[re]interpreting the Extramural Building

Navigating the complexities between heritage practice and remodelling

[re]interpreting the Extramural Building

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Submitted as part of the requirements for the Degree Master of Architecture (Professional) in the Faculty of Engineering, Built Environment and Information Technology at the University of Pretoria.

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Abstract

Many buildings in Pretoria's central business district stand empty and abandoned. These buildings are being looted, stripped and vandalised, resulting in a great deal of damage that eventually leads to their destruction. The Extramural Building is an iconic modernist building that has served the city well over its lifetime. It has stood abandoned and empty for the last seven years, is in a state of disrepair, and is on the verge of being lost and forgotten.

The intention with the dissertation is to connect the past and the future by investigating the potential of old buildings with the aim of retaining their existing fabric and cultural significance. Heritage practice and theories of adaptation are investigated to generate a theoretical framework for the remodelling of old buildings. A statement of significance is developed by investigating the historical context of the building. The Tshwane Inner City Regeneration Framework is used as a starting point for the development of an urban framework for the project. An appropriate program is chosen, derived from the theoretical framework, statement of significance and urban framework. Appropriate precedent studies serve as examples of the discussed theory, urban framework, program and conceptual intentions.

The design of a proposed intervention is developed within the established urban framework by applying the theoretical framework. The navigation of the complexities between heritage practice and remodelling ultimately allows a new interpretation of the building to emerge. The argument and its eventual expression results in an intervention that allows the Extramural Building to reclaim its role in the city, unlocking its latent potential, and retaining its inherent cultural value.

Ekserp

‘n Groot aantal geboue in Pretoria se sentrale besigheidsdistrik staan leeg en verlate. Hierdie geboue word gereeld deur vandale gestroop en geplunder; hulle rig verstommende skade aan wat uiteindelik tot die vernietiging van die geboue lei. Die Buitemuurse Gebou is ‘n ikoniese, moderne gebou wat vir lank ‘n positiewe bydrae tot die stad gelewer het. Die gebou staan al sewe jaar lank leeg en is baie vinnig besig om te verval, wat sonder drastiese ingryping ongetwyfeld tot die gebou se finale vernietiging sal lei.

In die verhandeling word daar gepoog om die verlede en toekoms te versoen deur die potensiaal van ou geboue te ondersoek met die doel om die geboue en hul kulturele waarde te behou. Erfenispraktyk en aanpassingsteorieë word ondersoek om ‘n teoretiese raamwerk vir die herbenutting van ou geboue te genereer. ‘n Verklaring van betekenis word ontwikkel deur die gebou se geskiedenis te ondersoek. Die Tshwane Middestad Ontwikkeling- en Herlewingstrategie word as ‘n beginpunt vir die ontwikkeling van ‘n stedelike raamwerk vir die projek gebruik. ‘n Toepaslike gebruiksprogram word afgelei uit die teoretiese raamwerk, die verklaring van betekenis en die stedelike raamwerk. Die studie word deur toepaslike gevallestudies as voorbeelde van die tersaaklike teorieë, stedelike raamwerk, program en konseptuele doelwit van die projek ingelig.

Die ontwerp van die voorgestelde ingryping word binne die bestaande stedelike raamwerk in oorleg met die teoretiese raamwerk ontwikkel. Die ondersoek van die kompleksiteite wat tussen erfenispraktyk en aanpassingsteorieë bestaan maak nuwe interpretasies van die ou gebou moontlik. Die argument, en uiteindelike uitdrukking daarvan, word gevolg deur ‘n ingryping wat die Buitemuurse Gebou toelaat om weer sy rol in die stad te vervul en so die latente potensiaal van dié gebou te ontgin, maar ook die inherente kulturele waarde daarvan te laat voortbestaan.

Project Summary

Program
Justice College Resource Centre

Site Location
Erf 3060 Pretoria

Site Address
332 Johannes Ramokhoase Street
Central Business District
Pretoria

Coordinates
25°44’34.0”S
28°11’36.0”E

Site Description
The Extramural Building

Owner
Public Works

Client
Justice College

Research Field
Heritage and Cultural Landscapes & Human Settlements and Urbanism

Theoretical Premise
Theories of heritage practice and adaptation are explored to generate an appropriate theoretical premise for the remodelling of old buildings.

Architectural Approach
The exploration of palimpsest as a means to understand and reinterpret the potential of derelict buildings brought about by urban decay.

Acknowledgements

Thanks to Nico Botes for all his support and guidance; without his enthusiasm and motivation this project would not have been possible. I would also like to thank Prof. Arthur Barker for his wisdom, insight and patience.

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Thanks to all my friends for standing by me through this journey. Words cannot express how thankful I am to the people who played a positive role in my life during this time. I thank you all from the bottom of my heart.

Declaration

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

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

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

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Lionel Shaun Bates

Preamble

This dissertation serves as a record of and informant to the design process applied to a chosen project and should be seen as a vital part of the overall design process. While this document presents a linear argument, the design process is non-linear at times, and the document should be read with this in mind. The project is rooted in the current time and place, casting a light on issues that are relevant at the moment, and exploring existing realities.

In this dissertation the aim is to develop a strategy to retrofit an old Department of Public Works building in order to increase its lifespan in response to environmental and economic concerns. These economic concerns are expressed in the mission statement of the Department of Public Works to "… efficiently manage the asset life cycle of immovable assets under the Department's custodianship" (Department of Public Works, 2009). A great deal of value lies in these buildings as they have been a part of our nation for generations and they provide meaningful services to their communities. The current generation inherited these buildings and should ensure that they survive for decades to come. In an attempt to conserve them, innovative solutions must be sought to bring these buildings into the future and ensure that they perform to the high standards of our era. The intention with the dissertation is to connect the past and the future, by investigating the potential of old buildings with the aim of retaining the existing fabric.

It is intended that the dissertation makes a helpful contribution to architecture in South Africa, by showing that an appropriate remodelling strategy for an old building can substantially increase its lifespan and save valuable cultural significance in the process. The dissertation can assist practitioners by serving as an example of sustainable practice and development.

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Introduction

In Pretoria's central business district, the Extramural Building of the University of Pretoria is an iconic modernist building that has served the city well over its lifetime. It now faces a great threat; it has stood abandoned and empty for the last seven years, and is in a state of disrepair at a critical time of its life cycle. The building is fifty eight years old, only two years shy of a small amount of legal protection. It is on the verge of being lost and forgotten.

During an on-going archival project an opportunity for research was discovered. The "Public Works of South Africa" journals being preserved in the aforementioned project document a large portfolio of work that includes schools, post offices, police stations and a variety of public buildings that were built in an era free from climatic austerity. Many of these buildings have already been lost and forgotten. Something has to be done to protect the ones that are still standing from suffering the same fate – a fate that the Extramural Building faces today.

The dissertation is split into two parts, the argument and the expression. Part one will focus on the development of a theoretical framework for the remodelling of existing buildings by investigating theories of adaptation and heritage practice. An attempt will be made to develop a written statement of significance for the Extramural Building through a thorough understanding of the historical context that contributed to its existence. In an attempt to generate an appropriate Urban Framework, the argument will also focus on the physical context of Pretoria, investigating existing development plans, the overall structure of the city, and how the city is currently used. Finally, an attempt will be made to generate a programmatic intention for the Extramural Building that will hopefully be led by the developed statement of significance and urban framework.

Part two will start with the development of a conceptual premise, followed by an account of the development of the design and how it relates to the issues described in the argument. A technical development will outline the issues of structure, services, technology and ecology and how they are integrated and used to further develop the design. Finally a conclusion will attempt to summarise the dissertation and reflect on the issues that were discussed.

The General Issue

The city of Pretoria is plagued by urban decay and many buildings stand empty. These buildings are being vandalised and stripped of any precious material. This form of urban decay is a highly organised illegal act that views an empty building as an above-ground mine to be exploited for all its precious metals and items, a process colloquially referred to as ‘building mining’. Many buildings within Pretoria have already been mined this way, including the Van Riebeeck Medical Building in Schoeman Street and Schubart Park in Madiba Street. The most recent mining activity is occurring inside the Transvaal Provincial Administration Building just west of Church Square, arguably one of the most important modernist buildings in the city. We are losing old buildings at a rapid pace and something has to be done about it.

The Extramural Building is a prime example of this kind of urban decay. During April of 2017 the building was mined and has been reduced to a shell. In an attempt to rescue it, the dissertation aims to gain a deeper understanding of urban decay by focusing on the Extramural Building and the treatment that it has received. It no longer plays a role in the city and has been abandoned. Can heritage practice and theories of adaptation help the Extramural Building reclaim its role in the city?

Urban Issue and Intention

Public space in Pretoria is often limited to street edges, affording few opportunities to enter the blocks; thus pedestrians are banished to the sidewalk, and forced to navigate the city alongside vehicular traffic. Similarly, public buildings are limited and often not very accessible, affording access to only a select few. These situations limit city dwellers in the way they can engage with the city.

The Tshwane Inner City Regeneration framework will be used as the starting point for an urban scale investigation. The Civic Precinct is further developed to improve the public realm and unlock the social potential of the chosen site.

The Architectural Issue

The dissertation focuses on the role that architecture plays in recognising and unlocking the latent potential that exists in old buildings that have undergone a considerable amount of vandalism and decay. A great deal of value is contained in these buildings, as they have been a part of our nation for generations and provided meaningful services to their communities. By means of an appropriate remodelling strategy, the dissertation intends to enable the Extramural Building to reclaim its role in the city by once again providing meaningful service to the community. Architecture is explored as an extension of the public realm.

Research Question

The research of this dissertation will attempt to navigate the complexities between adaptation and heritage in an attempt to generate a framework for the conservation of old buildings. The dissertation will approach past research firstly through the lens of heritage practices, focusing on acts and charters and secondly by investigating existing theories of adaptation. Can the combination of these two practices help protect an old building from destruction?

Dissertation Question

This dissertation aims to develop a strategy as well as design documentation to retrofit an abandoned building in order to increase its lifespan as a response to environmental and economic concerns. Can architecture recognise and unlock the latent potential in old buildings?

PART ONE _ Argument

Theory

The focus of this section will be on establishing some common ground between theories of adaptation and theories of heritage conservation. The aim is to develop a theoretical framework and vocabulary for the adaptation of existing structures within an understanding of heritage conservation practices. Modernism acts as an extra layer of interaction to the main theoretical premise of adaptation. While many theoretical frameworks exist for adaptation as well as heritage, only a couple will be focused on here.

Adaptation

It is a well-meaning act to conceive of buildings as essentially unchanging, stable, permanent, invariant, an historical record, but we must acknowledge that in reality buildings have to be understood in terms of several different timescales over which they change, in terms of moving images and ideas in flux (Groak, 2002:15).

Buildings cannot be viewed as static objects; they are forever changing. In *The idea of building – thought and action in the design and production of buildings,* Groak (2002:17) makes a distinction between adaptability and flexibility. He describes adaptability as the ability of a building to accommodate different social uses, and flexibility as its ability to assume different physical arrangements. Adaptability and flexibility define a building's capacity for change. Adaptability and flexibility are then qualities of an existing building that are needed for remodelling.

