

**U R B A N**

D E S I G N

**L A B O R**

**A T O R Y**

I N N E R - C I T Y

**B L O E M F O N T E I N,**

F R E E S T A T E



# DECLARATION

This dissertation is submitted in partial fulfilment of the requirements for the degree M. Arch. (Prof.) at the University of the Free State. All the work contained in this document is my own, unless otherwise acknowledged.

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The work contained in this dissertation has been submitted for proof-reading and/or editing by Linda Sparks.

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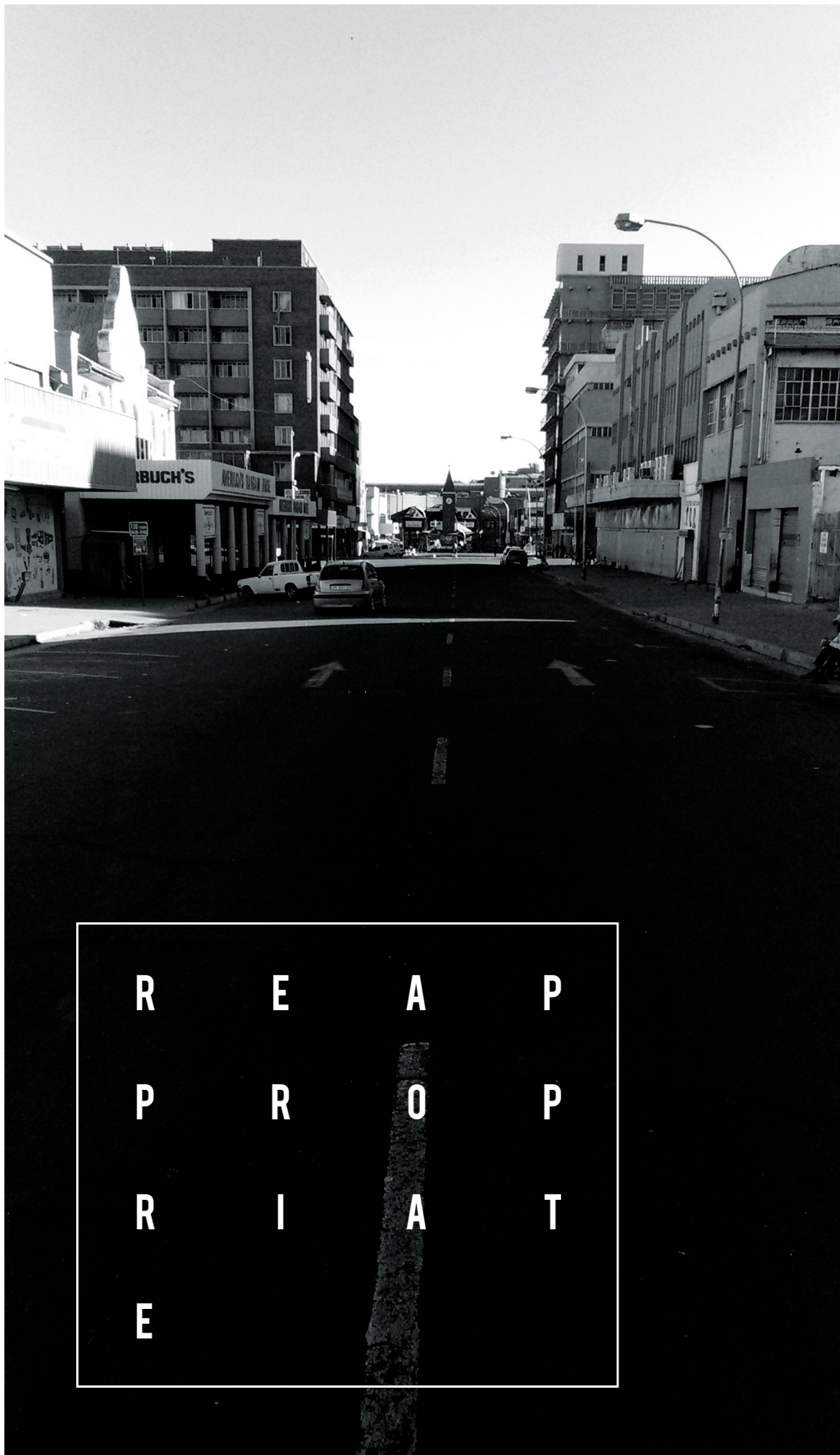


FIGURE **01**

A street perspective of Fichard Street, looking south towards Central Park at the convergence point of the image. The chosen site sits just off the frame to the right.

<b>P</b>	<b>R</b>	<b>E</b>
<b>A</b>	<b>M</b>	<b>B</b>
<b>L</b>	<b>E</b>	<b>_</b>

The proposed project takes the form of an inner city Design Laboratory situated between Fichardt and Oos Burger Street in the CBD of Bloemfontein. The aim of this project is to establish a centralised workshop in the inner city, where design, art and architecture students from Motheo FET College, the Central University of Technology (CUT) and the University of the Free State (UFS) can work towards the physical refurbishment (on micro level) of dead public spaces within the city.

Interest in this typology arose from observing the fragmented urban framework of the Bloemfontein inner city, and speculating towards the reason for this fragmentation. Public space is perceived as the proverbial 'link in the chain', and if not the origin, then a key starting point to addressing inner city framework issues. Consequently, the research within this document focuses primarily on public space theories and how the addressing of public space can contribute to better urban place making.

In the process of investigating public space and urban frameworks within the Bloemfontein inner city, this dissertation firstly identifies challenges and corresponding aims with which to drive the possible resolution of the identified problems, as a baseline for further investigation. Following this, research is conducted into published literature on the topic, including precedent and case studies on typologically similar projects. The research is then applied to a practical design, with construction and technical considerations. Lastly, the project is reflected upon, in an attempt to evaluate successes and failures in the addressing of the problem.

<b>T</b>	<b>A</b>	<b>B</b>
<b>L</b>	<b>E</b>	<b>O</b>
F	C	O
N	T	E
N	T	S

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I N T R  
O D U C  
T I O N



FIGURE 02

Street perspective of Oos Burger Street, looking south.

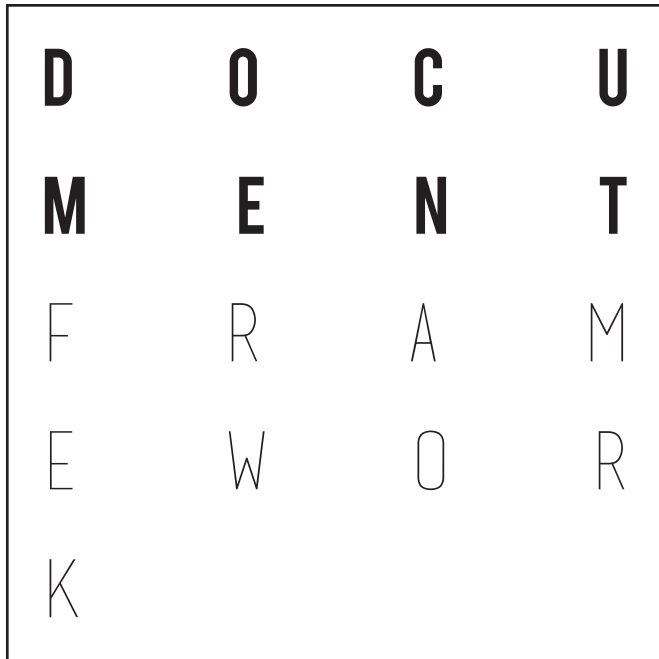
Exposed to Bloemfontein's inner city dilemmas during prior studies, I became interested in its underlying systems and how people use the spaces available to them, despite the apparent chaos perceived by outsiders. Like so many other urbanities in our country, there are parts of the CBD that are more dilapidated than others, and strangely enough, in these parts we often see the most activity, albeit non-formalised activity. I chose to investigate this underlying phenomenon of inner city life (as well as other related phenomena) to try and unearth the challenges designers must face on the road to inner city revitalisation.

Bloemfontein suffered the migration of its predominant [European] business sectors to peripheral zones in the wake of Apartheid, constituting the struggling of its smaller enterprises to stay adrift. As Europeans no longer had sole claim over inner cities, they underwent changing ownership dynamics. This brought about different user patterns, which the historically colonial framework struggled to accommodate. The mobile European minority established new economic centres in fringe locations, which pulled considerable business activity out of the CBD (Jaca, 2003: 75). Consequently, given economic shortcomings and insufficient resources to completely rebuild the inner city framework to the requirements of the new user profile, it suffered neglect.

As a result of this neglect, and the fact that it first seeped into public space, some buildings have shut out external activities and become internalised, leading to dead street zones. This could be the origin of Bloemfontein's inner city struggles, and subsequently constitutes the main field of my investigation.

If inner city neglect was to blame, the framework might require a new **perspective** for future development.

**The two issues the project aims to address:** Firstly, public space is the glue that holds city frameworks together, and yet Bloemfontein's inner city has little in the way of properly planned public space. Secondly, government and university institutions hide behind walls of exclusivity and power, rarely influencing the rest of society, despite their moral obligation and capacity to exact change in the public realm. In an attempt to solve this, the proposed facility aims to address public space by using government and student bodies to engage with society on craft projects. This should effectively bring social and economic classes together on a universal platform/field. The facility is situated in the CBD, close to the areas which need the most intervention. In this way, an attempt is made to force exclusive bodies to interact with the city.



The dissertation seeks to investigate the phenomena of public space, especially in the context of post-Apartheid South Africa, where infrastructure maintenance is greatly neglected in the face of lingering (and often more important) civil and political issues. The investigation delves into the phenomena of public space in general. Thereafter it attempts to theorise South African perspectives on public space given the backdrop of segregation planning and the modern architectural struggle to rectify it. The study attempts to chronicle public space decline in South Africa and the role the abolishment of segregation planning had on this decline after 1994. It further investigates how public space deteriorated in the social, economic and racial chaos that followed the country's attempts to integrate inner city demographics after the abolishment of Apartheid. The study aims to reiterate the importance of public space and its potential to aid the mitigation of inhumane city frameworks.

As a means of organising the research into a logical, coherent whole, the document is structured around four main terms which are intrinsic to any architectural intervention: typology, topology, morphology and tectonics. Typology refers to the study of associated building types where similar space and user requirements are shared, to better understand these requirements and how they might apply to the dissertation proposal. Topology refers to the understanding of the site and any geographic implications the site might have for the project, with regard to physical parameters as well as phenomenological implications, with the intent being to better contribute to the making/altering of place. Morphology refers to the form, or rather the gestalt, of the project; how the building will look and feel and fit in with its surroundings. Morphology is the creative response to typological and topological parameters. Tectonics refers to a more concrete understanding of actual construction and structural considerations, which relate to form and connection on a more detailed level than morphology. These four terms will be continuously discussed and analysed within four main parts (chapters).

## PART 1

focuses on the predominant design challenges which the project aims to address, and possible departure points towards addressing them. The chapter is subdivided into typology, topology, morphology and tectonics. Firstly, the challenges of each are discussed. Thereafter, a comprehensive research question is formulated, leading to the creation of summative project aims.

## PART 2

focuses on in-depth research into identified challenges, whilst analysing precedents and published literature for plausible solutions. This research clarifies the essence of the main architectural problem, and inadvertently influences design and form choices.

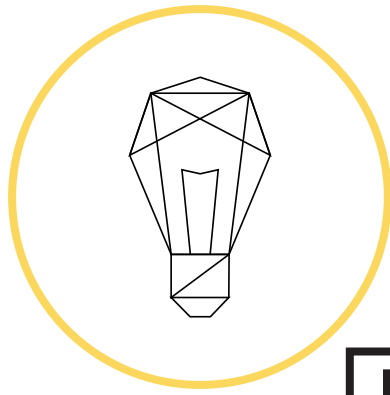
## PART 3

discusses the application of the research towards a tangible architectural solution for the main urban problem. The chapter showcases the form-giving choices that arose from the researched literature and discusses the reasons and methods behind application.

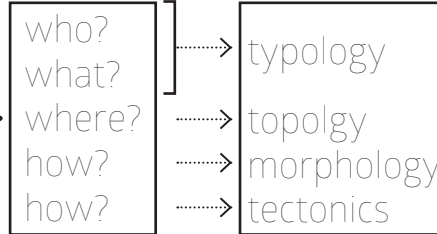
## PART 4

is the reflective chapter. The end product is analysed in terms of its theoretical efficiency and ability to solve the problem for which it was designed. Mistakes are pondered and possible solutions investigated.





# RESEARCH DESIGN



# EXPLORATORY RESEARCH

## PART 01

challenges, research question and aims

- TYPOLGY → clients + users challenges
- TOPOLOGY → challenges
- MORPHOLOGY → challenges
- TECTONICS → challenges
- RESEARCH QUESTION
- PROJECT AIMS → typology, topology, morphology, tectonics

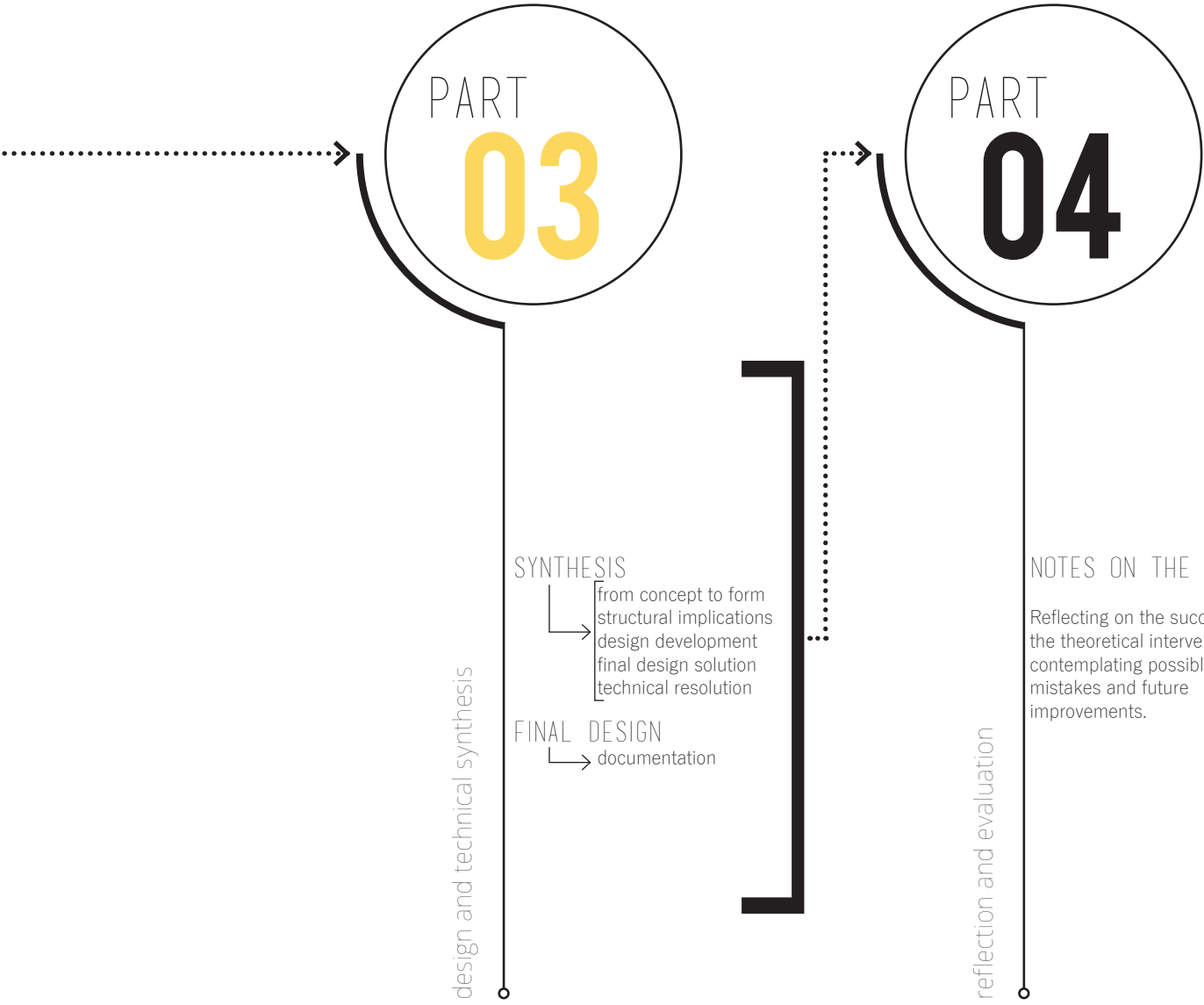
## PART 02

grounding and exploration

- CONCEPTUAL DEVELOPMENT → touchstone, the concepts, conceptual framework
- TYPOLGY → investigation of client and user accommodation list
- TOPOLOGY → macro site analysis, meso site analysis, micro analysis, contextual public space investigation
- MORPHOLOGY → DISCOURSE: enclosure versus connection, guidance of behaviour: movement through the system, public space as hybrid: transitional destination, public space as a platform for addressing civil issues, giving free expression its foothold, minimal intervention for a flourishing concept, conclusion
- TECTONICS → technical investigation, structural touchstone, structural philosophy

TOWARDS A DESIGN METHODOLOGY

**D O C U  
M E N T  
S T R U  
C T U R  
E**



<b>R</b>	<b>E</b>	<b>S</b>	<b>E</b>	<b>A</b>
<b>R</b>	<b>C</b>	<b>H</b>	D	E
S	I	G	N	—

The dissertation follows a method of explorative research, based on the challenges posed by a few fundamental problems intrinsic to the design and construction of any architectural project. The research seeks to unearth the following: what to design (typology), for whom to design it (typology: the clients and users), where to design it (topology), and how to respond to the site and user requirements through architectural considerations (morphology and tectonics).

The research originated from an interest in South African public space dilemmas (in this case, Bloemfontein specifically); more precisely, the dilapidation and neglect of the inner city and the origin and possible solution towards this neglect. It is speculated that the utilisation of arts and crafts within public space refurbishment is the most appropriate approach to consider, given that art and creativity is a multi-communicative platform for cross-demographic communication, and that it is the medium through which free expression is most successfully conveyed. Furthermore, contemporary art and design has proven a successful method with which to process civil issues and opinions over political unrest in contemporary South Africa (Jantjies, 2011: vi).

To substantiate these ideas and speculations, the necessary explorative research is conducted in logical steps, from first conceptual considerations to a developed design:

# PART 01

01

## INITIAL EXPLORATORY RESEARCH

Identify a perceived problem in the inner city of Bloemfontein (the fact that segments of the city are dilapidated and neglected, and have little in the way of public space; and that this could be the reason for inner city fragmentation).

Dissect the problem into smaller, more easily identifiable challenges that need further research. Try to ascertain what possible intervention is needed in the area.

Identify an appropriate type and client profile and formulate a speculative building programme accordingly.

Conduct brief precedent studies, identifying buildings that have dealt with similar issues. Investigate how these issues were approached, and how the respective user profiles were managed.

02

### **TOUCHSTONE**

Sculpt a touchstone, to try and encapsulate an appropriate conceptual standpoint, which will inform future concepts and influence form choices. This will be the core essence of the project. The touchstone is completed before all qualitative and quantitative data have been collected, so as to inform the design from a pure, initial understanding of the problem.

03

### **CONCEPTUAL FRAMEWORK**

Formulate a conceptual framework stemming from the touchstone, which will guide the rest of the project. This will take the form of a conceptual glossary with key concepts and ideas which inform the rest of the design process and research direction.

04

### **SITE INVESTIGATION**

A comprehensive site analysis is performed so as to understand the true essence of the site and the surrounding urban field. This is because the environment has key influences on the design. The analysis will take the form of macro, meso and micro site analyses.

05

### **LITERATURE REVIEW, PRECEDENT AND CASE STUDIES**

Research on the chosen topic will be undertaken. This entails a literature review of theoretical material, as well as thorough precedent and case studies. The research will be subdivided into critical, cognitive and interpretive analyses.

# PART 02

# PART 03

06

## RESEARCH APPLICATION

Apply the research to a design response on the chosen site.

# PART 04

07

## CRITICAL REFLECTION

The end product is reflected upon, meriting successes, and pondering mistakes. This results in the formulation of possible design rectifications and overall improvements.

P R O J  
E C T R  
A T I O  
N A L E

**C O N T E X T D I S C U S S I O N**

The city of Bloemfontein had its origin on a farm with the same name. The natural fountain that surfaced on the land allowed for life in an otherwise barren South African landscape, and the spot soon became a stop-over destination for hunters and soldiers. Upon occupation of the area by the British government in 1846, English troops set up forts on the naturally occurring hills surrounding the fountain. Bloemfontein was chosen for this as a result of its centrality, communication advantage and natural water supply (Jaca, 2003: 62).

After the establishment of the forts and factors that facilitated permanent settlement, a town eventually developed. Historically, gridiron planning was popular in colonial towns because of the speed at which these towns could be planned and developed. This was especially the case when flatter areas allowed for simplified street layouts, as it was for Bloemfontein. Another significant factor was the 'Spruit', and its water course running from west to east. As a result, Bloemfontein developed as a military

grid (Jaca, 2003: 63). The north-south running railway line and train station was established to the east of the current inner city, separating the European city to the west and north (Jaca, 2003: 63) from the African neighbourhoods to the east. Developments to the south were restricted by the power station, tertiary schools and industries (Jaca, 2003: 64).

Skip forward many years and we find ourselves in the time following the abolishment of Apartheid. With the complete removal of economic, social and racial boundaries, most South African cities saw an influx of a previously 'undesirable' ethnic group into historically European CBDs. Given predominantly European ownership of city infrastructure during this time, many white building owners and the banks that funded them feared investment decline and effectively 'fled' inner cities (Reid, 2005: 156). This led to the rise of 'edge cities', with the establishment of peripheral economic sectors.

To compound the problem, the abolishment of regulatory bylaws, chief among which the regulations around

public transport and public street trading, led to the biggest contributors to inner city abandonment. Following the influx of so many poor and disadvantaged individuals into previously European CBDs, the taxi industry boomed uncontrollably, with no infrastructure to accommodate the sudden increase in mini-bus taxis. Similarly, informal street trading flocked to unregulated pavements and further congested inner city space. These two, above most factors, led to business relocation to peripheral zones. These increasingly unregulated behaviours also led to increased crime rates, which served as further motivation for CBD abandonment (Reid, 2005: 156). Bloemfontein was no exception.

Today, the problem persists, with neglect especially visible in the eastern sectors of the Bloemfontein CBD. Following the initial migration of large businesses and retailers to the north and west, inner city buildings were taken over by small traders (Jaca, 2003: 64). The migration is most prominently seen in the rising commercial character of Westdene (Mouton & Schoeman, 1992: 65) which stands in contrast to its residential origin. Vendors that cannot afford formal space, flock to the pavements. Inner city values fall and investors do not perform upgrades because their investments do not produce sufficient turnovers (Jaca, 2003: 64). Upper floors are not efficiently used, leading to an underutilised, drifting inner city.

Luckily for Bloemfontein, the inner city still functions to some degree as an urban knot connecting various peripheral sectors. No circumventing highways have yet rendered the inner city completely null and void. This could be why, despite having only a handful of formalised communal spaces, the CBD is still a nexus of diverse activity. The

thriving transport system is the most visible representation of this activity. In Johannesburg, for example, inner city abandonment coupled with the adoption of the car-centred highway systems of corporate America, rendered the CBD almost useless preceding Post-Apartheid decentralisation (Reid, 2005: 155). Similar to Bloemfontein, business sectors fled to peripheral zones and began competing with the CBDs, leading to its steady decline.

One irrevocable truth persists: despite entering a democracy more than two decades ago, the South African urban landscape is still struggling to rectify Apartheid segregation planning and bring about a more cohesively built framework. Public space fell out of priority first, and is only now becoming a point of concern once more.

It would perhaps be prudent to mention at this point, that the backdrop of segregation planning is investigated to get some idea of how the current Bloemfontein urban fabric came to be. It is not insinuated that segregation planning is solely responsible for inner city fragmentation. There are a plethora of factors to consider, our weak economy notwithstanding. But to deny its influence in any way or form seems even less accurate. Apartheid played a tremendous role in urban development prior to the abolishment of the regime and must therefore be considered when current urban issues are contemplated. One thing rings true. The abolishment of segregation led to the fleeing of the wealthy minority from inner cities, leaving them barren and underutilised. This neglect spread, giving rise to an infrastructural setback when inner cities became re-appropriated in more recent years.

**P A R**

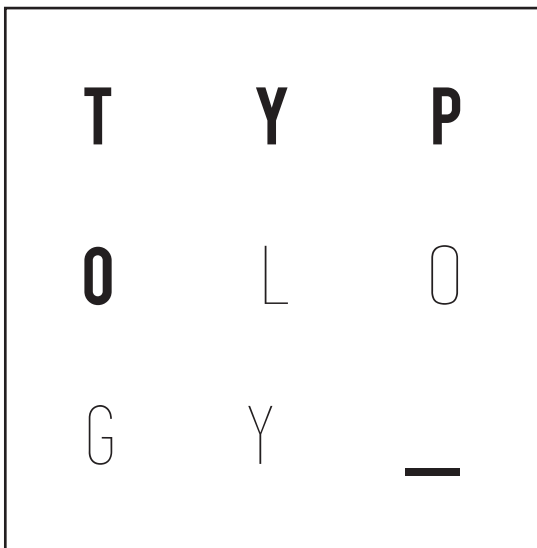
**T O 1**

This part focuses on the predominant challenges constituting the main architectural problem, dissecting each to uncover the most basic hurdles and to formalise action plans for addressing each individually. Inner city problems are not simplistic, and usually comprise sets of smaller problems, like bricks in a wall. The part aims to unearth these 'bricks', grouped under typology, topology, morphology and tectonics respectively, as a means of informing further investigation into the topic.

## CHALLENGES, RESEARCH QUESTION AND AIMS

- 1.1 TYPOLOGY
  - clients + users
  - challenges
- 1.2 TOPOLOGY
  - challenges
- 1.3 MORPHOLOGY
  - challenges
- 1.4 TECTONICS
  - challenges
- 1.5 RESEARCH QUESTION
- 1.6 PROJECT AIMS
  - typology
  - topology
  - morphology
  - tectonics

## 1.1



Typology refers to the type of building and the predominant type of user group by whom the building will be used. In terms of the Urban Design Laboratory, the type is mostly that of workshop and studio space, similar to a school of architecture. In this instance, the inclination is simply more practical than theoretical. Projects are actually built, rather than merely designed.

In order to fully understand this typology, research is conducted into existing gallery and design-orientated buildings (such as galleries, artist studios and industrial workshops), with similar facility requirements, as a means of understanding appropriate area layouts and sizes.

### 1.1.1

## C L I E N T S + U S E R S

The building's client entity consists of a joint venture between four bodies: the three main tertiary institutions in the city of Bloemfontein (CUT, UFS and Motheo FET College) in collaboration with the National Department of Public Works. The Urban Design Laboratory serves as an inner city depot in which the three educative institutions' students collaborate on urban craft projects. In addition to using it, the universities' student bodies also contribute to the running of the building, working alongside permanent staff. Students become mentors, transferring knowledge of materials and structural composition to local labourers, thereby involving the community in craft projects.

The collaboration comprises all four entities so as to ensure proper cooperation between these institutions, and to utilise their powerful resources towards urban place making. The objective is to break down boundaries of superiority, shattering the exclusivity of higher education and government. This allows their resources to flow into the urban fabric and contribute in a tangible way. Here 'resources' does not strictly refer to money, but to knowledge, expertise, authority and powers of decision making.





REMOVED GROUPS IN THE  
FORM OF INSTITUTIONS



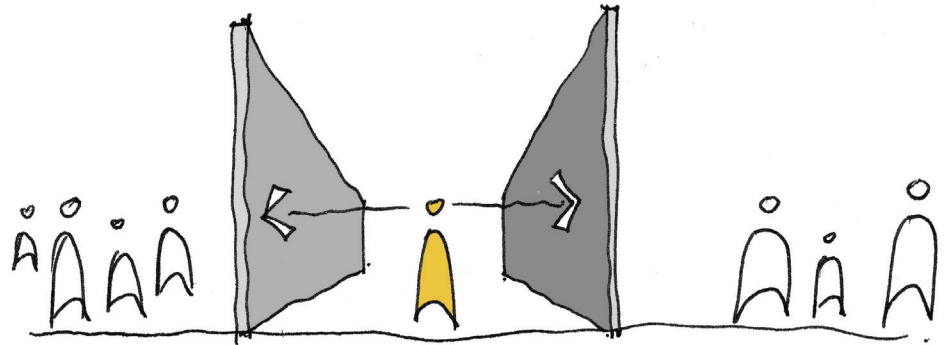
SEPARATION BETWEEN  
THE SOCIAL ELITE AND  
THE EVERYMAN



The privatisation of the user profile is similarly expressed in the private nature of the chosen building typology

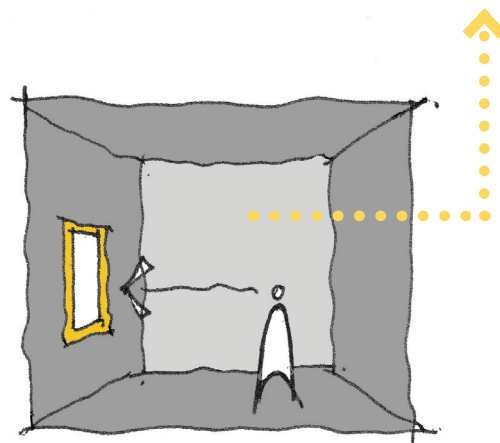
**FIGURE 04**

The subdivision of human groups into societal factions within modern cities. The class system is still a lingering issue.



**FIGURE 05**

The typical gallery model does not allow communal public intervention. The approach is one-sided and static.



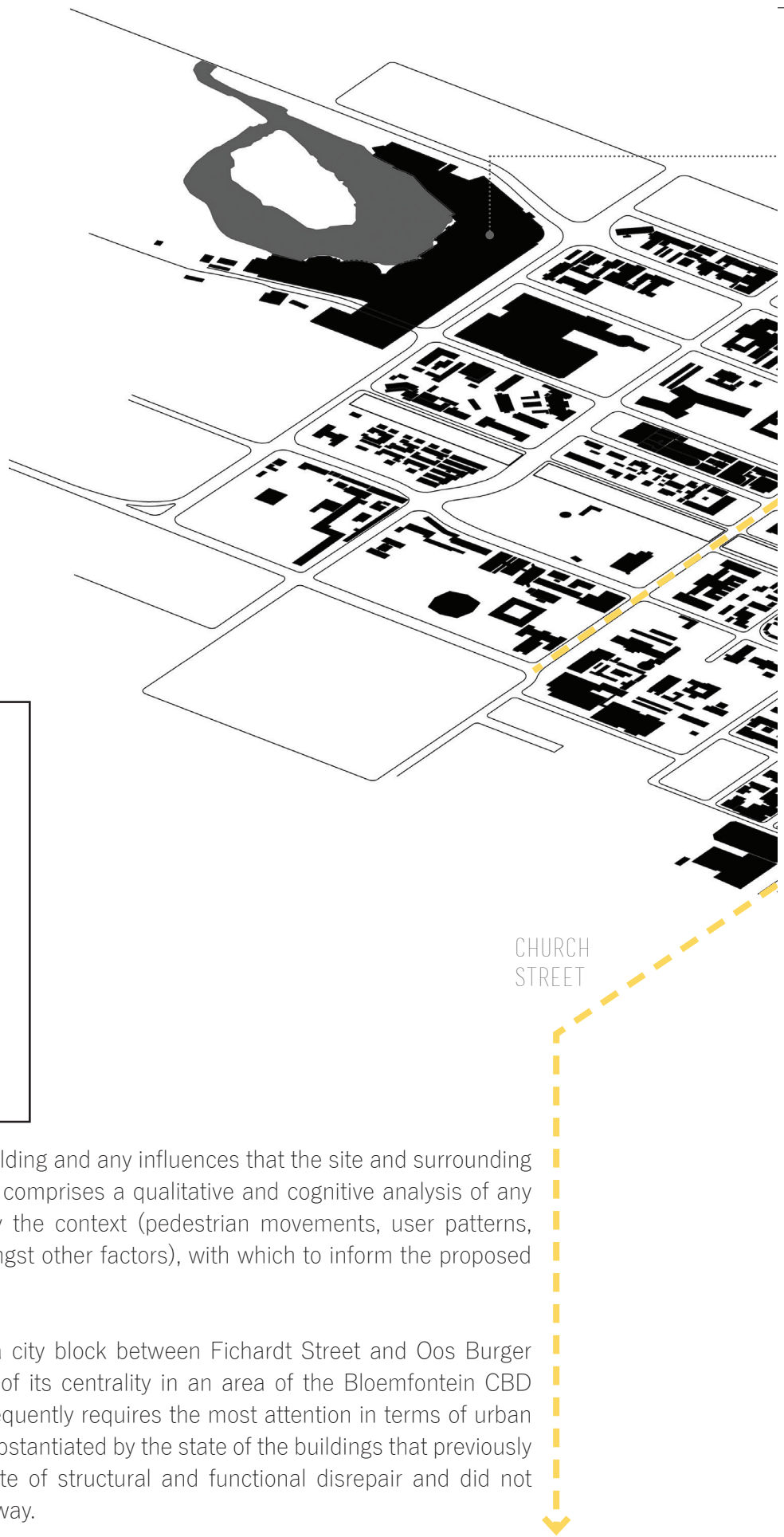
The project recognises the client profile as a removed entity in the urban environment. This group secludes itself within exclusive enclosures spread throughout the urban fabric. Parallel to this is the exclusivity of the gallery and studio typology. The challenge is how to use a privatised architectural programme to establish social reintegration.

## 1.1.2

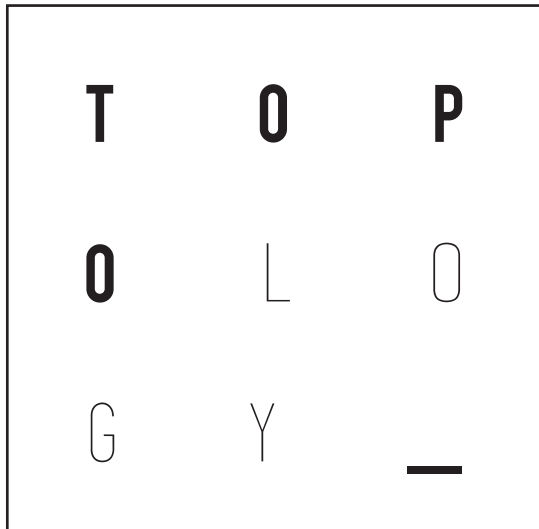
### C H A L L E N G E S

Traditionally, art and craft facilities are relatively private, selectively showcasing finished pieces of work in exclusive gallery spaces. This typological model is restrictive, and lends itself to exclusivity rather than community involvement. However, arts and crafts constitute a communicative platform capable of transcending demographic barriers, availing itself for the possible addressing of these issues within our cities. The type should be questioned and reinterpreted, to establish a model that is more physically involved with inner city development.

Apart from viewing and appreciating arts and crafts, formal instruction (in the strict western tradition of schools and universities) in these trades is also relatively inaccessible to the poor and uneducated. Addressing this issue is parallel to addressing the issue of social and economic inequality.

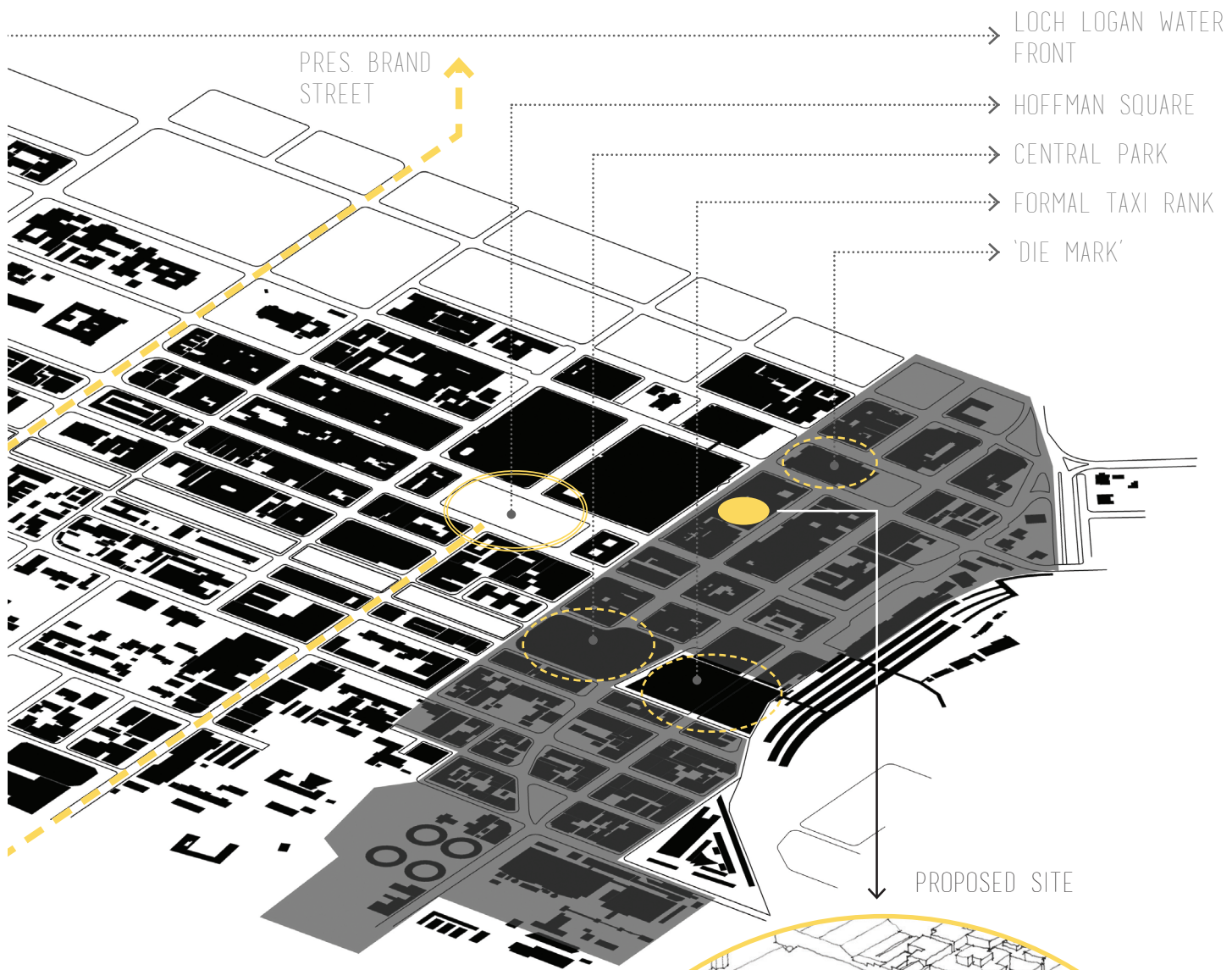


## 1.2



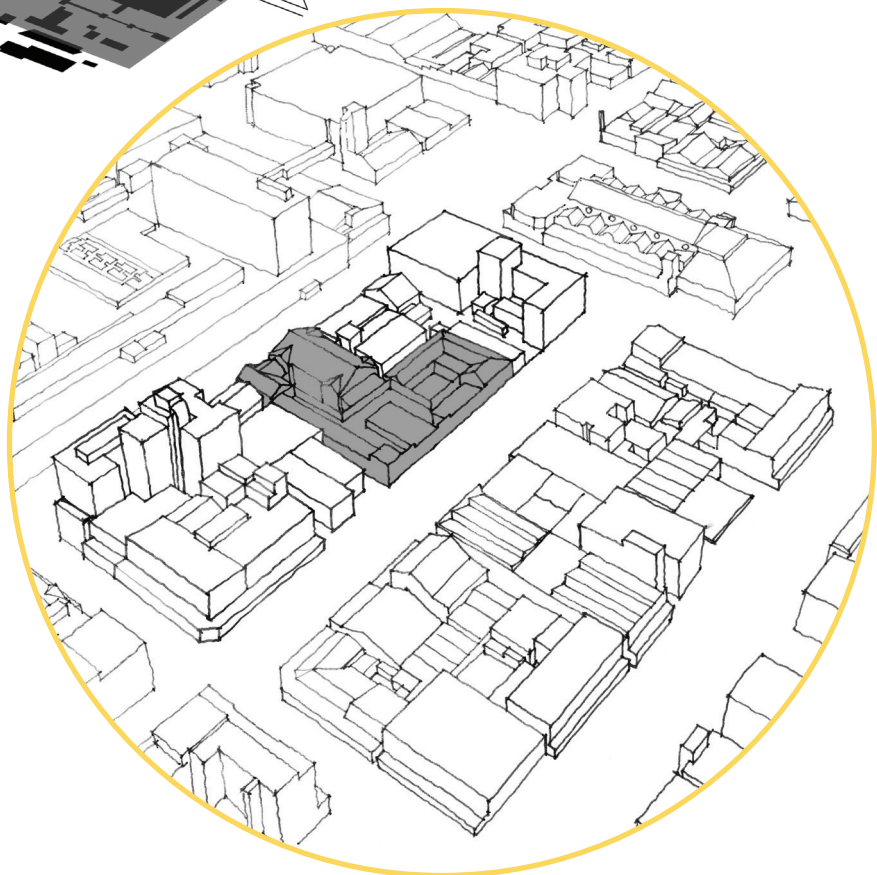
Topology refers to the location of the building and any influences that the site and surrounding context might have on the structure. It comprises a qualitative and cognitive analysis of any and all external influences imposed by the context (pedestrian movements, user patterns, the surrounding built environment amongst other factors), with which to inform the proposed design form-giving.

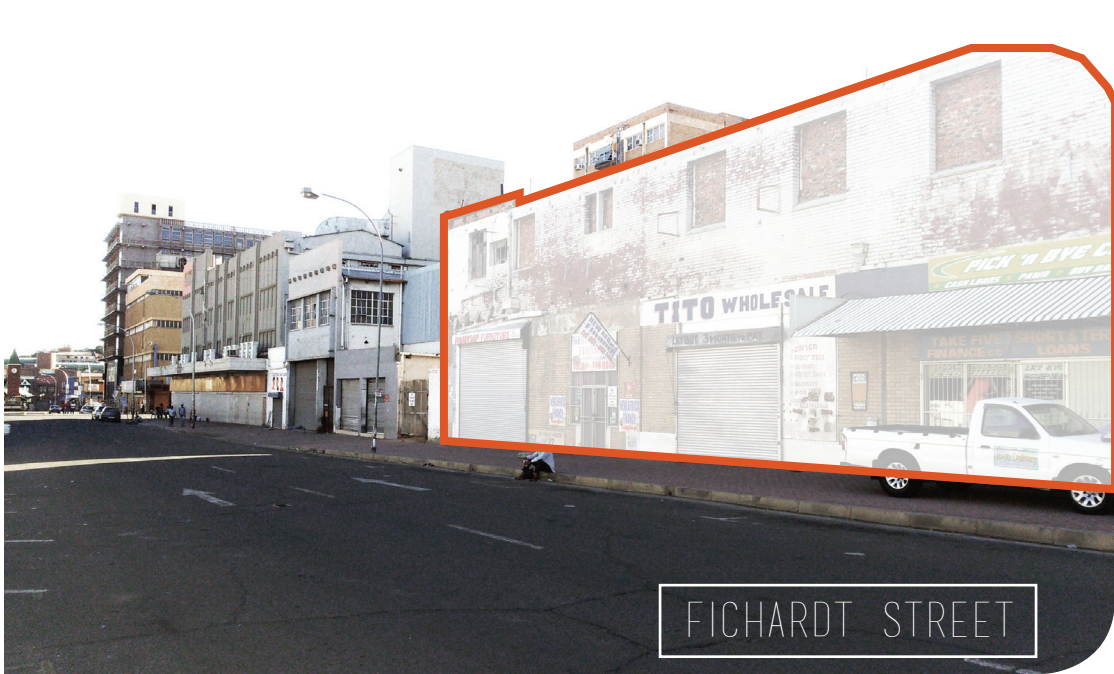
The chosen site lies in the middle of a city block between Fichardt Street and Oos Burger Street. The site was chosen because of its centrality in an area of the Bloemfontein CBD that is especially dilapidated, and consequently requires the most attention in terms of urban rejuvenation. Site choice was further substantiated by the state of the buildings that previously occupied the site. Both were in a state of structural and functional disrepair and did not contribute to the city framework in any way.



## FIGURE 06

The location of the chosen site is marked by the solid yellow dot. Other important landmarks are indicated for the purposes of orientation within the Bloemfontein CBD. (Right) The grey buildings are demolished to clear the site for the proposed building.





FICHARDT STREET



OOS BURGER STREET

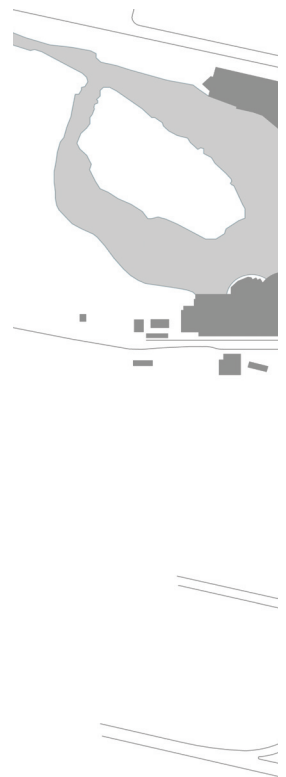
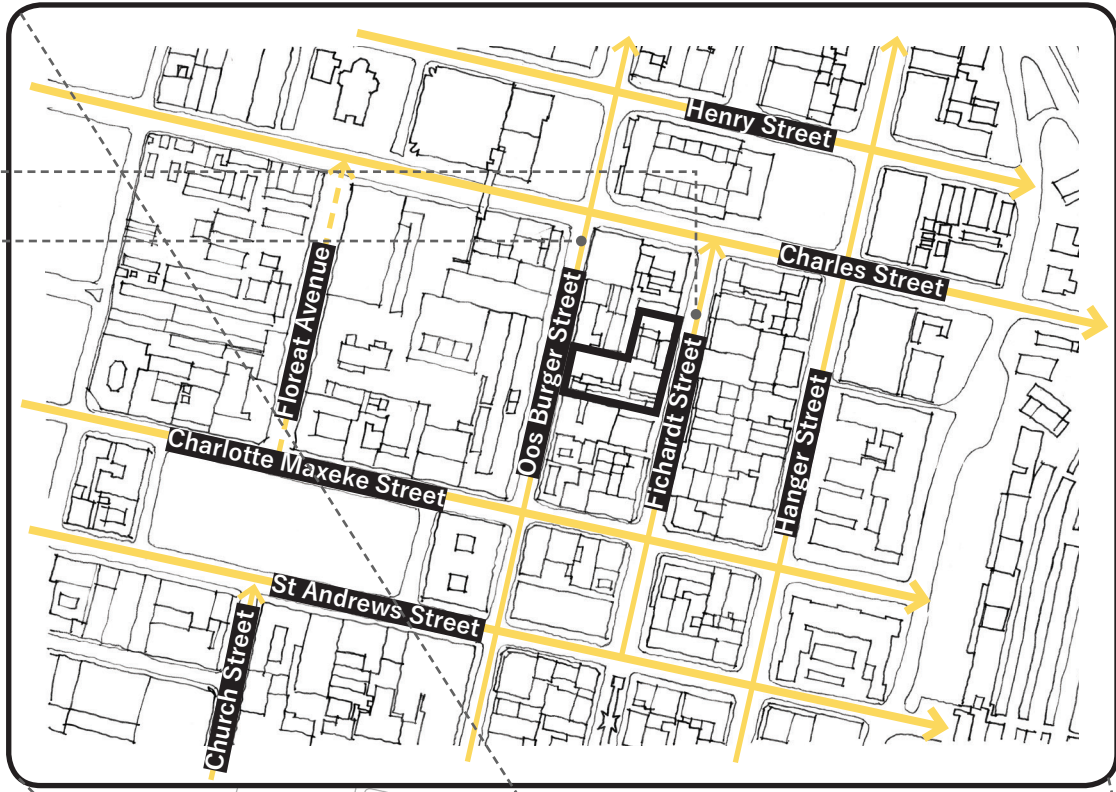


FIGURE 07

(Above) The east side of the site fronts Fichardt Street. The building indicated is to be demolished.  
 (Below) The west side of the site fronts Oos Burger Street. The building indicated is to be demolished.



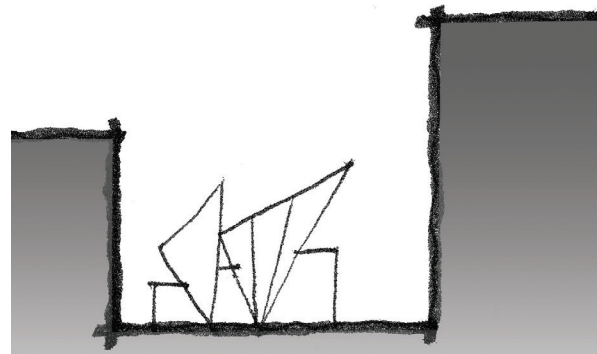
**FIGURE 08**  
The site sits in a densely built-up part of the Bloemfontein CBD, with little surrounding open space.

## 1.2.1

### C H A L L E N G E S

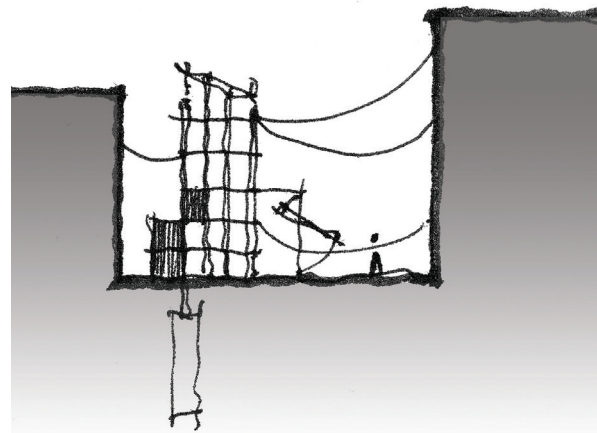
The addressing of inner city fragmentation is much more complicated than the mere refurbishment of public space. The suggestion is by no means that proper public space will solve all inner city problems. However, public space is an appropriate platform from which to assess inner city struggles because of its very nature: that of containing public activity. Public space is the foundation on which public activity is built, and so it seems the logical starting point when public interest is considered.

Bloemfontein suffers from neglected public space (dead or underutilised alleys and pavements, as well as unused open spaces) and therefore constitutes a less cohesive infrastructure network. The challenge is how to contribute a building to this fragmented framework which can aid in the natural improvement of surrounding public space without being a subjective imposition; the insertion of a functional structure that can heal fragmentation by addressing surrounding inner city voids. Therefore, a building should be provided which does not alienate itself from the site, but which enters into a symbiotic relationship with the surrounding urban fabric. The building should also attempt to use its surrounding fabric in its attempted public space improvement, rather than plastering false facades over non-functional structures.



1

An alien object within the city, resulting in minimal contextual engagement.



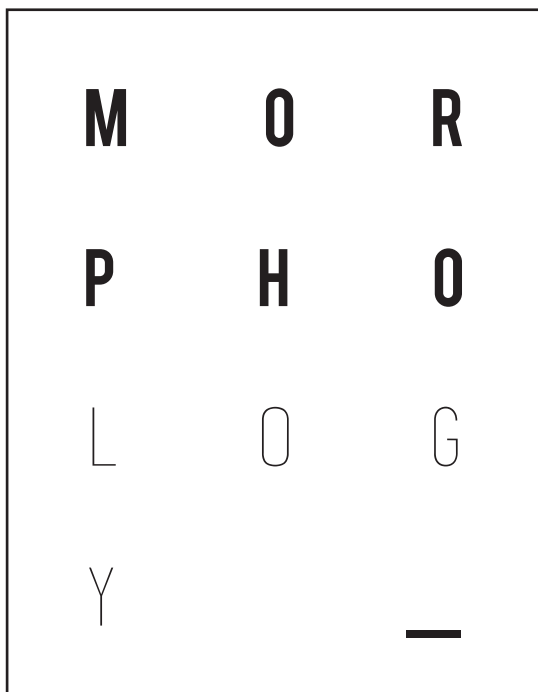
2

The object integrates itself with the surrounding context, resulting in an inseparable relationship.

## FIGURE 09

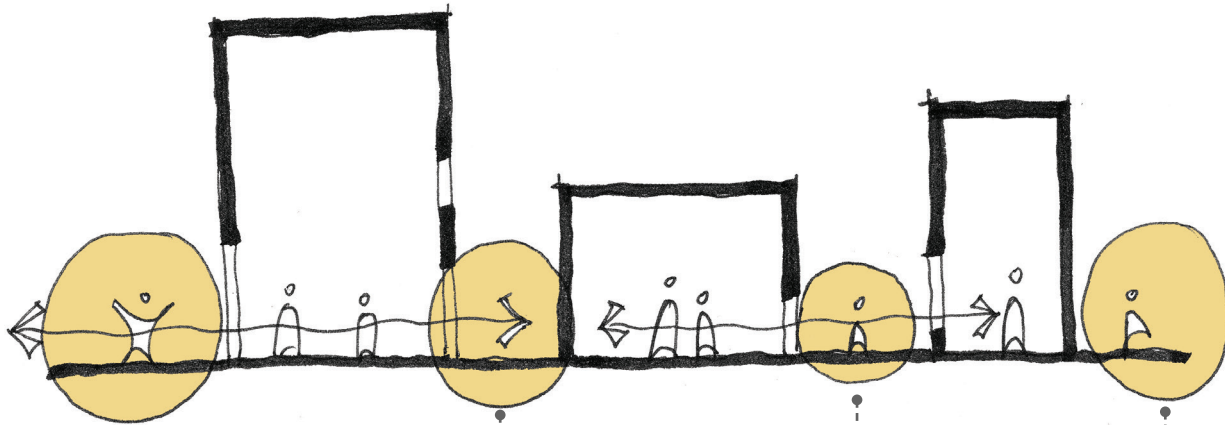
The proposed building should aim to achieve the 2nd ideal, establishing a programme that aids its surrounding context in a mutually beneficial way.

## 1.3



Broadly speaking, morphology refers to the form-giving of the proposed project. More accurately, it refers to the tactile influences of the typological and topological parameters of the project. It is the physical result of a design that takes into account all manner of external influences and proceeds to determine its own form and structure around those influences.

In terms of the proposed project, it attempts to be a delicate structure inserted into a context with which it engages in a mutually beneficial symbiosis. Both structure and context attempt to feed from, and into, the other. The morphology is greatly influenced by further reading into the phenomena of public space and what the concept has grown to mean in the South African context.



### 1.3.1

## C H A L L E N G E S

Our perception of the world is dictated by societal norms, which distort and “control” human perspective. Numerous possibilities are discarded in favour of one chosen outlook. In order to free man from this constraint, we need to drive a wedge between us and the “chosen” perspective by challenging the norm and removing it from the equation. With the “norm” removed, our perspective will widen to include a diverse and multi-layered world open to personal interpretation. In relation to the city, this refers to our perception of public space and what the essence of this concept has evolved to become. Perhaps public space is no longer synonymous with ‘park’ and ‘square’? What if our 21st century needs have begun to require different forms of public space?

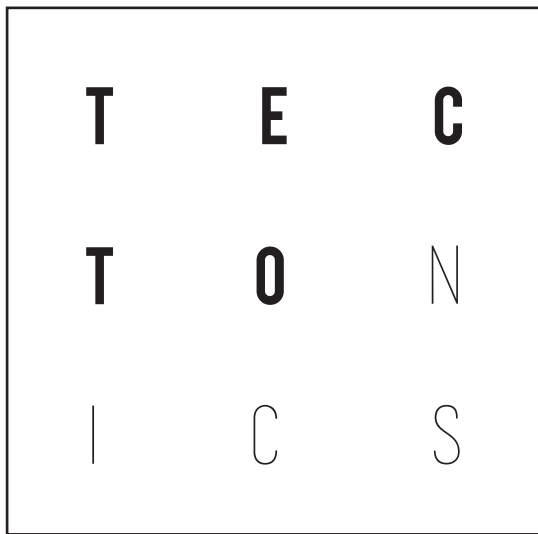
Bloemfontein perpetuates a negative perception of its own inner city public realm, by being neglected and maintaining traditional (western) views of public space. This influences development and revitalisation negatively, having a compounded detrimental effect on our experience of the city. The overriding challenge is to rethink the boundaries between private and public, and to question the very essence of public space and what ‘public space’ means to a 21st century society in Africa.

### FIGURE 10

The project aims to address the issue of public space and what it really means. The image indicates the possibility of public space comprising anything on the exterior of demarcated private space (instead of only meaning ‘park’).

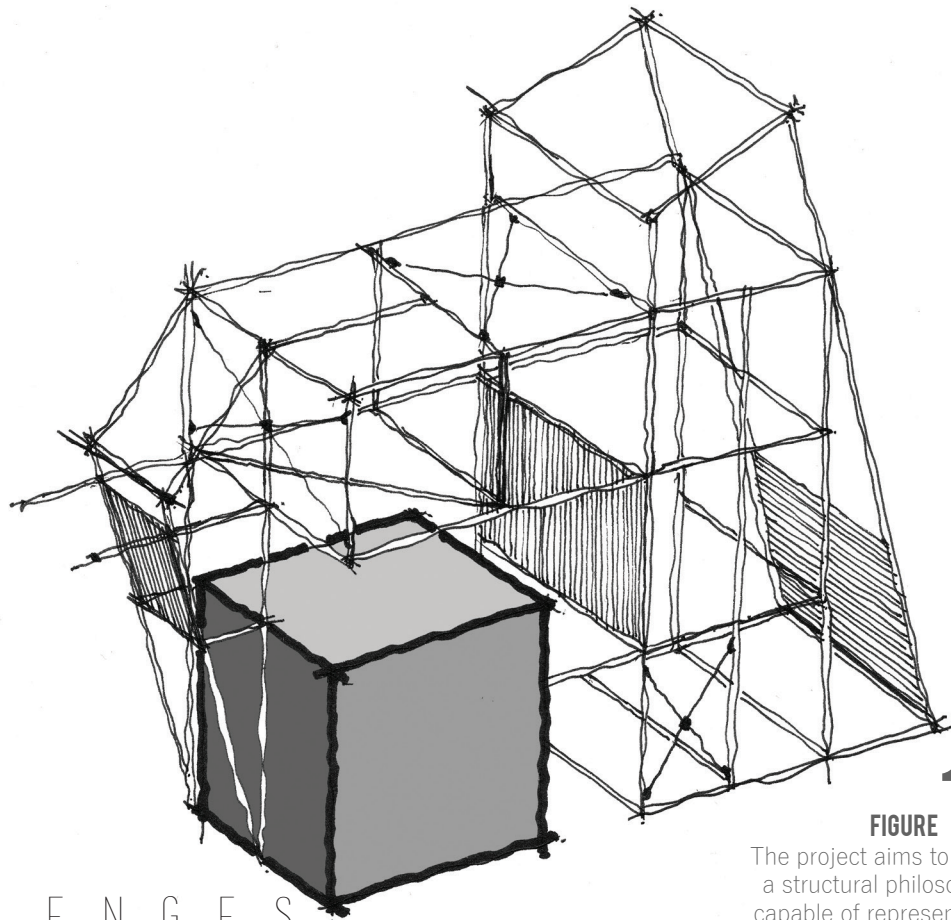


## 1.4



Tectonics refers to the 'art of construction'. Given its consideration of the finer details of form-giving, it is a subcategory of morphology. It considers the physical connections, choices of material and ways in which all of the above fit together to form a complete whole.

The concept informs ideas about structural composition. In the case of the proposed building, it therefore determines the use of a steel frame structure with infill panels of solid brickwork and various composite walls. It determines how concepts inform detail choices, and how the essence of the project is not only represented by overall form, but by detailed elements as well.



### 1.4.1

## C H A L L E N G E S

---

Based on the conceptual stance of 'tension between opposites', the building attempts to find a structural philosophy capable of symbolising the dichotomies in modern society (especially between the elite and the everyman). The main challenge is to find a structural form and detail signature capable of visually and functionally communicating this underlying concept.

Linking to the typological challenge of making arts and crafts more community driven and less exclusive, the building also attempts to become a transparent vessel making function move outward into the city, instead of perpetuating an introverted, closed structure.

**FIGURE 11**

The project aims to find a structural philosophy capable of representing the 'tension between opposites'. The building will investigate the juxtaposition of tectonic and stereotomic aesthetics.

1.5

R E S E  
A R C H  
Q U E S  
T I O N



**FIGURE 12**

The west side of Oos Burger Street. The black steel and glass building is a Protea hotel immediately across the street from the chosen site.

“ How can we use supplementary network and boundary theories and the physical upgrading of public space to establish a more integrated urban fabric and address civil tension in post-Apartheid South Africa? ”

”



FIGURE 13

A view down Oos Burger Street, looking towards Bloemspruit in the south.

## T Y P O L O G I C A L A I M

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The design should attempt to rethink the gallery and craft workshop typology, investigating how it can be applied to actively reshape the inner city public realm. This is to ensure that the proposed building does not merely enclose objects of artistic commentary on islands of seclusion (typical of the gallery typology), but that it actually uses art to address abstract issues on the physical plane (functional art). The building should investigate the use of art in a practical way; letting it 'bleed from the canvas' into the city framework itself, thereby supplementing it in a concrete way. Parallel to this, the building should also investigate the sharing of its programme with the community at large, and investigate how collaboration between societal opposites could benefit the collective growth of a diverse community.

## T O P O L O G I C A L A I M

---

The building must not simply improve its immediate surroundings by being a good intervention, but must literally generate micro public spaces and re-establish broken connections (dead zones) within the city. In terms of the ontology of the building, it must be a 'machine' producing public space – an organic workshop using the city's people and existing network to produce a more continuous urban fabric. Furthermore, it is the intention that the building be a functionally inverted structure, where activity spills outward rather than becoming internalised. In so doing, it uses the city's framework to rectify itself, becoming an essentially 'empty' structure using the city's own infrastructure towards its beneficial repair.



1.6

P R O J  
E C T A  
I M S

## M O R P H O L O G I C A L A I M

---

The craft facility will aim to challenge the city's perception of what constitutes public space. It will indulge radical thinking brought on by students in order to reshape the city's historic perspective and truly juxtapose 'societal norms' with 'free expression'. Bloemfontein is in a state of limbo, justifying the need for radical solutions from a newly formed, utterly diverse user profile. Allowing all groups of diverse peoples to collaborate on urban projects, will produce a new cultural perspective specific to the inner city; for which entirely different public spaces might be a requirement.

## T E C T O N I C A I M

---

The aim is to use detailing to express tension in modern society, which is in line with the concept of using public space as a reflector of societal opinion. The building will attempt to juxtapose and insert, in delicate interdependency, two structural aesthetics (ideally tectonic and stereotomic) to symbolise the tension between the societal elite and the everyman.

**P A R**  
**T O 2**

This chapter deals with the establishment of informed design parameters based on research as set out in the research design section. The research takes the form of various precedent and case studies, as well as a literature review, to provide a theoretical discourse on which to base further design decisions. This investigative process is spearheaded by an initial conceptual approach, as illustrated by a design touchstone. The touchstone continues to generate several concepts, which in turn direct further research into specific conceptual fields. These conceptual underpinnings and readings are used to formulate specific design parameters which guide the design process.

## EXPLORATION AND GROUNDING

### CONCEPTUAL DEVELOPMENT

- 2.1 touchstone
- 2.2 the concepts
- 2.3 conceptual framework

### 2.4 TYPOLOGY

- investigation of client and user
- accommodation list

### 2.5 TOPOLOGY

- macro site analysis
- meso site analysis
- micro analysis
- contextual public space investigation

### 2.6 MORPHOLOGY

- DISCOURSE
- enclosure versus connection
- guidance of behaviour: movement through the system
- public space as hybrid: transitional destination
- public space as a platform for addressing civil issues
- giving free expression its foothold
- minimal intervention for a flourishing concept
- conclusion

### 2.7 TECTONICS

- technical investigation
- structural touchstone
- structural philosophy

### 2.8 TOWARDS A DESIGN METHODOLOGY

It goes without saying that public space is the most pressing concern. Whilst the building being proposed is not a public space in itself, it takes the form of a design laboratory/factory (almost in the literal sense), where public furniture is built, mosaics for pavements are designed and murals for building facades are planned (among other forms of micro public space intervention). The addressing of public space is a delicate issue, especially in the South African context, where civil issues in the aftermath of Apartheid segregation are still a lingering reality. Many South African cities saw, after the abolishment of Apartheid, the fleeing of Europeans from inner cities to peripheral zones, and the subsequent influx of a predominantly Ethnic demographic into the newly abandoned CBDs.

It is especially because of this tension between different racial groups, and the tension with which inner city development is now taking place, that public space has perhaps become the relevant issue that it is today. Case in point, South African cities were designed by Europeans to match a Western model, with no consideration to African perspective. When the restrictions on Ethnic movements were lifted, and the previously oppressed were allowed to inhabit inner cities, a definite clash was seen between opposing culture systems. Each culture has a different perspective on what constitutes public space and how it is formed. The problem is, in Bloemfontein, multiple diversities are now forced to utilise a city framework born from the perspective of a single culture's idea of public space. That is also why it is so difficult for local city users to accept new developments imposed upon them by subjective developers.

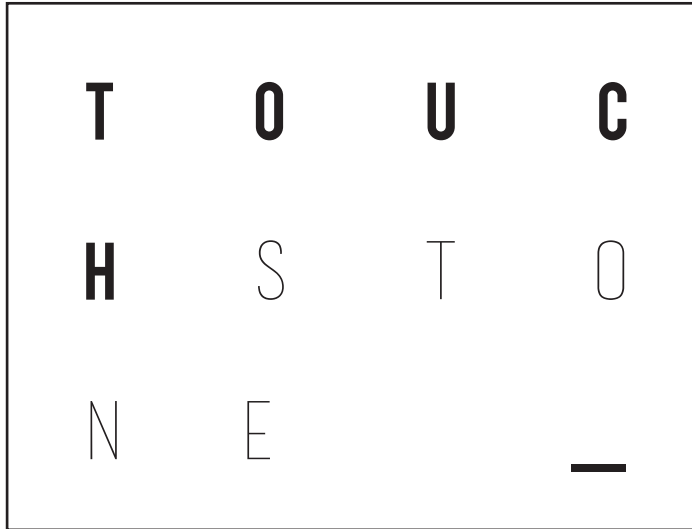
Public space intervention is delicate, and unspecific at best. The city is so multi-cultural that care must be taken not to impose a restrictive model of public space, and to rather provide a blank backdrop for further personal intervention. In other words, the concept of public space needs to be rethought. Better yet, the public needs to be involved in this reinvention. This will allow the public to contribute to their own place making and to take ownership of it, effectively linking the city socially as well as physically.



**FIGURE 14**  
The building looking onto Fichardt Street, to be demolished.

I N T R O  
D U C T I  
O N —

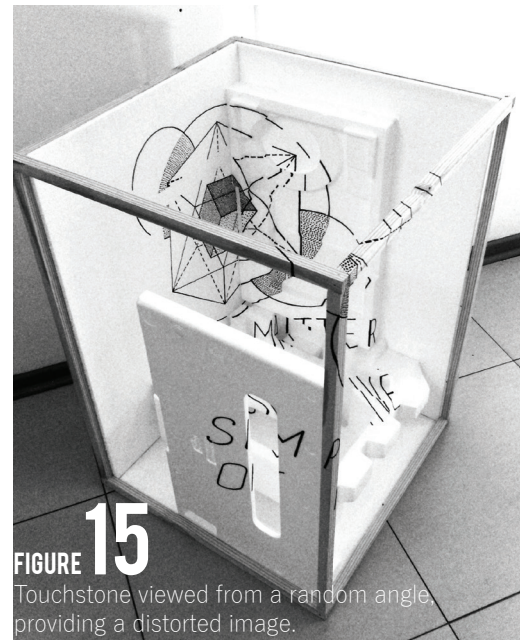
## 2.1



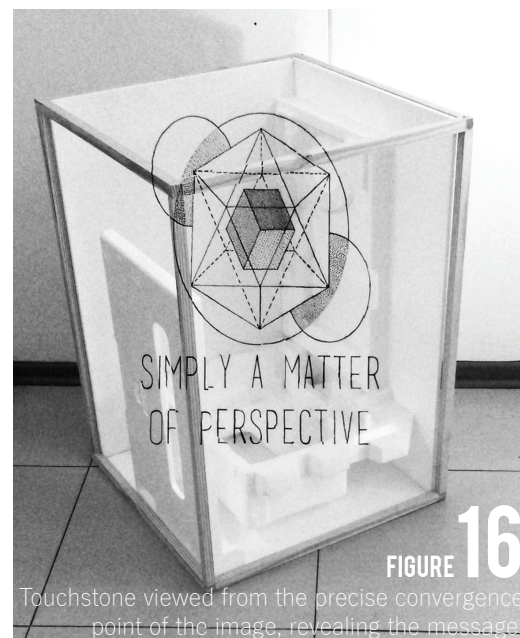
Perspective is the first true threshold in our perception of the world around us. In this instance, it refers to our opinion of Bloemfontein's inner city and its public realm. 'SIMPLY A MATTER OF PERSPECTIVE' comments on outsider ignorance. Taking the time to find the perfect spot will reveal the image, whilst a bypassing glance will only reveal a distorted mess.

It becomes more relevant when interpreted in terms of different 'points of view'. Suppose different cultures have different opinions (perspectives) of what constitutes the specifics of public space. In terms of the aesthetic appeal and functionality of public space, these perspectives will then share different vantage points. Consider the following scenario: One likens the touchstone to the concept of public space and places a representative of each culture in a circle around the object. The position of each culture is representative of their respective understanding of public space (their opinions on the concept). Should any one culture be positioned at the precise convergence point of the image, only that one culture would be able to see the image (or, in terms of the city, be able to understand and effectively use public space). All other cultures would be ignorant towards the true nature of the message. This is applicable to South African urbanities if it is assumed that the European model was the one at the precise convergence point.

As is true to a touchstone, this is a very general idea. The deriving concept introduces the following thought: public space, in whatever form it manifests, should be universal in a diverse context.

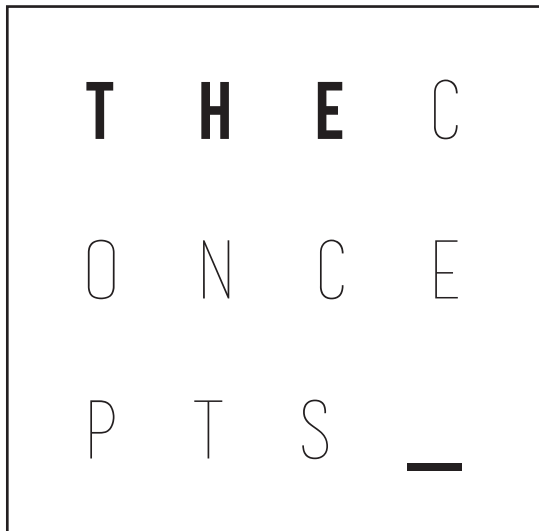


**FIGURE 15**  
Touchstone viewed from a random angle providing a distorted image.



**FIGURE 16**  
Touchstone viewed from the precise convergence point of the image, revealing the message.

## 2.2



Public space is the simultaneous reason and solution to urban fragmentation, depending on its state of neglect or maintenance. User perception of the city is misinformed, because it is only formed based on the visibility of public space and public activity, both of which receive relatively little attention in Bloemfontein's current urban development. To ensure a better understanding of the city, public space infrastructure must meet the public need for it and start attracting more pedestrian activity. These 'open' spaces can also become platforms for 'free' public expression. From touchstone to concepts, the focus shifts from merely seeing and understanding city problems, to finding practical ways to make public spaces meet public needs through architectural intervention.

