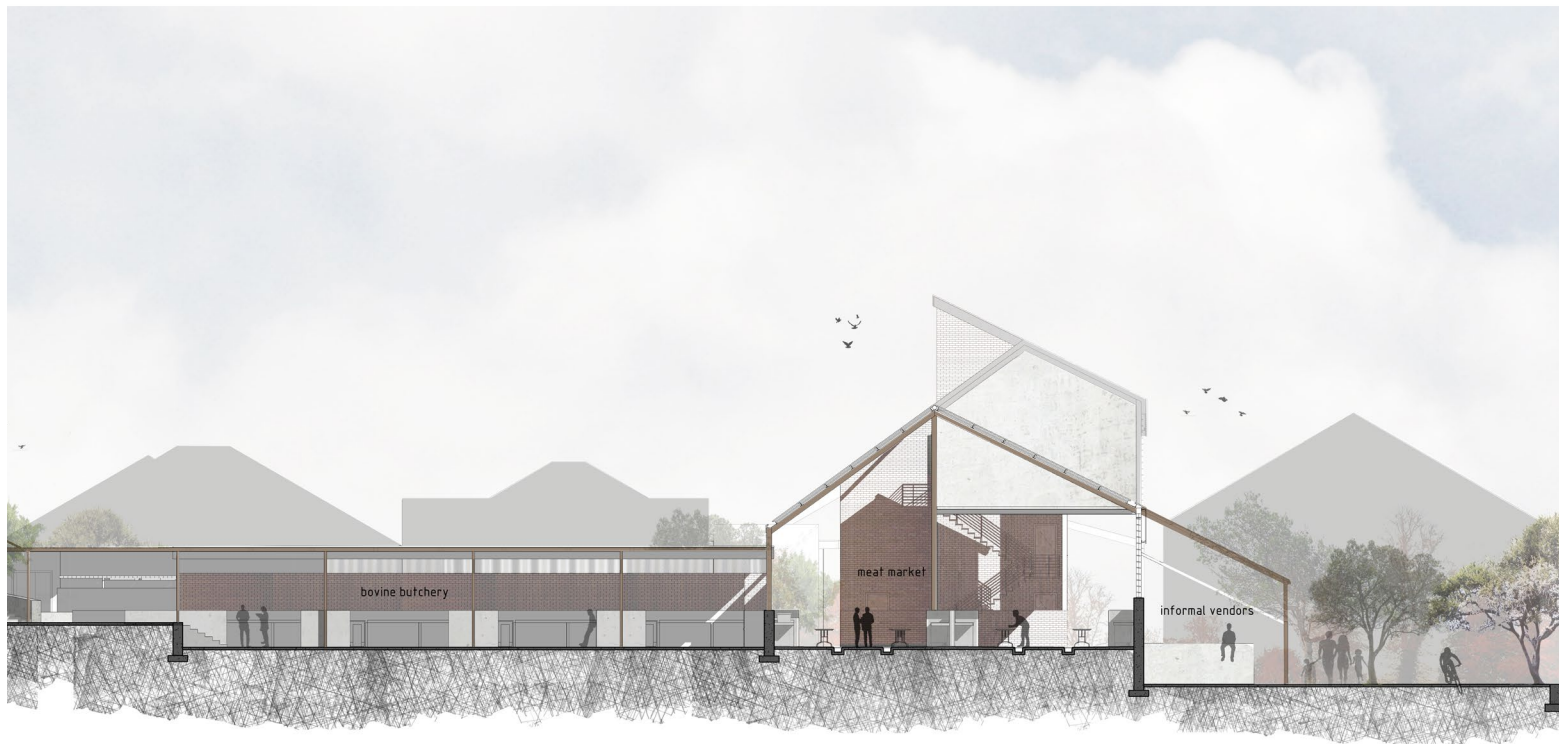
- gold & coin exchange
- hair & non-hair beauty salon
- job wholesalers & retailers
- informal market storage (supermarket (free rent))
- riflino herbs
- 3 stars wholesalers
- maraba textiles
- rainbowers bankers
- rainbowers butchery
- je & furniture
- tes whiteside
- hennies boutique
- babers stores textiles
- maraba textiles
- 1 withno herbs & seed
- Rainbooth supermarket & sweetshop
- Rainbooth wholesalers & baker centre
- vacant garage informal vendor storage
- dentist
- general clothes store





SECTION A-A
1:100





SECTION B-B
1:100

DESIGN INFORMANTS

levels respond to natural site slope of 4m



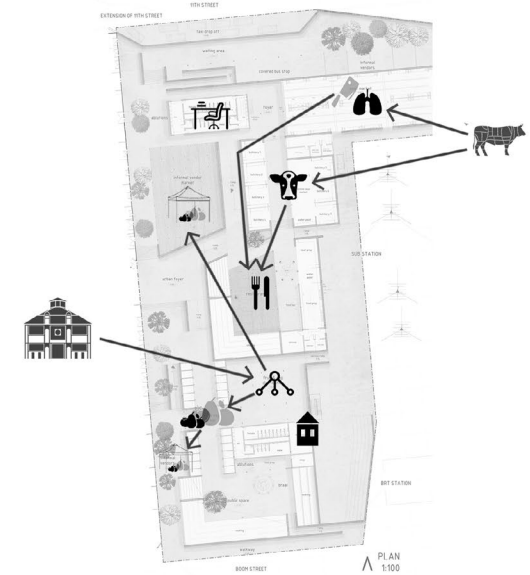
building placement to accommodate pedestrian movement



private programmes placed further from public spaces & walkways

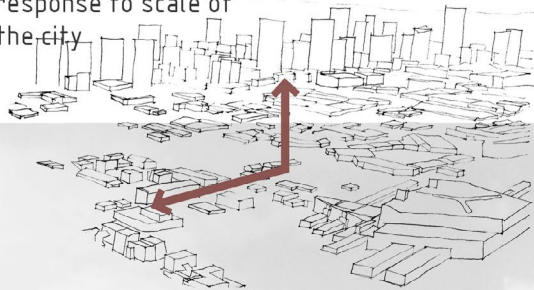


programmes located in accordance with other relating programmes

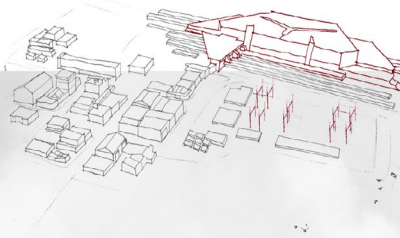


LARGE & SMALL SCALE

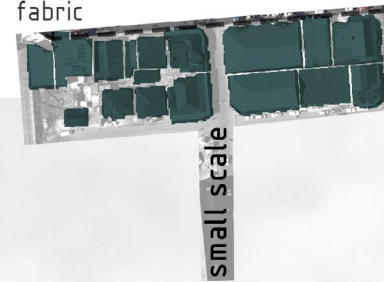
response to scale of the city



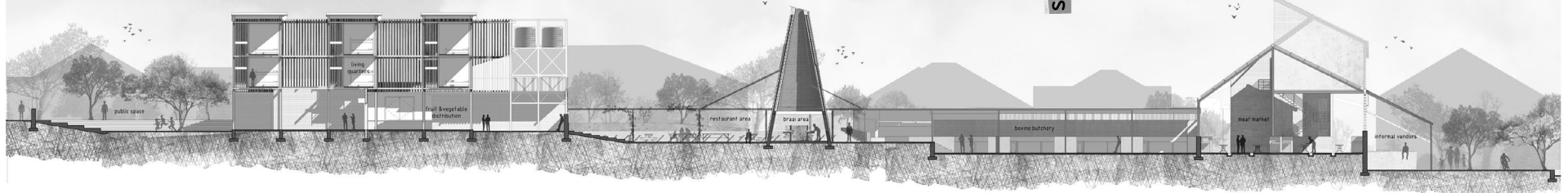
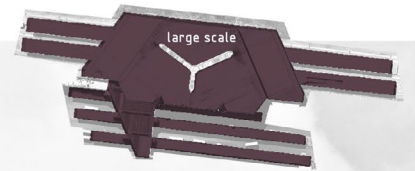
furnace is a response to height of sub station



response to small scale of heritage fabric

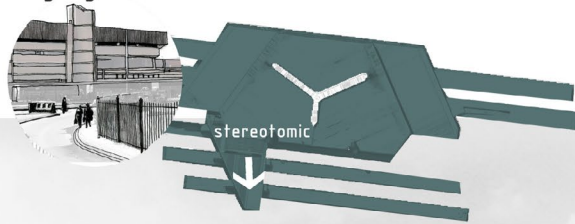


response to large scale of belle ombre

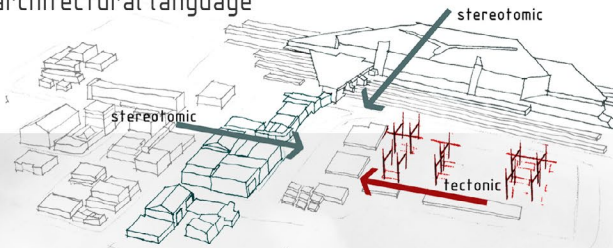


STEREOTOMIC VS. TECTONIC

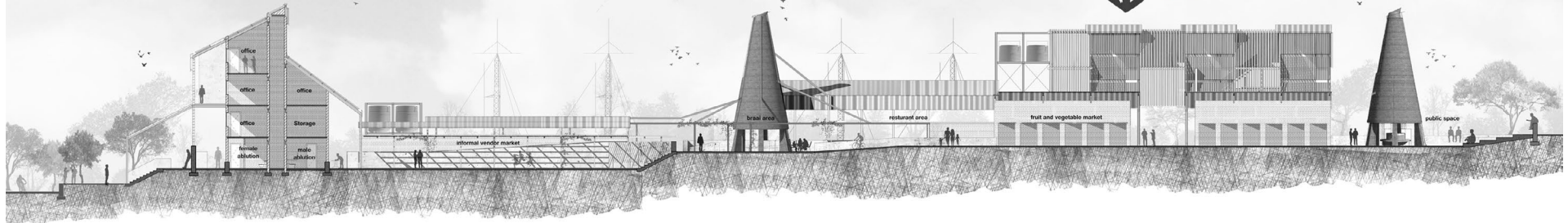
response to stereotomic
language of belle ombre



mediation between stereotomic & tectonic
architectural language



response to tectonic
language of sub-station



PERSPECTIVES



RESTAURANT & FURNACE



MEAT MARKET



BOVINE HEAD BUTCHERY



INFORMAL VENDORS



FRUIT & VEGETABLE MARKET



BRAAI & RESTAURANT



NORTHERN VIEW FROM BELLE OMBRE



FRUIT & VEGETABLE DISTRIBUTION

9 | TECHNICAL RESOLUTION

9.1 | URBAN & ARCHITECTURAL CONCEPT

9.1.1 | PERMANENT ELEMENTS

[concrete] which should remain despite the future of the scheme. Service: ablutions, water tanks points, furnace landmarks, water drainage, solar panels.

9.1.2 | LIGHTER STEEL STRUCTURE

bolted for their potential disassembly and reassembly + precast infill elements which can also be re appropriated.

9.1.3 STEREOTOMIC [CONCEAL] TO TECTONIC [REVEAL]

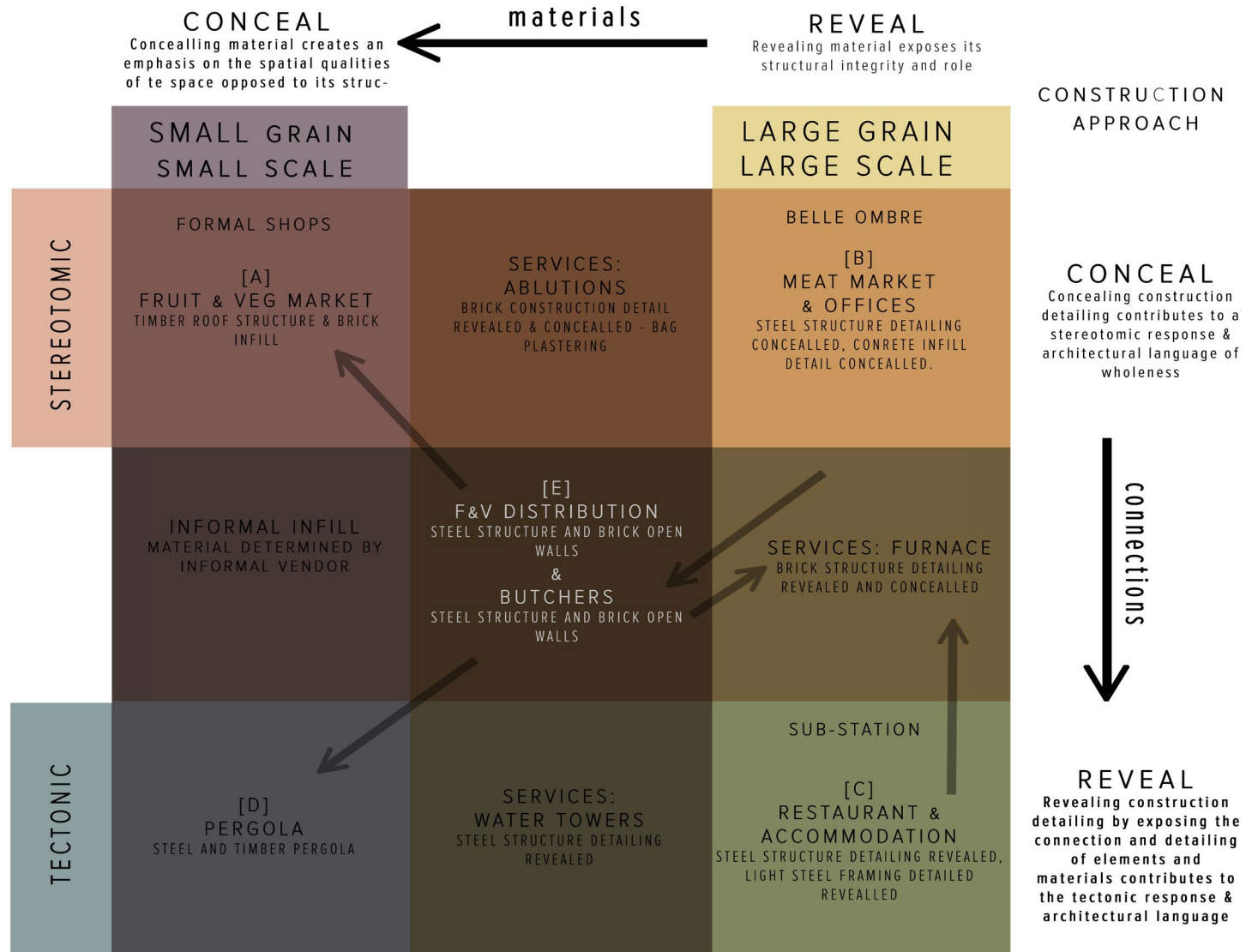


Figure 9.1. Table illustrating urban & architectural concept (Author, 2015)

9.2 | STRUCTURE

9.3.1 | PRIMARY & SECONDARY

PRIMARY > Urban: Concrete ground defining

SECONDARY > Structure: Steel (+ pergola?)

QUATERNARY > Programmes: Butchery, meat market, restaurant: cooking & eating, fruit & vegetable market, fruit & vegetable distribution, recycling.

PRIMARY > Services: Masonry permanent elements

TERTIARY > Infill: Wall, roof, pergola

URBAN > CONCRETE

Terracing at public seating & to deal with site slope;
Concrete footings & planters: ground defining elements & structural support for secondary structure.



SERVICES > MASONRY

Ablutions as universal programme necessity;
Furnaces as landmarks



SECONDARY ELEMENT

STRUCTURAL STEEL supported by urban defining elements;
ROOF SHEETING for shelter and water collection



TERTIARY ELEMENTS

INFILL > PRECAST CONCRETE for stereotomic conditions & LIGHT WEIGHT STEEL for tectonic conditions



Figure 9.2. Primary & secondary structure (Author, 2015)

9.3 | SUSTAINABILITY & NATURAL SYSTEMS

9.3.1 | WATER CATCHMENT

9.3.2 | WATER HEATING

9.3.3 | THERMAL HEATING

9.3.4 | NATURAL VENTILATION

9.3.4 | NATURAL VENTILATION & NATURAL LIGHT

9.3.5 | DISASSEMBLED STEEL STRUCTURE

9.3.1 | WATER CATCHMENT

Water catchment from roofs, through filtration system and into underground water storage tanks. From there it is pumped back up to jojo tanks ready for use.

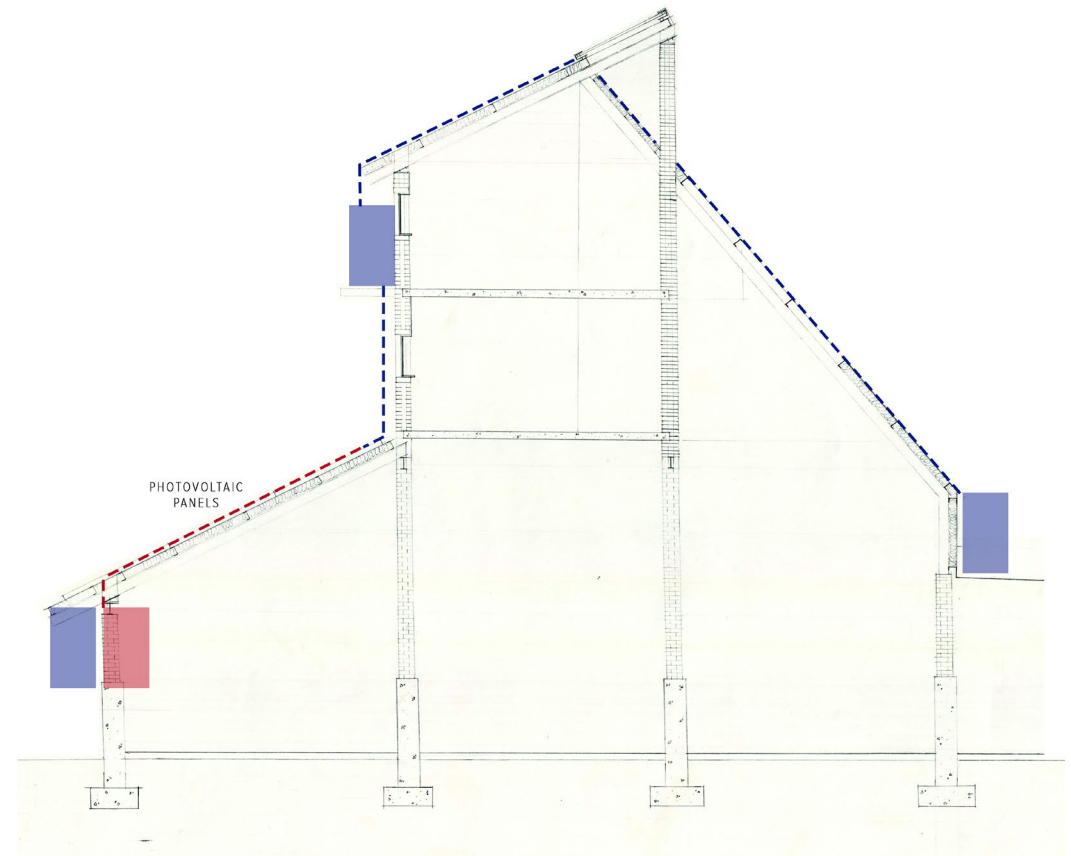


Figure 9.3. Water catchment (Author, 2015)

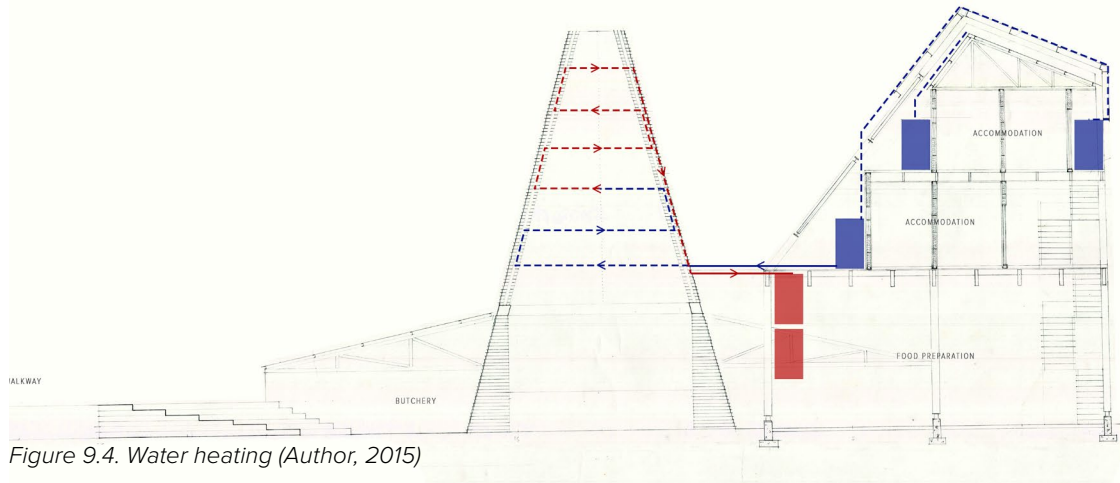


Figure 9.4. Water heating (Author, 2015)

9.3.2 | WATER HEATING

Water stored in jojo tanks is pumped through copper coils which are heated by the fire of the braai areas and hot water is stored in insulated tanks. This hot water is used in the restaurant for cooking as well as for cleaning of outdoor areas.