Machado (1976:46) argues that remodelling is as old as the practice of architecture itself, defining it as formal intervention upon existing form. He rejects terms like adaptive reuse, retrofitting and architectural recycling and suggests that we should simply use the term 'remodelling'. The use of metaphors, such as palimpsest, can be a valuable aid in building a theory of remodelling, which means a building can be viewed as a piece of parchment with a narrative already inscribed on it. Extending this argument of an old building as palimpsest, one can view remodelling as rewriting, writing over, underlining, erasing, paraphrasing, quoting and even as punctuation (Machado, 1976:47). In this way many possibilities are opened up for the type of formal intervention on existing fabric.

Formal intervention on existing fabric is best described by two existing frameworks that each help to provide a meaningful vocabulary in aid of remodelling. The first is Philippe Robert's seven principles for formal intervention, and the second is Stewart Brand's shearing layers of change.

Robert's seven principles are:

- *The building within*, where the formal intervention is built inside the existing building.
- *The building over*, where the formal intervention occurs on top of the existing form.
- *The building around*, where new space is defined between the existing form and a new intervention.
- *The building alongside*, where the existing building is extended by means of a new architecture.
- *Recycling materials and vestiges*, where existing materials are reused in the new intervention and existing spaces are re-appropriated.
- *Adapting to a new function*, where the existing building is changed to accommodate a new function.
- *Building in the style of*, where the style of the existing building is simulated in the new intervention (Robert, 1989:6-8).

These seven principles almost organise themselves into two categories. The first four each have a unique spatial identifier, while the last three refer to a practice of some kind.

Stewart Brand's framework focuses on a building's cycles of change over time after it has been built, which he refers to as the shearing layers of change. The building is separated into six layers, or the six S's: Site, Skin, Structure, Services, Space plan and Stuff (Figure 1). The site is the plot of land that is allowed to be occupied, including its topography and building lines. The site is the component that will last the longest, outliving the building that is constructed on it. The structure includes the loadbearing elements and foundations; these bones should be able to last 300 years. The skin is the exterior surface of the building and changes approximately every 20 years. The services are the inner workings of the building, including plumbing, electrical components and air-conditioning; these need to be replaced every 7 to 15 years. The space plan refers to interior walls, doors, ceilings and floors. The space plan changes as often as every 3 years. Finally, stuff is that which is not fixed, like furniture (Brand, 1994:13).

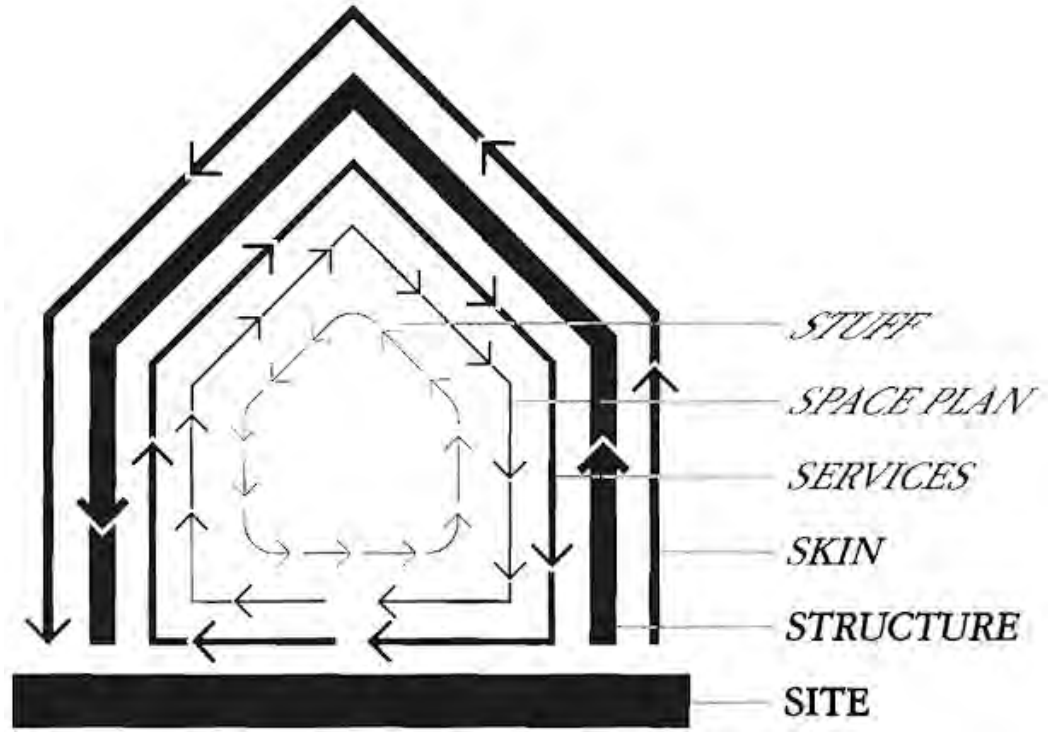


Figure 1: Shearing layers of change. (Brand 1994: 13)

It is important to note that Brand's framework focuses on the physical fabric of a building and does not consider intangible elements. For the site, for example, the changes to the immediate or greater context that occur over time are not taken into consideration. These kinds of changes can have huge spatial implications for the site, especially if adjacent buildings are removed or replaced.

The International Style had its own manifestation of how to deal with changes to a building over time, most notably in the Dom-in-o House, where Le Corbusier took advantage of reinforced concrete technology to create a column and slab structure that brought a certain freedom to the floor plan and façade, allowing them to be replaceable over time (Nuttgens, 1983:268).

In South Africa the modernist ideal of a free floor plan and façade was further explored by Hellmut Stauch (1910-1970) in the Meat Board Building. It was the first civic building in South Africa to be built in the International Style, relying heavily on Brazilian influences and showcasing adjustable *brise-soleil*, in situ concrete and colourful glass mosaic tiles (Gerneke, 1998:216). Stauch aimed to provide sub-divisible office space in the building, and achieved this by incorporating slender steel columns in the façade that disappear behind vertical fins that prevent early and late sun from entering the building. In this way the office spaces could be successfully sub-divided again and again in any form and there would be no pesky free-standing columns in the space (Stauch, 1951:13). It meant however that the structure was again incorporated with the façade but allowed a greater freedom for the floor plan.

Buildings are constantly changing and it is the responsibility of the designer to understand the forces that drive this change and how the process can be managed and designed. Brand's framework offers a comprehensive starting point for the development of a framework for remodelling within the understanding of old buildings as palimpsest. The understanding of formal intervention can be further expanded with the principles that Robert offers, in conjunction with Brand's shearing layers of change. Furthermore, remodelling forms an intrinsic part of the DNA of modernist column and slab structures, regardless of the designer's future remodelling intentions.

Heritage Practice

In this section an attempt will be made to set the current paradigm of heritage practice in South Africa, in order to establish a platform from which to build a framework for the conservation of modernist buildings. The National Heritage Resources Act and the *Burra Charter* will be explored as tools for the formal intervention on existing form.

In 1994 apartheid was abolished and Nelson Mandela became South Africa's first democratically elected president, ushering in a new age for the country that was applauded by the world as a human rights victory. The resultant cultural and political paradigm shift raised problematic questions: what is to be done with objects and places that invoke a contested and no longer prevalent paradigm? The following years saw an iconoclastic reaction to the previous paradigm, involving the removal of statues from public spaces and art from public buildings, and the renaming of places and streets in order to restore the old African names or to erase colonial, settler or apartheid appropriations (Bakker, 2010:48).

Most heritage practice in South Africa has a central theme of exclusion. Places of heritage often only focus on a singular social memory and deny the existence of other social narratives that exist in the same space and time. This practice of exclusion should be overturned and a practice that embraces inclusion and multivalence be undertaken (Bakker, 2011).

The Voortrekker Monument, dedicated to the Dutch pioneers, is an example of a singular narrative, as it only transmits the social memory of the Voortrekkers and excludes, for instance, the social memory of Mzilagazi's people who lived here before the Voortrekkers. South Africa's understanding of heritage should change to that of a shared and inclusive one. This is to say that South Africa's heritage should include the narratives and social memory of Mzilagazi, Kruger and Mandela alike, and should explore the complex interrelationships betwee in a critical yet non-biased way. It is of great importance to avoid the homogenisation of social identity and memory. Some attempts have been made to create a more inclusive narrative in projects like Freedom Park, the Boipatong Memorial and Youth Centre and the Hector Pietersen Museum.

Bakker's attitude towards a multivalent and inclusive heritage is strongly rooted in post-colonialism. According to Hosagrahar a post-colonial attitude towards architecture and urbanism offers a way of thinking about heritage and cultural landscapes that is simultaneously globally interconnected and situated in time and space (Hosagrahar, 2008:70). This means that there should be an understanding of all the historical narratives that play a role in the cultural significance of a place regardless of its qualitative expression; the good and the bad should be embraced and transmitted.

The new attitude towards heritage practice is best described as:

[…] an increased emphasis on intangible heritage as an agent in the production of places of commemoration, and for open-ended heritage places where the emphasis is not necessarily on achieving consensus, but where contradictions, complexity and conflicts, due to inevitable differences in interpretation, may be continuously explored and debated, and seen as an opportunity for an increase in cultural vibrancy and cultural tolerance (Bakker, 2010:54)

What does a multivalent and inclusive heritage practice look like?

Acts and Charters

Heritage practice in South Africa is largely driven by the National Heritage Resources Act as well as the *Burra Charter*.

The National Heritage Resources Act (Act No. 25 of 1999) describes the types of resources that are considered part of the national estate and continues to define the cultural significance that has to accompany the resource. These resources may include buildings, places, settlements, landscapes, archaeological sites, graves and movable objects. The National Heritage Resources Act lists nine possible values that a resource may possess for it to be considered culturally significant (1999:14):

- The perceived importance of the resource to a community or to the pattern of South Africa's history.
- Resources that are uncommon, rare or endangered, whether they are natural or cultural resources.
- The resource may possess the ability to contribute to an understanding of South Africa's heritage.
- The resource may demonstrate the principal characteristics of a certain class of heritage place or object.
- The resource could exhibit an aesthetic characteristic valued by a community or culture.
- The resource may have the ability to demonstrate technical or artistic achievements of its time period.
- The resource may be considered special to a community or cultural group for social, cultural or spiritual reasons.
- The resource could be associated with the life and work of a person, group or organisation that played an important role in the history of South Africa.
- The resource is considered significant if it relates to the history of slavery in South Africa (1999:14).

The Act also defines a grading system to distinguish the importance of places or objects. A Grade I resource possesses qualities that are exceptional, rendering it as nationally significant. A Grade II resource has special qualities that lead towards its provincial or regional importance. The final grade of resources, Grade III, simply entails other resources that are worthy of conservation (1999:18).

It is important to note that the National Heritage Resources Act defines 'cultural significance' as aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance, without assigning it to a specific culture (1999:8). It implies that all cultures are to be considered and are equally important and valuable, but it fails to be explicit in addressing multivalent and inclusive heritage practice.