Stemming from the touchstone, which embodies the key concept of perspective, the three following concepts are considered:

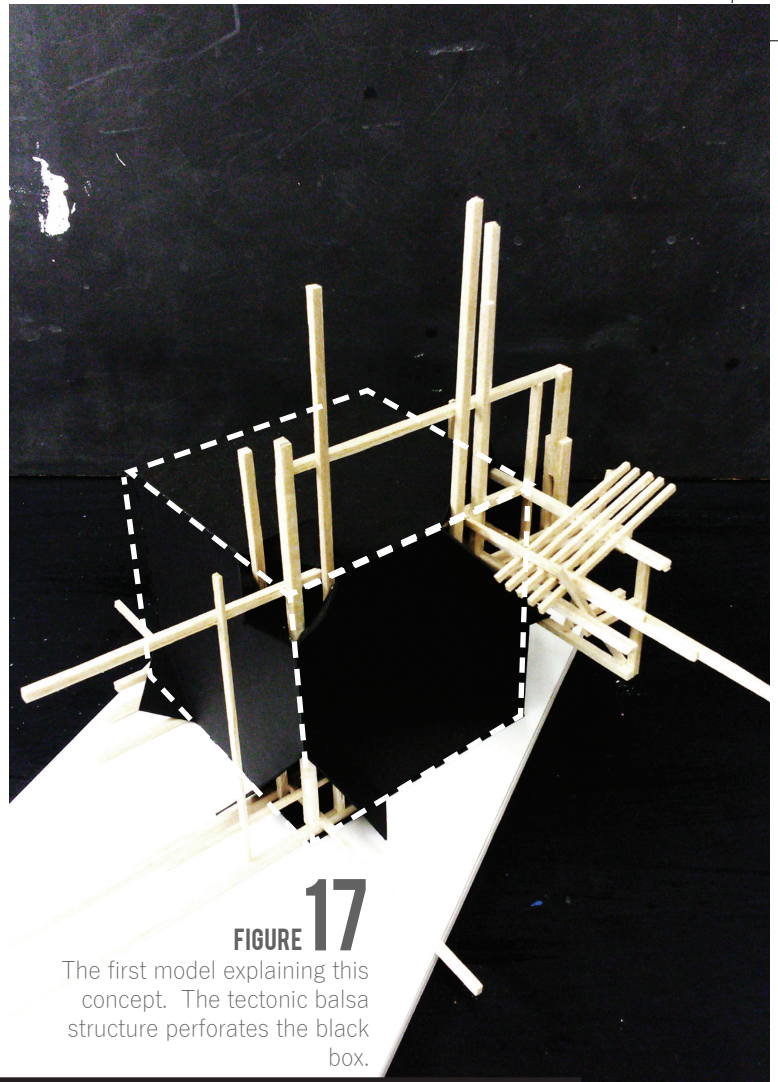
**01** BREAKING THE BOX

**02** ENHANCING THE EXISTING

**03** DISRUPTING LINEARITY

# 01

## BREAKING THE BOX



**FIGURE 17**

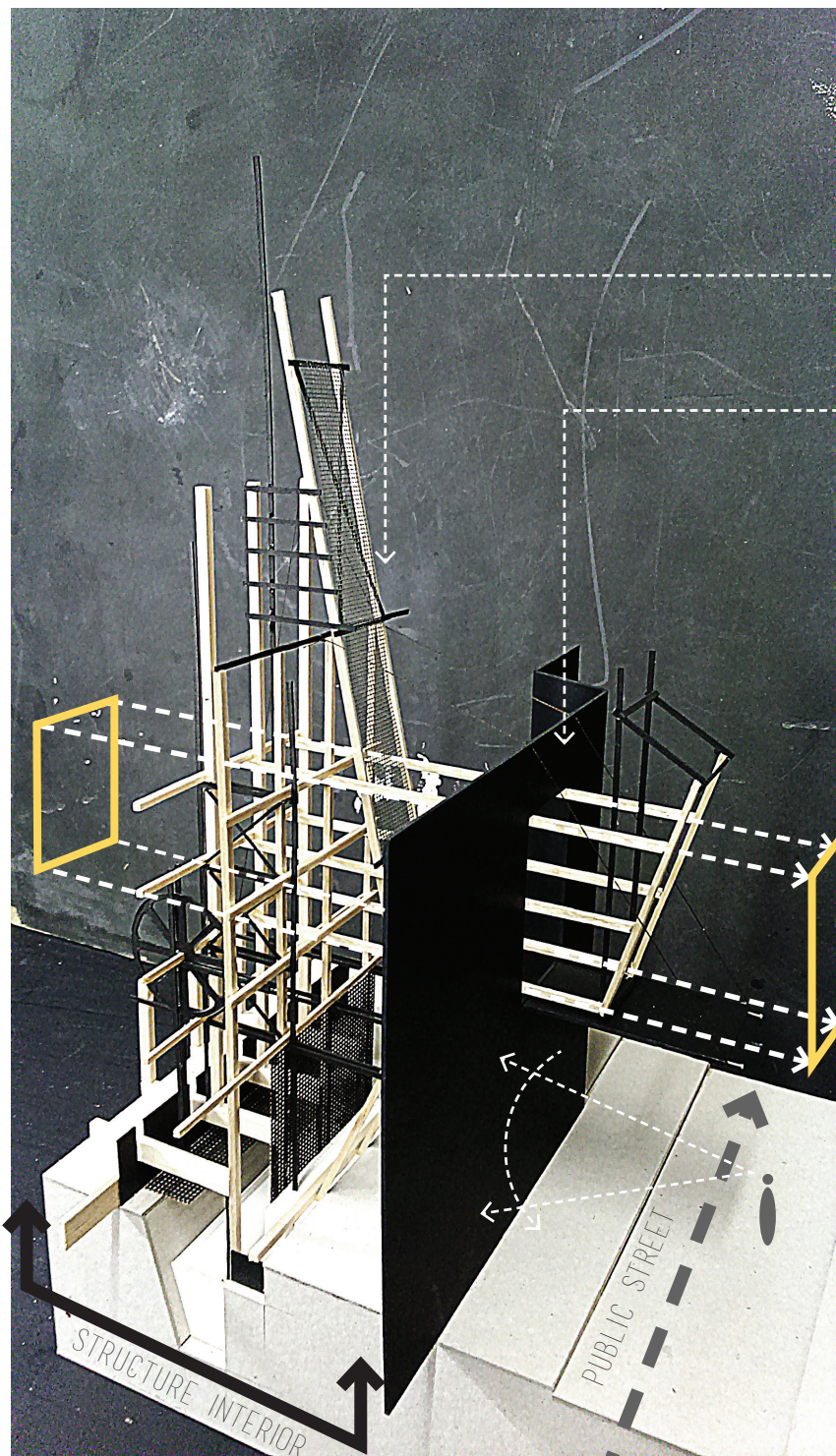
The first model explaining this concept. The tectonic balsa structure perforates the black box.

Breaking the box is about breaking the hold of prescriptive perception; it is a movement towards challenging the normative concepts of public space and public space interventions. The concept attempts to rethink public space intervention, and to investigate what other forms this can take other than merely erecting a new public space. It attempts to think of a typological function that can become something that organically, and sustainably, produces public space: instead of designing public space, rather design a programme that uses city users to design and build their own public spaces – a building [machine] that produces public space.



**FIGURE 18**

Watercolour representation of the perforation of boundaries.



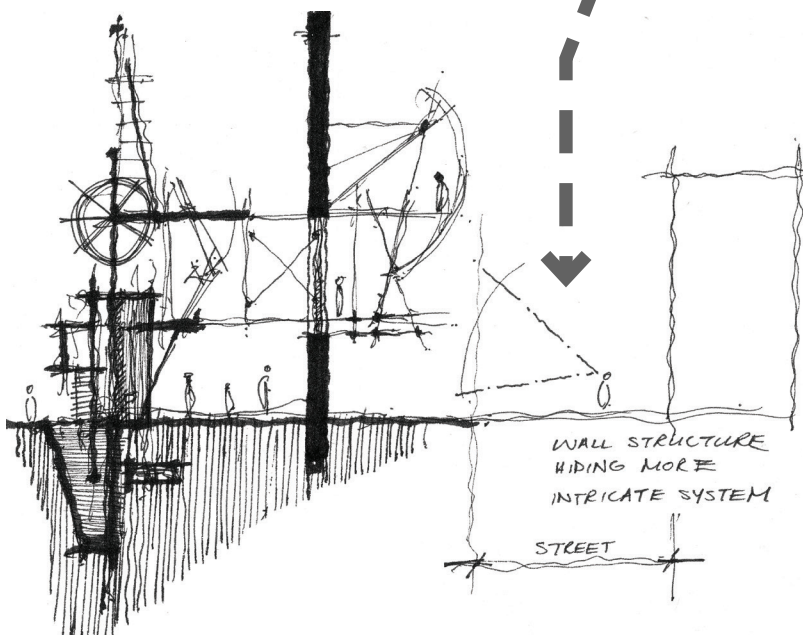
tectonic structure,  
representative of 'truth',  
hidden behind the facade

blank facade hiding the  
intricate structures and  
systems behind it

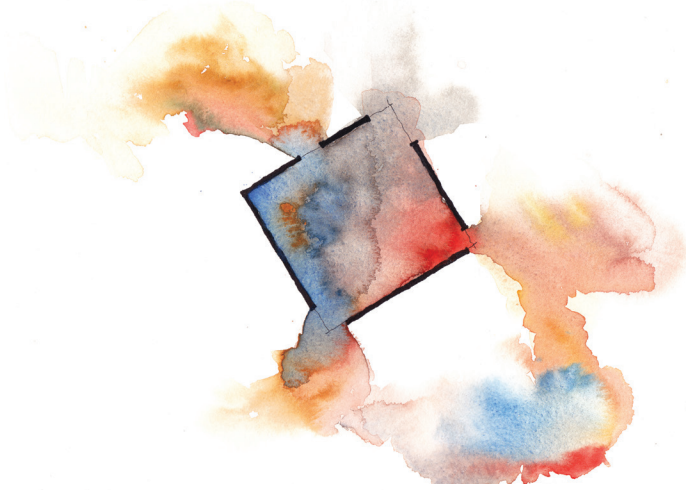
pushing through  
the facade  
to provide  
transparency

## FIGURE 19

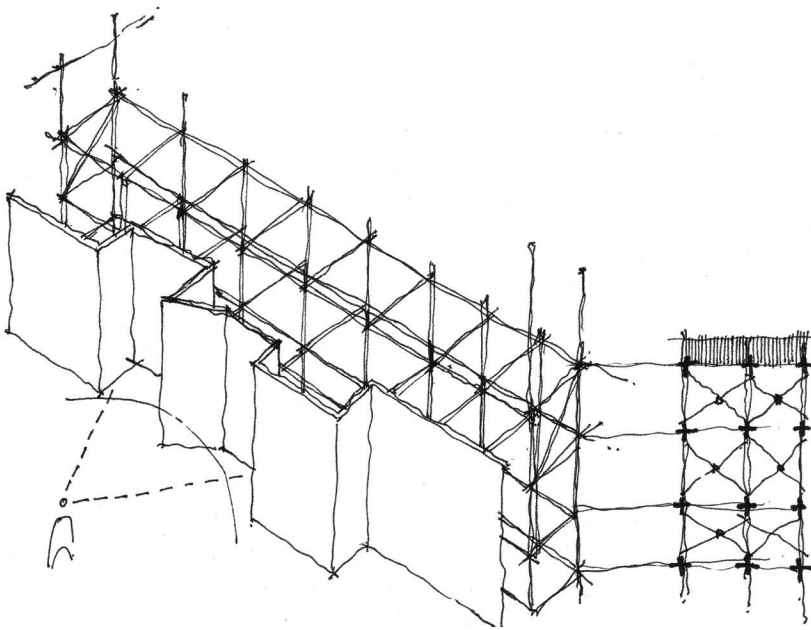
(Above) The second model depicting the concept. The solid wall is perforated in order to reveal the hidden structure on the other side. (Below) A sketch depicting the same principle.



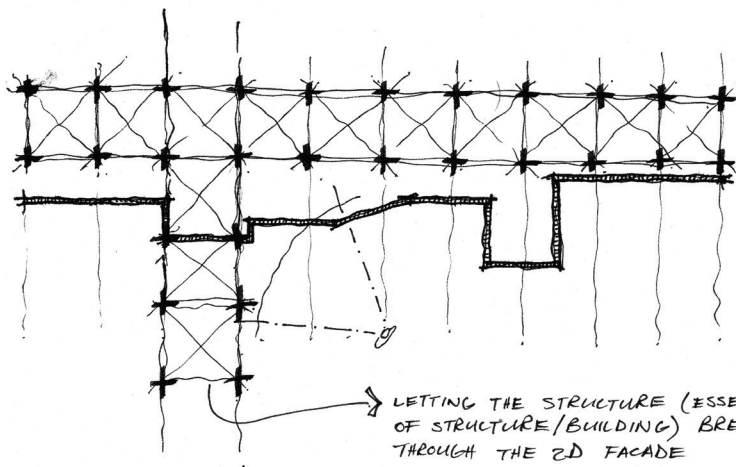
1



2



3

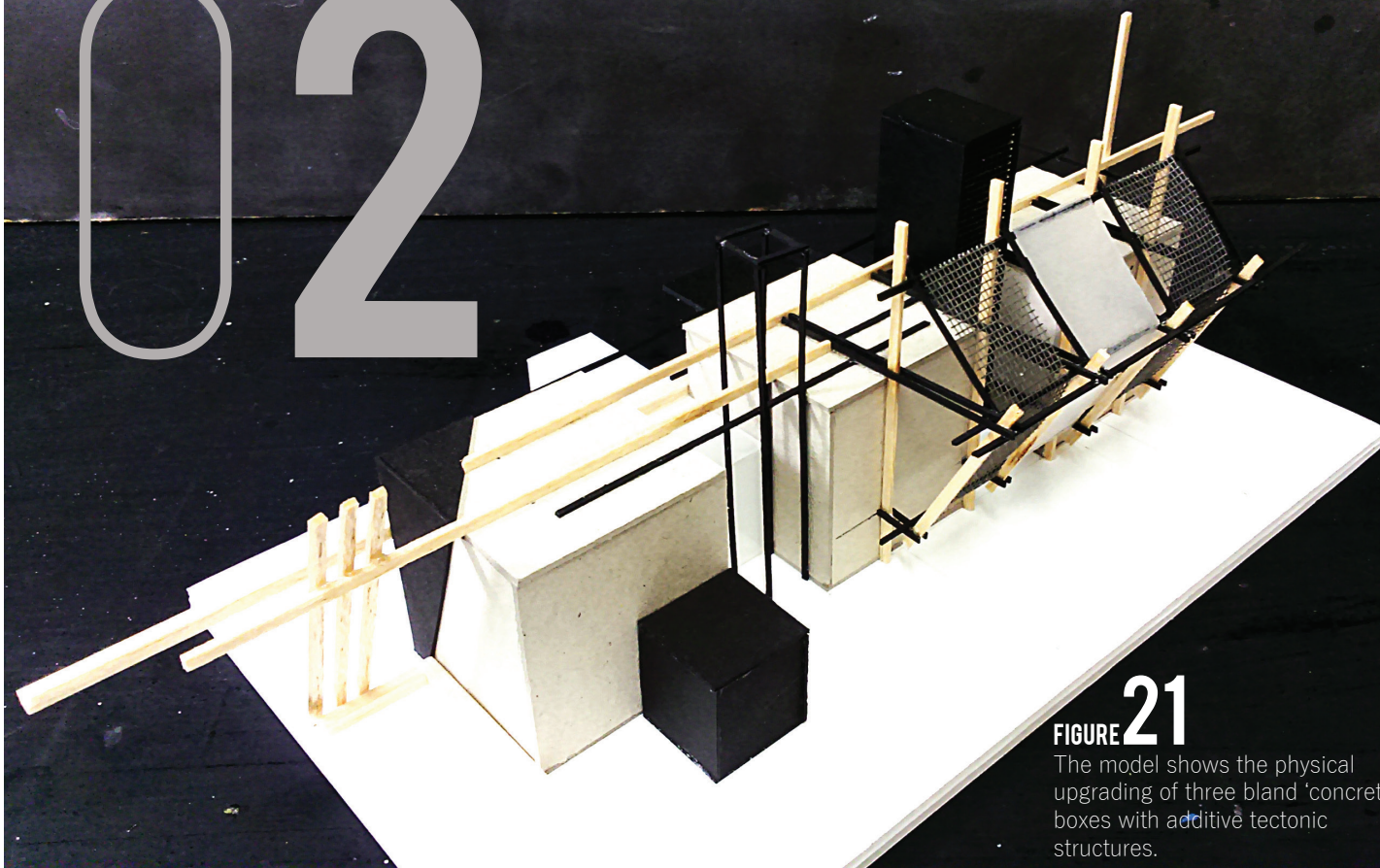


LETTING THE STRUCTURE (ESSENCE OF STRUCTURE/BUILDING) BREAK THROUGH THE 2D FACADE

## FIGURE 20

A series of images showing possible interpretations and applications of 'breaking the box' to architectural boundaries.

# 02

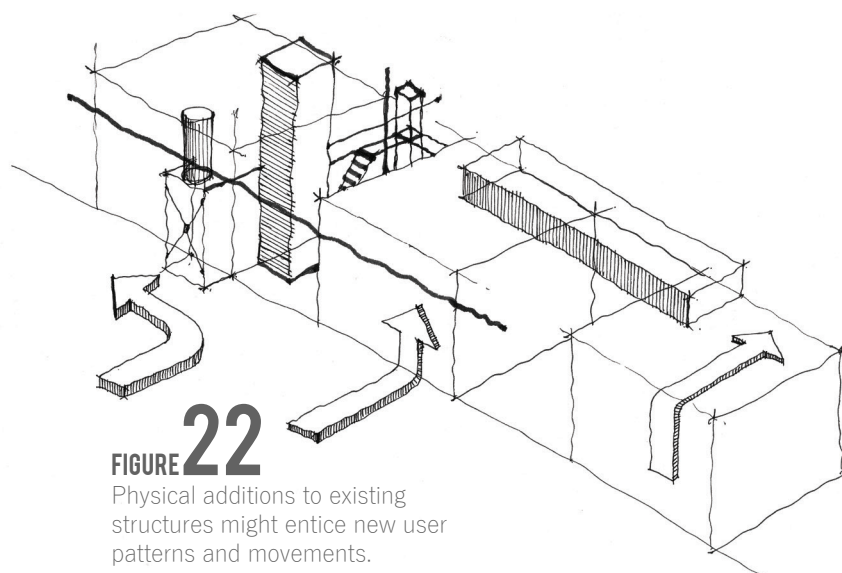


**FIGURE 21**

The model shows the physical upgrading of three bland 'concrete' boxes with additive tectonic structures.

## ENHANCING THE EXISTING

Enhancing the existing is a conceptual consideration that seeks to establish an intervention that is not a foreign object, but an organic composition of various contextual elements. In terms of a building, it prescribes a minimalistic intervention that focuses more on its relationship with the context, than on its own inner functions. Of course, this concept refers simultaneously to the building as an enhancement, and to the various public space enhancements it will perform. Therefore, parallel to the proposed building's relationship with its context, the concept also dictates that public space interventions be as minimalistic and non-prescriptive as possible. In so doing, both building and its function will attempt to augment the existing rather than impose a superficial layer.

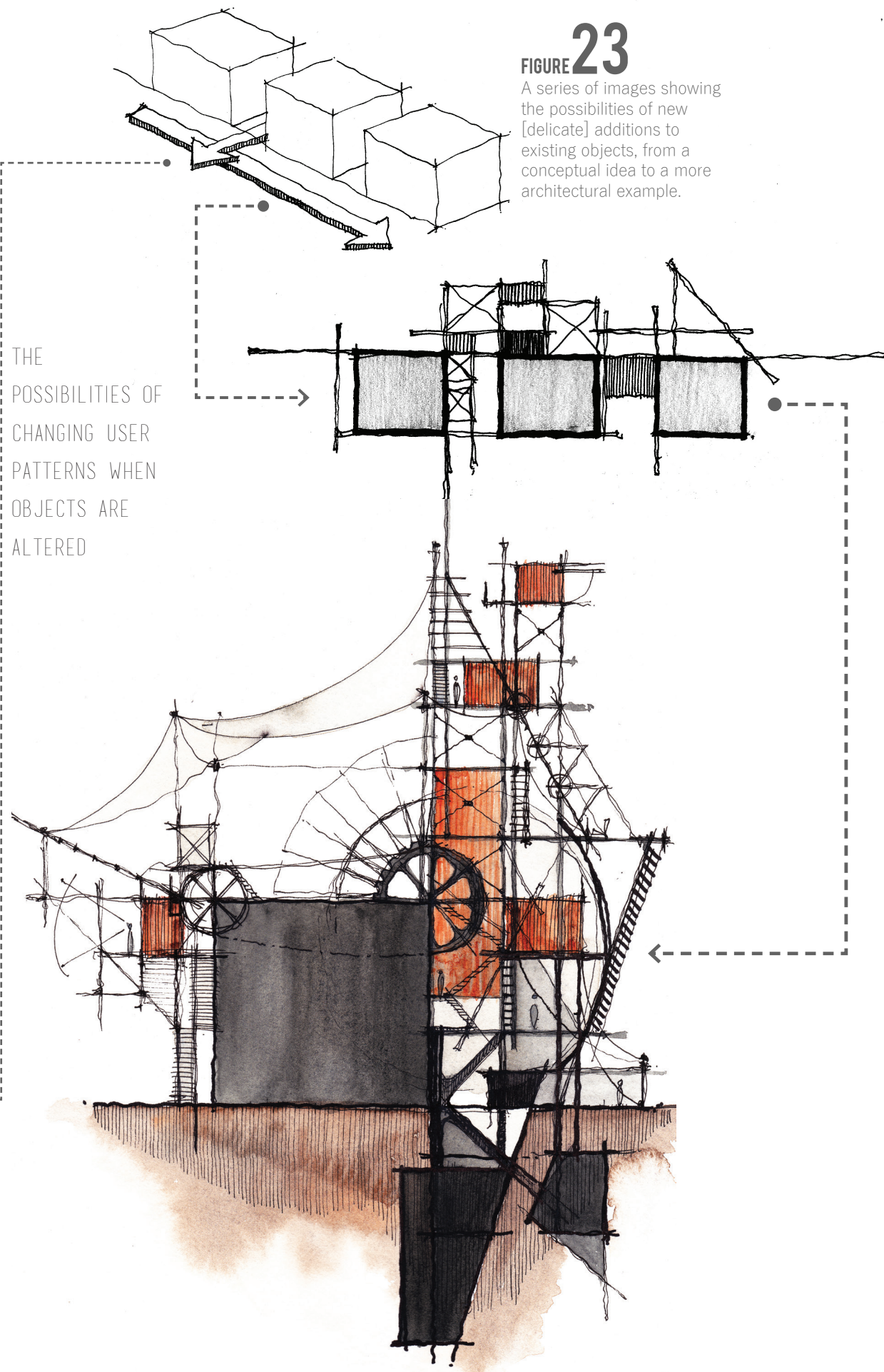


**FIGURE 22**

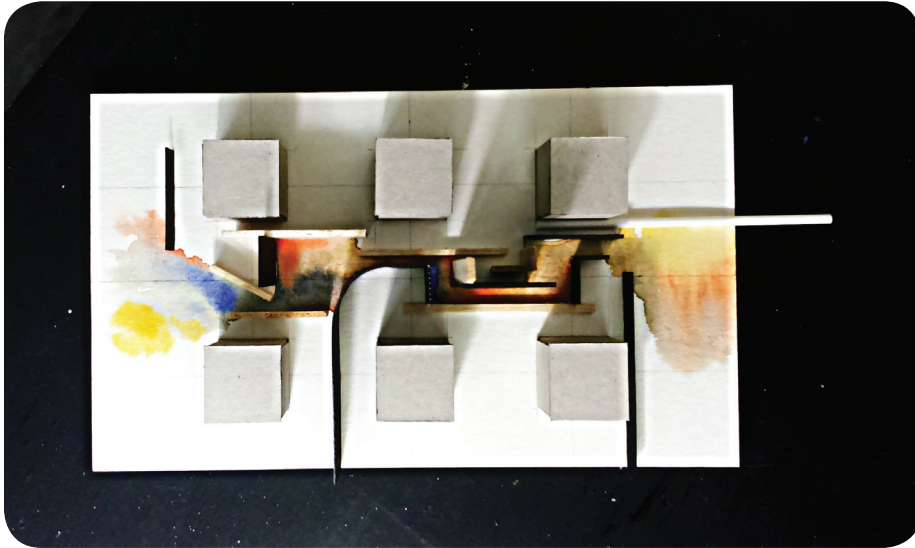
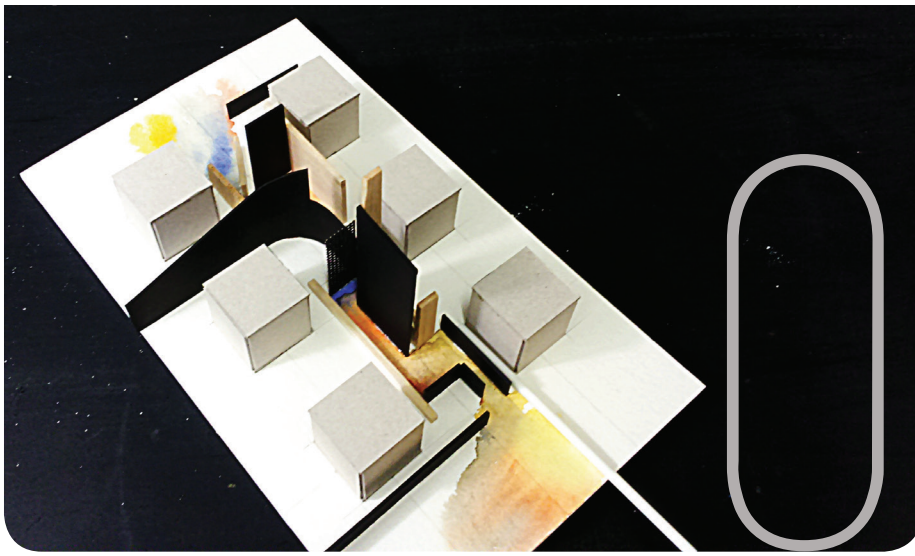
Physical additions to existing structures might entice new user patterns and movements.

# FIGURE 23

A series of images showing the possibilities of new [delicate] additions to existing objects, from a conceptual idea to a more architectural example.



THE  
POSSIBILITIES OF  
CHANGING USER  
PATTERNS WHEN  
OBJECTS ARE  
ALTERED



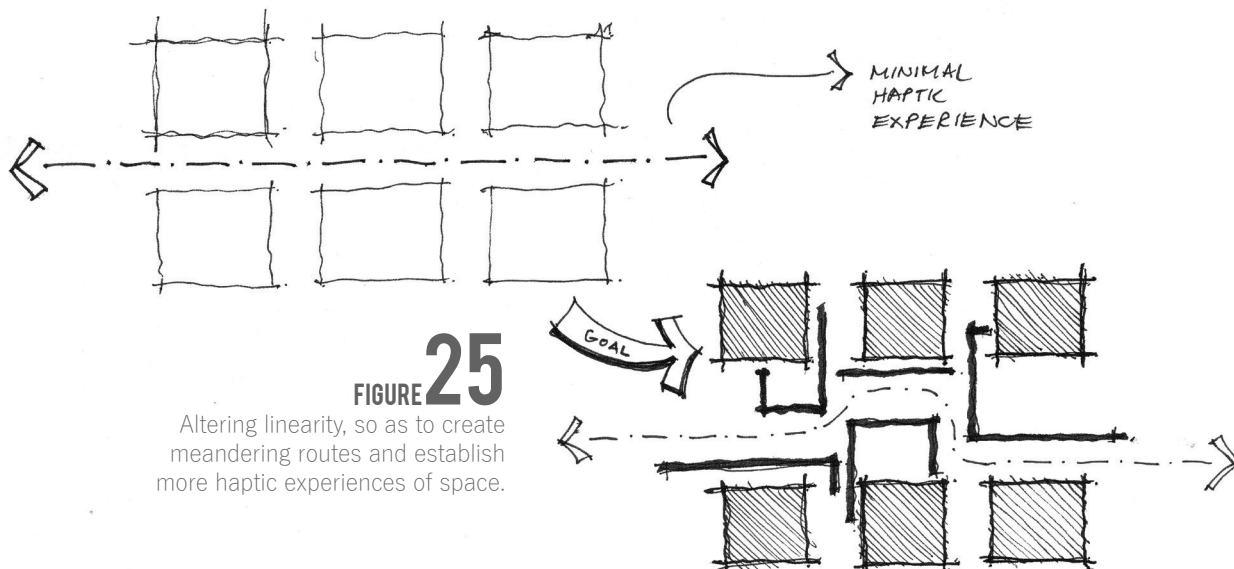
3

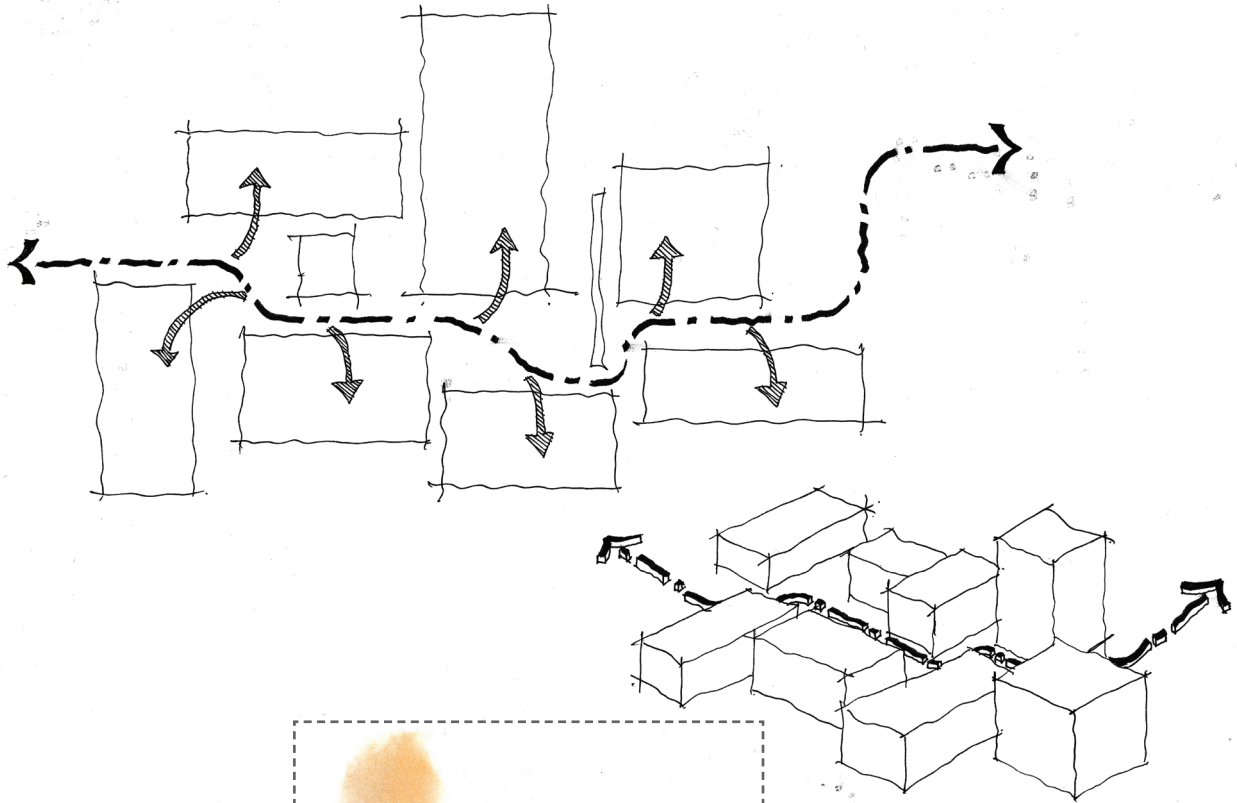
**FIGURE 24**

Small obstacles alter user patterns in the rigid urban fabric, creating the illusion of non-linear urban layouts in a larger city grid.

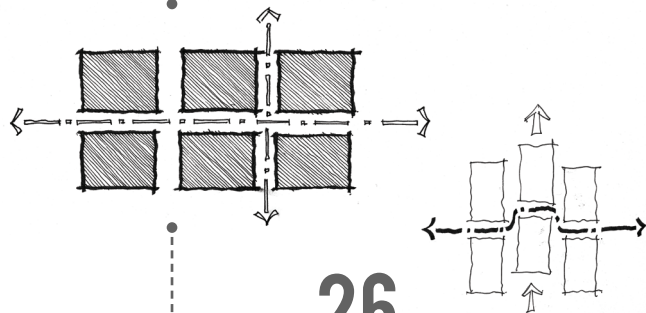
## DISRUPTING LINEARITY

Disrupting linearity aims to create an invasive architecture, which slows pedestrian movement and creates more meandering experiences of the city. The resultant architecture would have to establish alterations in pedestrian movement to break linear vision lines and deepen pedestrian consciousness of user haptic experience. It attempts to make the city a destination rather than a threshold.





moving from the rigid to the non-linear as a means of establishing natural movement patterns.

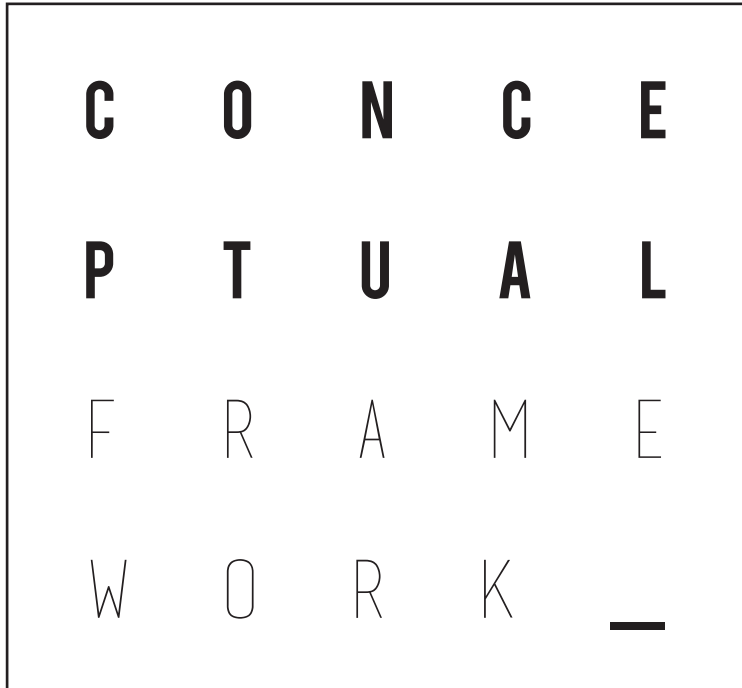


**FIGURE 26**  
 Breaking straight vision lines, establishing slower and more 'aware' movements through space.

Despite the relevance and use of all three concepts listed above, the severity of the architectural intervention being proposed sought an equally heavy (at least, heavier than the previous three) concept to drive the underlying design core. The project required a more basic conceptual spine stemming from a more essential conceptual issue. The addressing of urban dichotomies seemed the most relevant theme. With the decision to incorporate university bodies as the main user profile, bringing with it the issue of societal elitism, and the resultant muteness of an underprivileged majority, a new concept was explored: **The tension between global, free expression and the societal norms imposed by a power-wielding minority.**

During an investigation of the concept of tension, free expression, and the role of public space in addressing both, an examination was undertaken of literature pertaining to the following: **insurgent public space**, **heterotopia** (where heterotopia refers to spaces of deviant behaviour, which is linked to free expression), **boundaries** (physical as well as social and economic), and **networks** (as the city can be seen as a network comprising numerous vital links and nodes, including public space).

## 2.3



The main driving force behind the project is a thorough understanding of public space and the role it plays in well-functioning inner city environments. Parallel with this, is the research conducted into the phenomena of South Africa's inner city public spaces, and why they do not necessarily follow the optimal model.

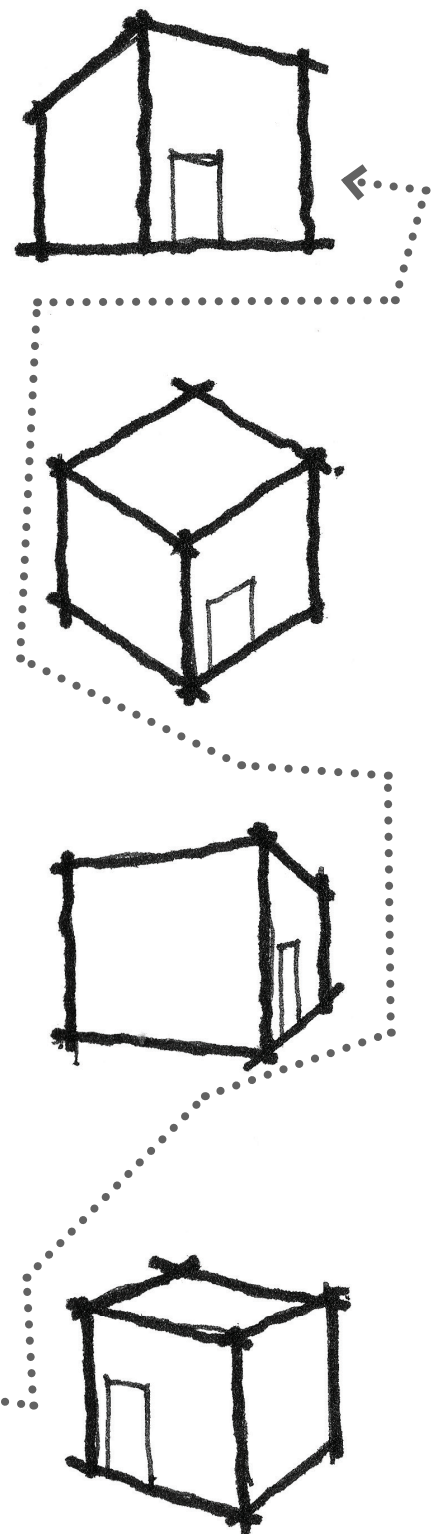
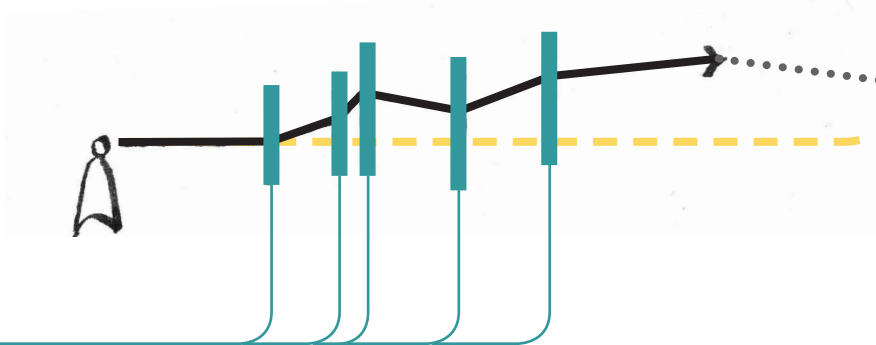
As a result, much of the research is directed at Apartheid segregation planning, to investigate the influence this had on inner city design before 1994. The struggle these inner city systems underwent to adapt to a changing user profile after 1994 is then discussed. It is important to understand the history of South African urban development, especially from the view point of Apartheid, as it had such a profound influence on city structures and where they are today.

The conceptual approach touches on ideas such as: perspective, heterotopia (non-place), boundaries, networks, oppression and free expression. The following explanations of these terms refer to my own understanding of each, based on researched interpretations, and their consequent way of use in the rest of the document.

# P E R S P E C T I V E

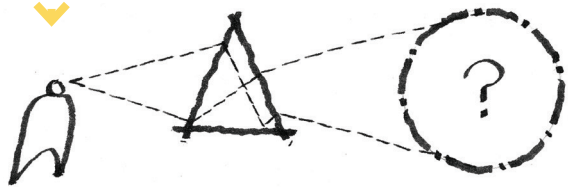
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The perception of public space is the concept referred to in this instance. Perspective is a wide concept and can be interpreted both physically and metaphorically, but here it refers to the public understanding of public space. It is believed in the South African context, that public space is perhaps not as successful given a widely unspecific understanding of what constitutes public space. This would be an unspecific understanding brought about by the formation of a relatively new (and utterly diverse) national demographic. Races have never lived in such close proximity, and it warrants investigation whether different perceptions of city structures can be reconciled, or if a new, culturally universal **perspective** of inner city life should be cultivated instead.

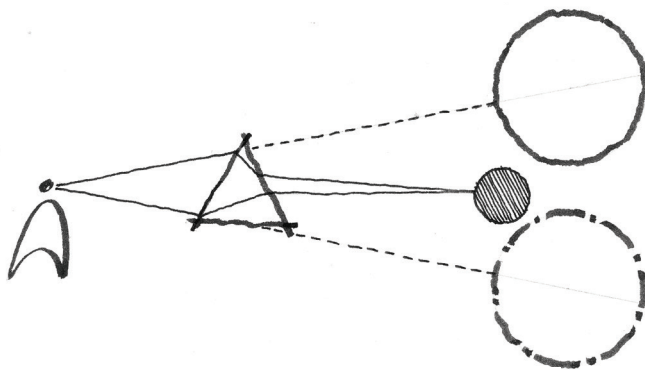


**FIGURE 27**

Thresholds in perspective influence how objects are viewed, often leading to diverse opinions of a single object among different subjects.



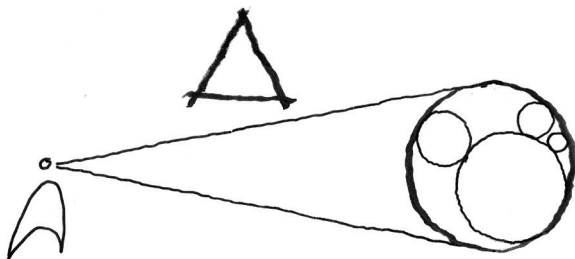
Human perception of the world is influenced by societal norms.



01 The prism is representative of societal norms. The prism distorts human perception of the world. Numerous possibilities are discarded in favour of one chosen outlook.



02 To free humanity from the constraint, the prism needs to be removed (the norm has to be challenged).



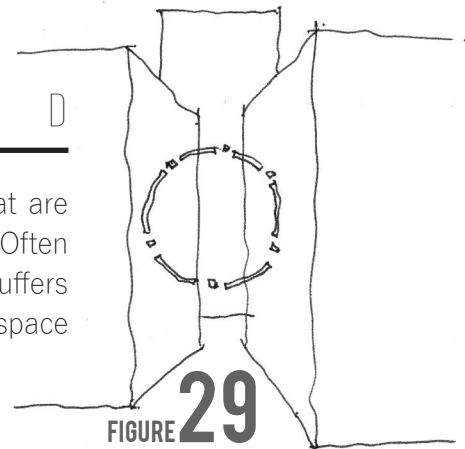
03 Without any norm, human perspective will widen to include a diverse and multi-layered world open to personal interpretation.

**FIGURE 28**  
The issue of perspective explained.

## U R B A N V O I D

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This term is loosely used to describe spaces in the city that are empty - either from lack of built form, or lack of user activity. Often the two go hand in hand. Neglected and forlorn built fabric suffers from lack of use, which compounds the problem and lets the space degrade exponentially.



**FIGURE 29**  
Empty spaces between meaningful places.

## H E T E R O T O P I A

---

In this dissertation, the term 'heterotopia', as coined by Michel Foucault (2008: 17), is used to describe a state of public space, in which public space has become neglected to a point of losing specific function. To explain this more clearly, a brief definition and background of the term is provided.

Foucault (2008: 17) begins by juxtaposing the term with 'utopia', in a piece titled 'Of other spaces'. Essentially, utopias are unreal 'dream spaces', that represent a perfected version of the real world or something utterly different and impossible. They are products of imagination and have no real grounding in the physical realm (Foucault, 2008: 17). Heterotopias, on the other hand, are real places in the physical realm, taking up real space, despite the fact that Foucault (2008: 17) describes them as being non-places. A further definition sees them as being considered a type of 'realized utopia'. Their categorisation as 'non-place' derives from their functional 'oddness'. They do not house 'normal' functions, but contain strange in-between functions that are vital to societal functioning even if they are difficult to officially label (Foucault, 2008: 17). This functional contrast to what is considered 'normal' or 'everyday' is difficult to define, and at first it is rather difficult to understand what heterotopias really are. To offer further clarification, Foucault defines two broad types of heterotopia: heterotopias of crisis and heterotopias of deviation.

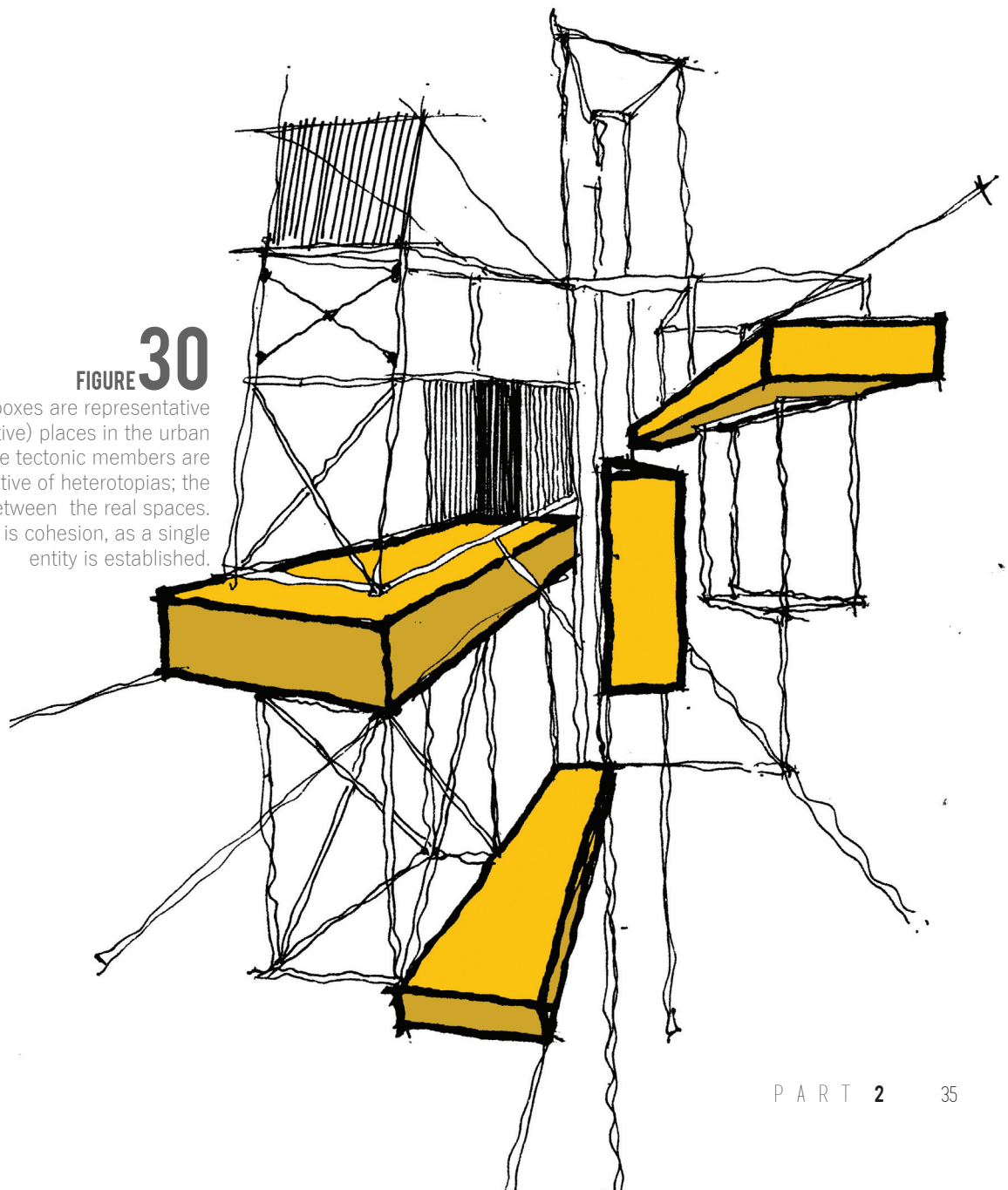
Heterotopias of crisis are spaces housing activities of crisis, like war zones, boarding schools (if puberty is considered a crisis) and military training camps among others. However, Foucault sees these heterotopias of crisis as disappearing in modern society. He argues that they are being replaced by heterotopias of deviation. As the name suggests, these places house activities of deviation – activities that are considered out of place and abnormal in normative society. These include psychiatric hospitals, prisons and old age homes (Foucault, 2008: 18).

There are other examples of heterotopia explained, like the cemetery, the library, the museum (accumulation of time), the fairground and holiday resort (fleeting experiences; opposite of the museum). Through reading Foucault, the expanse and varied applications of heterotopia become apparent. It seems as if 'normal' societal behaviour comprises eating, sleeping, working and travelling. Everything else that inconveniently falls outside this dawn-to-dusk routine possibly comprises a heterotopia. Therefore, if we consider the 'normal' routine and deviation from that routine, heterotopias are most easily recognised when they are heterotopias of deviation.

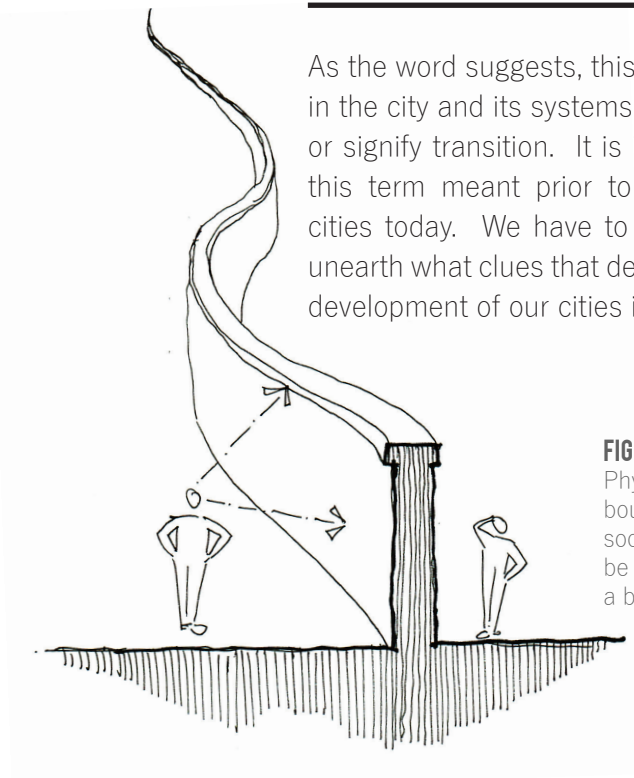
Now, my definition of modern public space as a heterotopia of deviation will be explained. In addition, background will be given on the meaning of the term as used further in this document. In the typical 18th century western tradition, public space refers to a market square or park. Both were intrinsic to society at the time, and their functions were well-written into the societal programme. Today (as will be further explained in part 2), public spaces have become multi-faceted, and encompass a plethora of possible interpretations. They have lost specific function, which has been compounded by a modern need to spend more time on cyber public space, than in actual parks. Second to this, is the neglect of public space, which establishes urban voids. Underused public spaces lose recreational function, and become functional transition zones. They become empty spaces with absolutely no function other than separating buildings by being empty spaces. These spaces become containers of deviant behaviour performed by deviants like graffiti artists, street dwellers, homeless people and illegal squatters. They become heterotopias of deviation, with no place in 'civilised society'.

This dissertation project aims to re-establish meaningful public spaces by formalising them as spaces of deviation rather than forcing a western model onto the city. The project does not mean to make more parks, but to celebrate and encourage the self-appropriation of public space by societal deviators. Whilst it is true that deviant behaviour is often detrimental to a well-functioning society, it is the negative half of free expression. And free expression must inevitably be addressed on our road to true reconciliation, as it is a tool with which to determine a society's thoughts and behavioural preferences.

**FIGURE 30**  
The yellow boxes are representative of real (normative) places in the urban setting. The tectonic members are representative of heterotopias; the connections between the real spaces. Together, there is cohesion, as a single entity is established.



# B O U N D A R I E S



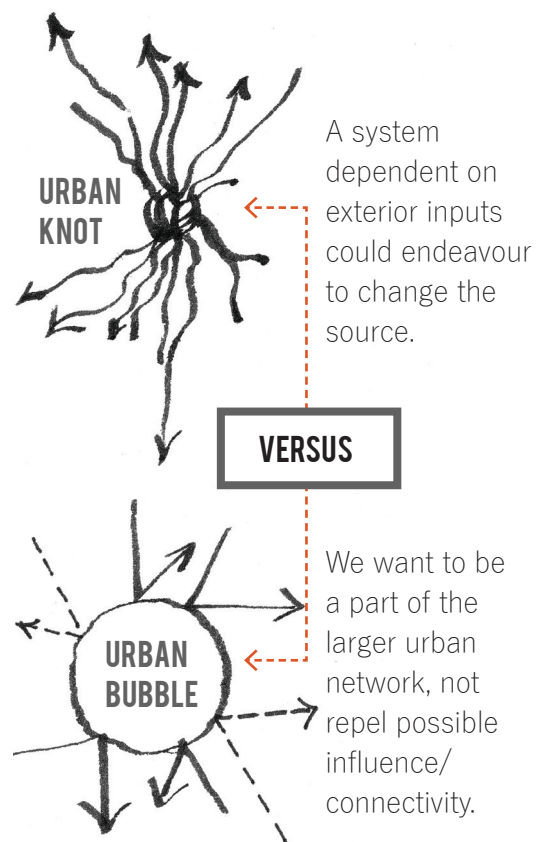
As the word suggests, this concept refers to various thresholds in the city and its systems, whether they separate, demarcate, or signify transition. It is imperative that we understand what this term meant prior to 1994, and what it means for our cities today. We have to mark the development and try and unearth what clues that development might have to offer for the development of our cities in future.

## FIGURE 31

Physical, social and economic boundaries keep our cities and societies divided. There will never be true reconciliation if we maintain a boundary mindset.

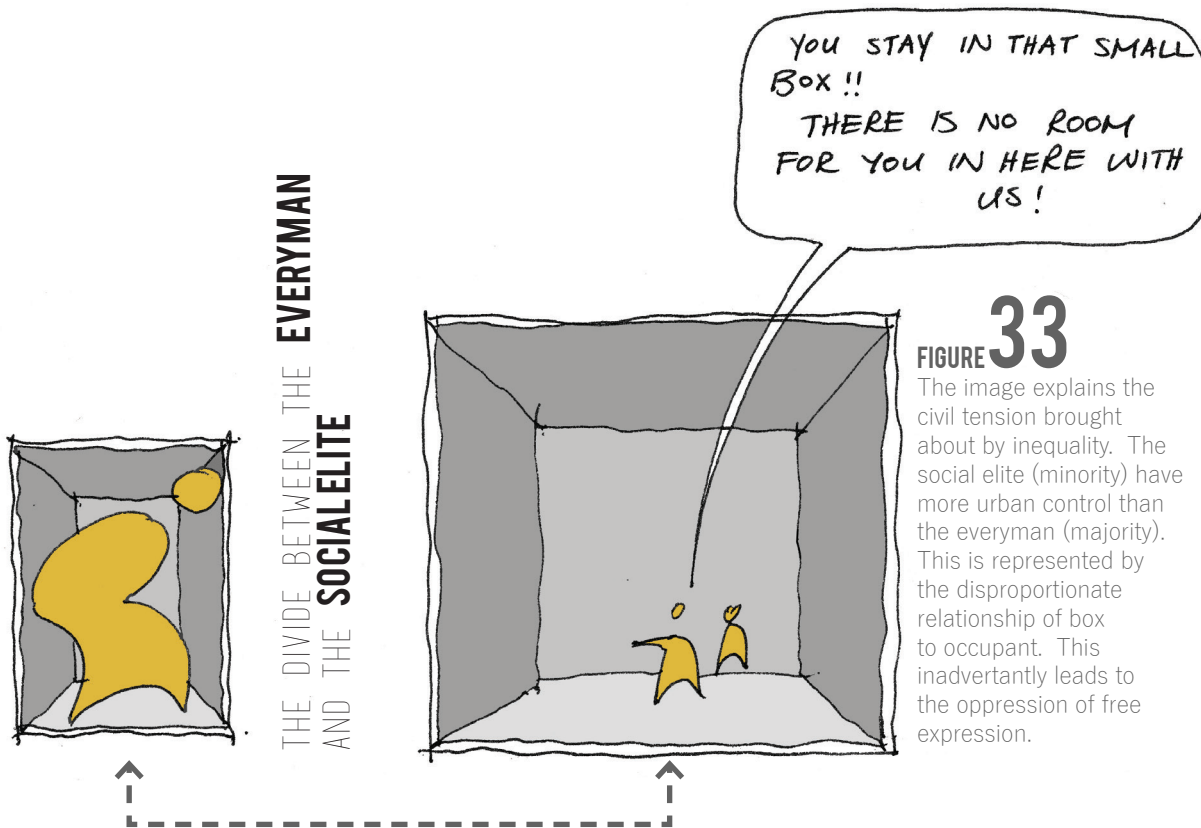
# N E T W O R K S

Networks are a [relatively] modern concept, which arose parallel to the rise of the information age. The internet is used as a universal icon for this phenomenon, but in the realm of architecture, we have come to recognise it in cities and land habitation as well. This is especially applicable in cities, as this is where the internet is most prominent (internet cafes, wifi zones, company intranet systems, electronic bulletin boards to name a few), we have become keenly aware of the parallel network caught between the invisible world of zeros and ones. This world mirrors the physical one, with its streets and highway systems and parks and building destinations. It has made us aware of the distinction between points and pathways: between destination and transition. Everything is part of a network, constituting various points linked with numerous connections. Dealing with public space as a 'link in the larger urban framework', this concept becomes especially relevant. The issue here is to unearth whether public space is transitional in nature, or whether it is a destination in the framework. Should we move through it, or towards it? And which will contribute to a better city?



## FIGURE 32

Urban knot (network) versus urban bubble (enclosure).



**FIGURE 33**  
 The image explains the civil tension brought about by inequality. The social elite (minority) have more urban control than the everyman (majority). This is represented by the disproportionate relationship of box to occupant. This inadvertently leads to the oppression of free expression.

**O P P R E S S I O N**

This refers to the apparent superiority of the societal elite (which falls in a marked minority) over the everyman (the 'normal' majority). This superiority is no longer perpetuated by actual oppressive legislation, but the inaccessibility of privilege to the masses still has this inequality to effect. In current times, this is most visible through the oppression of the voice of the masses by a power-wielding minority (for example, the way government occasionally restricts the spread of sensitive information through formal media by way of censorship).

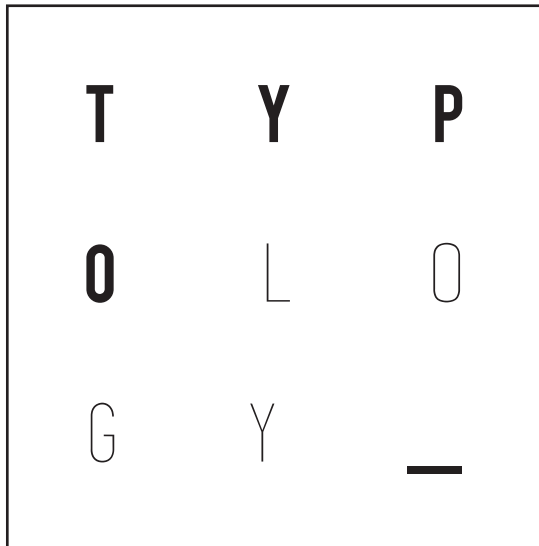


**FIGURE 34**  
 Allowing voices to be heard on any issue.

**F R E E E X P R E S S I O N**

Free expression refers to the exercising of any one individual's desire to express through any medium that individual's opinion or perspective on a certain issue. An example of this is public protest art/street art. A derivative of graffiti, it is a form of [what is labelled by the minority as vandalism] art performed on public property to convey an opinion on current issues. More broadly, it pertains to the use of public space in any way a user chooses.

## 2.4



### 2.4.1 INVESTIGATION OF CLIENT AND USER

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In the essay *The Rural Studio*, Samuel Mockbee implores architects, both in academia and practice, to take on a subversive role in the world and to challenge the status quo and question the norm (Mockbee, 2010: 108). He expresses a worry that architects have become content with taking a back seat and letting politicians and government officials make critical world-altering decisions, despite architects' capacity for insight into these issues. He fears his profession underestimates its ability to produce subversive leaders (Mockbee, 2010: 109).

It is fair concern. Given architects' prerogative to alter and form the built environment, and the resultant burden of responsibility they must carry in the wake of this privilege, it seems even logical that architects must be active participants in the process of determining urban development, if not the sole decision makers. Yet, having read this, it becomes apparent upon reflection, that architects are often not part of the formation of project rationales (and therefore problem prevention), but rather designated to solving problems created by the poor decisions of others (the client, developer). It is a strong sentiment, rarely expressed, and here stated at the onset of the article, as though to remind architects of

their potential and obligation to exact morally responsible change. It is through this initial iron-fisted 'call to arms' that Mockbee continues to convey his views on the never-ending search each architect undertakes to unearth the meaning of architecture in the social realm, and the 'real issues' which architecture must address (Mockbee, 2010: 107). In his opinion, taking a subversive, challenging stance is the only way to truly face these issues and expose the voids architecture must fill and the needs it must address. This is crucial in understanding the difference between what architecture can do and what it should do, and to cultivate a socially responsible attitude through any and all architectural interventions.

From this hands-on approach, *The Rural Studio* was born: a project started by Mockbee that took the knowledge, skills and workforce of young architecture students and applied it in less fortunate neighbourhoods in the form of small architectural interventions. Mockbee (2010: 114) wanted architectural education to play a more social and physical role in the world, instead of lying dormant on academic campuses. The intent was to expose students to the real world and force them to let go of preconceived ideas

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(Mockbee, 2010: 114). They would see the effect of architecture 'in the flesh', rather than merely guessing at good intentions from secluded offices.

The prerogative of architects aside, it seems a valid lesson for all members of society; it implores each to take an active role in the shaping of their own urban condition. In terms of this dissertation, students are used as the main user profile in the proposed project because of their exposure to radical and innovative thinking at university level, and the resultant potential to apply this innovative reasoning to real world issues. Additionally, it is a means of addressing the exclusivity of higher education institutions. There is a discord between governmental and tertiary institutions and the greater good of the public they have the moral obligation to safeguard. There is no community, and it seems that those belonging to either university or governmental institutions have lost sight of the larger picture. They have become engulfed by exclusivity. The project attempts to reintegrate these 'island beings' with the rest of society.

**The problem is summarised as such:** university students have the greatest potential,

as innovative thinkers pondering contemporary issues in our societies, to exact change in our cities. Yet, knowledge is kept 'hostage' on secluded campuses, inadvertently creating a system of hierarchy. This behaviour is understandable, because it is understood that universities are there to educate first. The argument does not try to express a strict obligation of students to be public servants, but tries to express the possibility of utilising student expertise. It would serve the 'greater good' to integrate these separated entities with the real world, whilst using their knowledge to the beneficial alteration of that world. Therefore, this explains the decision to use students to perform small interventions in cities, in both this dissertation and Mockbee's Rural Studio.

By addressing the social system, and transferring the power of urban decision making from a removed minority to an all-inclusive majority, the project attempts to break down social boundaries and establish social and infrastructural networks. In this way, the majority becomes responsible for their own place making, which could be a remedy to the 'island effect' and touch on issues surrounding public space.

2.4.1.1

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# NEBULA

AUSTIN MAYNARD ARCHITECTS

Melbourne, Australia

62sqm

2012

Nebula is a portable art space that can adapt to adhere to the needs of artists with disabilities, changing into a gallery, workshop, seminar space or performing arts venue as need and circumstance requires (Archdaily, 2013: online).



FIGURE **35**

Nebula set up in an urban niche  
(Archdaily, 2013: online).



**FIGURE 36**

Each folded down side becomes a work station for the artists (Archdaily, 2013: online).

## B A C K G R O U N D

As Australia's first portable art space, Nebula is an initiative that aims to connect disabled artists to the larger urban framework. As the user profile is physically and metaphorically relegated to fringe locations, the project made accessibility the largest part of its design drive. It aims to give disabled patrons freer movement and reconnect them to the rest of the city grid. This versatility allows the space to truly adapt to any environment, and morph to its users' needs (Archdaily, 2013: online).

## I M P U L S I V E I N S E R T I O N

Nebula demonstrates the possibility of taking arts education INTO the city, in order to contribute in a proactive way to the betterment of society. Even more appropriate is the fact that the predominant user group comprises artists with disabilities. This marginalised group required better integration with the rest of society, leading to the creation of the portable artist studio that could more easily give them access to the city. The trailer could easily pop-up in any public space which would turn it into a temporary artist studio, gallery or exhibition space.

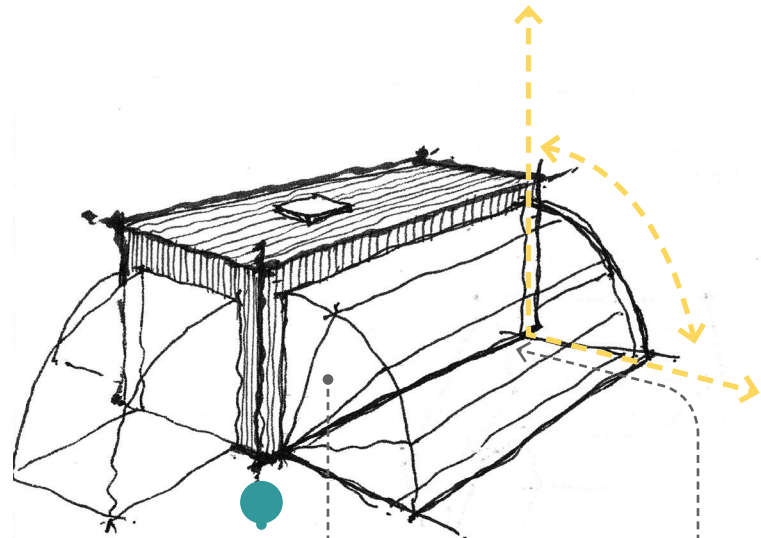


**FIGURE 37**

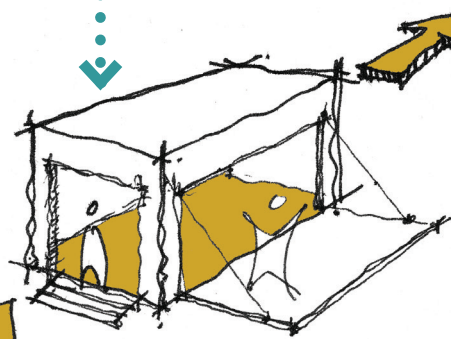
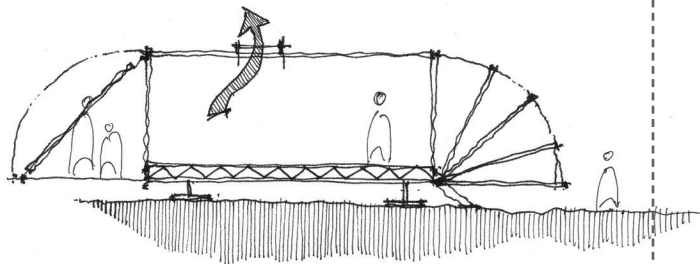
Interior of the trailer, showing the wings being used as micro studios (Archdaily, 2013: online).

## A D A P T A B I L I T Y

Nebula was a lesson in adaptability and versatility. The Project inspires the use of minimal space as blank backdrop merely housing or accommodating personal expression, instead of establishing a prescriptive container. The project is small, but the principle remains powerful. The box can be a gallery, studio or stage depending on the user needs, and each space finds itself at home in the adapted structure without effort. Its movability is also intriguing, albeit difficult to simulate in a dissertation-scope project.



A box that can be opened towards the public via simple pivoting side panels.



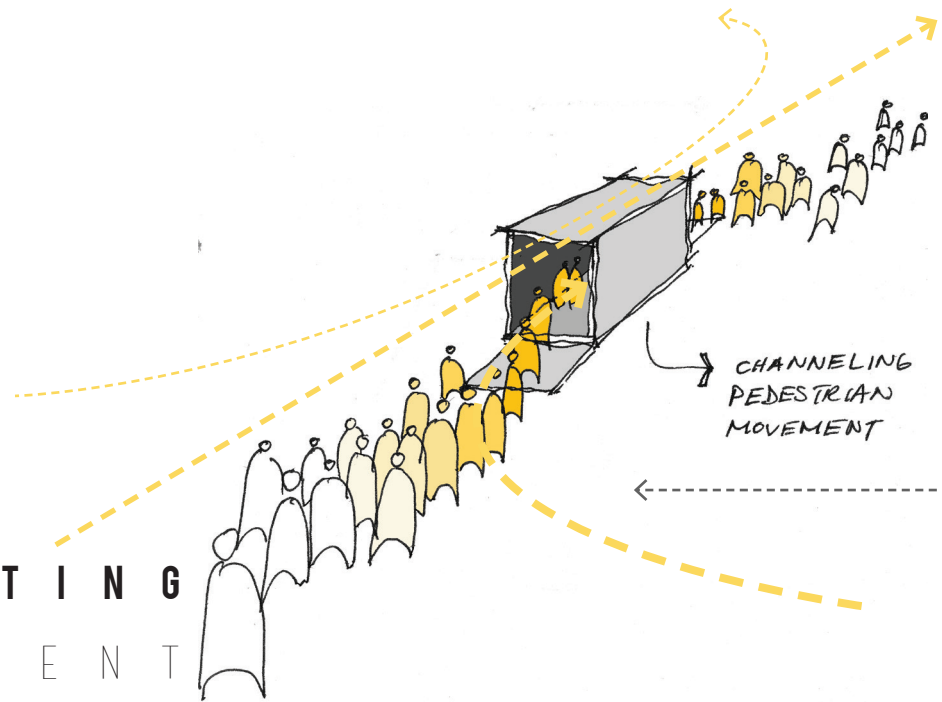
moving through a continuously changing space



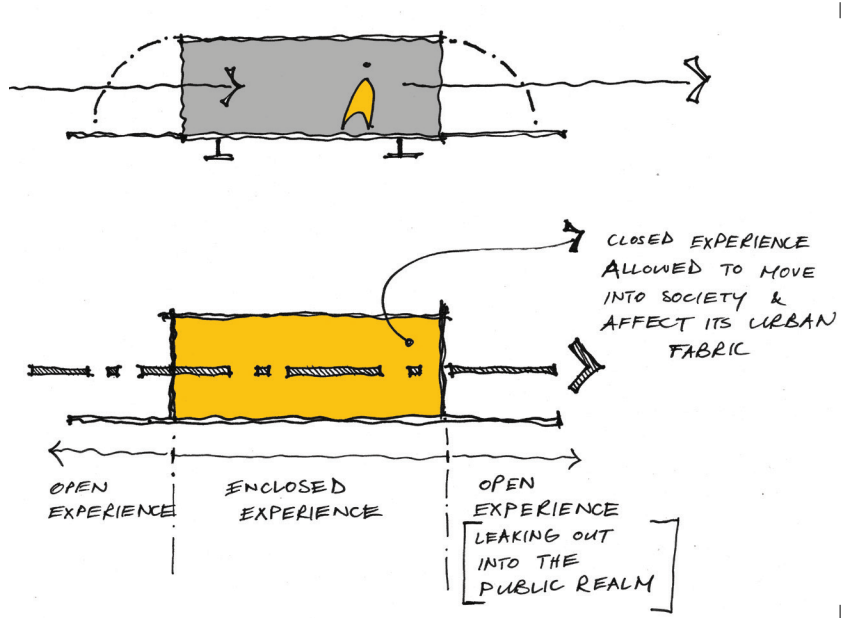
### FIGURE 38

The sketches above illustrate the trailer's versatility, afforded by the folding panels (Archdaily, 2013: online).

# DIRECTING MOVEMENT



Nebula is more than a portable artist studio. It is a flexible container capable of channelling and redirecting inner city pedestrian movement. Especially in terms of the proposed dissertation project which aims to refurbish public space, the redirection of pedestrian movement is a valuable lesson to learn.