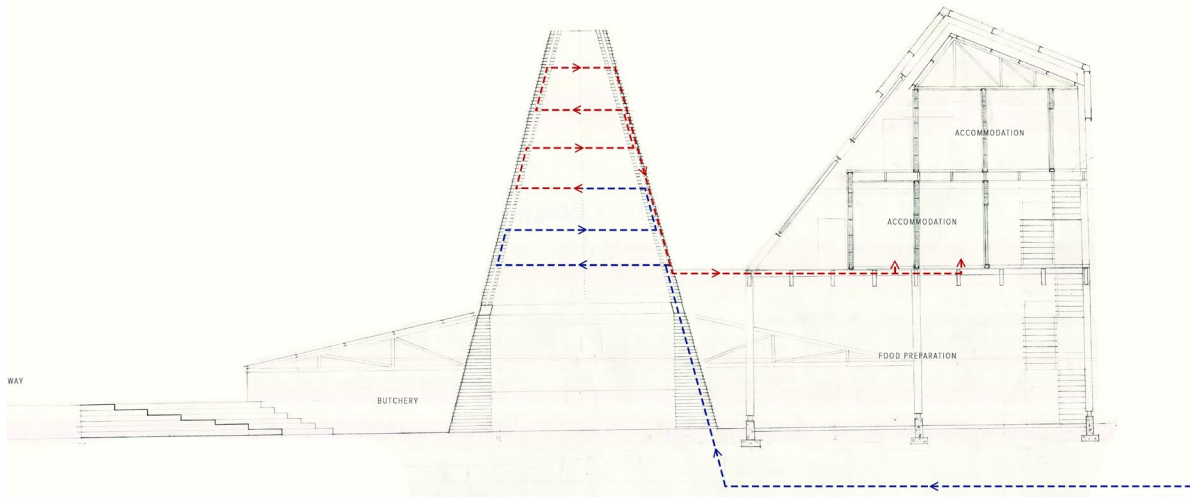


Figure 9.5. Thermal heating (Author, 2015)

9.3.3 | THERMAL HEATING

Clean air bought in from geopipes is heated by the furnace and used to warm accommodation spaces when required via adjustable ducts.

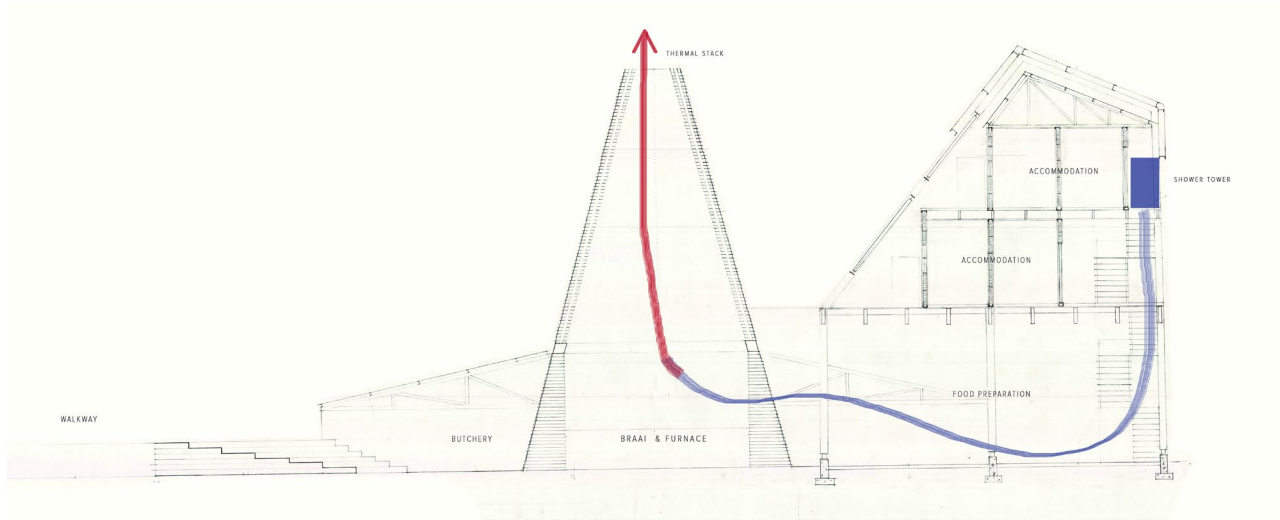


Figure 9.6. Natural ventilation (Author, 2015)

9.3.4 | NATURAL VENTILATION

Cool air drops from the shower tower and is drawn up the furnace chimney creating natural ventilation.

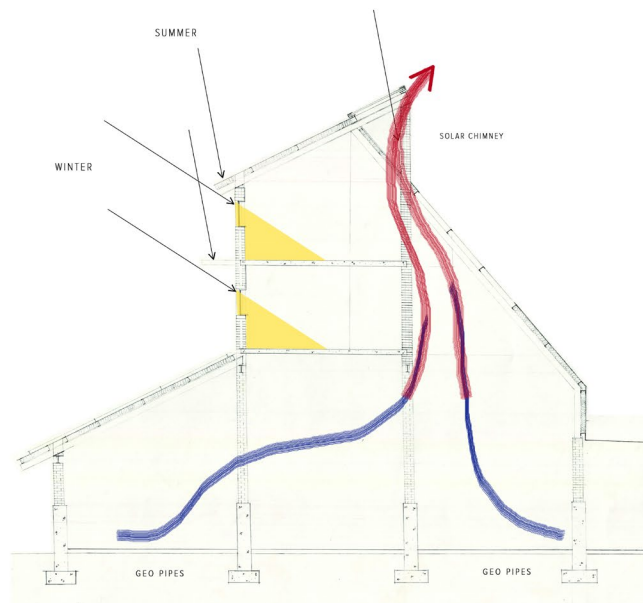


Figure 9.7. Natural ventilation & natural light (Author, 2015)

9.3.4 | NATURAL VENTILATION & NATURAL LIGHT

A solar chimney ensures ventilation of meat market. Natural northern light is optimised for office spaces.

9.4 | MATERIALITY

	Responds to	Programme	Materiality	Colour	Type	Connection
Small scale, fine grain stereotomic	Historical fabric	Fruit & Veg Market	Brick, bagged plastered	Red face brick with bag plaster concealing joints but revealing brick slightly	What bond ? Different to that of existing	Concealed by plaster – stereotomic
		Ablutions	Exposed brick	Red face brick	What bond ? Different to that of existing	Connections –revealed as in existing urban fabric
Large scale, large grain stereotomic	Belle Ombre	Meat market	Steel	Exposed steel expressing structural quality	Structural members: I beams and H beams	Connections concealed – stereotomic
		Offices	Concrete	Exposed concrete	Precast	Smoothed concrete concealing joints- stereotomic
Small scale tectonic		Pergola	Light steel members	Paint the members, start to conceal the materiality	Non-structural: C-channels and Angles	Connections revealed and concealed – stereotomic to tectonic
Large scale, tectonic	Sub-station	Restaurant	Steel	Exposed steel expressing structural quality	Structural members: I beams and H beams	Connections revealed – tectonic language
		Accommodation	Light weight steel	Exposed steel and panels	Pre-cast light weight steel members	Revealed connections - tectonic
Middle condition between: Stereotomic & tectonic; Fine grain & large grain; Small scale & Large scale	New architectural intervention as mediation point	Fruit and vegetable distribution	Steel (& timber: two materials showing the transition from stereotomic to tectonic)	Exposed steel expressing structural quality	Structural members: I beams and H beams	Revealed
			Timber	Exposed	Used as cladding	Revealed
		Butchery	Masonry walls responding to existing fabric	Red face brick	What bond ? Different to that of existing	Revealed - tectonic
			Light steel members & timber: two materials showing the transition from stereotomic to tectonic	Steel member exposed but concealed by timber in some instances	Non-structural: C-channels and Angles	Concealed - stereotomic

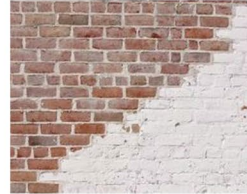
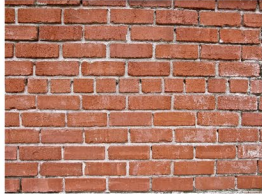
Figure 9.8. Table illustrating materiality (Author, 2015)

CONCEPTUAL & TECHNICAL APPROACH MATERIALS

CONSTRUCTION

[A] MASONRY

REVEAL



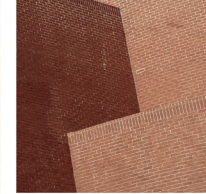
CONCEAL



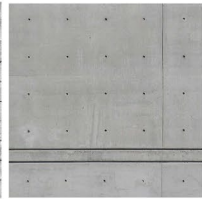
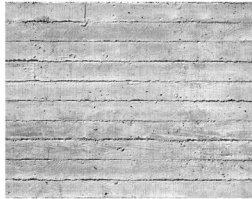
TECTONIC



STEREOTOMIC



[B] CONCRETE



[C] STEEL



[E] MASONRY/
CONCRETE/STEEL



Figure 9.10. Conceptual & technical approach
(Author, 2015)

9.6 | CONSTRUCTION

CONCEAL

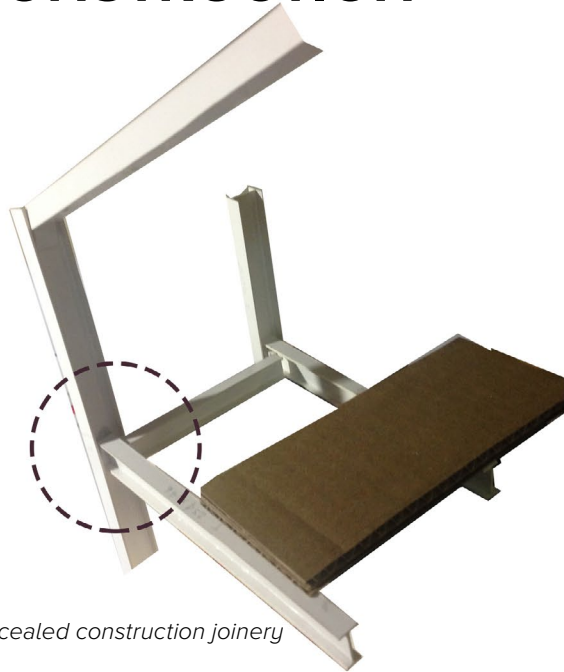


Figure 9.11. Concealed construction joinery (Author, 2015)

REVEAL



Figure 9.15. Revealed construction joinery (Author, 2015)

column - footing

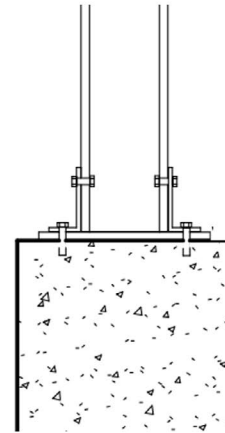


Figure 9.12. Concealed construction footing detail (Author, 2015)

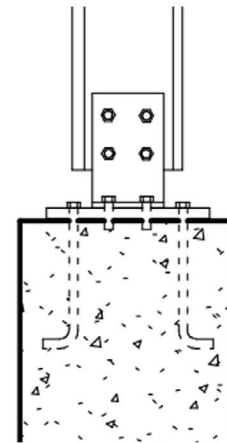


Figure 9.16. Revealed construction footing detail (Author, 2015)

column - beam

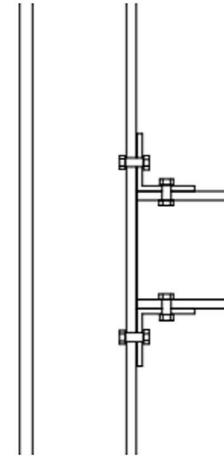


Figure 9.13. Concealed construction column detail (Author, 2015)

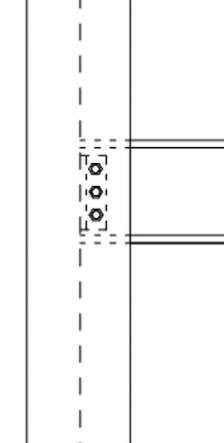


Figure 9.17. Revealed construction column detail (Author, 2015)

beam - beam

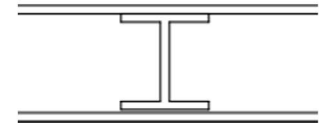


Figure 9.14. Concealed construction beam detail (Author, 2015)

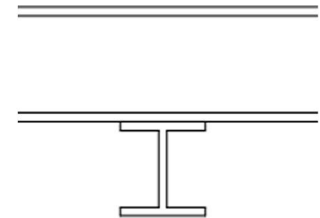
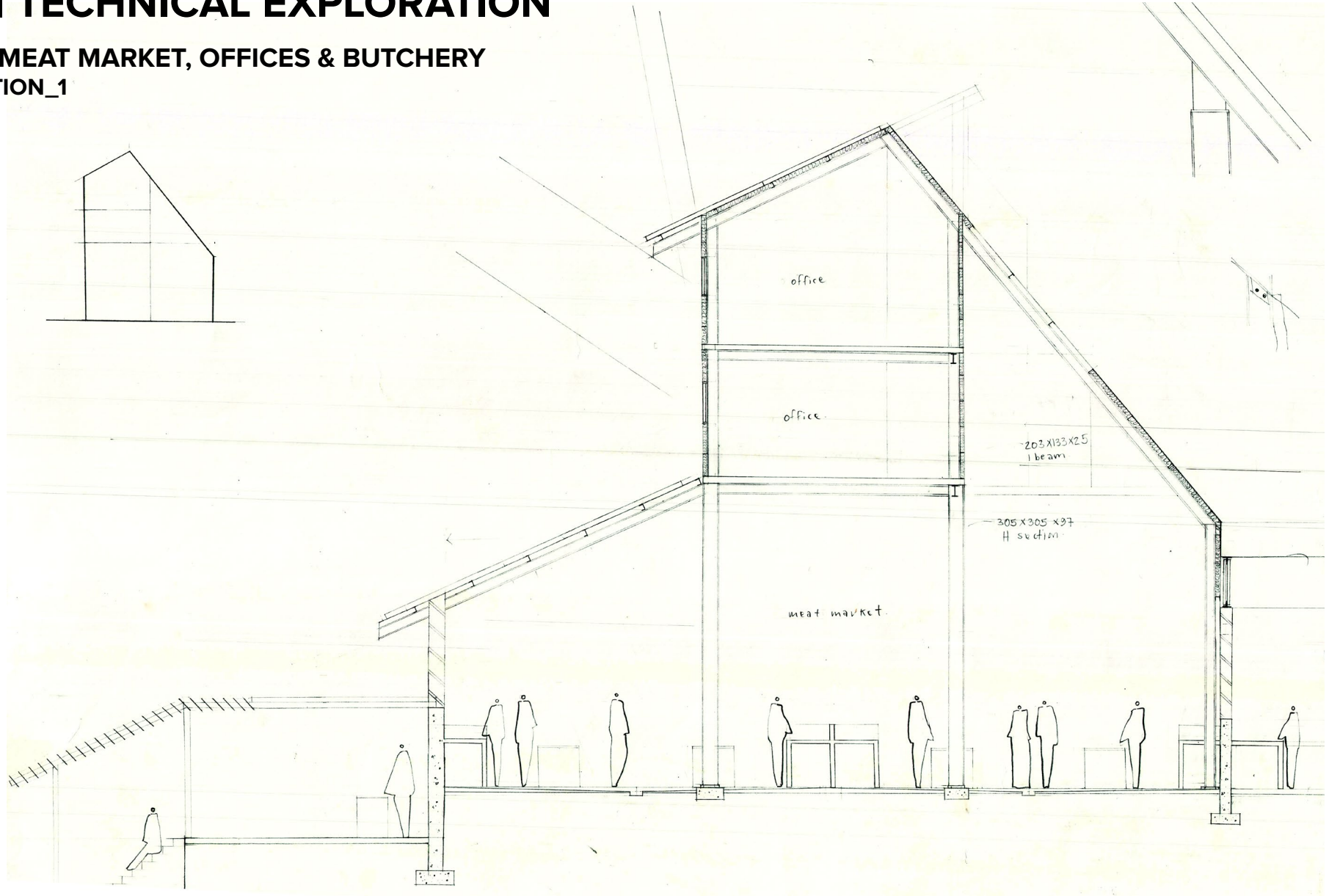


Figure 9.18. Revealed construction beam detail (Author, 2015)