While the National Heritage Resources Act provides us with an understanding of what is worth conserving as well as a legal framework, it does not truly describe the act of heritage conservation; for this we turn to *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*. The *Burra Charter* provides a comprehensive list of terminology as well as a variety of principles, processes and practices that can aid in the production of a framework and vocabulary of remodelling.

The *Burra Charter* outlines 34 articles that drive conservation practice. The following section covers a selection of articles and definitions that will serve as a basis for the investigation of adaptation. It is important to note that all of the articles expressed in the *Burra Charter* are extremely valuable, but only the most relevant articles can be discussed here (The *Burra Charter* 1999:2-7).

Maintenance, preservation, restoration, reconstruction and adaptation are all physical acts of conservation. These practices are extremely valuable for the development of a remodelling framework. At the core of these practices lies the idea of conservation with the aim to save or reveal cultural significance.

Maintenance is the fundamental conservation act of protective care. It is performed to retain the cultural significance inherent in the fabric and setting of a place. Regular maintenance can reduce the need for restoration and reconstruction and should be an integrated process of site management (Marquis-Kyle & Walker, 2004:56).

Preservation is the act of maintaining the existing state of a place in order to reduce the deterioration of its fabric or setting, in an attempt to slow the passage of time. It can be the most appropriate conservation strategy in cases where insufficient evidence is available to perform restoration or reconstruction, or in cases where the existing state constitutes evidence of cultural significance (Marquis-Kyle & Walker, 2004:58).

Restoration is the act of reinstating a previously known state of a place by reassembling existing components or

removing accretions. This strategy does not introduce new material to the fabric and is performed if enough evidence of an earlier state of the place is available. The process focuses on the removal of layers in order to reveal cultural significance (Marquis-Kyle & Walker, 2004:62).

Reconstruction is similar to restoration; however, this strategy allows for the introduction of new material to aid in the endeavour to reinstate a previously known state of the place. Many places periodically require the reconstruction or renewal of fabric in order to maintain significance, as is often necessary when a place is incomplete as a result of damage, alteration or natural deterioration (Marquis-Kyle & Walker, 2004:63).

Adaptation allows for the modification of a place to suit an existing or proposed use. This strategy is only acceptable when it has very little impact on the cultural significance of the place. Adaptation is sometimes necessary when a small loss or change in significant fabric can have a positive effect on the rest of the place. The Charter aims for absolutely no loss of significance, but recognises that it can be beneficial in some cases (Marquis-Kyle & Walker, 2004:64).

The *Burra Charter* also outlines several principles that are valuable for the development of a remodelling framework. The most notable principle is expressed in the Charter's third article, the cautious approach. It advocates 'changing as much as necessary but as little as possible'. This article promotes a responsible practice that respects the history of the place, its fabric, the historical and current use, its setting, and all associated meanings (Marquis-Kyle & Walker, 2004:20).

Often the cultural significance of a place is connected to its use, adding value and meaning to the community, and this memory of use should be respected. All past and present uses may be of value, and an attempt to retain the original use should be made (Marquis-Kyle & Walker, 2004:34).

Places can sometimes have a variety of meanings to and associations for different groups, especially places that are associated with political, cultural or spiritual events. This spectrum of meaning should be addressed and emphasised without favouring one over the other (Marquis-Kyle & Walker, 2004:50). This article reflects a post-colonial attitude towards heritage conservation practices and supports Bakker and Müller's quest for a multivalent and inclusive heritage practice.

A clear distinction between new work and existing form aids in the endeavour not to obscure the cultural significance of a place. New work should never dominate, as it will draw attention away from the existing place. Methods of distinguishing new work should be carefully considered (Marquis-Kyle & Walker, 2004:66) – a principle that also applies to reconstruction strategies, where new material should be identifiable upon closer inspection.

The *Burra Charter* gives a comprehensive understanding of heritage practices and all the various forms that these can embody. The *Burra Charter* explicitly encourages multivalent and inclusive heritage practice in its articles, while the National Heritage Resources Act allows for the opportunity to be inclusive without explicitly demanding it. It remains the heritage practitioner's responsibility to be multivalent and inclusionary in their investigation and engagement of a place.

Theoretical framework

"Lieux de mémoire [places of memory] only exist because of their capacity for metamorphosis, an endless recycling of their meaning" (Nora, 1989:19). This transformation is an important component in the continued preservation of places of cultural significance.

Theories of adaptation and theories of heritage practice often work in isolation. Even though they have very similar intentions, these arise from different points of view, one intending to save cultural significance and the other intending to save ecological value. It is intended in this theoretical framework to amalgamate them in order to create a rich and flexible tool for understanding the act of remodelling old buildings.

A series of diagrams were developed with Brand's diagram serving as a base. The first four diagrams incorporate definitions from the *Burra Charter* that describe the physical act of conservation: maintenance, preservation, restoration and reconstruction. Four additional diagrams focus on remodelling, incorporating Robert's four principles: the building within, the building over, the building around and the building alongside.

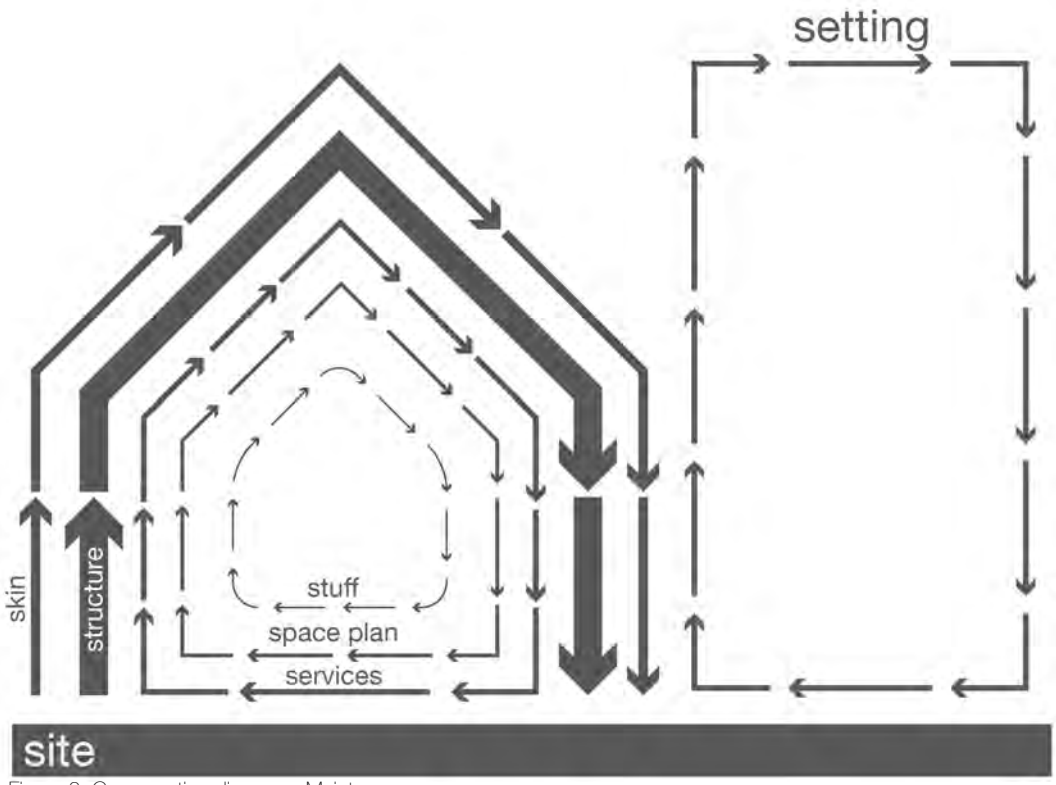


Figure 2: Conservation diagram - Maintenance.

Maintenance is almost a pure representation of Brand's six S's. There are two changes to the original diagram: the first is that all the processes now flow in a clockwise direction to indicate the natural passage of time. A seventh S is added that sits outside the building and represents Setting, defined by the ***Burra Charter*** as the area around a place, which may include the visual catchment. The setting adds a contextual dimension omitted by site. It broadens the understanding of how a place changes over time and includes changes to streetscapes, vistas, landscapes and surrounding buildings.

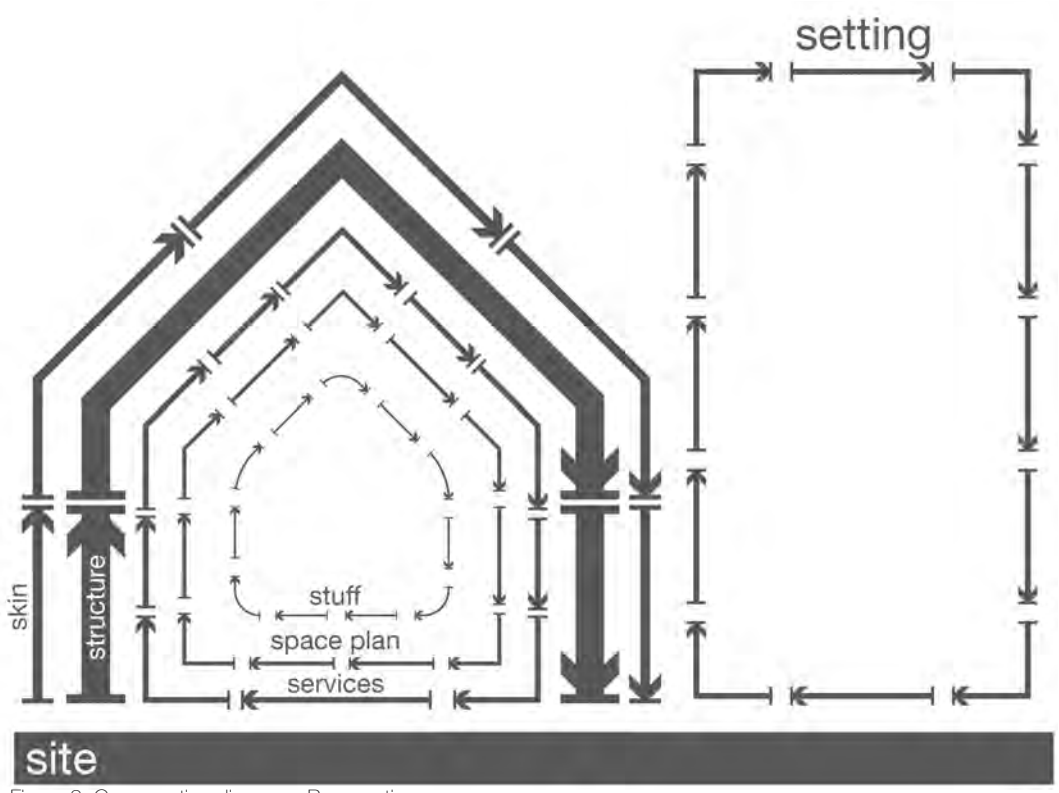


Figure 3: Conservation diagram - Preservation.

Preservation sees the flow in Brand's diagram come to a complete standstill. It is the main focus of preservation practice, i.e. to attempt to stop the passage of time and preserve a building in its current state, and is also applied to the setting in some cases, especially where cultural landscapes are concerned.