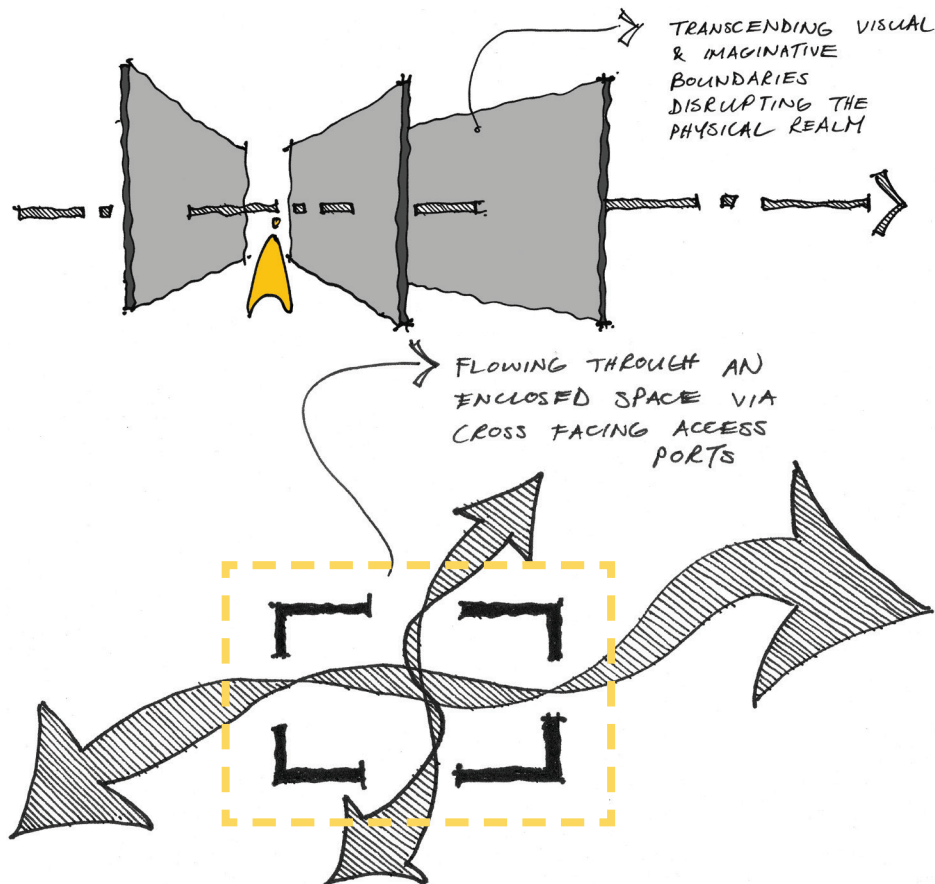
**FIGURE 39**  
The images portray the trailer as a channel of urban activity, capable of altering that activity by redirecting its flow. (Archdaily, 2013: online).

# T R A N S C E N D I N G B O U N D A R I E S

The project deals with taking a secluded/marginalised group into a larger urban framework and having it contribute to the betterment of urban place. The project attempts to marry two different societal groups, to abolish ignorance and to create a more coherent urban demographic. Here, the integrated group is disabled people, whilst the reintegrated group in the proposed dissertation project comprises campus students. The aim remains similar: to bring a secluded body into the realm of the everyman and to establish a meeting curated by a common interest.

## FIGURE 40

Nebula's folding panels allow the context to flow into (and become part of) the structure's interior. It is the most basic form of perforating boundaries (Archdaily, 2013: online).



2.4.1.2

# INNER-CITY ARTS

MICHAEL MALTZAN ARCHITECTS

Los Angeles, California

4050 sqm

2008

Maltzan was tasked with creating a 'protected beacon' for the arts instruction of at-risk school children in the downtown area of Los Angeles called Skid Row. The challenge was creating a courtyard-centred facility in a no-go area, whilst maintaining dialogue with the surrounding context (Hawthorne, 2009: 68).

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## FIGURE 41

Inner-city Arts nestled among the grey semi-industrial buildings of downtown Los Angeles. (Bustler, 2009: online).

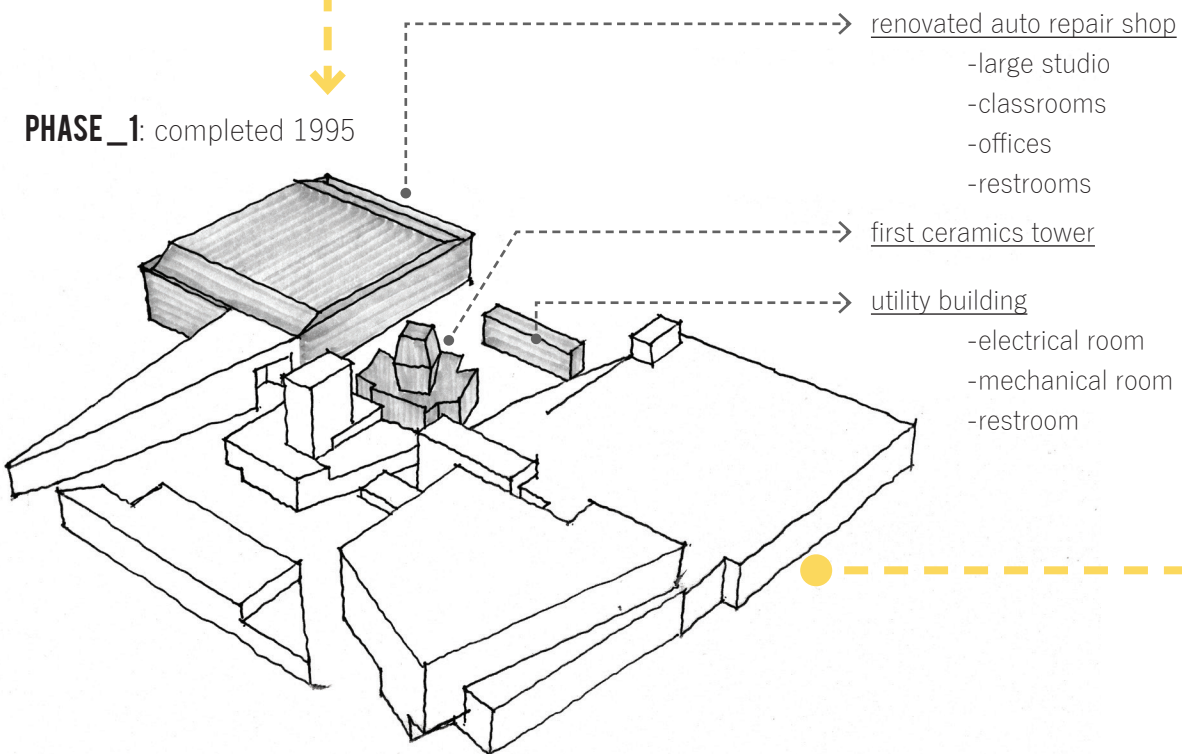
# N A T U R A L D E V E L O P M E N T



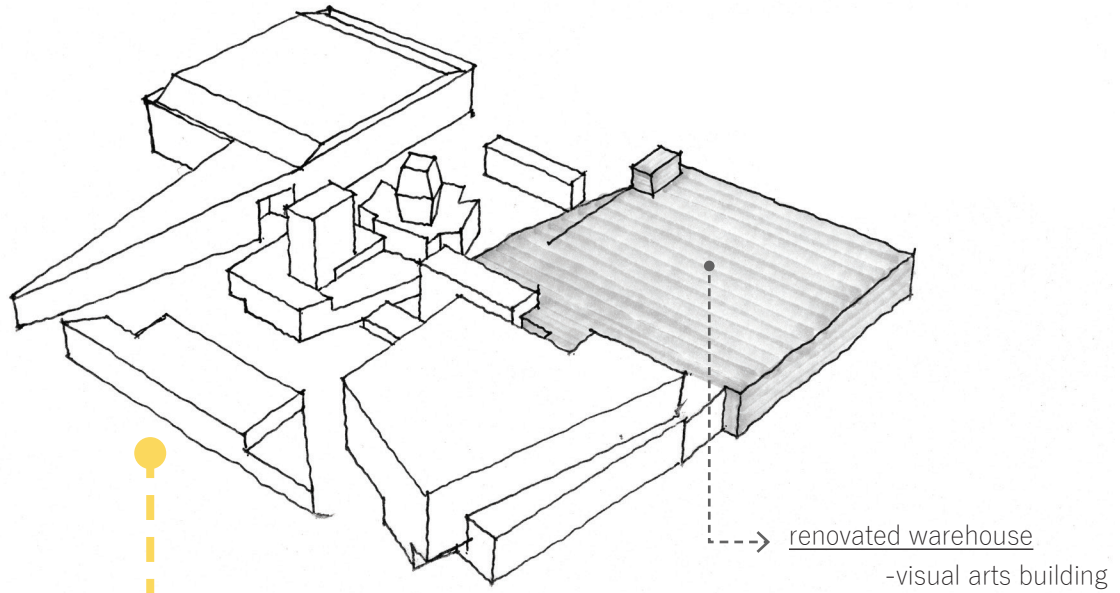
**FIGURE 42**  
The floor plan shows a cluster of buildings forming a singular complex. Sketch was redrawn from original plan (Pearson, 2009: 65).

Inner-City Arts is an art school predominantly researched for its intriguing approach to the creation of an urban courtyard. In terms of the context, building programme and user profile, the building is similar to the proposed dissertation project. The complex aims to provide extracurricular arts instruction to school students in Los Angeles. It developed in three construction phases over 15 years, finally occupying a ground area of 4050 square metres and nearly comprising an entire city block in the downtown part of LA called Skid Row. The semi-industrial area was labelled a no-go region, which made it a sensitive issue to address for the erection of an educational facility.

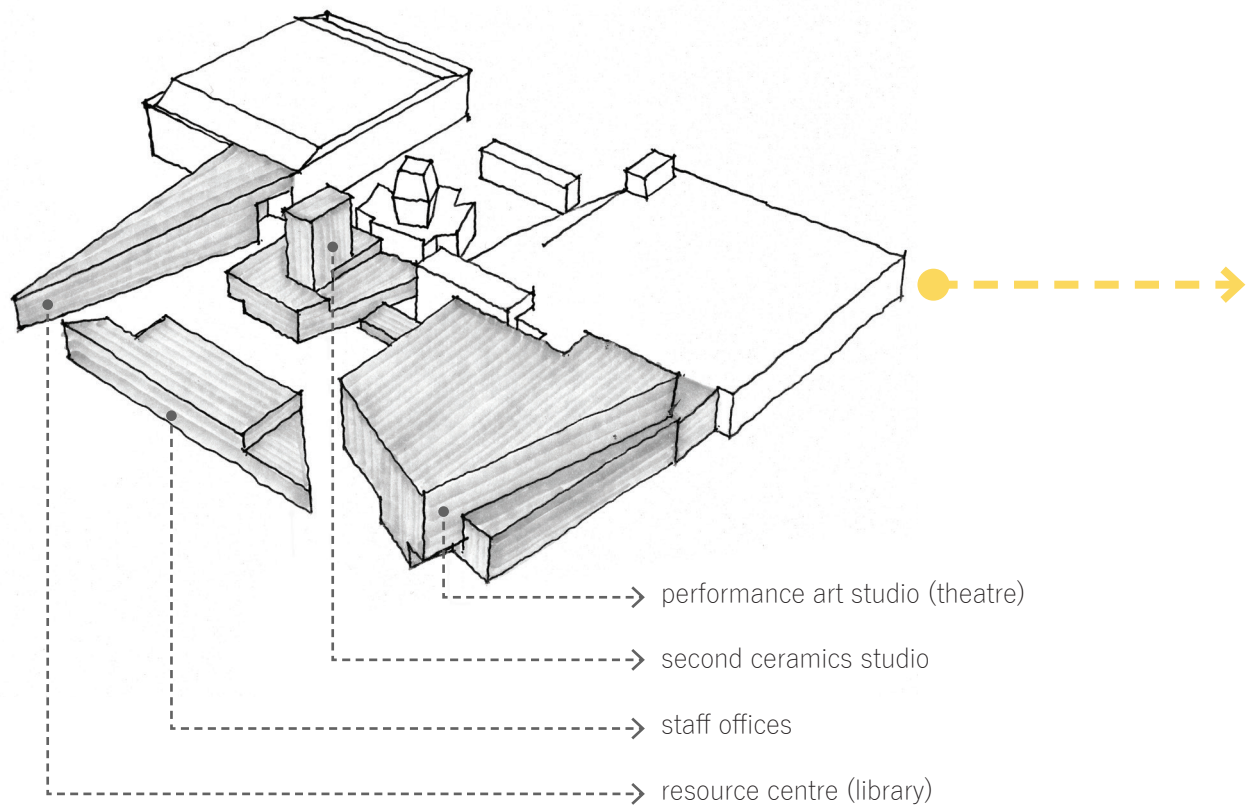
**PHASE\_1:** completed 1995



PHASE\_2: completed 2005

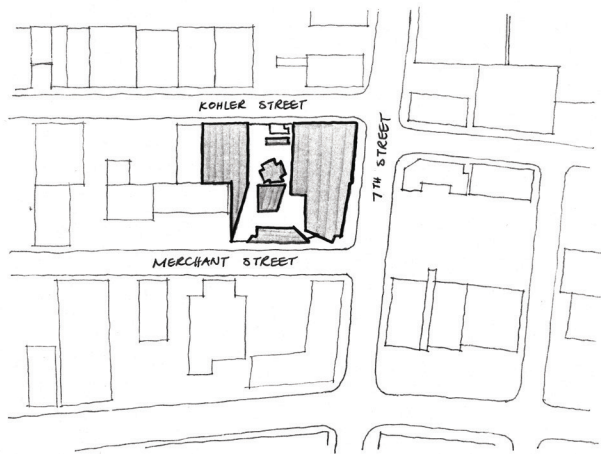


PHASE\_2: completed 2008

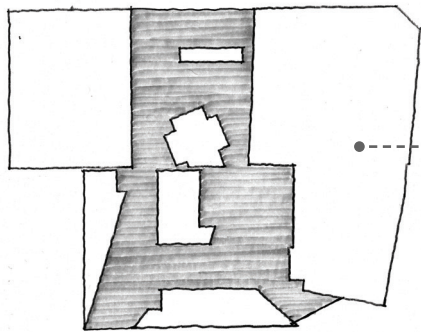


## FIGURE 43

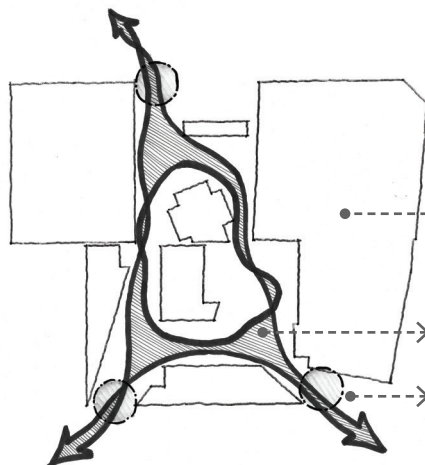
In reference to image 'phase 1' to 'phase 3'. The project developed timeously in three phases, over a 15 year period. Images redrawn from 3d rendering (MoMa, [n.d.]: online).



vegetation (Inner-city oasis)



enclosed courtyard



flow of pedestrian circulation

access points



## E N C L O S U R E

Here the building is introverted, because of an introverted function. Unlike the proposed dissertation project which seeks to upgrade public space in the surrounding urban fabric and therefore must be a public orientated building, Inner-City Arts is solely preoccupied with providing arts instruction to a select number of school learners. This leads to peripheral structure-groupings enveloping an enclosed courtyard and creating a 'safe' pocket within the larger urban framework.

### FIGURE 44

Inner-city Arts establishes an enclosed urban oasis within the middle of its building lot. This creates a safe, green spill-out space for the art students that use the building. Images redrawn by author (MoMa, [n.d.]: online).

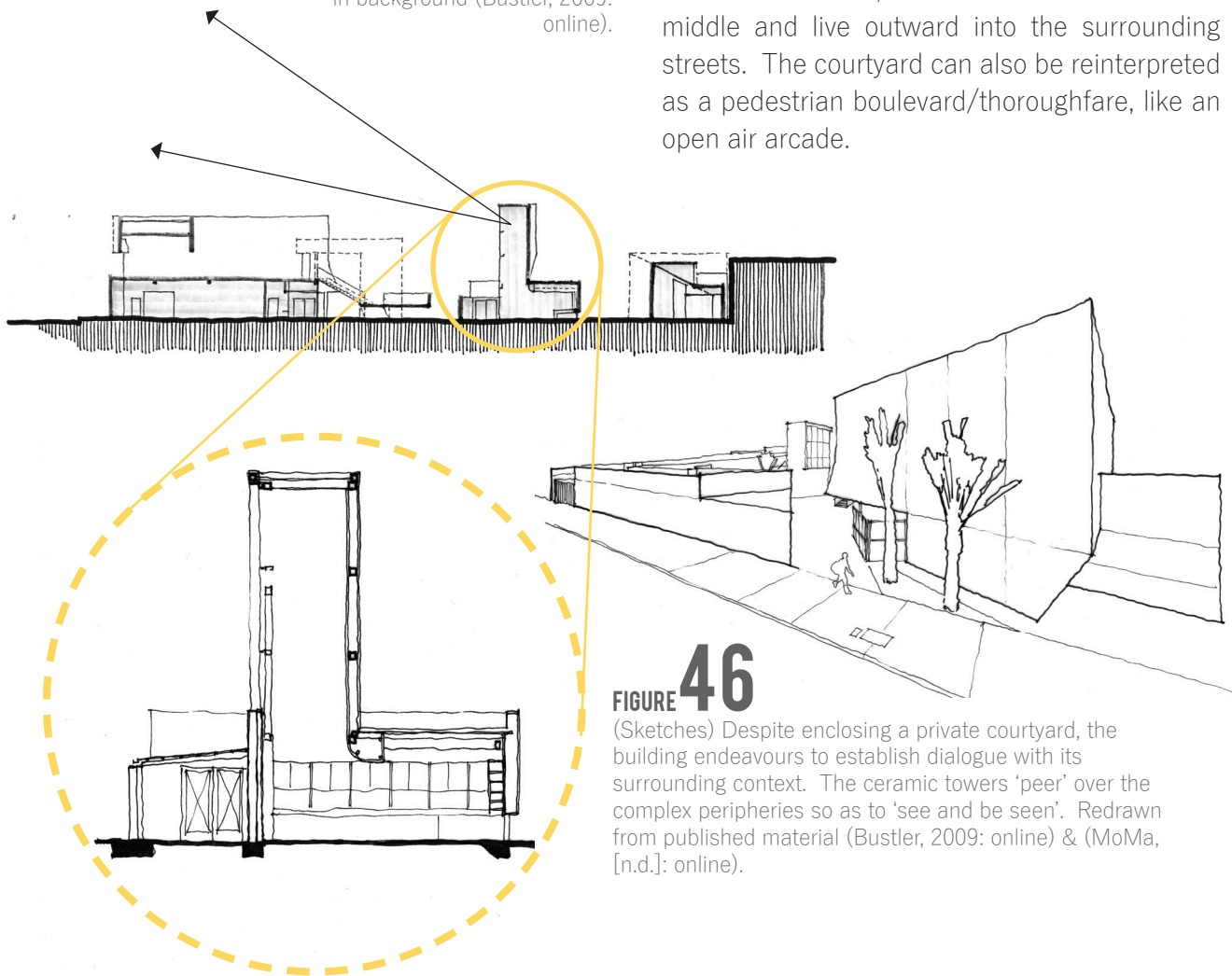
## C O N N E C T I O N

So, whilst students are brought into the city, they are not used to influence it in any way. Location is nearly irrelevant, bordering on simple gentrification. The complex started with the refurbishment of an old industrial-orientated building, suggesting that low property prices and floor space could have been some of the major contributors to site choice.

In contradiction to this, the proposed dissertation aims to establish an externalised hub, which will flow into the city and encourage user interaction. The focus is the city, and its refurbishment. The precedent was mostly researched for its unwillingness to address the surrounding urban fabric, to see how this could be reinterpreted to achieve the opposite. The proposed building would firstly refrain from establishing peripheral site structures, so as not to create 'walls' of exclusion. Instead, it would sit to the side or middle and live outward into the surrounding streets. The courtyard can also be reinterpreted as a pedestrian boulevard/thoroughfare, like an open air arcade.



**FIGURE 45**  
(Photo) View of campus courtyard, with urban context in background (Bustler, 2009: online).



**FIGURE 46**  
(Sketches) Despite enclosing a private courtyard, the building endeavours to establish dialogue with its surrounding context. The ceramic towers 'peer' over the complex peripheries so as to 'see and be seen'. Redrawn from published material (Bustler, 2009: online) & (MoMa, [n.d.]: online).

2.4.1.3

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# UFS DEPARTMENT OF ARCHITECTURE

TYPOLOGY ARCHITECTS CC  
Bloemfontein, South Africa

The project is a renovation and addition to an existing shed-like building that housed the urban and regional planning department of the University of the Free State. Interior spaces needed to be opened up and filled with natural light, which was achieved with the new roof element.



FIGURE 47

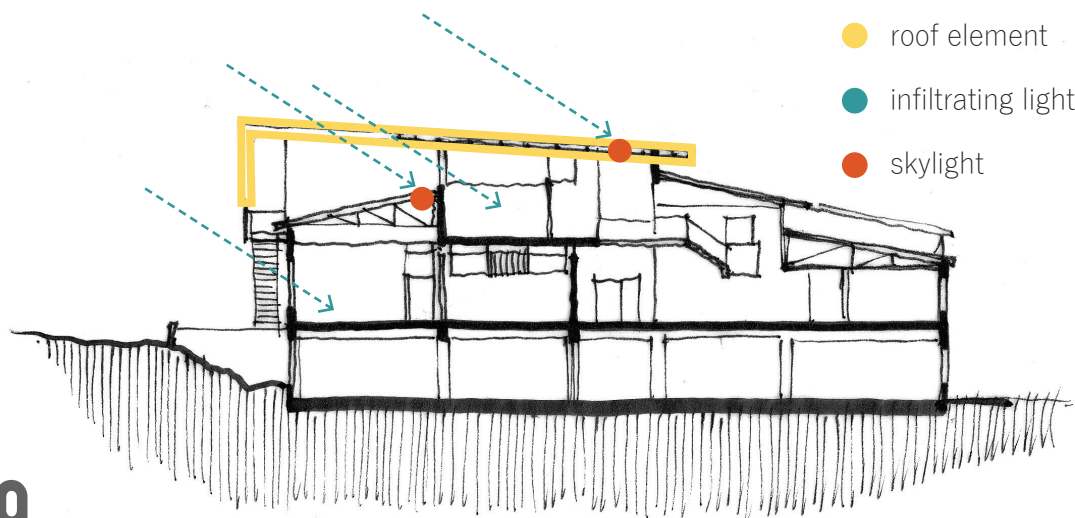
A view of the entrance of the building, with particular emphasis on the wrap-around roof element.



## U N I F Y I N G E L E M E N T

The refurbishment was undertaken to allocate a matching aesthetic appeal to the school's national standing and accreditation. The most drastic change includes the wrap-around roof element, constructed of steel frame construction and corrugated iron cladding. The latter was installed at a higher elevation than the original roof, allowing the inclusion of a new mezzanine level. The new floor raised ceiling heights and allowed more natural light to infiltrate the building. A new library, model-building room, multi-functional hall and seminar space was included on the mezzanine. The new roof enveloped the new structure and gave the building a unified aesthetic focal point.

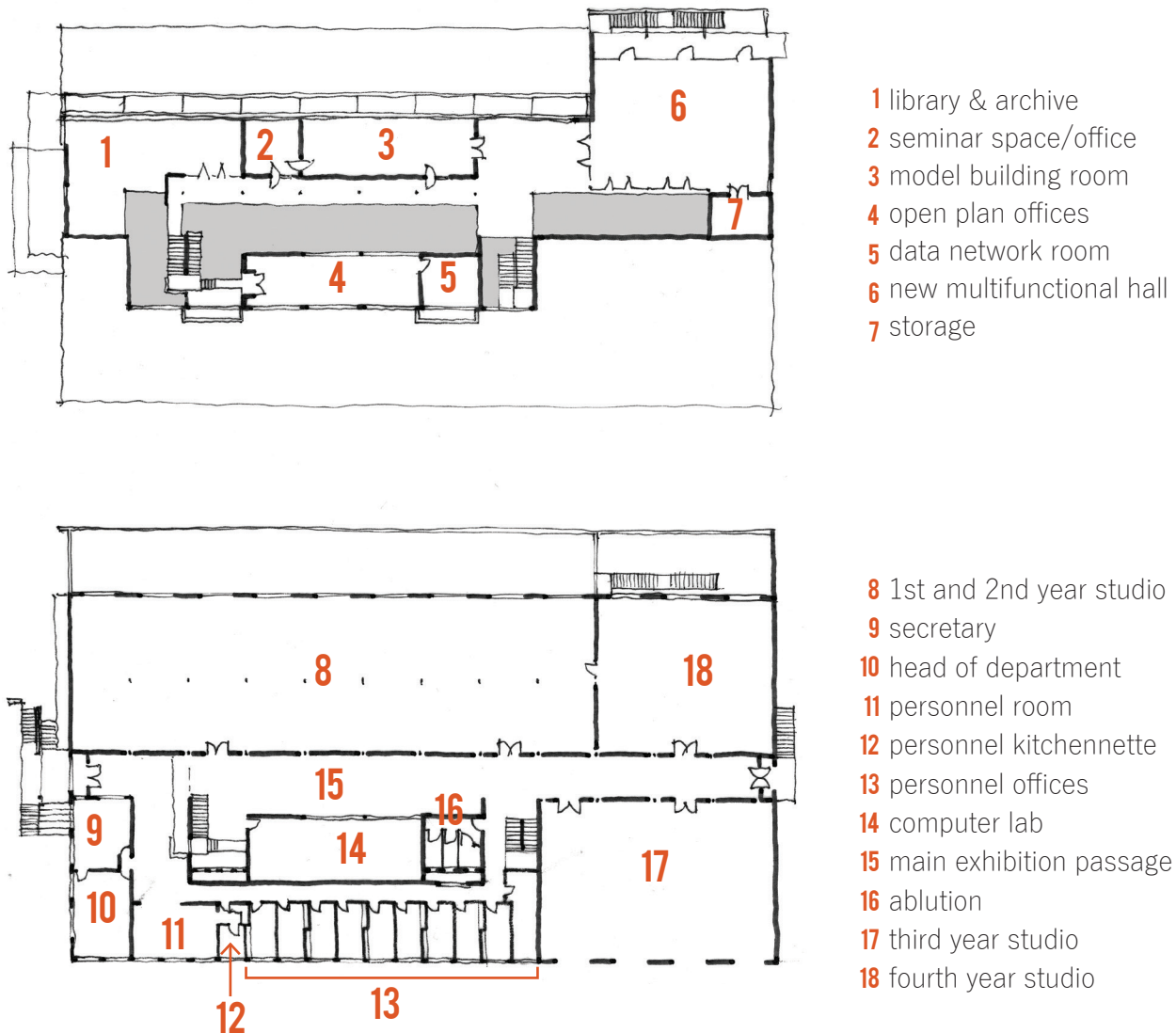
**FIGURE 48**  
Front view of the UFS department of architecture. The wrap-around roof also aids in controlling western light on the entrance.



**FIGURE 49**  
A north-south (cross) section of the architecture school, showing the roof angle, sunlight direction and skylights. Section redrawn from published plans (Pretorius, 2012: 57).

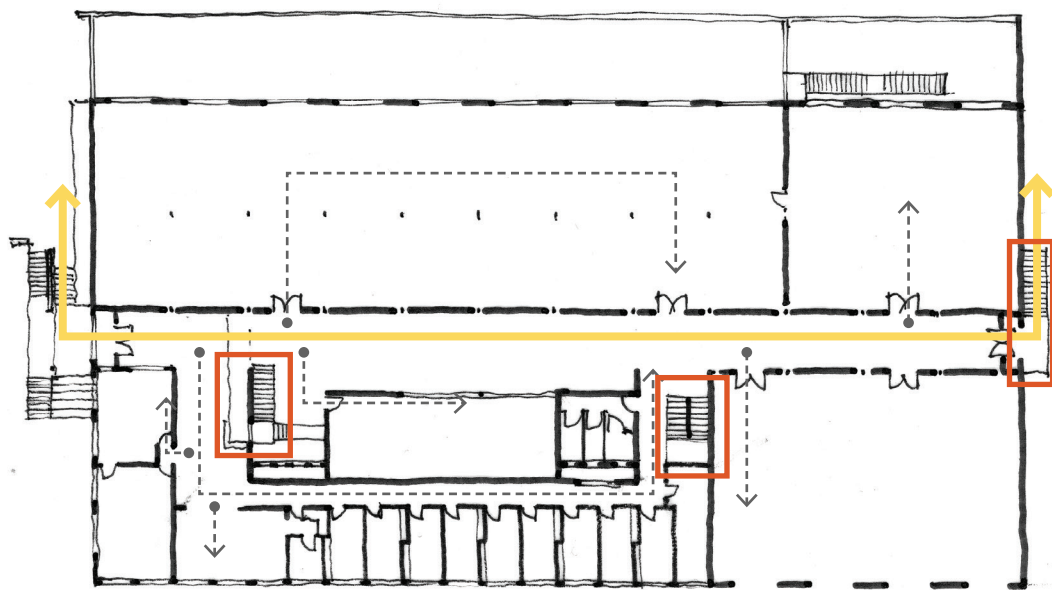
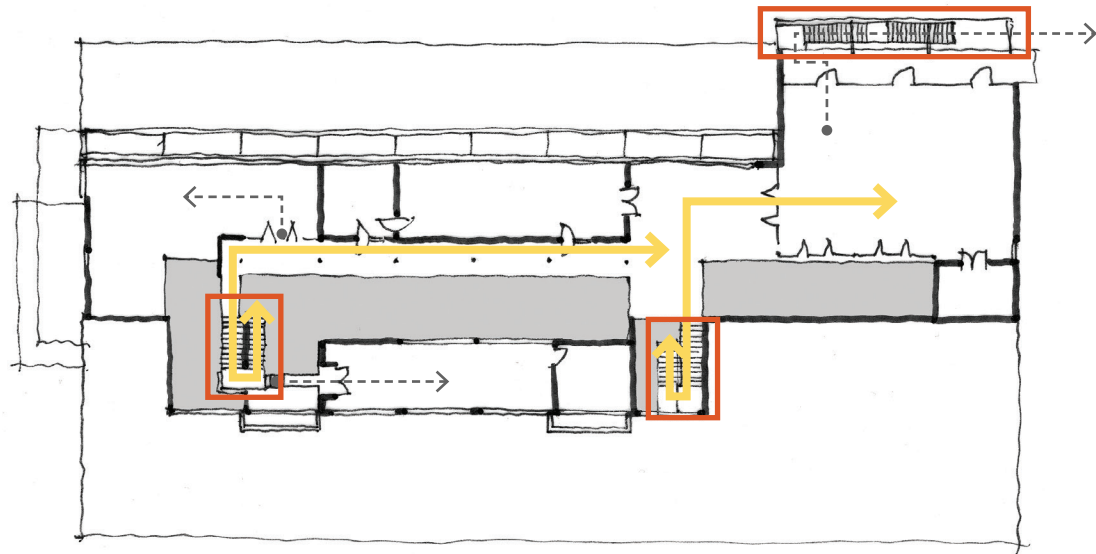
# P R O G R A M M E L A Y O U T

In terms of functional requirements, the building basically comprises large open plan studio spaces for each year group from first year through to fourth year. These studio spaces are all placed on the ground floor and grouped against the north facade of the building (with the exception of one of the studios, which is grouped against the south facade). The administrative spaces are grouped against the south facade on the ground floor. These include the staff offices, staff room, and head of department office. The reception quarters are placed next to the west-facing main entrance. The building has a central service shaft onto which plumbing services front. The ground floor also houses a computer laboratory, centrally placed next to the service shaft in the middle of the building. It does not require any light, and central placement is best for mechanical temperature control.



**FIGURE 50**

The ground floor and mezzanine plans showing programme allocation. Plans redrawn from published plans (Pretorius, 2012: 57).



- > secondary circulation
- ↔ main circulation
- ▭ vertical circulation

## FIGURE 51

The ground floor and mezzanine plans showing circulation flow, both horizontally and vertically. Plans redrawn from published plans (Pretorius, 2012: 57).



**FIGURE 52**

A view down the main basement circulation corridor. Ablution facilities are situated on the left of the image, with classrooms on the right. Five fifth year cubicles are grouped at the end of the corridor (two on the left, three on the right).

The basement holds the fifth year cubicles, three main classroom spaces, and the bulk of the ablution facilities. Despite being the basement, none of the floor level is actually submerged below the ground, and allows ample natural light. Approximately half of the floor space is shared with the Urban and Regional Planning department.

## T Y P O L O G I C A L R E L E V E N C E

For the proposed dissertation project, the UFS department of architecture is most appropriate in terms of functional requirements, user profile, and material considerations. Given the typological similarities (especially considering that the proposed project is first and foremost a workshop outpost for this very building, amongst others), this case study greatly influences the programme of the proposed dissertation project.

In a more aesthetic comparison, the most notable similarity is the use of a single, unifying roof element to 'wrap' around stacked functions. Although visually reinterpreted in the proposed dissertation project, the principle remains the same. It gives the project structural and visual cohesion, and reads as a protective element allowing itself to be perforated and morphed by the structure underneath; in other words, it becomes a protective skin.

The similarities between the UFS Department of Architecture building and Gallery on Leveur warrants notice. Material usage is shared, reinforcing the idea that these materials are contextually relevant in the greater Bloemfontein area. Corrugated iron wrapping structures are a common thread, used in conjunction with steel frame, curtain windows and clay brick.



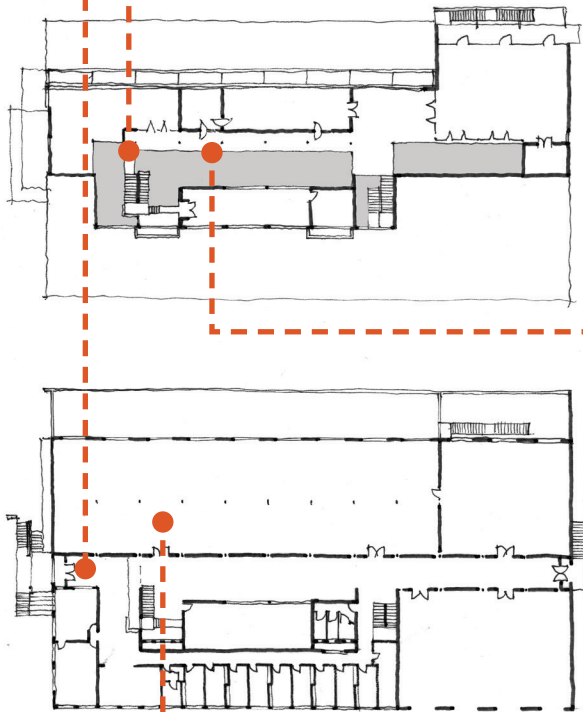
**FIGURES**

**53** A view down the main exhibition corridor on ground floor (looking towards the back of the building).

**54** A view into the library on the mezzanine floor.

**55** A view down the mezzanine floor corridor. The ground floor corridor is over the balustrade to the right.

**56** A view into the first year studio on ground floor. The far wall is the north facade of the building.



**FIGURE 57**

The ground floor and mezzanine plans. Plans redrawn from published plans (Pretorius, 2012: 57).

## 2.4.2

### A C C O M M O D A T I O N L I S T

The following accommodation list represents the final design solution of the proposed dissertation project. Although reasonably accurate, it may be subject to change before final submission.

#### GROUND FLOOR (MAIN WING)

tuck shop	15m <sup>2</sup>
tuck shop storage	10m <sup>2</sup>
supervisor office 1	14m <sup>2</sup>
concrete workshop	243m <sup>2</sup>
workshop material storage	15m <sup>2</sup>
locker room	22m <sup>2</sup>
male showers	16m <sup>2</sup>
female showers	16m <sup>2</sup>
cleaning storage	3m <sup>2</sup>
fire escape 1	27m <sup>2</sup>
entrance foyer + reception	153m <sup>2</sup>
main stair	16m <sup>2</sup>
elevator shaft	7m <sup>2</sup>
services shaft	6m <sup>2</sup>
service crane	29m <sup>2</sup>
supervisor office 2	18m <sup>2</sup>
main ablution passage	20m <sup>2</sup>
disabled ablution	5m <sup>2</sup>
female ablution	15m <sup>2</sup>
male ablution	15m <sup>2</sup>
ablution cleaning storage	7m <sup>2</sup>
fire escape 2	30m <sup>2</sup>

**702m<sup>2</sup>**

#### GROUND FLOOR (GALLERY WING)

staff room	10m <sup>2</sup>
manager office	7m <sup>2</sup>
kitchen	45m <sup>2</sup>
cold room	4m <sup>2</sup>
freezer	4m <sup>2</sup>
dry storage	5m <sup>2</sup>
ablution	26m <sup>2</sup>
ablution cleaning storage	4m <sup>2</sup>
service alley	7m <sup>2</sup>
restaurant/cafeteria	168m <sup>2</sup>
security booth	10m <sup>2</sup>

**290m<sup>2</sup>**

#### BASEMENT

parking floor	1659m <sup>2</sup>
parking ramp	222m <sup>2</sup>
circulation passage	25m <sup>2</sup>
main stair	17m <sup>2</sup>
elevator shaft	7m <sup>2</sup>
services shaft	6m <sup>2</sup>
service crane storage	18m <sup>2</sup>
service crane	27m <sup>2</sup>

**1981m<sup>2</sup>**

#### FIRST FLOOR (MAIN WING)

design studio	128m <sup>2</sup>
design meeting room 1	17m <sup>2</sup>
design meeting room 2	12m <sup>2</sup>
design studio storage	16m <sup>2</sup>
fire escape 1	40m <sup>2</sup>
health and safety office	10m <sup>2</sup>
auditorium	43m <sup>2</sup>
auditorium storage	6m <sup>2</sup>
office 1	15m <sup>2</sup>
office 2	15m <sup>2</sup>
office 3	14m <sup>2</sup>
passage space	153m <sup>2</sup>
main stair	16m <sup>2</sup>
elevator shaft	7m <sup>2</sup>
services shaft	6m <sup>2</sup>
staff room (cleaners)	18m <sup>2</sup>
main ablution passage	20m <sup>2</sup>
disabled ablution	5m <sup>2</sup>
male ablution	15m <sup>2</sup>
female ablution	15m <sup>2</sup>
ablution cleaning storage	7m <sup>2</sup>
service crane	29m <sup>2</sup>
board room passage (bridge)	67m <sup>2</sup>
fire escape 2	39m <sup>2</sup>
board room	26m <sup>2</sup>

**739m<sup>2</sup>**

#### FIRST FLOOR (GALLERY WING)

gallery	171m <sup>2</sup>
gallery storage	9m <sup>2</sup>
gallery double volume	96m <sup>2</sup>

**276m<sup>2</sup>**

## SECOND FLOOR

timber workshop	361m <sup>2</sup>
workshop material storage	42m <sup>2</sup>
fire escape 1	37m <sup>2</sup>
health and safety office	12m <sup>2</sup>
passage space	112m <sup>2</sup>
main stair	16m <sup>2</sup>
elevator shaft	7m <sup>2</sup>
services shaft	6m <sup>2</sup>
service crane storage	26m <sup>2</sup>
service crane	28m <sup>2</sup>
disabled ablution	6m <sup>2</sup>
female ablution	8m <sup>2</sup>
male ablution	8m <sup>2</sup>
ablution cleaning storage	7m <sup>2</sup>
design studio storage	10m <sup>2</sup>
design studio	147m <sup>2</sup>
design meeting room	18m <sup>2</sup>
fire escape 2	30m <sup>2</sup>
	<b>881m<sup>2</sup></b>

## FOURTH FLOOR

computer and laser cutting room	228m <sup>2</sup>
fire escape 1	40m <sup>2</sup>
health and safety office	9m <sup>2</sup>
passage space	112m <sup>2</sup>
main stair	16m <sup>2</sup>
elevator shaft	7m <sup>2</sup>
services shaft	6m <sup>2</sup>
service crane storage	26m <sup>2</sup>
service crane	28m <sup>2</sup>
disabled ablution	6m <sup>2</sup>
female ablution	8m <sup>2</sup>
male ablution	8m <sup>2</sup>
ablution cleaning storage	7m <sup>2</sup>
library storage	10m <sup>2</sup>
student library	115m <sup>2</sup>
fire escape 2	30m <sup>2</sup>
	<b>656m<sup>2</sup></b>

## THIRD FLOOR

workshop equipment storage	13m <sup>2</sup>
steel workshop	273m <sup>2</sup>
exterior welding space	75m <sup>2</sup>
fire escape 1	40m <sup>2</sup>
workshop material storage	42m <sup>2</sup>
health and safety office	10m <sup>2</sup>
passage space	112m <sup>2</sup>
main stair	16m <sup>2</sup>
elevator shaft	7m <sup>2</sup>
services shaft	6m <sup>2</sup>
service crane storage	26m <sup>2</sup>
service crane	28m <sup>2</sup>
disabled ablution	6m <sup>2</sup>
female ablution	8m <sup>2</sup>
male ablution	8m <sup>2</sup>
ablution cleaning storage	7m <sup>2</sup>
design studio storage	10m <sup>2</sup>
design studio	108m <sup>2</sup>
design meeting room	17m <sup>2</sup>
fire escape 2	30m <sup>2</sup>
	<b>842m<sup>2</sup></b>

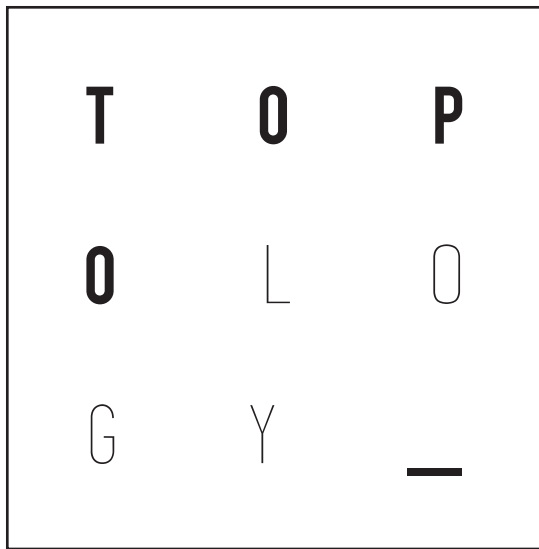
## FIFTH FLOOR

greenhouse	135m <sup>2</sup>
interior passage space	50m <sup>2</sup>
fire escape 1	40m <sup>2</sup>
main stair	16m <sup>2</sup>
elevator shaft	7m <sup>2</sup>
services shaft	6m <sup>2</sup>
service crane	28m <sup>2</sup>
greenhouse storage	68m <sup>2</sup>
fire escape 2	30m <sup>2</sup>
(exterior circulation space on this level not calculated)	000m <sup>2</sup>
	<b>380m<sup>2</sup></b>

## TOTAL

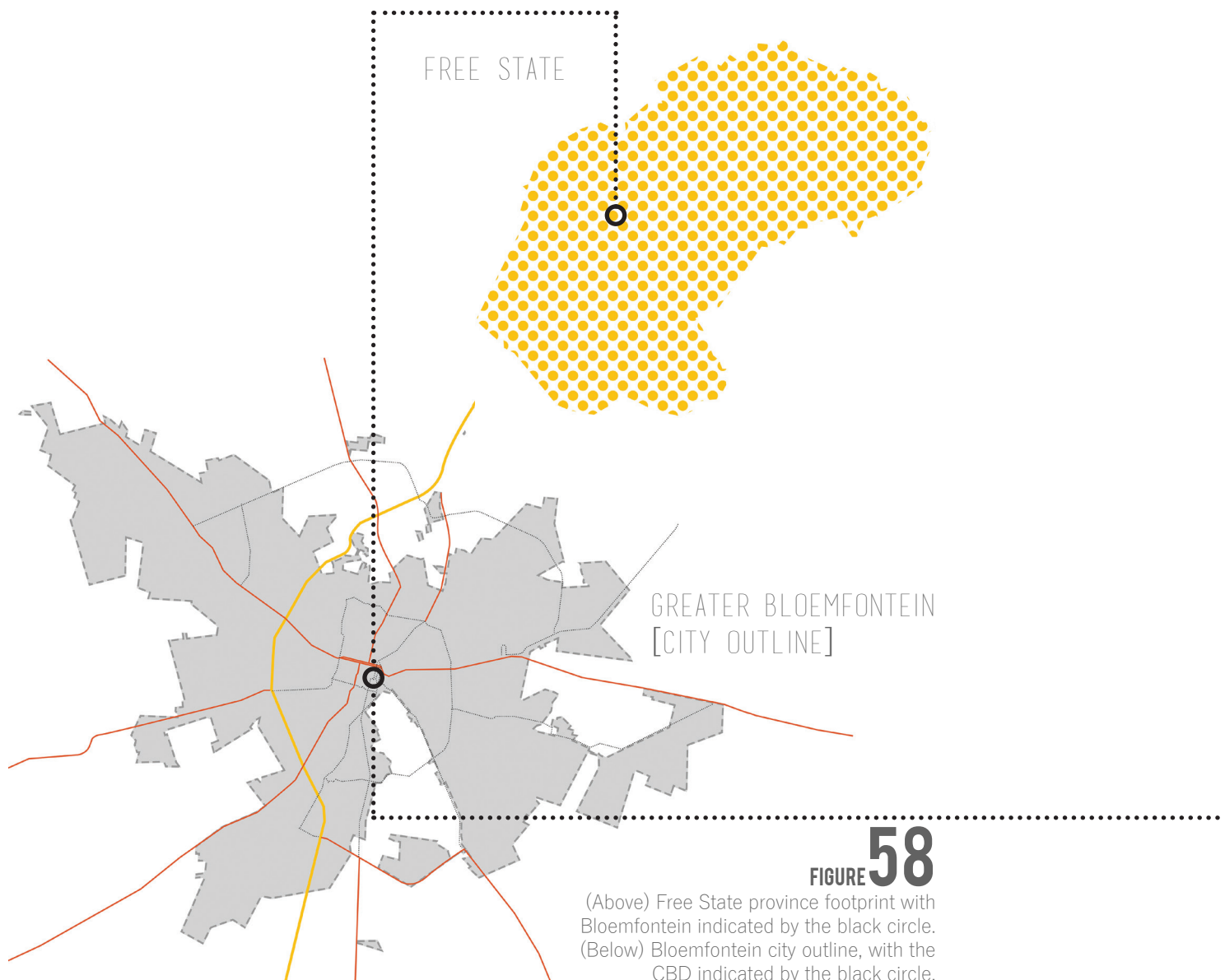
**6747m<sup>2</sup>**

# 2.5



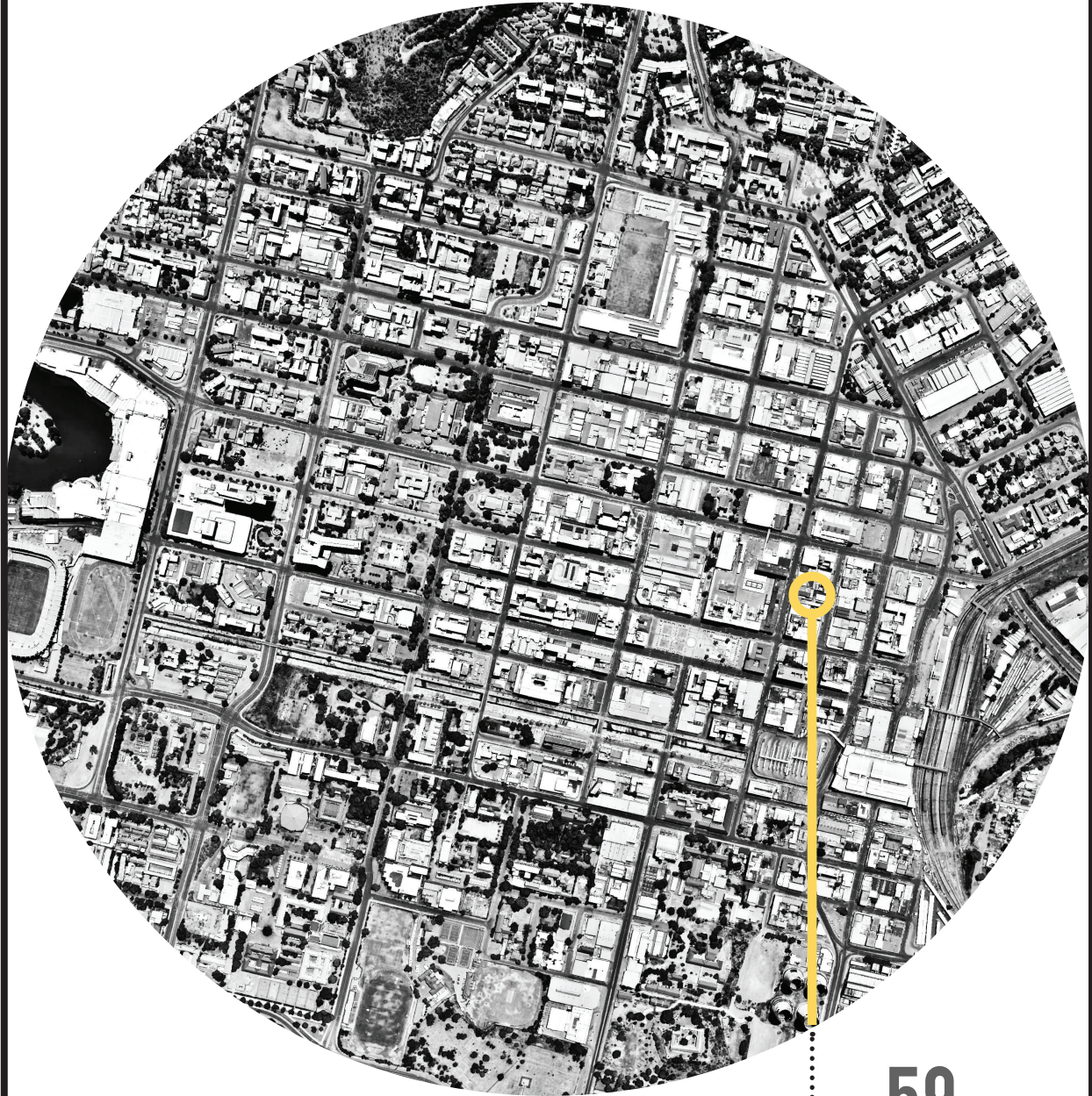
The site was specifically selected for its location in a region of the Bloemfontein CBD that needs physical and social rejuvenation. Consequently, the site is located near the north-eastern corner of the CBD, in a less travelled part of the inner city. The urban character is diverse, but has a slightly industrial and utilitarian feel, which is appropriate in terms of what the building tries to address and what functions it will house.

This chapter contains a topological investigation on a macro, meso and micro scale, to ascertain all site and context influences exerted on the chosen site.



**FIGURE 58**

(Above) Free State province footprint with Bloemfontein indicated by the black circle.  
(Below) Bloemfontein city outline, with the CBD indicated by the black circle.



BLOEMFONTEIN CENTRAL BUSINESS DISTRICT  
[SITE INDICATED]

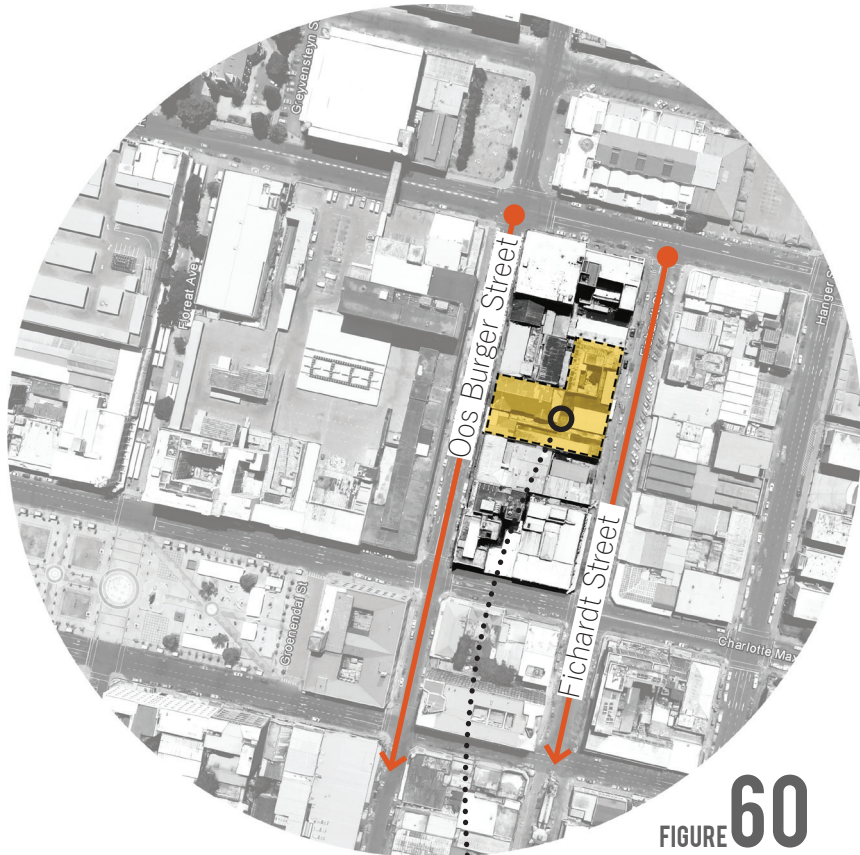
**FIGURE 59**

A Google Earth image of the Bloemfontein inner city. The chosen site is indicated by the yellow circle.

## 2.5.1

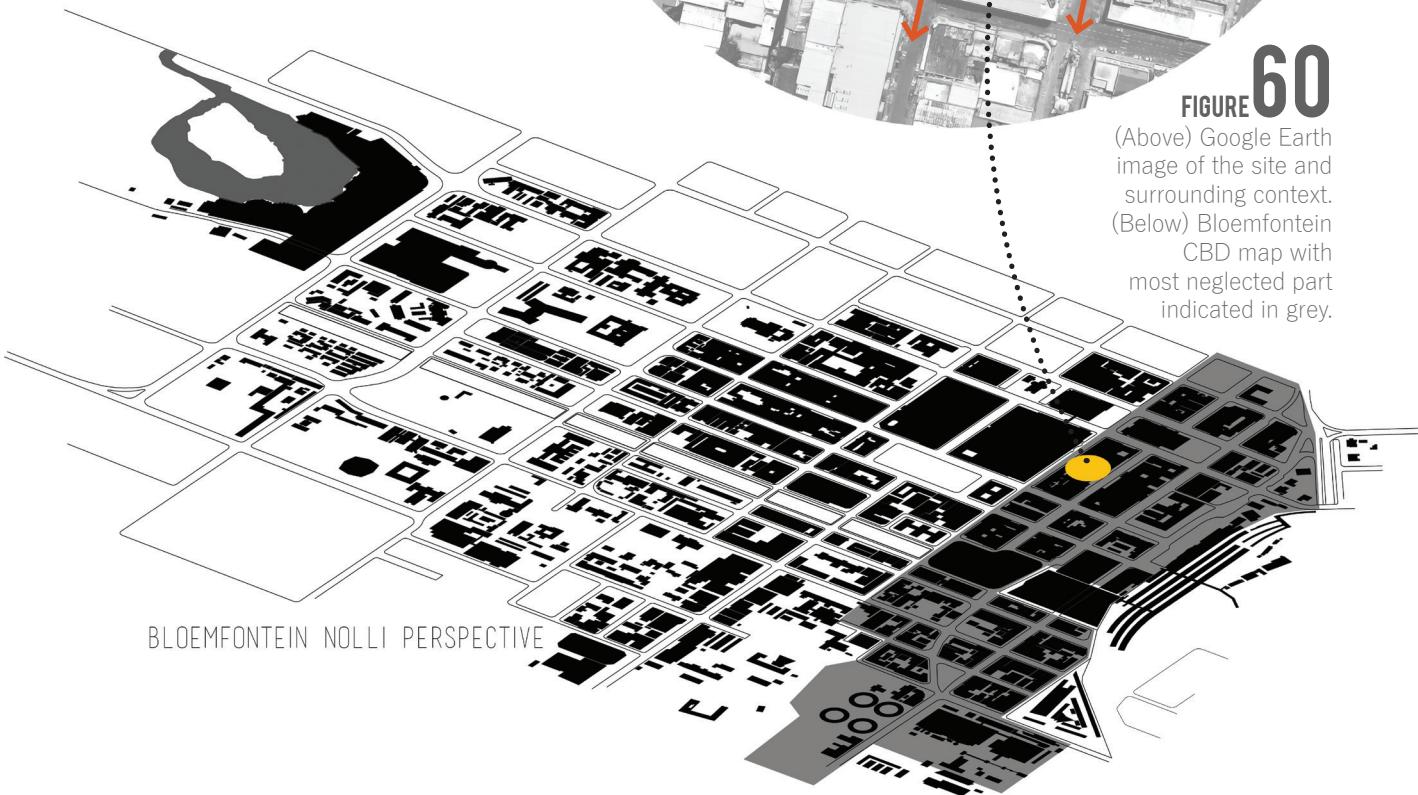
# M A C R O S I T E A N A L Y S I S

The site comprises an L-shaped space in the middle of an urban building lot, flanked by Oos Burger Street on the western side, and Fichardt Street on the eastern side. As indicated by the greyed out area on the larger map, it falls within a region identified as the more dilapidated and physically neglected part of the Bloemfontein CBD. It is here where the proposed building is inserted, to ensure maximum contact with the surrounding urban fabric it hopes to address.



**FIGURE 60**

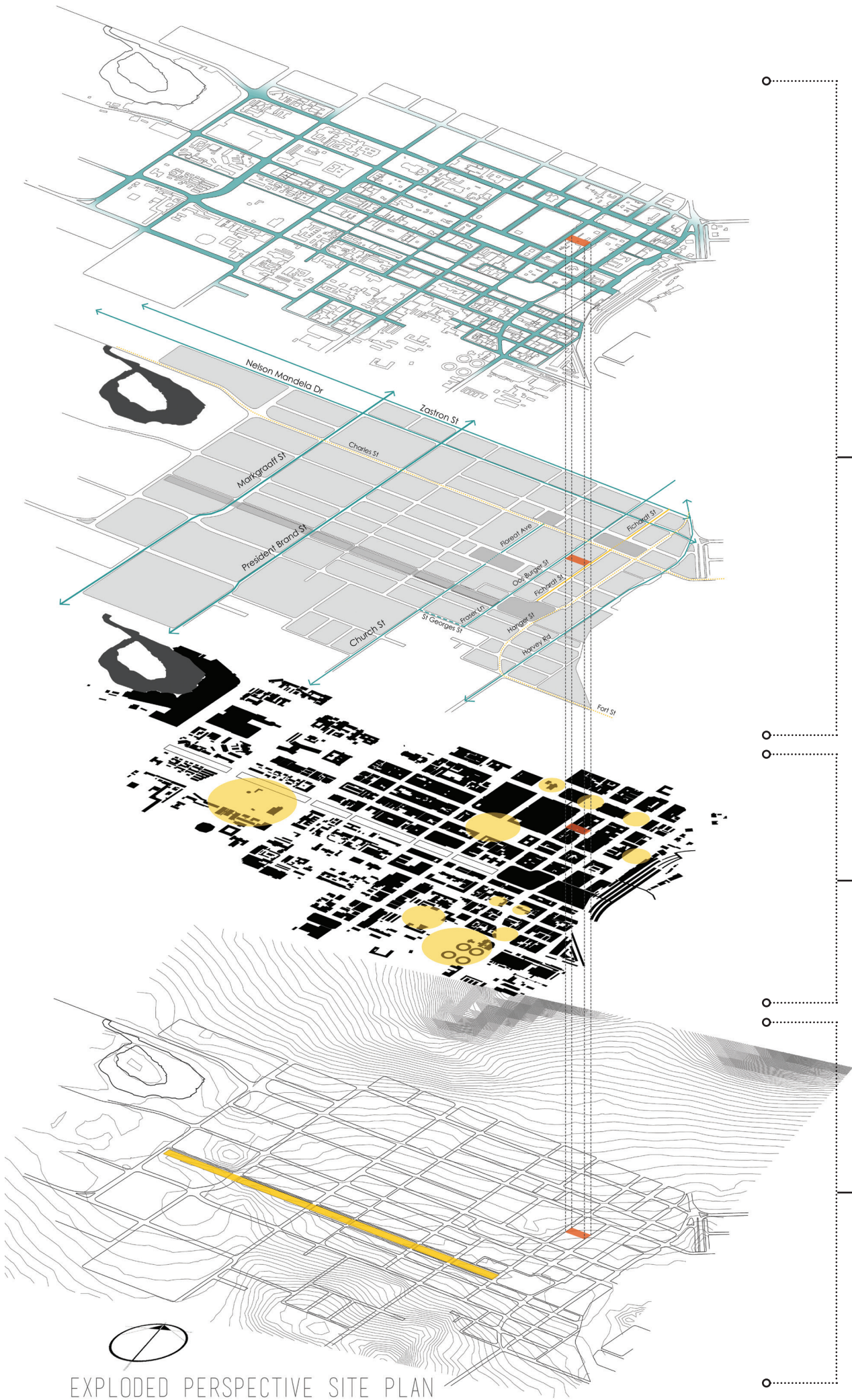
(Above) Google Earth image of the site and surrounding context. (Below) Bloemfontein CBD map with most neglected part indicated in grey.





The site does not find itself adjacent any arterial roads leading into the inner city. This could complicate vehicular access, but is beneficial for the creation of a pedestrian centred building.

+ **FIGURE 61** Map of the Bloemfontein CBD with a Google Earth image underlay. The chosen site is indicated by the burnt orange circle. Main roads are indicated with yellow.



EXPLODED PERSPECTIVE SITE PLAN  
NOT TO SCALE

## FIGURE 62

(Opposite page) Exploded axonometric site map of the Bloemfontein CBD. The orange squares are the chosen site in each instance. Each map indicates a different inner city factor to consider. These are explained below.

### 01 IRREGULAR CITY GRID

---

The city's irregular grid pattern constitutes clear main and subsidiary roads flanking differently sized building lots. This irregularity complicates movement in the city, especially where congested built fabric makes visual navigation problematic. But it also ensures interesting space creation and layered spatial experience. As is the case with some building lots that are big enough to accommodate division, secondary pedestrian thoroughfares can be established. The project investigates this.

### 02 SOLIDS VERSUS VOIDS

---

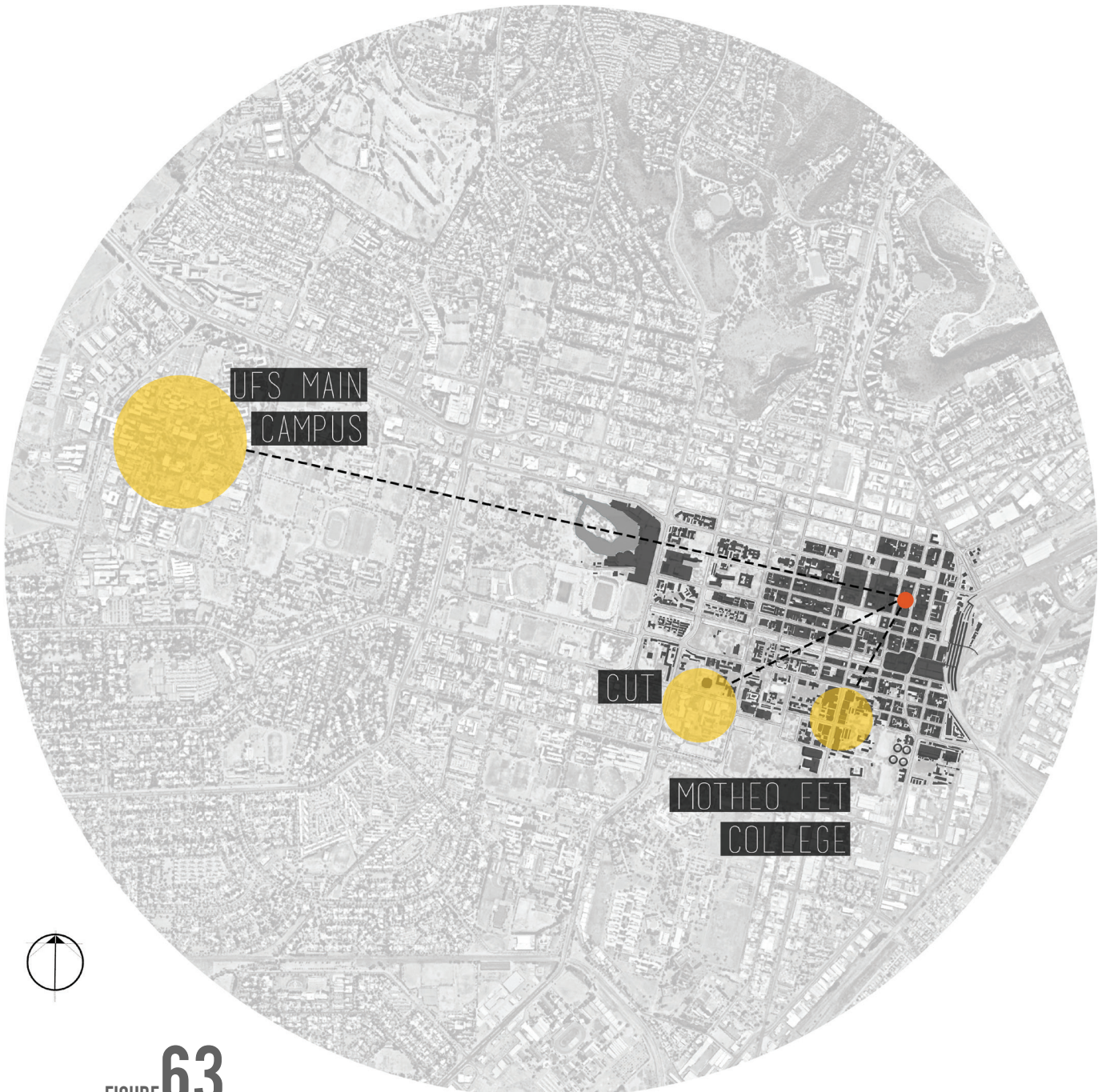
The project focuses on underused or underutilised space, attempting to reintegrate it back into the urban fabric and establish a more functional grid, consequently eliminating any urban voids. The yellow areas indicate open spaces lacking built form, to show possible spaces requiring urban intervention.

### 03 CONTOURS

---

Bloemspruit is the lowest point on the city's geographic plane, situated between Fort Hill to the south and Naval Hill to the north. The site finds itself on a reasonably flat terrain slightly north of the Spruit, on the gradual slope towards Naval Hill. This simplifies design issues pertaining to level changes and streamlines pedestrian movement.

Site placement favoured optimal locality within the CBD above close proximity to the three main tertiary institutions that comprise the majority of the project's user profile. This is because it is important to use the building itself as the first step towards urban rejuvenation. Furthermore, and despite the distances, the project specifically aims to bring students into the city in order to bridge the gap between campus 'utopias' and the city at large. As the image suggests, Motheo FET College will be least affected, whilst UFS main campus will be most affected.

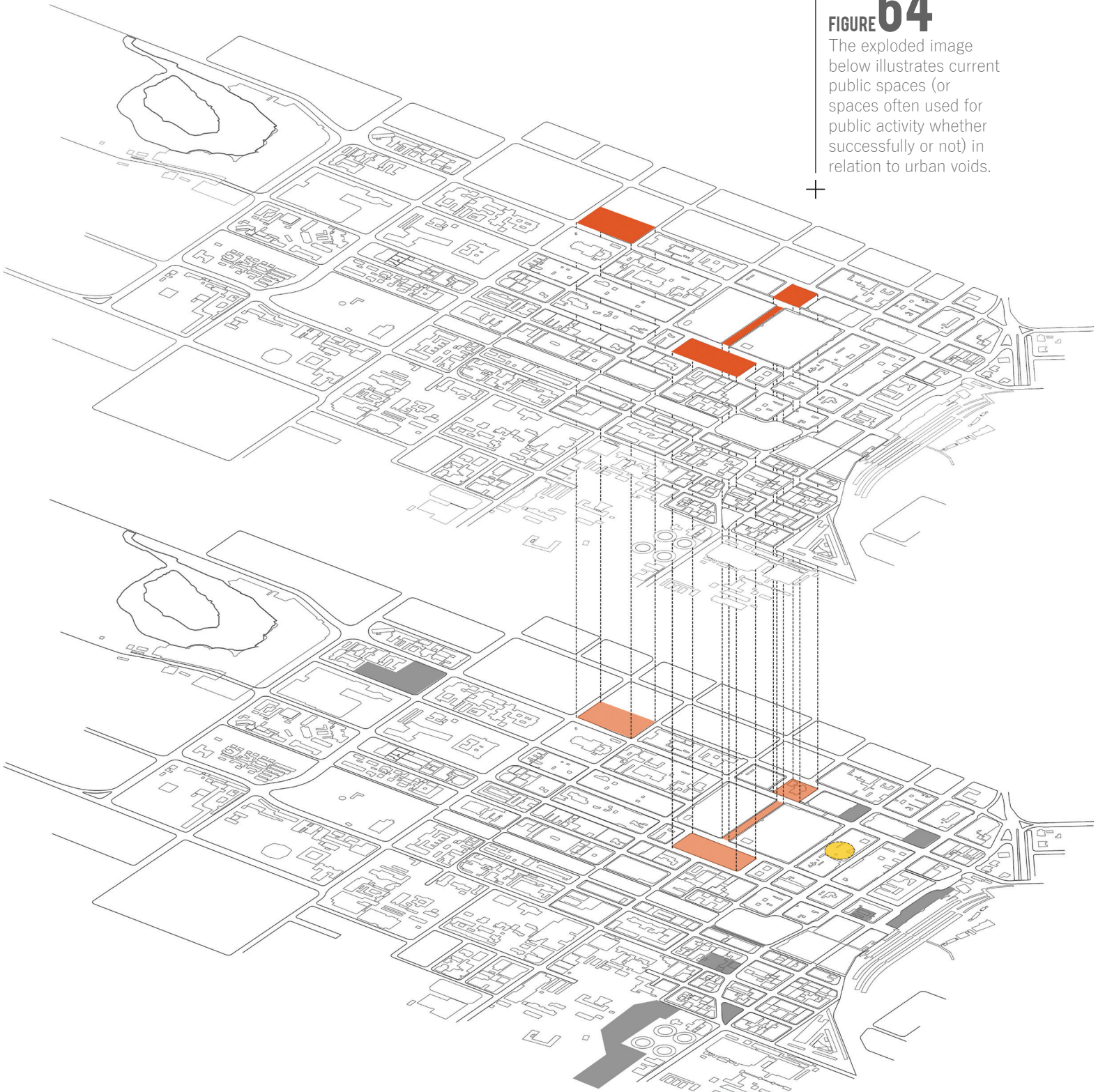


## FIGURE 63

A map of Bloemfontein. The darker blocks indicate the CBD. The yellow dots indicated the three tertiary education institutions that are to comprise the majority of the proposed user profile. The map shows their relative positioning to the proposed site (indicated with the small orange dot).

# FIGURE 64

The exploded image below illustrates current public spaces (or spaces often used for public activity whether successfully or not) in relation to urban voids.



The site is centrally placed in terms of its proximity to established and possible public spaces. The orange blocks indicate existing recreational spaces in Bloemfontein (whether they are successful public spaces or not). These are Hoffman Square, Hertzog Square, Twin Spire Church and Floreat Avenue. The grey blocks indicate possible public spaces (either by being void of built form, or by containing non-formalised public activity).

## 2.5.2

# M E S O S I T E A N A L Y S I S



005 BURGER STREET

The site is not on an already open lot, but inserts itself into a dense part of Bloemfontein's urban fabric. Here, urban growth is slow and structures are underused. The project attempts to rejuvenate the existing infrastructure (pavements, streets etc.) by inserting a new node of activity.