9.7 | TECHNICAL EXPLORATION

9.7.1 | MEAT MARKET, OFFICES & BUTCHERY ITERATION_1



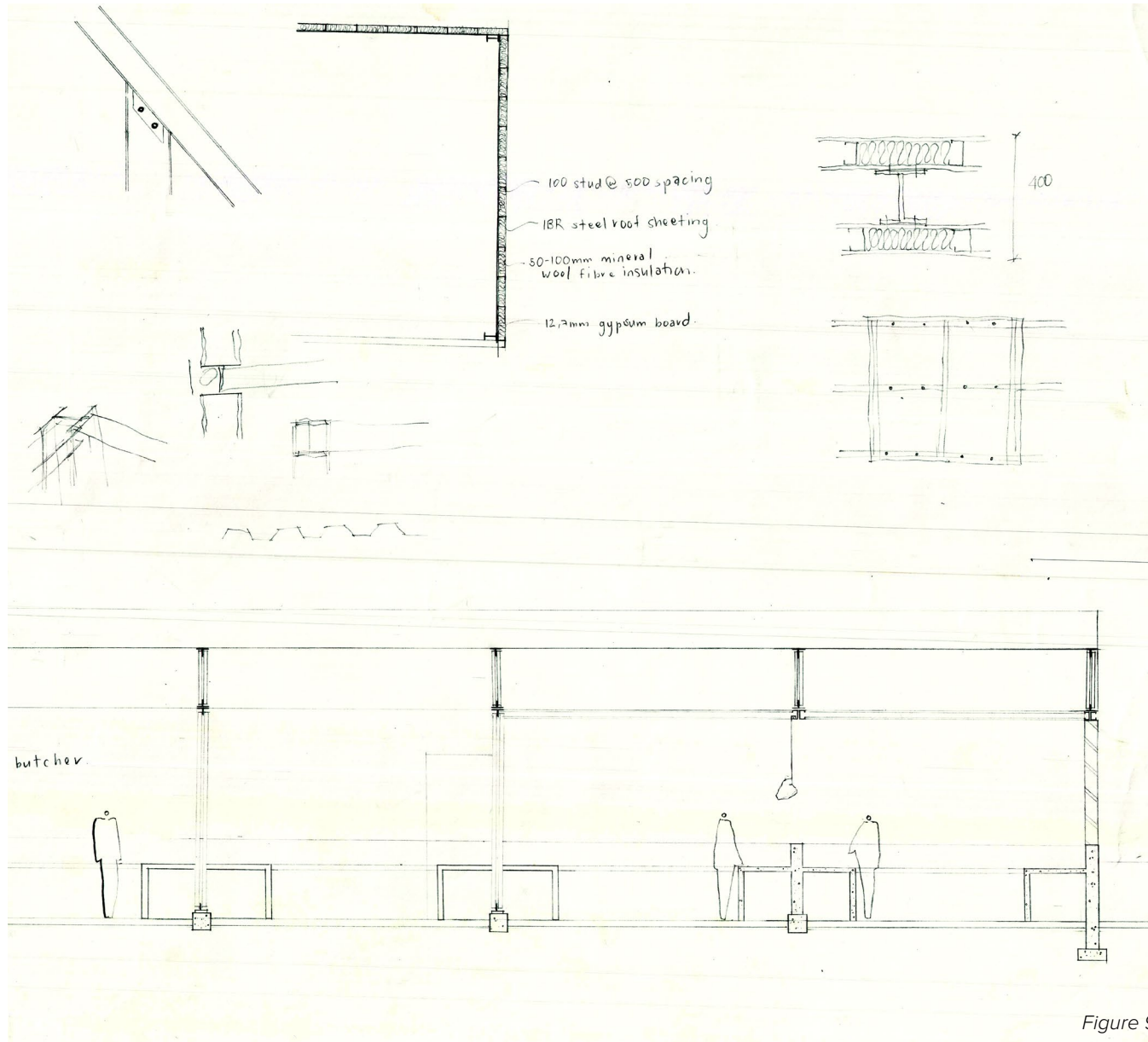


Figure 9.19. Meat market, offices & butchery: Iteration_1

9.7.1 | MEAT MARKET & OFFICES ITERATION_2

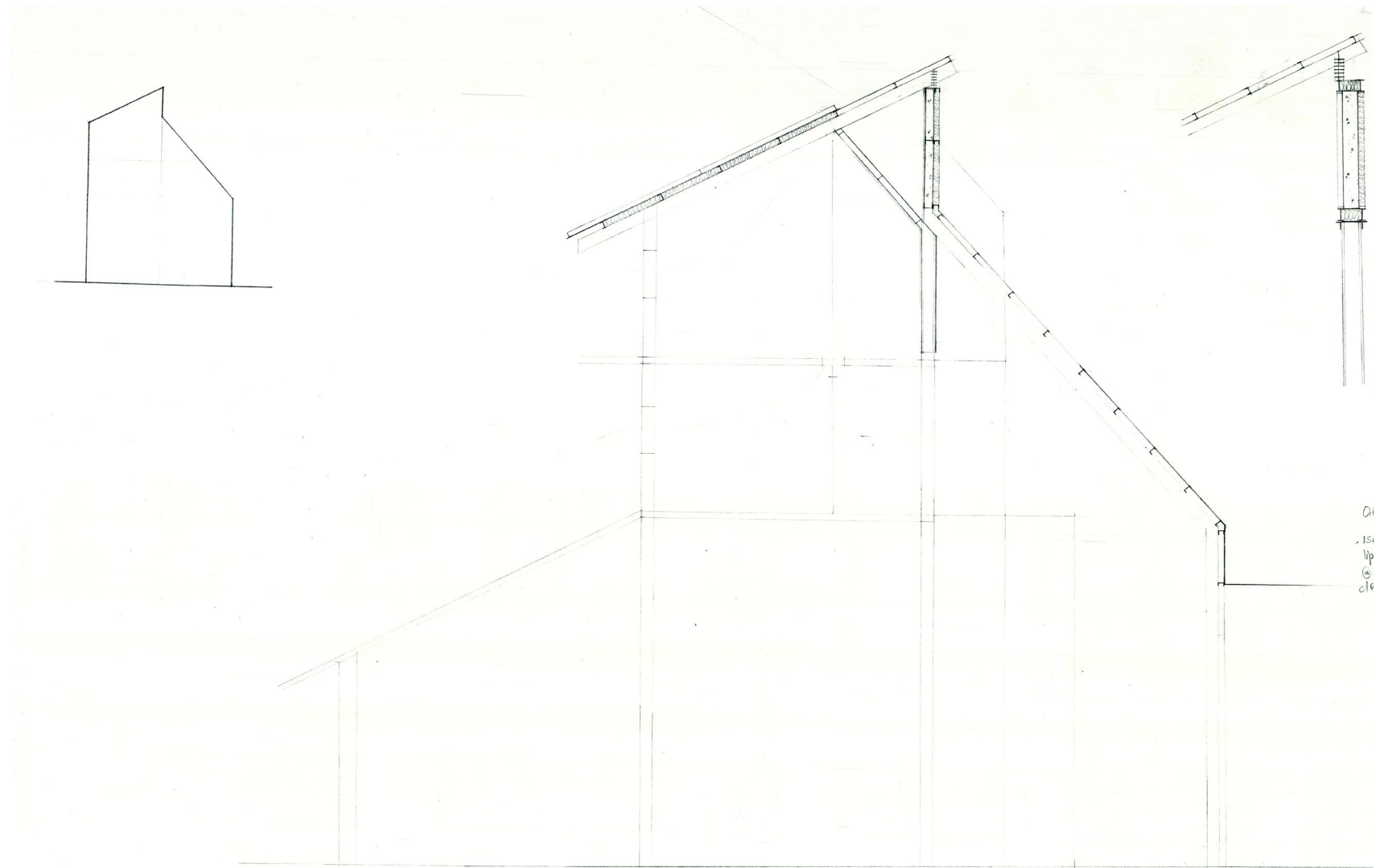


Figure 9.20. Meat market & offices: Iteration_2

ITERATION_3

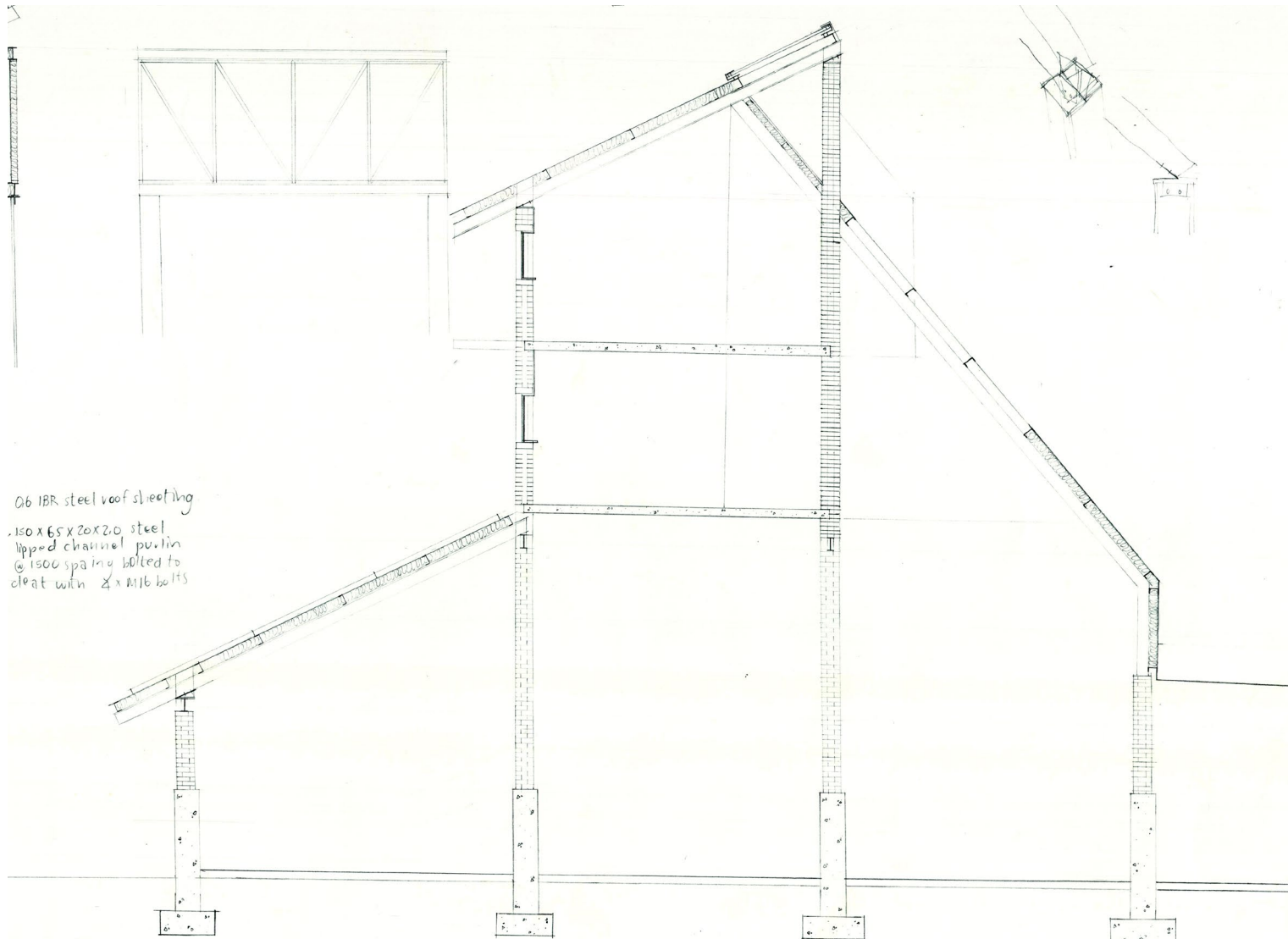


Figure 9.21. Meat market & offices: Iteration_3

9.7.2 | MEAT MARKET & OFFICES ITERATION_4

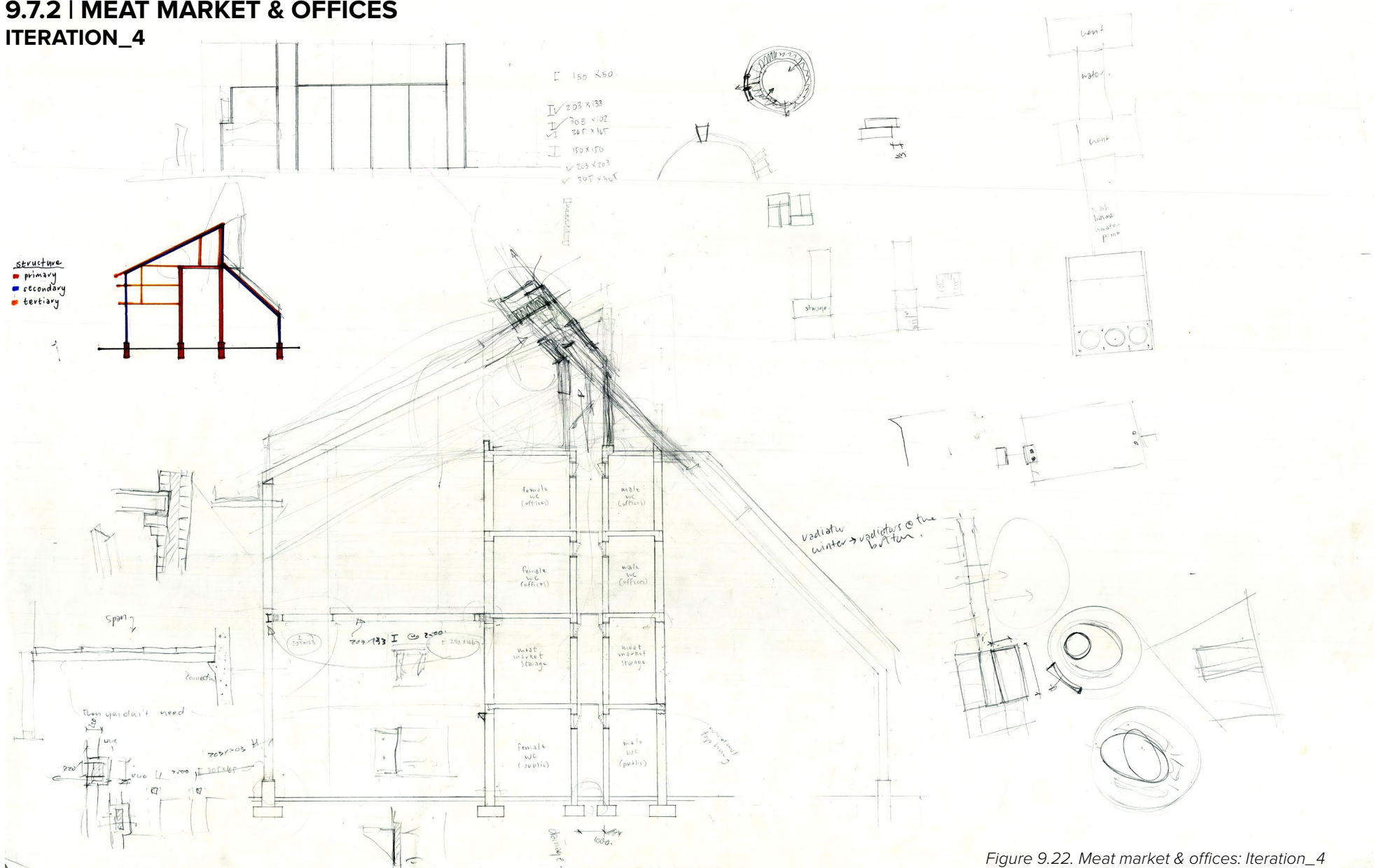


Figure 9.22. Meat market & offices: Iteration_4

9.7.3 | FURNACE & ACCOMMODATION ITERATION_1

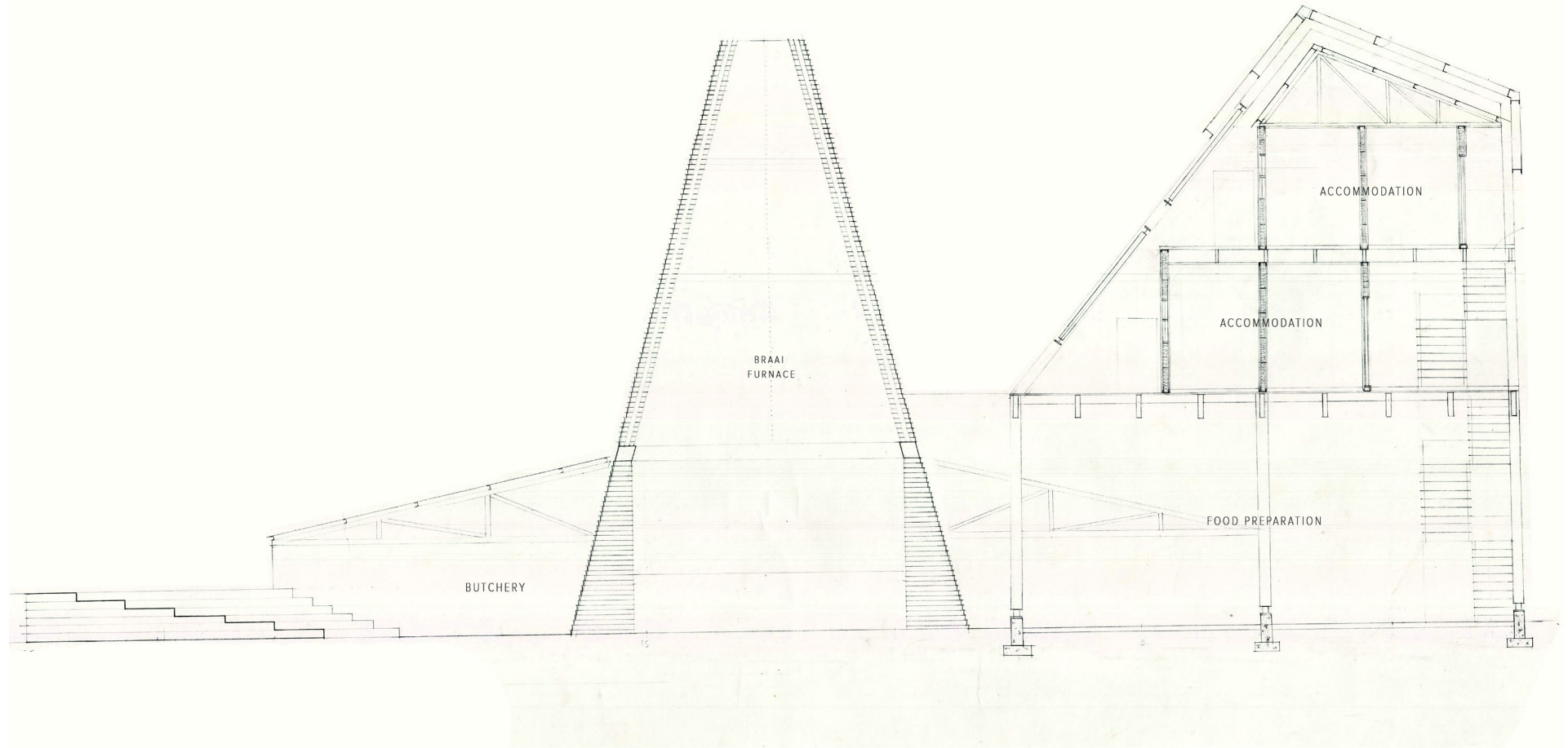
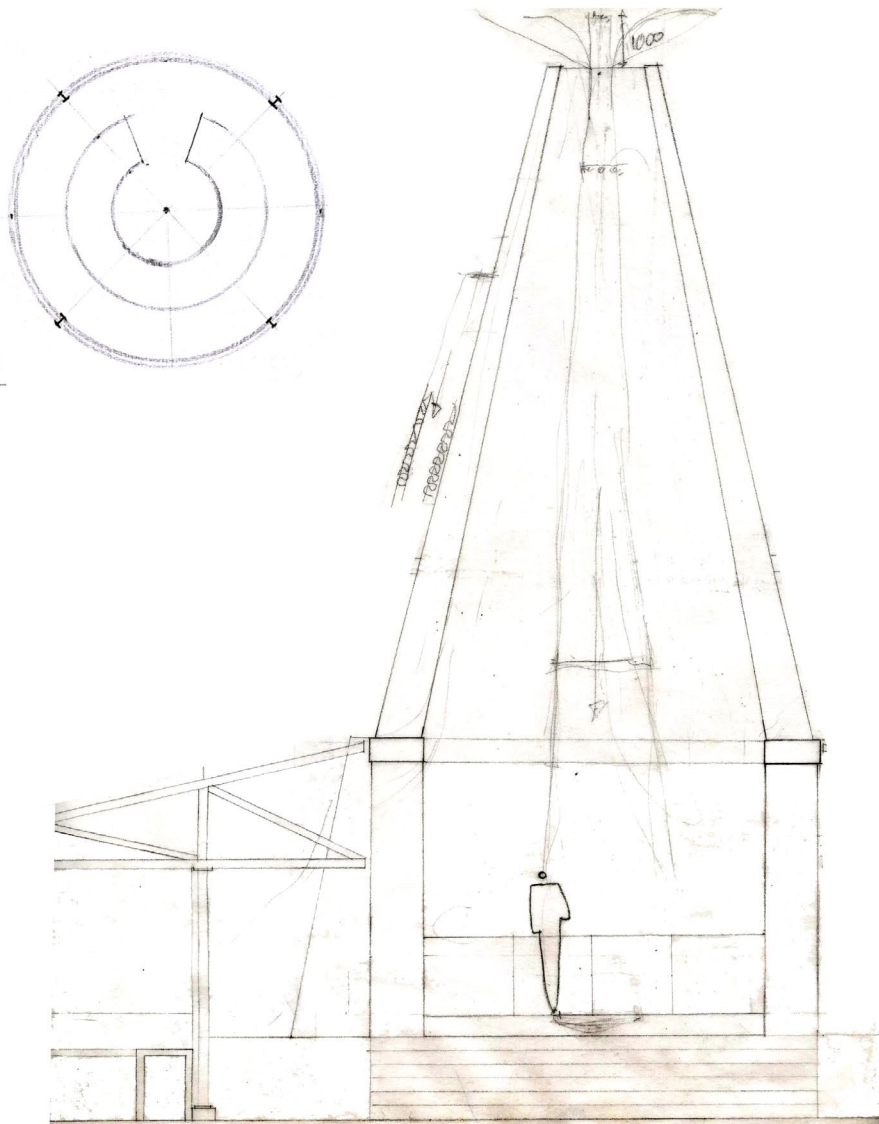


Figure 9.23. Furnace & accommodation: Iteration_1

9.7.2 | THE FURNACE

1



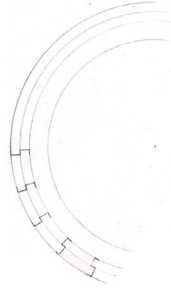
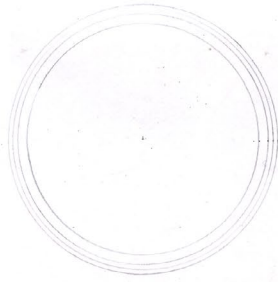
Central braai area

Cylindrical shape:
a) encourages sociable braaing
activity of cookers
b) Structurally ...