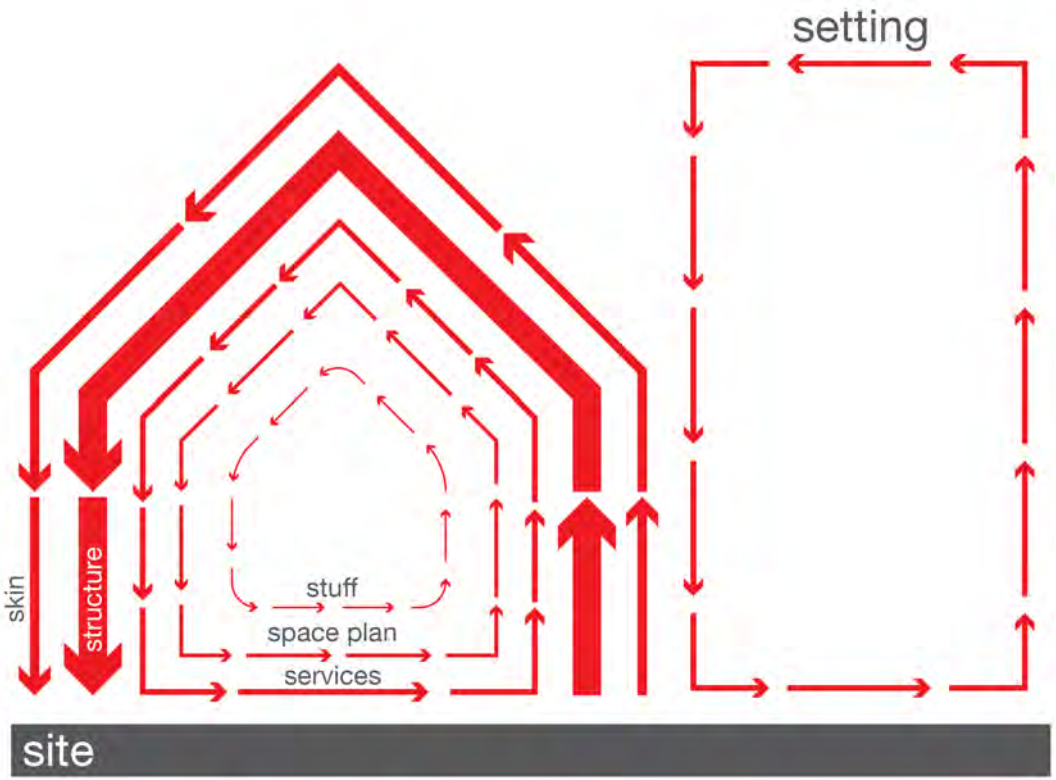


Figure 4: Conservation diagram - Restoration.

Restoration sees the flow of Brand's diagram reversed completely, in what is effectively an attempt to reverse time. Again, this reversal of time could also be applied to the setting.

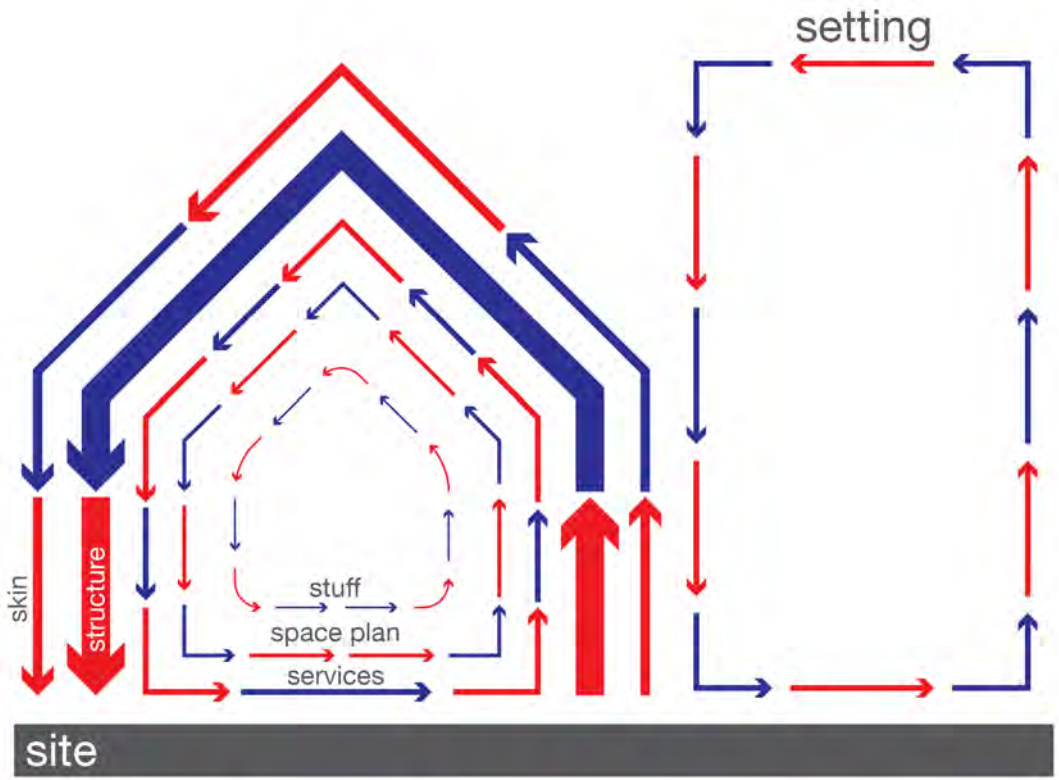


Figure 5: Conservation diagram - Reconstruction.

Reconstruction once again sees the flow of Brand's diagram reversed, this time however including blue lines to indicate the introduction of new material.

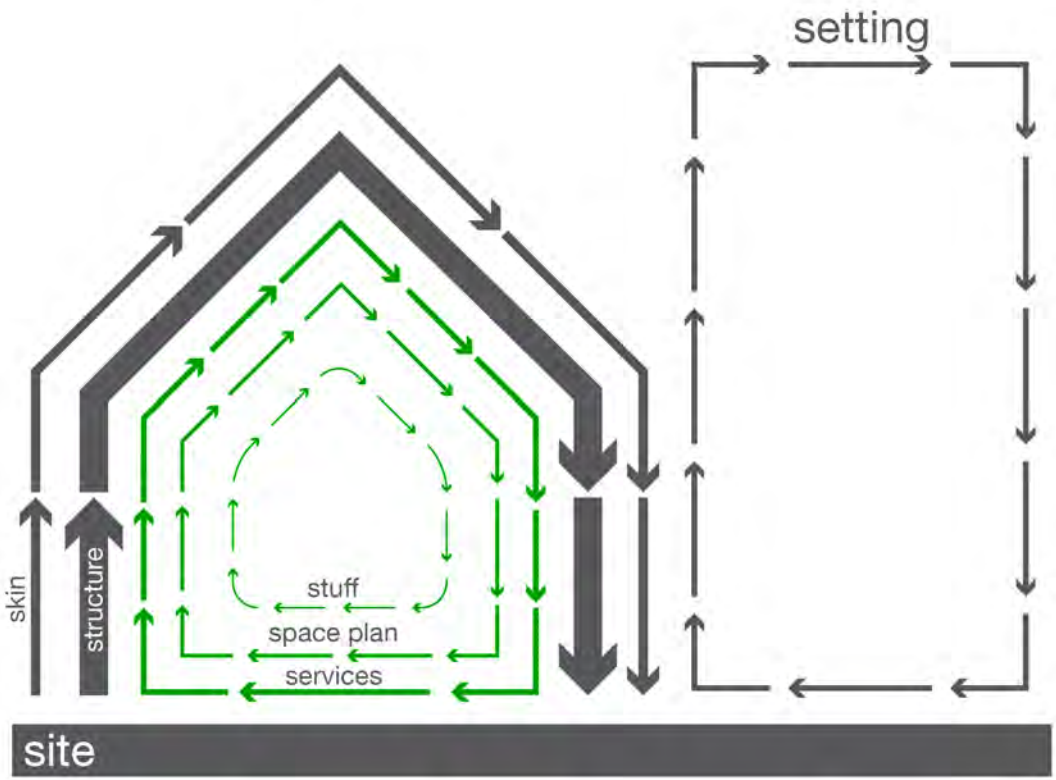


Figure 6: Remodelling diagram - the building within.

The first remodelling diagram superimposes Robert's idea of 'the building within' onto Brand's diagram. This practice only engages with the inner layers and leaves the structure and skin in its original form, and has no effect on the setting.

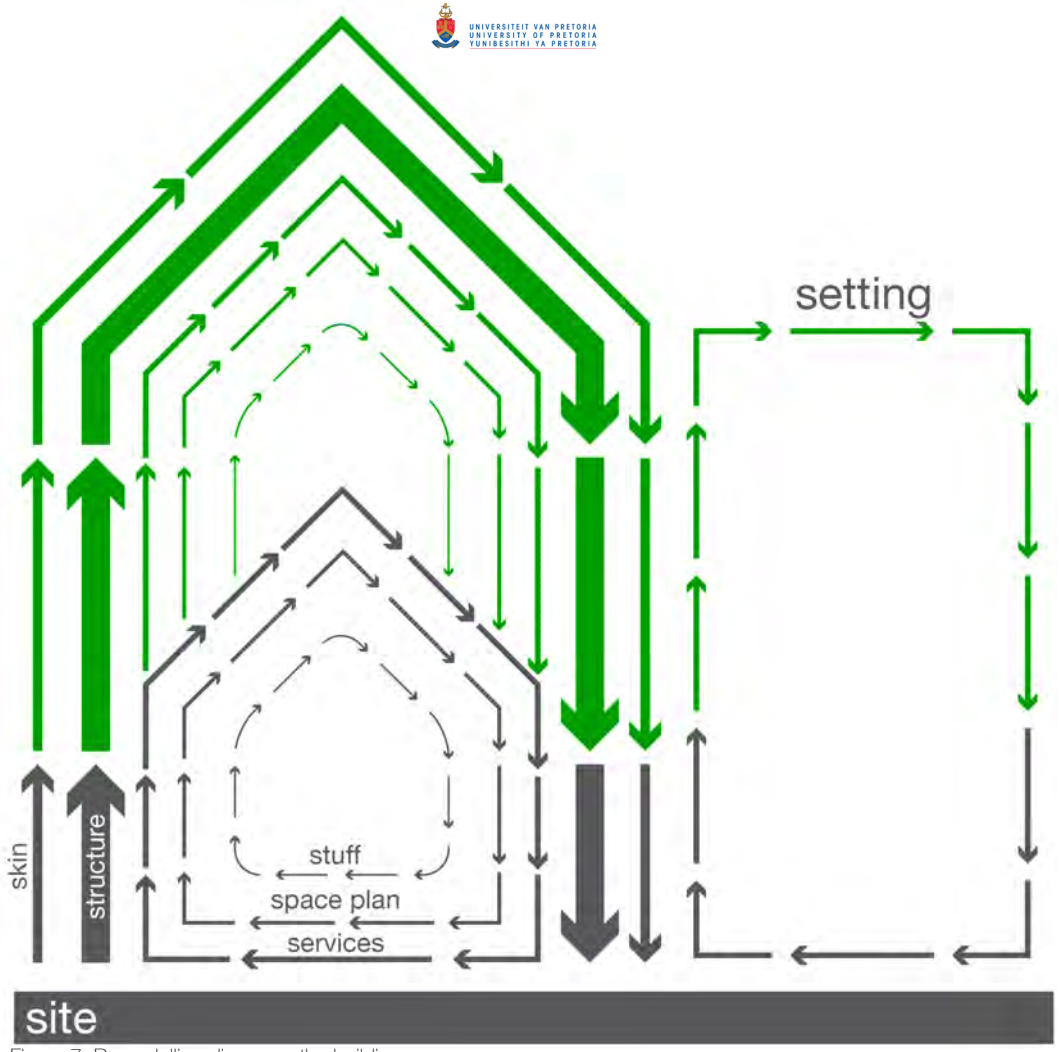


Figure 7: Remodelling diagram - the building over.