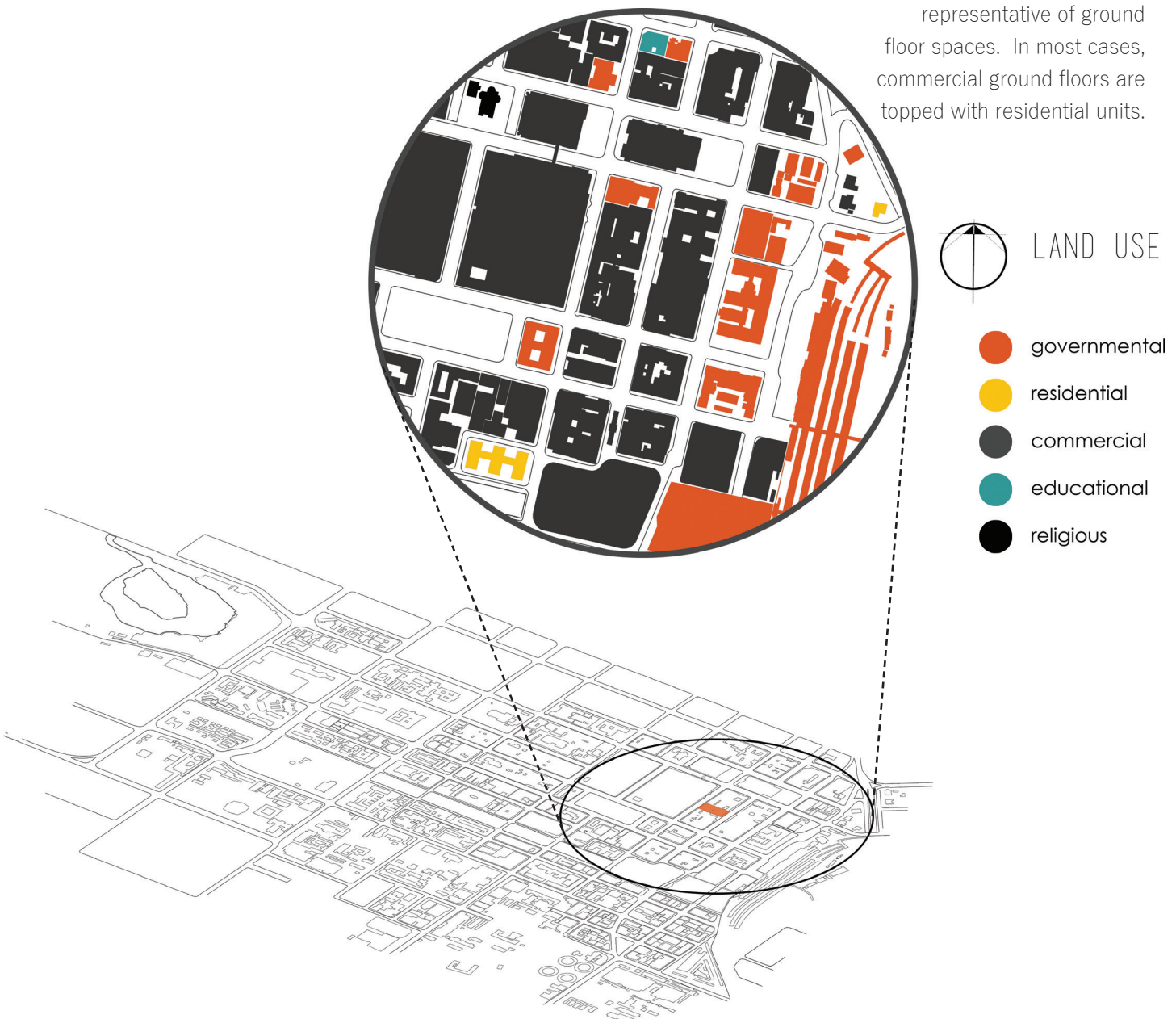


FICHARDT STREET



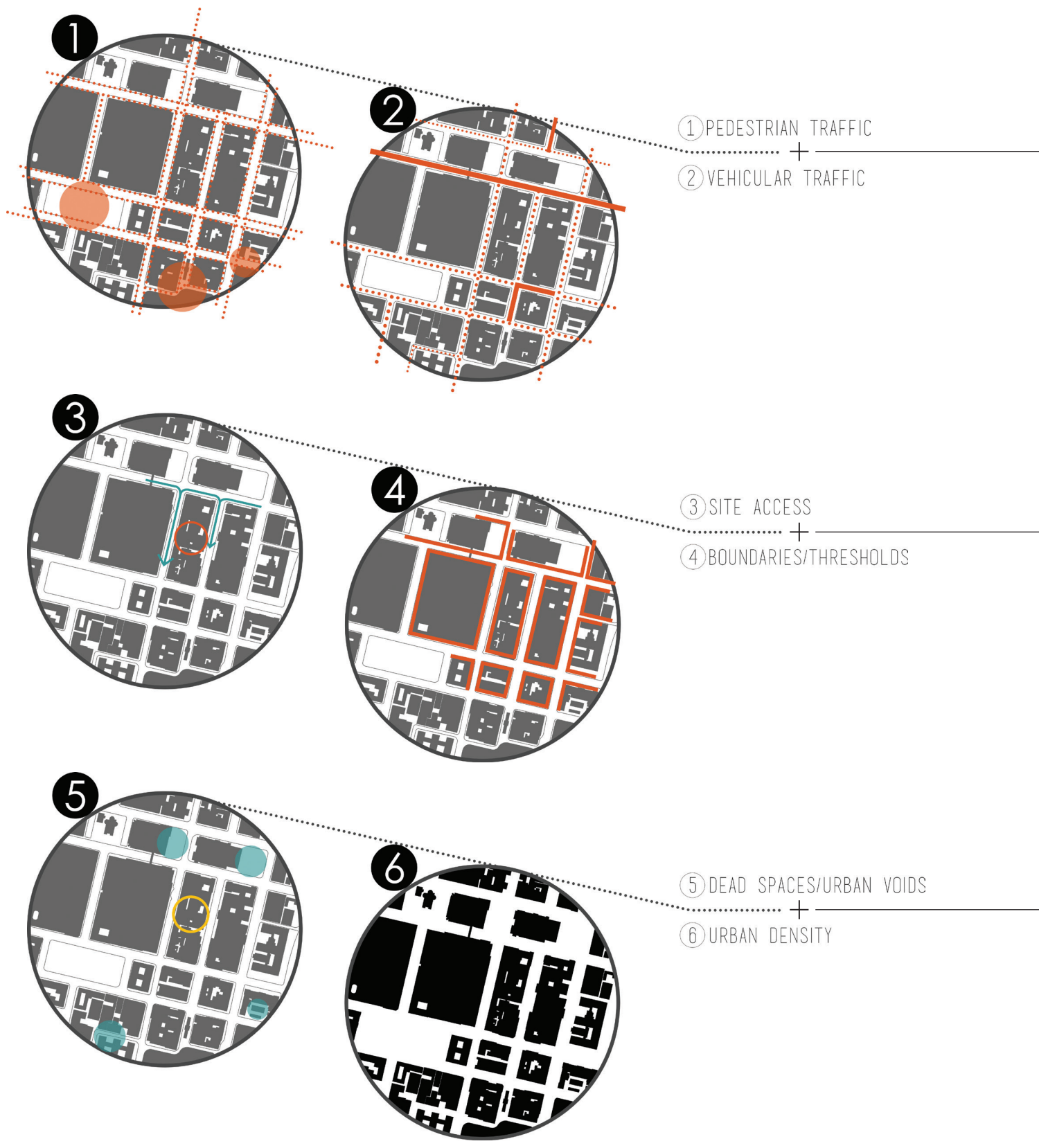
**FIGURE 65**  
The image highlights the buildings to be demolished for the new proposed project. Both are neglected and underutilised. The Google Earth keyplan below indicates their frontages.

**take note:** the graph is only representative of ground floor spaces. In most cases, commercial ground floors are topped with residential units.



The site is predominantly retail orientated, abutting the industrial sector to the east, and consequently comprising commercial functions of an industrial nature: furniture shops, mechanic repair shops and clothing shops to name a few. A few take-away shops and cellular shops are also present. The majority are small retailers, mostly utilising ground floor spaces. The nature of the environment is in line with the industrial workshop nature of the proposed building, but is not ideal for recreational public space. There is a marked decline in pedestrian traffic in this area. Whether that is directly linked with the site's typological nature is unclear.

**FIGURE 66**  
The image shows urban land use in the immediate context of the proposed site.



# FIGURE 67

(Opposite page) Meso site analysis site maps 1 to 6.

## 01 02

Pedestrian movement occurs in a grid pattern, given substantial infrastructural congestion. Movement occurs on existing pavements. The orange dots indicate areas of considerable pedestrian activity.

Vehicular traffic occurs in a simple grid pattern, but is made complex with numerous one-ways. The solid lines indicate the two-way streets, whilst the dotted lines indicate the one-ways.

## 03 04

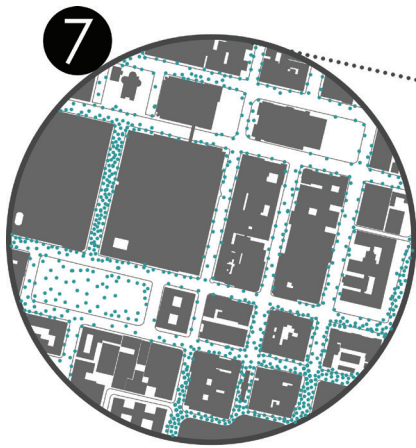
Given the fact that both streets flanking the site are one-ways in the same direction, the site can only be accessed from the north.

Because of severe building congestion, every building facade acts as a visual and physical boundary, forcing activity into a strict grid pattern.

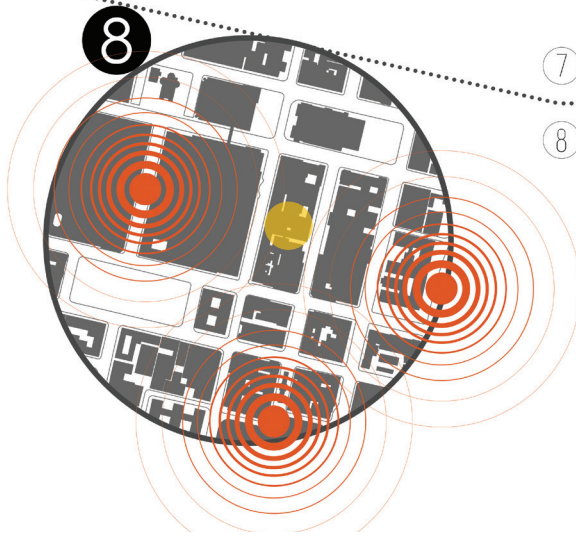
## 05 06

The aquamarine dots indicate urban voids (either neglected spaces or spaces without built fabric and little human activity). Given their proximity to the chosen site, they could serve as future public space projects.

The immediate context is densely built up, with the exception of Hoffman Square. It warrants the rethinking of what public space can be and how to refurbish the public realm of a city without creating a park.



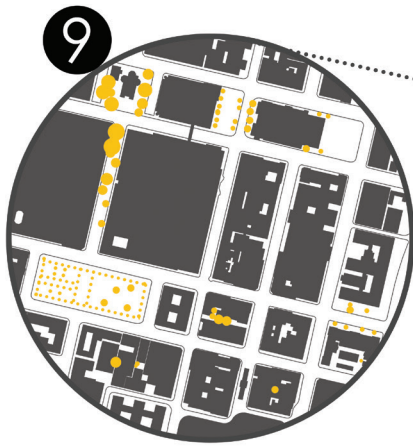
7



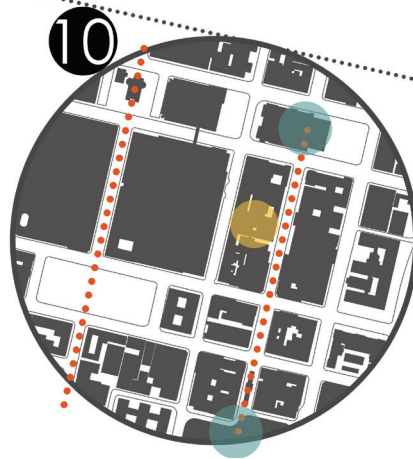
8

⑦ POPULATION DENSITY

⑧ ACTIVITY NODES



9



10

⑨ VEGETATION

⑩ IMPORTANT AXES

## FIGURE 68

(Opposite page) Meso site analysis site maps 7 to 10.

### 07 08

The scattered dots show relative population density measured by pedestrian activity. The two dense areas are Floreat Avenue (to the left) and Central Park (bottom edge).

The concentric orange circle clusters represent the most prominent activity nodes around the site. Notice that these closely correlate with the dense areas shown on the adjacent map.

### 09 10

The yellow dots indicate vegetation. With the exception of Hoffman Square, Floreat Avenue and Twin Spire Church, little of this is viewed or used by the public. The possibility of more green spaces is worth exploring.

The orange dotted lines indicate two important axes. The left is Church Street, which connects Twin Spire Church, Navall Hill and Fort Hill. The right is Fichardt Street, which links 'Die Mark' and Central Park.

## NOTES BASED ON MESO ANALYSIS

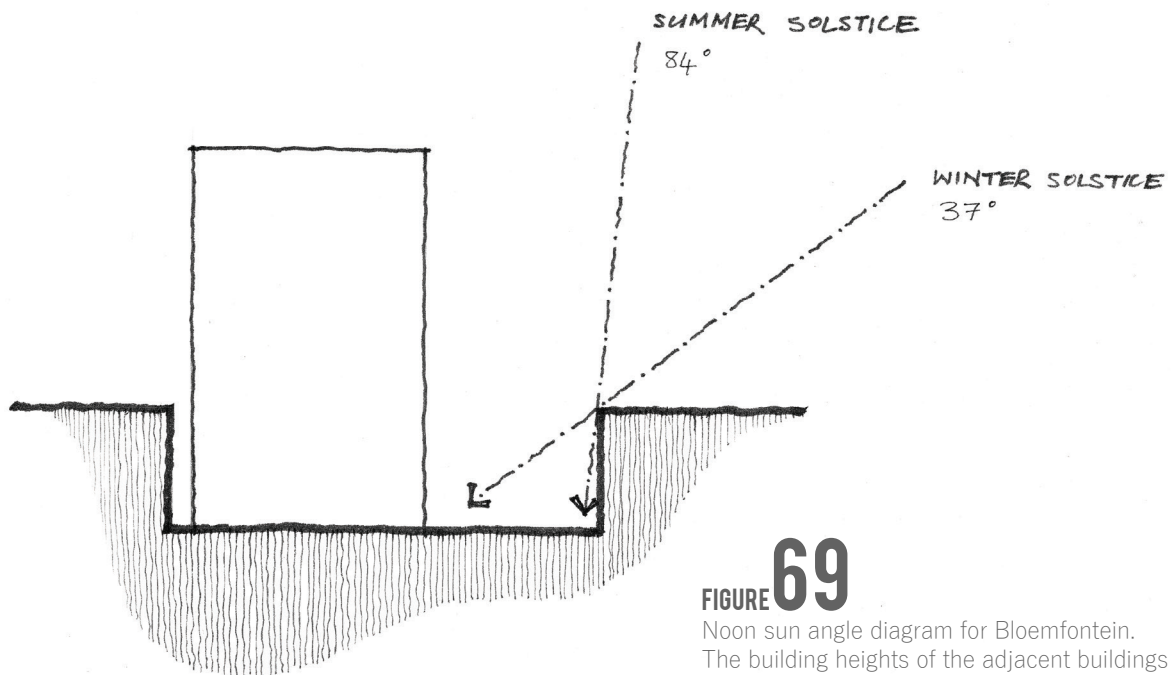
Access is problematic, because of many one-way streets. Underground parking will be provided in the project. However, most attention will be given to pedestrian traffic, to aid in the promotion of lived public spaces rather than promoting a car centred city.

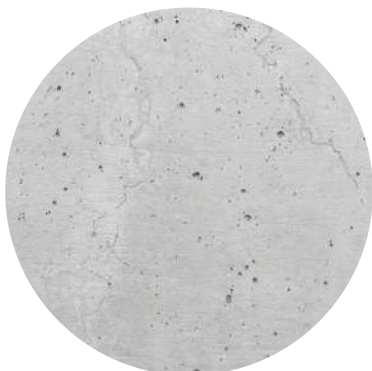
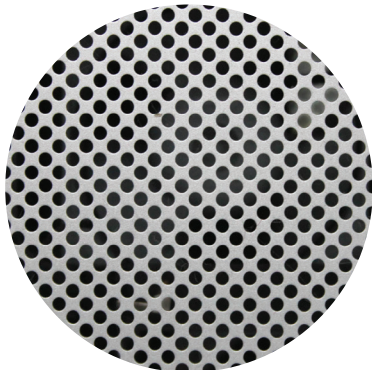
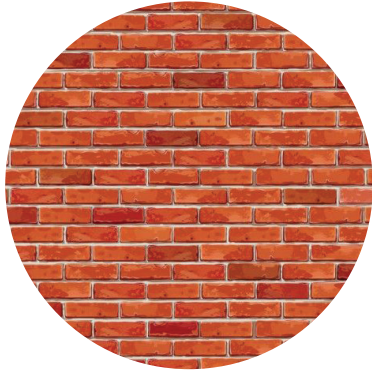
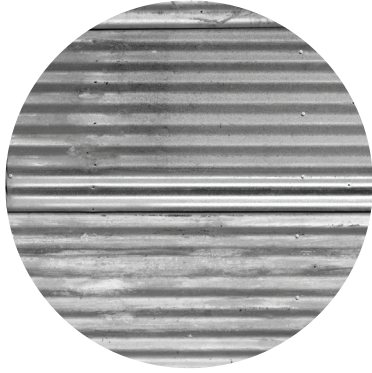
The site is equidistant from other open spaces needing rejuvenation. This proximity is essential, as green spaces are in a minority in this part of the city (especially in the immediate vicinity). The potential for transforming urban voids into green hubs is established.

The project will aim to create a new boulevard through the width of its urban lot, and connect two parallel streets. This would create a pedestrian thoroughfare for the public, but will also constitute the creation of a semi-private 'nook'. It allows for the seamless blurring of private and public.

### 2.5.3

## M I C R O S I T E A N A L Y S I S





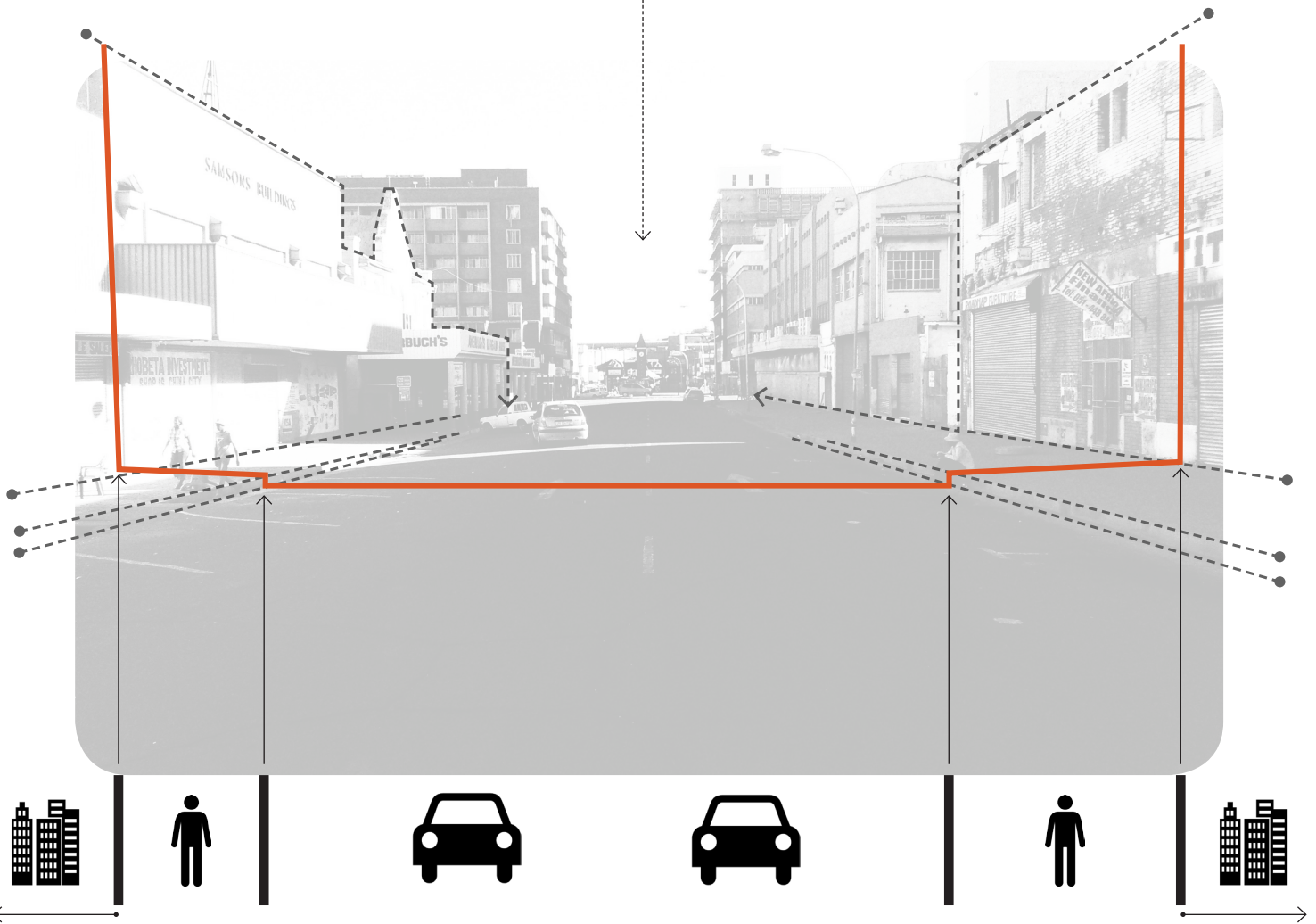
# FIGURE 70

Contextual material usage. These materials are to be considered in the structural composition of the proposed building.



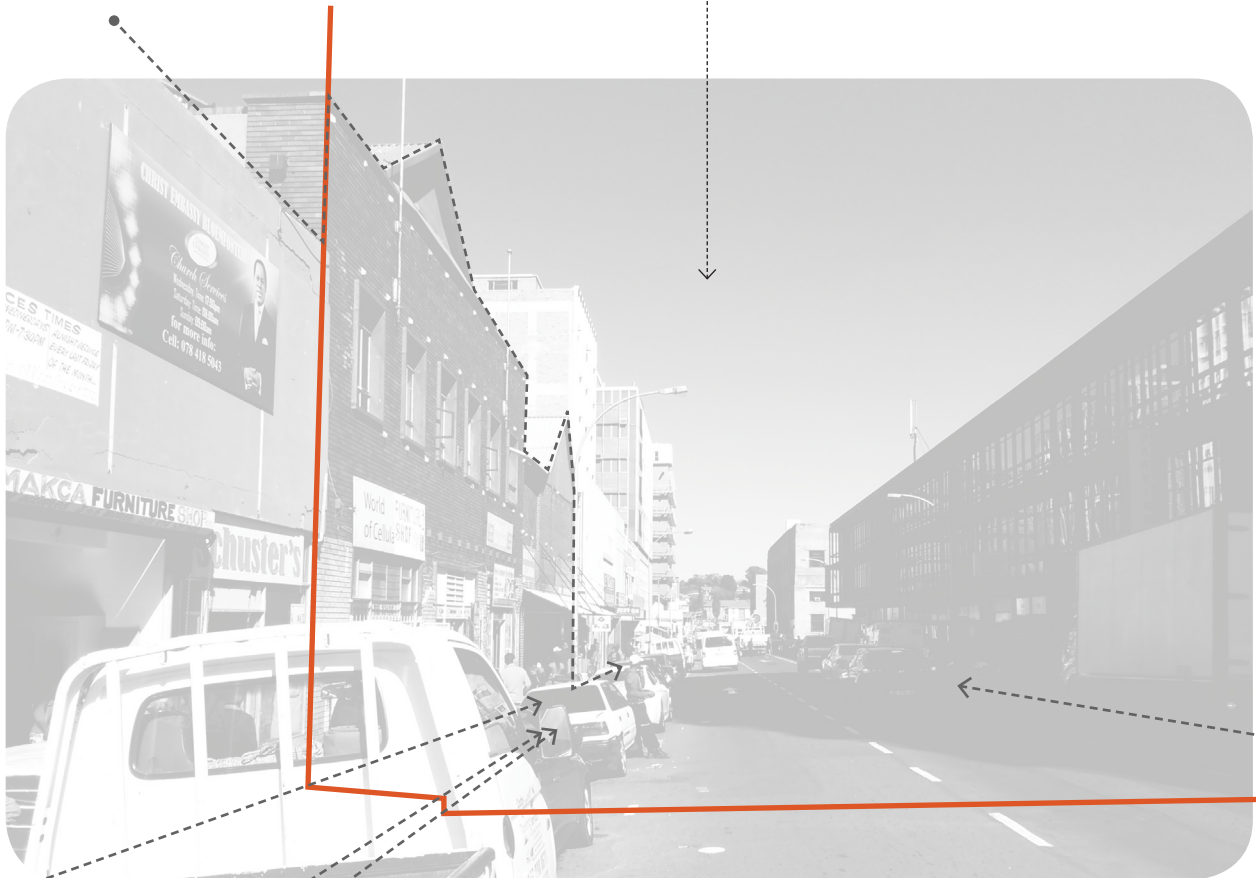
**FIGURE 71**

Fichardt street, looking south towards Central Park. The faded image below is used to illustrate the various thresholds to be considered.



# FIGURE 72

Oos Burger Street, looking south towards Bloemspruit. The faded image below is used to illustrate the various thresholds to be considered.



## 2.5.4

# C O N T E X T U A L P U B L I C S P A C E I N V E S T I G A T I O N

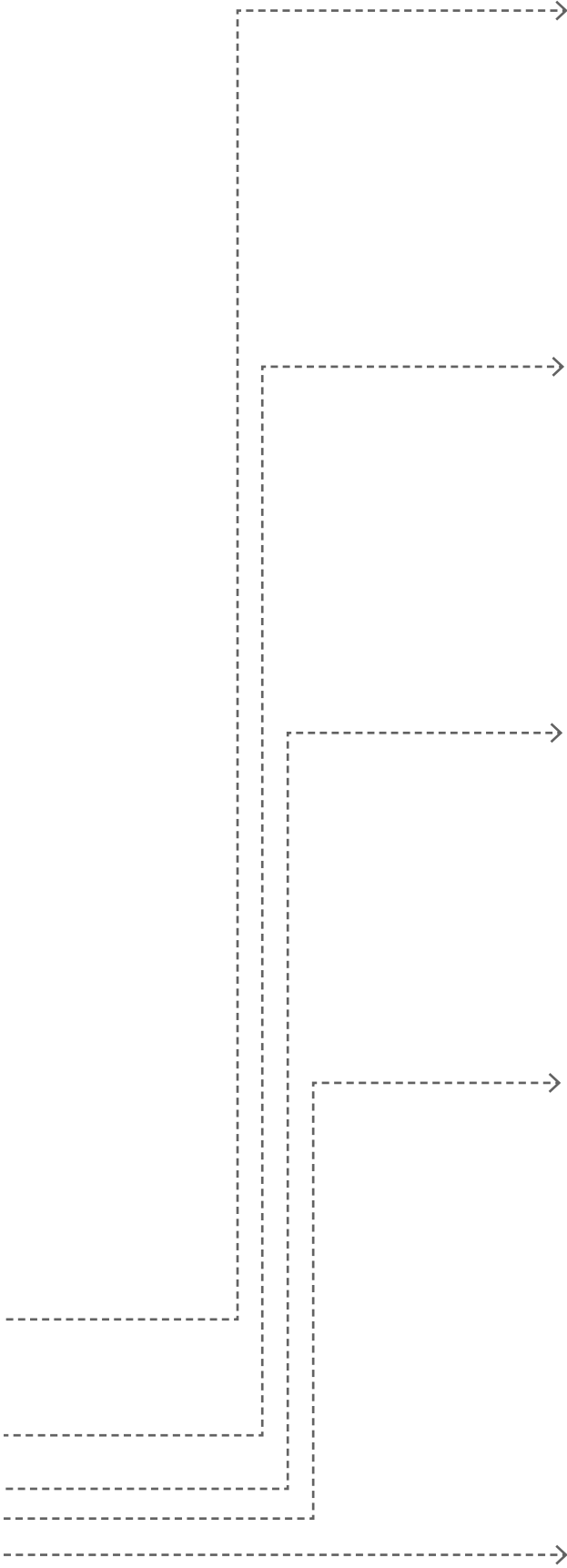
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Bloemfontein has a very prominent, informal taxi-transport system in place. This suggests that commuting is an important function currently rooted within the inner city. And whilst this transport system keeps the city active, these self-appropriated public spaces (informal taxi ranks) are merely spaces of function. The fear is that the CBD, spurred on by the lack of proper public space, has become a threshold rather than a destination.

Hoffman Square appears to be the only attempt towards providing exterior spill-out space to city dwellers. Or at least, it is the only one getting any attention, considering its upgrade. Hertzog Square, the other demarcated, formal public space, is neglected. Whilst the whole of President Brand Street could be seen as a green and public boulevard, it is flanked by gated government buildings throughout most of its length. The majority of these buildings prohibit public access.

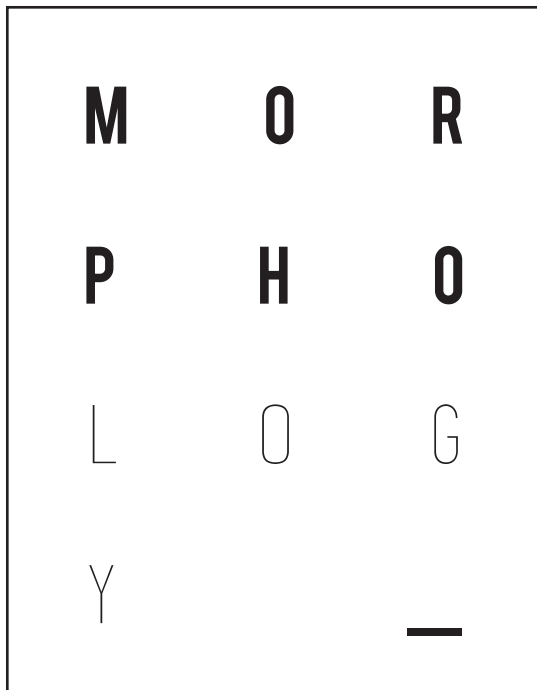
Public space acts the part of urban stitch, holding together built form by establishing habitable space between solid objects and, in so doing, creating continuous urban fabric. In addition, it slows movement through the urban field, creates surveillance and establishes 'soft' spaces. Without proper public space, cities either favour the internalisation of their buildings, or play host to radical space appropriation (Reid, 2005: 155).





**FIGURE 74**  
The Google Earth images show the informal taxi ranks in real time.

## 2.6



### 2.6.1

#### D I S C O U R S E

---

It is a common misconception that public space is synonymous with transparency, inclusivity and openness, especially in the Western tradition. And whilst this can sometimes be the case, it is not absolutely representative of the history of universal public space. In many instances, government used public space as a platform for the display of its authority, as was the case in Nazi Germany. And today, with the advent of democracy, public space houses protests and demonstrations of unrest, as a reflection of modern society's freedom of speech (Hou, 2010: 3).

With reference to the inner city of Bloemfontein, Hoffman Square is the most pronounced public space, especially considering its presence throughout most of the city's history. Initially called 'markplein' (or market square), the Hoffman Square we know today was first used as parking space for wagons during Communion ceremonies and market visits (Schoeman, 1980: 7). Later, it became a considerable market presence, when a formal market building was erected in 1890 contributing to the status of the space (Schoeman, 1980: 98). On 24 May 1900, after the British occupation of Bloemfontein during the second Anglo Boer War, Hoffman Square was used as parade ground for British troops and official space for the raising of the Queen's flag (Schoeman, 1980: 169). The square, having been used for leisure activities for so long, suddenly became a canvas for the display of authority.



**FIGURE 75**

The occupation of Bloemfontein by the British forces on 13 March 1900. 'Markplein' is in the background (Schoeman, 1980: image 78 in the photo section).



**FIGURE 76**

The annexation of the Free State on 24 May 1900. The Queen's flag is raised (Schoeman, 1980: image 80 in the photo section).



**FIGURE 77**

The photo shows school learners on 'markplein' during the peace celebrations of 1919 (Schoeman, 1980: image 146 in the photo section).

In today's democratic climate, it serves a more neutral, recreational purpose as the largest open space in the CBD. One thing is clear. Public space is the container of public opinion, and a representation of the zeitgeist of any given time. Above all, we need to address the inclusivity of South Africa's modern public spaces.

The study seeks to investigate the essence of public space, and how the currently reigning western perception of public space could be rethought and adjusted to become culturally universal. The study looks at basic principles of openness and enclosure, boundaries and connection, and then moves to the deeper concepts of heterotopia and non-place. This forms a semi-linear storyline of what public space is in modern society, and how users use and view it in the zeitgeist of the 21st century.

---

### 2.6.1.1 + \_enclosure versus connection

With the dawn of the information age, real world boundaries took on a new identity. Prehistoric times saw the advent of the 'enclosure'-mentality, as a means of ensuring protection from outside forces. However, with the establishment of the internet and its omnipresent identity, enclosure has been superseded by the desire for interconnectedness (Sykes, 2010: 226).

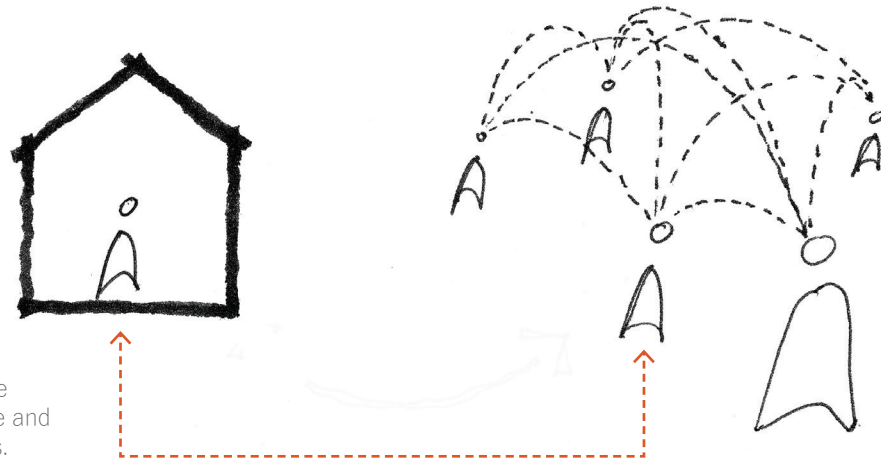
In an introduction to Stan Allen's *Field Conditions*, Sykes (2010: 116) emphasises Allen's desire to move towards a world where forms themselves are of lesser importance compared to the spaces between them. Humanity has become aware of the world as a system or a network, where infinite paths and connections bring together points of interest. Therefore, we have also become aware of destination versus transition.

Allen (2010: 125) refers to Post-war artists, and how they sought separation from pre-war cubism. These artists moved away from the illusion of control, and embraced process over composition. They introduced fragmented sculptures comprising numerous parts, and shifting focus from singular objects placed in space, towards separate pieces placed in relation to one another (Allen, 2010: 125). This approach effectively made the physical plain part of the artwork and blurred the lines between the work and its environment. A cultural mind-shift occurred: the relationship between the parts of a fragmented work was favoured above the holistic composition of a singular piece (Allen, 2010: 125). In other words, the network theorem began its ascent.

Rationally of course, we know the world has examples of both enclosure and network. Despite our ancestors' inclination towards building impenetrable walls around their ancient cities, city gates and roads between towns leant towards a network paradigm. We simultaneously connect and separate, and William J. Mitchell (2010: 230) even suggests

## FIGURE 78

Showing the difference between the enclosure and connection mentalities.



that one causes the other; that separating and connecting happens interdependently. The question is, is this movement formally monitored, or utterly random? Through investigation of this coexistence, Mitchell (2010) introduces the filter, or the doorway, as a concept which allows for small points of access where movement may be isolated, controlled and regulated. Networks are allowed to flourish only if they remain monitored. Consequently, we perpetuate a strange coexistence between two contradicting concepts. We dwell in concrete isolation, but also travel in indefinite limbo (Mitchell, 2010: 230,238).

Furthermore, Mitchell (2010: 230) emphasises that whether a wall to separate, or a network to connect, the purpose of either exercise is a reaction on the relationship between entities of difference. A wall defines outside and inside. There is no other purpose to a wall other than to demarcate areas of difference. This is also the case with the network. It is a system connecting various different points into a more cohesive and comprehensive whole. The purpose is the distinction between diversities. However, the network attempts to reconcile differences, whereas the boundary aims only to separate. It becomes a complex game of reconciliation, with thresholds acting as connectors on pathways of connection.

In architecture and urban development we see this coexistence and tension quite plainly. Often when the enclosure approach is favoured, that city development struggles to relate to the 21st century paradigm of interconnection. In terms of this dissertation's suggested urban problem, one might argue that Bloemfontein favours enclosure in its physical built environment, leading to the internalisation of its structures and people. The purpose of this project is to establish connective links once more; this is done whilst working with the dead spaces between buildings to establish a more continuous network and bring activity out into the open.

2.6.1.1.1

C A S  
E S T  
U D Y  
2

# MABONENG PRECINCT

DAFFONCHIO AND ASSOCIATES  
Johannesburg, South Africa

Jonathan Liebmann, a young entrepreneur, converted a group of warehouses into a contemporary art gallery and studio complex in a previously no-go area of the Johannesburg CBD. The project sparked an entire urban rejuvenation development, constituting the gradual refurbishment of the entire neighbourhood. (Pitman, 2013: online).



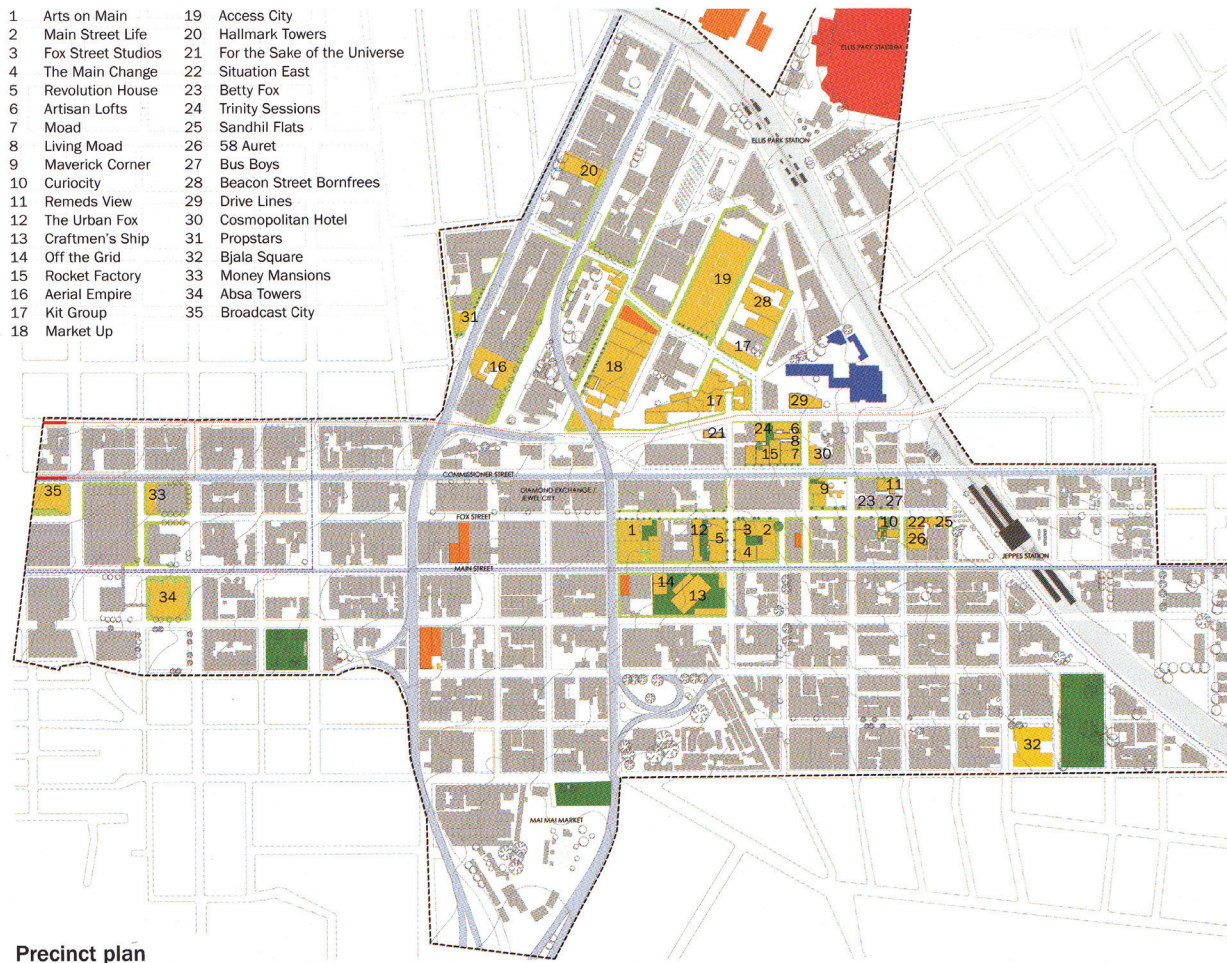
**FIGURE 79**

The photo is taken from inside the Arts on Main courtyard, looking onto the back of the building. Much of the original warehouse materials and character were maintained during the renovation (South Africa, [n.d.]: online).

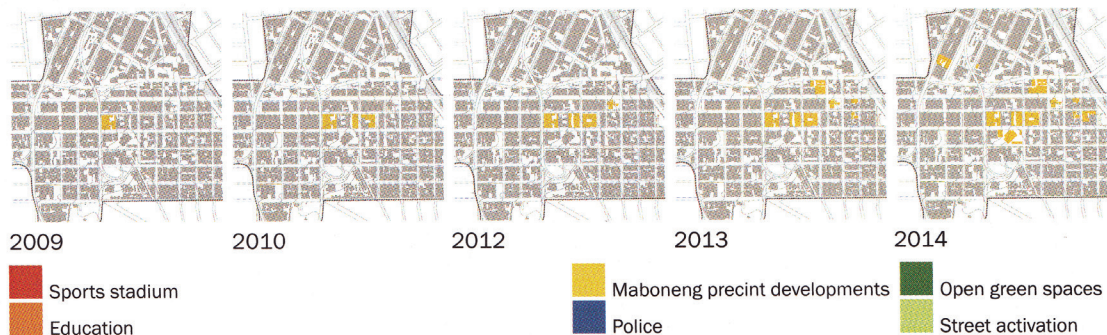
# R E F U R B I S H M E N T

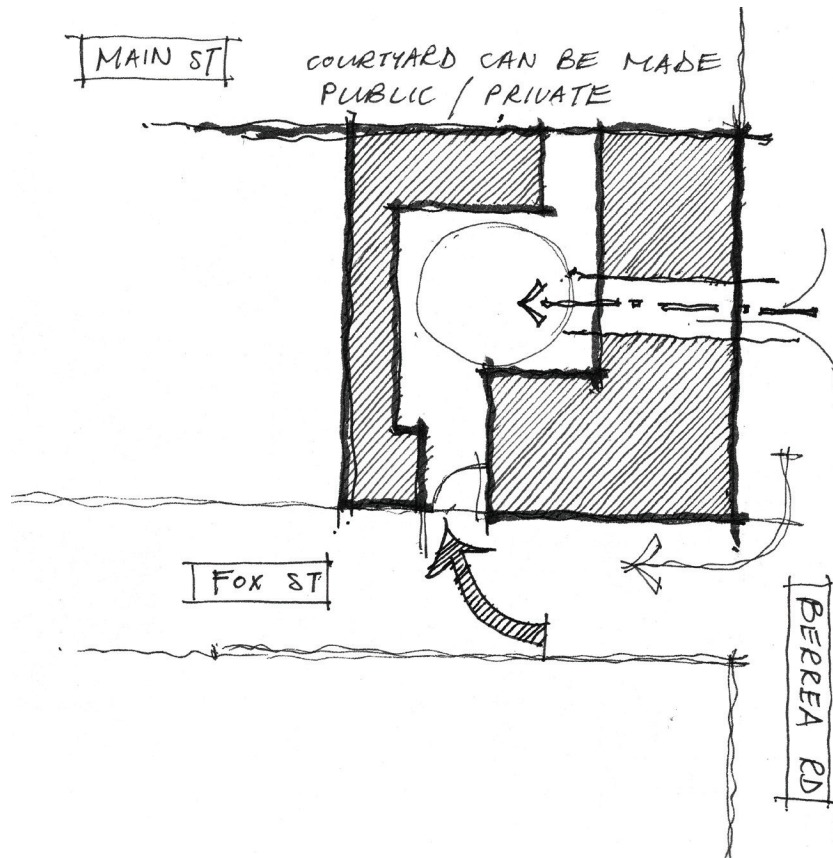
The Maboneng Precinct development is probably the best example of a post-Apartheid inner city rejuvenation project in South Africa since 1994. The initial idea was to create an art gallery complex within five adjoined warehouses on the corner of two perpendicular streets in the previously no-go area of Jeppestown. The development was so successful, that it soon led to the full scale refurbishment of most of the neighbourhood; turning it from the industrial slum into a new hip hub for young professionals. Architectural intervention takes the form of refurbishment, and there is little in the way of new buildings, but the reason for this precedent was to take inspiration from its contemporary re-appropriation of dead urban spaces.

**FIGURE 80**  
The map shows the development of Maboneng Precinct since its inception (Daffonchio, 2014: 133).

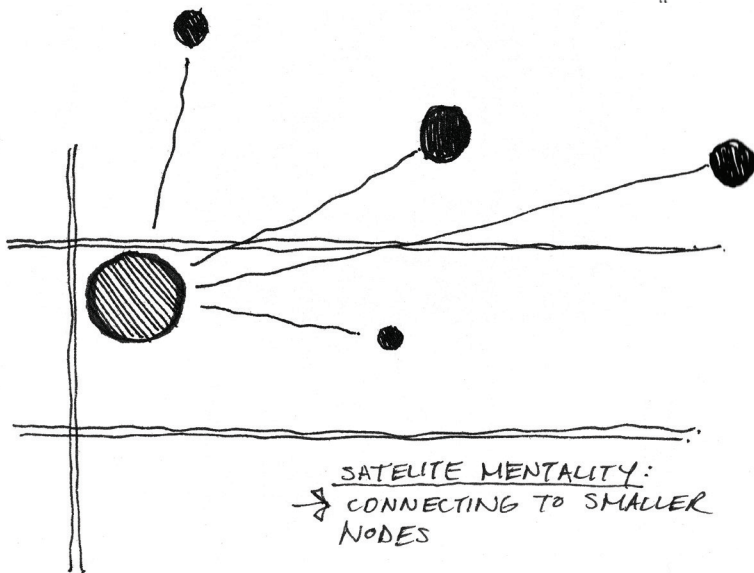


Precinct plan

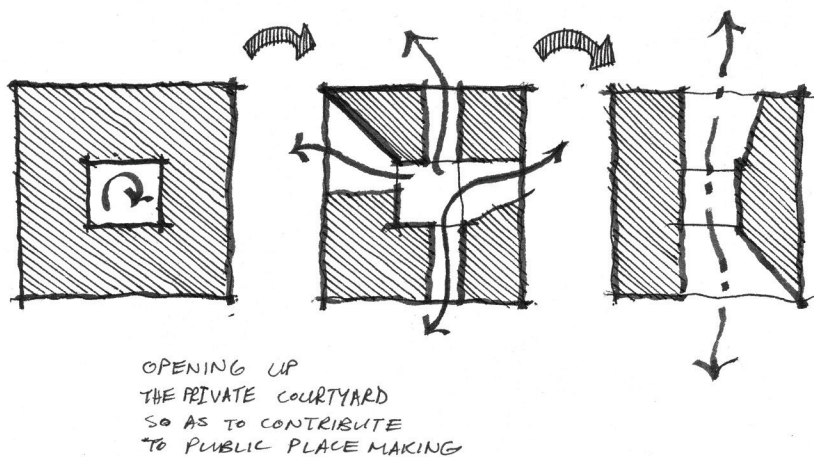




**FIGURE 81**  
Building massing on the Arts on Main site (relatively).



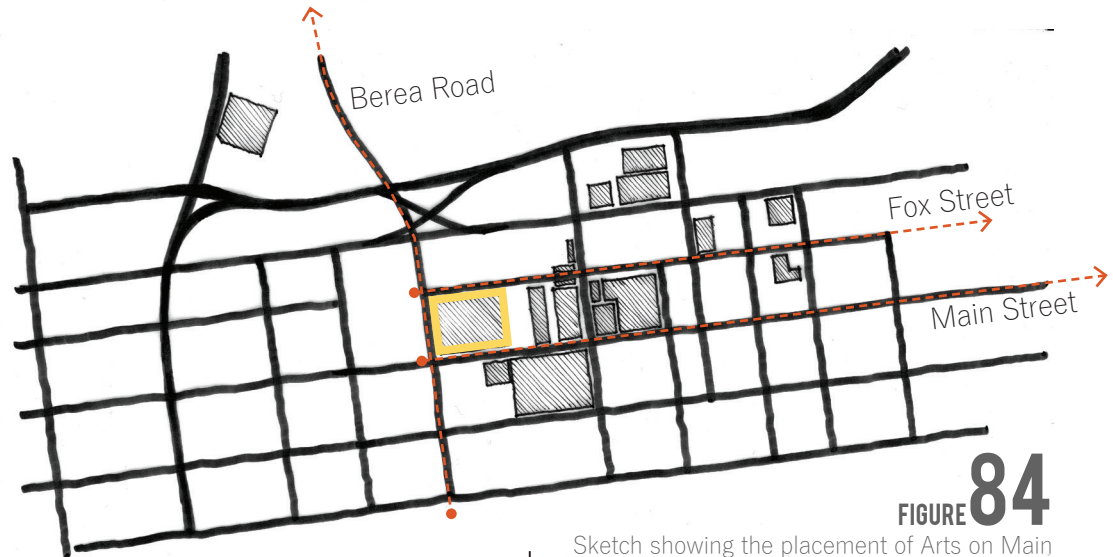
**FIGURE 82**  
All the structures in the Maboneng Precinct connect via important streets.



**FIGURE 83**  
Opening up the courtyard.

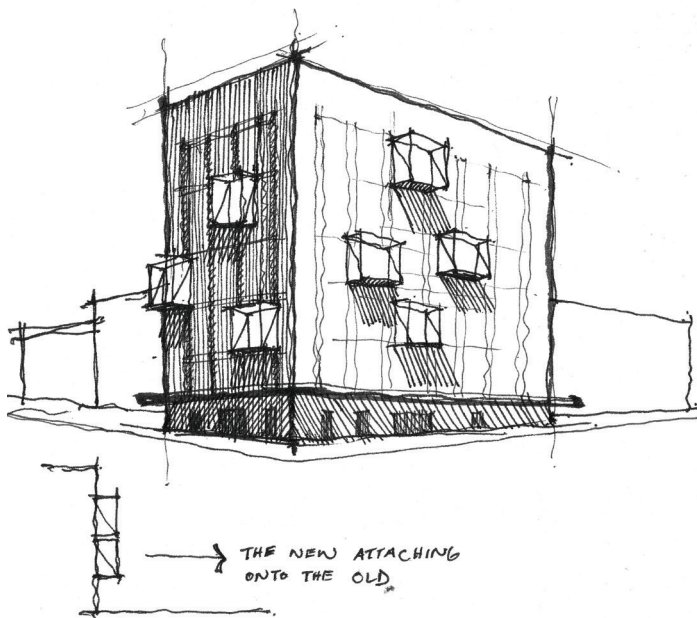
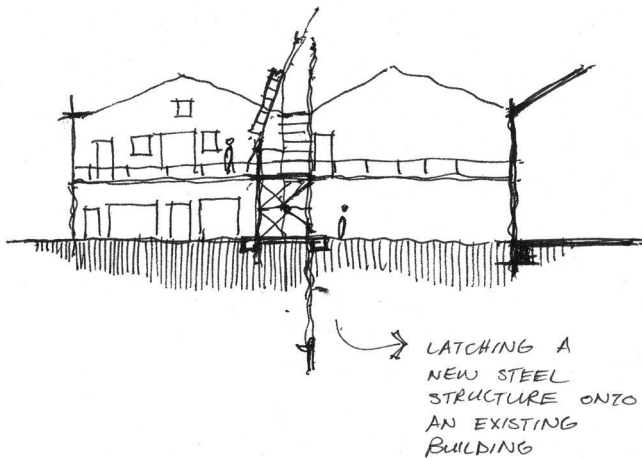
# S T R E E T A S S P I N E

Most of Fox Street has developed farther down from the original starting point (Arts on Main), towards the east. The development allows the street to become a unifying public space itself, linking the newly appropriated structures either side of it. The process has been linear and organic. It is a natural re-appropriation of deteriorated urban structures through the introduction of a new and vibrant development theme (arts and culture).



**FIGURE 84**

Sketch showing the placement of Arts on Main (indicated by the yellow block).

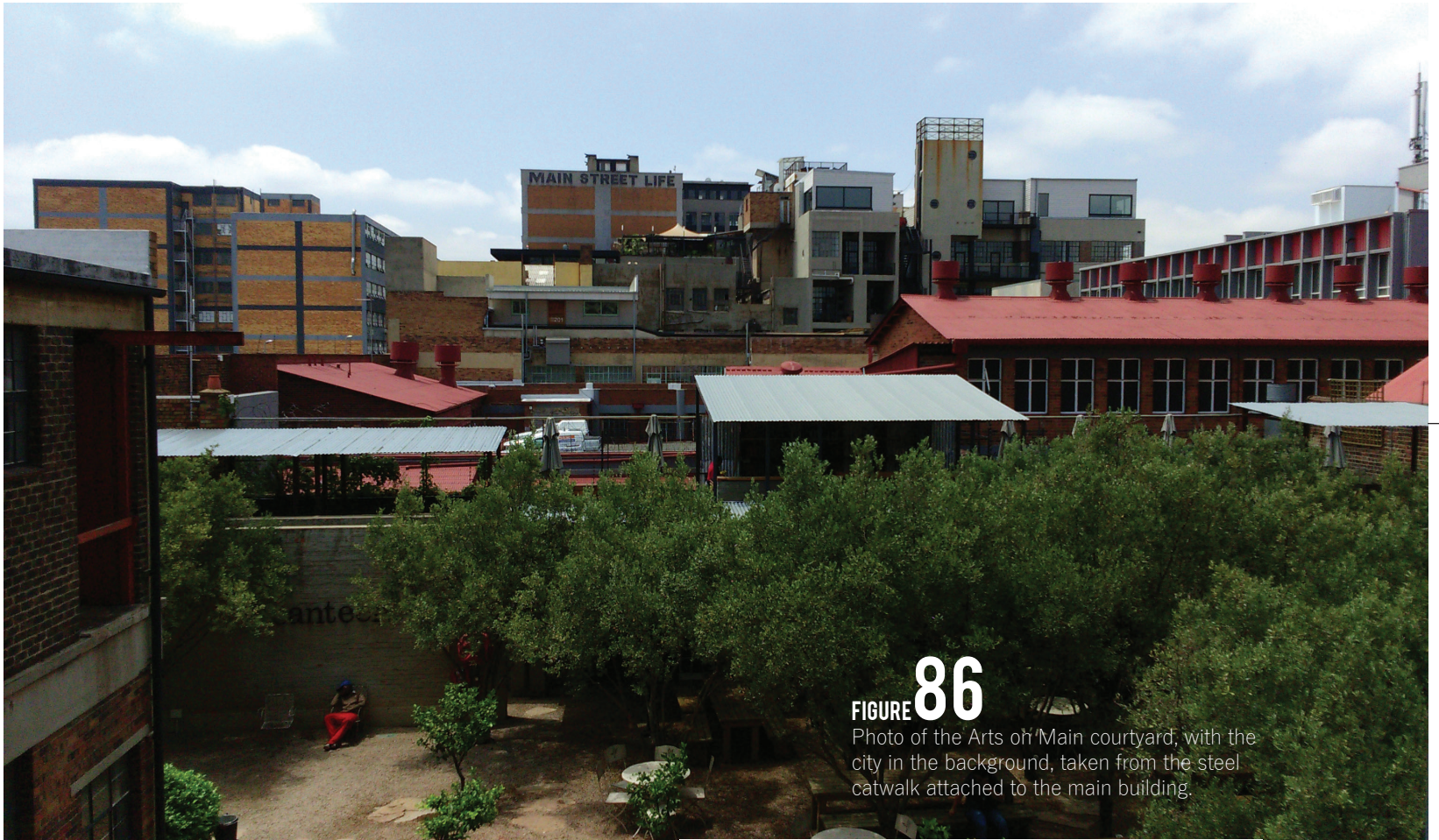


## R E L E V A N C E

The development has little in the way of structural clues for the proposed dissertation project. Arts on Main is an art complex comprising artist studios, which can give clues for space sizes and light use. The courtyard can be reconsidered as a public boulevard and the flow of spaces can be studied. But more than this, the precedent is structurally thin. Most of it is addition, with few new structures (holistic/completely new) present. This makes it difficult to unearth structural clues for the proposed project, as it is entirely new and comprises an entirely different structural philosophy.

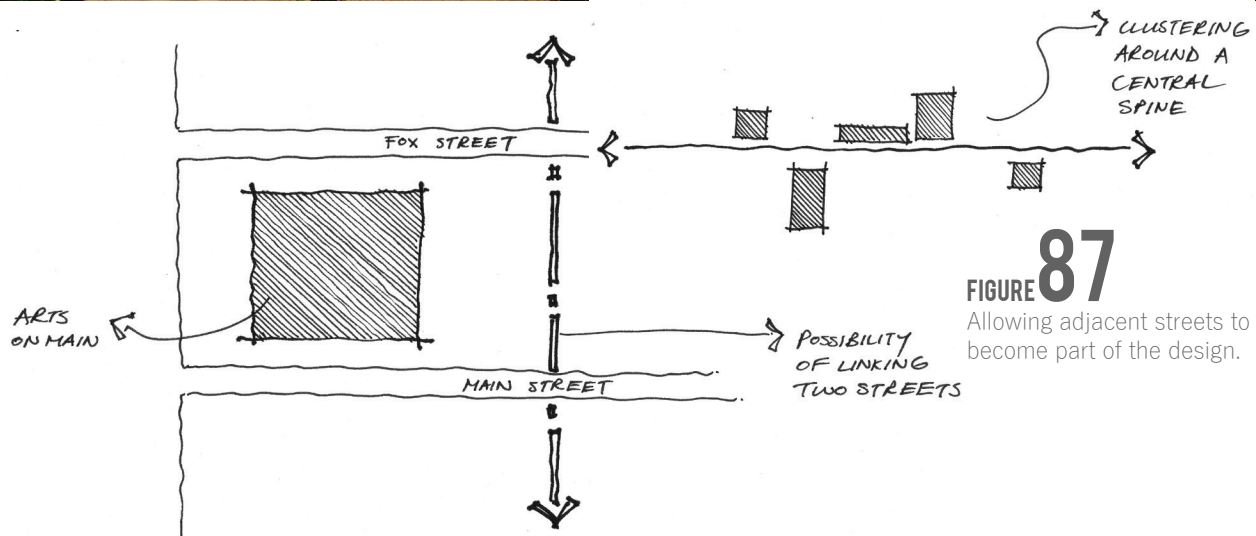
**FIGURE 85**

Both the elevation and 3d sketch show additive architecture.



**FIGURE 86**

Photo of the Arts on Main courtyard; with the city in the background, taken from the steel catwalk attached to the main building.

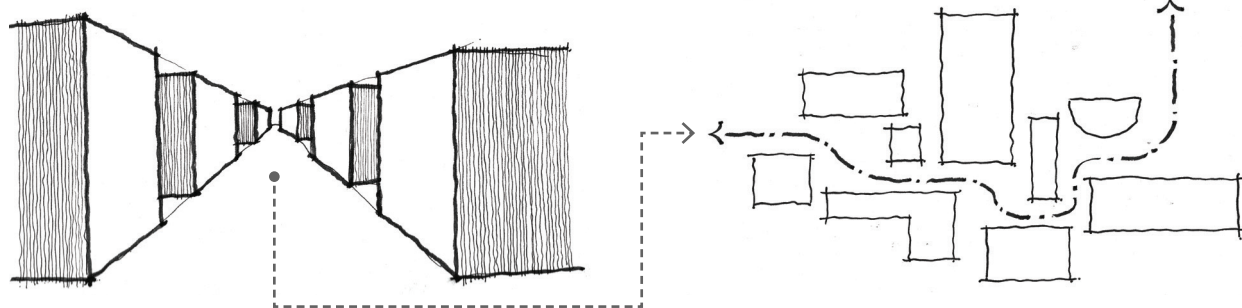


**FIGURE 87**

Allowing adjacent streets to become part of the design.

## M E T A \_ N E T W O R K

However, the precedent successfully embodies a marriage of the boundary and network concepts. For instance, Arts on Main becomes a self-sustaining complex with a semi-private courtyard. It is self-contained, relating to enclosure or boundary. Access to the courtyard is controllable, but not dictated. Fox street serves as a network strand, binding the entire neighbourhood into a single unit through successive and interconnected public spaces. By linking to Fox street, each development forms part of the whole, with the added benefit of housing separate functions. The boundary and network works together to create and sustain a meta-network.



**FIGURE 88**  
From the linear to the meandering.

### 2.6.1.2

### guidance of behaviour: movement through the system

Boundaries and networks are interdependent agents forming part of the same system. A city is too complex to liken to a singular conceptual idea, and will always resemble a delicate relationship of various interlinked concepts. So, whilst complete interconnection is the utopian ideal, it will never be a feasible outcome. A balance between the two opposites is the optimal model. Through 'boundaries' and 'networks' it has become clear that a city is not a singular entity, but a continuous system of inclusion and exclusion, separation and connection. A city is not a singularity, but many functions working together. In that very definition, it again leans over to the idea of networks, using a concept to describe a more advanced version of itself. It is a system being represented as a relationship of smaller systems. In the case of this dissertation, the question is the balance of this coexistence in Bloemfontein, and how to manipulate the balance towards the favouring of a more network-based system.

This pertains most to the role of public space, and the people within it. Likening a city to a singularity, it becomes clear that it is only a set of relations, where human behaviour forms space as much as it is influenced by it. This is substantiated in Allen's (2010: 127) concept of flock behaviour, where he theorises that flocks and crowds adopt unified behaviour because of a delicate combination of a few innate behavioural norms and external influences incurred by surrounding objects. These formations mostly occur spontaneously and as a direct result of surrounding spatial fields. Control of these masses is very difficult and mostly impossible. Therefore, whilst human movement through cities can be thoroughly studied, and sometimes predicted, it is incredibly hard to control or redirect. Architecture is often at fault when it thinks it can assume the role of behavioural dictator.

This again relates more thoroughly to the network mentality. Built structures in a city stand in a vast network, with various relations and spaces between them, not reading as singularities, but as parts of a larger system. In a similar way, human behaviour creates systems and networks with surrounding spatial fields when interactions occur. Human behaviour is guided by the objects that surround the human subject. Crowds form when the subjects become numerous and have to compensate for movable and immovable influences alike. We do not see humans as singularities, but as part of the masses of the city. City life becomes a complex game of managing these networks, establishing new connections where old ones have faded, and guiding system behaviour without attempting to form it.

With the perception of the city as a network, and how human movement flows through that network, the most architecture can hope to achieve when addressing the urban condition, is the bending of the field connections. These bends (rather than drastic fractures) should only attempt to alter conditions to such an extent that they might have some predicted effect on the movement and behaviour of the masses. The changes should influence people in such a way that they inadvertently improve their own urban condition. Allen's essay emphasises the creation of an architecture that does not impose a certain way of use, but which allows patrons to improvise within the space provided (Allen, 2010: 131). Architecture cannot liberate, it can only hope not to constrain. Modern architecture must be open to, and even promote change and accident in our rapidly evolving zeitgeist. Consequently, the network is the more appropriate half of the scale, as it is the most inclusive, liberal and accommodating model.

**FIGURE 89**  
Pen, ink and watercolour  
representation of the organic  
flow and development of cities  
(Bliss, 2015: online).



### 2.6.1.3 **\_ public space as hybrid: transitional destination**

---

Public streets are spaces of transitional limbo connecting various 'pods' of internalised activity. Therefore, public space becomes somewhat of a heterotopia (non-place) in terms of the network and boundary theory. It is not an enclosed (safe) space, but it does not completely qualify as a connecting space either. It is a place, but not one demarcated by a definite enclosure. Public spaces are, in fact, points of interest forming part of a larger urban framework, often given value as a result of recreational intent. Just like the enclosed space, they are essential to the proper functioning of our cities. When neglected, it seems as though humanity abandons its very nature of 'dwelling within the world' and nearly becomes machine-like in its activity within the inner city. In this case, it merely moves from one place of utility to the next, favouring function over haptic experience.

It seems public space, being a non-place and place at the same time, has entered into a state of hybrid existence. It can house leisure activities and become a destination. Or, it can simply separate areas of function which are used as transitional nodes. Public spaces have become heterotopias in the urban network, given their lack of specific function. We know they are needed, but we do not often understand why. Being unable to allocate specific function, public spaces in modern times have become to the city what multi-functional halls are to institutional buildings.

This vague idea of the purpose of public space is worrying to some. The fear is that the unspecific nature of modern public spaces is what has led to their steady decline. However, it seems necessary to emphasise the difference between enclosed and open space in the furthering of this argument. Specificity in buildings is needed because of their functional requirements. A

building is built to accommodate certain needs and fulfil certain functions pertaining to a certain type (hospital, airport, school), which asks for the specificity of its spaces; hence the suspicion of the multi-functional hall. However, a city is unspecific in nature. It is an organic system that develops naturally over time because of the sole need of humanity to remain in close quarters. There is no definite control, or at least no singular control. The vagueness of public space is not the problem so much as it is that vague public spaces are created by subjective developers with their own agendas to what constitutes public space. Public space must be utterly universal, and must distance itself from any preconceived idea of what public space should be. Modern times perpetuates the idea of hybridity, and so too must its public realm.

Despite lack of specific function, public spaces have a recreational baseline. This realisation of public space led to another suspicion. They are pods of phenomenological experience within utilitarian, function-based urban frameworks. There is another urban coexistence: the relationship between recreation and utility. This is another coexistence public space must reconcile. Solely in terms of the functionality of the urban system, as a hypothetical, machine-based system, public spaces are not exactly needed. In terms of pure function (if the human soul were to be ignored), public space is wasteful. However, the human soul cannot be ignored, because it would mean the denial of humanity itself, and in terms of haptic and phenomenological experience, public spaces make cities more liveable. Cities are function-based systems of human relations. Without the need for function, humanity would have no reason to form urban networks. We must keep in mind that human relations are what the network aims to connect. Function aids phenomenology. It is not meant to replace it. If we want to live in our cities and not only have them function like machines, we cannot neglect the humanistic interface that is public space.

The unspecific nature of public space and the various concepts it must reconcile, is what makes it possibly one of the most important parts of any city structure. It has become the link in the system tasked with defining a rapidly evolving user requirement in contemporary times. The concept of public space is vague, to the point where users themselves are uncertain of what it means, or what it should be. New ways of constituting public space have become the main requirement. As a result of this lack of specificity, this dissertation links public space to the concept of an 'interface of haptic freedom'. Public space has become nearly indefinable in 21st century society. This leads to the only solution being to create a semi-blank 'interface' within the urban network, where diverse versions of public space and public activity can be exercised.

The idea of the interface is further explicated by William J. Mitchell (2010: 238) who explains how the city-network can only be experienced through its various interfaces. When the toilet is flushed, we do not much care for the 'hidden' part of the disposal system: out of sight, out of mind. Similarly, email is experienced upon composition and receipt, but the actual transportation of data through the internet sphere escapes our notice (Mitchell, 2010: 238). Public and private spaces, being the interfaces in the urban network, therefore carry the image and function of the entire system. Even the roads (or links) would be pointless if they had nothing to connect. Whilst private spaces receive specific attention from their patrons, public space is neglected for the lack of such a specific user group. This is where the system becomes fragmented. There is no absolute cohesion between all aspects of the system, because there is no singular entity taking responsibility for it all. One weak link makes it temperamental and unpredictable.

In an attempt to address public space, alterations to the urban field/city framework are proposed (through the addressing of public space as interfaces) which will address the behaviour of the public masses and contribute positively to their experience of the inner city. This is a delicate system, in which any intervention will have wildly unspecific effects further into the future. The choice to work with public space was born from the understanding that in terms of individual ownership, no-one actually owns public or transitional space. This means that these empty voids within the larger urban fabric are open to new forms of expression and manifestations of public identity. When they are not efficiently utilised, we see the manifestation of the 'archipelago effect'. Underdeveloped public spaces act as voids separating 'islands' of internalised activity. People retreat into buildings, and as a result, exterior spaces become the playgrounds of vagrants and vigilantes; these are deviators in the eye of the all-seeing societal 'norm'.

---

Whilst public spaces are the connectors of the urban fabric, and should house more human activity as a means of more accurately representing true city life, they are also ideal spaces for free public expression. In an introductory chapter to 'Insurgent Public Space: Guerrilla urbanism and the remaking of contemporary cities', Jeffrey Hou (2010: 1) references an instance of rebellious public art where a large metal pig sculpture was anonymously erected on a pavement one night, without permission. The pig drew attention not so much for its artistic expression, as for its rebellious nature in going against public policy.

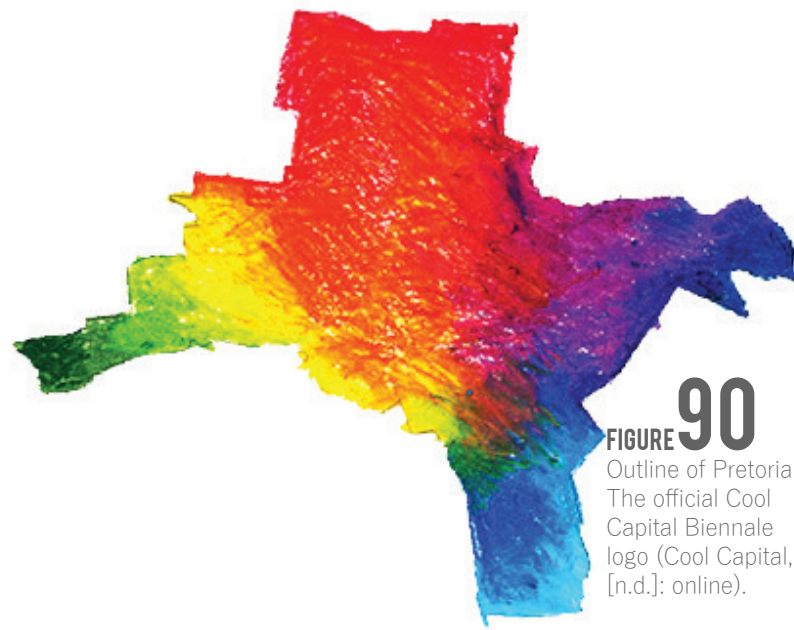
"Although the pig did not physically alter the space except for its footprints, its unauthorized presence challenged the norms of public space by defying the city's requirement for a deposit to put art on a sidewalk (Hou, 2010: 1)."

Trivial as it seems, by requiring deposits of its inhabitants for the erection of art in public spaces, the government controls and, in a sense, determines the parameters to which we exercise our right to free expression. This, above anything else, could be what the artwork tried to contest. Simply by its presence and the subsequent debates it evoked, the pig renewed the perception of public space as "a forum for open discussion" (Hou, 2010: 1). Public space is the only platform where free expression can be exercised, given its non-specific ownership. Granted, government is responsible for its maintenance and administration, but the public makes out the user group. It belongs to no one, and yet to everyone all at once. Public space finds itself in-between spaces of specificity, and therefore it is by definition unspecific. It can be anything.