Large chimney:
a) as landmark
b) to ensure effective removal
of smoke

Figure 9.24. Furnce: Iteration_1

2



Ventilation

Using the heat generated by the fire chimney to ventilate surrounding spaces

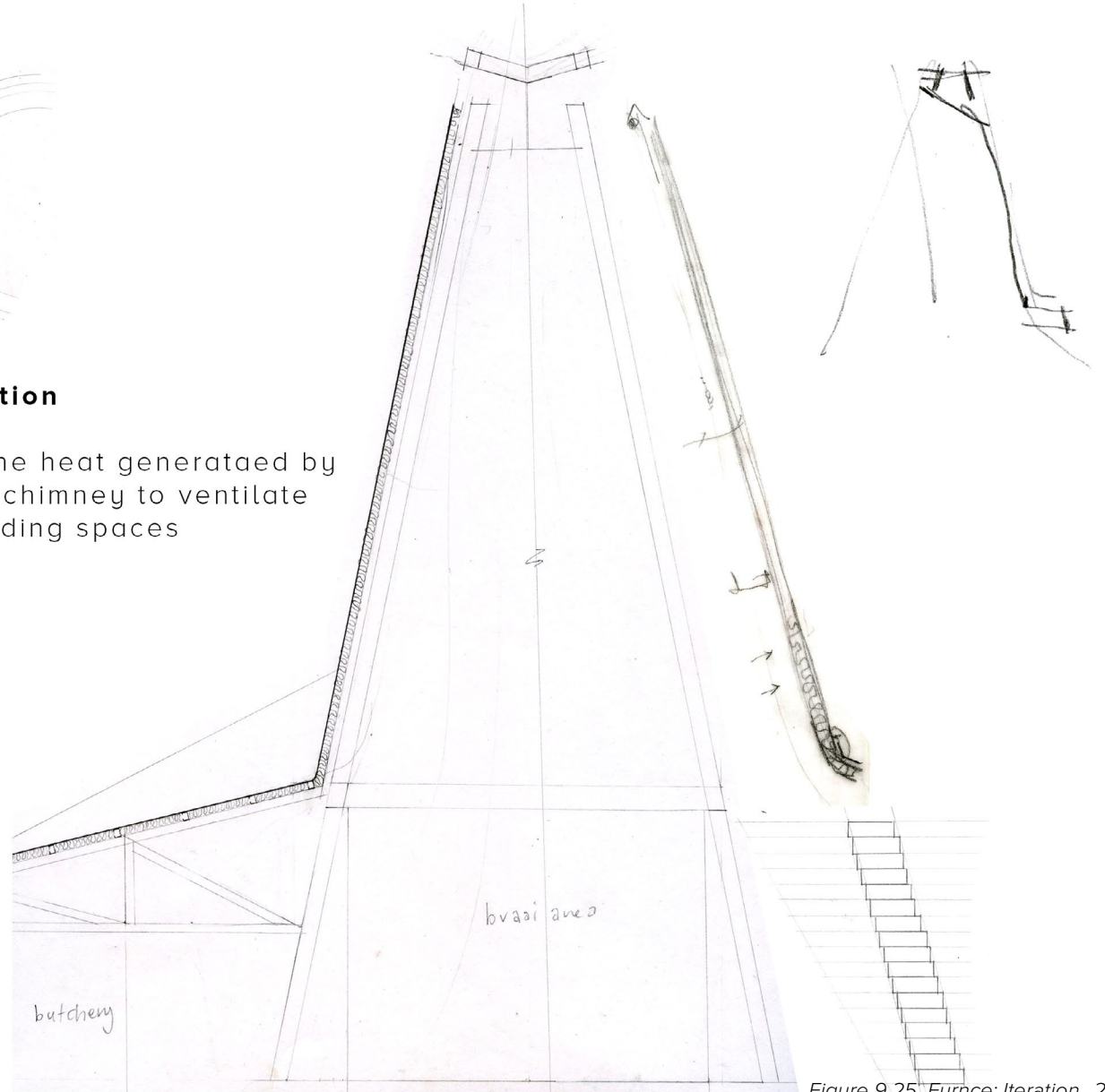
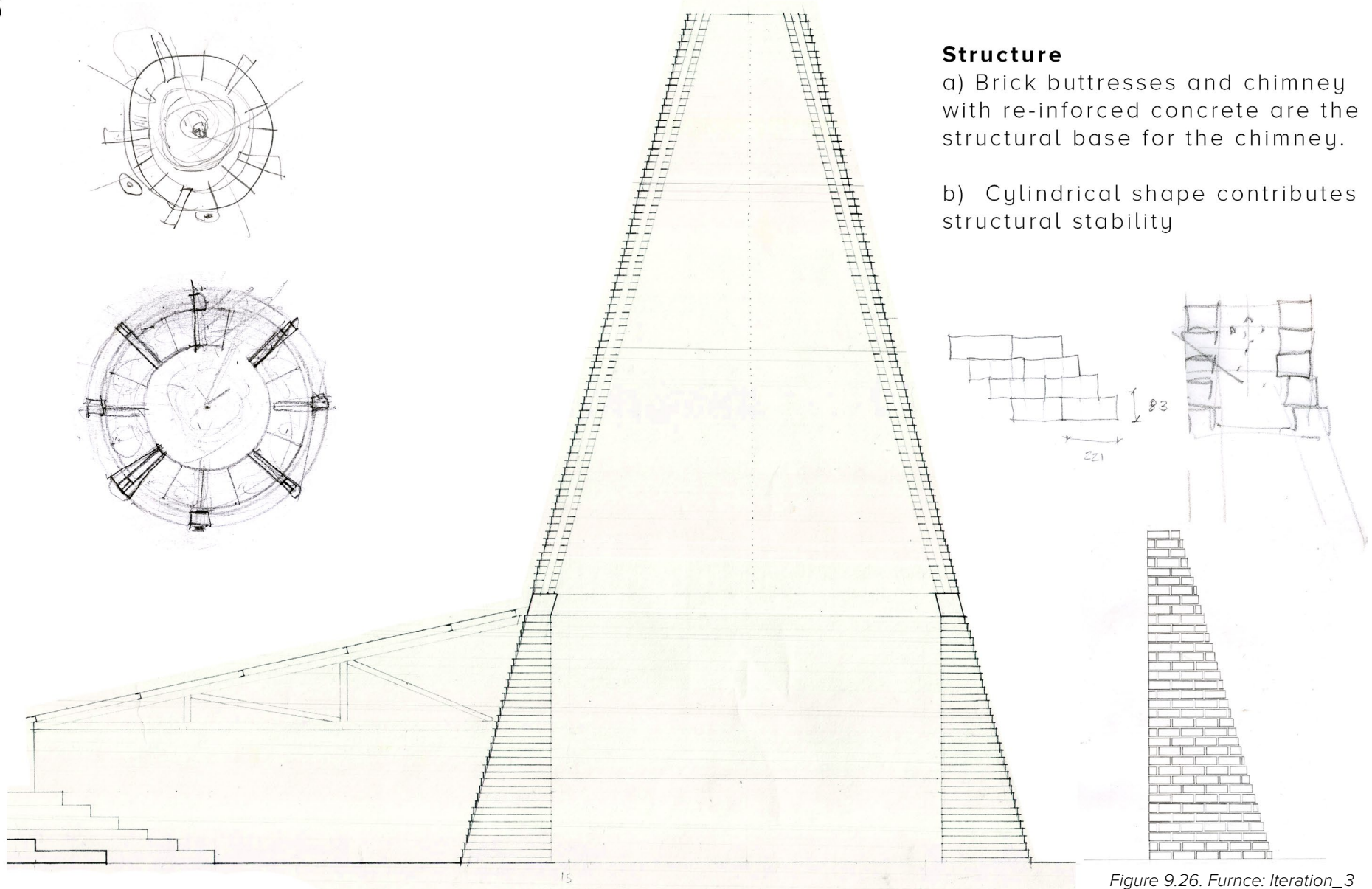


Figure 9.25. Furnce: Iteration_2

3



Structure

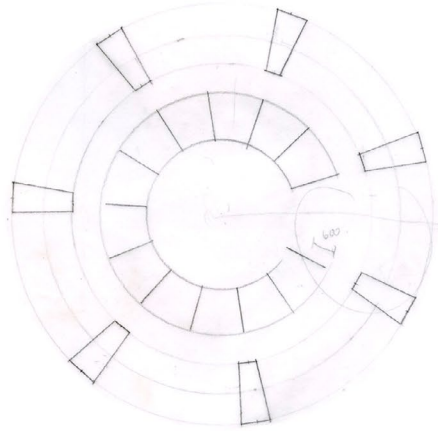
a) Brick buttresses and chimney with re-inforced concrete are the structural base for the chimney.

b) Cylindrical shape contributes structural stability

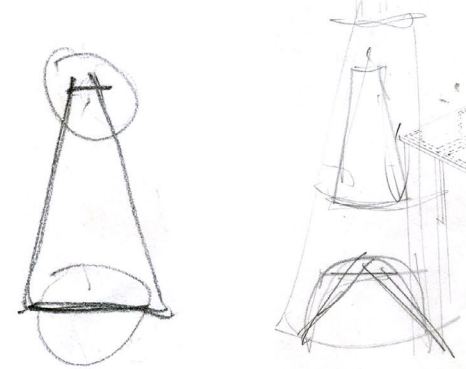
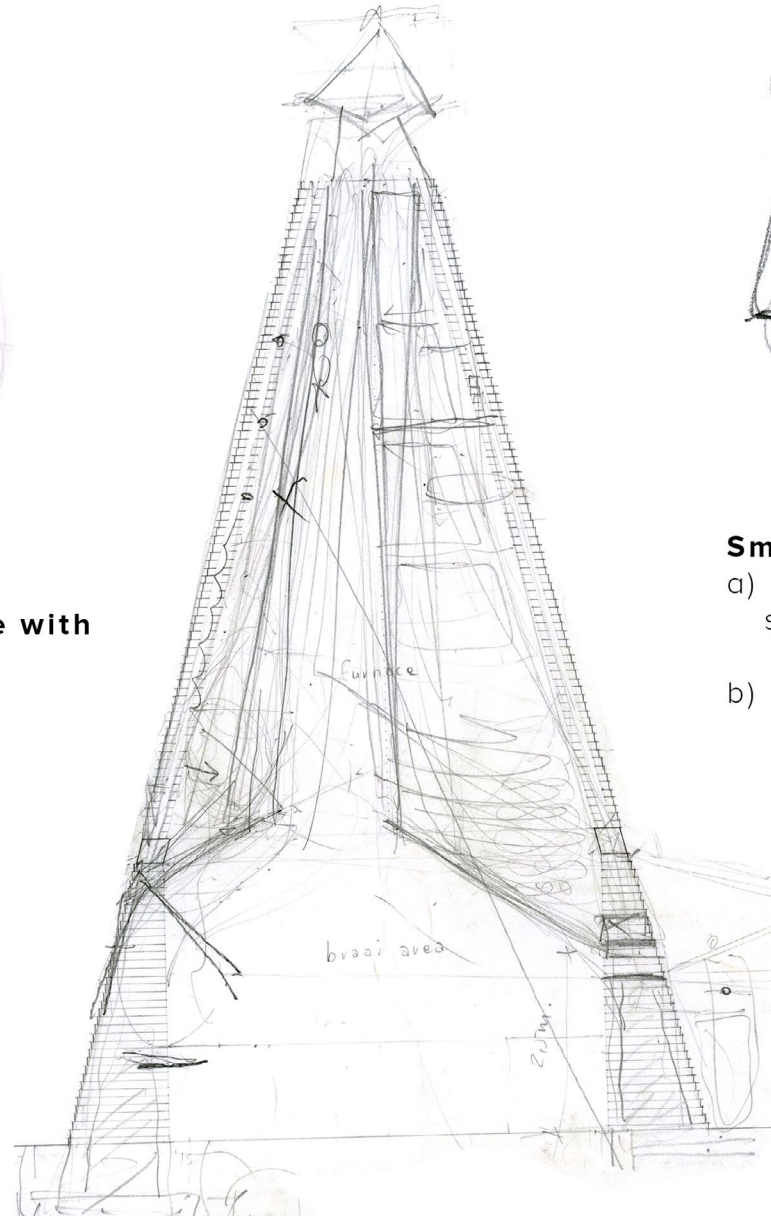
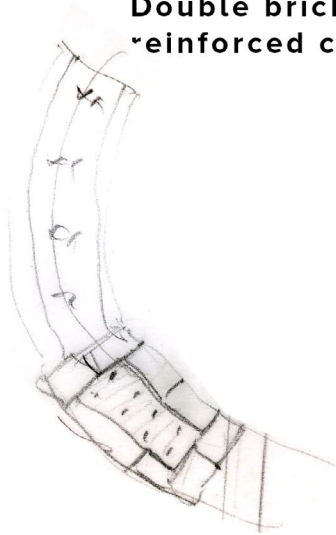
Figure 9.26. Furnce: Iteration_3

4

to



Double brick course with reinforced concrete

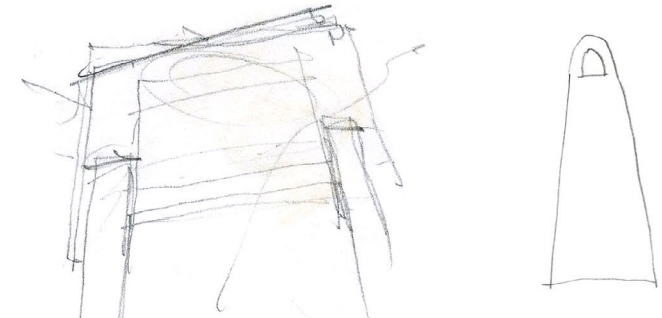
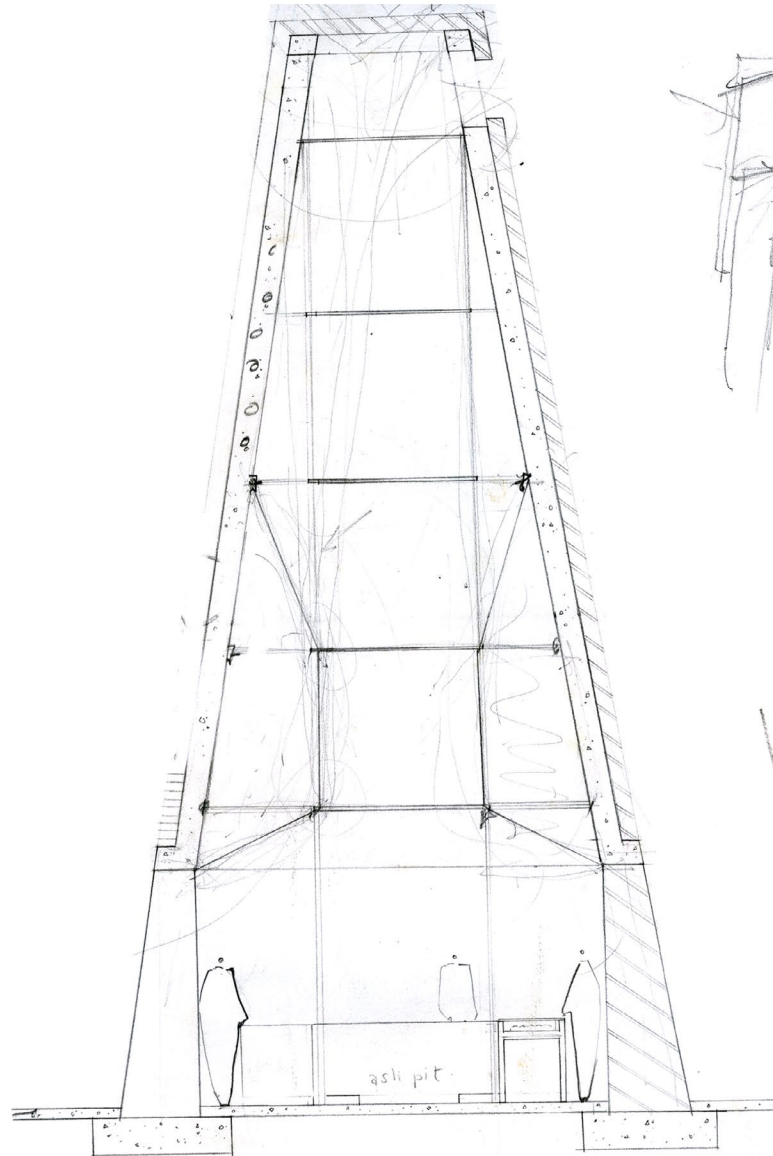
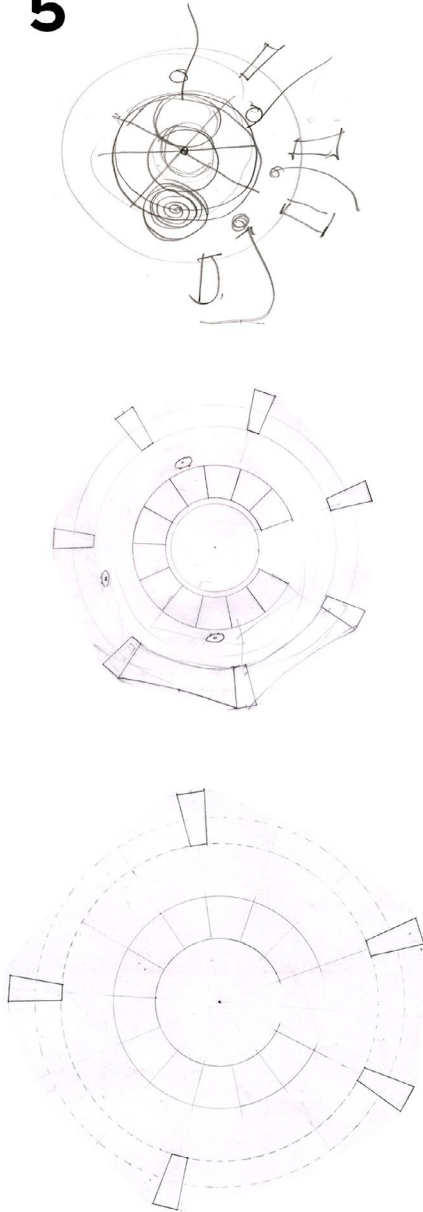


Smoke chimney design

- a) Creates an overhead cooking shelf
- b) Ensures effective smoke removal by creating the venturi effect

Figure 9.27. Furnce: Iteration_4

5



Steel capping

a) attaches to brick chimney providing protection from rain

b) contributes to the venturi effect by creating pressure difference.

Pre-cast cylindrical concrete form

a) Brick shelf concals concrete materiality

b) Complicated concrete form

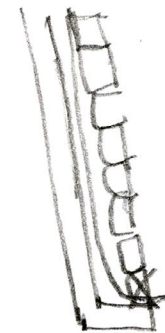


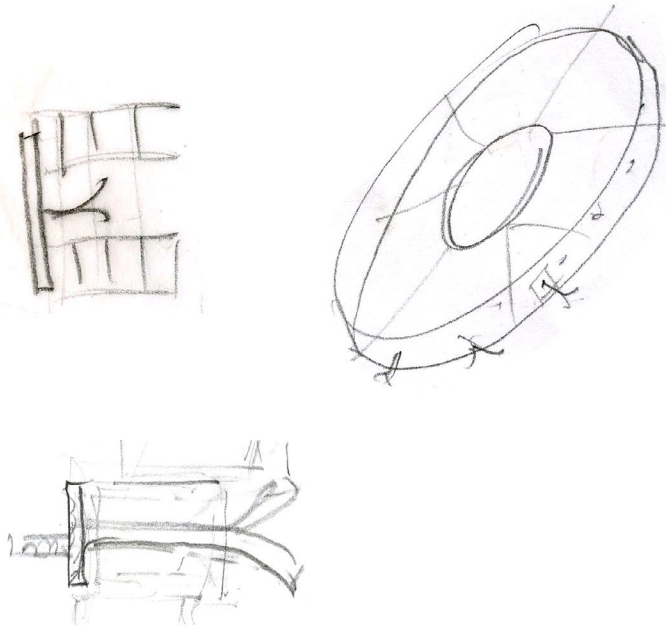
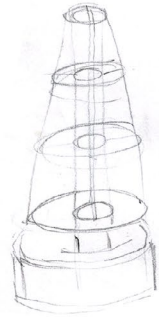
Figure 9.28. Furnce: Iteration_5

6

Steel chimney frame

a) Provides frame on which steel chimney sheeting is attached - sheet material easily cleaned.

b) Copper pipes heat up in the fire and steel frame creates space within the chimney for hot water geyser storage.