The second remodelling diagram superimposes Robert's idea of 'the building over' onto Brand's diagram. This practice aims to extend the structure and skin without affecting the site. The practice adds a new set of layers that can interact with the exiting building, but largely leaves the existing building unaffected. The setting is visually altered in a minimal way because of the additional height that is added to the building.

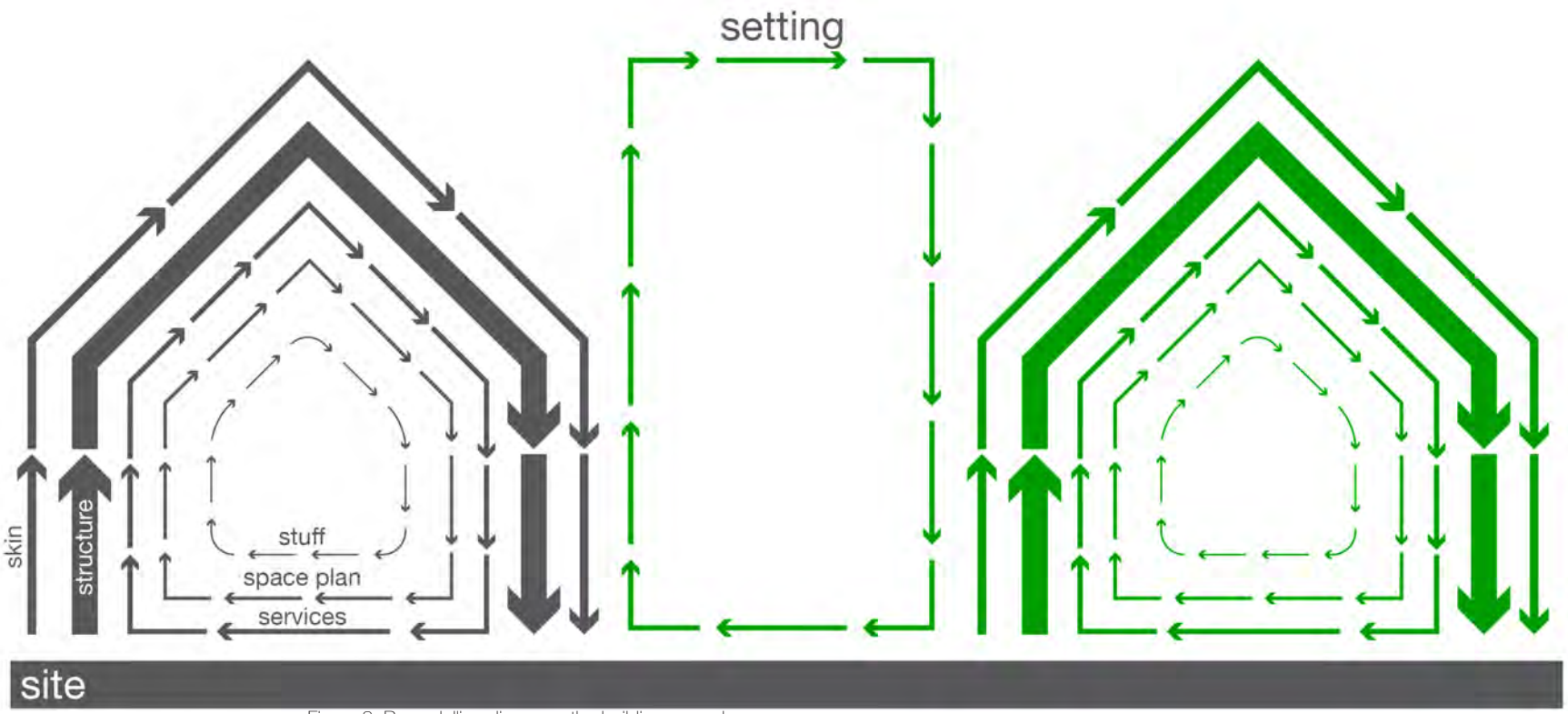


Figure 8: Remodelling diagram - the building around.

The third remodelling diagram superimposes Robert's idea of 'the building around' onto Brand's diagram. This practice focuses on adding a new intervention that does not affect any of the existing building's layers, but does redefine the setting to a large degree.

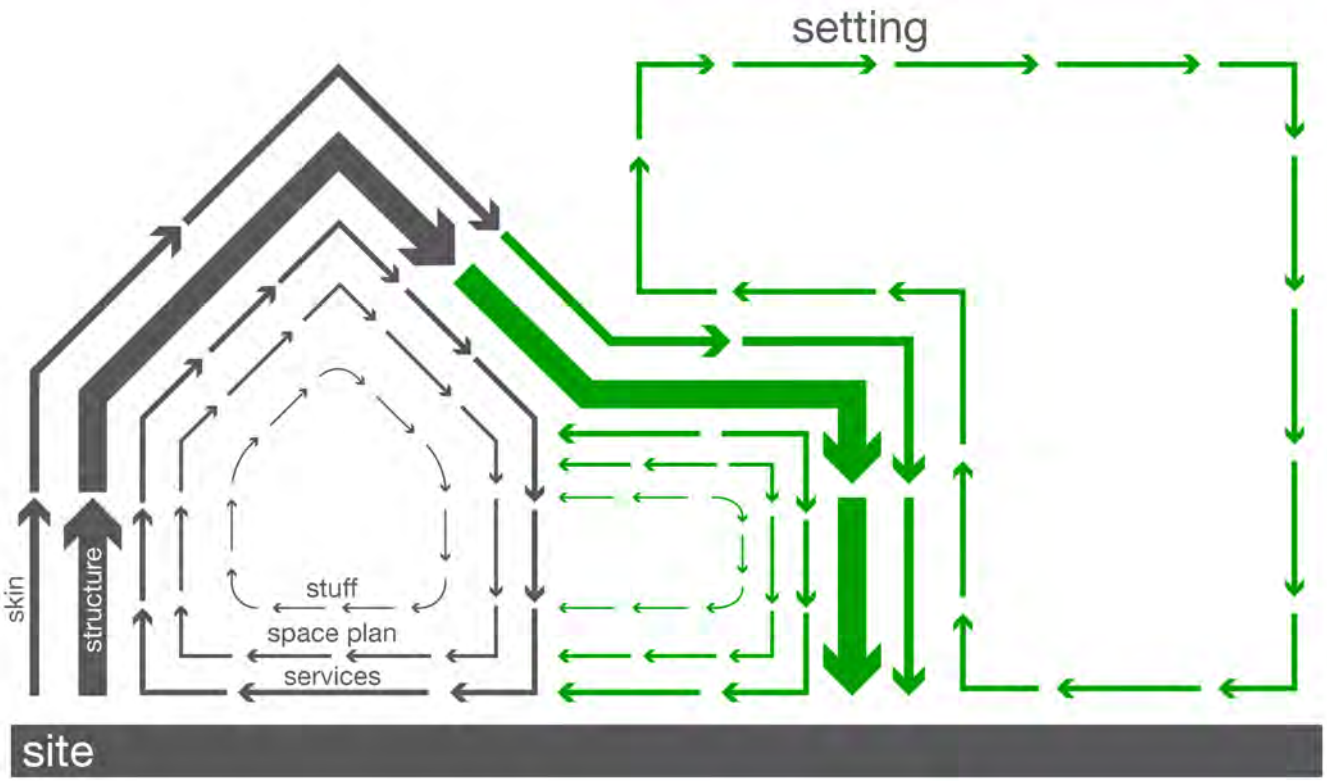


Figure 9: Remodelling diagram - the building alongside.

The fourth and final remodelling diagram superimposes Robert's idea of 'the building alongside' onto Brand's diagram. This practice aims to formally extend the existing with a new addition. It partially interacts with all the existing layers, and again redefines the setting to a large degree. Thought was given to add an additional diagram to illustrate the idea of 'the building through'; however, this would just have been a larger scale of interaction as illustrated in the building alongside, one that simply protrudes from more than one side of the building, effectively only combining 'the building alongside' and 'the building within'.

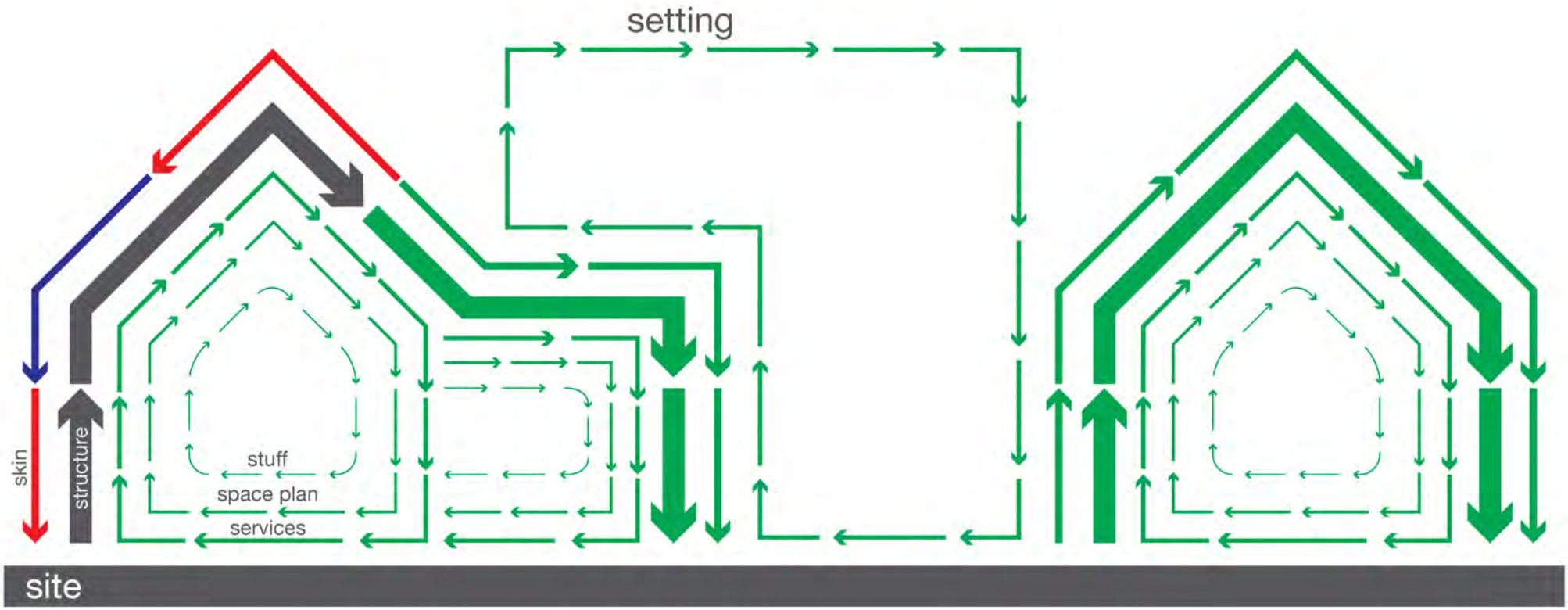


Figure 10: A comprehensive strategy for the conservation of a place.