The pig installation is one of many persistent acts around the world in which public opinion challenges the decreasing, and ever more controlled, forms of true public space. Hou (2010: 1) references another incident in London where Space Hijackers install benches in empty public spaces. It is clear, that despite government proprietorship over public spaces, lack of specific ownership avails these spaces as the only platform for the public voicing of a collective opinion.

2.6.1.4.1

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<b>3</b>		



**FIGURE 90**  
Outline of Pretoria.  
The official Cool  
Capital Biennale  
logo (Cool Capital,  
[n.d.]: online).

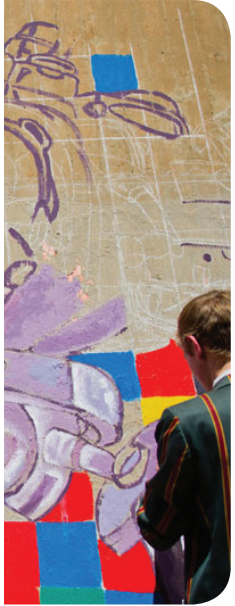
## COOL CAPITAL

PETER MATHEWS  
Pretoria, South Africa

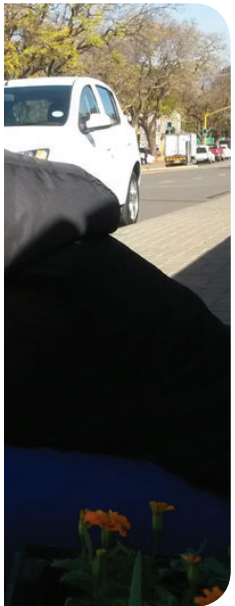
A similar South African movement is Cool Capital, spearheaded by the architect Peter Mathews (Cool Capital, 2014: online). A Pretoria-based guerrilla movement in the regeneration of the urban condition, the project had its inspiration from a poster at the 2012 Venice Biennale, which urged viewers to perpetuate creativity in their own cities. Matthews accepted the challenge, and initiated a radical urban upgrading programme in Pretoria. The initial launch incorporated various sculptors and artists, which were tasked with taking art into the city and introducing the people of the city to its underlying artistic potential.

Since the guerrilla movement's launch in 2014, it has completed numerous urban rejuvenation projects. The first and most popular of these include the installation of 10 concrete furniture pieces in Pretoria (Stehle, 2014: online). The concrete bench project has since won the BASA innovation award together with PPC cement (which sponsored the project) (Nkwane, 2015a: online). Hatfield experienced an urban gardening initiative, where small plants and flowers were planted in pavement cracks and cement imperfections (Nkwane, 2015c: online). School children were approached, and encouraged to take part in painting and sculpting projects throughout the city (Nkwane, 2015b: online). More recently, the Cool Capital initiative started encouraging everyone in the city to make and document their own pieces of street art. The intent was to get as many people involved as possible, without budgetary limitations

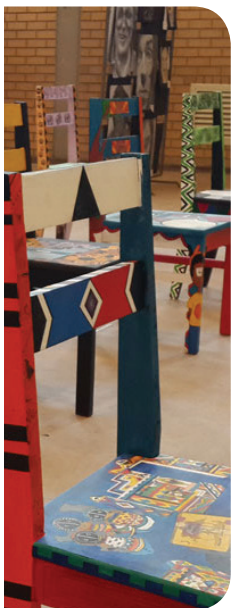




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96

detering them. The response was successful and creative despite occurring on a small scale (Nkwane, 2015d: online).

The project has successfully approached inner city revitalisation through incorporating the community in its urban endeavours, instead of imposing subjective pieces curated by a select few. Moreover, it has presented Pretoria (and hopefully other South African cities in future) as a blank canvas for the free expression of its people. This, above all else, is what is valued and strived towards in this proposed dissertation project. The initiative is nearly identical. The dissertation project therefore proposes a building capable of housing and aiding such an initiative in the Bloemfontein context.

The Urban Design Laboratory attempts to rejuvenate public space not only for public use and as an attempt to reconnect the fragmented urban fabric of the Bloemfontein CBD, but to provide these open spaces as platforms for free public expression. Furthermore, it aims to utilise the opportunity of public space towards the simultaneous addressing of urban voids and civil issues in our country. To touch on the concept of free expression in a more tactile way, the facility aims to address graffiti art among other forms of public opinion.

#### FIGURES

**91** Pink Voortrekker Monument art installation.

**92** 'At School' initiative, allowing school learners to become involved with art projects. This one is called 'Constructing a Line'.

**93** 'Lets sit' initiative, installing public benches throughout Pretoria. This bench is located at A Re Yeng Central Station.

**94** The 'Small Step' initiative sees volunteers planting 'micro-gardens' in pavement cracks, making the city greener one plant at a time.

**95** 'Lets sit' initiative, installing public benches throughout Pretoria. This bench is located at Pretoria Gautrain Station.

**96** 'At School' initiative, allowing school learners to become involved with art projects. This is called 'Teater Vol Stoele'.

Images 91 to 96 found on Cool Capital Beniale's official website (Cool Captial, [n.d.]: online).

### 2.6.1.5 giving free expression its foothold

Graffiti is a shunned art, despite its potential for true social value. Many artists use this art form as a means of expressing deep rooted social and political issues in our environments, and yet it is seen as vandalism solely due to the lack of a more 'civilised canvas'. Something can be said for the more rebellious nature of graffiti today as opposed to when it first started in the 1970's in New York (Jake, 2012: 5). But then again, this increased rebellion was most probably spurred on by increased disapproval from opposing parties. Graffiti is given allure because it is forbidden. It should seem as though the disdain towards the art-form that gradually rose to meet its ascent (by the more conservative of the populace), and their general disapproval of free expression, might have enticed an intent in the art-form specifically aimed at public defacing.

Whatever the case in this regard, vandalism is the by-product of a more important aim, that of producing controversial art where everyone can see it. Public spaces are the holders of graffiti because there, and only there, the messages are visible to all (whether those messages are detached, or rebellious specifically as a result of their public nature).

One thing should be kept in mind. The emphasis of Hou's examples is that people, driven by emotion or frustration, naturally reclaimed and re-appropriated empty public spaces. No-one planned for these public spaces to become what they did. The re-use happened organically because of the right circumstances and resultant public opinions of the time (much like Allen's flock behaviour). And mostly, it was the result of a group action instead of the mission of a single person (Hou, 2010: 2).

"These instances of self-made urban spaces, reclaimed and appropriated sites, temporary events, and flash mobs, as well as informal gathering places created by predominantly marginalized communities, have provided new expressions of the collective realms in the contemporary city (Hou, 2010: 2)."

Similarly, graffiti is a natural reaction upon real world issues spurred on by emotion. It cannot be controlled or institutionalised. However, appropriate space could be provided. The facility (Urban Design Laboratory) creates blank canvases (literal blank concrete walls) inviting personalisation, free from possible claims of vandalism. Furniture is kept equally simplistic and specific use of these newly appropriated public spaces is not stipulated.

2.6.1.5.1

P R E  
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**FIGURE 97**  
The John Lennon wall in October 2014 (Chandler, 2014: online).

# JOHN LENNON WALL

Prague, Czech Republic

In the wake of John Lennon’s 1980 assassination, Czech youths took to a Prague wall with a graffiti tribute depicting the late singer’s face and lyrics from popular Beatles songs. During Communist reign, the Beatles were one of the few Western music groups not banned in Prague. Naturally, the band became a symbol of hope and freedom, igniting a vigorous following among young rebels wishing to resist the Communist regime (Brock, 2010: online). Consequently, with the first act of graffiti, the wall became a beacon for young rebels to the cause of freedom from totalitarianism.

The secret police tried to cover the wall numerous times, but to no avail (Lonely Planet, 2016: online). Finally, with the rise of the Velvet Revolution in 1989 (Chandler, 2014: online) and the end of Communism, along with a request from the French Ambassador (whose office overlooked the wall), the wall and its graffiti messages were legalised. Today, the wall is still a free canvas for the expression of pleas for peace by artists, activists and laymen alike (Chandler, 2014: online).

In this case, the first act of graffiti was graffiti in the true sense of the word. In a bid to send a message of the resistance to the ruling Communist regime of the time, an anonymous artist put a visual tribute to a peace fighter on a wall in a deeply totalitarian city. The

desire for freedom and displeasure for the reigning government could not have been more clear. Of course, with the fall of Communism and the legalisation of the wall, the term 'graffiti' became less accurate, turning more towards 'tagging' as a contemporary endeavour. The term 'I was here' comes to mind. Nevertheless, messages of peace, love, hope and freedom still find their way onto the wall, among irrelevant tourist tags. It truly has become a platform for free expression and desire for a better world.

In the case of the proposed dissertation project, and the 'Tag-Me' initiative it aims to launch, the outcome would be similar. The creation of blank walls where graffiti (for want of a better term) would be legal could rob the art of some of its political sting. Nevertheless, they would still become holders of public ideas. Nothing pleases the 'Me'-generation more than being heard (on whatever platform possible - and the more anonymous, the better).



#### FIGURES

**98** The Lennon Wall before it was completely covered in white paint (Alternative Prague Tours, [n.d.]: online).

**99** The blank Lennon Wall, after a group of art students completely covered it with white paint in commemoration of its inception (Alternative Prague Tours, [n.d.]: online).

**100** The wall continues to be graffitied despite having been completely erased by a group of art students (Chandler, 2014: online).

Public space has become multi-faceted and now includes a far wider scope of possible interpretations. For instance, physical public space and public activity are on a road of steady decline (Hou, 2010: 6), but at the same time, public space in the cyber realm has blossomed. Whilst we might not want to think so, social media platforms are instances of public space. They constitute the freedom of speech in a singular environment, whether physical or not. Therefore, whilst physical public space is diminishing, we might say that the concept of public space has not really disappeared. Instead it has simply adapted along with technology, taking on new forms (Hou, 2010: 9). This refers back to the chapter of 'Public space as hybrid', warranting the rise of unspecific public space to meet an unspecific time. More accurately, we might simply say that public space in the 21st century no longer follows a 20th century European model, but has adapted along with the time. It is our duty to let it.

In addition, public space has been more and more uncontrollable and impulsive. Individuals in cities are utilising empty spaces for a range of innovative uses (like pop-up markets, outdoor dance studios, and indie music festivals). Public space no longer only has to pertain to the archetypical 'park', and even less has to be designated for public use. It has almost become a movement, where mass groups of people take any open, urban space and utilise it for any temporary public activity (Hou, 2010: 9). The more creative the use, the better. And best of all, none of these activities are controlled or planned. People are becoming ever more aware of their power to not only use public space as they see fit, but also to create it. Public space is no longer in the hand of urban planners, but in the hands of the people themselves.

"Because of the scale and mode of production, the making of this alternative public space is more participatory and spontaneous, and therefore more open and inclusive (Hou, 2010: 15)."

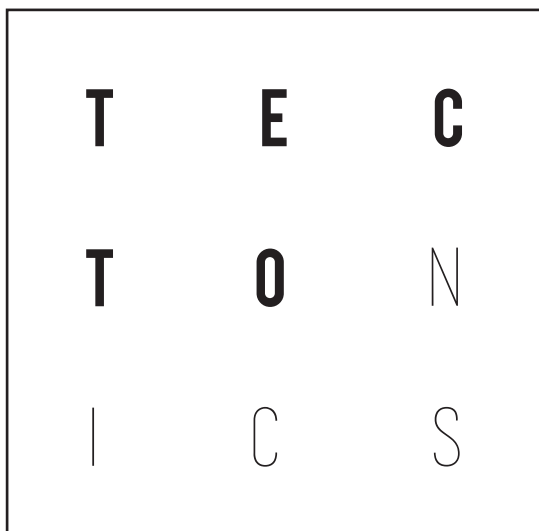
An example of this self-claimed public space in the South African context, must be pavement trading spots claimed by street vendors. Although quite normal in the South African context, in terms of architectural theory, this is a unique phenomenon. As previously stated, streets are mere transitional zones, or the links connecting two points of designated activity. However, by claiming a trading spot along a street or a pavement, a vendor creates a small pocket of public space along a route where something of the sort is not supposed to exist. These vendors have recognised the rush of modern society to travel from one point to the next without care for what happens in between. But the in-between still constitutes time; and unless this time is utilised, it is wasted. Hence, the insertion of the vendor stall, that makes use of travel space in order to advertise and sell. Everyone must use pavements and roads. It is a natural part of the human environment, and has therefore become a natural part of the human condition. Vendors have become space-rebels, exploiting a hole in the travel system to the betterment of the urban fabric. They are often thought of as 'in the way', but their actions form part of a much larger system towards which we are often ignorant.

### 2.6.1.7

### **\_conclusion**

Public space is neglected, but it is far from disappearing. We simply need to upgrade the interface; the underlying and 'unseen' systems are already in place. The unspecific nature of public space warrants minimal intervention, so as to allow the public to create its own public spaces. This could entice a collective movement of city-users trying to form their own urban environments and create their own urban experiences. Public space cannot, and will never be, the be all and end all of inner city fragmentation. Hence, it is impossible to create a single public space capable of transcending all these issues. Instead, the intervention simply aims to create a means of supplementing the network. It strengthens the links by rethinking the essence of what public space is, and giving society the tools to address its own urban condition. Samuel Mockbee perpetuates this idea of abolishing subjective imposition. He states that architecture, as a social art, must be made where it is needed out of what exists there. Architects must only guide that process of making, instead of imposing personal ideas of what should be made (Mockbee, 2010: 110).

## 2.7



### 2.7.1

#### T E C H N I C A L I N V E S T I G A T I O N

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This subchapter deals with the in-depth discussion of a holistically relevant precedent study. It forms part of the project's technical investigation into the components of a typologically similar scheme (similar in terms of the building itself and the urban condition it influences). As such, it has numerous subdivisions and chapters dealing with the project from start to finish. These will be listed and discussed below.

2.7.1.1

P R E  
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5

# NEW LEME GALLERY

PAULO MENDES DA ROCHA, METRO ARQUITETOS

ASSOCIADOS

São Paulo, Brazil

554.47 m<sup>2</sup>

2012



## FIGURE 101

The New Leme Gallery. Photo taken from the door of the replica of the original Leme Gallery (Archdaily, 2013: online).

## INTRODUCTION

This technical investigation will attempt to discuss and analyse an art/gallery complex made up of three separate buildings placed in close proximity within the greater city of Sao Paulo, Brazil. The first building of the three was the Leme Gallery. A relatively simple building on a rectangular lot, it was completely constructed of reinforced concrete and simple steel fittings. Across the street from it, the Leme Studio took the form of a renovated semi-industrial workshop, which combined function and circulation into one open, free space. The third building was a replica of the first with a further addition, coined the New Leme Gallery. The first was demolished preceding the construction of the last, because of Sao Paulo's rapidly expanding and ever changing urban fabric. A new tower block development required the original Leme Gallery's land, and it had to be demolished. The New Leme Gallery was therefore a replacement in the form of a near identical replica. While the first is no longer in existence, it seems necessary to include it in the analysis, seeing as its placement and original choice of construction set the benchmark for the rest of the development.

## ENVIRONMENT & MICRO CLIMATE

### location

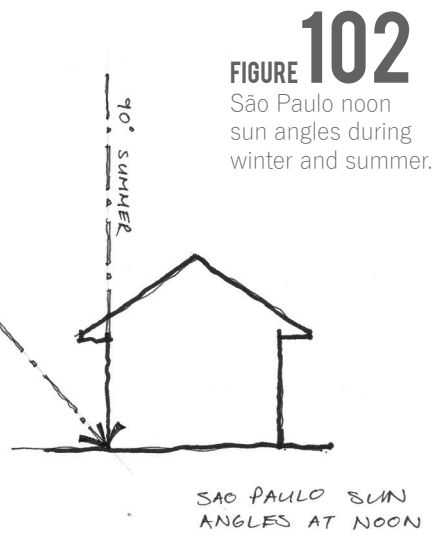
The three buildings making out the Leme complex, are situated roughly southeast of Sao Paulo's central business district, west of the Pinheiros River.

The first Leme Gallery was deliberately situated near the University of Sao Paulo's main campus. It fell outside the main gallery circuit and formed part of an alternative approach to art trading; its proximity to a tertiary education institution helped to support it (Phaidon Atlas, 2004: online). It was built on a narrow rectangular lot with one of the short edges fronting Agostinho Cantu Road, the street separating it from the Leme Studio. The Leme Studio was built immediately opposite the Gallery, taking the same long narrow form with its short edge fronting the street. The long edges of both structures had a northwest and southeast orientation respectively.

With the advent of the larger corporate development mentioned in the introduction, which required the land the Leme Gallery was built on, the gallery was relocated to a new lot one street down, to the corner of Des. Armando Fairbanks Road and Valdemar Ferreira Avenue. The original Leme Studio remained where it was, although whether it is still used as an artist studio to this day is unclear.

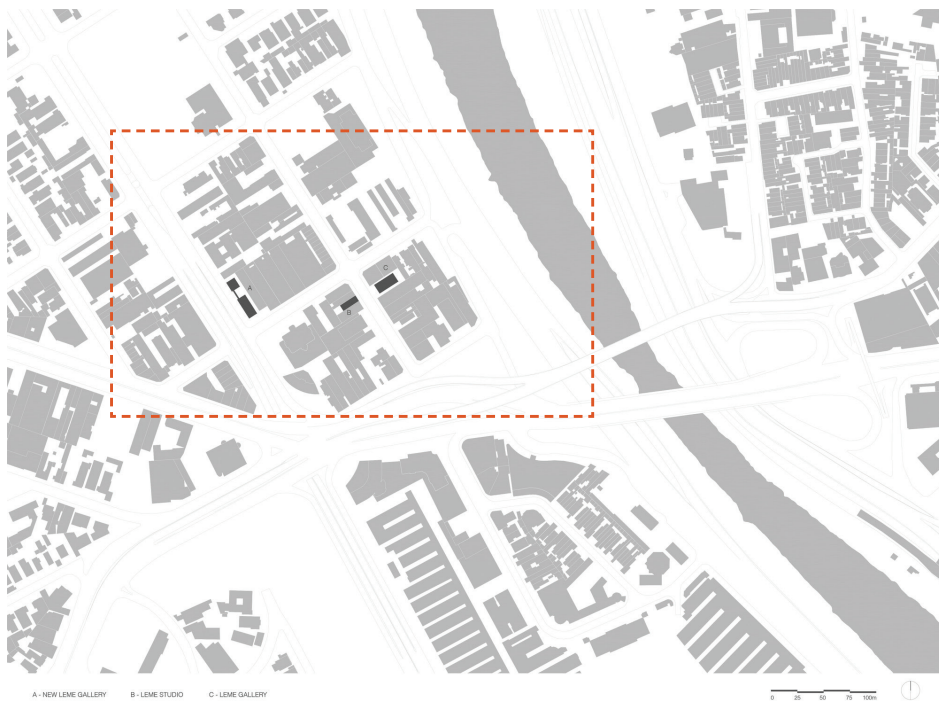


**FIGURE 103**  
 São Paulo Brazil location (Britannica Kids, [n.d.]: online).



**FIGURE 102**  
 São Paulo noon sun angles during winter and summer.

SÃO PAULO SUN ANGLES AT NOON



**FIGURE 104**  
 Leme complex's three separate buildings. Right: Leme Gallery. Middle: Leme Studio. Left: New Leme Gallery (Archdaily, 2013: online). Edited by author.



**FIGURE 105**  
 Google Earth image of site. Notice the towerblock development that took the site of the original Leme Gallery to the right. (Google Earth Pro). Image edited by author.

### **\_climate**

Despite finding itself on the fringe of the tropical zone, Sao Paulo has a temperate climate as a result of its altitude (820 metres above sea level). It therefore enjoys four distinct seasons throughout the year, despite relatively high humidity levels year round and frequent thunderstorms in summer. Winters are sub-dry, with temperatures hovering around the high teens, whilst summers are wetter, with temperatures reaching high twenties. Autumn and spring are merely transitional seasons (Wikipedia, 2016c: online).

Sao Paulo is known for its sporadic weather changes. Locals say that all four seasons can often be experienced throughout a single day (Wikipedia, 2016c: online).

### **\_topography**

The city rests in a reasonably flat 'bowl' on the Brazilian Highlands (near the edge of the Great Escarpment), the majority of which comprises age old crystalline rocks which give way to gentle hills covered in soft reddish clay soil near Sao Paulo. The city is surrounded by valleys and foothills which have mostly been covered by urban development. The higher lying regions are preferred for residential development, whilst the lower lying areas around Sao Paulo's three rivers (the Tiete, the Pinheiros, and the Tamanduatei) are mainly used for industrial, commercial and working-class residential exploits (Minkel, 2015: online).

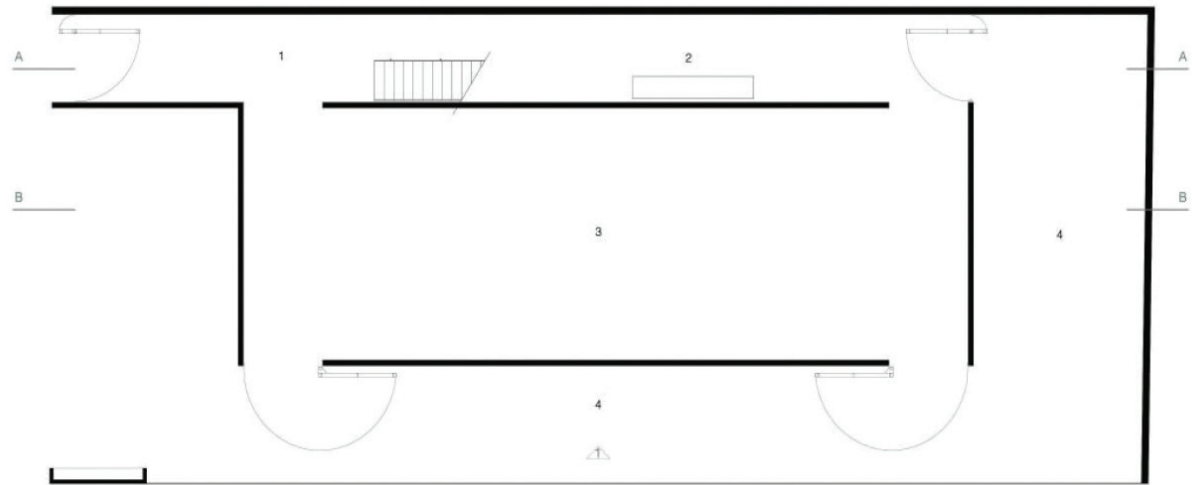
### **\_urban character**

In terms of the city's history, Sao Paulo lay dormant for much of its existence, only booming into a considerable economic centre after coffee became Brazil's biggest export commodity. The city expanded rapidly, and many people both nationally and internationally were drawn to it; soon, it became an overnight nexus of diversity and innovation. Having been overshadowed by Rio de Janeiro for most of its life, Sao Paulo suddenly became bigger and more affluent than its former superior. In terms of architecture we also see diversity in use of materials, as the CBD comfortably juxtaposes concrete, glass and steel clad skyscrapers. This is due in part to fast-paced architectural innovation, but also to little consideration towards historical precedents, given the lack of said precedents. Because of the city's speedy expansion, very little of its built fabric dates farther back than the 1900s. There are only a few exceptions in the way of churches, leaving it to be a predominantly modern city which continues to expand as such (Minkel, 2015: online).

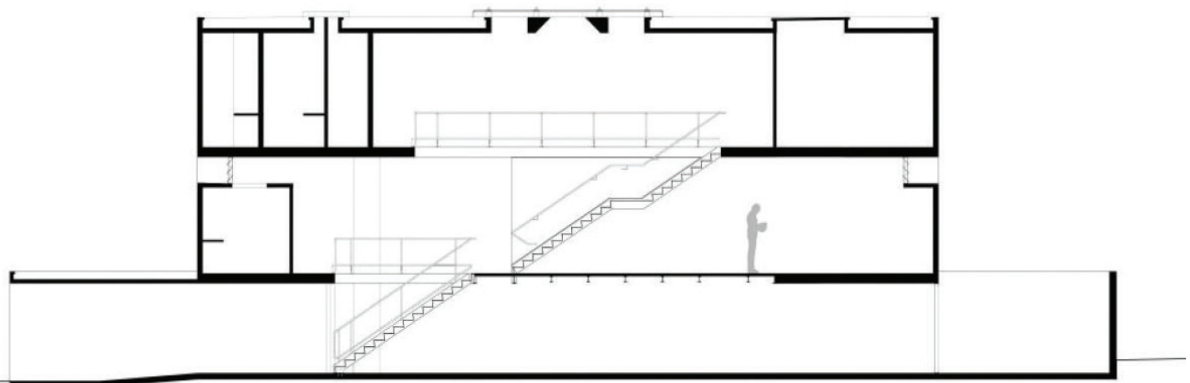
### **\_vegetation + soil**

Before the advent of colonialists and their economically driven exploits, 82% of the area was covered with natural forests. Together with the fertile soils of the plateau on which Sao Paulo is situated, it is no wonder that the coffee boom took place and rocketed Sao Paulo firmly into the economic sector (Brazil Travel, [n.d.]: online).

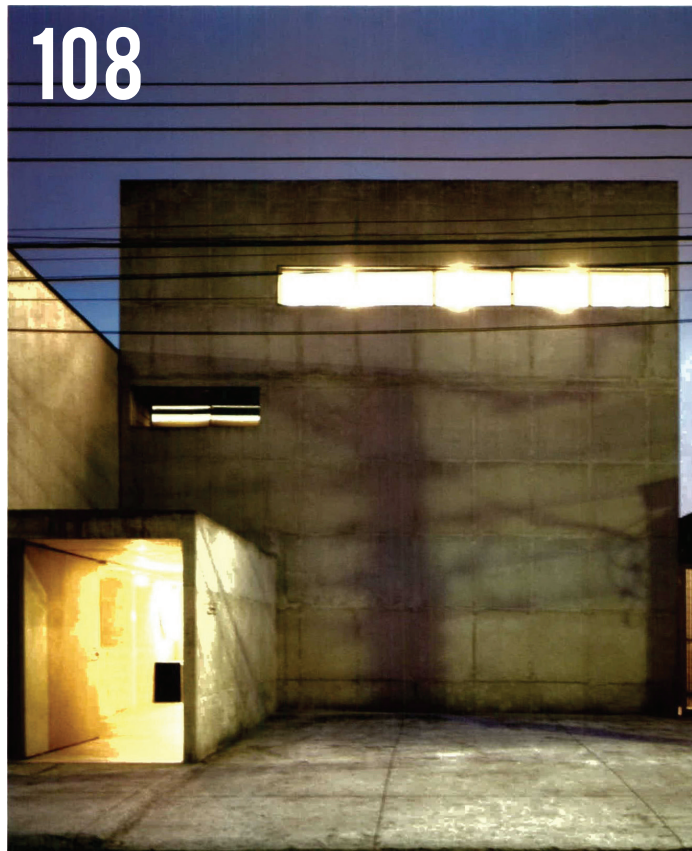
On a more micro level, Sao Paulo has reddish clay soil, traditionally requiring raft foundations in buildings, as the soil has a tendency to expand and contract considerably when wet. The Leme galleries employed pile foundations capped with concrete pads to address this problem (Archdaily, 2013: online).



106



107



108

**FIGURES**

**106** Original Leme Gallery ground floor plan (Phaidon Atlas, 2004: online).

**107** Original Leme Gallery longitudinal section (Phaidon Atlas, 2004: online).

**108** Street view of the Leme Gallery (ARQ, 2010: 56).

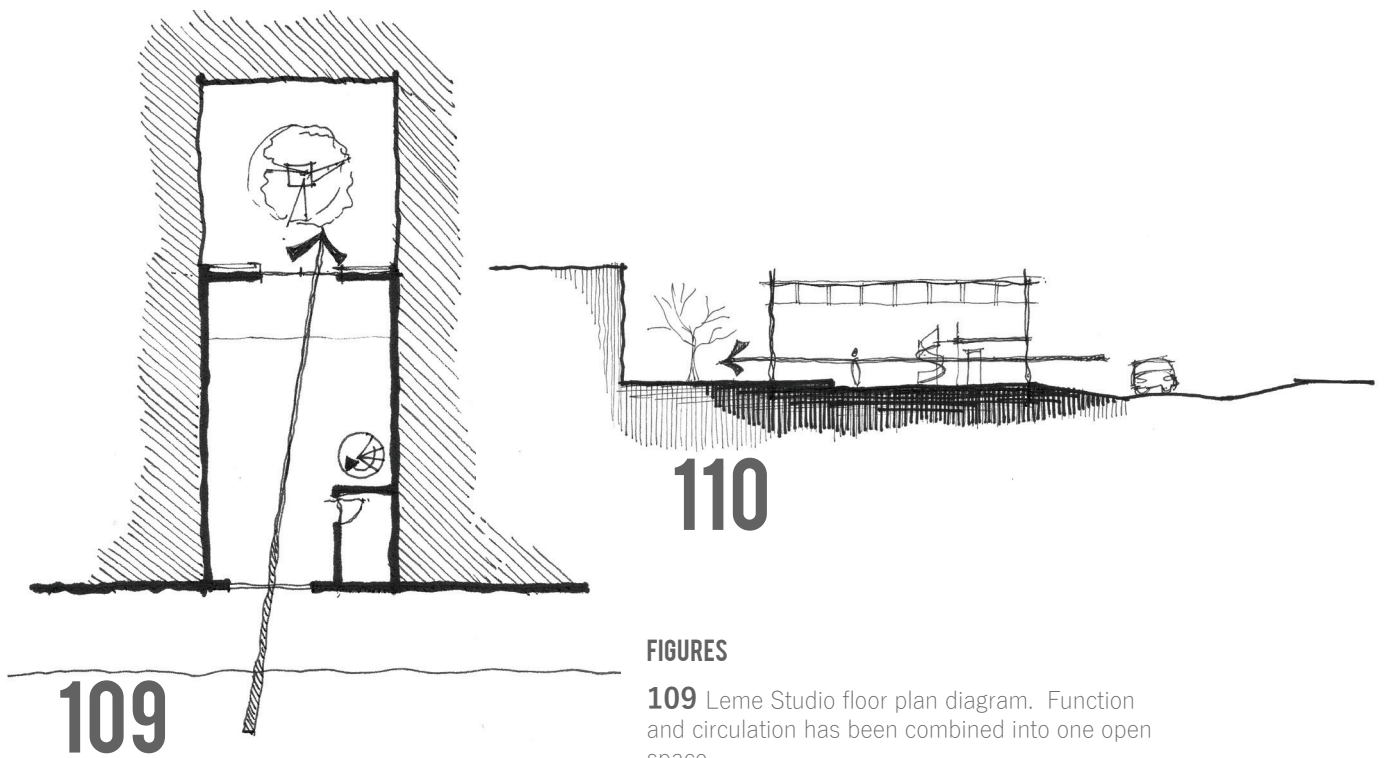
## USER BEHAVIOUR & REQUIREMENTS

### function /area requirements

Given the main function of all three buildings first and foremost being 'exhibition space' (the Leme Studio's ground floor can also function as a gallery), the main goal was to create large, open, blank spaces within which to showcase large artworks and installations. As a result, the construction and space requirements were kept minimalistic, with the majority of all three buildings comprising large multi-functional, free plan spaces, especially on ground floor.

The original Leme Gallery had a 150 m<sup>2</sup> exhibition space on the ground floor. This was topped with two upper floors collectively making out an additional 225 m<sup>2</sup> in which offices, shops and service spaces were provided. The upper administration floors and the ground exhibition floor were connected via a simple circulation corridor/shaft running along the entire north facade of the building (Phaidon Atlas, 2004: online).

The Leme Studio was a much simpler design. Given the fact that it reused an existing semi-industrial workshop, it was a large (150 m<sup>2</sup>) free flowing space that stretched from the street to an enclosed courtyard in the back via two opposing large doors (Phaidon Atlas, 2006: online). When both doors were opened, the studio read similar to an under roof corridor connecting street and courtyard. Within the double volume of the studio, the architect also included a residence quarters on a mezzanine floor above the entrance. Here the requirements were again simplistic, requiring only an open studio space with an en-suite bedroom on a mezzanine.



### FIGURES

**109** Leme Studio floor plan diagram. Function and circulation has been combined into one open space.

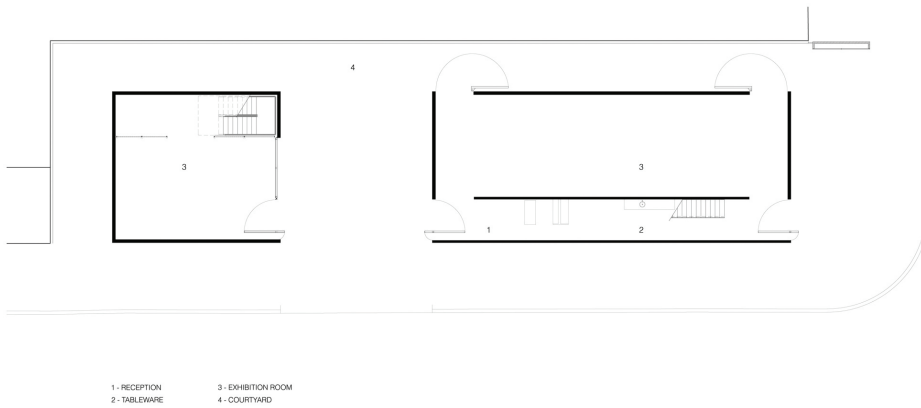
**110** Diagrammatic section of Leme Studio. Visual line from street to courtyard indicated by the arrow.



**FIGURE 111**  
Street view of the Leme Studio. The facade borrowed from the context (Phaidon Atlas, 2006: online).



**FIGURE 112**  
Street view of the Leme Studio at night. Notice the courtyard visible through the building (ARQ, 2010: 56).



**FIGURE 113**  
Ground floor plan of New Leme Gallery. To the right is the exact replica of the original, and to the left, the 9 x 9m addition (Archdaily, 2013: online).



**FIGURE 114**  
Street view of the New Leme Gallery, the porous footbridge connecting the two masses (Archdaily, 2013: online).

When the studio and gallery worked together and opened out towards each other, the street became included in the design; this effectively pulled a part of the larger urban framework into the design (Phaidon Atlas, 2006: online).

When the New Leme Gallery was constructed, it was constructed as an exact replica of the original Leme Gallery. An added 9m by 9m concrete block was connected to the main structure via a porous steel bridge stretching over an exterior spill-out area on the ground floor. Other than making the exhibition space larger in this newer version, the main requirement was still for exhibition space on the ground floor, and administration and service spaces on the upper floors (Phaidon Atlas, 2011: online).

### **\_accommodation list**

Leme Gallery:

- Reception
- Shop space
- Exhibition room
- Exterior courtyard
- Multi-functional counter space
- Ablution
- Offices
- Painting deposit

Leme Studio:

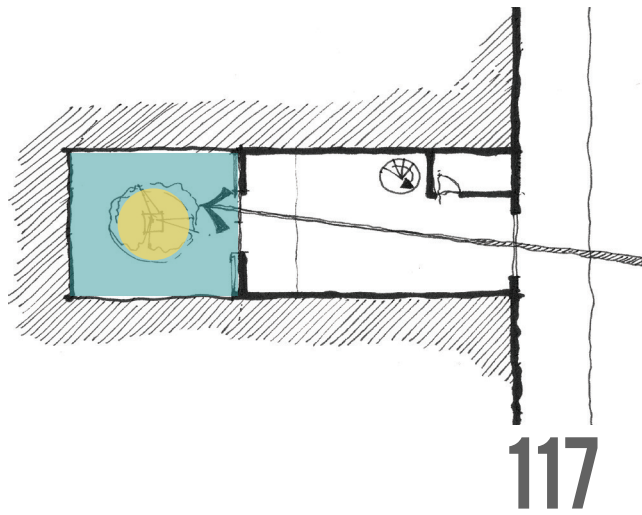
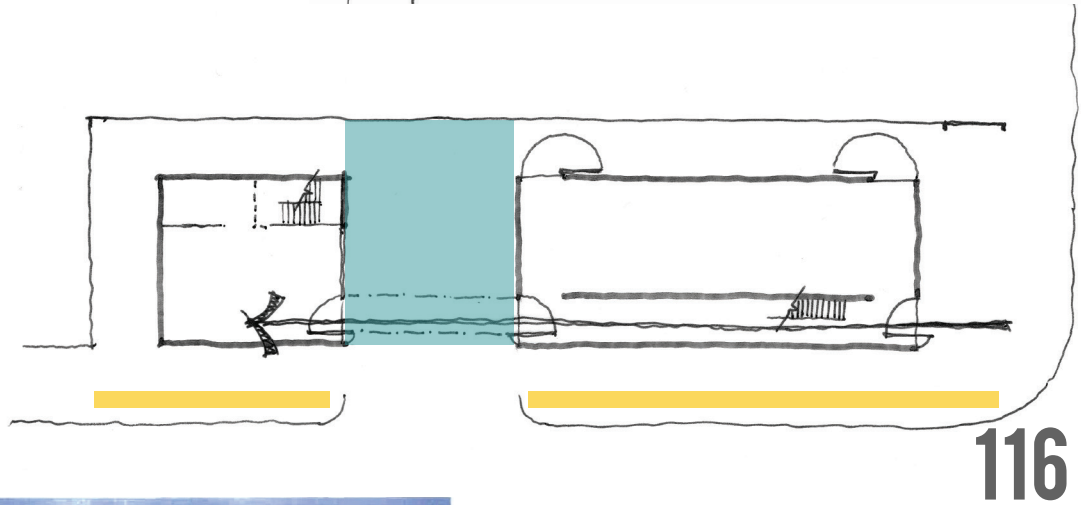
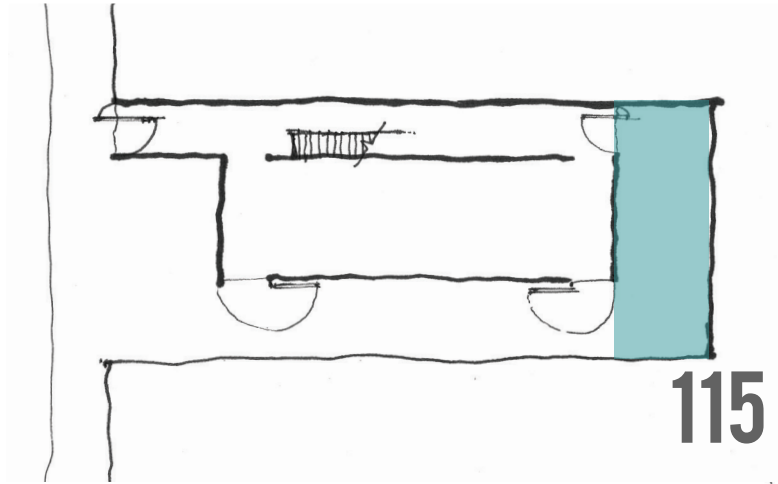
- Ablution
- Studio
- Courtyard
- Bedroom/living quarters

New Leme Gallery:

- Reception
- Shop space
- Multi-functional counter space
- Exhibition room
- Courtyard
- Offices
- Ablution
- Studio
- Footbridge
- Art storage room

### **\_socio-economic profile of user group**

The user group of the gallery is not specific to a certain demographic. The assumption of it being near the University of Sao Paulo's main campus is that students and young artists would most probably benefit most from this intervention. However, being a gallery, the purpose is to invite the public to view art. Therefore, any people could be users of these buildings at some point or the other. The only possible exception would be the Leme Studio, which has living quarters specifically for in-house artists. Sao Paulo has one of the most diverse populations of most Brazilian cities, with many international immigrants having settled permanently in the city after the coffee export boom. As a result, with all these diversities flung together in close proximity, the city is particularly innovative in terms of art, architecture and other forms of artistic expression.



**FIGURES**

**115** Back spill-out space of the original Leme Gallery indicated in blue.

**116** Spill-out space under steel footbridge of New Leme Gallery indicated in blue. Green strips on street-side pavement indicated in yellow.

**117** Leme Studio courtyard indicated in blue. Tree planted in courtyard indicated with yellow.

**118** Leme Studio viewed from the courtyard at the back. Notice the submerged concrete gutter next to the threshold, covered with a wrought iron grid (ARQ, 2010: 57). Edited by author.

## SITE PLANNING & LANDSCAPE DETAILING

### **site development**

All three sites have little in the way of landscape development. Being located in densely populated urban areas, the sites are all relatively flat and predominantly covered with built fabric. In an attempt to incorporate some form of urban design, the architects employed courtyards in all three buildings. Taking the form of simple, paved, private spaces (with a single tree in the case of Leme Studio), they offer open air spill-out areas to the building users. They are very minimalistic and, in all fairness, hardly constitute 'landscape architecture', but were a design consideration nonetheless. The 'blank canvas' ideology was brought out from the interior of the building to similarly dictate the exterior spaces.

### **green spaces/breathing spaces**

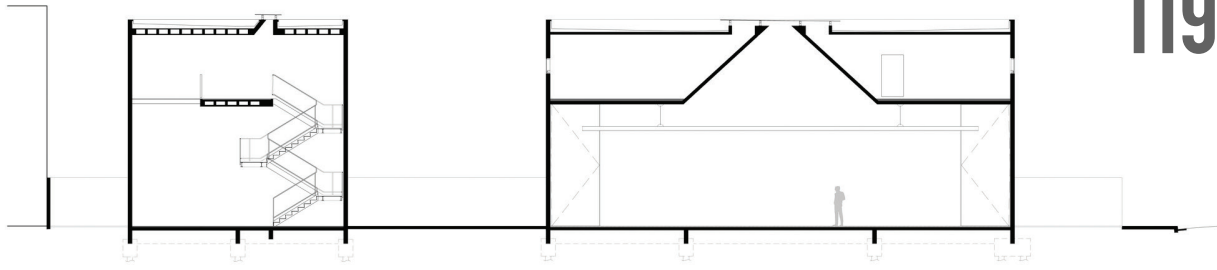
The Leme Gallery incorporated an exterior service corridor/alley running along the southern periphery of the site and connecting the street front with a semi-secluded courtyard space at the back of the gallery. This courtyard is, however, merely an exterior spill-out space for the purposes of making the moving of large art pieces or installations in and out of the interior gallery easier (Phaidon Atlas, 2004: online).

The Leme Studio abuts both its neighbouring buildings, making the courtyard at the back of the building completely private. This courtyard contains a single pomegranate tree. This transforms the space ever so slightly from 'pure object' to 'human place', seeing as the studio has accommodation for a resident artist. The possibility of human inhabitation, instead of only housing art, required a softer breathing space (as opposed to the blank open space at the back of the gallery across the street).

The New Leme Gallery contains a courtyard space, or rather transitional spill-out space, under the footbridge connecting the two separated 'sister buildings' (Hudson, 2013: online). Again, given the non-residential nature of the building, no greenery has been included in this space, and is often used for parking. Along the street-side periphery of the site a few palm trees and a small strip of grass alleviate the total greyness of the concrete building and its paved surroundings.

### **storm water run-off**

Given Sao Paulo's abundant rainfall, especially in summer, no measures were taken for rain water harvesting. In terms of storm water run-off, however, it was strange to see the lack of substantial thresholds around the building peripheries. The assumption is that the relatively small amounts of exterior space around each of the three projects did not require extensive draining. In most cases, the sites were sloped towards the street fronts with concrete paving, holistically using the free ground space as massive storm water channels, leading water away from the building peripheries and into the streets. In the case of the Leme Studio, where the courtyard at the back does not have exterior access to the street front, a concrete water channel was placed along the exterior side of the threshold and covered with a wrought iron grid to prevent water running back into the studio.



## UTILITY & SPACE ENHANCEMENT

### clever use of space

The most notable use of space is the skylight system penetrating all floors in order to throw direct light into the exhibition space on the ground floor, both in the original Leme Gallery and the New Leme Gallery. On the upper floors, where the office spaces are inserted against the slanted walls, users experience a dynamic quality in terms of geometric spatial experience and light control.

It's worth emphasising here that New Leme Gallery was purposefully designed to be an exact replica of the original Leme Gallery, with no substantial changes made to floor plans and elevation detailing, despite a completely different site and solar orientation. The building was practically moved to a new site. This was a choice made so as to maintain the (what had then become an iconic) architectural signature of the original structure, but also because the skylight was the primary source of light, effectively rendering orientation pointless.

### FIGURES

**119** (Across) A section of the New Leme Gallery, illustrating the simple, yet effective skylight design (Archdaily, 2013: online). Edited by author.

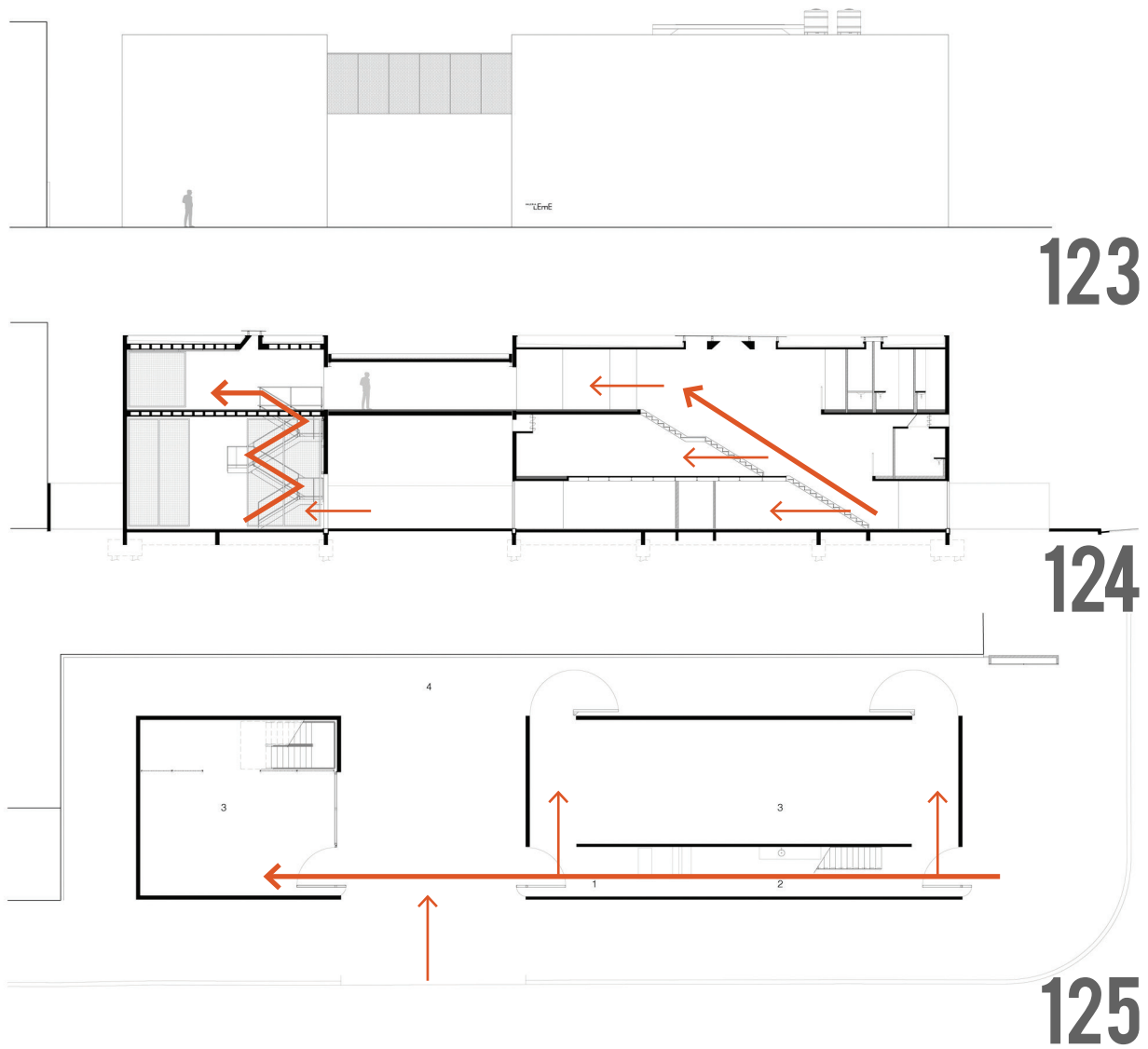
**120** (Across) An interior perspective of a second floor office, tucked in against the skylight and sharing the sloped surface (in this case, a sloped wall) (Archdaily, 2013: online).

**121** (Across) An interior perspective of a second floor leisure space, tucked in against the skylight and sharing the sloped surface (in this case, a sloped wall) (Archdaily, 2013: online).

**122** (Right) An interior perspective of the ground floor exhibition space of the gallery. The sloped surface here forms part of the ceiling, converging upwards toward a long, narrow skylight (ARQ, 2010: 57).

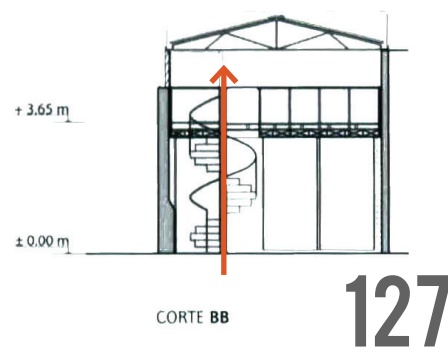
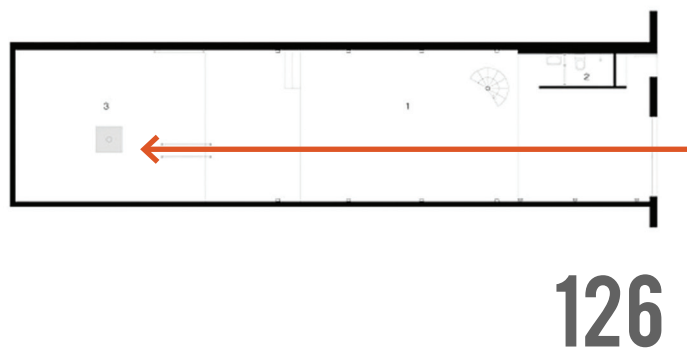


122



**FIGURES**

- 123** Front elevation of New Leme Gallery. Notice the HVAC system on the roof (Archdaily, 2013: online).
- 124** New Leme Gallery section, indicating vertical circulation (Archdaily, 2013: online). Edited by author.
- 125** New Leme Gallery ground floor, indicating horizontal circulation (Archdaily, 2013: online). Edited by author.
- 126** Leme Studio ground floor, indicating horizontal circulation. (Phaidon Atlas, 2006: online). Edited by author.
- 127** Leme Studio cross section, indicating vertical circulation. (ARQ, 2010: 57). Edited by author.



## HORIZONTAL & VERTICAL CIRCULATION

### horizontal circulation

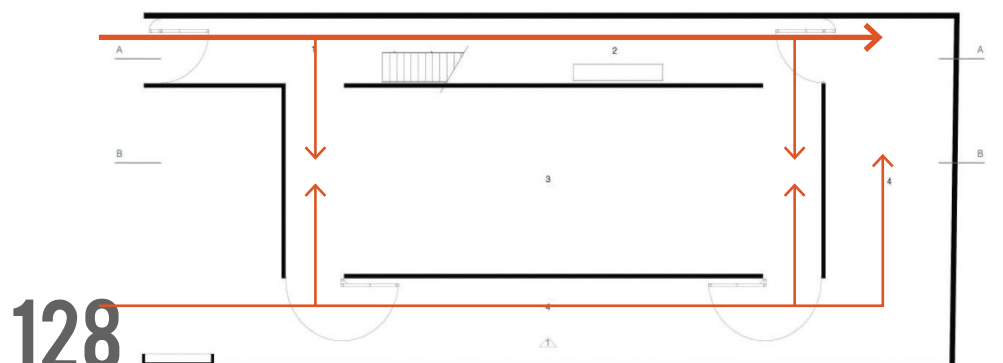
In the original Leme Gallery, horizontal circulation occurred naturally through a wide multi-functional corridor set against the northern boundary of the site, where the building abutted its neighbouring structure. This was done to allow as much of the southern face to be open to the indirect sunlight admitted through two large pivoting steel doors. The gallery space sat astride the corridor, with two arches permitting entrance and allowing relatively free movement.

In the case of the Leme Studio, the entire ground floor is an open plan space allowing free user movement through to the courtyard at the back. When both front and back doors are opened simultaneously, public passersby can see right through to the pomegranate tree at the back.

The New Leme Gallery grouped its circulation corridor, identical to that of the original Leme Gallery on floor plan, against the street fronting facade, along with the services. Service pipes and fixtures are hidden from public view and exit the building on the opposite facade, along with a fire escape staircase. On ground floor and in the main part of the building, horizontal circulation occurs near identically to that of the original Leme Gallery, before spilling out into an exterior courtyard space and back into the additional 9x9m block at the back (Archdaily, 2013: online).

### vertical circulation

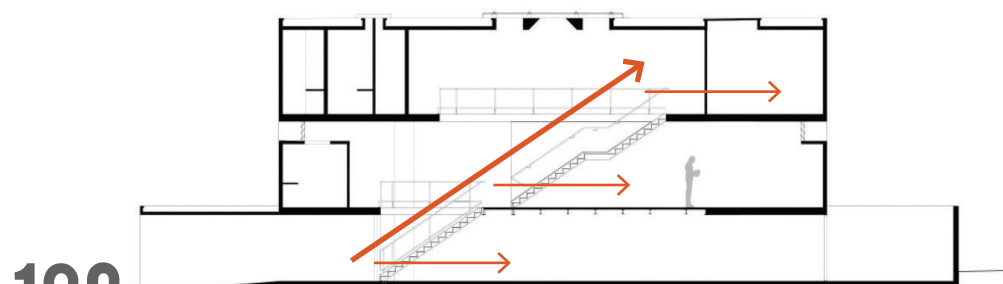
Vertical circulation occurs via simple staircases in all three buildings. In Leme Studio, a spiral staircase is used so as to take up as little floor space as possible. In the two galleries, linear staircases are used, running parallel to the narrow circulation strips provided in the building. No elevators are provided, meaning that upper floors are not accessible to people with disabilities.



128

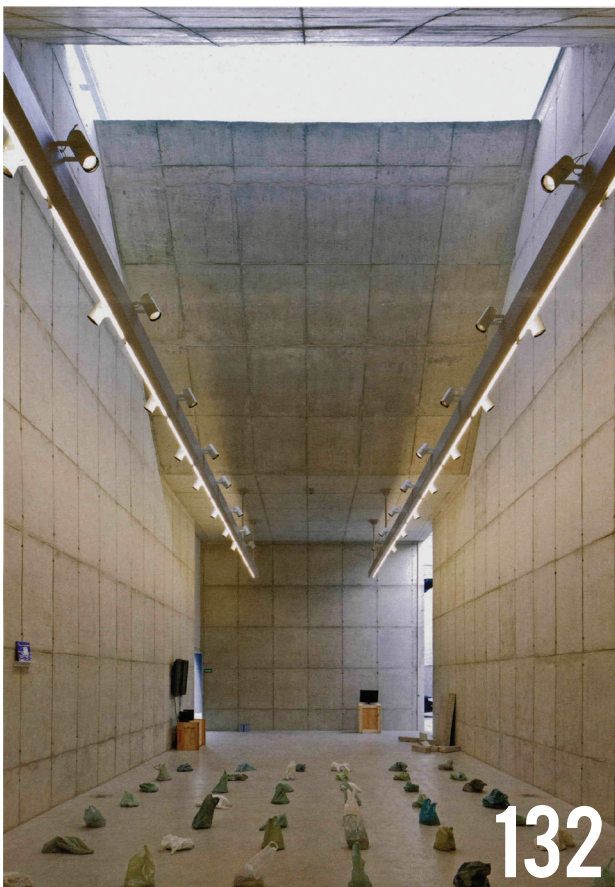
#### FIGURES

**128** Original Leme Gallery ground floor, indicating horizontal circulation (Phaidon Atlas, 2004: online). Edited by author.



129

**129** Leme Gallery section, indicating vertical circulation (Phaidon Atlas, 2004: online). Edited by author.



**FIGURES**

**130** Leme Studio in its context. (Phaidon Atlas, 2006: online).

**131** New Leme Gallery in its context (Archdaily, 2013: online).

**132** Interior perspective of the New Leme Gallery's exhibition space. (Strange, 2013: 18).

## FORM & FUNCTION

### context

The surrounding context is semi-industrial in nature. As a result, we see robust and unfinished materials. This, to a great extent, contributed to the use of modular, stereotomic concrete facades. The Leme Studio, especially, is successful in mimicking the context, considering that it greatly reuses an existing contextual structure (Phaidon Atlas, 2006: online). The light weight steel and corrugated sheet wall system employed on its upper floor responds particularly to Sao Paulo's relatively gentle weather. It comprises a double corrugated sheet system, the inner leaf being of perforated steel, and the outer being of translucent polycarbonate. This creates a wall that can admit diffused light, doubling as an obscured window (Phaidon Atlas, 2006: online).

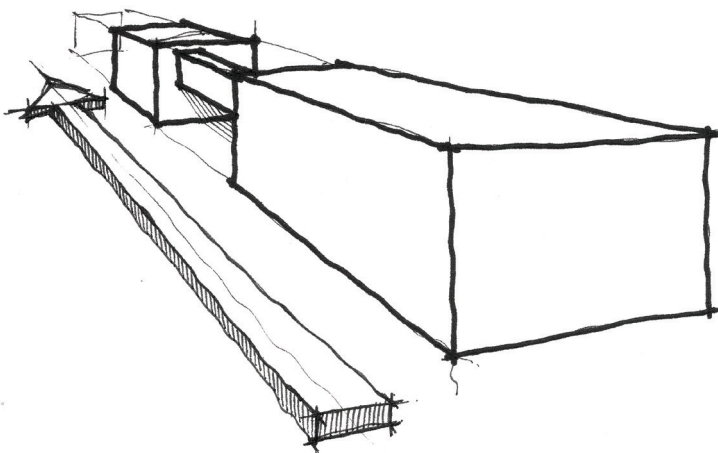
### morphology

Both gallery buildings read as solid stereotomic cubes set unapologetically on flatly paved sites, comprising minimalistic concrete facades which are the most basic of urban materials. The simple and assured use of material is supported by the strong, and equally simple, geometric form-giving. Both of which were driven by the idea of creating a blank backdrop against which the virtue of art would be in strongest contrast. The only liberty taken with the conventional 'cube', is the triangular-shaped wall panels (in section) meeting head-on at the skylight, and diverging down through the rest of the building. These cut through the second and first floors and open into the ground exhibition floor like a light shade admitting natural daylight from above. This ingenious way of admitting natural daylight further contributes to the geometric purism.

## STRUCTURAL SYSTEM

### stereotomics

The building structures of the Leme Gallery and New Leme Gallery predominantly make use of a stereotomic philosophy, both being constructed of 150mm thick reinforced concrete sheer wall systems (Phaidon Atlas, 2004: online). The thinness of the walls is a result of no insulation (Brazilian regulations do not require it). The roof, however, is insulated (Strange, 2013: 18). The simplistic construction is employed as a means of making the building a blank backdrop to the art it exhibits. The simple forms and unfinished materials contribute to the strong geometric poetry of the structure, again in dialogue with the modern art to be housed.



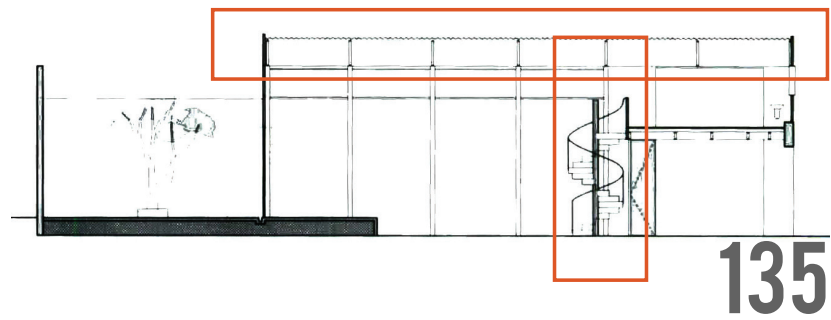
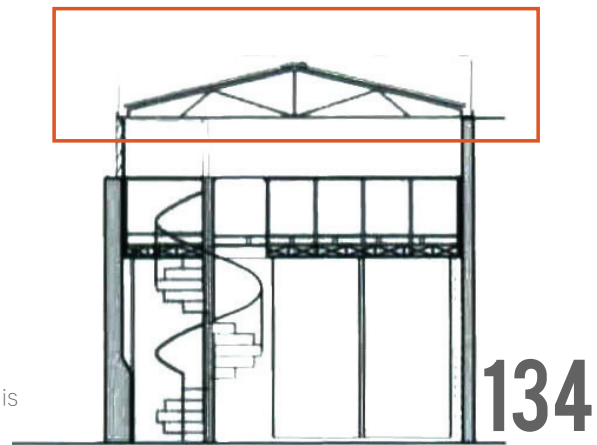
**FIGURE 133**  
New Leme Gallery  
massing.

**FIGURES**

**134** Cross section of Leme Studio. The steel frame roof is the predominant tectonic structure, as well as the light steel frame skin (ARQ, 2010: 57). Edited by author.

**135** Longitudinal section of Leme Studio. The spiral staircase is another tectonic element (ARQ, 2010: 57). Edited by author.

**136** Leme Studio back elevation. The light, double membrane skin is semi-translucent, contributing to the tectonic character of the studio (Phaidon Atlas, 2006: online).



### **tectonics**

The Leme Studio is a renovation of an existing building, of which the prior construction is unknown and not discussed. Whether concrete or brick, the bottom half of the building is of a solid, stereotomic nature. The top half consists of a clever double-skin light steel structure. Interior perforated steel sheet panels are covered on the outside by translucent polycarbonate corrugated sheets, allowing natural light to enter the space through the walls (Phaidon Atlas, 2006: online).

### **substructure**

Given the clay soil conditions of the site, both the Leme Gallery and the New Leme Gallery employ an intricate foundation system comprising concrete foundation pads on piles. This compensates for soil movement and effectively supports the heavy stereotomic masses above ground. Atop these foundation pads, a primary concrete building pad is cast, atop which the sheer concrete walls of the rest of the building are cast.

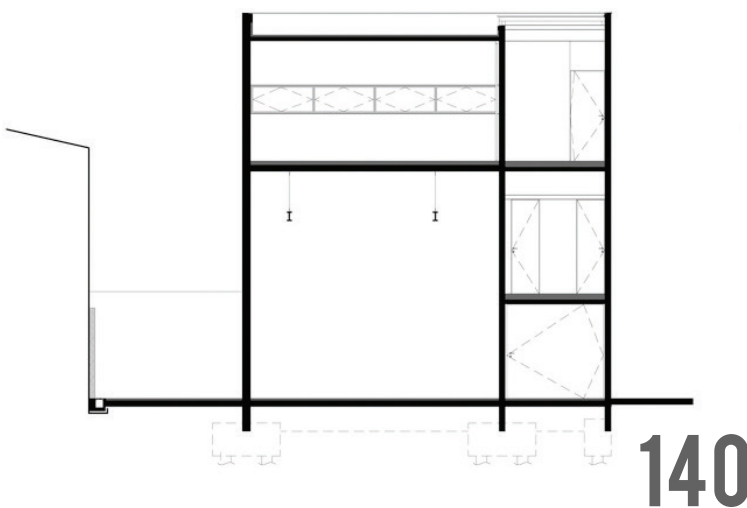
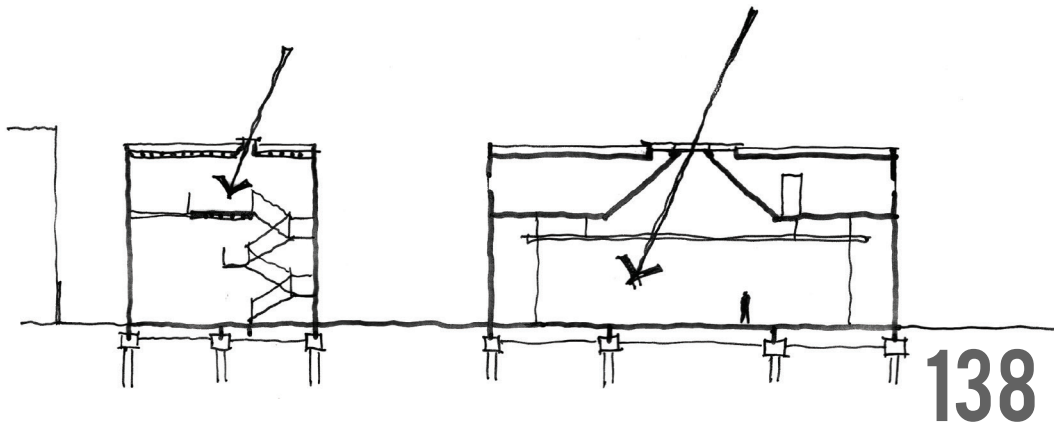
### **superstructure**

The Leme Gallery and the New Leme Gallery keep their reinforced concrete sheer wall systems right up to the parapet walls. The only instances of a light and tectonic superstructure are found on the first floor of the Leme Studio and the footbridge connecting the two wings of the New Leme Gallery. These employ steel frame construction.



## **FIGURE 137**

Stereotomic massing of New Leme Gallery. Notice the selective fenestration along the sides of the building (Archdaily, 2013: online).



#### FIGURES

**138** Light falls into the New Leme Gallery from above.

**139** Strip glazing viewed from the inside (Archdaily, 2013: online).

**140** The intricate foundation system comprises pad foundations cast on top of piles (Archdaily, 2013: online).

**141** Roof plan of the New Leme Gallery, indicating the glazed panels of the skylights (Archdaily, 2013: online).

**142** Parking possible between the two buildings (Archdaily, 2013: online). Edited by author.

### **\_fenestration**

The fenestration system is minimalistic, taking the form of punctured ‘slits’ both vertical and horizontal which admit light into the respective stereotomic voids. In the case of both galleries, skylights are also incorporated.

### **\_roof system**

The gallery buildings make use of a flat concrete roof system with a glass skylight in the middle. This throws direct light into the gallery spaces three floors below and indirect light into the offices on the first and second floors. The two offices on the upper floors have sloped walls which form a pitched ceiling in the gallery space below. Light is admitted through the skylight and allowed to pass over these two converging walls into three separate spaces (Strange, 2013: 18).

The Leme Studio has a more conventional steel truss roof system, with corrugated sheeting lain with overlaps. This was determined by the original, reused structure.

## **DESIGN DETAILING**

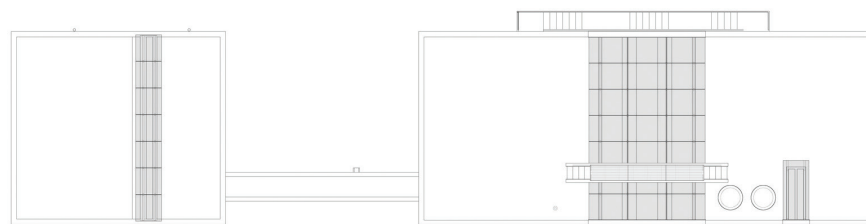
### **\_parking**

No direct parking was provided on site for any of the three buildings. Unlike the Leme Studio, the Leme Gallery and New Leme Gallery have exterior spaces on their sites not taken up by built form. These open site spaces are paved with in-situ concrete pads, which allow them to be used as informal parking bays. This is made especially easy as none of these buildings have any form of fencing, offering no substantial boundary between private and public. This makes sense, as the building typology is a publically-orientated one. Lastly, in the case of all three buildings, the floor space is not large enough to necessitate underground parking. Patrons can simply use municipal street parking.

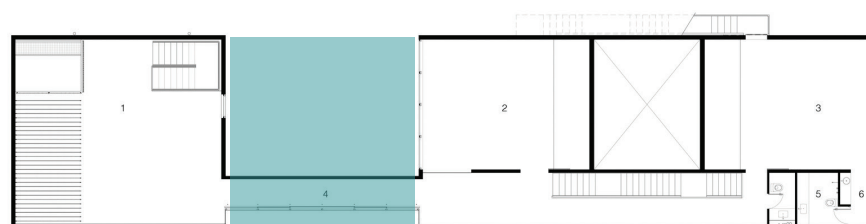
### **\_access for disabled persons**

The ground floors of all three buildings are completely accessible to people with disabilities, as concrete paving leads directly from street level to the ground floor levels of all three buildings. The upper floors, however, are completely inaccessible to disabled users.

141



142





**FIGURE 143**  
Partial view of the footbridge entryway (Archdaily, 2013: online).



**FIGURE 144**  
View into the semi-translucent footbridge (Archdaily, 2013: online).

## BUILDING SERVICES

### HVAC

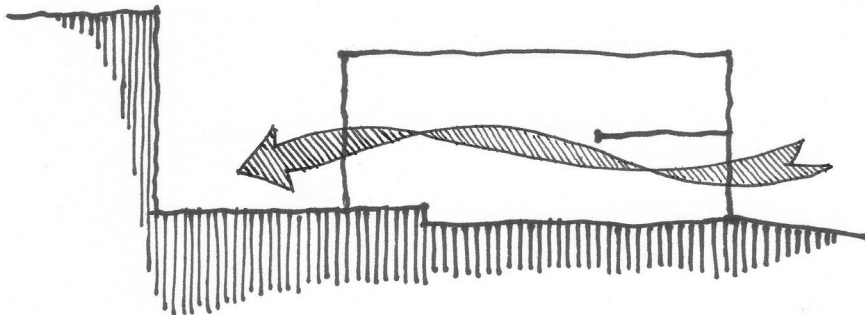
Both galleries make use of air conditioning systems, seen on the roofs in elevation. This is predominantly for the upper level offices and administration functions. In the Leme Studio no evidence of artificial heating and cooling can be found, but the 'corridor' design, with the two opposing doors, allow for abundant natural ventilation. In both galleries, cross ventilation was also incorporated on ground floor, especially in the circulation corridors.

### water

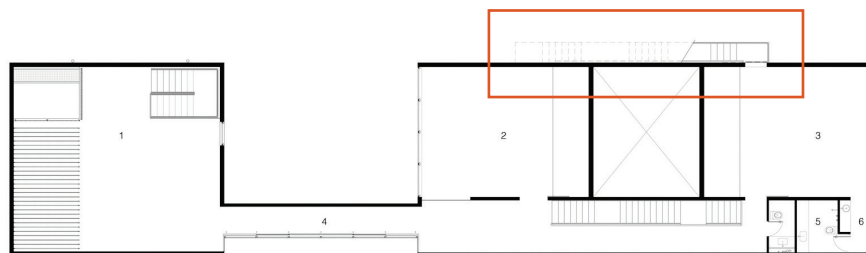
Water requirements are minimal, as ablution facilities (without showers) are the only dependents. The system probably makes use of its own water catchment facilities, in unison with municipal supply.

### fire

Concrete has a high fire resistance, and circulation is very simplistic; both factors which contribute to all three buildings' fire awareness. The New Leme Gallery also incorporates a fire escape staircase against the opposite facade of where the main circulation corridor is situated.



**FIGURE 145**  
Cross ventilation of Leme Studio.



**FIGURE 146**  
Upper floor plan of the New Leme Gallery, with the fire escape indicated at the top (Archdaily, 2013: online). Edited by author.