7

Corbelled brick

a) assists chimney shape for venturi effect

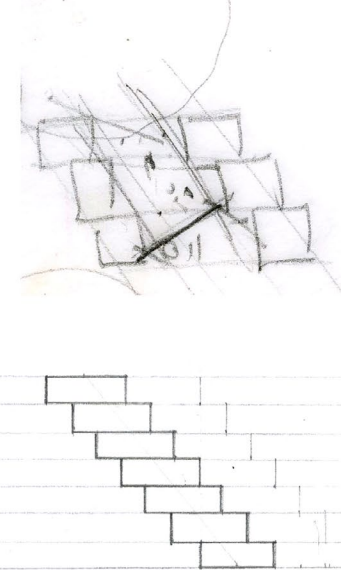
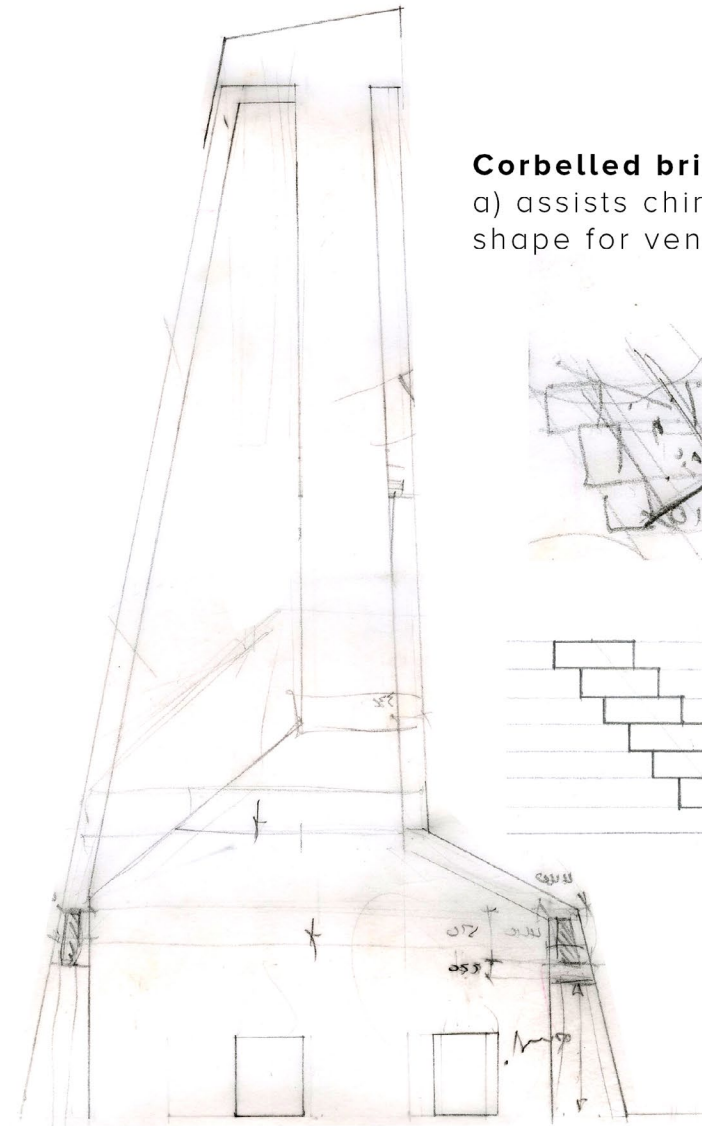


Figure 9.29. Furnce: Iteration_6 & 7

8

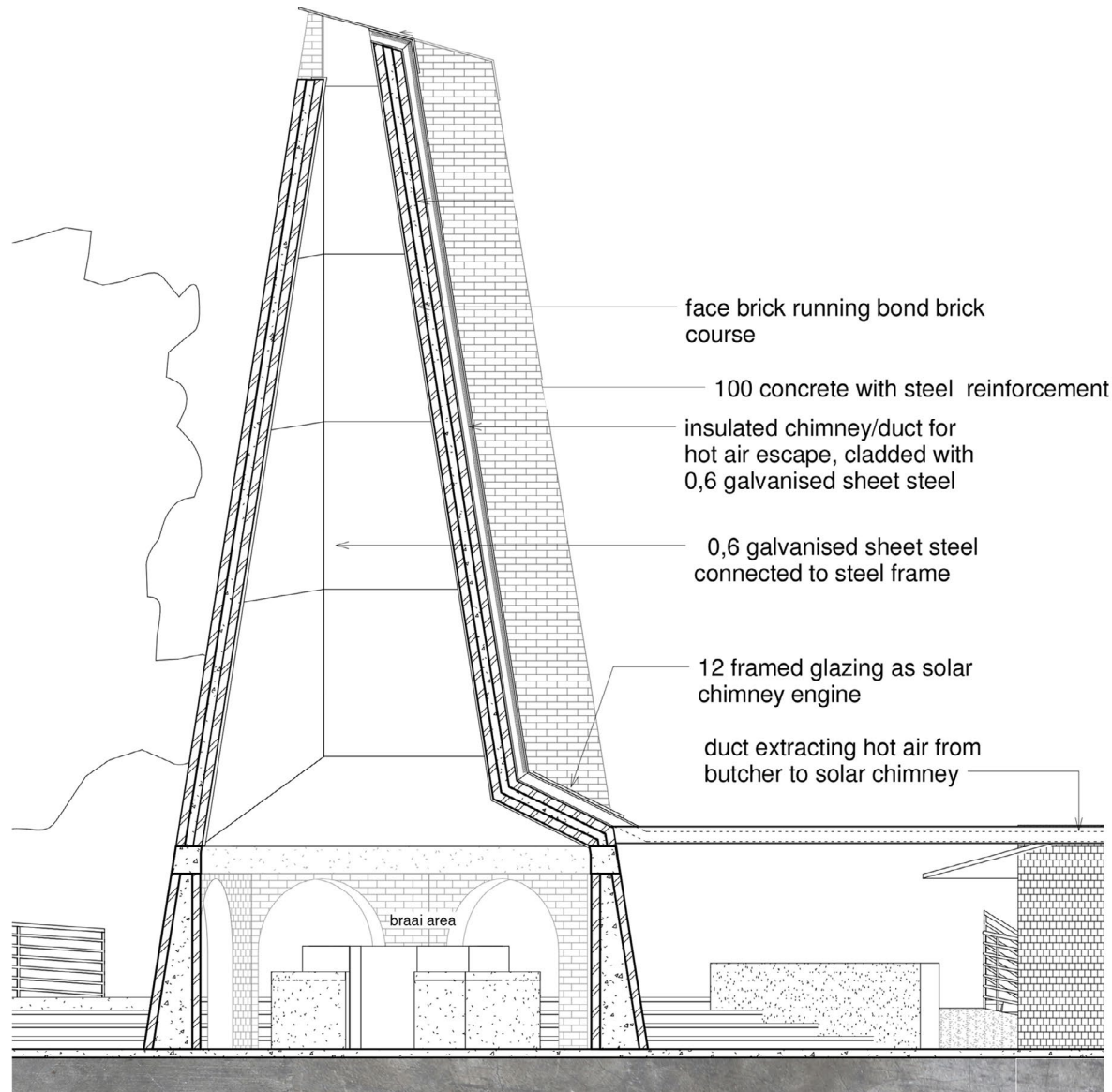


Figure 9.30. Furnce: Iteration_8

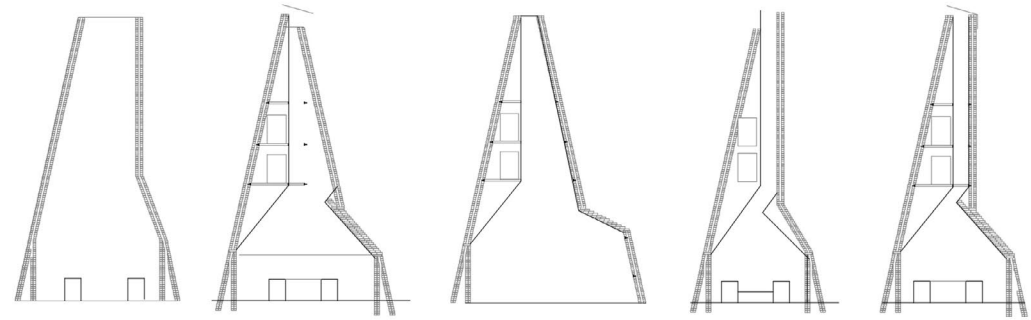
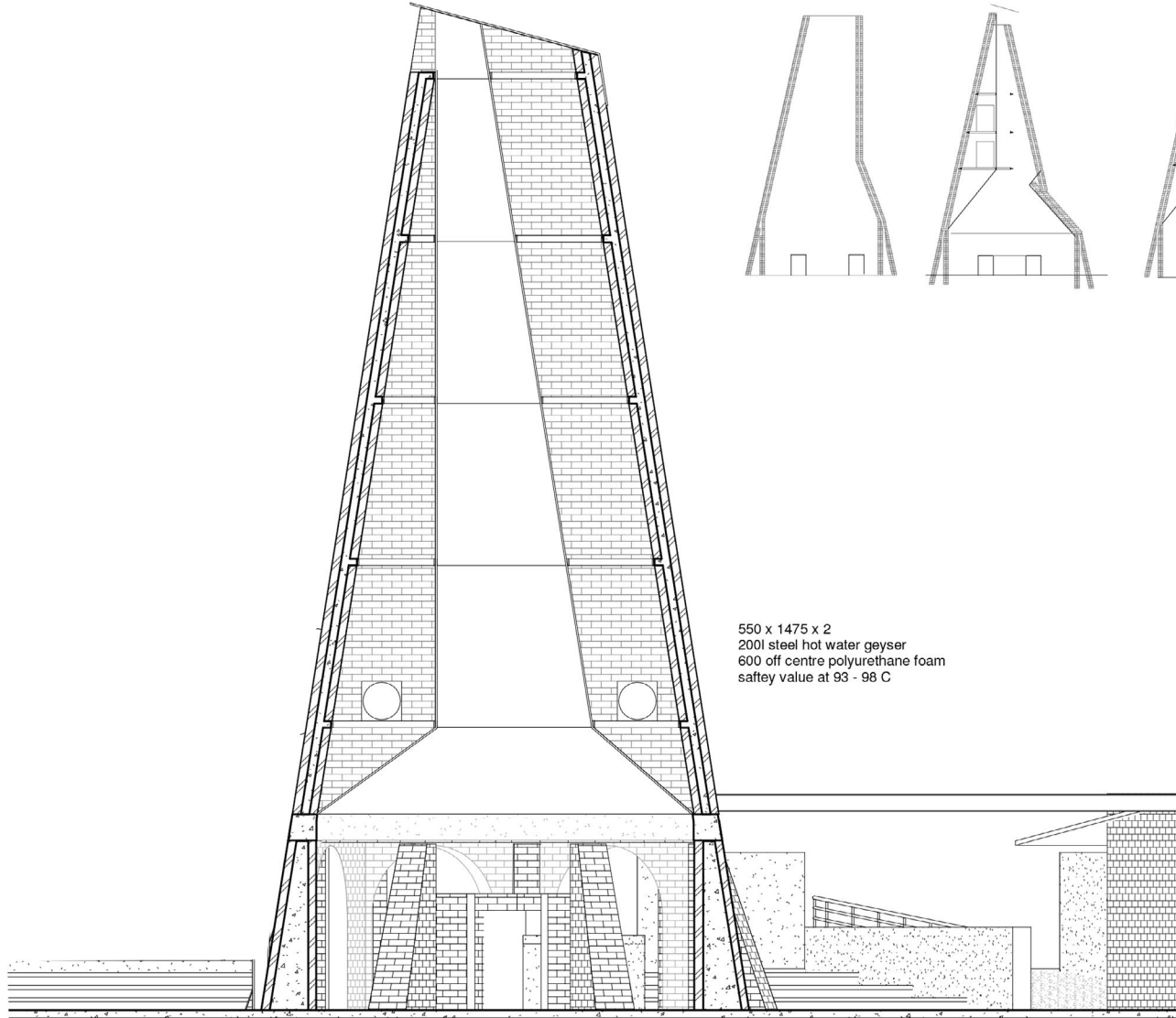
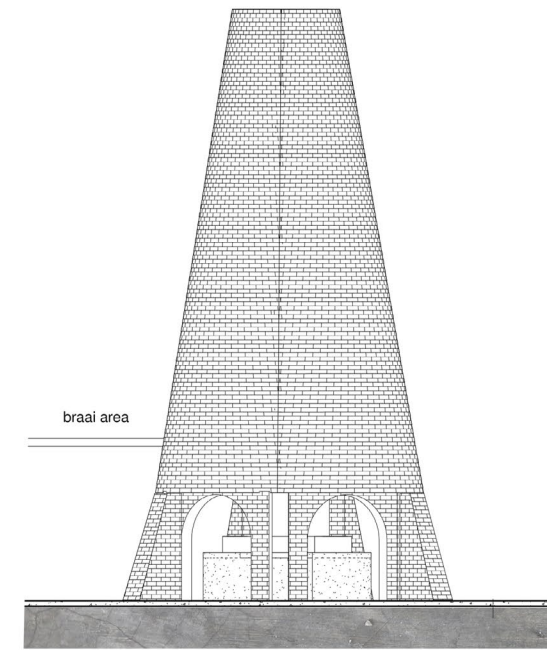


Figure 9.32. Furnce iterations



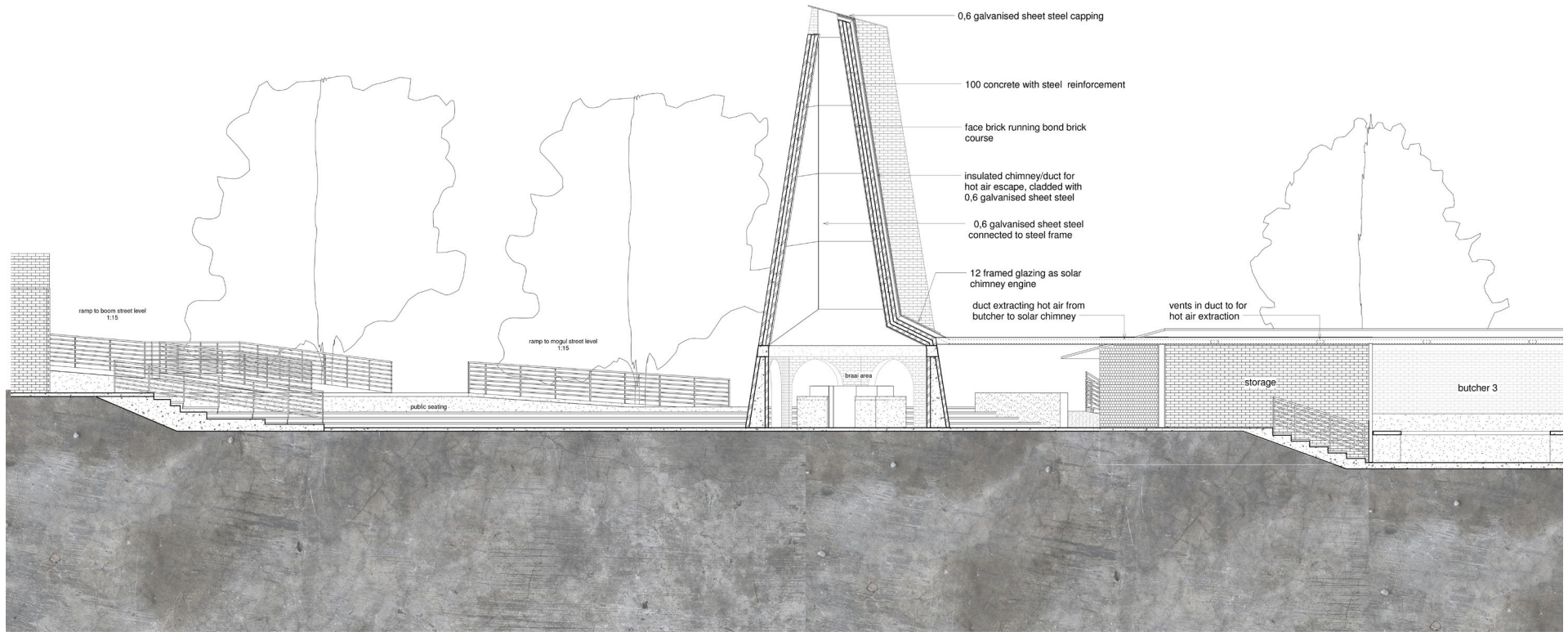
550 x 1475 x 2
200l steel hot water geyser
600 off centre polyurethane foam
saftey value at 93 - 98 C