These diagrams represent the active practices of conservation, which are seldom seen in isolation and often work together as a strategy for the conservation of a place. The ninth diagram illustrates how some of these practices can interact and together form a comprehensive strategy for the conservation of a place. This diagram sees the combination of 'the building within', 'the building around', 'the building alongside', 'restoration', 'reconstruction' and 'maintenance' to form a strategy for formal intervention upon existing form, simultaneously embracing ideas of heritage conservation and ideas of remodelling.

The theoretical framework discussed here will be further explored and applied to the Extramural Building in the design development.

For Machado “the past pervades the building and the building itself becomes the primary level of the context of intervention” (1976:49); therefore the act of remodelling is an act of engaging in the history of a place, unifying the theories of adaptation and heritage practice. Machado’s conceptions are the glue that binds adaptation and heritage under a single term, ‘remodelling’. Palimpsest becomes an inherent component of the DNA of remodelling.

Brand, Robert, the National Heritage Resources Act and the *Burra Charter* are all valuable resources that contribute a great deal to their respective fields. From these resources a framework of practices emerged that is useful for the understanding and development of old buildings. These practices were expressed in a series of diagrams that represent a spectrum of possibilities that should allow for an appropriate formal engagement with existing form. The framework also developed a vocabulary of remodelling that includes the definitions of Brand’s six S’s, Machado’s definition of remodelling, Robert’s four principles, and some definitions from the *Burra Charter*. These definitions are very precise in what they mean and help to avoid confusion. The framework also includes some guiding principles from the *Burra Charter* that will aid in decision-making.

In conclusion, the theoretical framework consists of a series of practices illustrated by diagrams, a vocabulary of definitions, and a set of principles to guide the process of remodelling.

Figure 11: Shattered, but not broken.

Theoretical Precedent

Figure 12: South Boiler House interior

Figure 13: link to Turbine Hall

Architect
TPSP Architects

Project
Turbine Square

Program
AngloGold Ashanti Head Office

Location
Newtown, Johannesburg

Gauteng, South Africa

Year
1991

Newtown's Turbine Hall and North Boiler House were built in 1927, with a South Boiler House added in 1934. The buildings fell into disuse in 1942 when the Orlando Power Station started to supply the city with electricity. In 1991, in an attempt to promote urban renewal, the Johannesburg City Council called for proposals to engage with the site as a means to reinvigorate the precinct that included the Reserve Bank, the Stock Exchangeand a variety of small traders. This task was taken up by Guy Steenekamp of TPSP Architects (Nutall, 2009:41).

Ultimately, the North Boiler House was demolished to make way for the new AngloGold Ashanti Building that linked to both the remaining buildings. The South Boiler House was cleared out and two structures were inserted along the bays that flank its lofty central space. The Turbine Hall needed some reconstruction work to its structure and skin, while patches of the patina that had built up over the years were left intact. A glass box sits at an angle to the existing structure of the Turbine Hall, allowing the original form of the building to be clearly visible, while providing the necessary multi-level office space (Nutall, 2009:41-43).

The Turbine Square project serves as a prime example of the variety of conservation and remodelling practices that are required to form a comprehensive strategy to engage with old buildings. These conservation practices include maintenance, restoration and reconstruction, and make use of Philippe Robert's 'the building within', 'the building around' as well as 'the building alongside' (Robert, 1989) as remodelling strategies.

Figure 14: Befor renovation

Figure 15: After renovation

Figure 16: Tshwane House under construction.

Context

In this chapter the contextual issues relevant to the dissertation are covered in two sections. The first section investigates and describes the historical context of the project, starting with a general historical overview and finding its way down to the specific histories that are associated with the Extramural Building. The historical context culminates in a written statement of significance for the Extramural Building. The second section deals with the physical context and primarily focuses on the problems that plague Pretoria. The investigation will look at existing development plans, the overall structure of the city, and how the city is currently used, culminating in the development of an urban framework.

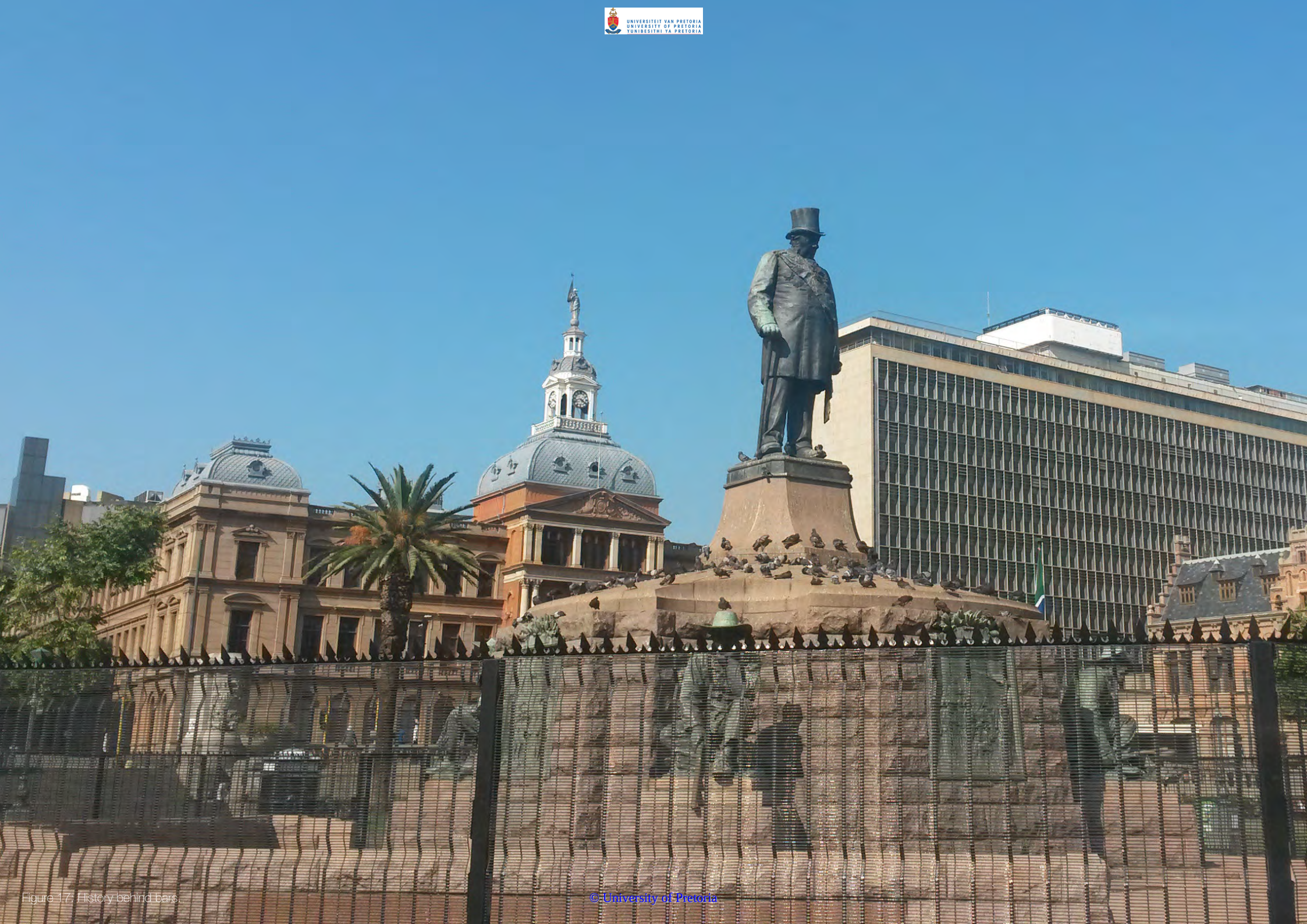


Figure 17: History behind bars.

Historical Context

The aim with the historical overview is to gain a political and architectural understanding of the context within a post-colonial paradigm, viewing heritage and cultural landscapes as globally interconnected as well as situated in time and space.

Pretoria has undergone many cultural and spatial paradigm shifts. The land was used as cattle grazing fields for the ba-Kwena people during the early 1800s. The situation took a militant turn when Mzilagazi drove out the ba-Kwena in 1825, after which he built two military kraals in the Moot valley along the Apies River (Preller, 1938:17). With the arrival of the Voortrekkers from 1836 onward the land was used for farmsteads, around which a town slowly started to develop (Jordaan, 1989:27).

The city of Pretoria was founded in 1855 by M.W. Pretorius (Le Roux & Holm, 1989:30). From 1877 onwards Pretoria's architectural legacy is largely the result of President Paul Kruger's vision executed by Sytze Wopkes Wierda (1839-1911), who would lead the *Departement Publieke Werken* [Department of Public Works] of South Africa for the coming years (Le Roux & Holm, 1989:30). This period saw the rise of many important buildings, including the Palace of Justice and the Government Printing Works (Rex, 1974:420). The gold rush of the 1890s ushered in a period of economic growth that was shortly followed by the Anglo-Boer War. The early 1900s was marked by British colonialism and saw imported architects like Herbert Baker, alongside the Department of Public Works, produce symbolically charged artefacts like the Union Buildings, in an architectural idiom known today as the Baker School (Fisher, 1999:224).

Pretoria Regionalism began to take root in the 1930s, with architects like Gerard Moerdijk who designed the Merensky Library, completed in 1938 and a forerunner of the Voortrekker Monument in terms of form and use of materials (Fisher, 1999:225). In the 1920s a Brick Tradition started to emerge in Pretoria, reaching its apex in the 1960s. This tradition was championed by the Department of Public Works, but originated with Prussian architect Karl Friedrich Schinkel who established the respectability of the material (Fisher, 1999:225).

The International Style gained a foothold in South Africa during the 1930s through the Transvaal Group, led by Rex Martienssen. The Second World War suspended development in South Africa to a large degree, essentially splitting modernism into pre-war and post-war eras (Fisher, Le Roux, Murray & Sanders, 2003:69). The Pretoria School of Architecture was established in 1943, the same year that the Museum of Modern Art in New York hosted the 'Brazil Builds' exhibition, launching modernism into the public realm. The result was buildings like Helmut Stauch's Meat Board Building of 1951 and Karl Jooste's Aula Building of 1958, to name but a few (Fisher, 1999:229).