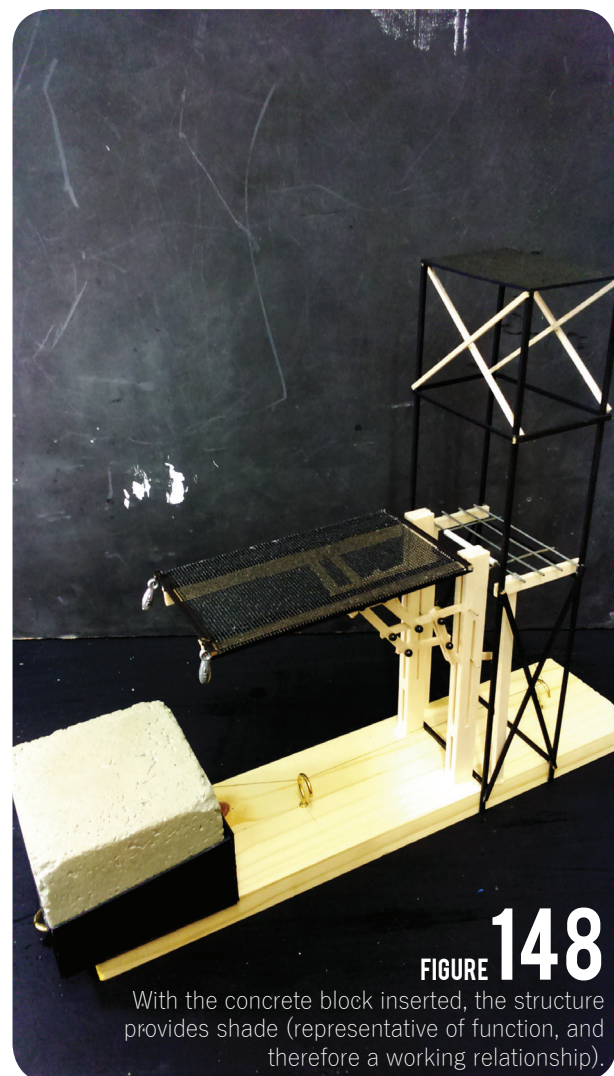
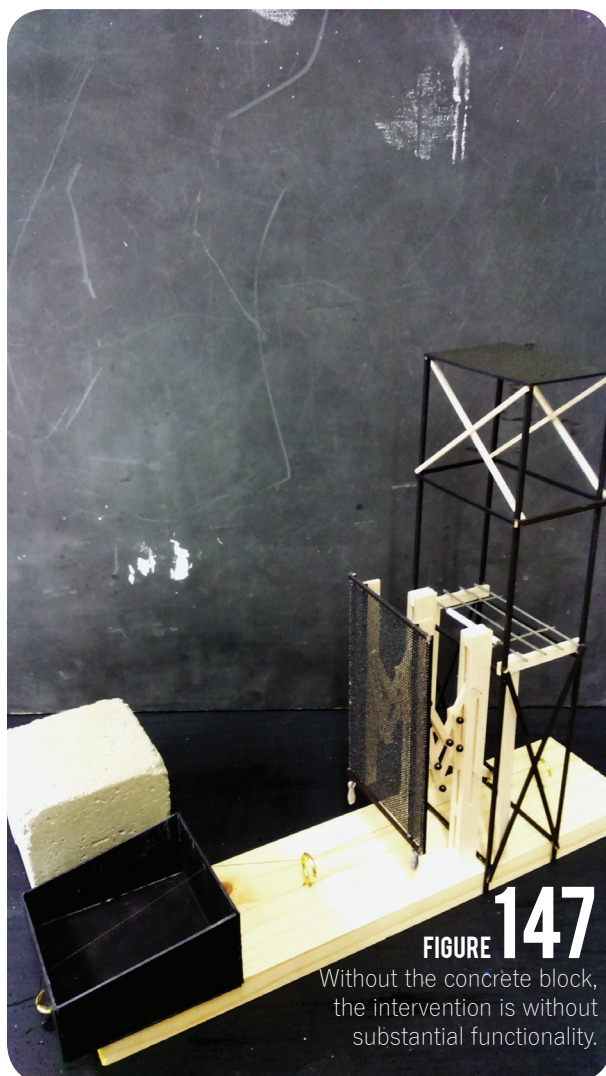
## 2.7.2

# S T R U C T U R A L T O U C H S T O N E

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The touchstone commented on the relativity of the desired intervention of the project, in terms of the relationship between the intervention and the existing urban fabric. The tectonic, movable part of the touchstone symbolises the intervention and the delicate nature it is to assume. The heavy concrete block symbolises the existing urban fabric. When the 'existing urban fabric'-block is inserted into its slot, a pulley system makes the tectonic half of the structure move, creating a canopy that symbolises the functional creation of shade.

The touchstone insinuates that the intervention is needed, but only in the form of a symbiotic relationship with the existing. The intervention should not be self-sustaining, but functional only because of its irrevocable relationship with its surrounding. Therefore, despite the functionally inadequate nature of the surrounding city infrastructure, the proposed intervention should attempt to augment it. In doing so, it will create an interlinked relationship between the old and the new, instead of imposing a removed intervention.



## 2.7.3

# S T R U C T U R A L P H I L O S O P H Y

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### 2.7.3.1

C A S

E S T

U D Y

3

## GALLERY ON LEVISEUR

SERGIO NUNES ARCHITECTS  
Bloemfontein, South Africa

Gallery on Levisaur is a contextually accurate precedent. Residing in the same city as the proposed project, the precedent offers many clues as to appropriate material usage, form-giving and circulation control for the Free State environment and user profile.



FIGURE **149**

Street view of Gallery on Levisaur. (Nunes, 2014: 222).

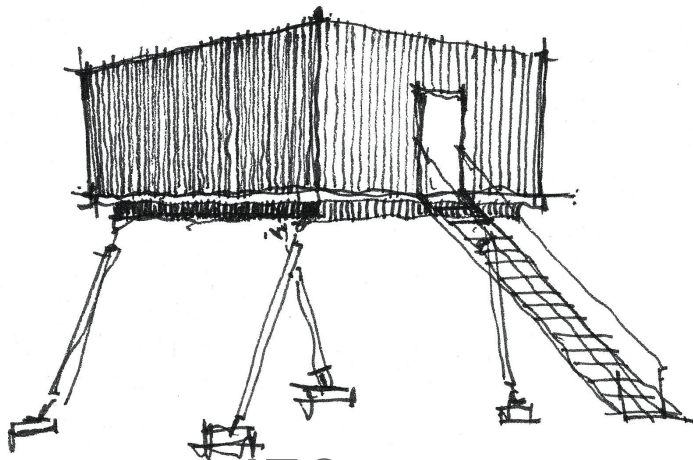
## FIGURES

**150** The office is placed above the entrance of the site, in a clad corrugated iron box supported by 'haphazard' pilotes.

**151** The gallery part of the building (which is hierarchically the most important) is housed in a form that is radically different from the rest of the building. This visually communicates the functional heart of the structure, established contrast and creates tension.

**152** The longitudinal section shows massing and spatial void. Redrawn from published plans (Nunes, 2014: 222).

**153** (Across) Plans showing user flow and space orientation. Redrawn from published plans (Nunes, 2014: 223).

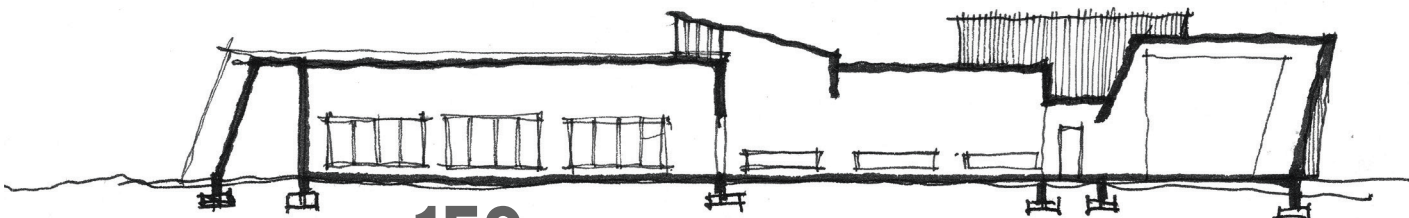


**150**

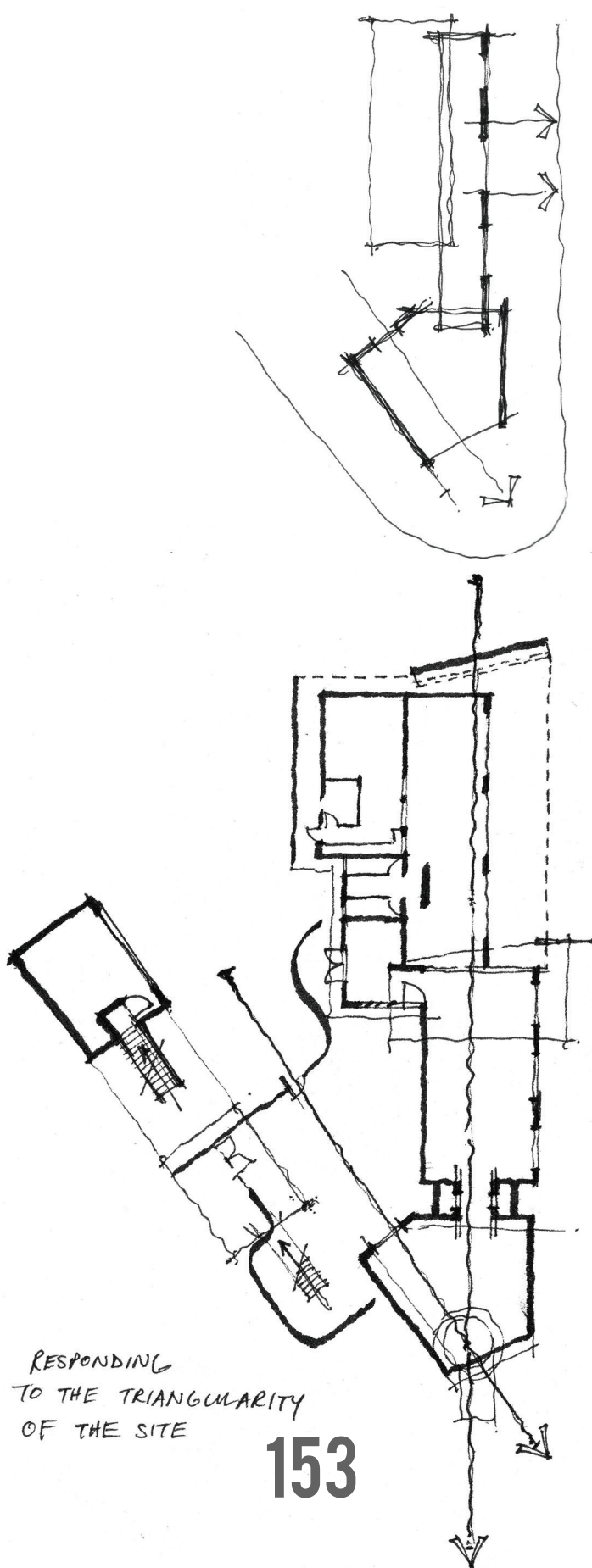
JUXTAPOSING  
DECONSTRUCTED FORM  
WITH STANDARD  
RECTILINEAR PRISMS,  
TO CREATE CLIMAX



**151**



**152**



But there are crucial points of difference to consider. The gallery is small, and more residential in nature, finding itself in a predominantly residential area. In conjunction with location, the structure is a renovated house, having a much more human feel and scale than a conventional commercial gallery. The spaces are consequently more intimate than would have been the case in a larger scale institution. Furthermore, the building is very exclusive, catering to the stereotypical arts scene and market. This will have to be reinterpreted in the design dissertation project, as the opposite is desired.

Clues were mainly taken from structure and circulation, and not from topological and typological responses. The kitchen and restaurant facilities proved useful, as the proposed dissertation project also incorporates a student restaurant and conjoined kitchen facility. The layout and patron flow is studied for clues towards the layout of the proposed project's public facilities.

Most important, however, is the relationship between the main gallery entrance and the rigidity of the rest of the building, in terms of the form differences between them. The marked contrast in form-giving successfully establishes climax and hierarchy, visually acknowledging the importance of the gallery over the more utilitarian functions in the rest of the building. This seems a good structural ideology to perpetuate. The proposed dissertation project will attempt to take the contrast further, also using different materials and structural composition, as well as form-giving, to visually represent tension.

### 2.7.3.2

#### **\_philosophy in terms of the proposed design**

To visually represent the two opposing concepts of 'norm' and 'free expression', stereotomic and tectonic entities will be juxtaposed as a means of expressing tension and simultaneous dependency in the proposed dissertation project. The building comprises two main entities: the studio/workshop spaces, and the gallery/exhibition hall. These two entities read as two separate structures placed opposite each other on either side of a pedestrian thoroughfare. To visually represent the concept of 'tension' through the juxtaposition of stereotomic and tectonic structures, the studio part of the project is predominantly tectonic in nature, comprising a clad steel structure, whilst the gallery is a semi-perforated concrete box.

This choice is further substantiated through a theoretical contradiction. In terms of traditional workshop and studio spaces, the architecture related to this typology is often introverted and separate. In terms of a gallery, the purpose is to exhibit an idea to a public audience. In the proposed project, both these conventions are inverted, in an attempt to create a higher consciousness of the dichotomies of society, the oppression of free expression by a minority, and the struggle of a majority to break through a prescribed 'societal norm'. Therefore, the gallery becomes symbolic of the 'societal norm' and the powerful minority, trying to rule society with impenetrable boundaries; in this instance, the concrete walls. The workshop part of the structure [which is the largest component of the project] becomes symbolic of the normative majority, trying to break free from oppression and to live in free expression. Again, the theoretical irony lies in the functions, where the gallery is presented as the oppressive half and the usually introverted workshop as the expressive half.

There is link between these two parts in the form of a tectonic bridge connecting the two structures. This bridge 'breaches' the concrete gallery box, establishing perforations and symbolising the desire to eradicate the oppression of the societal norm.

### 2.7.3.3

#### **\_philosophy in terms of the public realm**

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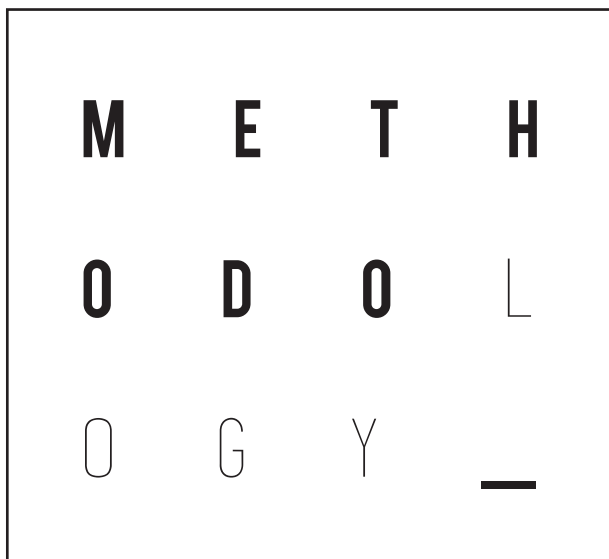
Refurbished public spaces will introduce the “tag me”-initiative, where blank walls will be erected for the purposes of street art. This is a further response on the idea of free expression in our society, and how public space should be a platform for the expression of a society’s ideas.

The initiative specifically aims to be controversial, aiming to erect these walls where they will rouse the most current debates and strike the most sensitive nerves. This should establish a form of inner city dialogue. For instance, the erection of a graffiti wall on the pavement across from parliament, or next to the high court adequately provides this type of space. This will consequently lead to the creation of controversial public spaces right next to sites of secluded elitism.

Of course, graffiti receives its allure mostly due to its rebellious nature. Providing walls for graffiti diminishes its illegality, and blunts the knife’s edge for those specifically aiming to deface public property. Having said that, these proposed walls provide a platform for communication. They will allow anonymous opinions to be heard (or seen rather). Therefore, allow this amendment: the term graffiti is used to refer to any form of visual art applied in a 2d manner, for which a more accurate term would most probably just be ‘street art’. However, ‘graffiti’ brings with it the concept of civil unrest, which is appropriate in this case, hence the use of the term.

## 2.8

T O W A R D S  
A D E S I G N



Once the industrial nature of the project was determined through the choosing of the appropriate function and user profile (design workshop and university students), the inclination towards an industrial-orientated layout and appeal soon followed suit.

The building comprises a tectonic structure assembled with raw materials (steel, concrete, clay brick). In terms of layout, and the multiple stories, the approach is to make it as functional as possible through imposing a uniform grid. Much of this is also influenced by the pragmatic requirements of the basement parking column spacing.

The intention is to have the design be as simplistic as possible. This constitutes open workspaces that engage in active dialogue with the surrounding city, rather than becoming an introverted, self-sustaining entity of exclusivity.

### **T TYPOLOGY**

Design a building that incorporates a socially current programme, which can act as a cross-demographic binding agent and universal communication platform - in this instance, a craft facility.

Incorporate university students as the main user profile of the programme.

Establish a transferral of knowledge from the student body to local labourers, which creates collaboration between the everyman and social elite.

Have this collaboration serve the public realm in a tangible way.

Address public space as a universal platform.

## RESULTANT BRIEF

### **PART 1(FREEING OF KNOWLEDGE)**

The building is first and foremost a platform (satellite hub) stationed within the inner city on which student bodies from the three main tertiary education institutions in Bloemfontein (UFS, CUT and Motheo FET College) can collaborate on urban craft projects. This catalyst in the urban centre allows them to utilise and apply their student knowledge in a more practical way.

### **PART 2(SHARING OF KNOWLEDGE: THE MENTORSHIP)**

The already established students (formal students) then engage in a community service project of sorts, teaching underprivileged local labourers (informal students) craft trades, in exchange for credits at their respective institutions of higher learning.

### **PART 3(THE COLLABORATION)**

Both groups (mentors and apprentices) then collaborate on craft projects towards the revitalisation of Bloemfontein's dead zones and dilapidated areas.

## **TOPOLOGY**

Design an organic urban structure that is born from the context that already exists, uses contextual elements to improve that context, and eventually re-applies the improvements to the context. The Structure is sensitive towards its environment, relating to surrounding structures and relying on them for continued support. Without public spaces to revive, the building would have no purpose. It therefore cannot survive without its surrounding context. The building supplements the city as much as the city supplements it.

## **MORPHOLOGY**

Question the concept of public space. The idea of public realms should be rethought by transferring the power to alter these spaces to the people actually using them. The building should function merely as vessel. This requires external influences from the city in terms of contextual materials and local workforce to better its own urban system. In other words, the building is merely a tool, placed there for the city to use to improve itself.

## **TECTONICS**

Use the structural concepts of stereotomics and tectonics to juxtapose two symbolic concepts: free expression and societal oppression. The structure creates dialogue on these issues as much as its intervention in public spaces spurs the same dialogue. The structure will become a symbolic representation of inner city issues as much as it will attempt to address them functionally.

# P A R T 0 3

This chapter discusses the application of the research done in part 2 on the design of a proposed building. The research stemmed from a theorised urban problem, which the proposed building attempts to solve through applicable design solutions.

The chapter begins with explaining the first form considerations that originated from the touchstone and resultant concepts. Through the analysis it is clear that the initial design proposals saw the influence of pure conceptual underpinnings, with little other influences. After the transferral of concept to initial form, the design underwent numerous developments, as contextual influences were considered, applied and refined.

After this initial discussion, the design progress is further explicated under conceptual headings taken from Part 2. It will attempt to discuss how the research influenced the design decisions using the same coherent route of thought.

Part 3 concludes with a technical investigation of the proposed building, delving into detail considerations and dissecting the building structure.

## DESIGN AND TECHNICAL SYNTHESIS



# 3.1

**F R O**  
**M** —

**C O N**  
**C E P** T O  
T —

**F O R**  
**M** —

## 3.1.1

D E S I G N T O U C H S T O N E

---

The touchstone is more a comment on the urban problem, than on the aesthetic value of a possible structure. Consequently, little is taken from it in terms of form decision. Instead of directly influencing form choices, the touchstone remains a barometer determining which human experiences the proposed design might offer. An instance of this is when the northern facade of the building is pushed back, letting the structure taper upwards. This is done in an attempt to open up the space above the pedestrian thoroughfare, so as to prevent claustrophobia and to create the illusion of less structure.

Given the concept of perspective, sight lines are also kept in mind. The design continuously attempts to create pleasant views when and where the structure allows. In addition, the thoroughfare is indented near the entrance of the building, disrupting the straight sight line so as to create a meandering experience that draws people into the building. When the building is entered, a sight line is established across the entrance foyer through a large curtain wall in the back of the building, offering a view of a large graffiti mural on the adjacent existing structure. 'Perspective' is linked to the human experience of a space, which continuously informs space and layout choices throughout the design process.

## 3.1.2

### C O N C E P T S

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The four conceptual approaches are, unlike the touchstone, directly linked to form-giving, making their application on the proposed design easier.

#### **BREAKING THE BOX**

This simultaneously comments on the building and its function of addressing public space. In terms of the building it refers to the perforation of a historically exclusive typology; that is, punching holes through private boundaries. Although the facility houses workshop, studios and gallery functions, which are historically private and exclusive, the design attempts to invert structural intent, making the proposed structure transparent and accessible. This is translated into a light steel frame structure, comprising numerous semi-transparent screens that allow views into the studios. The public student restaurant on ground floor level which exits directly onto the adjacent pavement, further contributes to drawing in the public and diminishing boundaries of exclusivity.

In terms of public space creation, the concept urges any intervention into the public realm to be unconventional and critical of the normative understanding of public space. Therefore, interventions will take the form of public furniture installations in dead urban voids, or the painting of a mural on a dead building facade. This is opposed to, for instance, creating numerous Hoffman Squares, which follow a European tradition and would be impractical for a student-based user profile to accomplish astride pre-existing formal studies.

#### **ENHANCING THE EXISTING**

In terms of the building itself, this concept is a little less applicable, seeing as none of the original two structures are kept. The building itself attempts to enhance the surrounding urban fabric, by being a sensitive intervention aimed at rejuvenating the dilapidation in its context. With this in mind, the intention is to create a building that 'grows' from the context, instead of being a completely alien imposition. The building sits to the south side of the site, establishing a pedestrian boulevard running parallel to its north facade and connecting the two streets either side of the lot. This is an attempt to give back to the city, rather than completely overpowering the available space.

In terms of public space creation, interventions will be small and additive, rather than establishing large scale urban parks anew. The idea is to supplement what is already there, improving through subtle addition, rather than attempting a complete rebuild.

## DISRUPTING LINEARITY

This concept is achieved by using site landscaping to disrupt the straight pedestrian boulevard linking the two streets on either side of the lot. In so doing, pedestrians enter a meandering route on site. This establishes a deeper haptic experience of the building and its surroundings. Meaningful places are created, rather than the boulevard's only purpose being a shortcut.

The structure itself establishes a layered facade, symbolizing a perforated boundary between inside and outside. It creates visual diversity and intrigue, and prevents a singular understanding of the building's aesthetic. This layered experience both in layout and facade detailing, creates a complex understanding of the building, which holds attention and prevents bypassing glances. The result is a richer experience. Layered facades and transitions make it harder to ascertain definite boundaries between the building and its context. This establishes a truly irrevocable bond between the building and the city that surrounds it.

## TENSION BETWEEN OPPOSITES

The structure of the building juxtaposes two structural aesthetics (namely stereotomic and tectonic) in order to visually represent the concept of 'tension between opposites'. The main part of the building, which houses the design studios and workshops, comprises a steel frame structure. Large curtain wall windows allow visual dialogue between outside and inside and establish transparency. The gallery and student restaurant stand separated from the rest of the structure and comprise a semi-perforated concrete box. The two structural aesthetics stand in great contrast not only because of different material, but also because of physical separation via the central pedestrian thoroughfare.

It is ironic that the studio and workshop part of the building are the 'transparent' half of the structure. This is because, traditionally speaking, a studio is more private than a gallery. The studio is the space where the artist works in complete isolation, whilst the gallery is where he/she ultimately shares completed works with the public. Yet, in the proposed building, the structural intent contradicts the functional norm. This is because the structure also represents the free thinking majority in society (the layman). In terms of the building's function, this symbolic link is substantiated. Just like the studio houses the physical work being done and so the bulk of the process, so too, the everyman is responsible for most of the city's visible activity.

In contrast, the gallery is housed in a semi-enclosed box. This is ironic considering that the purpose of a gallery is the exhibition of art to a public collective. However, in terms of its function, it represents the power-wielding minority hiding behind walls of exclusivity. The concrete walls represent the unwillingness of the minority to integrate with the

rest of society, consequently secluding itself on islands of exclusivity (such as parliament buildings, university campuses, and private schools). The relative smallness of the gallery is further representation of the insignificance of the step it represents. The end product is only a fragment of the entire process and the false illusion of perfection, despite exhaustive efforts during the process to make it seem that way. Similarly, the minority only offers brief facades of perfection, removed from process.

These two stand in direct contrast, as a means of creating thought-provoking dialogue on this contemporary issue. The minority aims to oppress the majority. Yet, the minority subconsciously realises the futility of this pursuit (mostly given historic precedent). The minority creates the illusion of control by avoiding physical involvement and simply excluding the majority. This is represented by the size of the tectonic structure in relation to the stereotomic structure. The latter is much smaller than the former, symbolising the futility of its attempted oppression of the larger party.

The pedestrian boulevard running through the middle represents public space as universal catalyst for addressing civil issues. Public space houses the layman (the wanderer). It is also the holder of free expression and public activity. Standing between the two opposites, it therefore has the power to act as mediator and establish a connection on a universal plane. As much as it has the power to separate, it also has the power to connect, often performing both simultaneously. Therefore, public space becomes common ground, and it is imperative it be used as such.

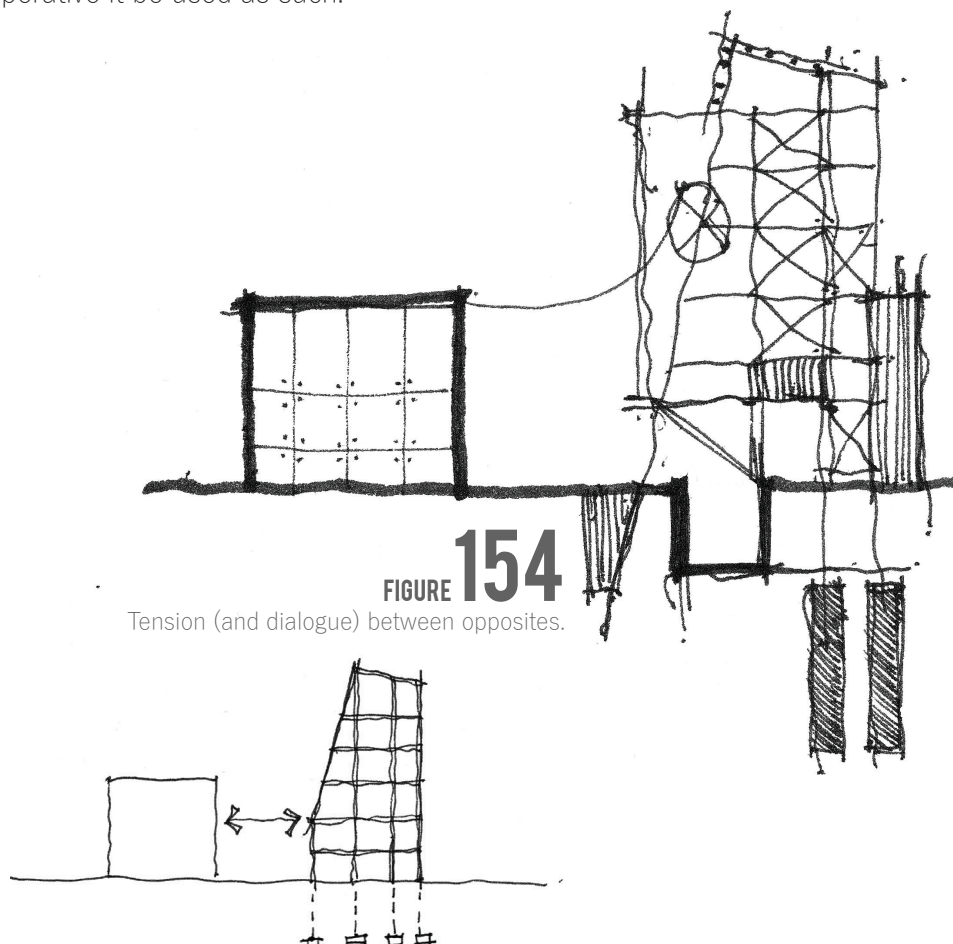


FIGURE 154  
Tension (and dialogue) between opposites.

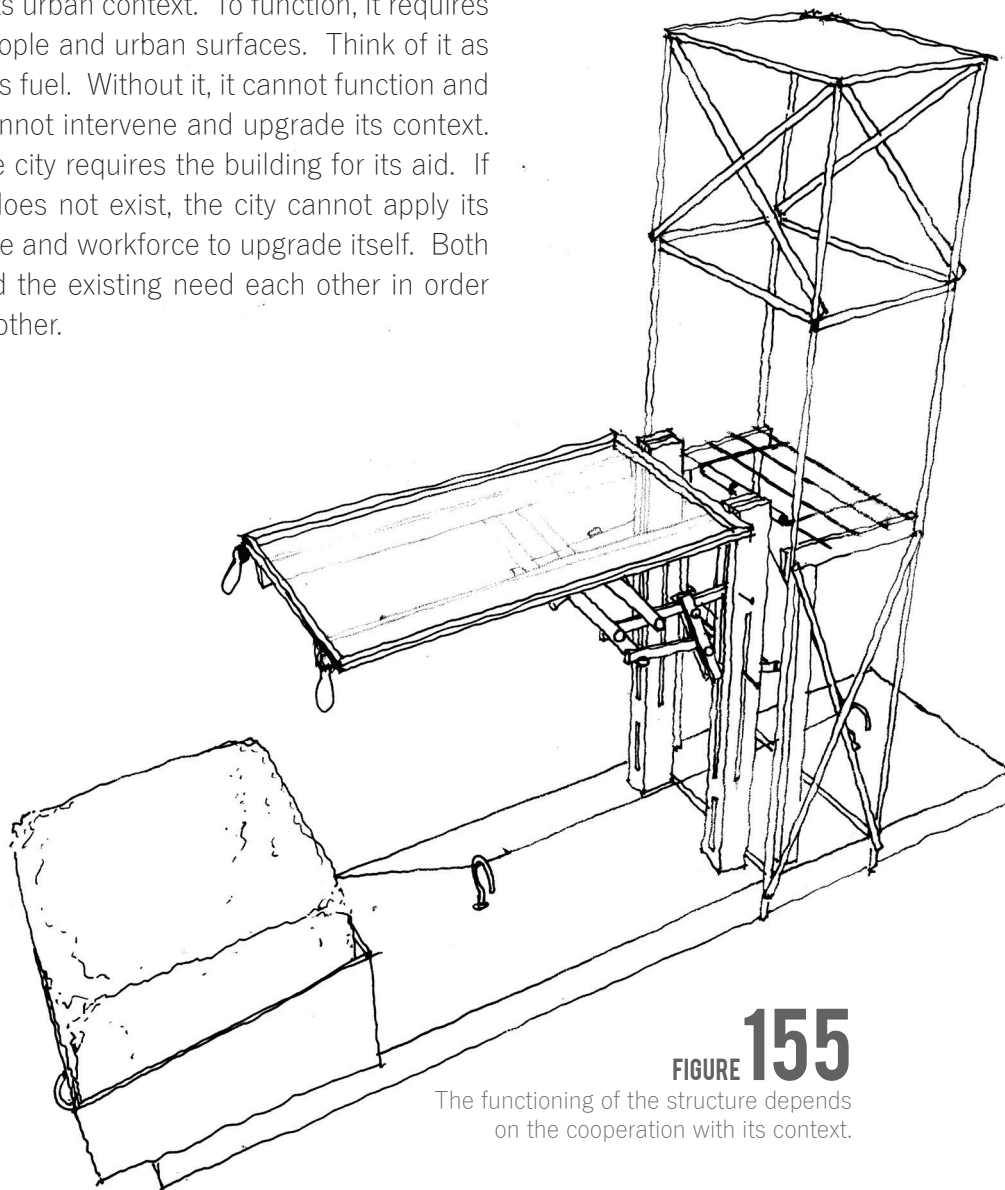
### 3.1.3

## S T R U C T U R A L T O U C H S T O N E

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The touchstone comments on the essence of the building. The 'concrete block' is the only object that can give the 'black structure' purpose. In the same way, the relationship between the new proposal and the existing urban fabric is based on a mutually beneficial urban relationship.

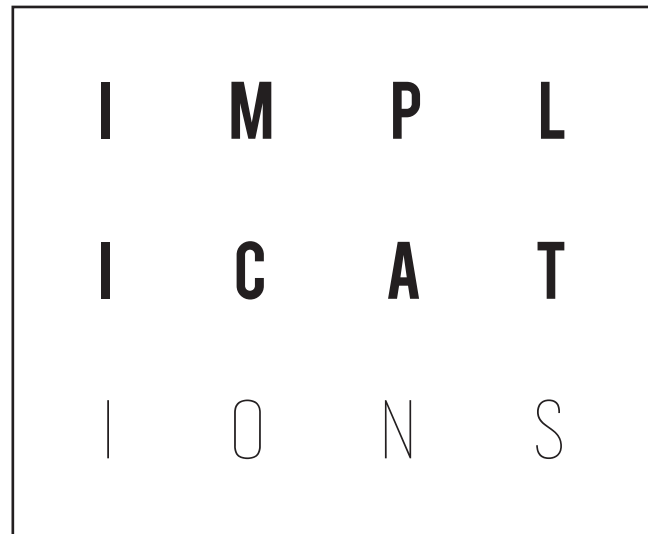
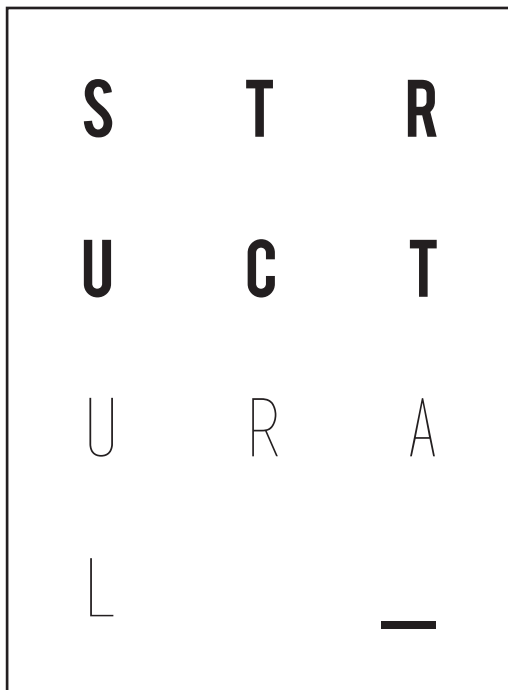
In essence, the building is merely an empty workshop. It is a machine with the potential to rejuvenate its urban context. To function, it requires the city's people and urban surfaces. Think of it as the building's fuel. Without it, it cannot function and therefore cannot intervene and upgrade its context. Similarly, the city requires the building for its aid. If the facility does not exist, the city cannot apply its infrastructure and workforce to upgrade itself. Both the new and the existing need each other in order to aid each other.



**FIGURE 155**

The functioning of the structure depends on the cooperation with its context.

## 3.2



### 3.2.1

#### **E Q U I P M E N T**

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Given the significant presence of the three workshops (timber, steel and concrete) in the building programme, the specifications of the machinery to be used become important when considering the spatial planning of each workshop space. The following table illustrates the most substantial machinery, and describes their size and weight (on average). These specifications have to be kept in mind when the workshops are designed. Note: handheld equipment will not be discussed, as small tools don't directly influence the design or spatial layout.

Circulation of materials and work pieces between the workshops is also important. To accommodate most transportation scenarios (and object sizes), a Fixed-column jib crane is used in a 6m x 5m service circulation shaft. Its versatility allows most materials and objects to be easily moved between floors. A sketch and photo is included.

# TIMBER



**Table Saw**  
740x1070x880mm  
216kg

(Beaver Industrial supply, [n.d.]: online)



**Wood Drill Press**  
300x510x1020mm  
40kg

(Beaver Industrial supply, [n.d.]: online)



**Band Saw**  
1070x965x1880mm  
210kg

(Beaver Industrial supply, [n.d.]: online)



**Jointer**  
230x1830x810mm  
+-160kg

(Beaver Industrial supply, [n.d.]: online)



**Wood Lathe**  
1550x460x1520mm  
200kg

(Beaver Industrial supply, [n.d.]: online)



**Planer**  
1415x580x1045mm  
332kg

(Beaver Industrial supply, [n.d.]: online)



**Dust Collector**  
780x1450x2240mm  
140kg

(Beaver Industrial supply, [n.d.]: online)



**Bench Top Grinder**  
480x530x280mm  
30kg

(Beaver Industrial supply, [n.d.]: online)



**Bench Top Sander**

(Beaver Industrial supply, [n.d.]: online)



**Drum Sander**

(Beaver Industrial supply, [n.d.]: online)

## STEEL



### Metal Lathe

1900x700x1250mm  
600kg

(Beaver Industrial supply, [n.d.]: online)



### Metal Drill Press

1400x840x2795mm  
1390kg

(Beaver Industrial supply, [n.d.]: online)



### Metal Milling Machine

2740x2032x2340mm  
1500kg

(Beaver Industrial supply, [n.d.]: online)



### Bench Top Grinder

480x530x280mm  
30kg

(Beaver Industrial supply, [n.d.]: online)

Welding machines will be used, but are not included here as they are too small and portable to influence design choices.

## CONCRETE



### Wheelbarrow

1430x570x585mm  
120kg

(Wheelbarrows, [n.d.]: online)

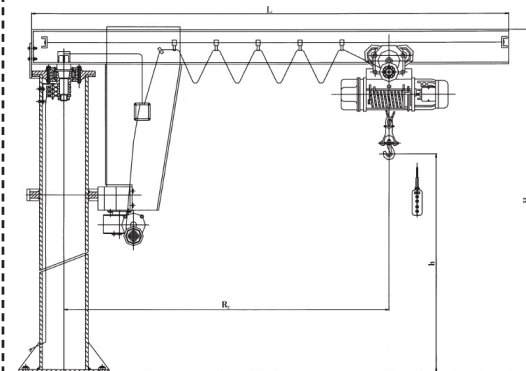


### Cement mixer

880x770x550mm  
68kg

(Adendorf Machinery Mart, [n.d.]: online)

## SERVICE CRANE



(Weihua Cranes, [n.d.]: online)



(Cranes Hoist, 2015: online)

### 3.2.2

## S E R V I C E C R A N E

The crane consists of one stationary, vertical arm (the column), and one movable, horizontal arm (the beam). The beam can move in a hemispherical fashion, pivoting 180° around its connection to the vertical column. In addition, it can also hoist objects up and down. In terms of the movability of objects with such a crane, it seems the most efficient choice.

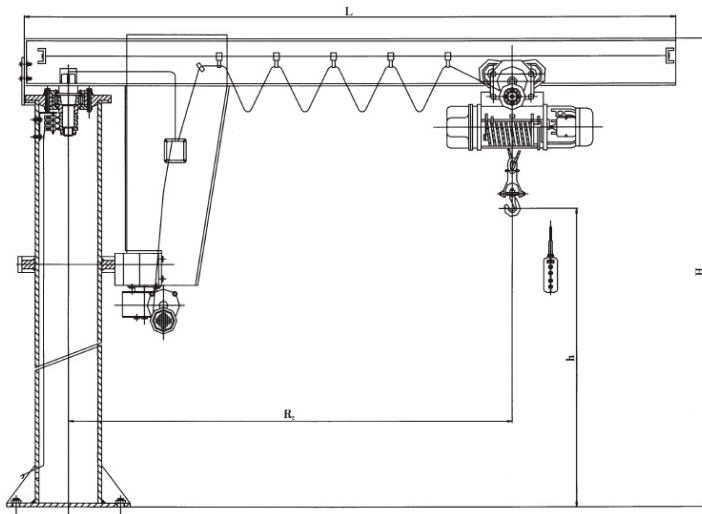


FIGURE 156

A fixed column-type jib crane from the side. From its pivot point, the horizontal arm can rotate 180° in the horizontal plane. (Weihua Cranes, [n.d.]: online).

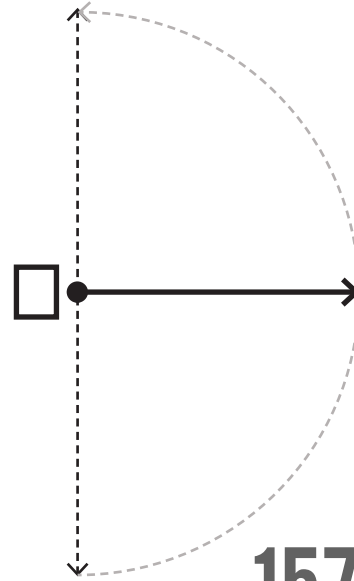


FIGURE 157

A plan-view diagram of the rotation of the jib crane.

### 3.2.3

## D R Y W A L L S Y S T E M

Dry wall systems are considered for light-weight construction and added insulation properties. The system works well with steel frame construction (which is the case here), and speeds up building time due to the lack of wetworks. Erection is quick, and once floors are cast, walls can be assembled off the floor plates (instead of having to use cumbersome scaffolding).

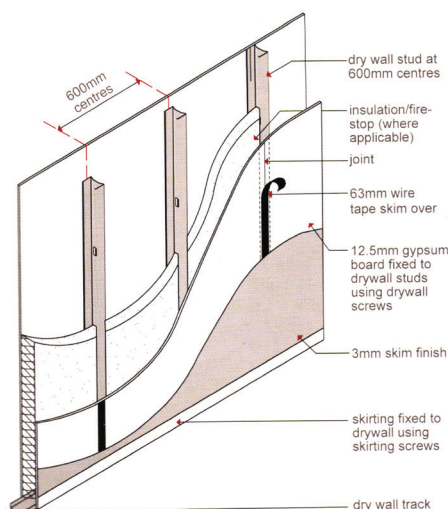


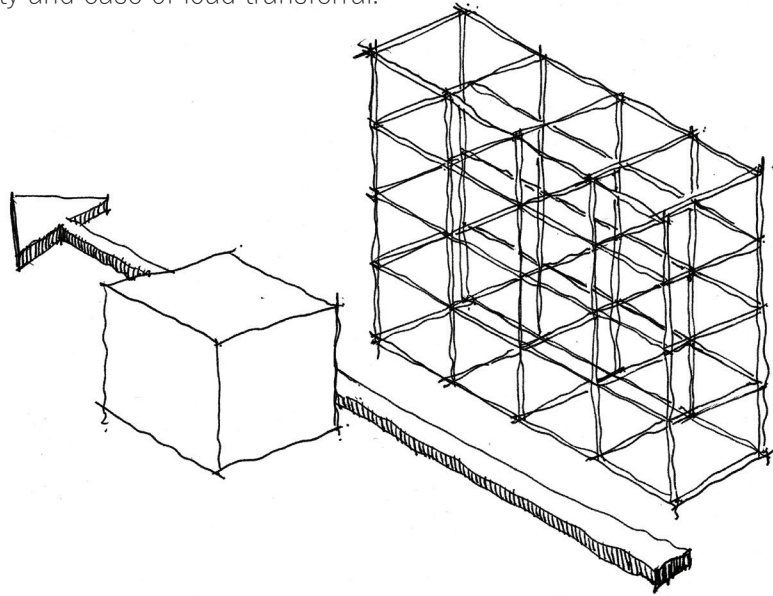
FIGURE 158

A typical dry wall system, to be used internally and externally because of a range of cladding options (Schmidt, 2013: 261).

### 3.2.4

## S T R U C T U R A L G R I D

A grid system is used in the design for two reasons: the surrounding urban grid informs and justifies it, and the use of basement parking dictates strict column spacing. Moreover, when multiple building stories are the case, it is preferable for columns to line up in the vertical position, to ensure structural integrity and ease of load transferral.

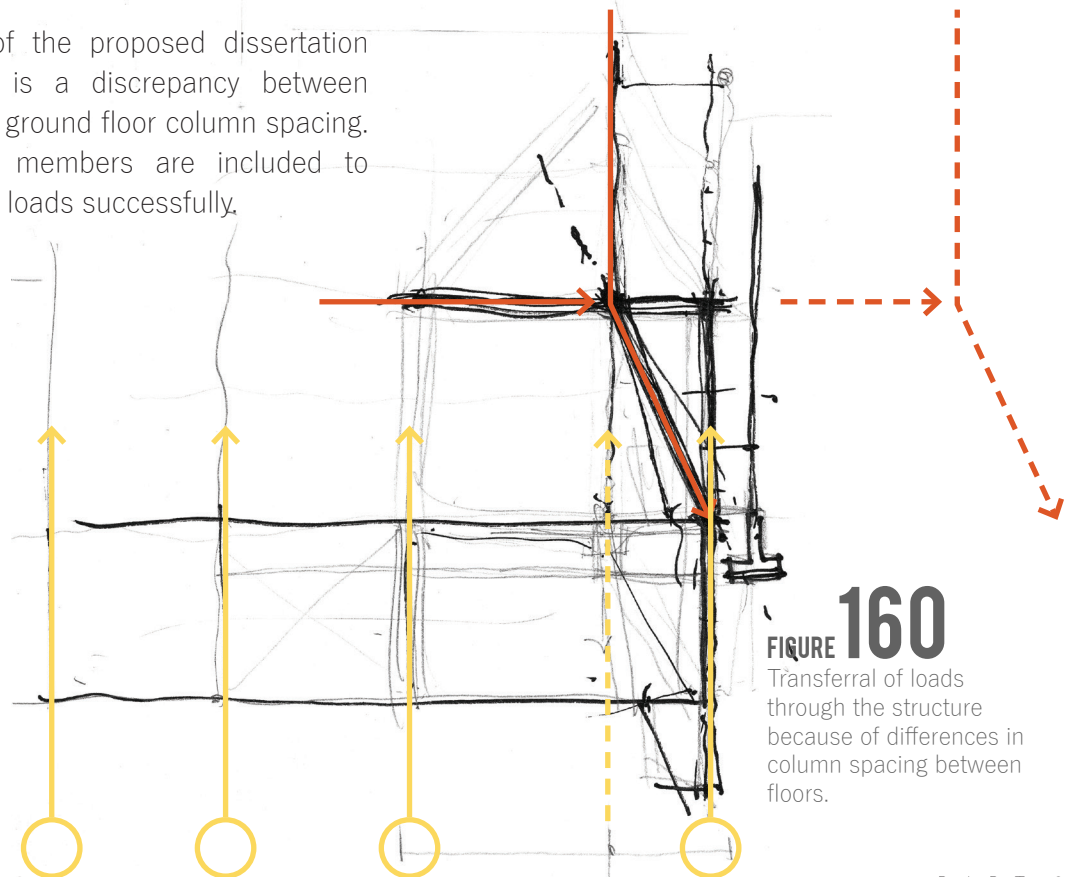


**FIGURE 159**  
A tectonic structure  
based on a grid system.

### 3.2.5

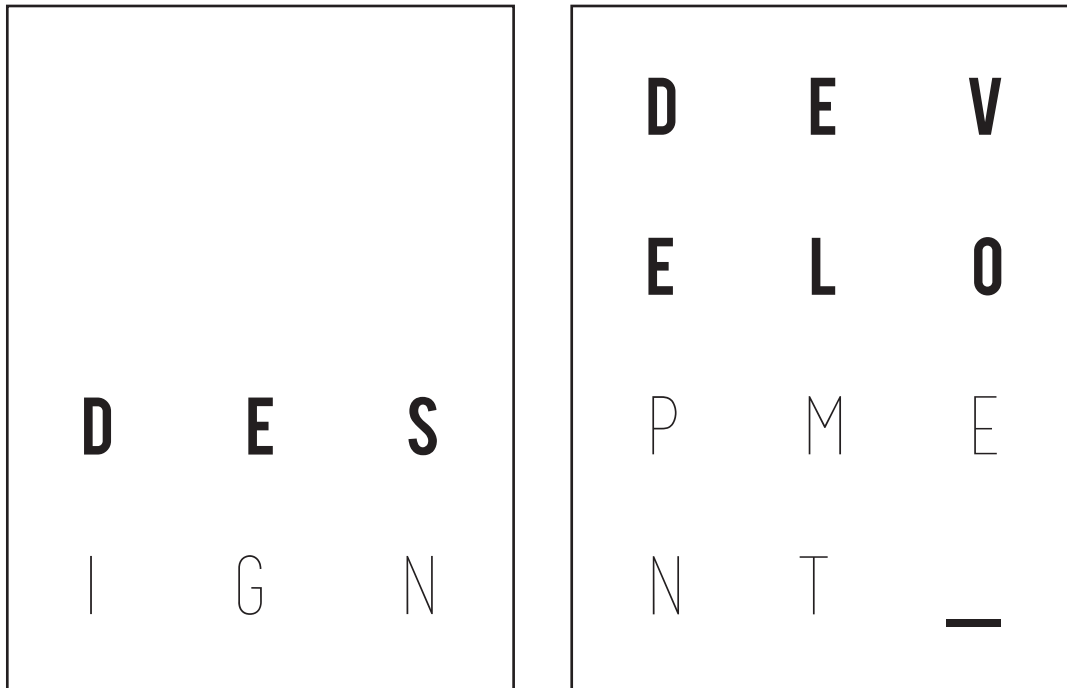
## L O A D T R A N S F E R R A L

In the case of the proposed dissertation design, there is a discrepancy between basement and ground floor column spacing. Angular steel members are included to transfer lateral loads successfully.



**FIGURE 160**  
Transferral of loads  
through the structure  
because of differences in  
column spacing between  
floors.

# 3.3

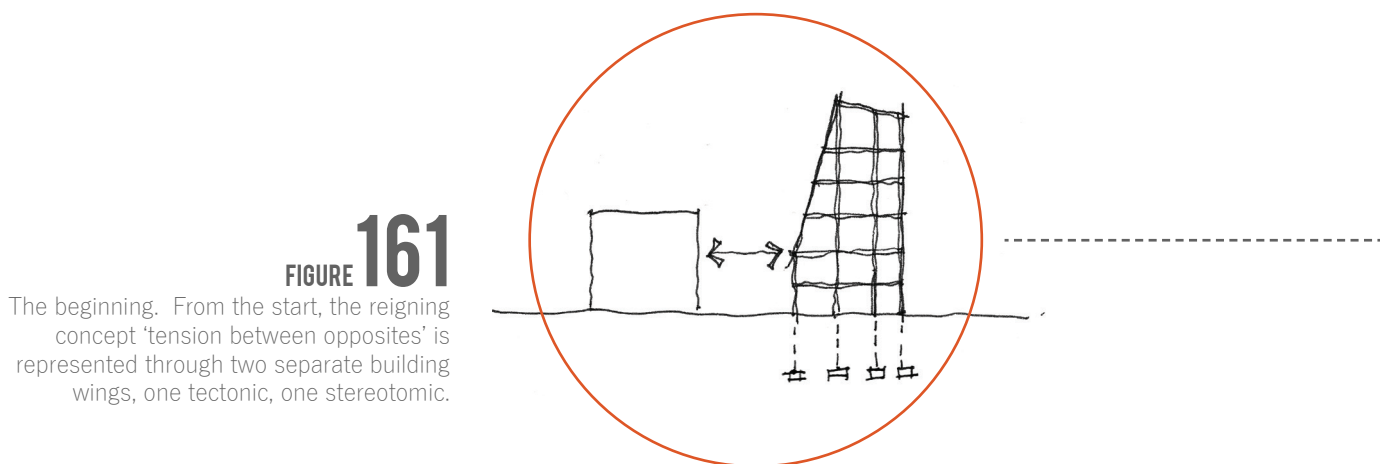


## 3.3.1

### DEVELOPMENT SUMMARY

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The design predominantly undergoes detail development, with little overall form changes during the process. The structural philosophy of two opposing structures (stereotomic and tectonic objects standing divided either side of a pedestrian boulevard) is an early decision, to which is kept. Consequently, the design process sees subtle changes in form-giving and detailing relevant to that original idea, with no drastic form changes present. The following diagram shows the phases of development, indicating the external changes which brought about the most significant alterations.



PHASE  
**1**

→ Separating the building into two distinct wings, with a pedestrian boulevard running between them and connecting the two streets either side of the building lot.

PHASE  
**2**

→ Introducing a definite grid system as a way of organising space.

PHASE  
**3**

→ Phase 3 focuses on the development of the main circulation core of the building as a spine. All other services and functions are grouped around this spine. The three material workshops take shape.

PHASE  
**4**

→ Incorporating a basement parking level. This changes the spacing of the previous grid and leads to a slight redesign of the building's floor plates.

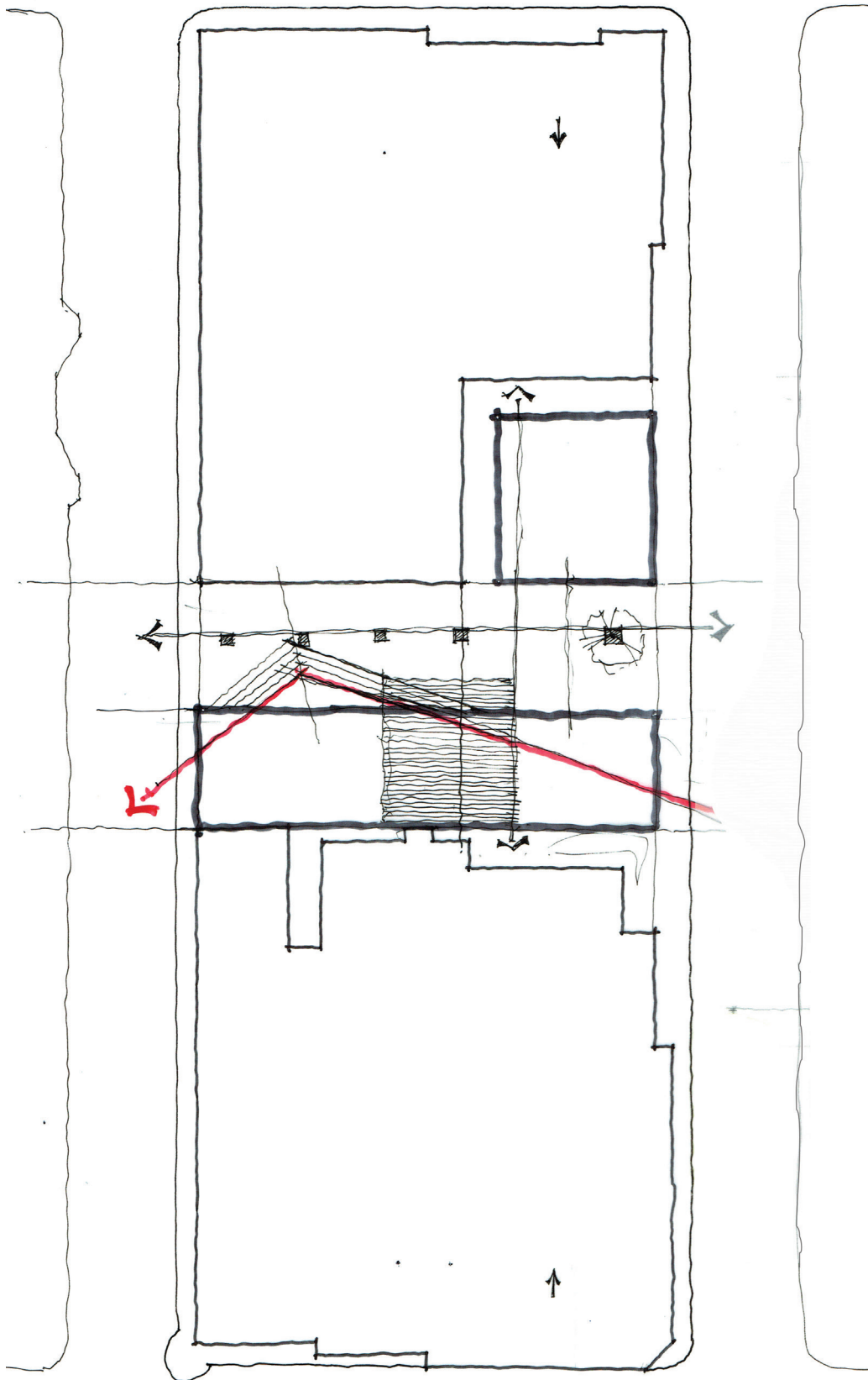
PHASE  
**5**

→ Facade treatment is decided: slanted facade perforated with vertical screens extruding into the air space above the pedestrian boulevard.

PHASE  
**6**

→ Phase 5 is predominantly concerned with the development of the gallery box to the north, particularly due to the relocation of the cafeteria from the main building into the ground floor of the gallery box. The circulation core is also changed.

FINAL DESIGN



**FIGURE 162**

The first sketch plan shows two building wings separated by a pedestrian boulevard. The boulevard connects Fichardt Street and Oos Burger Street on either side of the building lot.



## 3.3.2

### DEVELOPMENT PHASES

#### PHASE 1

During phase 1 the general massing and layout of the project is established. The pedestrian boulevard through the site is a major element to be considered. It provides a building that is split into two separate wings. This implies two separate circulation cores, and more access points than would have been the case for a singular building.

Circulation impracticalities aside, two separate building masses provide opportunities for a connective public space in-between, substantiating the creation of such a boulevard. Surrounding buildings find themselves in a range of different heights, allowing the structure to have a number of floors without overpowering the context.

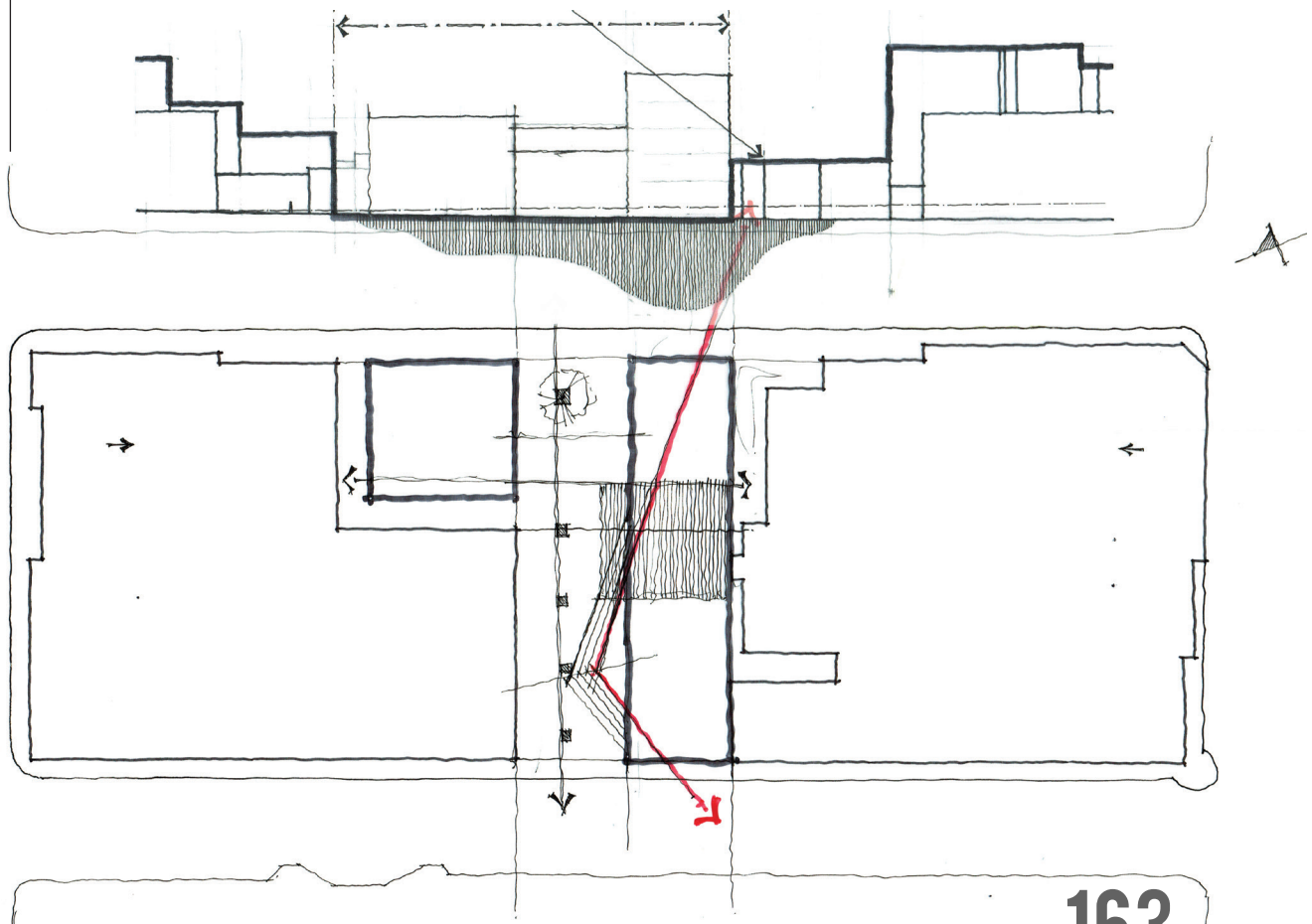
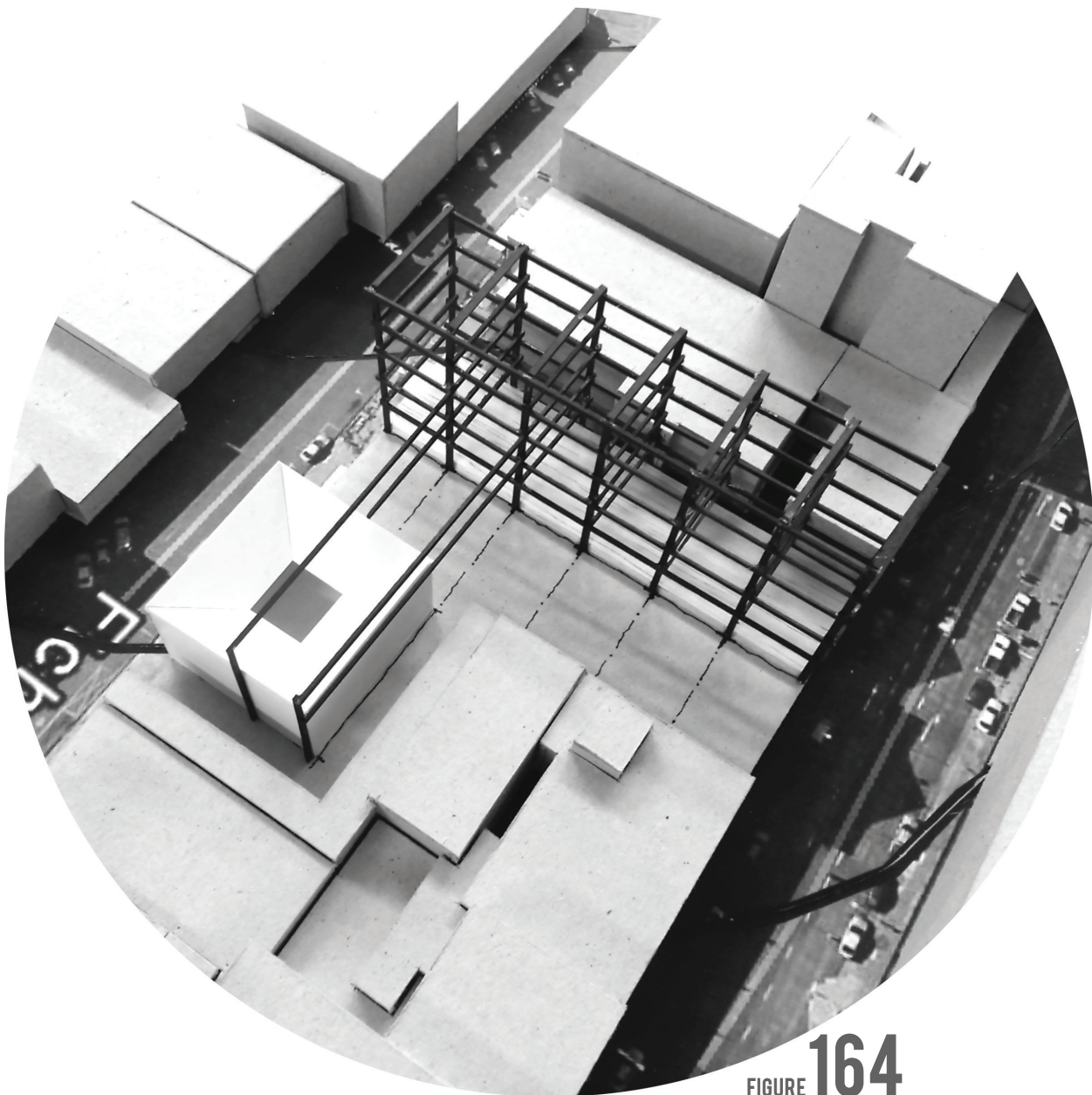


FIGURE 163

A site section is drawn from the initial sketch plan. It shows the surrounding context heights in relation to the proposed building mass.

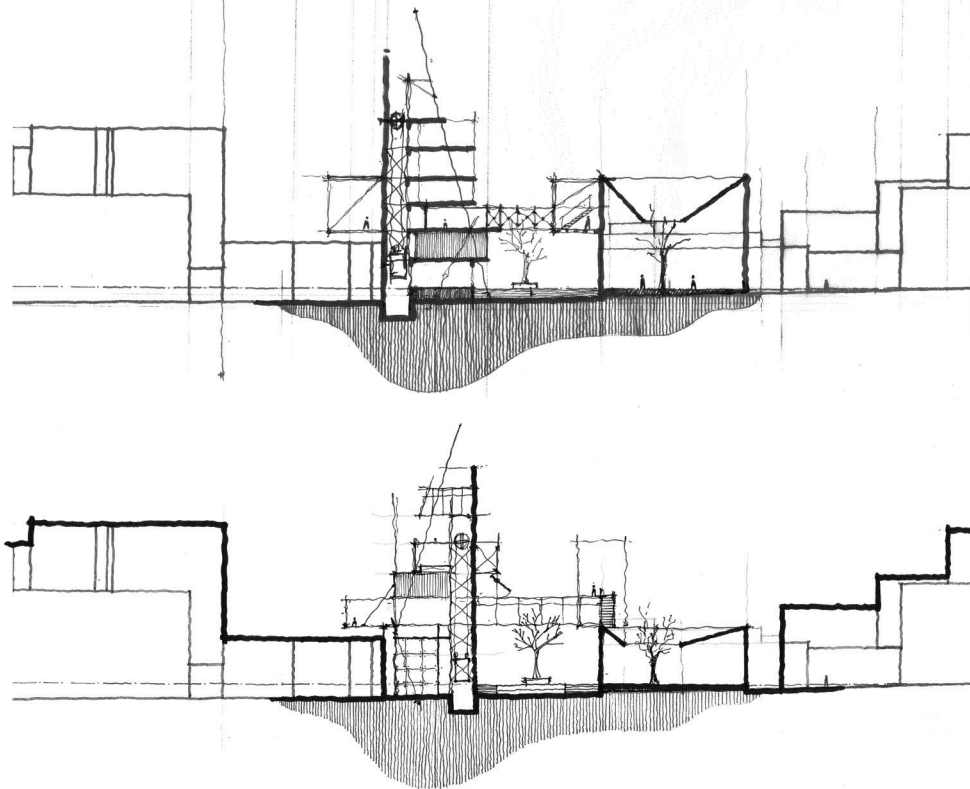
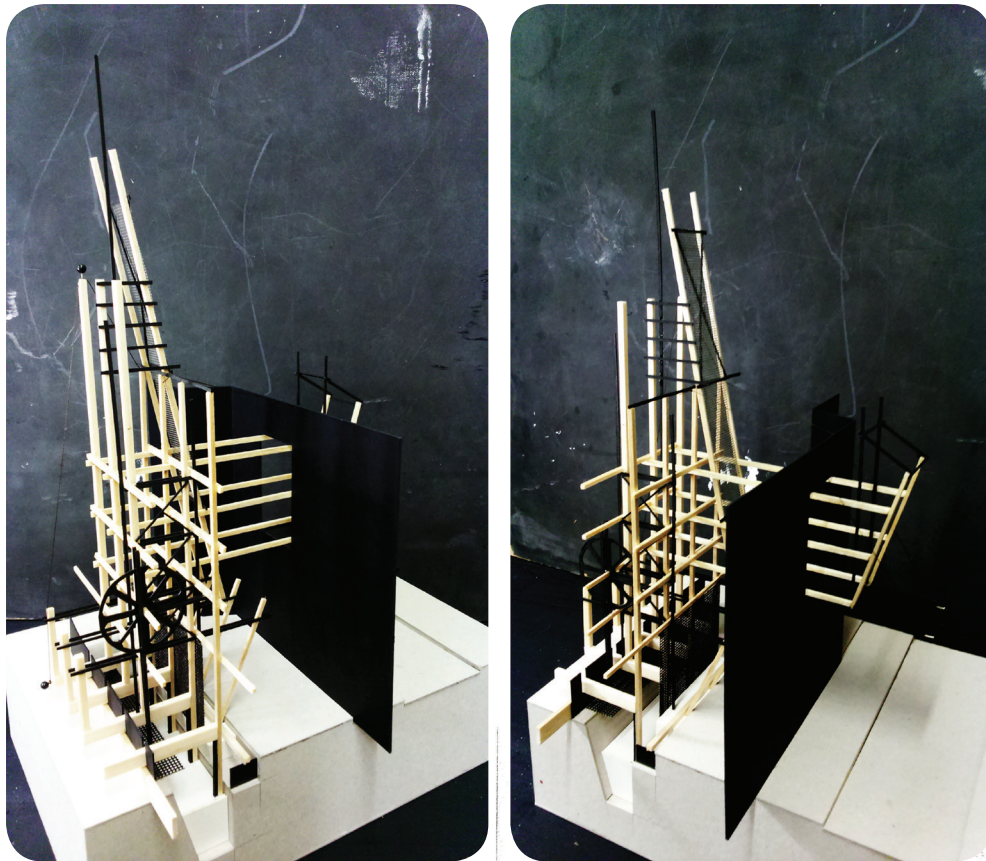
With the decision to have two separated building objects, structural treatment of both becomes a priority. It is decided to treat one as a transparent steel frame structure, whilst the other is treated as a semi-perforated concrete box. These two structural aesthetics stand in direct contrast and aid the concept of 'tension between opposites' (as discussed in part 2).



**FIGURE 164**

The initial massing and structural intent is captured in a small concept model.

The concept models influence section considerations. A choice is made to slant either elevation of the main building wing, as a means of opening up air space on site and making the building appear thinner than it actually is.

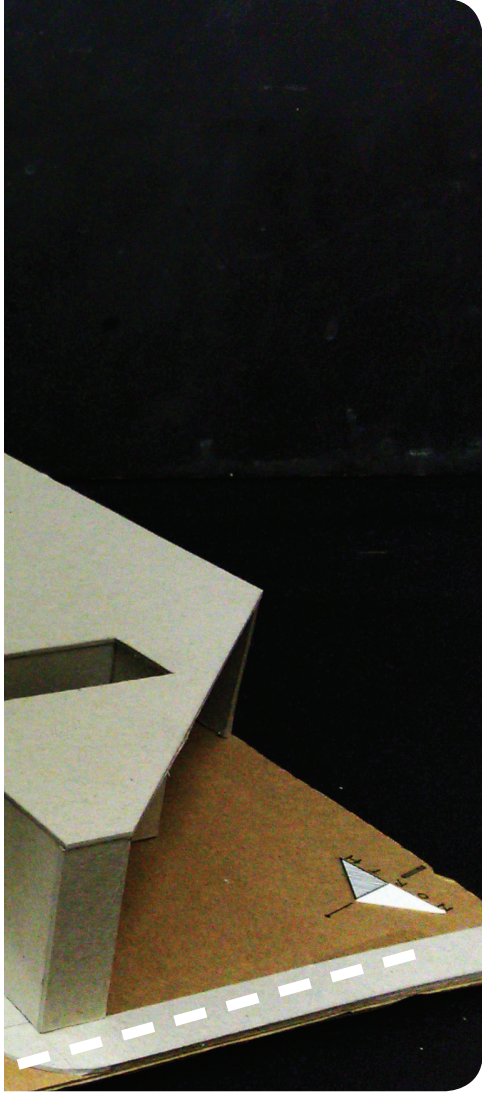


**FIGURE 165**

Section considerations stem from an earlier concept model.



A model is built as a means of experimenting with the massing of the 'stacked' spaces. The model gives itself over to the use of modular grid on plan, complemented with angular facade treatment. The early concept model also allows material usage to be investigated, as various possibilities are offered with the use of steel frame structures.



**FIGURE 166**  
Both photographs show the first concept model. It gives a structural and aesthetic feel of the possibilities of the building, as well as an idea of what the public boulevard can become.