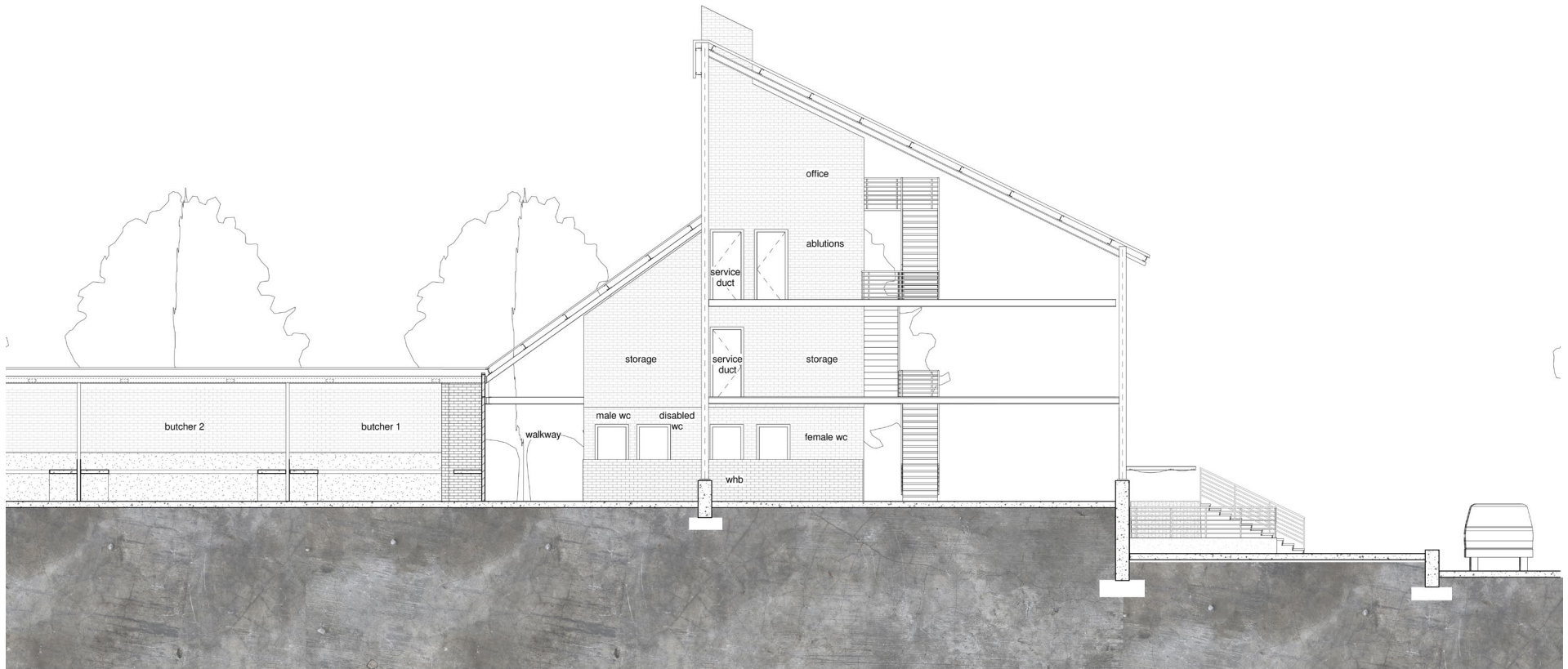


braai area

Figure 9.33. Furnce elevation

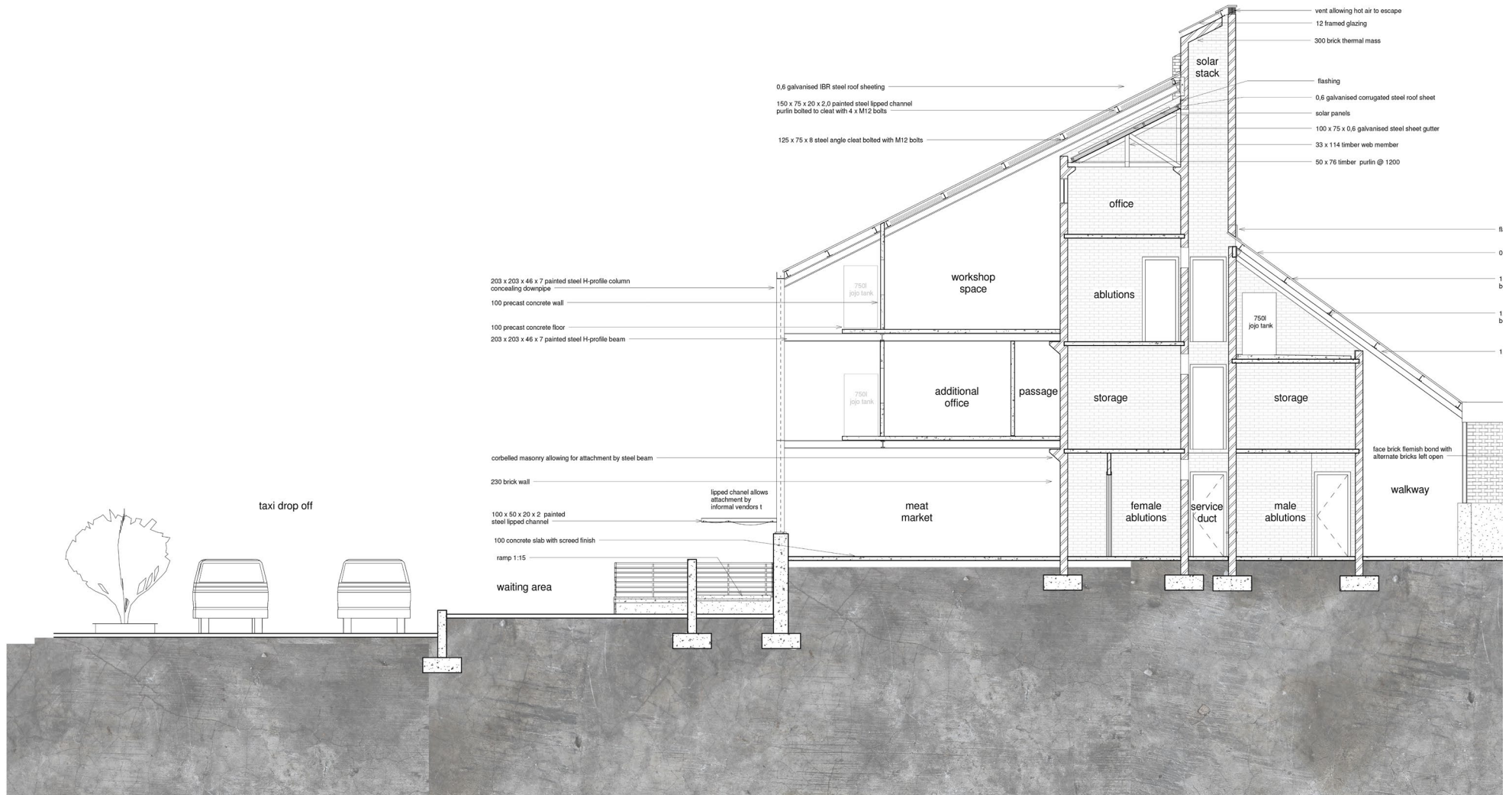
Figure 9.31. Furnce: Iteration_Chimney

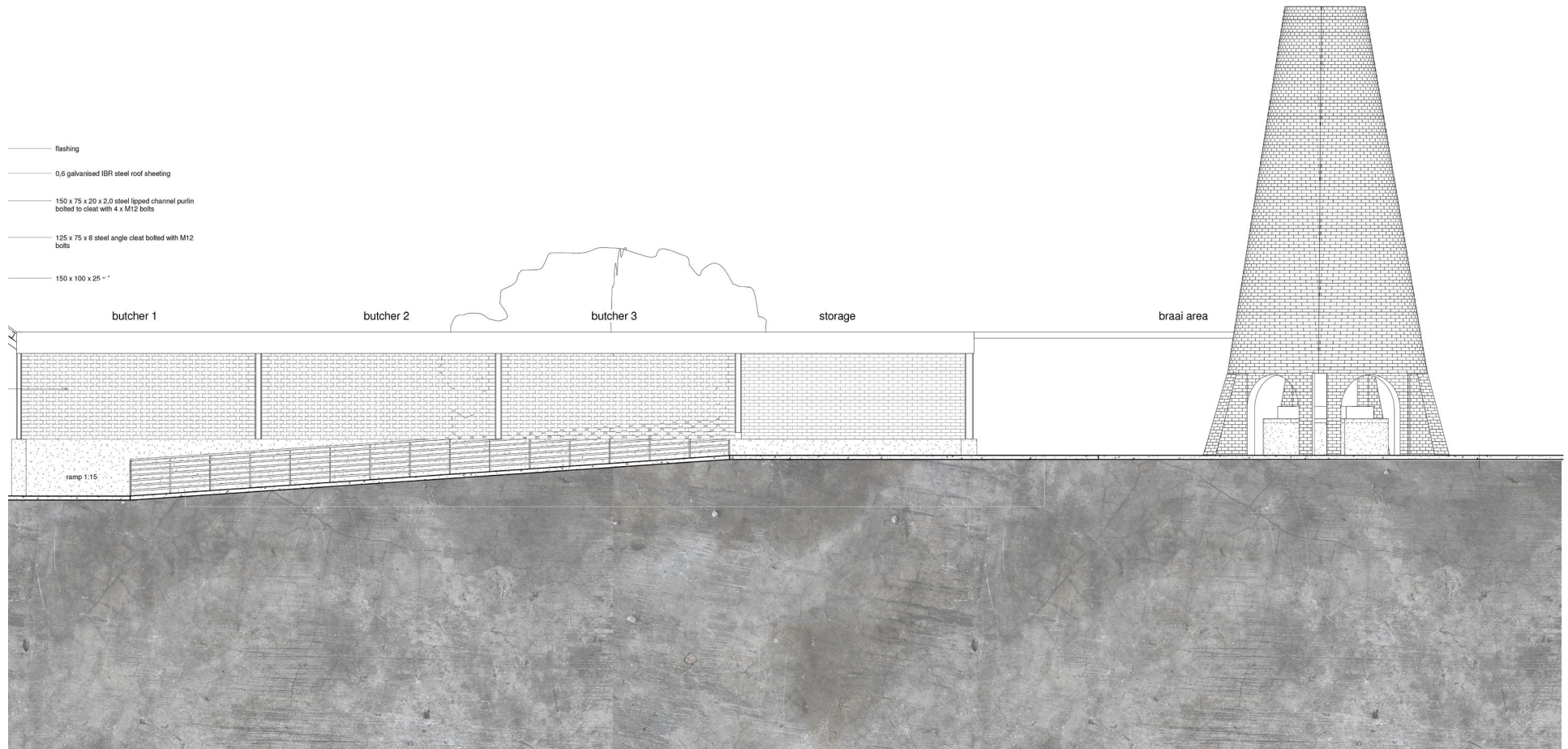




SECTION B-B
1:50

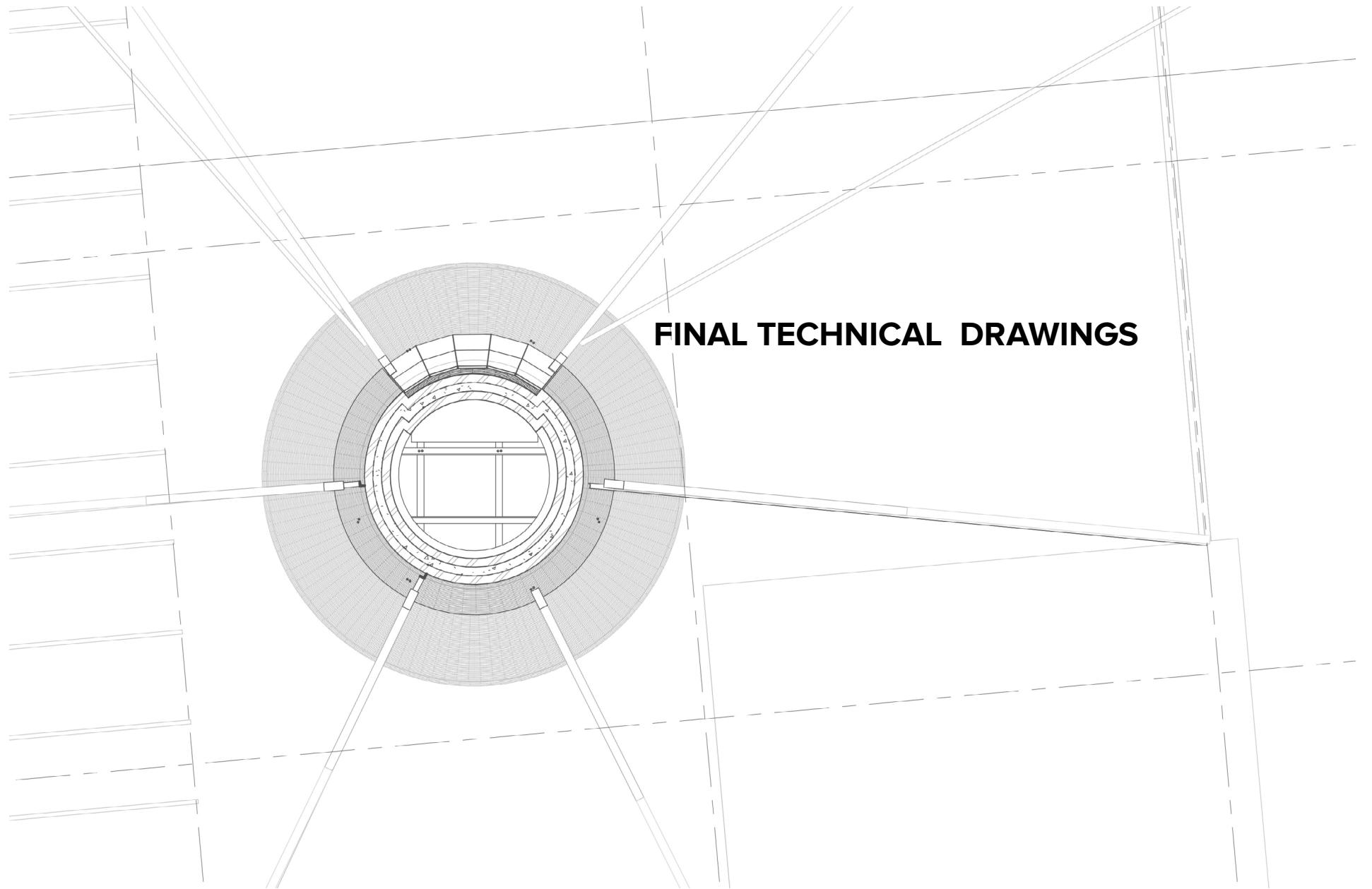
Figure 9.34. Section: furnace, butchery, meat market





SECTION A-A
1:50

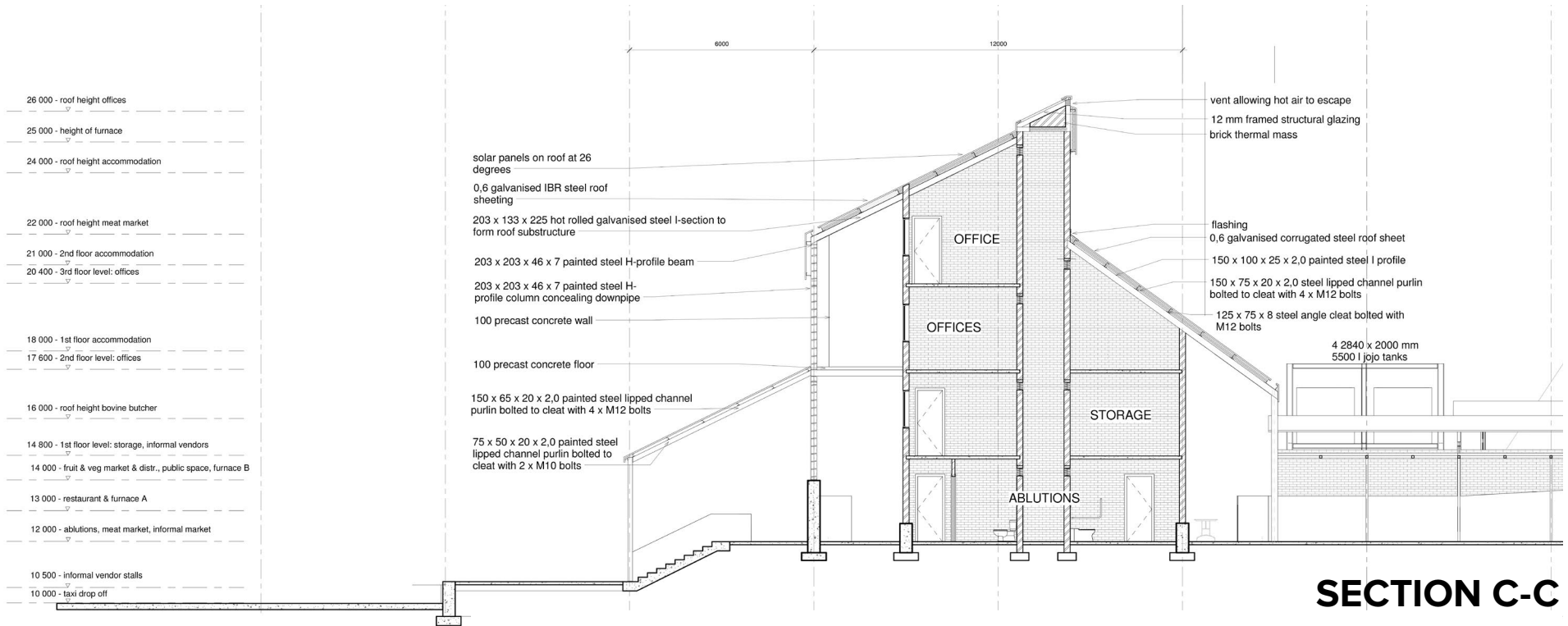
Figure 9.35. Section: taxi stop, offices, informal market



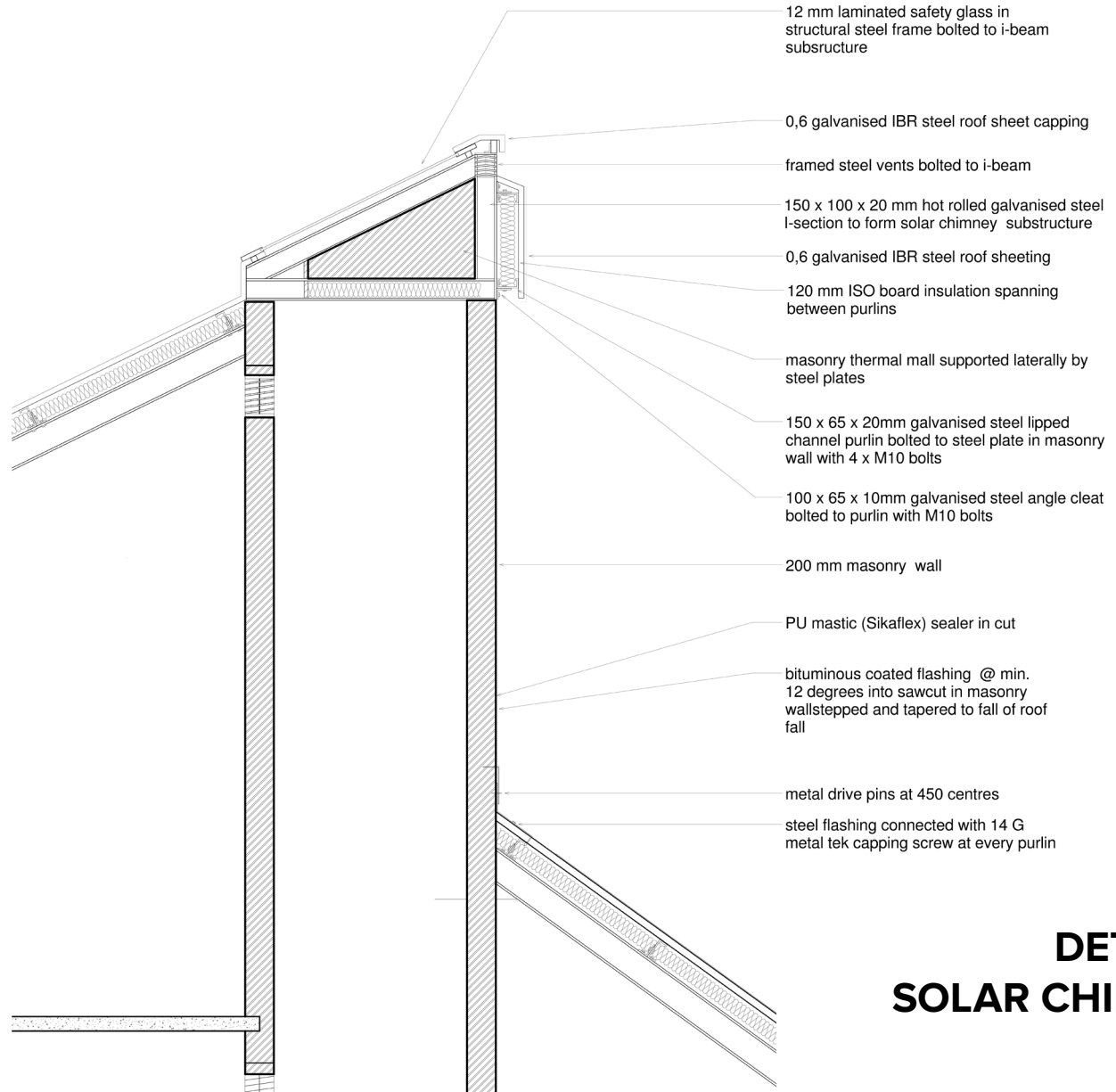
FINAL TECHNICAL DRAWINGS



TECH PLAN
1:100



**SECTION C-C
OFFICES
1:50**



DETAIL A SOLAR CHIMNEY 1:10

0,6 galvanised IBR steel roof sheeting @ min 5 pitch laid on saturated felt underlay on plywood sublayer seam claped @ 610 centres with 30 x 0.6 stainless steel

120 mm ISO board insulation spanning between purlins

150 x 65 x 20mm galvanised steel lipped channel purlin bolted to cleat with 4 x M10 bolts

Asphalt saturated felt underlay with 65mm sidelaps and 150mm endlaps fixed to plywood with steel nails @ max 300mm centre

16mm plywood

300 x 150 purpose made galvanised steel gutter laid to fall to 80 o/ galvanised mild steel rainwater downpipe

100 x 65 x 10mm galvanised steel angle cleat welded to gutter & bolted to steel frame with M10 bolts

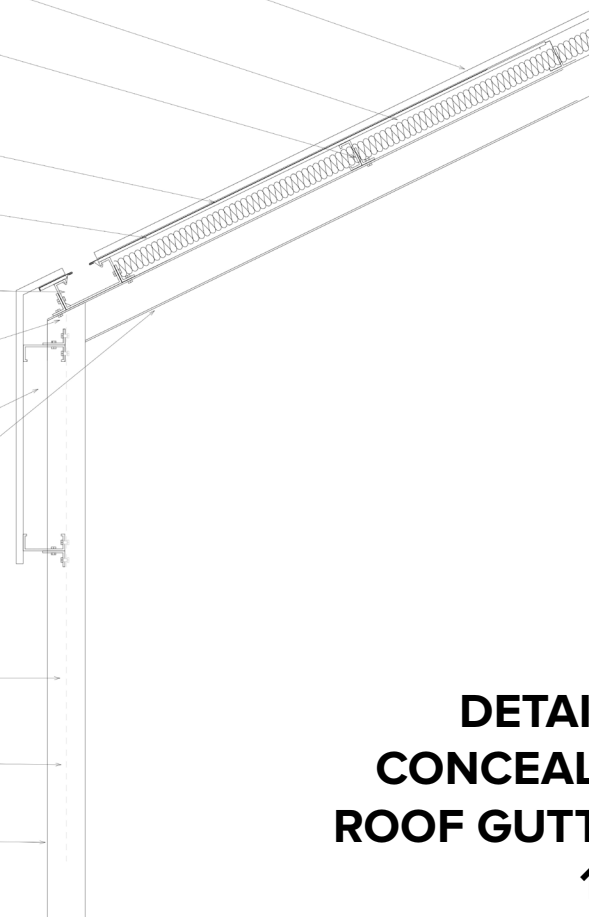
225 x 100 x 20 x 2mm galvanised steel lipped channel girt bolted to cleat with 4 x M10 bolts

203 x 133 x 25 hot rolled galvanised steel I-section to form roof substructure

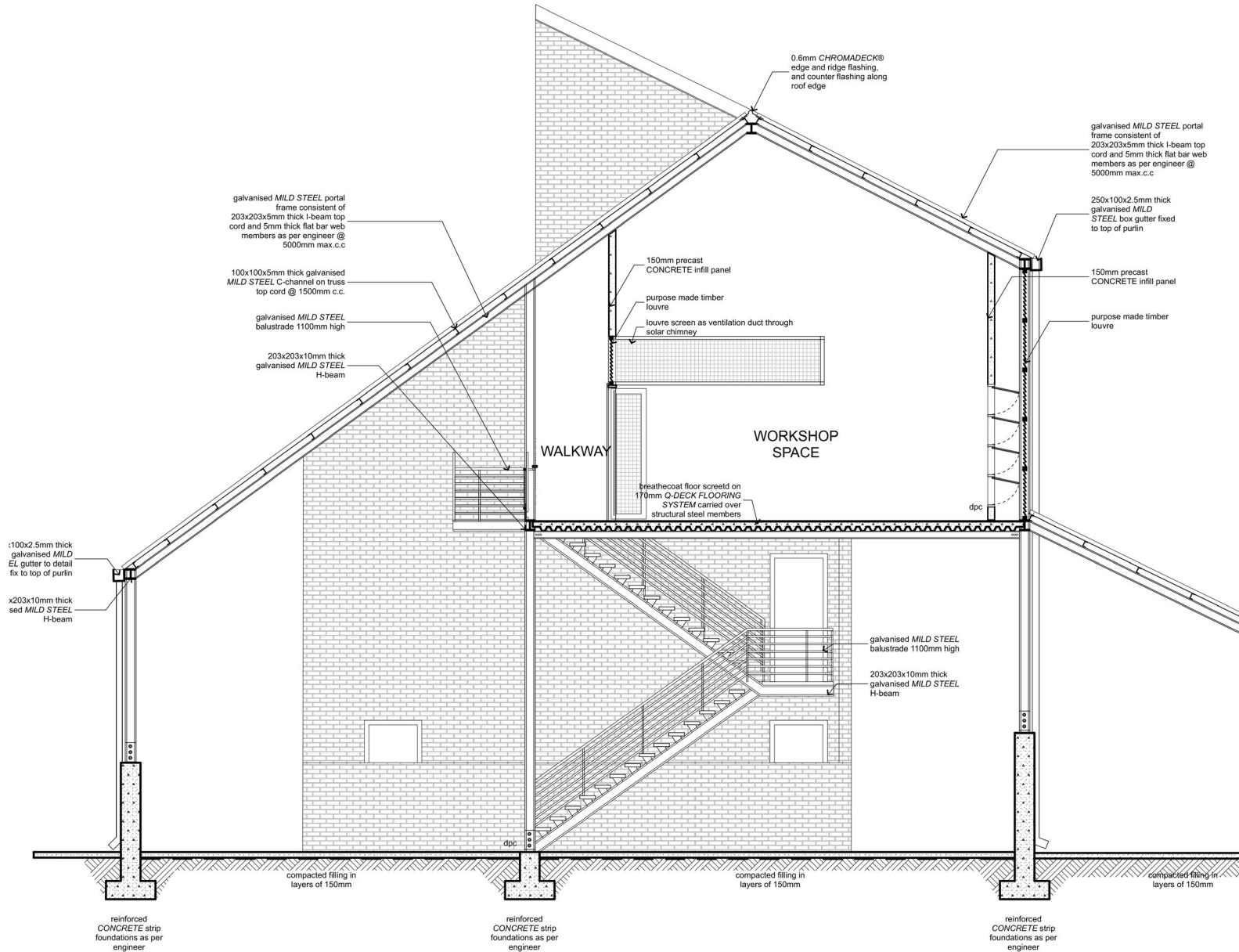
80mm o/ x 3mm mild steel rainwater downpipe