The late 1980s saw the rise of Post-Modernism, championed by Samuel Pauw in Pretoria. He was responsible for the Human Sciences Research Council Building in the city centre as well as the Faculty of Economic Sciences building on the University of Pretoria campus (Fisher, 1999:234).

South Africa's first democratic election in 1994 marked the end of apartheid, bringing about a huge shift in the national identity. The Rainbow Nation was born. South Africa is still experimenting to find an appropriate post-apartheid aesthetic, an exploration that can be seen in projects like Freedom Park, the Boipatong Memorial and Youth Centre and the Hector Pietersen Museum, mentioned earlier as examples of post-colonial expression.

The history of Pretoria is a rich tapestry that consists of many narrative yarns that interweave delicately with one another. This overview illustrates the complexities of South Africa's history. It demonstrates how it is connected to global forces while simultaneously attempting to navigate its national and local narratives. While many of the narrative threads are briefly mentioned, it is by no means a full and true account of all the threads and interpretations that co-exist in South Africa. Additional accounts from the various cultures of South Africa are needed to complete this narrative tapestry.

The dissertation is placed here within the historical continuum of architecture – in a time period marked by a post-apartheid and post-colonial navigation of contesting values, styles and ideas that attempt to represent this rainbow nation.

Brian Sandrock (1925-1990)

Brian Alan Sandrock was born in Bloemfontein on the 10th of November 1925. He attended Kimberley Boys' High School and completed his architectural training at the University of Pretoria in 1952. In 1953, shortly after graduating, he started his own firm, Brian Sandrock Architects. He contributed to the educational realm by presenting History as well as Design at the University of Pretoria from 1954 to 1958. He passed away on the 20th of May 1990 (Artefacts, 2017), leaving behind an incredible legacy that includes the training of several practicing architects and an impressive catalogue of buildings.

The majority of Sandrock's buildings were commissioned by his *alma mater*, the University of Pretoria. These include the Musaion (1958), the Administration Building (1968) and the Humanities Tower (1977), to name but a few (Artefacts, 2017). The Extramural Building was also one of these, built in 1960 for the University's Extramural Department (University of Pretoria, 1960:263).

Arguably the most notable project by Sandrock is the Theo van Wijk Building (1972) for the University of South Africa, also known as UNISA (Artefacts, 2017). This building defines the southern entrance to the city. It is highly visible from Fountains Circle as one enters the city from the south and has earned itself the colloquial name "The Singer Sewing Machine" by the inhabitants of the city (Fisher, 1999:234).

Brian Sandrock has undeniably played a big role in the shaping of Pretoria's built environment.

The Extramural Department

Figure 18: Extramural Building, University of Pretoria. (Sandrock, 1969:28).

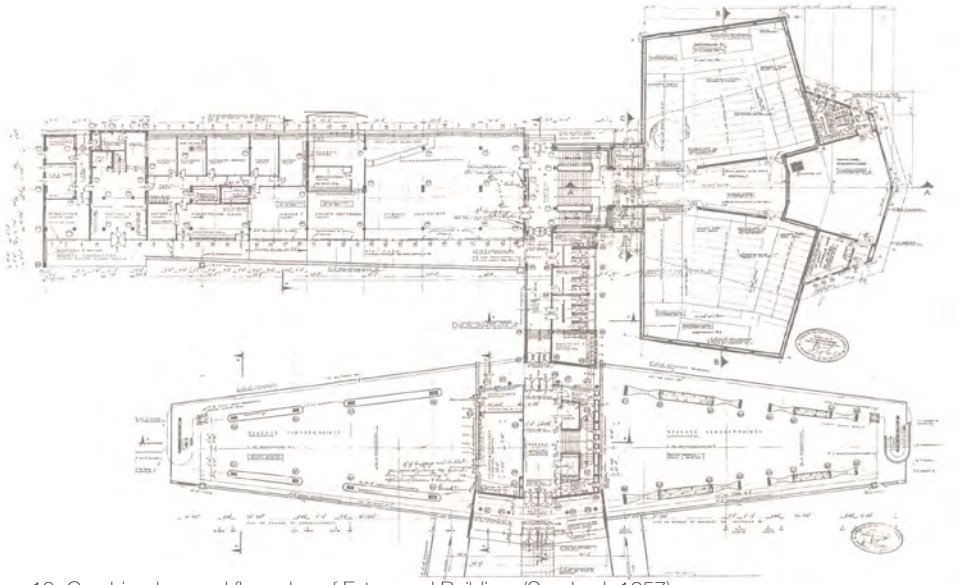


Figure 19: Combined ground floor plan of Extramural Building. (Sandrock 1957)

Founded by Prof. WA Macfadyen, Prof. AC Paterson and Dr JE Holloway in 1919, the Extramural Department of the University of Pretoria had humble beginnings. In the living room of a rented house in Minnaar Street and a borrowed classroom at the Hamilton School in Visagie Street they presented classes in Law and Economics to a small group of working adults. The department occupied the office space of the Erasmus Building on Church Square from 1920 to 1925. It was here in August of 1923 where the department held its first public lecture, by WH Clegg, the director of the South African Reserve Bank. These public lectures contributed to the popularity of the department and led to its rapid growth (University of Pretoria, 1960:249-252).

By 1950 the department had grown so much that a new building was needed urgently (University of Pretoria, 1960:259-261). In 1956 the decision was made to purchase six adjacent plots in Proes Street to build a bigger facility that could accommodate this growth. Brian Sandrock Architects were commissioned to design a new facility in 1957. The first phase of the building was completed in 1959, and students and lecturers started attending classes there in 1960 (University of Pretoria, 1960:262-263).

The Extramural Department used the building until 1986. At some point thereafter the ownership of the building was transferred to the Department of Public Works, who made it available to the Justice College as its head office. The college occupied the building until 2010 and it has been vacant since.

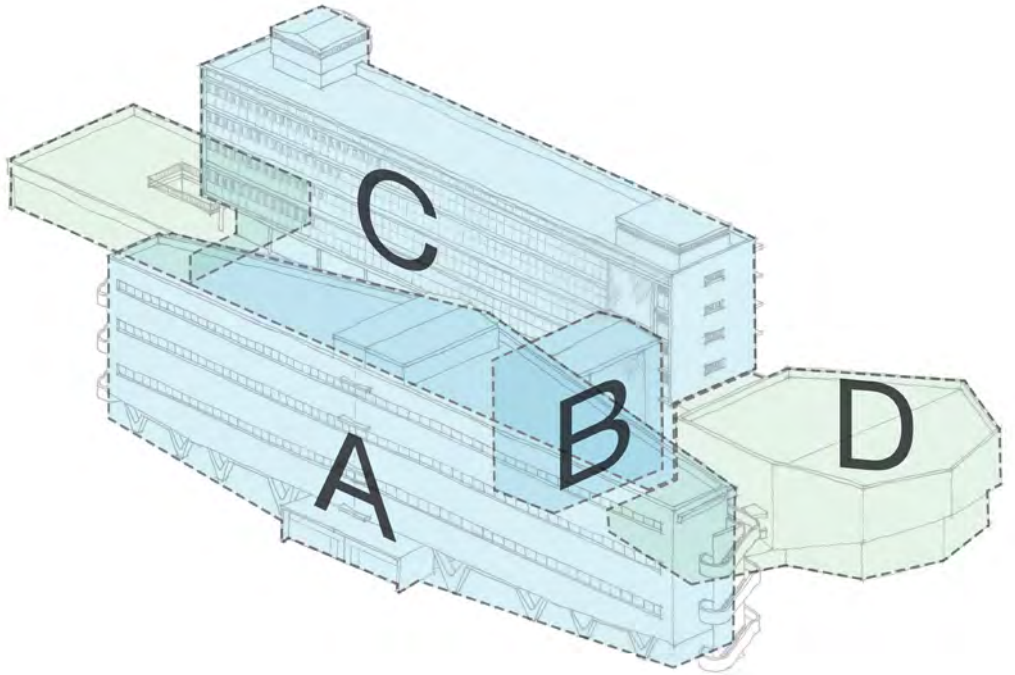


Figure 20: Extramural Building organisation diagram.

The Extramural Building

The first phase of the building consisted of three parts, Blocks A, B and C. A second phase of construction was drawn up in 1964 that included an extension to the ground floor of the C-block and a new auditorium, the D-block. The organisation of the building suggests a hierarchy of importance, placing the A-block closest to the street, indicating that education is the most important issue, while placing the C-block behind it, giving administration a back seat.

The A-block contains a series of sloped lecture halls, stacked on top of each other, that reads as a three-storey symmetrical box that is widest at the centre and narrower towards the ends. This mass, elevated on V-shaped columns, is clad in light-blue tiles that wrap around to the east and west sides. Three slanted strips of steel-framed windows adorn the southern façade. The northern façade is occupied by three sloped walkways with white balustrade walls, exposed columns, face-brick walls and clerestory windows. Open stairs can be found to the east and west of this block. The entrance is tucked underneath the main mass and extends towards the street.

The B-block is essentially a connecting piece of four storeys that contains a walkway and ablution block connecting the A and B blocks with each other. The eastern and western walls are clad with triangular Briti tiles that allow the facades to breathe.

The C-block is a six-storey column and slab structure divided into three sections: a top, middle and bottom. The façade of the bottom portion is divided into intermittent panels of face-brick walls, painted walls, large square windows and clerestory windows. The middle section is completely glazed on the inside of the column grid. The top portion consists of four storeys with a skin on the outside of the column grid. Each floor is divided into two horizontal strips of a single-leaf brick wall clad with light-blue painted steel panels and a strip of glazing. A circulation shaft is expressed on the northern façade with a face-brick wall that extends the entire height of the building, punctured by a pattern of small square windows.

The D-block is located east of the C-block and contains three auditoria. The two smaller auditoria are half sunken into the ground and form a plinth of face brick. The floor of this plinth has four precast panels inset with glass blocks to provide natural light for the two sunken auditoria. The larger third auditorium sits on top of the other two and cantilevers out towards the east – a faceted jewel-like black box clad with the same light-blue tiles as the A-block (Le Roux & Botes, 1991:19).

Figure 21: A-block southern façade

Figure 22: A-block extererior stairs.

Figure 23: First floor balcony C-block.

Statement of Significance

The *Burra Charter* offers some guidance on writing a statement of cultural significance. The charter lists five values that contribute to the cultural significance of a place. These values are: aesthetic, historic, scientific, social and spiritual. Aesthetic value focuses on the sensory perception of a place, its overall appearance, its value as a landmark, its stylistic character, and the creative achievement of the place. Historic value places emphasis on the narratives and people associated with the place. Scientific value focuses on the rarity, quality and representativeness of a place with regards to its type. The social value of a place is inherent in its associations with a community or cultural group. Spiritual value attempts to account for the intangible qualities of a place that relate to spiritual belief systems, knowledge, or art of a community or cultural group. Many of the *Burra Charter*'s definitions are worth taking note of for the purpose of a written statement of cultural significance (Marquis-Kyle & Walker, 2004:80).