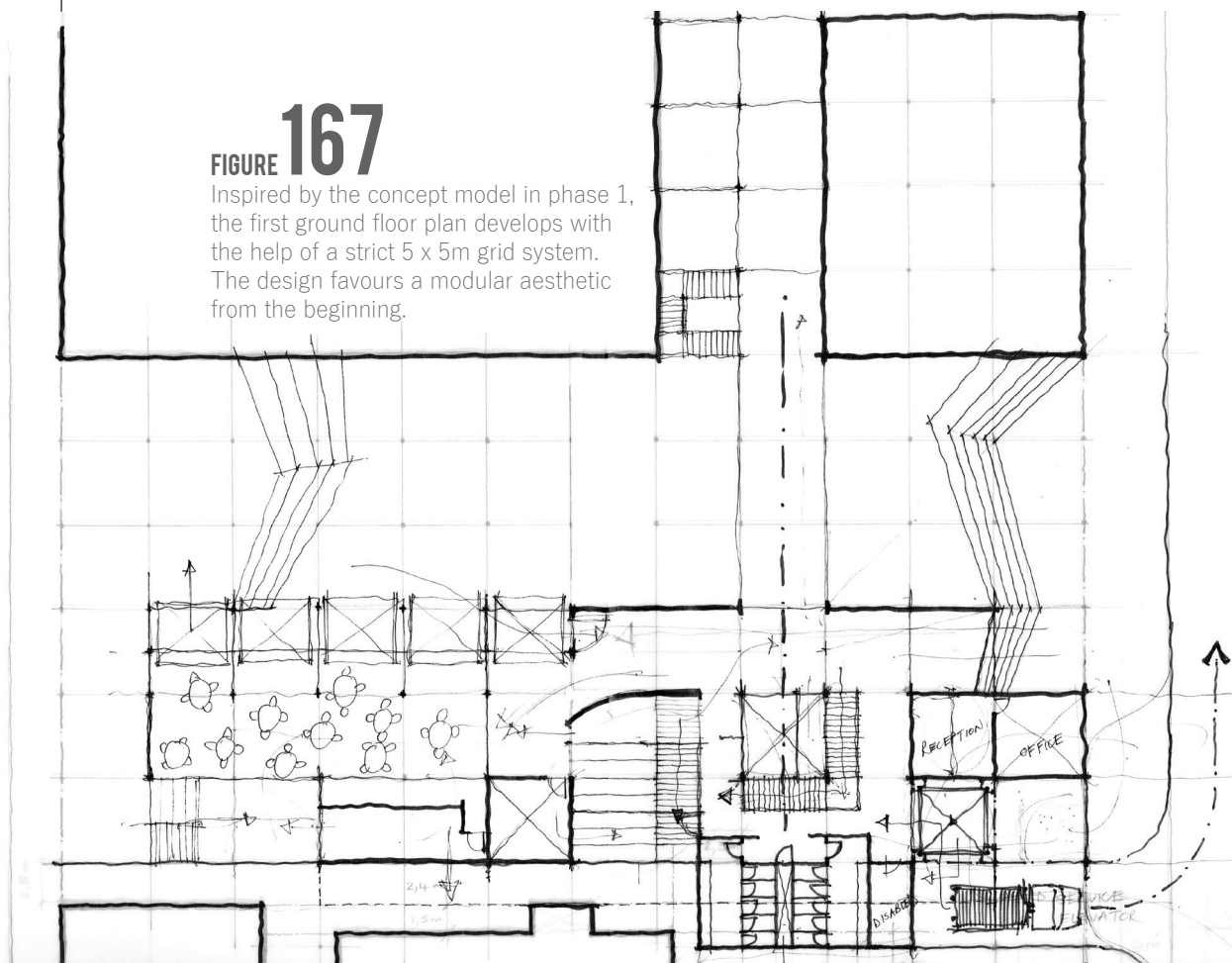


# P H A S E 2

The second phase of the design process sees the definite introduction of a strict modular grid system, as well as thorough spatial planning inspired by the previous concept model. Initial ground floor plans see the introduction of a cafeteria on the western side of the building. The exact functionality of the smaller wing to the north of the site is still unclear.

## FIGURE 167

Inspired by the concept model in phase 1, the first ground floor plan develops with the help of a strict 5 x 5m grid system. The design favours a modular aesthetic from the beginning.

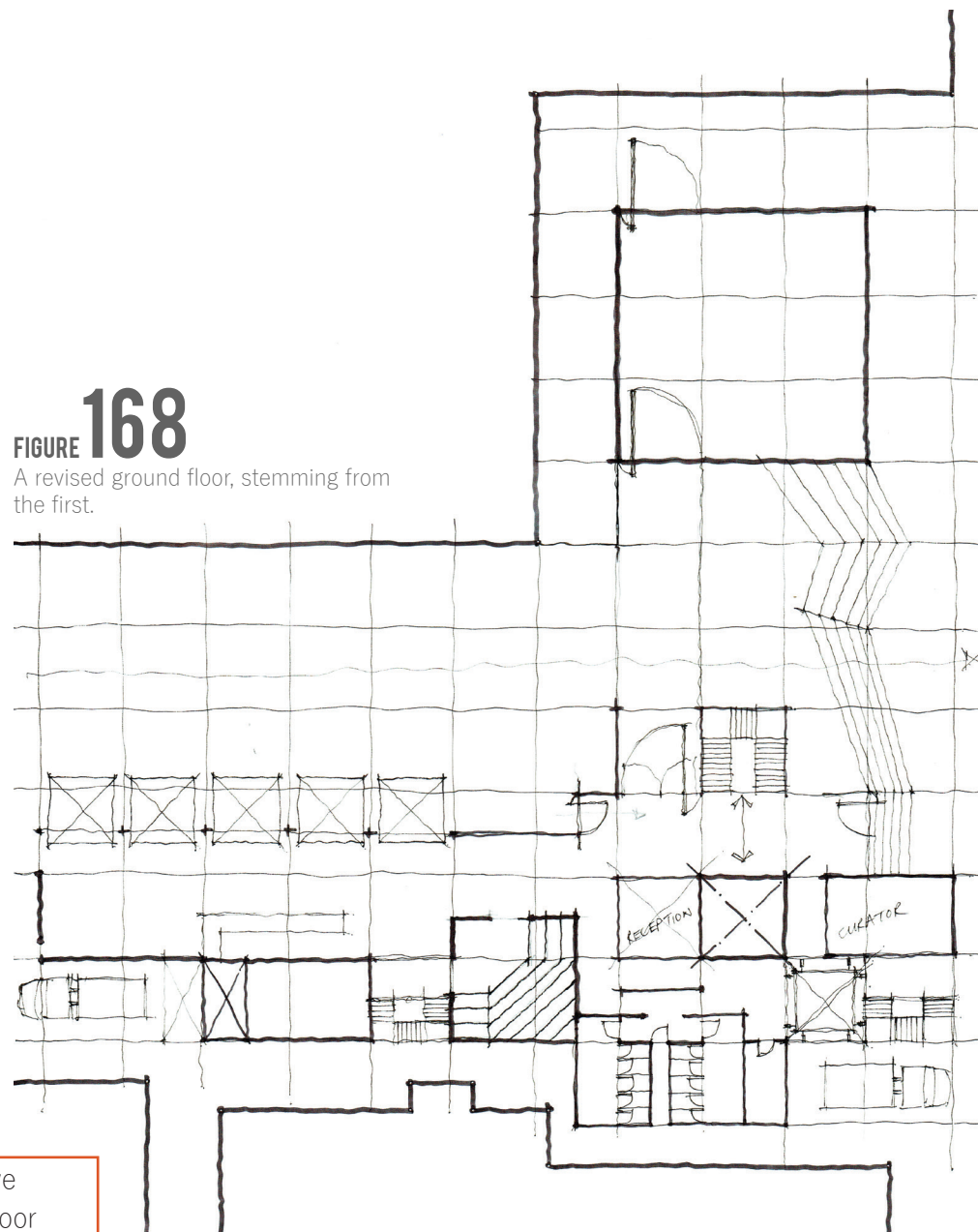


initial ground floor



# FIGURE 168

A revised ground floor, stemming from the first.

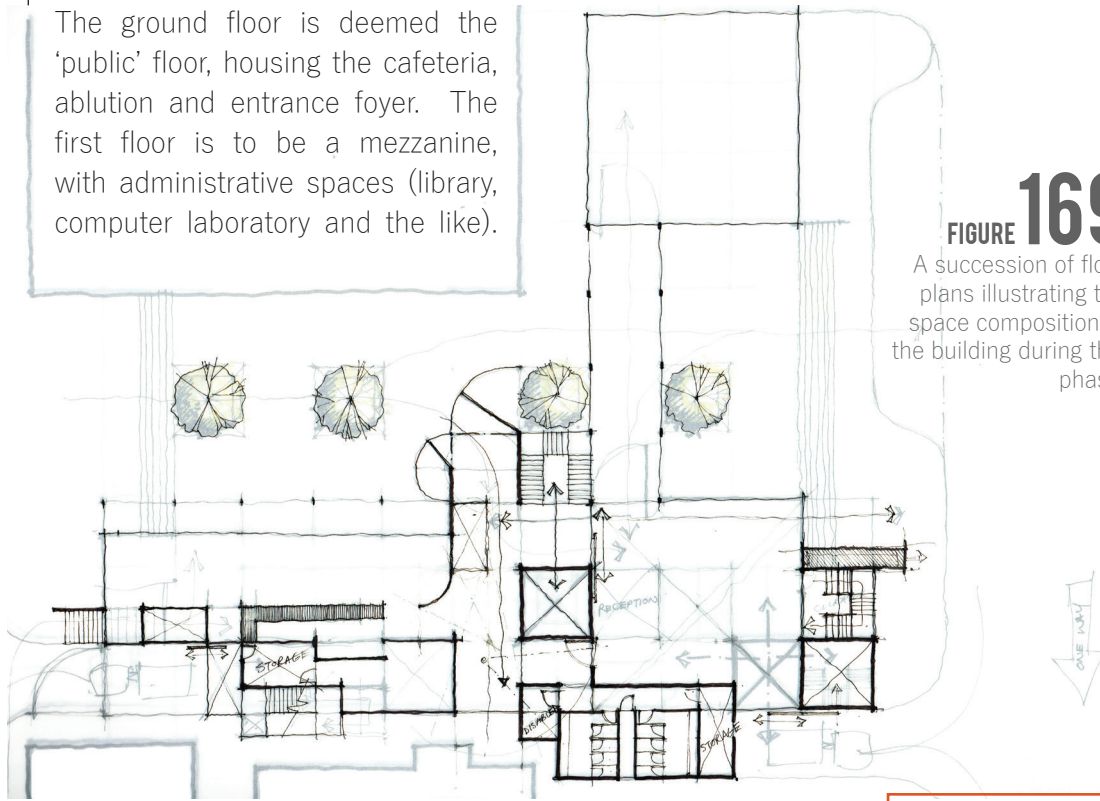


alternative  
ground floor

G.1

# PHASE 3

The floor plates develop further. The ground floor is deemed the 'public' floor, housing the cafeteria, ablution and entrance foyer. The first floor is to be a mezzanine, with administrative spaces (library, computer laboratory and the like).

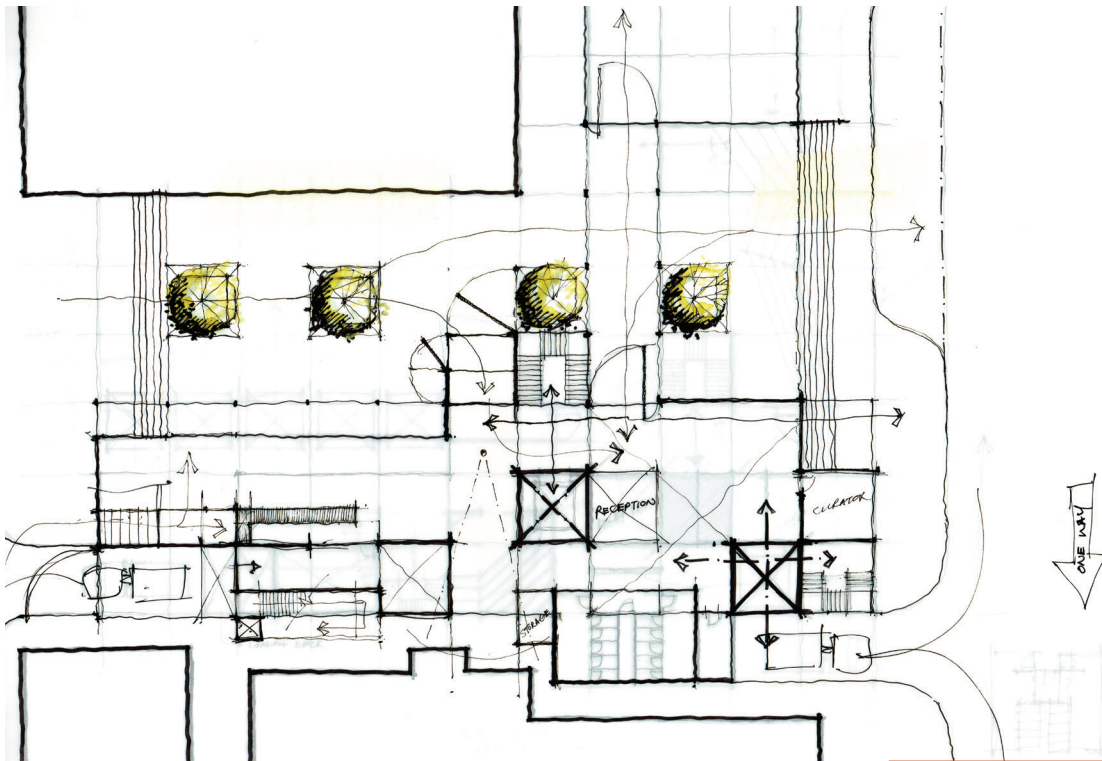


**FIGURE 169**

A succession of floor plans illustrating the space composition of the building during this phase.

alternative ground floor

G.1

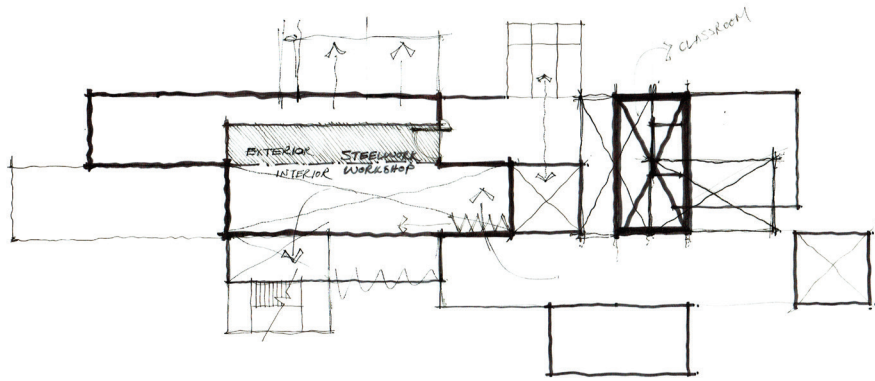


initial ground floor

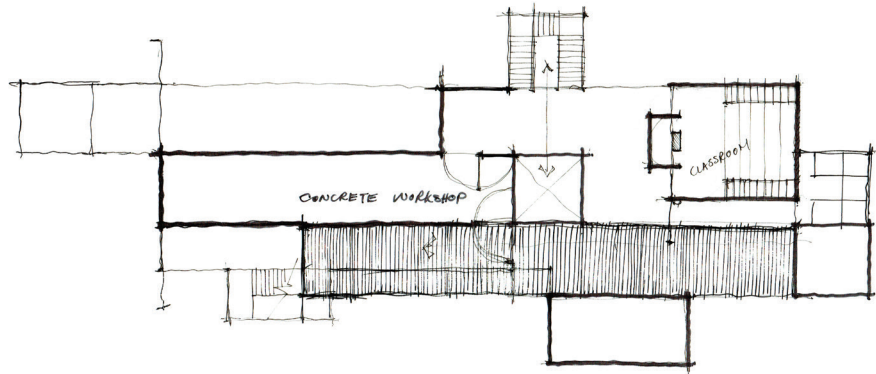
G



fourth floor  
(steel)

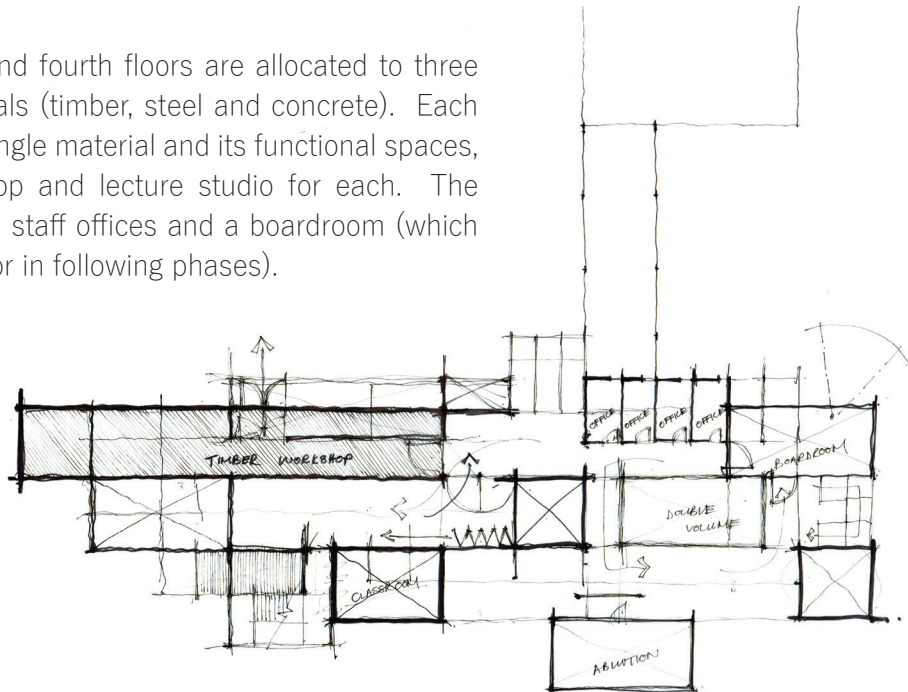


third floor  
(concrete)

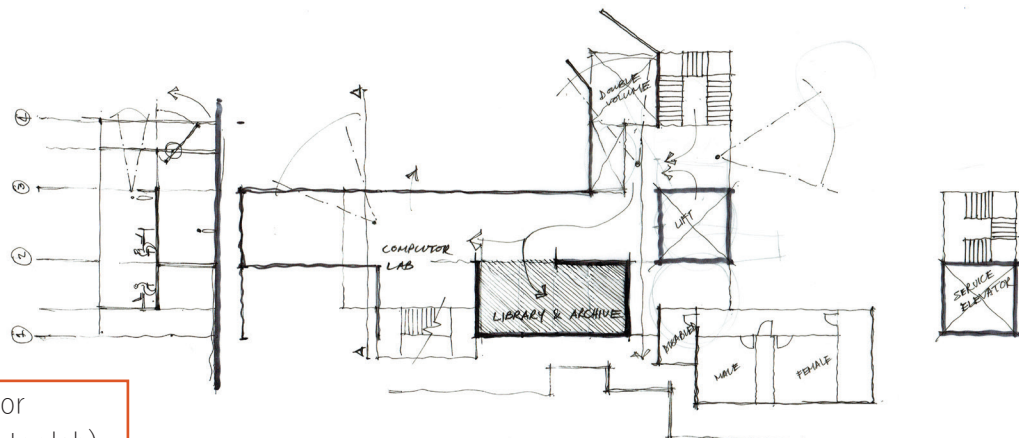


The second, third and fourth floors are allocated to three distinct craft materials (timber, steel and concrete). Each floor is to house a single material and its functional spaces, providing a workshop and lecture studio for each. The second floor houses staff offices and a boardroom (which move to the first floor in following phases).

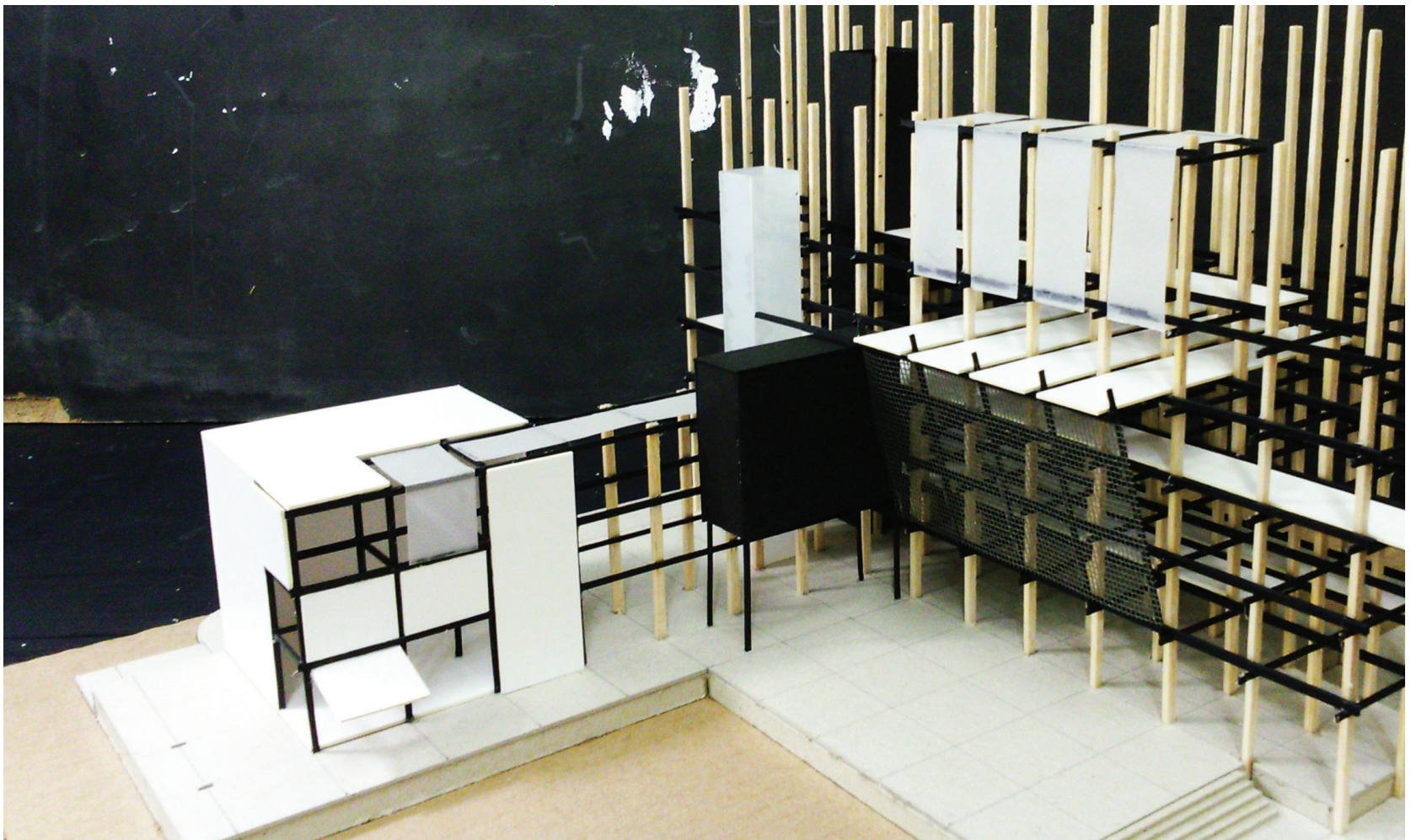
second floor  
(timber)



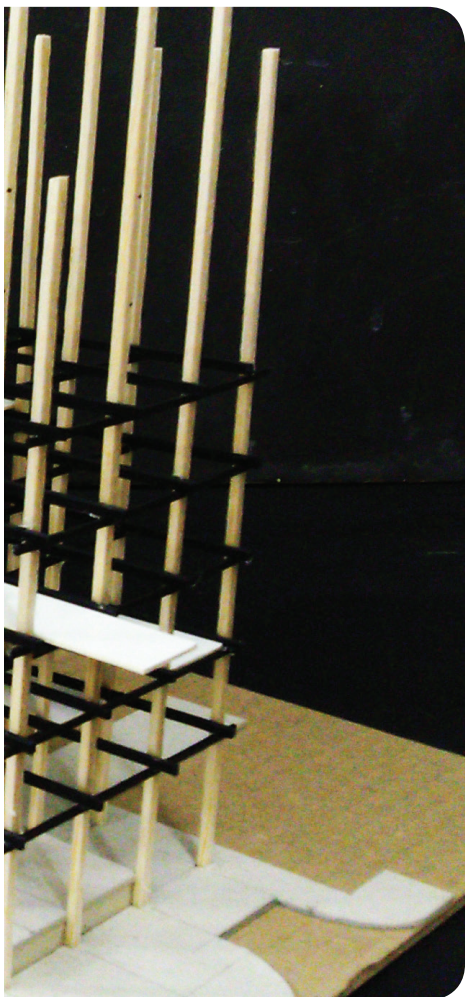
first floor  
(computer lab)



The second concept model experiments with the relationship between the two opposing structures. The steel frame structure is to extend over to the 'box' (as if reaching in the humane sense), so as to breach the concrete membrane and perforate it. The definite separation between tectonic and stereotomic becomes blurred and vague, indicating a natural process void of distinct lines and boundaries.



**FIGURE 170**  
Both photographs show the second concept model. It considers structure more, experimenting with its possible contribution to aesthetic appeal. The relationship between the two wings is further investigated.



# FIGURE 171

A succession of floor plans illustrating the space composition of the building during this phase.

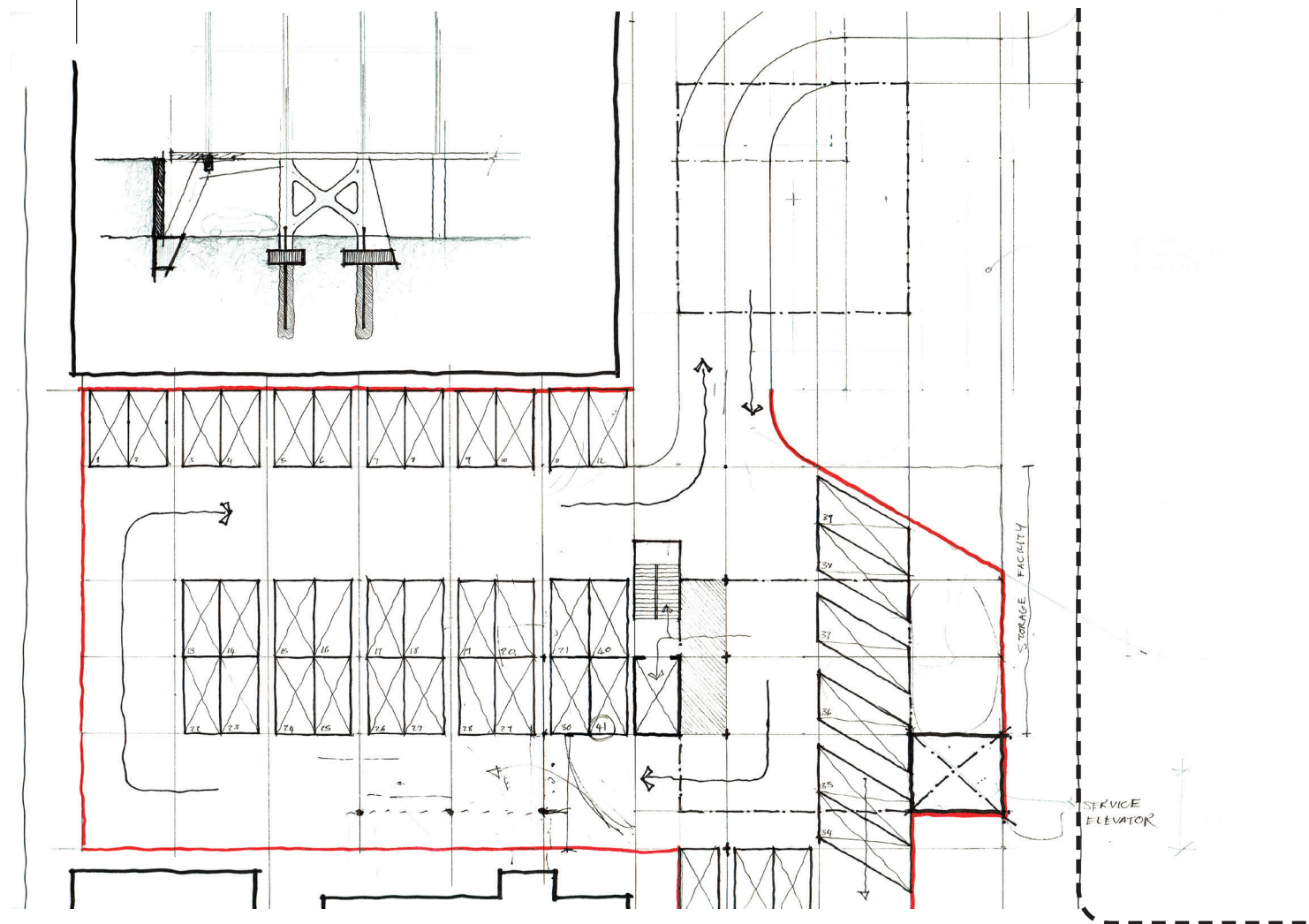
## P H A S E 4

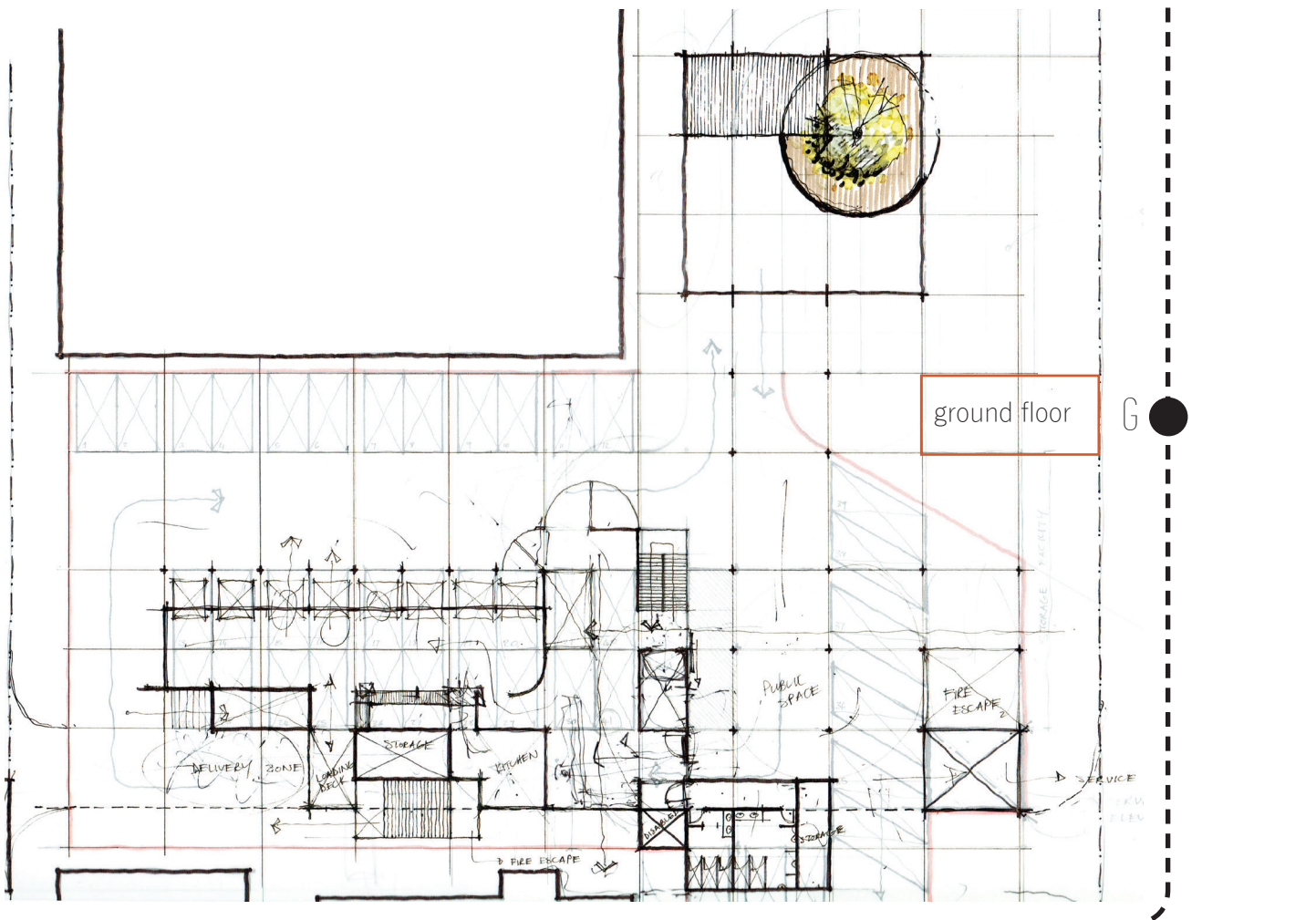
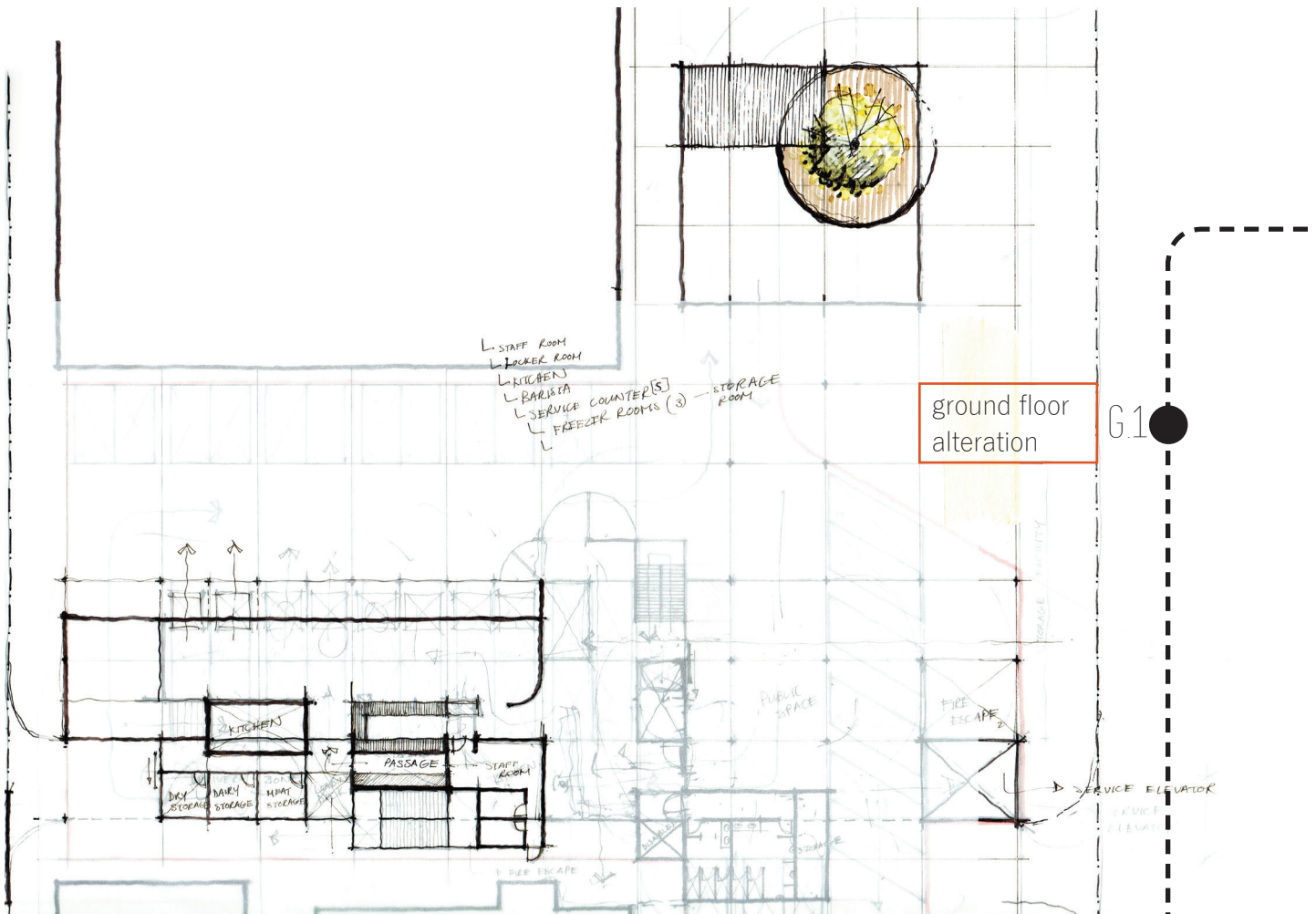
Phase 4 commences with the introduction of a basement. Given basement parking and the regulatory spacing of its components, the grid system slightly changes (having previously been a simple 5 x 5m grid incapable of accommodating parking spacing). Consequently, some spaces and circulation systems have to be slightly redesigned.

The box to the north is demarcated the exhibition space, in which public furniture will be exhibited prior to being installed in actual public spaces. The decision is made to have the gallery be a semi-enclosed open space, hence the insertion of a tree and the puncturing of the roof to let it grow through.

basement  
parking level

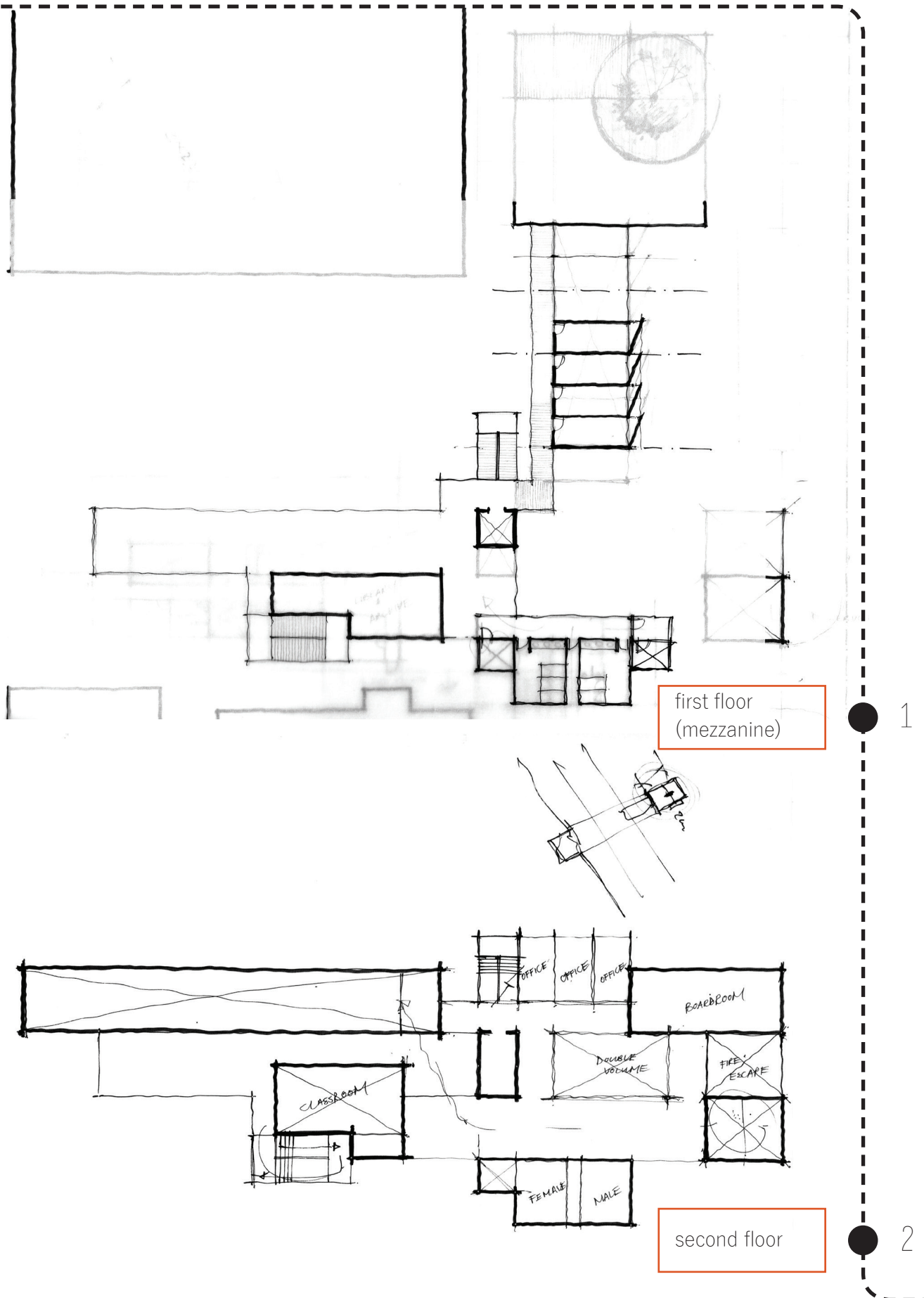
B

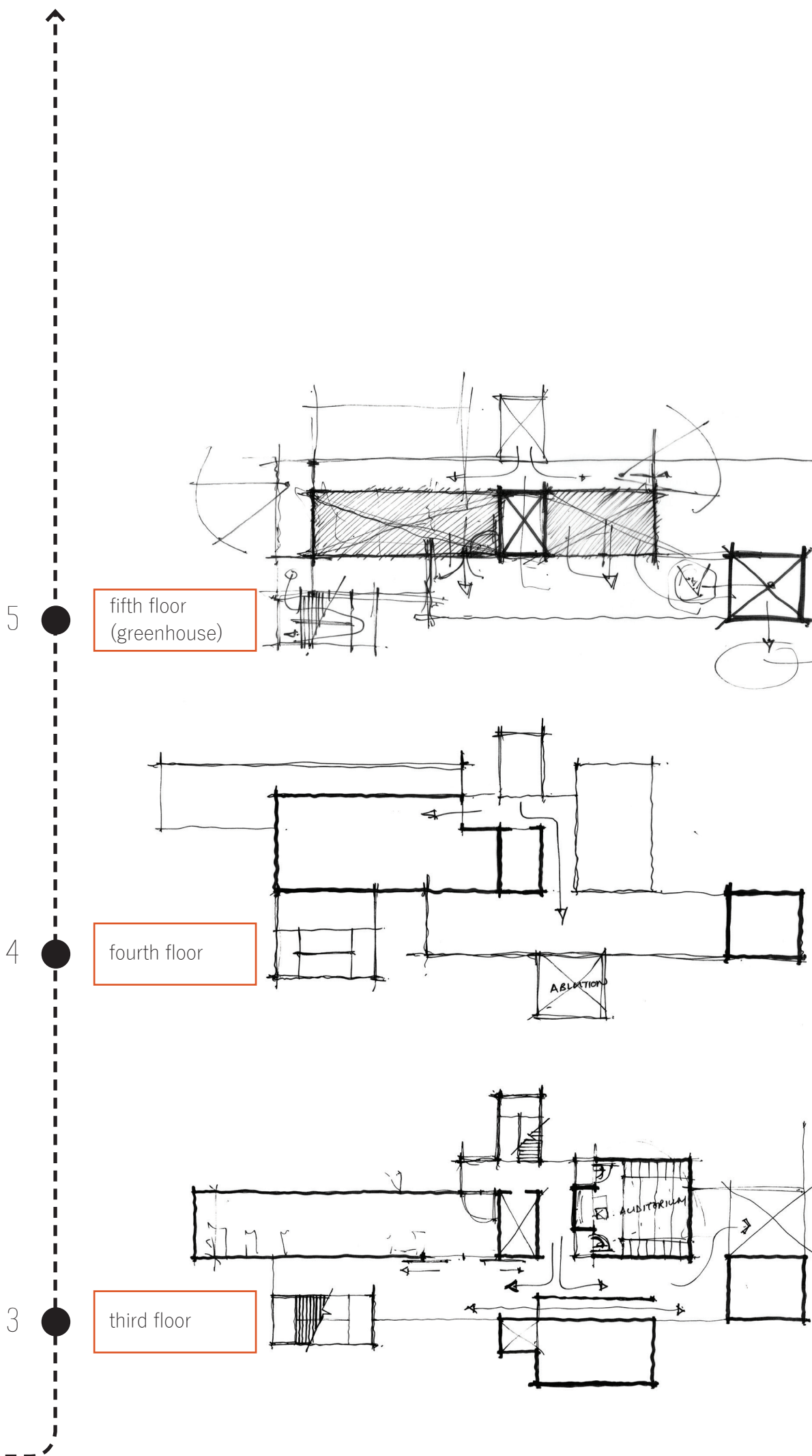




# FIGURE 172

(continued) A succession of floor plans illustrating the space composition of the building during this phase.





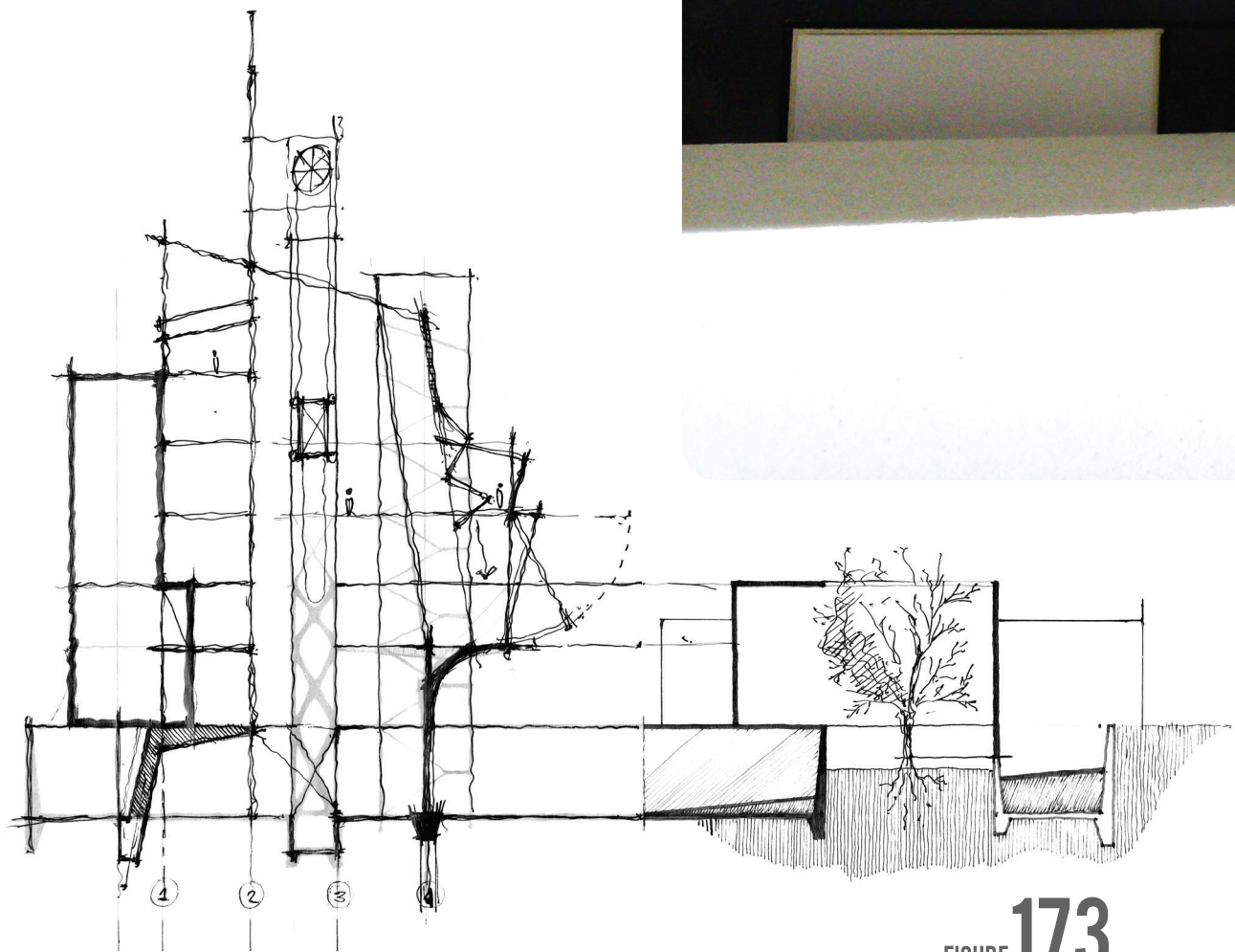


FIGURE 173

This section investigates the slanting of the facade in such a way that the building tapers upwards. It is the intention that the box on the other side of the boulevard (right) become an exhibition space of sorts. Its development as a semi-enclosed outside space is investigated, hence the three within the space.



**FIGURE 174**

This concept model is used as benchmark for the development of the slanted facade and screens. The angle is inverted (made to slant the other way) in future phases (as can be seen on the section on the opposite page).

The fifth phase establishes the overall form and facade treatment of the project (which remains relatively unchanged until the final design solution). The facade slants backward, letting the building taper upwards. To balance the slanted facade, vertical screens perforate the cladding and extrude out over the pedestrian boulevard. This allows light to filter into upper floors whilst breaking the solidity of the north facade.

## P H A S E

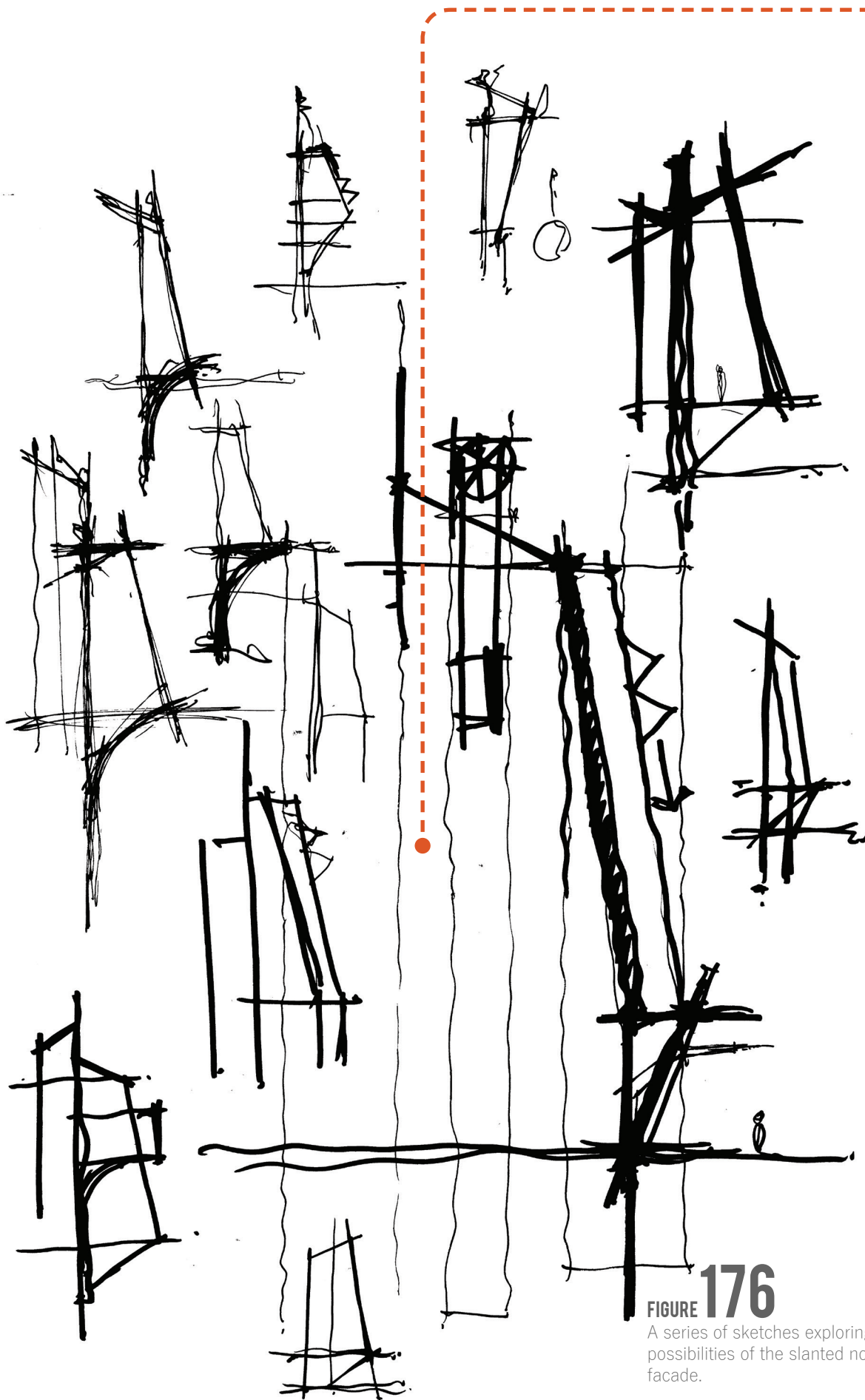
### 5

### FIGURE 175

The photograph shows the third concept model, with the nearly final facade treatment. The screens are to be perforated steel sheets, to allow filtered light infiltration into the workshop floors. Notice how the pedestrian boulevard is starting to take shape, incorporating planter boxes.

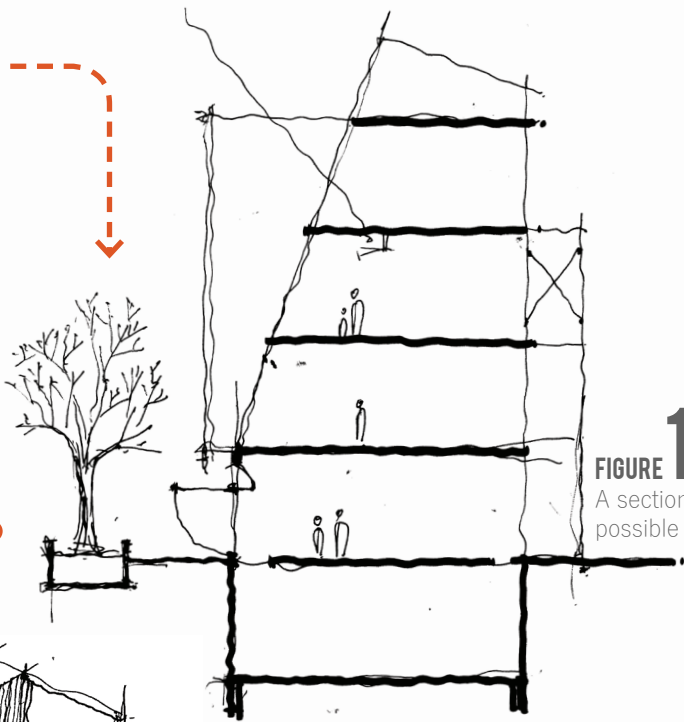




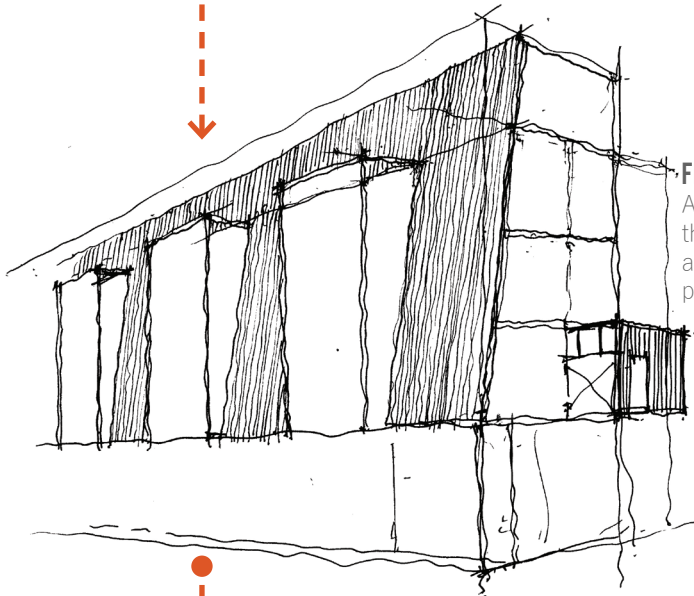


**FIGURE 176**

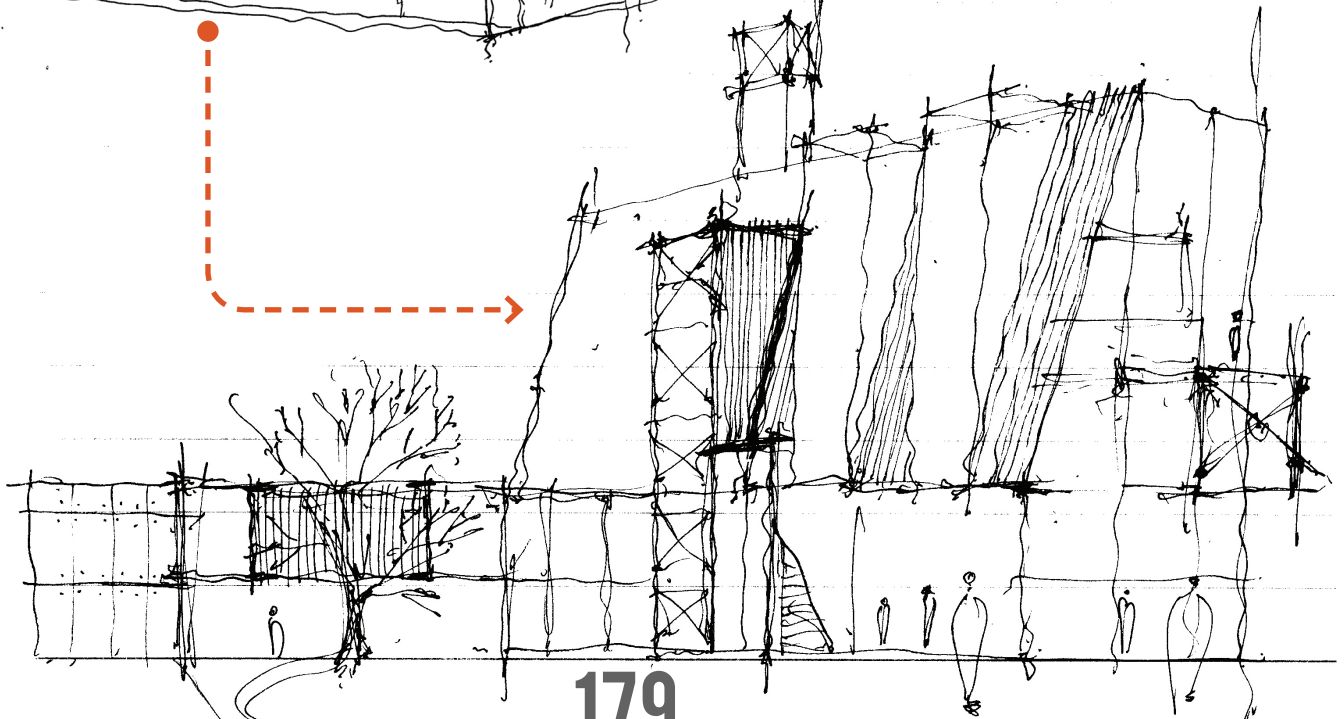
A series of sketches exploring the possibilities of the slanted north facade.



**FIGURE 177**  
A section of the possible facade.



**FIGURE 178**  
A perspective of the possible facade and the screens perforating it.



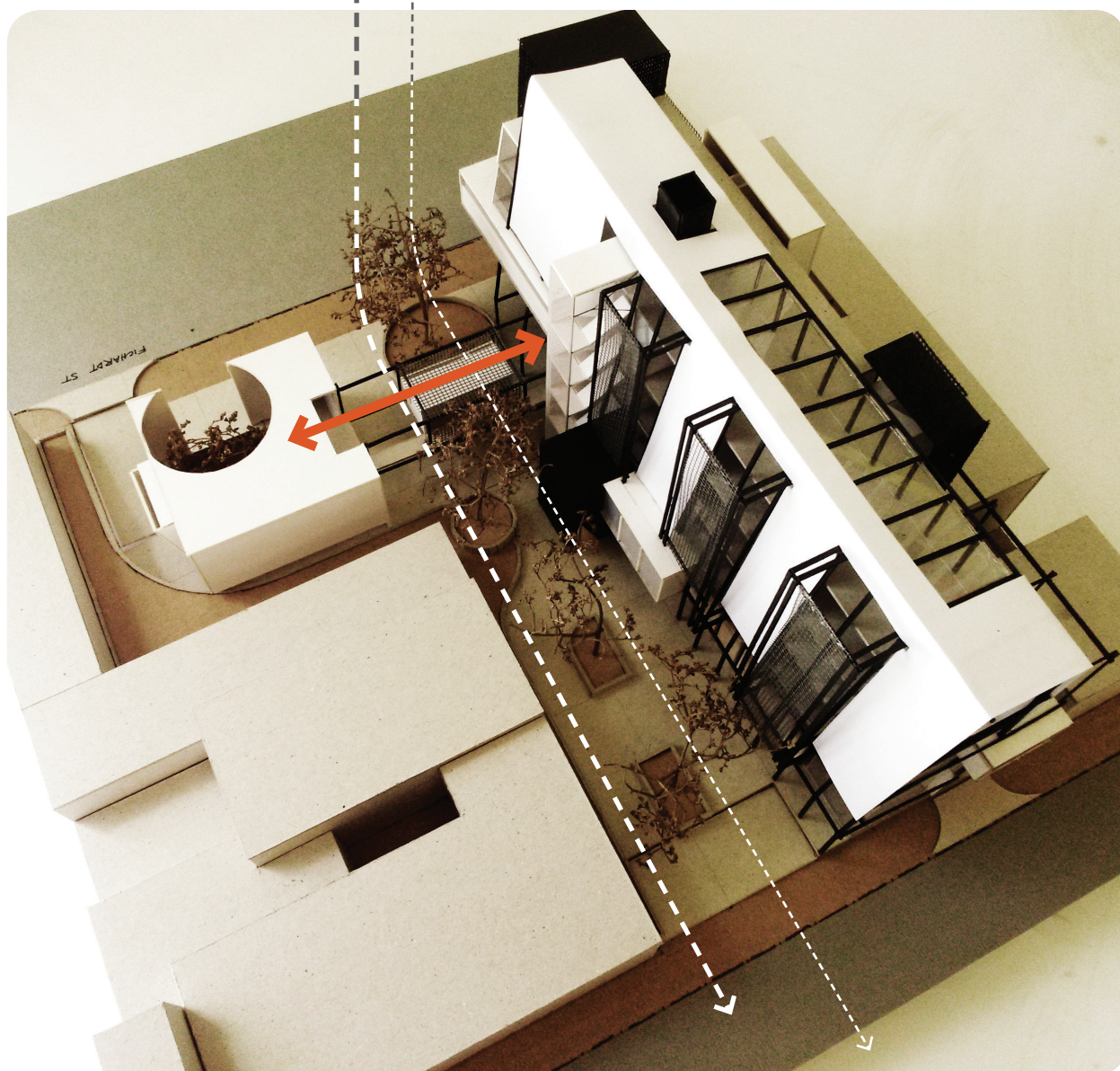
**FIGURE 179**  
A perspective sketch of the building.



**FIGURE 180**  
A physical link is established between the two building wings in the form of a boardroom.

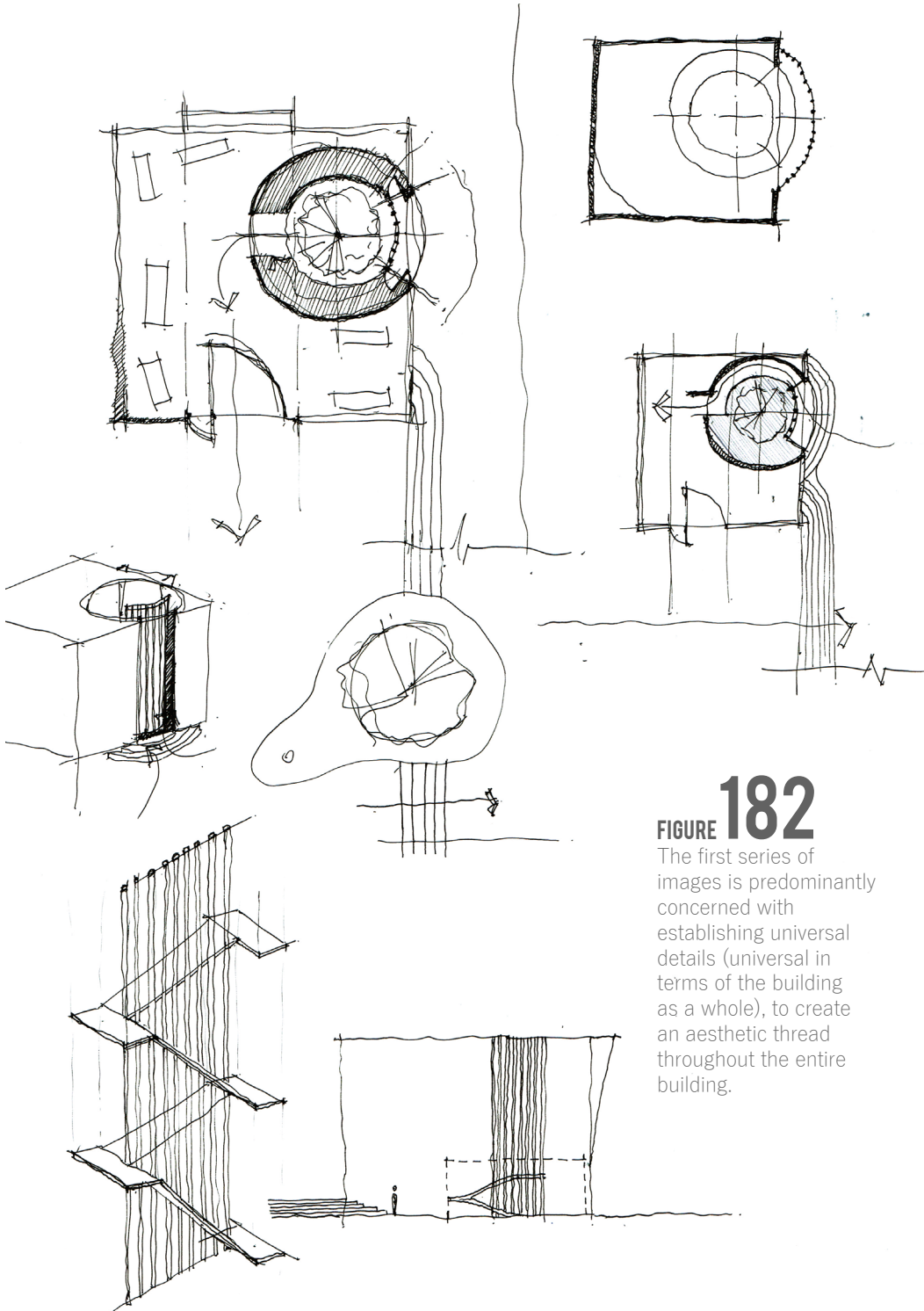
**FIGURE 181**

A top view better illustrates the relationship between the two building wings and the pedestrian boulevard separating them.



The sixth phase is predominantly concerned with the development of the gallery box, and the detailing of its link with the larger building wing to the south. A conscious decision is made to treat the pedestrian and public spaces more organically, as a means of mimicking fluid human movement (as humans don't move in straight lines). The pedestrian boulevard becomes an exercise in curved walls and seating, which enter the buildings at the demarcated entry points. The public realm almost literally flows into the more private spaces, blurring the boundary between the two.

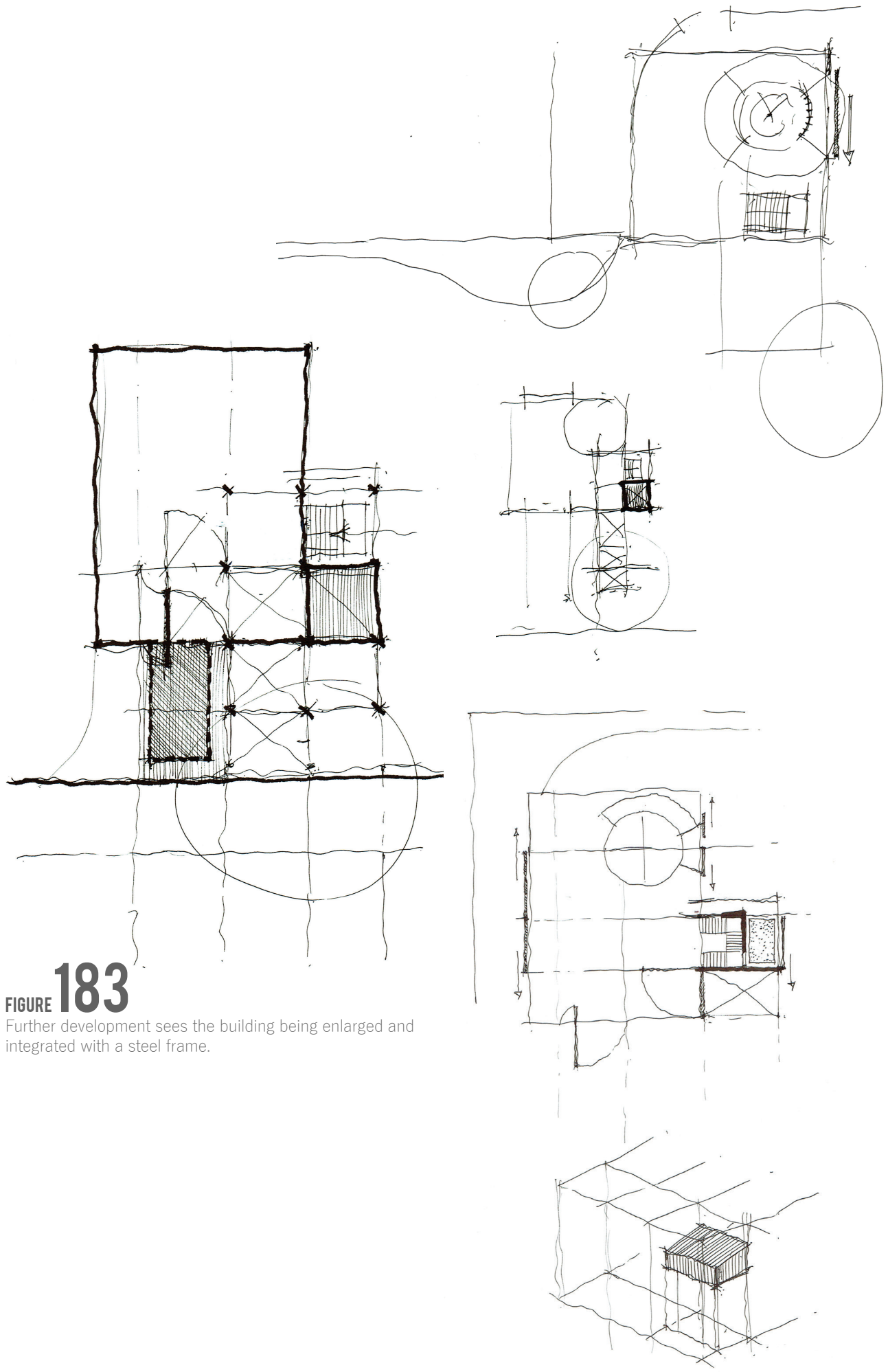
## P H A S E 6



**FIGURE 182**  
The first series of images is predominantly concerned with establishing universal details (universal in terms of the building as a whole), to create an aesthetic thread throughout the entire building.