Mild steel bracket bolted to 5mm flat bar with M6 bolts

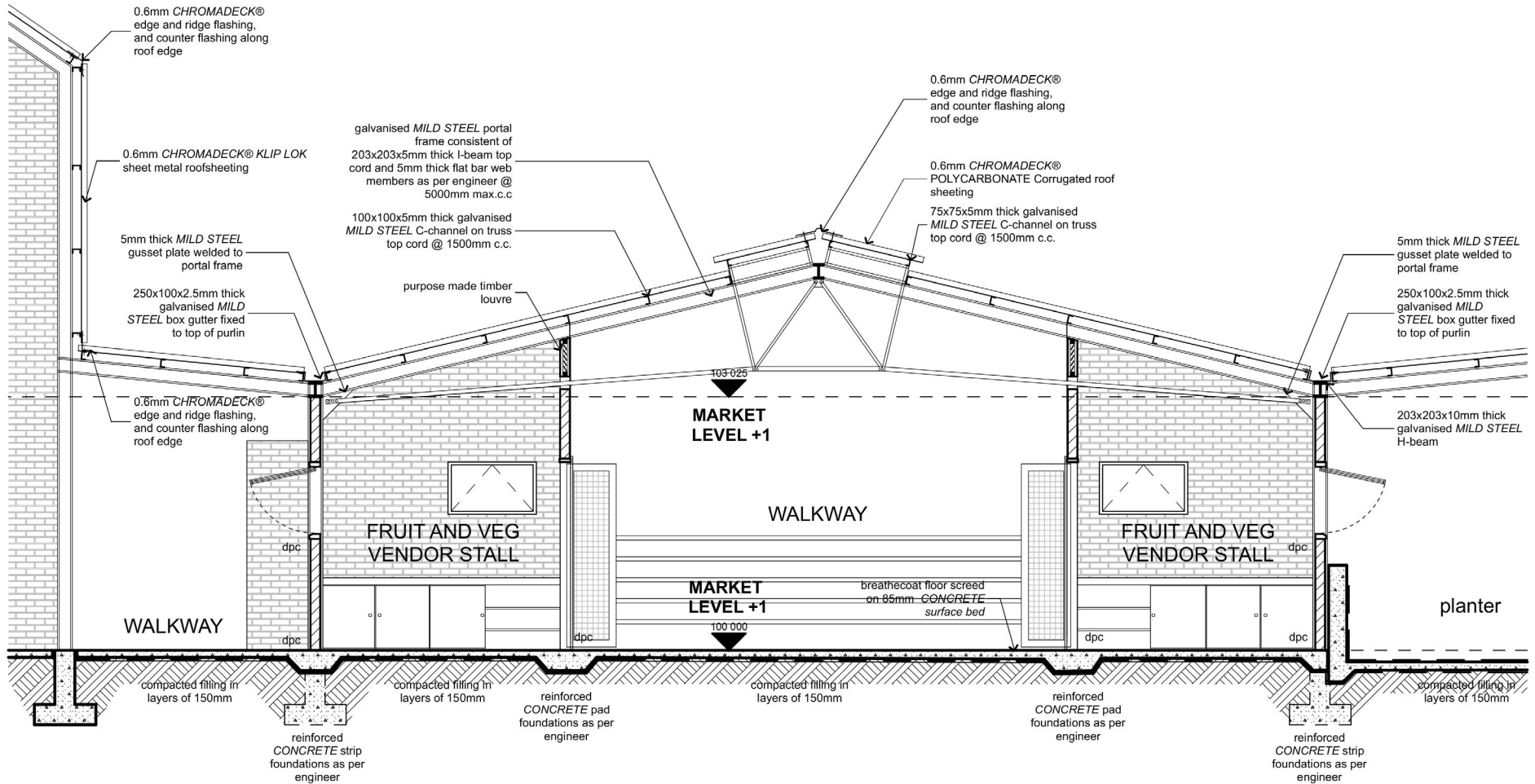
203 x 203 x 20? hot rolled galvanised steel H-profile column



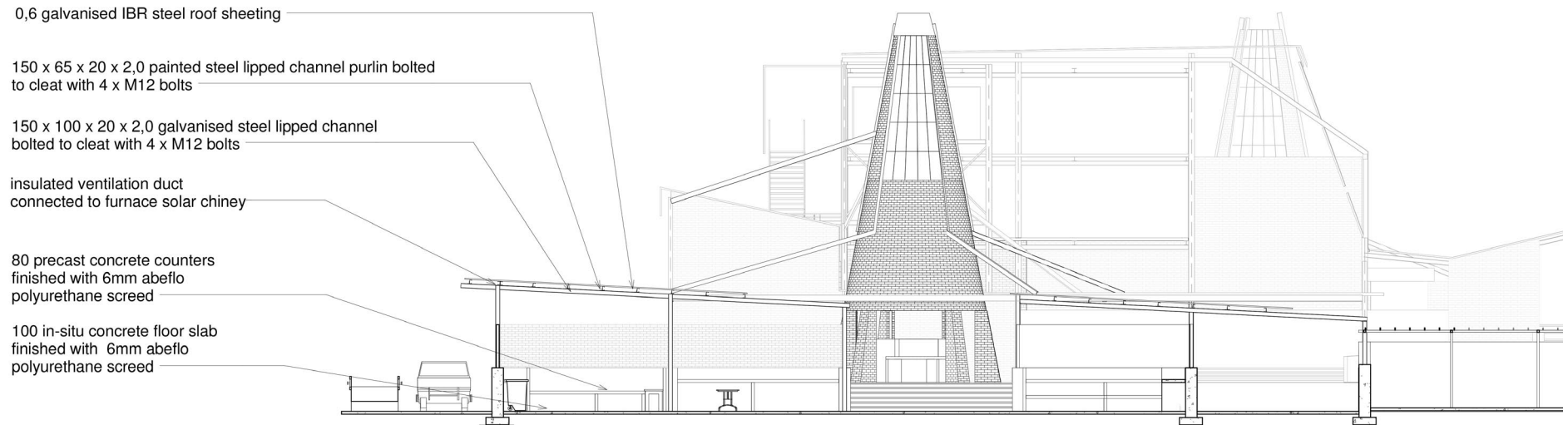
DETAIL B CONCEALED ROOF GUTTER 1:10



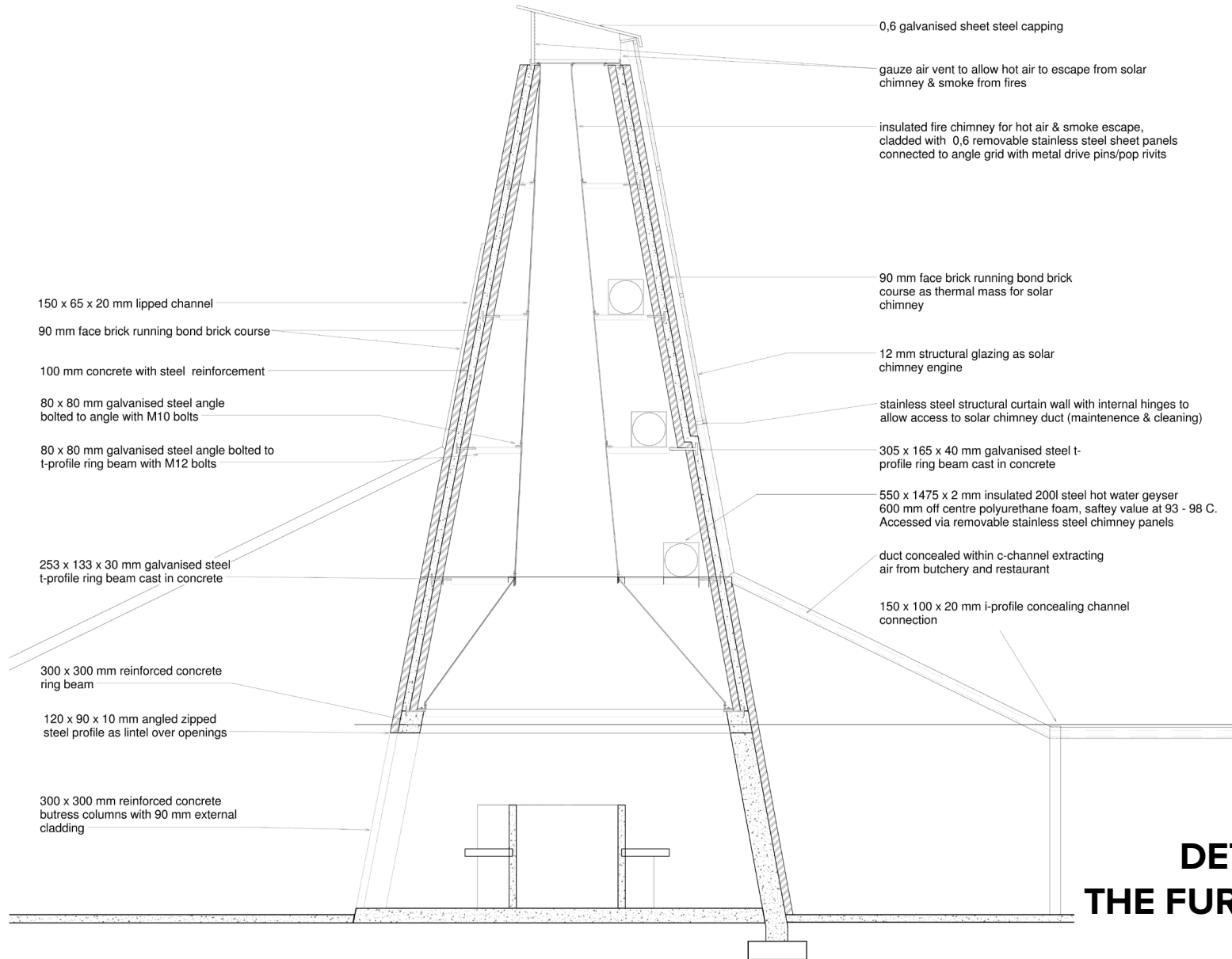
SECTION D-D
WORKSHOP
1:50



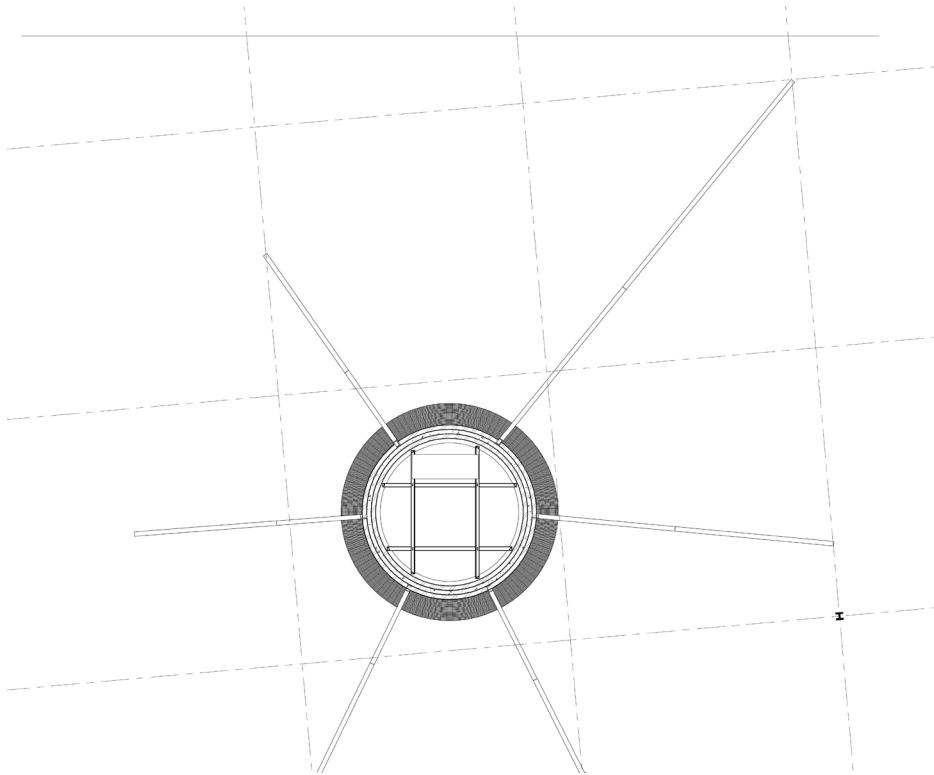
SECTION E-E FRUIT & VEG MARKET 1:50



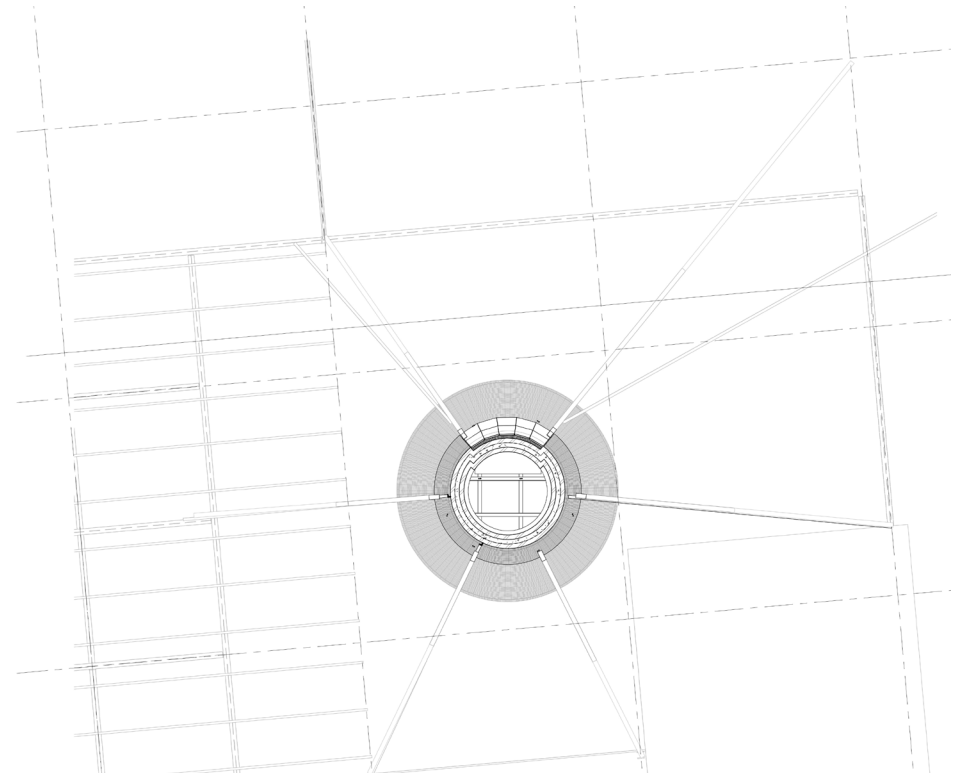
SECTION F-F
BOVINE BUTCHERIES
1:100



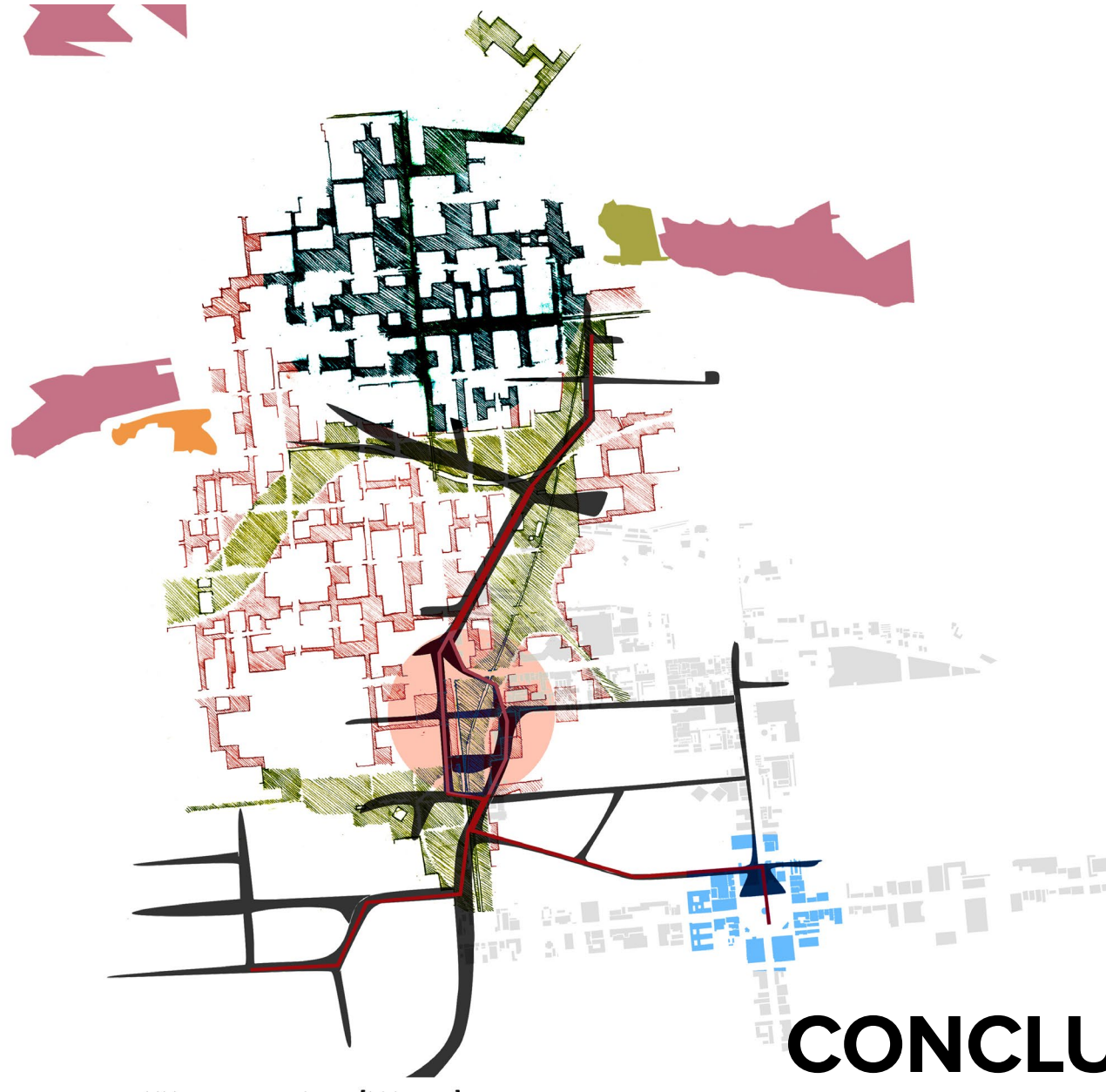
DETAIL C
THE FURNACE
1:20



DETAIL D
CHIMNEY:
LEVEL 17 600
1:20



DETAIL E
CHIMNEY:
LEVEL 20 800
1:20



CONCLUSION

PROJECT SUMMARY

Marabastad is dominated by formal and informal networks of trade and transport. Infrastructural support of existing informal activities and networks within Marabastad has, however, been largely neglected with its informality being too prolific to address. This has in turn hindered the economic and social establishment and growth of Marabastad.

Informality is so often seen to hinder the development of the formal, when in actual fact it has the potential to inform appropriate programme and architectural language.

The architectural design investigates the need for an opportunistic and responsive approach which adopts indigenous strategies while taking into account existing circumstances (Rustagi, 2014).

The intention of the dissertation is to explore resilience in architecture able to withstand change by critically observing the informal. There is value in the critical observation of informally developed systems as these remain adaptable and maintain a high degree of self-organisation.

Tension between formal and informal have developed where informal seeks to adapt while formal remains static. The informal should not be romanticised - it remains a necessity and not a choice, however, by discovering patterns in informal activities and understanding what works and why, successful formal space can be created through architectural intervention. Resolving urban issues of inaccessibility, poor infrastructure and urban decay within Marabastad and the city of Tshwane will aid in creating inclusive environments - preventing growing inequalities of access to economic and social opportunity.

In alignment with the urban vision, the dissertation identifies social and economic opportunity within the informality of Marabastad and explores how these can inform a programme that is catalytic within its environment - characterising Marabastad as an anchor point within the city opposed to a transitory place and therefore enabling its resilience.

The site is located along 11th Street, south of Belle Ombre Metro Station and East of the sub-station.

Lack of infrastructure on site for the informal bovine butchery and informal meat market resulted in unhygienic food preparation conditions. The programme rehouses and provides infrastructure for these existing economic activities while also incorporating a social platform through the design of the braai areas. The large scale of the braai chimneys become new landmarks within Marabastad, enabling a greater sense of legibility within the urban fabric.