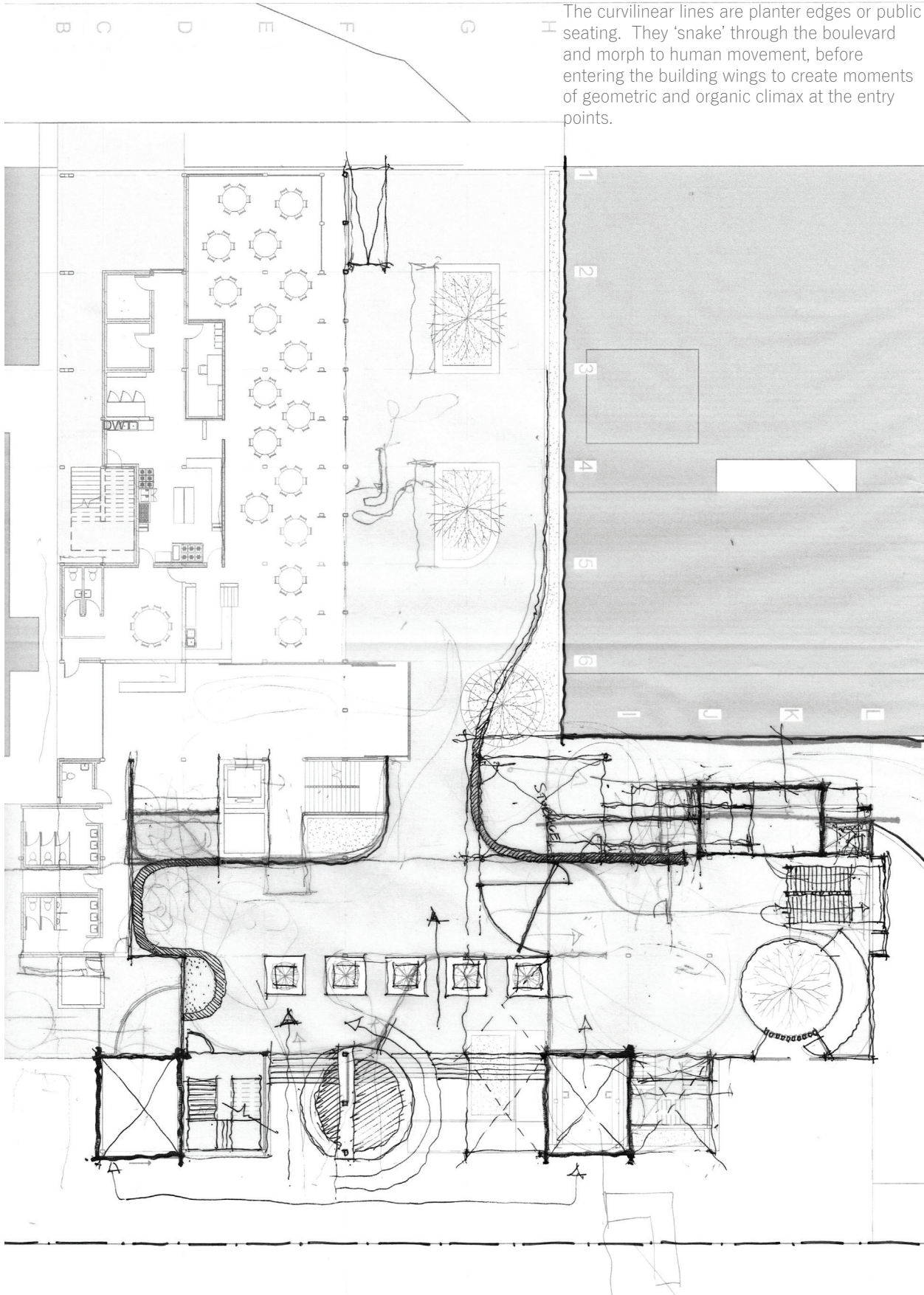
**FIGURE 183**

Further development sees the building being enlarged and integrated with a steel frame.



# FIGURE 184

The curvilinear lines are planter edges or public seating. They 'snake' through the boulevard and morph to human movement, before entering the building wings to create moments of geometric and organic climax at the entry points.



### 3.3.3

## L I T E R E V I E W A P P L I C A T I O N

---

### **INFLUENCE OF STUDENT USER PROFILE**

Using a student user profile requires an understanding of what students require and need in a building. Essentially, the decision is to have the proposed building function like a school of architecture, or an arts department. In this instance, the language of the structure is simply more industrially inclined, given the industrial nature of the programme.

The youth and radical temperament of the student bodies lead, in great part, to the incorporation of a student restaurant on ground floor. This has the added benefit of diminishing boundaries between private and public, and establishing a gradual progression from street to building interior.

### **SITE INFLUENCES**

The predominant site influences are the shape of the site, the fact that it faces two streets simultaneously, the sun angles, and contextual material usage.

The site is in the form of an L-shape. In addition, it fronts two parallel streets simultaneously (Fichardt Street and Oos Burger Street). A public pedestrian boulevard is established through the middle of the site, to link the two streets and produce a public space in conjunction with the proposed building. To accommodate as many parameters as possible, the boulevard is placed against the northern half of the long leg of the L, consequently separating the short and long legs. The main part of the building, which is long and slender, is placed against the southern edge of the long leg. This ensures optimal northern light infiltration for the building while providing ample shade for the pedestrian boulevard (provided by the existing structures to the north). The concrete gallery and student restaurant are placed in the short leg of the L, nestling themselves into the north-eastern nook of the site. The building wing housing both these functions stands across from the main structure, on the other side of the boulevard. This creates opportunity for structural tension and dialogue that aids the conceptual underpinning of 'tension between opposites'.

### **\_ENCLOSURE VERSUS CONNECTION**

The proposed building incorporates an open public space as part of its ground floor footprint, in order to establish a perforated threshold between inside and outside. This is further aided by the inclusion of a restaurant on

the ground floor which opens up onto the pedestrian boulevard. The public strip is used as spill-out space for restaurant goers, thoroughly pulling public activity into the structure itself.

In terms of the physical structure, as well as its future public space interventions, the building attempts to embody a network approach. Links and connections are favoured above enclosure and seclusion. The establishment of vital links in the urban framework is aided by the symbiosis between the building and its context, as explained under 'structural touchstone' above.

## **\_ GUIDANCE OF BEHAVIOUR**

The pedestrian boulevard attempts to create a shortcut between two parallel streets. Whilst the intention is not that the boulevard ONLY be used as shortcut, the use of it inadvertently establishes contact with the structure. This means that the structure becomes part of the city, instead of it being a separate (removable) entity.

Furthermore, the structure aims to guide users rather than imposing a restrictive model of use. The building inserts itself delicately into its allotted site, taking care to be useful to the surrounding context. Especially in terms of the influence the structure hopes to exert on the urban fabric (the future public space interventions it hopes to perform), the newly built public spaces will attempt only to guide pedestrian behaviour as far as it takes them to determine their own parameters of use. Neither the building, nor its influence, will be restrictive.

## **\_ PUBLIC SPACE AS HYBRID**

As argued in part 2, public space can either be a destination, or a route between two destinations. It is optimal that public space functions as both. In the dissertation project, the pedestrian boulevard is a link between two parallel streets, as well as a spill-out space for the structures surrounding it. This dualistic function contributes to a universally usable and freely open public space. Moreover, it establishes a meeting between the layman, merely using it as shortcut, and the student, specifically using the adjacent building. The specific and unspecific user meet on a universal platform. In a larger frame of reference, this single public space establishes a meeting between the function-driven building and the unspecific context surrounding it. The building becomes one with the surrounding urban context, through a meeting established on the universal space serving both.

In a similar sense, the building's future public space interventions will not aim to be either destination or link, but a hybrid version of both. In so doing, the necessity of travelling will be combined with recreational experience and contribute to a more enjoyable experience of the inner city. This links to the approach of vendor stalls in South African cities. The necessity of travelling is used to aid inner city informal trade opportunities.

This approach could be echoed in public space planning.

## **\_PUBLIC SPACE AS PLATFORM FOR ADDRESSING CIVIL ISSUES**

In addition to improving inner city public space conditions, the project also attempts to avail these spaces for the purposes of free expression (in this case, in the form of street art). Public space will become the manifestation of the voice of the oppressed majority, especially since these spaces are mostly used by the majority.

Availing public spaces for the use of street art (through the 'Tag-Me' initiative discussed under the next heading), will take public opinion into the public realm and make it visible. Civil tension will become measurable, leading to a forced addressing of that tension.

## **\_GIVING FREE EXPRESSION ITS Foothold**

The 'Tag-Me' initiative is a proposed part of each future public space upgrade. It suggests the erection of blank concrete walls in public locations, to be used specifically for street art (graffiti and the like). It also proposes the erection of these walls in controversial locations, for example, the pavement in front of the High Court or parliament administration.

In so doing, the public realm will be given opportunity to present commentary on parliament actions where parliament will have no choice but to face public feelings about their decision-making.

## **\_MINIMAL INTERVENTION FOR A FLOURISHING CONCEPT**

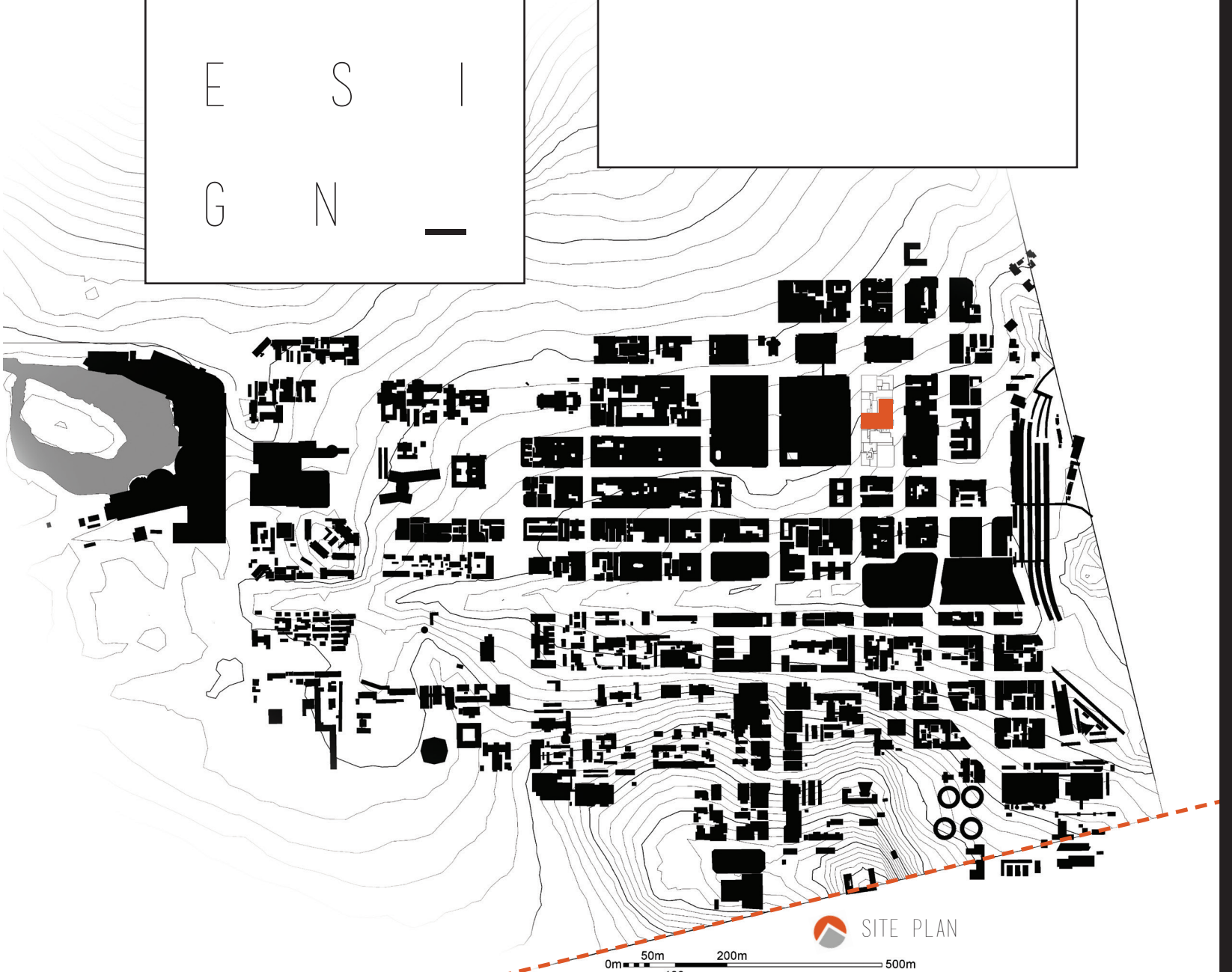
This refers to the unspecific nature of future public space interventions. 21st Century public spaces are utterly multi-faceted, comprising numerous interpretations. It is therefore imperative to propose spaces that are as minimalistic and free as possible.

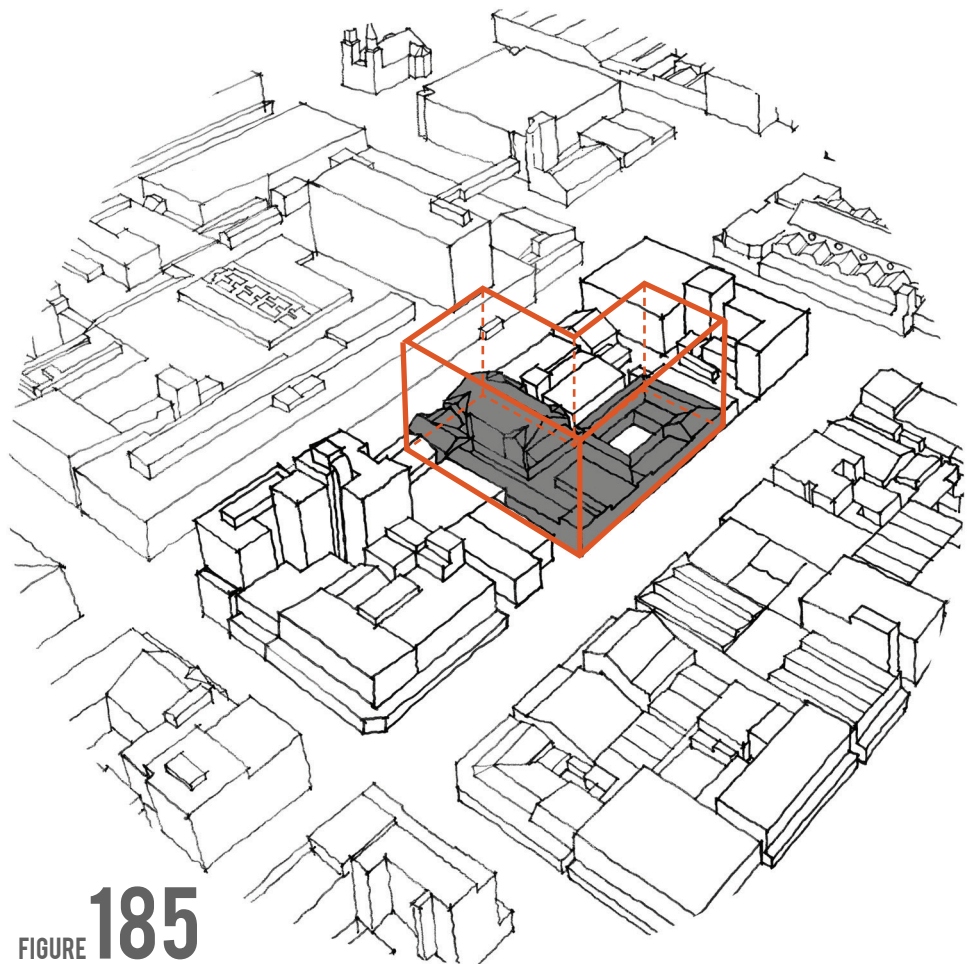
3.4

T O W A R D S A

**F I N**  
**A L D**  
**E S I**  
**G N**

**S O L U**  
**T I O N**





**FIGURE 185**

Buildings in grey to be demolished to open up L-shaped lot for proposed dissertation building.

**FIGURE 186**

Perspective from Oos Burger Street, looking through the pedestrian boulevard towards Fichardt Street.

PEDESTRIAN  
**BOULEVARD**

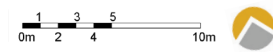




- 1 parking floor
- 2 parking ramp
- 3 circulation passage
- 4 main stair
- 5 elevator shaft
- 6 services shaft
- 7 service crane storage
- 8 service crane
- 9 tree pit



BASEMENT PARKING LEVEL



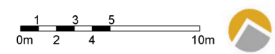
- 1 tuck shop
- 2 tuck shop storage
- 3 supervisor office 1
- 4 concrete workshop
- 5 workshop material storage
- 6 locker room
- 7 male showers
- 8 female showers
- 9 cleaning storage
- 10 fire escape 1
- 11 entrance foyer + reception

- 12 main stair
- 13 elevator shaft
- 14 services shaft
- 15 service crane
- 16 supervisor office 2
- 17 main abluion passage
- 18 disabled abluion
- 19 female abluion
- 20 male abluion
- 21 abluion cleaning storage
- 22 fire escape 2

- 23 staff room
- 24 manager office
- 25 kitchen
- 26 cold room
- 27 freezer
- 28 dry storage
- 29 abluion
- 30 abluion cleaning storage
- 31 service alley
- 32 restaurant/cafeteria
- 33 security booth



GROUND FLOOR [CONCRETE WORKSHOP]



- 1 design studio
- 2 design meeting room 1
- 3 design meeting room 2
- 4 design studio storage
- 5 fire escape 1
- 6 health and safety office
- 7 auditorium
- 8 auditorium storage
- 9 office 1
- 10 office 2
- 11 office 3

- 12 passage space
- 13 main stair
- 14 elevator shaft
- 15 services shaft
- 16 staff room (cleaners)
- 17 main ablution passage
- 18 disabled ablution
- 19 female ablution
- 20 male ablution
- 21 ablution cleaning storage
- 22 service crane

- 23 board room passage (bridge)
- 24 fire escape 2
- 25 board room
- 26 gallery
- 27 gallery storage
- 28 gallery double volume



FIRST FLOOR



- |    |                           |    |                           |
|----|---------------------------|----|---------------------------|
| 1  | timber workshop           | 12 | male ablution             |
| 2  | workshop material storage | 13 | female ablution           |
| 3  | fire escape 1             | 14 | ablution cleaning storage |
| 4  | health and safety office  | 15 | design studio storage     |
| 5  | passage space             | 16 | design studio             |
| 6  | main stair                | 17 | design meeting room       |
| 7  | elevator shaft            | 18 | fire escape 2             |
| 8  | services shaft            |    |                           |
| 9  | service crane storage     |    |                           |
| 10 | service crane             |    |                           |
| 11 | disabled ablution         |    |                           |



SECOND FLOOR [TIMBER WORKSHOP]



- |    |                            |    |                           |
|----|----------------------------|----|---------------------------|
| 1  | workshop equipment storage | 12 | service crane             |
| 2  | steel workshop             | 13 | disabled ablution         |
| 3  | exterior welding space     | 14 | male ablution             |
| 4  | fire escape 1              | 15 | female ablution           |
| 5  | workshop material storage  | 16 | ablution cleaning storage |
| 6  | health and safety office   | 17 | design studio storage     |
| 7  | passage space              | 18 | design studio             |
| 8  | main stair                 | 19 | design meeting room       |
| 9  | elevator shaft             | 20 | fire escape 2             |
| 10 | services shaft             |    |                           |
| 11 | service crane storage      |    |                           |



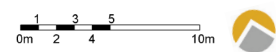
THIRD FLOOR [STEEL WORKSHOP]



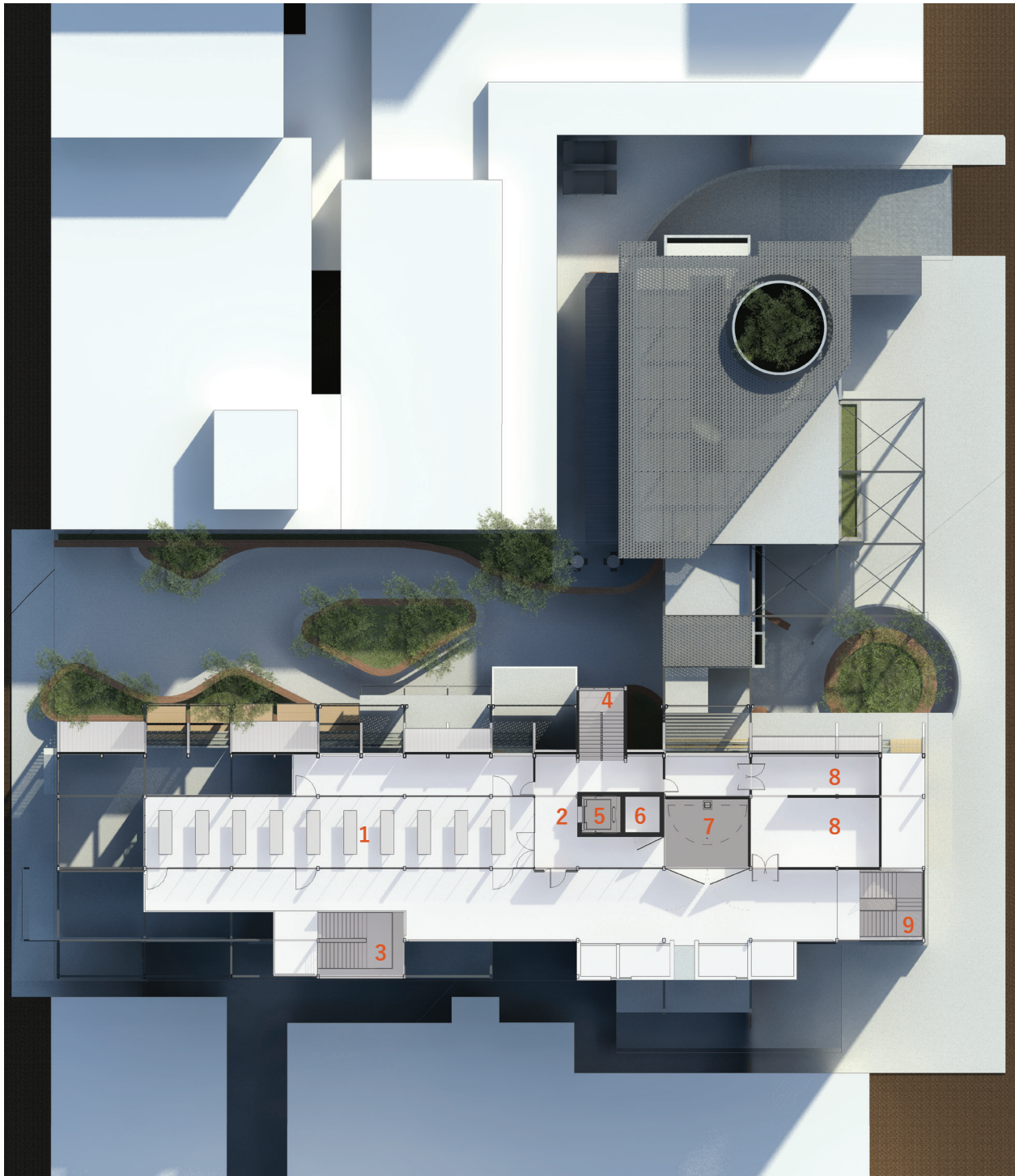
- 1 computer and laser cutting room
- 2 fire escape 1
- 3 health and safety office
- 4 passage space
- 5 main stair
- 6 elevator shaft
- 7 services shaft
- 8 service crane storage
- 9 service crane
- 10 disabled abluion
- 11 male abluion
- 12 female abluion
- 13 abluion cleaning storage
- 14 library storage
- 15 student library
- 16 fire escape 2



FOURTH FLOOR [COMPUTER AND LASER CUTTING]

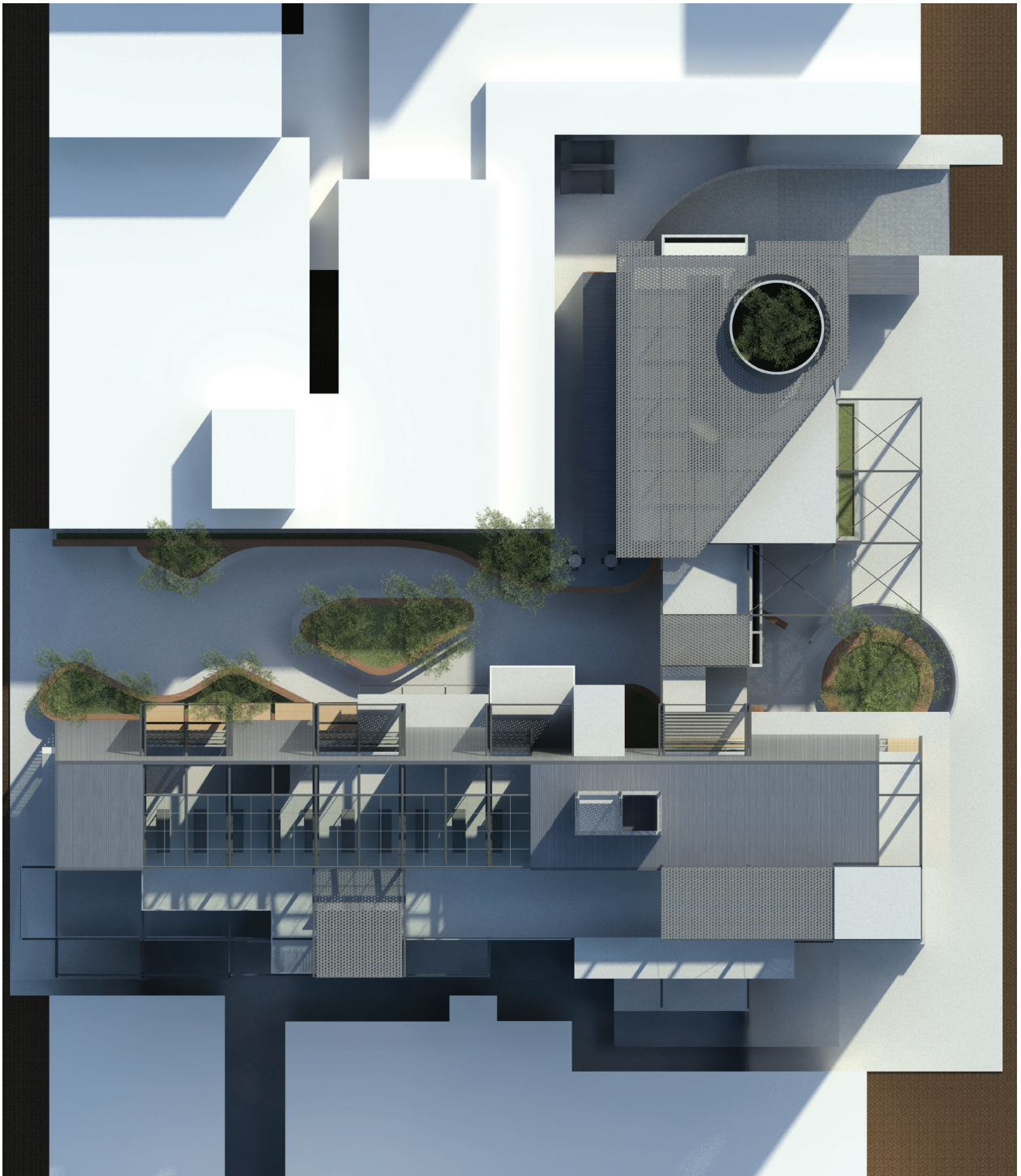


- 1 greenhouse
- 2 interior passage space
- 3 fire escape 1
- 4 main stair
- 5 elevator shaft
- 6 services shaft
- 7 service crane
- 8 greenhouse storage
- 9 fire escape 2



FIFTH FLOOR [GREENHOUSE]



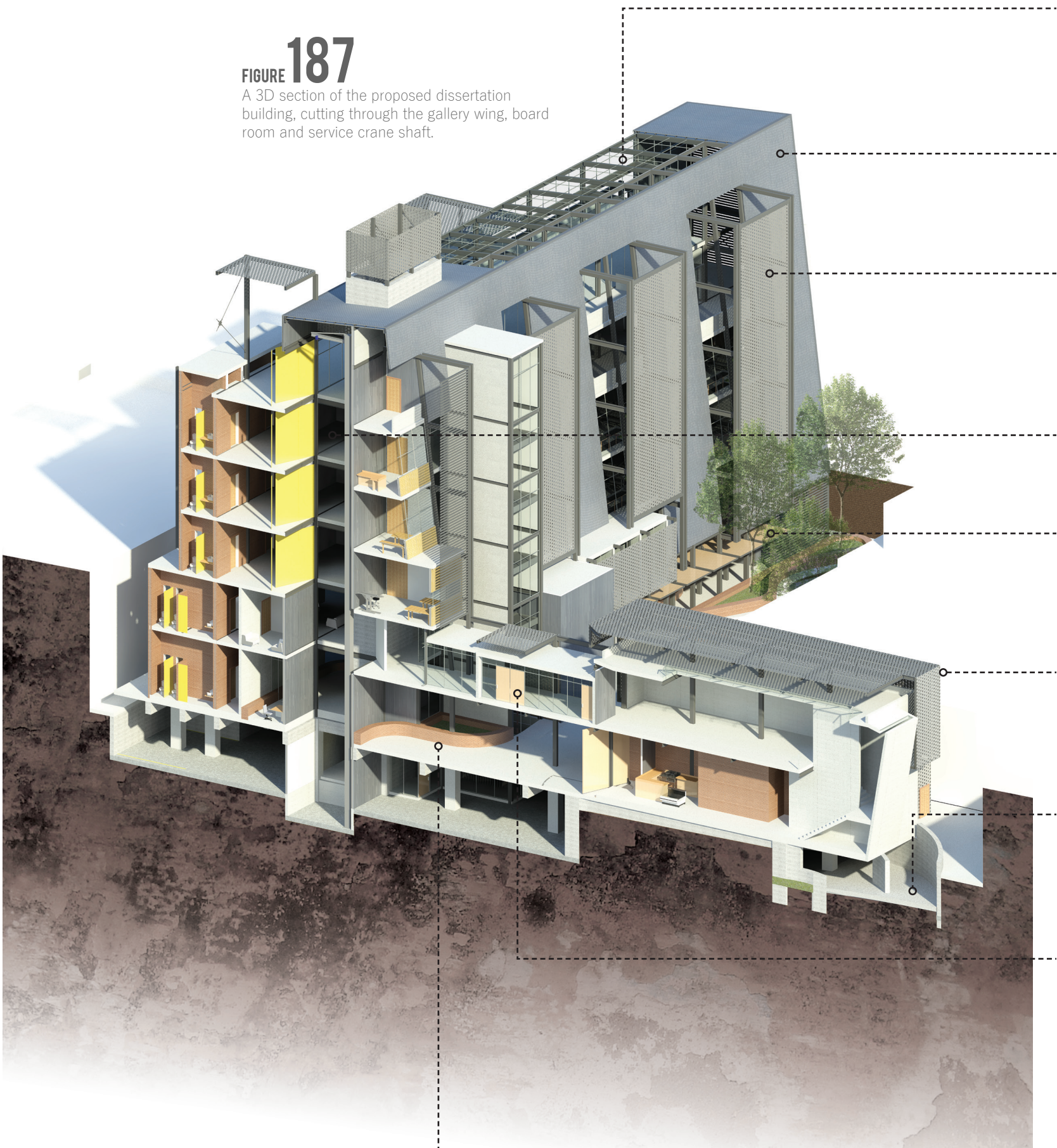


TOP VIEW



# FIGURE 187

A 3D section of the proposed dissertation building, cutting through the gallery wing, board room and service crane shaft.



To ensure optimal greenhouse functioning, the top of the greenhouse perforates the continuous cladding of the roof.

Tectonic steel frame structure clad with corrugated iron roof sheeting to create a singular 'wrapping' element that encases stacked functions underneath.

Perforated metal screens 'puncture' the continuously cladded facade so as to allow north light to enter the building in a filtered manner.

The service crane shaft runs continuously through all floors, acting as a vertical link between the different workshops. It opens up onto the skybridge, in order to transfer finished works to the gallery via the bridge's circulation corridor.

Timber is used for all the building entrances. This humanises the entry points and draws people in.

The screens are used to open up the north facade of the main building. In contrast, on the gallery and restaurant wing of the building, the screens are used to envelope the structure and protect it.

Basement parking is provided under the building, covering most of the building lot footprint. It is reached via a curving entry under the north side of the gallery wing.

The boardroom acts as a structural link between the main building wing and the gallery wing, establishing a 'skybridge' between the essentially separate structures.

Thick low walls are used in the pedestrian walkway. They wrap organically around the surrounding building structures to mimic fluid human movement and humanise the public spaces. They are constructed of red clay brick, to further humanise the spaces they are used in.





**FIGURE 188**  
Perspective of Oos Burger Street. The street leads to Bloemspruit in the south (right of the image).

STREET  
**PERSPECTIVE**



**FIGURE 189**  
Perspective of  
Fichardt Street. The  
street leads to Central  
Park in the south (left  
of the image).







**FIGURE 190**  
Elevation of the north facade. The pedestrian boulevard is seen in section.

NORTH  
**ELEVATION**

TOP  
VIEW

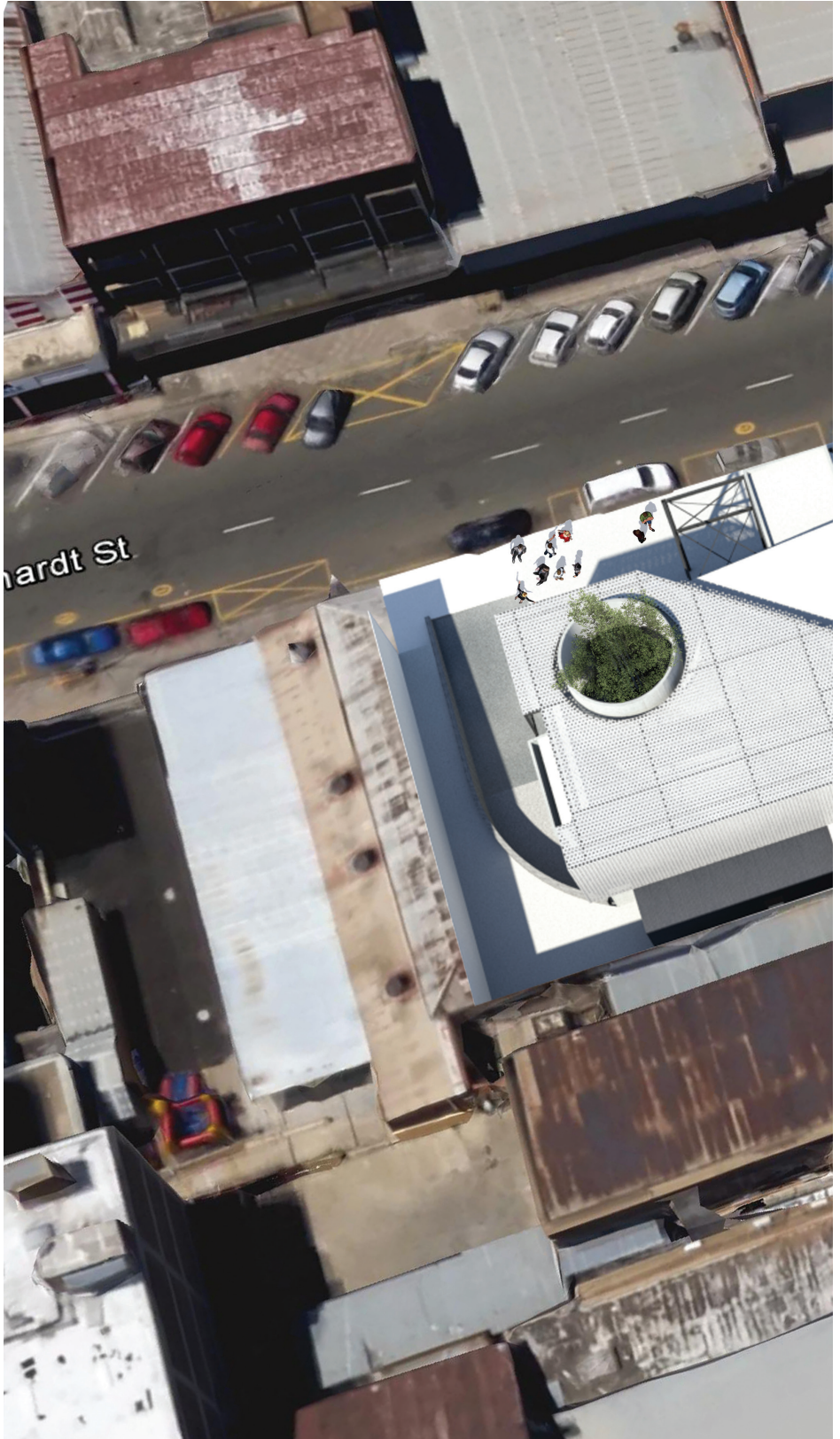
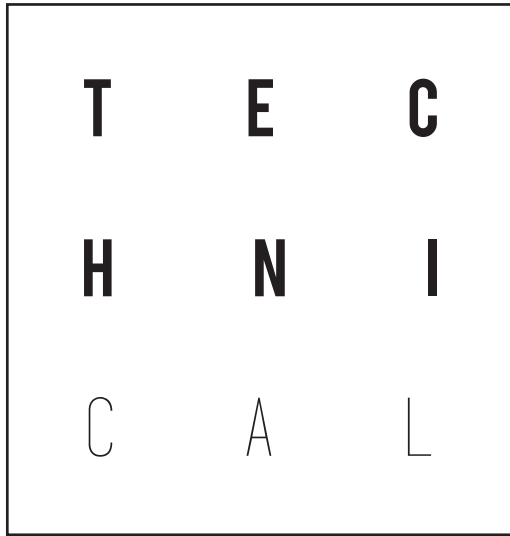


FIGURE **191**

Top perspective view of Urban Design Lab. Fichardt Street to the top and Oos Burger Street to the bottom.



## 3.5



### **INTRODUCTION**

This technical investigation will be an attempt at briefly dissecting the structural composition and overall assembly of the proposed dissertation project (pending a more thorough investigation with the formal documentation). Upon conclusion, the reader should have a reasonable understanding of the structure and the various choices that influenced it.

## **ENVIRONMENT AND MICRO CLIMATE**

### **\_location**

The building finds itself on an L-shaped city lot fronting both Fichardt Street and Oos Burger Street. The lot is situated in the north-eastern sector of Bloemfontein's central business district, in a quieter part of the inner city.

### **\_climate**

The city of Bloemfontein is located in central South Africa at approximately 1400m above sea level (Wikipedia, 2016a: online). It fringes the southern border of the Highveld region, with a cold semi-arid steppe climate similar to that of the Karoo (Weatherspark, [n.d.]: online). The climate registers as BSk on the Köppen-Geiger system (Climate-data.org, [n.d.]: online). The city experiences hot summer days occasionally interspersed with afternoon thunderstorms. Winters are cool to cold and dry, with frequent morning frosts. Snow is uncommon, but sometimes does fall (Wikipedia, 2016a: online).

### **\_topography**

The area's topography is generally flat, interspersed with occasional hills. The site lies on a flat expanse of land between two hills (Naval Hill in the north, and Fort Hill in the south). This simplifies building positioning and the placement of floor levels. Pedestrian movement through the site is also easy to direct, and has little implications for the structure.

### **\_urban character**

The north-eastern part of the CBD is an industrially inclined commercial sector of the inner city, given the proximity of the industry to the east. Pedestrian activity is lower than in the southern half of the inner city, and built infrastructure registers higher levels of dilapidation. This neglect, above all else, determines the choice of location of the project.

### **\_vegetation and soil**

The natural rural setting around the city mostly contains Highveld grassland. The soil is rich, with shale, mudstone, sandstone and Drakensberg Basalt (Wikipedia, 2016b: online). In general, Bloemfontein is known for its predominantly clay soil conditions. This is taken into account with the proposal of a combination of raft, pile and pad foundations, to compensate for possible soil movement.

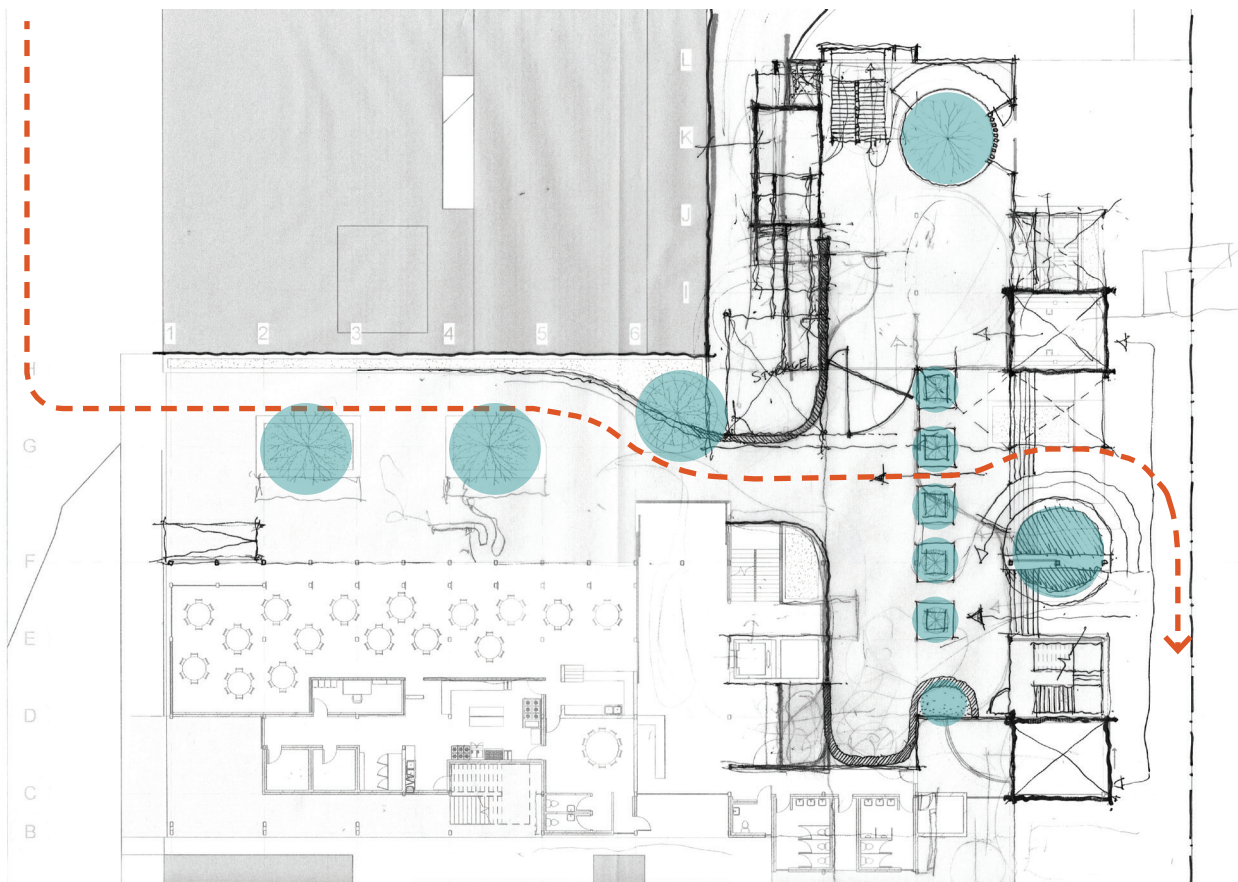
## **USER BEHAVIOUR AND REQUIREMENTS**

### **\_function/area requirements**

The proposed building comprises four main functional spaces: restaurant (student recreation), workshop/studio, gallery and greenhouse. The two separate building 'wings' further comprise a broader subdivision of public and private. The workshop and studio spaces make up the larger,

# FIGURE 192

Sketch indicating the pedestrian boulevard running between two separate building structures. The blue dots indicate possible vegetation planters and trees. Not to scale



more private wing (in terms of function), whilst the restaurant and gallery spaces make up the smaller, more public, wing. The workshop spaces are stacked on top of each other, with the most dirty and labour-intensive workshop (concrete) on the ground floor and the least interactive space (greenhouse) at the top. In the case of the greenhouse, the placement on top is motivated by the need for the most sunlight. The circulation core connecting all the spaces within the building is placed centrally, to ensure ease of access.

The sizes of the spaces, the studios and workshops in particular, are determined by equipment sizes and amount of workstations needed. It warrants mention that although the building will be used by the student bodies of UFS, CUT and Motheo FET college, not all these student bodies will use the facility simultaneously. In size, therefore, it most closely resembles a single school of architecture (loosely based on the UFS Department of Architecture). To accommodate all three schools and their respective student bodies, schedules will be worked out on a timeshare principle.

#### **\_accommodation list**

[see page 56-57]

#### **\_socio-economic profile of the user group**

The project aims to utilise university students as the main user profile, after which it will bring this elitist user group into collaboration with local city labourers. It is therefore safe to say that the project will accommodate various groups from either end of the economic and social scale. In terms of race and gender there are no specifications. The building is open to all those wishing to partake in the rejuvenation of the Bloemfontein inner city. It will be an open platform for community service, regulated by permanent staff and university lecturers.

### **SITE PLANNING AND LANDSCAPE DETAILING**

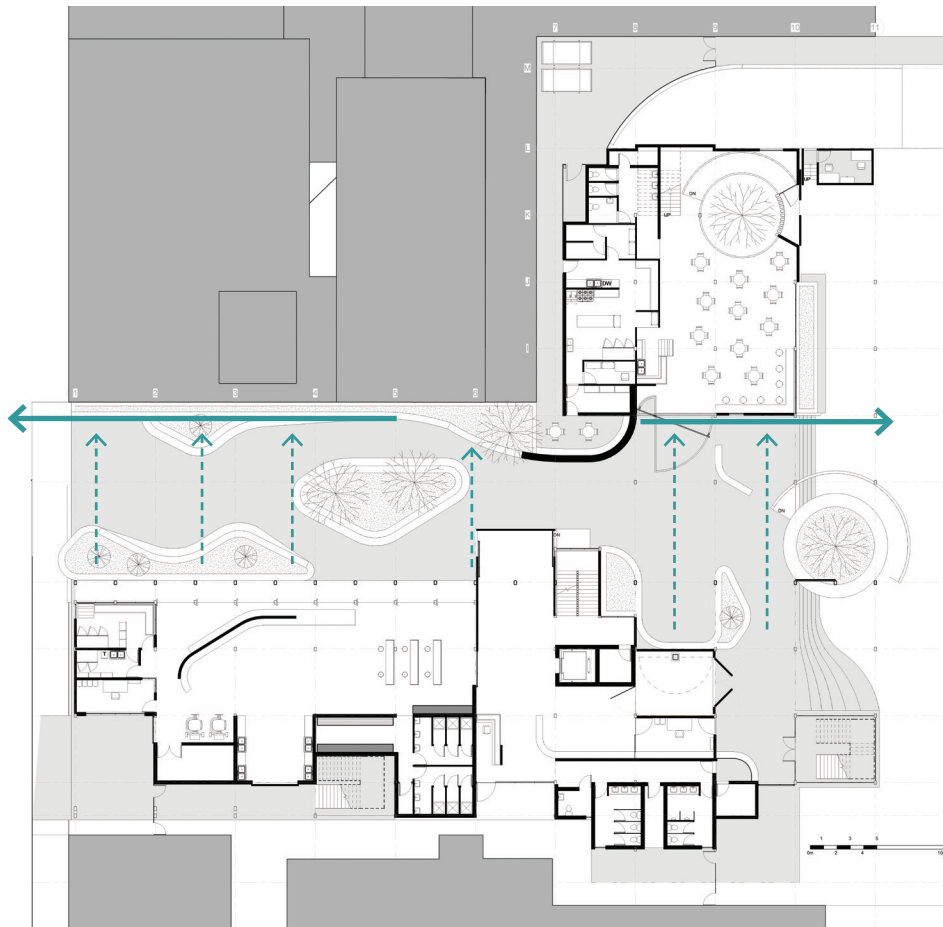
#### **\_site development**

Given the intention to incorporate a green public space into the design of the building, the two structures are pushed to either side (north and south) of the L-shaped lot in order to establish a pedestrian thoroughfare through the middle. This thoroughfare connects the two streets running parallel to each other on either side of the lot (Fichardt Street and Oos Burger Street).

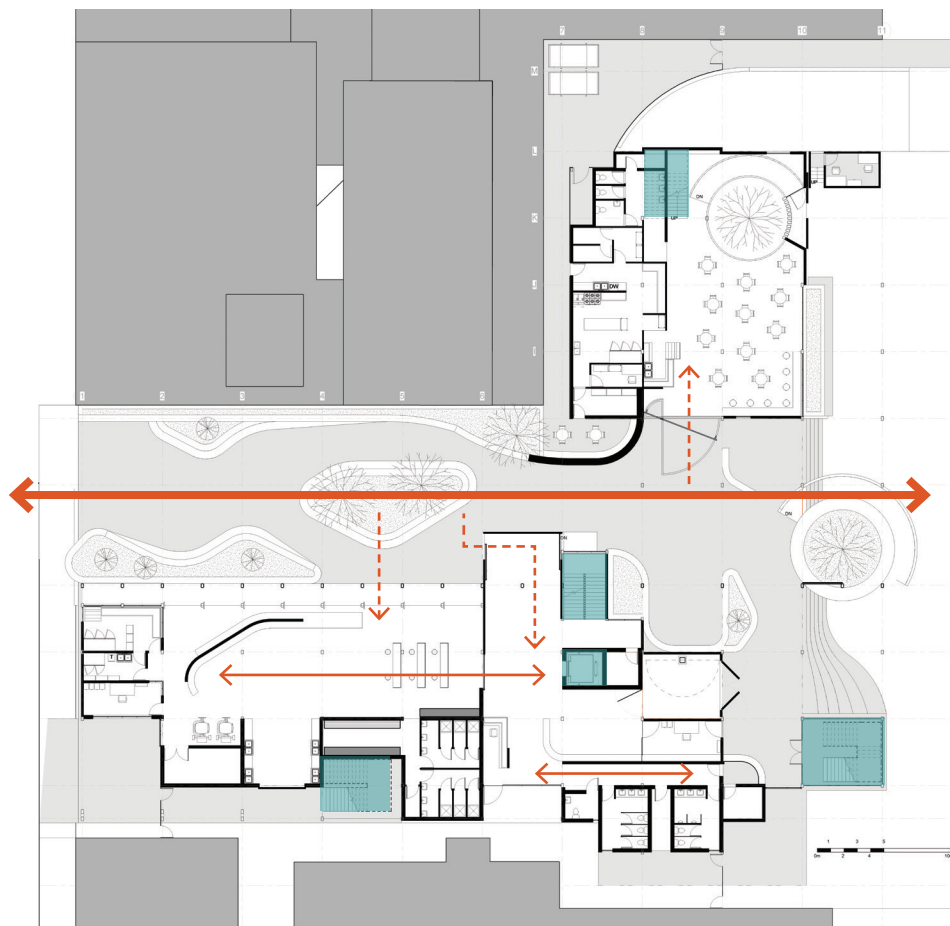
#### **\_green spaces/breathing spaces**

The thoroughfare serves as green spill-out space to the buildings either side of it, but also aids in pulling the public onto the urban lot. This effectively 'pulls' the surrounding urban fabric into the footprint of the proposed building, to blur the lines between the city and the structure.

The thoroughfare becomes a green ribbon connecting two streets, and establishes a green hub in a part of the city where vegetation is a scarcity.



**FIGURE 193**  
The blue lines indicate storm water flow.



**FIGURE 194**  
The orange lines indicate the main horizontal circulation, whilst the blue blocks indicate vertical circulation.

### **\_storm water run-off**

Storm water is to be directed to either street side via channels running parallel with the pedestrian boulevard.

## **UTILITY AND SPACE ENHANCEMENT**

### **\_illusionary space manipulation**

The building's north facade leans toward the south, allowing the structure to taper upwards. This opens up the air space above the pedestrian boulevard and gives it the appearance that it is larger than it actually is. In terms of practically, the slanted facade also receives better northern exposure, which is controlled via perforated metal screens.

## **HORIZONTAL AND VERTICAL CIRCULATION**

### **\_horizontal circulation**

Horizontal circulation occurs simplistically, branching off the pedestrian boulevard like ribs off a spinal column. Inside the building, horizontal circulation follows a path parallel to the linear direction of the pedestrian route on the exterior ground floor.

### **\_vertical circulation**

Vertical circulation occurs in the central circulation core situated in the approximate centre of the large steel frame wing. The elevator and staircase shafts are situated opposite each other, to simplify circulation options.

## **FORM AND FUNCTION**

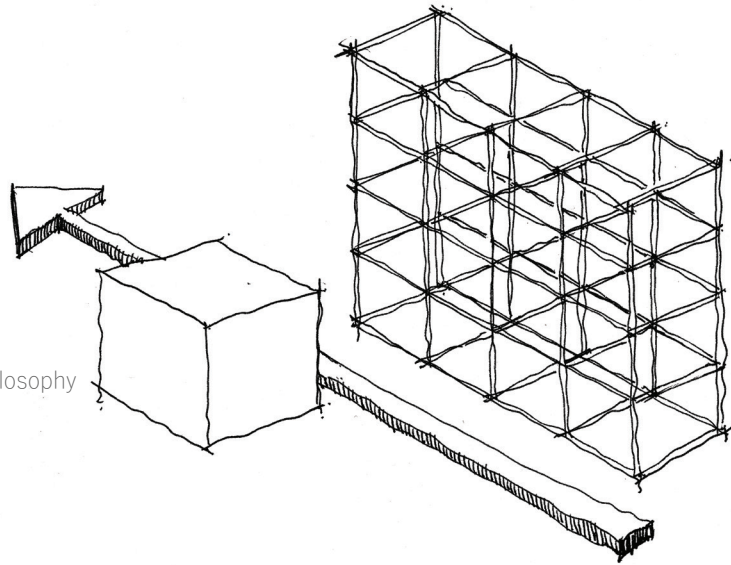
### **\_context**

The building's surrounding urban context comprises a plethora of different materials and structure uses. To avoid an overcomplicated mixture of too many contextual materials, the material and structural considerations of the immediate neighbouring buildings are considered.

The original building facing Oos Burger Street is of red clay brick. The original building facing Fichardt Street is of clay brick painted white. Clay brick is chosen in the new proposed building as a means of establishing links to the character of the site, and to use a material the users of the city would recognize and with which they would be comfortable.

Across from the site, on the other side of Oos Burger Street, a large steel frame Protea Hotel stands erected. The steel frame structure is painted black and filled in with large tinted curtain walls. To control morning sun exposure from the east, the hotel incorporates perforated screens fastened between the vertical members of the exposed steel frame on the east facade. Given the overwhelming presence of the hotel, the proposed

**FIGURE 195**  
The morphological philosophy  
of the structure.



building structure mimics the dark steel frame and screening mechanisms to camouflage itself in the context and control north light exposure.

Timber is less common on site, but is used for the new building's entrances as a way of humanizing the structure at the entrance points.

### **\_morphology**

The building comprises two separate bodies separated via a public pedestrian boulevard. The smaller of the two is the gallery and restaurant, constructed entirely of in-situ concrete and steel frame infill. The larger structure comprises the workshops, studios and other administrative functions. It consists of a steel frame structure filled in with various composite wall systems. The wall systems are of lightweight steel frame construction. The structures stand in aesthetic contrast, as a means of establishing visual tension on site. This translates to the concept of 'tension between opposites'.

## **STRUCTURAL SYSTEM**

### **\_stereotomics**

The gallery and restaurant form the more stereotomic portion of the project. The building wing (that accommodates both these functions) is constructed of in-situ concrete to symbolize an unwillingness for change and dynamism. The walls are 190mm thick, of off-shutter concrete left untreated.

### **\_tectonics**

The southern wing of the building encompasses the tectonic portion of the project. Its steel frame structure is filled in with light steel frame drywall systems, to relieve as much structural weight as possible.

### **\_substructure**

The building includes a basement for parking purposes. It fills nearly the entire L-shaped lot and therefore serves as foundation for the top structures. It rests on pad foundations, which are in turn set atop pile foundations as per engineer specifications.

### **\_superstructure**

The superstructure of the main part of the building comprises a steel frame structure set upon the concrete columns in the basement. The steel columns are connected and braced via I-section beams in the lateral position. Wall and window systems are fixed between steel members. The floors are of 35 MPa concrete so as to compensate for heavy equipment and the moving of heavy furniture pieces.

### **\_fenestration**

Fenestration takes the form of double-glazed curtain wall systems set in aluminium mullion frames.

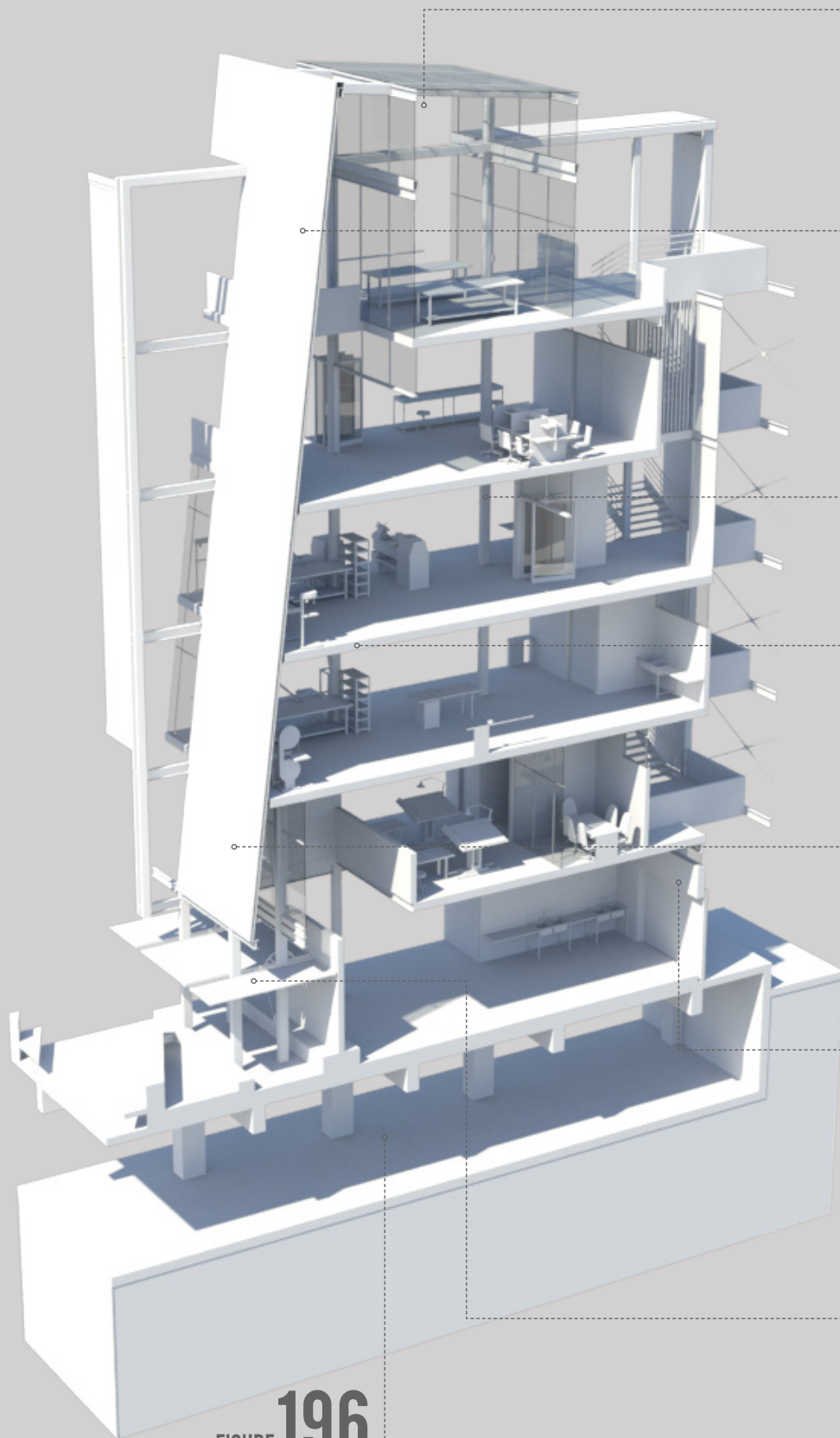
### **\_roof system**

The roof is a mono-pitch corrugated iron sheet assembly fastened to steel lipped channel purlins. Under the sheeting and between purlins, insulation is secured.

## **DESIGN DETAILING**

### **\_parking**

On-site parking is provided in the basement.



**FIGURE 196**

A 3D section of a fragment of the building, to illustrate structure and spatial composition throughout the floor levels.

To ensure optimal greenhouse functioning, the top of the greenhouse perforates the continuous cladding of the roof.

Tectonic steel frame roof structure (comprising a lipped channel purlin system) clad with corrugated iron roof sheeting to creating a singular 'wrapping' element that encases stacked functions underneath.

The predominant structural language of the building is that of steel frame construction. Rectangular hollow section columns and I-beams are used to create a grid-based frame structure, which is then filled in with a range of dry wall systems both for interior and exterior purposes.

The floor system consists of in-situ concrete floor slabs cast between beams and on top of permanent formwork.

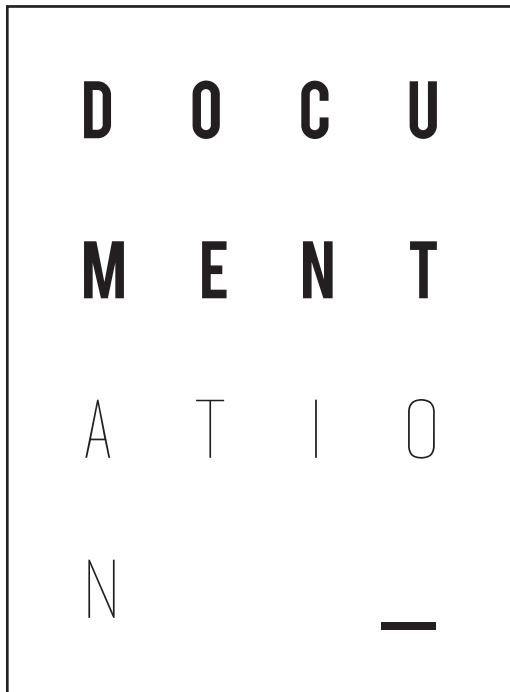
Perforated metal screens 'puncturing' the singular wrap-around roof element. The screens are used to open up the north facade of the main building and allow indirect light infiltration.

Brick cavity walls on ground floor, to humanise the base of the building. The ground floor has the most direct exposure to people using or passing the building, which requires it to be approachable.

Steel framed timber panel pivot doors. A series of these doors along most of the ground floor's northern facade allows the building to open up onto the public boulevard running by in front of it. Timber is used for all the building entrances. This humanises the entry points and draws people in.

Basement parking level, with square concrete columns and rectangular concrete townstand beams supporting in both directions (waffle pattern).

## 3.6



[ To be inserted at the end of the document ]

# P A R T 0 4

## REFLECTION AND EVALUATION

The following chapter follows an informal diary-style approach. The rest of the document adheres to academic writing practice, but here I want to take the opportunity to include my personal voice and sense of humour about the past year (seeing as the laughter was one of the best parts of this dissertation process). One of our supervisors said once that this chapter should be that small voice inside of us screaming to be heard from behind that cold facade we put up during formal crits (you know the one: that too-wide smile people use for business pitches and job interviews that can never seem to convey a sense of true happiness). In all respects, this should then become a collection of diarised notes on dissertation experiences throughout the year. So, if it pleases all to hear my side of the story, I will commence in full force.

## 4.1

### N O T E S O N T H E Y E A R

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Let me start by saying that this past year is difficult to describe to anyone that has not completed a dissertation in architecture. The words I use below will undoubtedly fail to express the complexities of emotions and misfortunes we architecture students face; most of all the euphoria of a good crit after two weeks of precious labour on a brainchild design. People not in this profession cannot seem to understand how important our work is to us. We don't simply draw and think of spaces. And those drawings don't just fall out of us on command. Inspiration is a stubborn thing, and sometimes it simply refuses to give us any rope. But then, when some spark somewhere does fire, we don't simply proceed to create enclosed space and detailed connections for construction site perusal, we (and please excuse the cliché) honestly pour our souls out on paper. We might even be visual poets. At least, that is what I like to think. And seeing as that sweet thought helps me sleep at night, I will continue to cling to it. Besides, architects like Louis Kahn make it easy to indulge in that fantasy.

Architects are always labelled 'weird' by the general populace. Never understood that sentiment until I became an architecture student. I generally thought it meant that all architects were somehow strange, and that that strangeness was ingrained in their personalities. But alas, it was another half truth created by people that can never hope to understand us (unless they marry

into this madness I suppose). Our weirdness is due to a different pattern of life. We don't sleep when other people do, we don't eat breakfast when other people do, we don't exercise (who has time for that anyway?), we don't have chilled weekends and we don't like talking about 'what we're busy with'. We are not weird, the life we live is weird. So you know, I kind of wish they would come up with a better insult.

The year was a rollercoaster of emotions (another cliché, I apologise), not that I have to explain that to any architect alive. We all know the feeling. And if some architect out there has never experienced despair in their careers, whether academic or professional, I have no choice but to assume that they must be dead inside (no offence to any iron-spine architect reading this; really I am just envious of you). To cope with these emotions, we often resort to substance abuse (nothing illegal on my part), hence the semi-permanent grey hue of cigarette smoke hovering in front of our department. To each his own; we do what we must to survive. We laugh a lot, swear often, cry until our cheeks are raw and laugh again. Our fingers usually boast some or other nasty cut from using a box cutter too freely in an over-tired state. And then the infamous grudge matches we have with fellow students when we are tired and they rub us the wrong way. Of that I am very guilty, and do have my regrets (to those unfortunate peers I apologise profusely).

## Now towards an academic discussion of the past year.

My design started as a proposal for an inner city art school in Bloemfontein. However, that proposal soon met its end when it was deemed too superficial, upper class and thin for a thesis topic. My supervisors encouraged me to think of an inner city problem I could try to address. Art as a theme for a building programme was not the problem, it was how to use art to address inner city issues instead of simply introducing another removed art school somewhere in the CBD.

My first conceptual consideration gravitated towards 'perspective' as an underlying theorem. This was hard to define given its broad scope of interpretation. I kept it, but continued to refine the idea and find family concepts that were easier to put into form. The process was long and tedious, and if I'm honest, now even a mystery to me. However it came to be (written on numerous flowcharts I seem to have misplaced), I came to four key concepts.

- 1 Breaking the box
- 2 enhancing the existing
- 3 disrupting linearity
- 4 tension between opposites

The most important theoretical concept was 'tension between opposites'. It was through that concept that I decided to use university bodies and government support in a building that addressed public space making through artistic means. In other words, I used arts (or crafts is more accurate) to bring exclusive bodies onto a universal plane (public space) where they came into contact with the everyman. And so the project started to address civil tension in the realm of public space, whilst still using arts and crafts as predominant typological theme (ironic, as this can also be an exclusive type).

Eventually the project developed into something resembling an architecture school, where public space refurbishment became the syllabus and physical projects received preference over

theoretical speculation. The three main materials (timber, steel and concrete) were chosen based on a general understanding of their workability and contextual relevance. They were also chosen based on their durability as materials to be used for public furniture. The building eventually came to incorporate a 3D printing room and computer lab to aid in the necessary research and preparation to be done prior to taking on physical projects.

The project had many design problems that needed to be solved, of which I will only mention the most pressing ones. The first big problem was the small site, and how its footprint had a large influence on overall form-giving and floor plate layout. It took away some design freedom, but enhanced the building's spatial dialogue with the surrounding context because the two were so ingrained.

The small site and rigid urban context further introduced the need for a grid-system to aid in spatial ordering. Again, this had its restrictive downfall in terms of design freedom, but aided in the quick and logical layout of floor plates and space relationships. It further helped to link stacked floors, to create a sense of cohesion in a project that was rather large.

The basement parking was introduced some time into the design process, which was problematic, as it re-spaced the grid-system I had been working on prior to its inclusion. Nevertheless, the spaces quickly adapted to accommodate the new grid. Given the restrictions on floor plan brought on by the grid, liberties were taken with facade treatment and building profiles in section. This is where the slanted facade was introduced, which remained constant until the final design solution.

After the concepts introduced the two separate building wings (one tectonic, one stereotomic) separated by the pedestrian boulevard, no further changes were made to overall form. The design remained constant from inception and underwent minor floor plan or facade alterations. One drastic change near the end saw the moving

of the student restaurant from the ground floor of the main wing to the ground floor of the gallery wing, to be replaced by the concrete workshop. This was for practical reasons (to have the mess of concrete works be on ground floor where cleaning was less of an issue). This change constituted a considerable redesign of the gallery wing, whilst the main wing remained relatively unchanged.

There is not much of the design I can say that has not already been discussed in part 3 of this document, so I would rather explain my thoughts on the process and the decisions I made.

Had I to do it over again, I would still work within the Bloemfontein inner city. I enjoy the urban problems and structure of our city, and I enjoyed doing research into public space theories. Touching on public space means touching on human relationships and issues with public space, which is fascinating to me; the irrevocable bond between built form and the people that use it.

I would still choose an artistically inclined building programme, given the relevance of the arts in modern society and how people have started using arts and crafts as platforms for expressing civil unrest and other issues. It has truly become a channel through which to address civil problems in our societies, strengthened by the use of art in a more practical way than historically intended. Art is also a deep interest of my own, which fits better with my radical and free-spirited temperament that would have been the case for a more rational and scientific programme.

In terms of the research field, I enjoyed public space theories and readings on human behaviour in public space, but in future I would rethink venturing into the political realm. As a topic, 'civil tension' is relevant in contemporary South Africa (especially considering the student uprisings on university campuses the past year), but it is an incredibly delicate topic, which has to be taken on with the utmost sensitivity and accompanying backbone. But most of all, I just think the topic is too complex and sensitive to be handled in a

dissertation scope project (perhaps it is more appropriate for more advanced degrees). In this document, I scraped off a top layer of foam only. It's hard, and if we're honest, there is no way of knowing how to solve civil tension in our country. Apartheid did serious damage, and I fear we have yet to come to know the full extent of that damage. So again, I enjoyed reading on rebellion, but as that links to racial tension in South Africa, I would tread lightly around the topic in future.

I enjoyed the use of stereotomic and tectonic structures, especially the design of the relationship between the two. Whether I was successful or not I will leave for my examiners to decide. I don't fancy myself an arrogant person (although my extreme shyness makes it seem that way). Therefore I don't like to make assumptions on the success of my own work. One external examiner once asked me if I was a good designer. I gave him a half hearted "I think I'm adequate" reply. He proceeded to question my self-belief and aptitude (perhaps insinuating that weak willed architecture students had no business to be in practice one day). I remember being slightly annoyed, because we were always being lectured on our attitudes. Sometimes we were too arrogant, other times not self-assured enough. This back and forth was tiresome to say the least. I replied, full of bravado and perhaps not as good at hiding my irritation as I had hoped, "No, I'm just humble". The examiner had simply laughed.

I enjoyed the year, despite the suffering of workload and stress. It's hard to know that we basically work towards impressing people that know infinitely more about architecture than we do. And it's even harder when they have to tell you that you know even less than you thought. And that is most of our year, one disappointing crit after the other. Until you think architecture is probably the thing in life you are the WORST at. But then you have one good crit in two months and the world is right again. I suppose we develop a love-hate relationship with ourselves as much as we do with our field. We love what we do, but nothing stings more to hear that you're not that good at it. But then, if you're like me, that

motivates you to work even harder; to become better.

The best part of the year was undoubtedly our work environment. To work in cubicles of eight students could potentially be disastrous. I don't think there is anything scarier than a tired architect, except eight tired architects in one, small room. In my case however, I was in a lovely cubicle with very good friends, who undoubtedly carried my spirits through this year. We laughed more times about not-so-academic-things than I care to admit. And that is what I will miss most. It even made me excited about having to work in design teams in practice one day (whether that will translate into happy work relationships remains to be seen, but for now let me enjoy that fantasy).

As a last minute note (and whether they read it or not), I would just like to thank my dissertation supervisors and all other lecturers at this department which were involved in my education during my five years at this department. I don't think all of you particularly like me. I'm a bit stubborn most of the time. And I think I'm too comfortable with saying what's on my mind. But I like to think I have personality and that I make things interesting (insert laughter here). So, whilst I'm not naïve to think that I was a pleasant student at all times, I sincerely want to thank you for everything you taught me, and for opening yourselves up so I could learn from you. I often think, despite being under examination scrutiny, students know little of true pressure. We forget that lecturers avail themselves every day, opening their expertise on crit tables for the perusal of [often cruel] students. I commend your bravery and willingness to pass on your knowledge in a world where judging each other is at the order of the day.

In conclusion I want to leave the following thought. I lived in an on-campus residence for the entire duration of my studies. We had a saying about the first year in residence: it is the best time of your life, but one that you never want to have over again. I think that accurately describes an architecture dissertation year (the dreaded fifth year). I have learned a lot, about myself as

much as about architecture. I thank all who were involved in making this experience what it was.

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