The site becomes a point of convergence where the architecture responds to the large scale, stereotomic language of the Belle Ombre Metro Station, the large scale tectonic language of the sub-station as well as the small scale fine grain of Marabastad's heritage fabric.

PROJECT CONCLUSION

The design is an enquiry into how formal architectural intervention can assist in and promote the socio-economic development and growth of informal activity, opposed to hinder it.

The programme responds directly to the existing activities on site by providing

appropriate infrastructure that enables socio-economic establishment and growth of these activities, while also anticipating future infrastructural needs of the site. Pedestrian movement is an important design informant on site and the design intervention is located on site to accommodate faster pedestrian movement in the morning from North to South and slower pedestrian movement in the afternoon from South to North. Private programmes are placed on the East of the site further away from the public realm, while programmes which required public exposure and interaction are placed along public walkways and public spaces.

An important aspect of the design exploration is the provision of space which is able to constantly adapt to facilitate the needs of varying activities and site requirements. Providing infrastructure which allows for the adaptability and self organisation of the space enables the site's resilience. With this in mind the construction of the site happened in phases, along a scale of permanent to temporary and adaptable to programme specific:

1. The concrete urban defining

elements which deal with the 4m site slope define various levels on the site by providing designated public walkways and stairs and ramps to each level. Regardless of future activities on site, the site slope will have been dealt with.

2. The provision of services and landmarks. Extension of the existing ablutions on the South of the site as well as the introduction of a new ablution block on the North ensures sufficient ablutions to accommodate the high pedestrian traffic as well as the site activities. The provision of new urban landmarks through the construction of the 2 brick braais and chimneys enable greater legibility within Marabastad by defining designated public space.

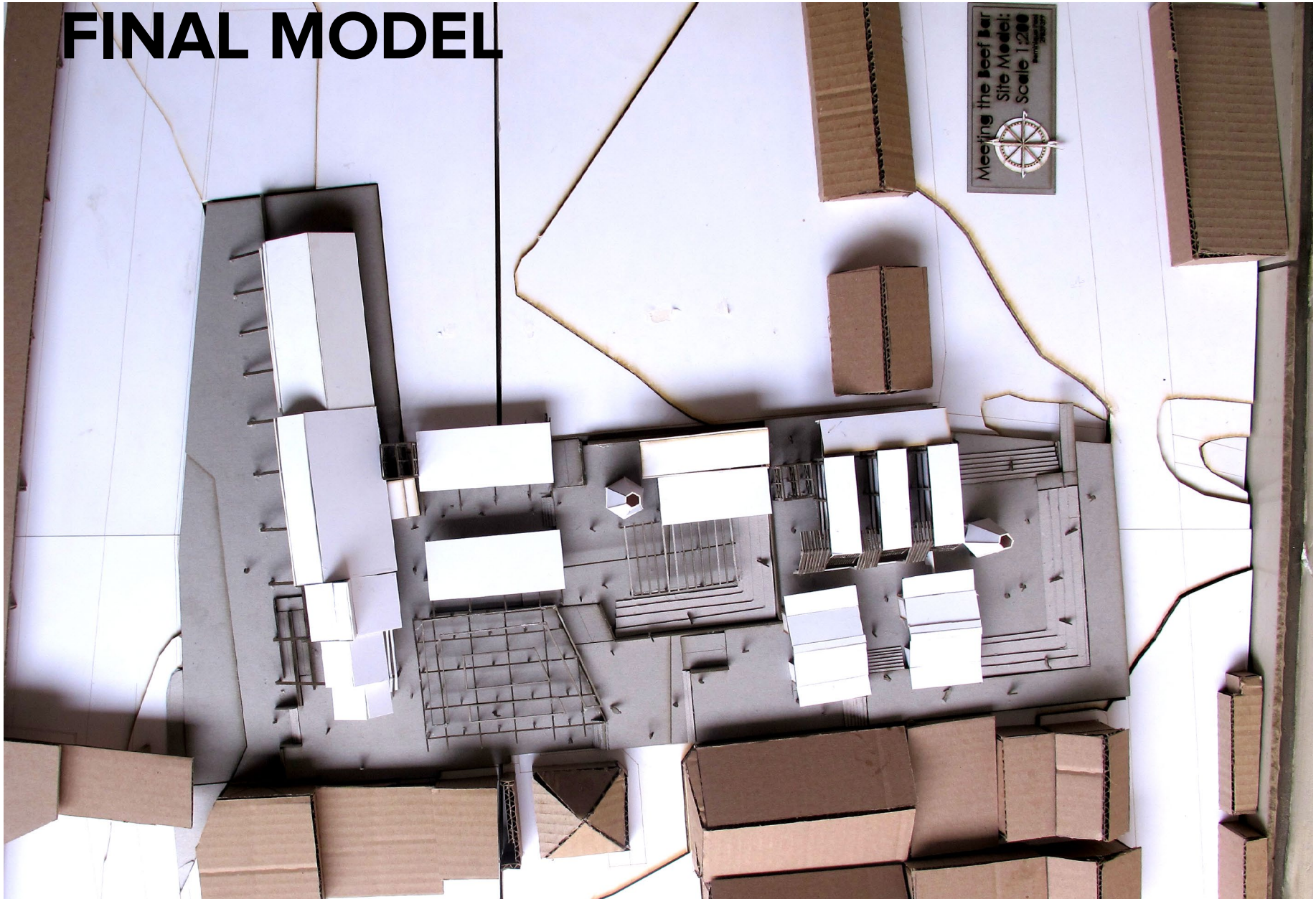
3. Construction of the steel structure and roof. The structural frame responds to the large grain of Belle Ombre, however, still allows for the fine grain condition by enabling self organisation and adaptability of informality.

4. The infill of the steel structure. This phase is most adaptable, with the design of the infill left flexible and changeable according to specific site and programmatic needs.

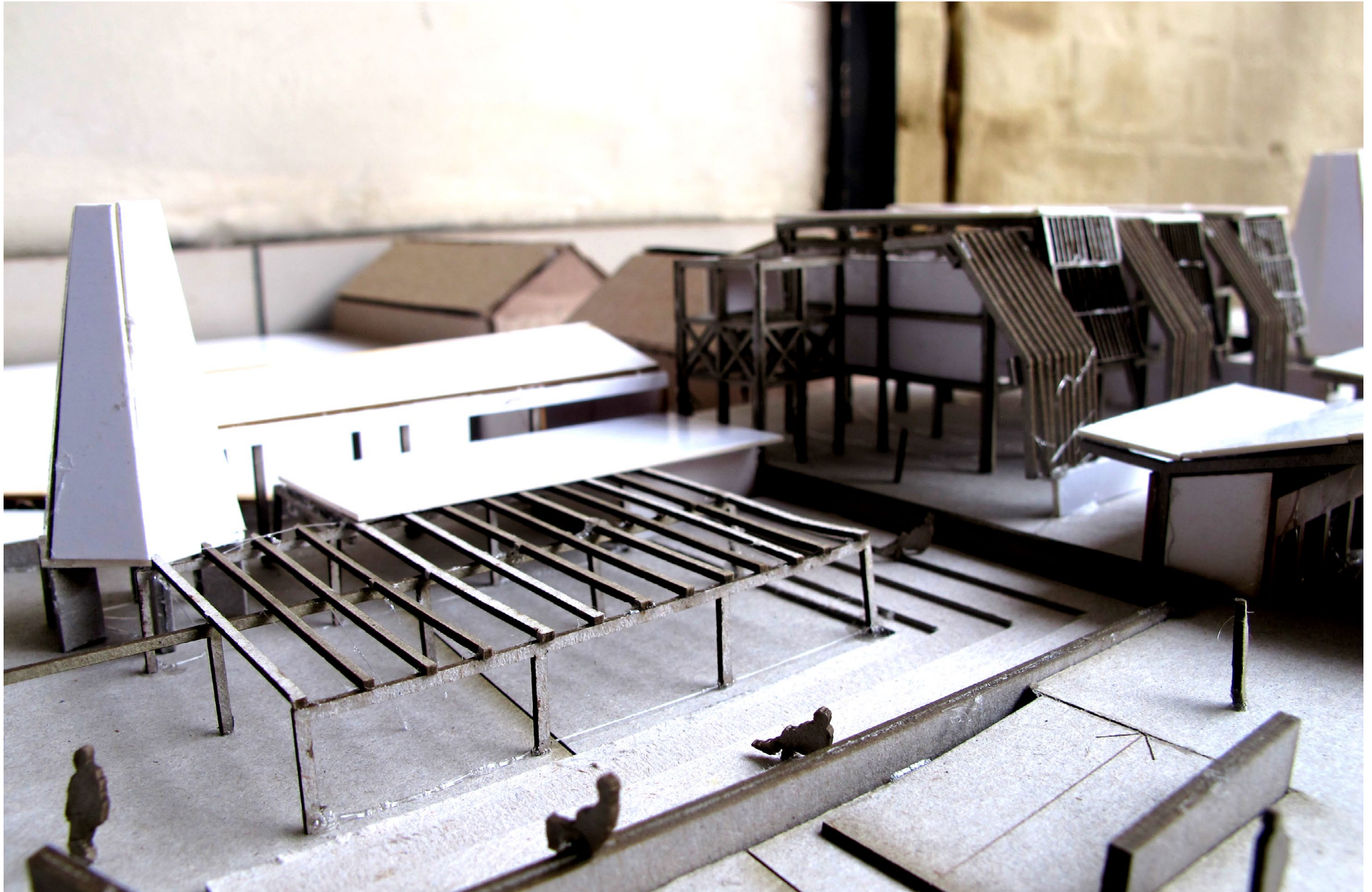
The design intervention responds to the varying scale of surrounding buildings and mediates the contrast between Belle Ombre Metro Station, the city and the small scale of Marabastad fine urban fabric. The design intervention also responds to the contrast in architectural language between the stereotomic Belle Ombre Metro Station and the tectonic sub-station. The architectural design intervention morphs from stereotomic to tectonic. The stereotomic response of the architectural intervention on the North of the site, conceals materiality and construction joinery while expresses a skeletal and tectonic language along the South-East of the site by exposing materials and construction methodology.

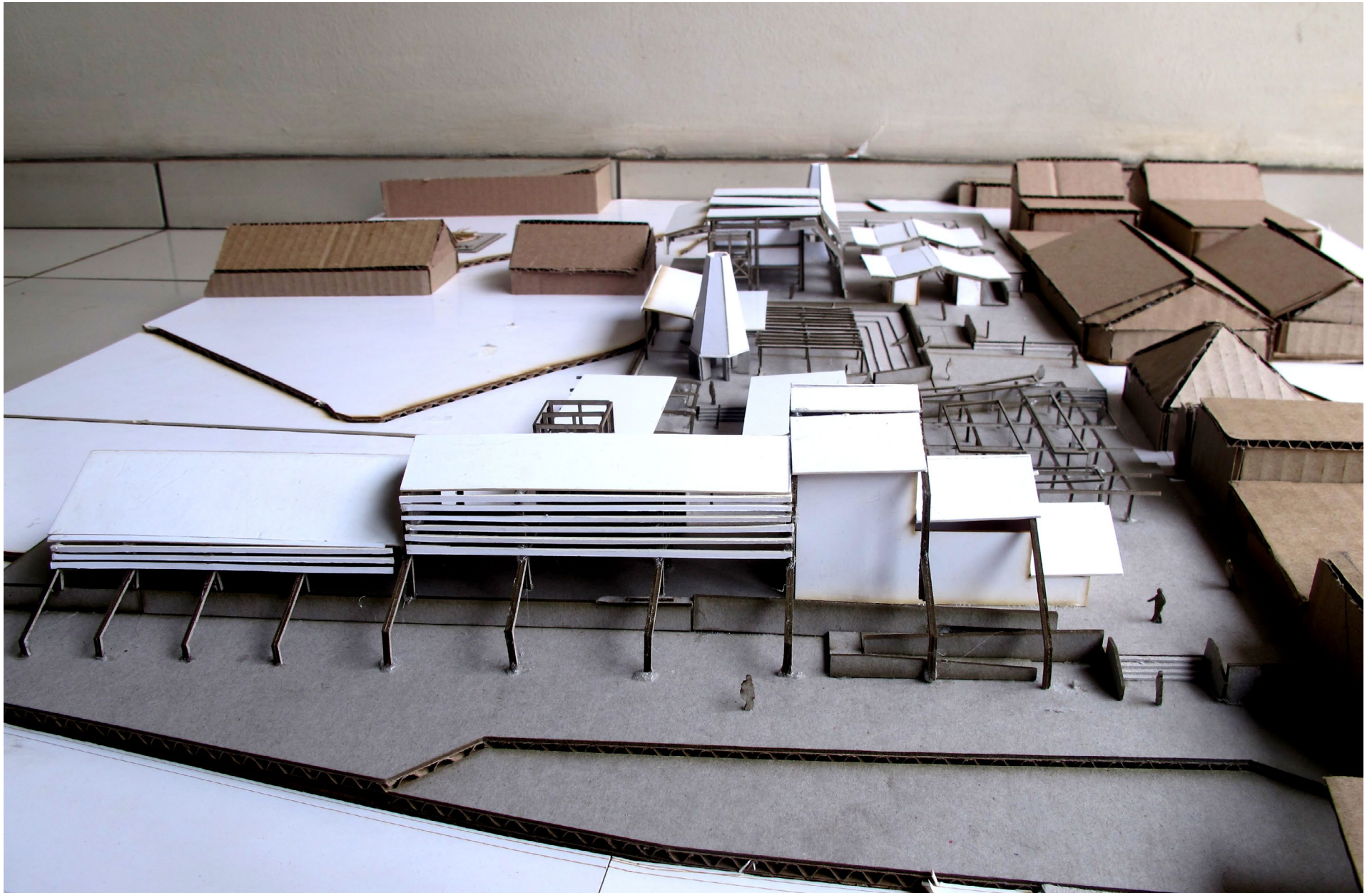
The awareness of allowing space and place to be resilient by enabling change and adaptability in the future, offers endless possibility of what architecture should and could be. The simple provision of urban defining elements and core infrastructural elements allow for endless architectural solutions and re-configurations of space in time as the key to understanding informality and facilitating and providing for it.

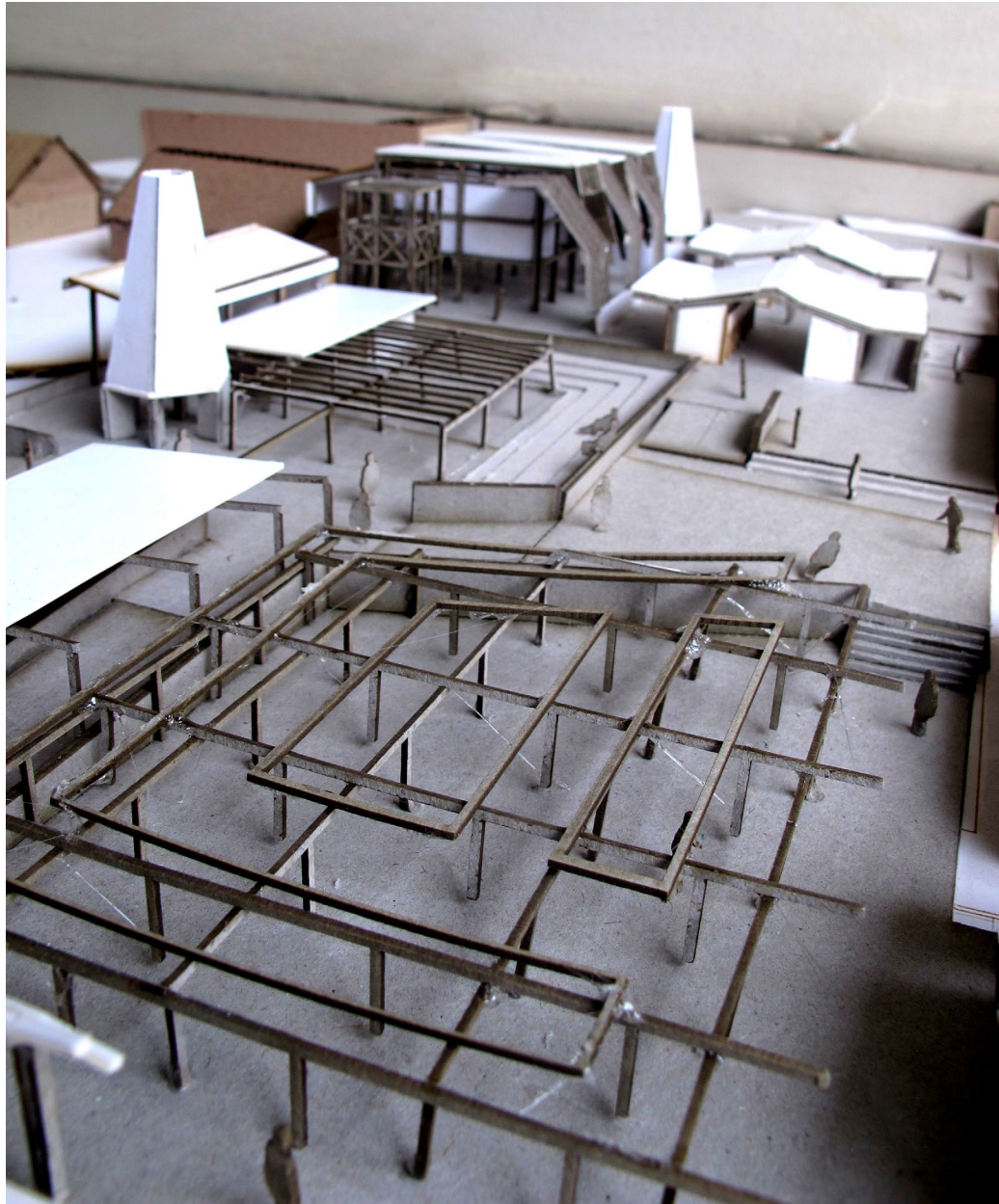
FINAL MODEL

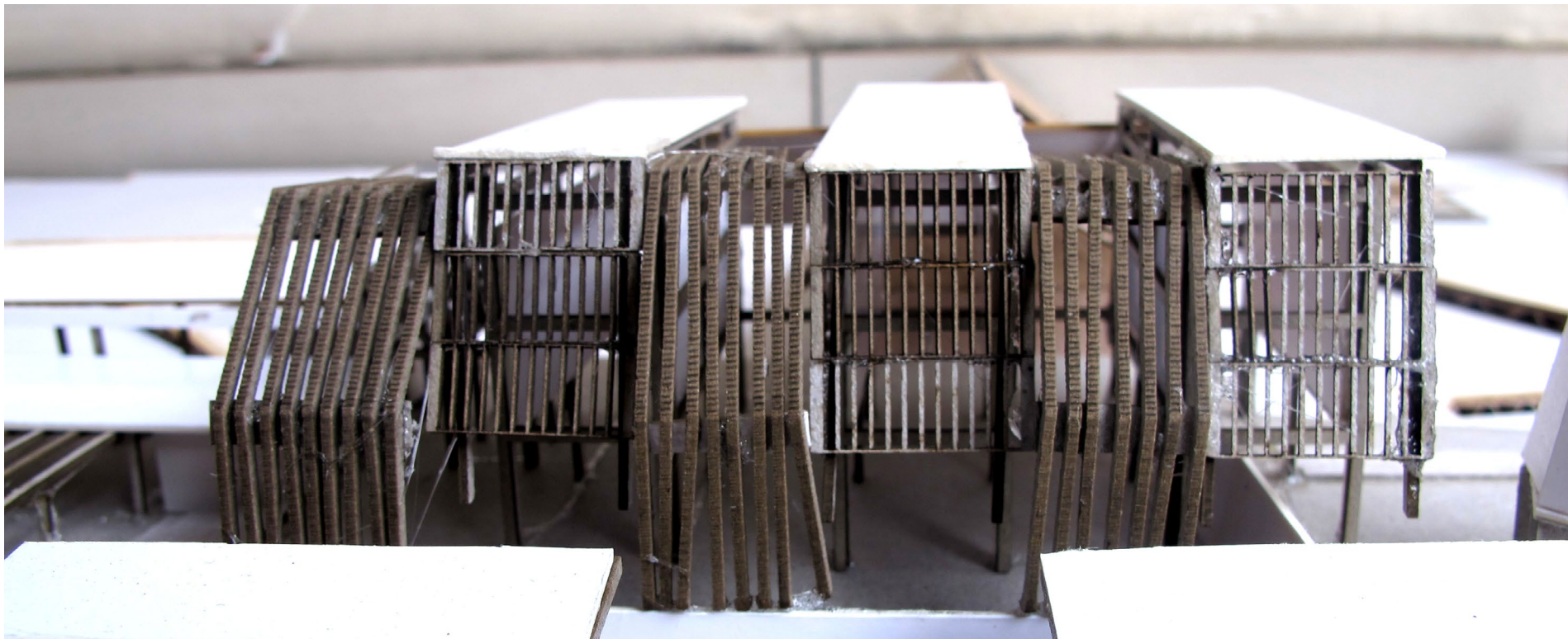












LA FIN!

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