[SOS] a cry for help

Historic value

The Extramural Building has an important association with the life and work of Brian Sandrock as well as the University of Pretoria. It forms an important part of the development of Pretoria, as well as the University of Pretoria and its Extramural Department. Brian Sandrock has undeniably played a big role in the shaping of Pretoria's built environment, and the same can be said of the University of Pretoria. Many of Sandrock's buildings are known throughout the city by humorous nicknames assigned by the population.

Aesthetic value

The Extramural Building is one of Sandrock's earlier works that displays a point of transition between the International Style and New Brutalism. The building expresses many of the modernist ideals and is original and exemplary of its time and place. Form absolutely follows function in this building, resulting in exciting geometric expressions of lecture halls and auditoria while demonstrating the architect's rational approach to design. Slanted ribbon windows adorn the street façade of the building, a transformation of a modernist ideal that alludes to the function within. Brutalist V-shaped columns expressively allow for the mass of the lecture halls to float above the ground. A column and slab structure frees the floor plan and façade of the office block, allowing the façade to be expressed with a pattern of steel-frame windows and light-blue steel panels. A great deal of aesthetic value is contained in the Extramural Building.

Scientific value

The Extramural Building is at once a type of educational building and a type of office building. It offers research opportunities with regards to the conservation, restoration and adaptation of modernist buildings, as well as for research on how this type of building performs climatically. The building has the potential to reveal evidence that may contribute to an understanding of scientific aspects of our cultural heritage with regards to its construction technology and innovation. The building is a rare example of its time and place. The architectural expression of the lecture halls and auditorium is original and imaginative, like no other building in Pretoria. The office block is generic in its construction and floor plan, but presents an uncommon façade. The urban context intensifies the building's uniqueness and strengthens it as a unique symbol of education in the city.

Social value

The Extramural Building has a strong association with the educational community in Pretoria. Many students and educational staff occupied its halls over its lifetime and it was once an integral part of the social fabric of the city. The building also provided a meaningful service to the surrounding community by presenting public lectures and events. It is also important to mention that the building contributed to the city's nightlife, as the bulk of its students worked during the day and could only attend classes in the evening.

Spiritual value

The Extramural Building has some spiritual value that can be attributed to its educational function and the public lectures and art exhibitions that were hosted within its spaces. These inspired the people of the city, as well as its students, to better their lives through education.

Vulnerability

The Extramural Building is at a sensitive stage of its life cycle. The building is fifty-eight years old, only two years short of protection in terms of section 34(1) of the National Heritage Resources Act of 1999 (Act No. 25 of 1999) (NHRA, 1999). The site and building are in a state of disrepair. Considerable damage has already been done to the physical fabric of the building, and its surrounding landscape is neglected. Substantial amounts of vandalism and theft have reduced the building to a shell. Development pressure in the city poses a significant threat to the building as the city becomes densified and space becomes ever scarcer. A great need exists for contemporary office space as staff numbers increase alongside the development of the city.

Figure 24: March 2017.

Figure 25: April 2017.

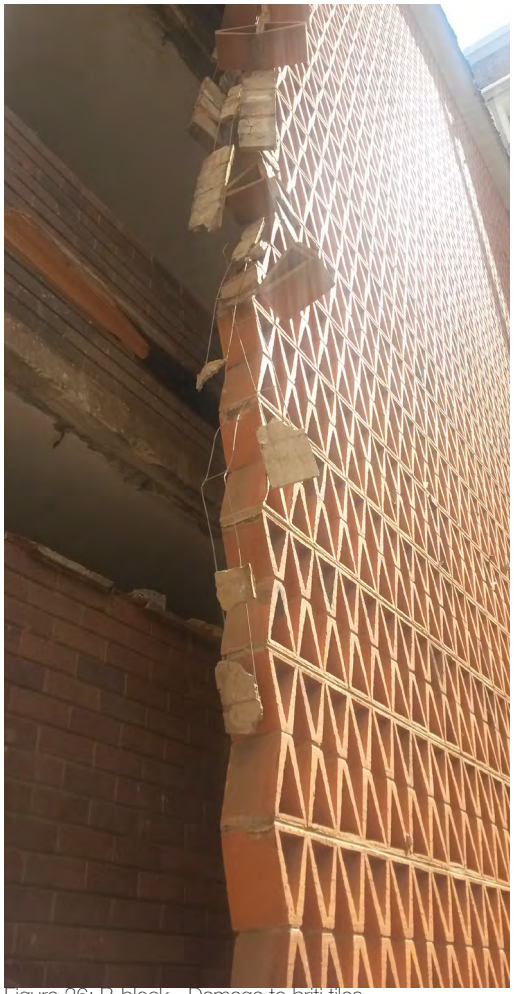


Figure 26: B-block - Damage to briti tiles.

Figure 27: A-block - damage to northern facade.

Figure 28: C-block - Damage to southern facade.

Current Condition

During April of 2017 the Extramural Building was illegally vandalised and stripped of all valuable materials, a process that is commonly referred to as Building Mining. In this section it will be attempted to describe the extent of the damage through the lens of Stewart Brand's definitions of site, structure, skin, services, space plan and stuff.

The site is largely neglected. Trenches were dug to remove underground steel pipes, leading to a great deal of damage to the landscaping as well as several surface beds.

The concrete structure remains largely intact and sound.

The skin saw a considerable amount of damage. All window and door frames have been removed. The south-facing façade of the A-block is largely unaffected, while the brickwork on the north-facing skin has been damaged. Some of the sheeting on the roof of the A-block has also been removed. The Briti tiles on the B-block have been badly damaged. The north- and south-facing skins of the C-block have been completely removed. Some damage can also be seen on the skin of the D-block due to the removal of steel balustrades. The joinery that forms the internal skin of the D-block has been removed or used as firewood; this is also true for the internal skin of the A-block.

All services have been removed, including all steel and copper pipes, sanitary fixtures, electrical fixtures and wiring.

The space plan of the A-block and C-block can still be seen. Some of the non-structural interior walls of the C-Block have been damaged or completely destroyed, effectively removing the space plan on most of the levels. Large volumes of building rubble can be found all over the site.

All furniture and fixtures have been destroyed or removed. Stuff with little to no value was simply discarded and litters the entire site of the building.

The Extramural Building has essentially been reduced to a shell. The extent of the damage has definitely affected the cultural significance of the place. While the overall form of the building is still intact, its aesthetic value has been diminished as a result of damage to its skin. A hidden opportunity sprouts from the current condition of the building: it forces intervention from stakeholders and allows many opportunities for remodelling and reinterpretation.

Figure 29: C-block - Damage to northern façade.

Figure 30: C-block - Damage to auditorium entrance.

In 2003 Fisher and his co-authors stated that "many early modern icons still stand, but this does not mean they are not threatened" (2003:73). The Meat Board Building is still in use, but has been battered and bruised. The Transvaal Provincial Administration Building has been abandoned for quite some time and is undergoing treatment that reflects that of the Extramural Building (Fisher ***et al.***, 2003:73). Consequently Fisher's statement requires an alteration: it should rather state that most modern icons are ***most definitely*** threatened.

Figure 31: C-block - Damage to first floor.

Figure 32: C-block - Damage to southern façade.

The conservation and documentation of Modernist buildings have been a growing concern, not only for South Africa but also for the international community, because these buildings often embody physical proof of international architectural relationships. In South Africa modernist buildings are often overlooked as a result of the lack of proper documentation, leading to possible demolition and redevelopment (Fisher ***et al.***, 2003:74). These buildings often represent a narrative yarn that is associated with the history of apartheid in South Africa and should therefore, in the spirit of post-colonialism, be conserved for their value of adding to the multivalent and inclusive history of our country.

The narrative of the Extramural Building does not directly relate to the history of apartheid, but does contribute to Pretoria's rich history and interweaves delicately with the other narratives that exist. The building is on the verge of being lost and intervention is immediately necessary before the building reaches the point where it can no longer be salvaged.

Figure 33: South-west view of Pretoria from the Extramural Building's roof.

Physical Context

The physical context focuses on the problems prevalent in Pretoria. Existing development plans, the overall structure of the city, and how the city is currently used will be investigated to culminate in the development of an urban framework. The Tshwane Inner City Regeneration framework will be used as the starting point for an urban scale investigation. The Civic Precinct is further developed to improve the public realm and unlock the social potential of the chosen site.

Urban Issue and intention

Public space in Pretoria is often limited to street edges, affording few opportunities to enter the blocks; thus pedestrians are banished to the sidewalk, and forced to navigate the city alongside vehicular traffic. Similarly, public buildings are limited and often not very accessible, affording access to only a select few. These situations limit city dwellers in the way they can engage with the city.

Lefebvre developed the concept of 'the right to the city' during the 1960s. The 'right to the city' hinges on an understanding of who the right applies to. According to Purcell, formal enfranchisement is based on citizenship (2002:102); the right to vote, the right to healthcare and the right to public services are all a matter of citizenship. In contrast to enfranchisement through citizenship, the right to the city aims to empower urban inhabitants. Lefebvre calls these inhabitants "citadins". Combining the enfranchisement gained through citizenship with that of the denizen, enfranchisement is earned through acting out the routine of day to day life in urban environments (2002:102).

The first right is the right to participation. Harvey (2012:4) describes this right as more than the right to access the resources a city has to offer, and more than the right to participate in the daily activities taking place there. He describes it as a collective, instead of individual, right to make the city after our "hearts' desire". The second right is the right to appropriate, i.e. the right of citadins to physically access, occupy and use existing urban space. This right extends further than the right of occupying existing urban space, and also includes the right to produce urban space that meets the needs of the citadins (Purcell, 2002:103).

Tshwane Inner City Regeneration Framework

The City of Tshwane developed a framework for the regeneration of the inner city. This framework aims to strengthen the administrative capital of South Africa through an ambitious long-term project. It outlines a series of precincts and how they relate to landmarks, gateways and the physical boundaries of the city. The West Capital precinct focuses on the provision of social facilities and housing in order to complement inner city uses and functions. The Salvokop precinct aims to be a mixed-use and government precinct and intends to enhance the importance of Freedom Park and improve its accessibility. The Government Boulevard will accommodate head offices and agencies for the government as well as for the City of Tshwane. The Ceremonial Boulevard will create a spine laden with historical significance running through the heart of the city. The Nelson Mandela Green Corridor precinct focuses on the development of Nelson Mandela Drive and the upgrading and damming of the Apies River to produce a visually pleasing promenade (South Africa, 2015:3-58).

The Civic Precinct overlaps with the Ceremonial Boulevard and includes the Volkskas Building, the State Theatre, Lilian Ngoyi Square, the Women's Museum, the Sammy Marks Building, the brand new Tshwane House and the Extramural Building. New offices for government services as well as an extended public space network are planned for this precinct (Department of Public Works (DPW), 2015:37). The Civic Precinct will be the focus of the dissertation's urban framework and will be discussed later in this paper.

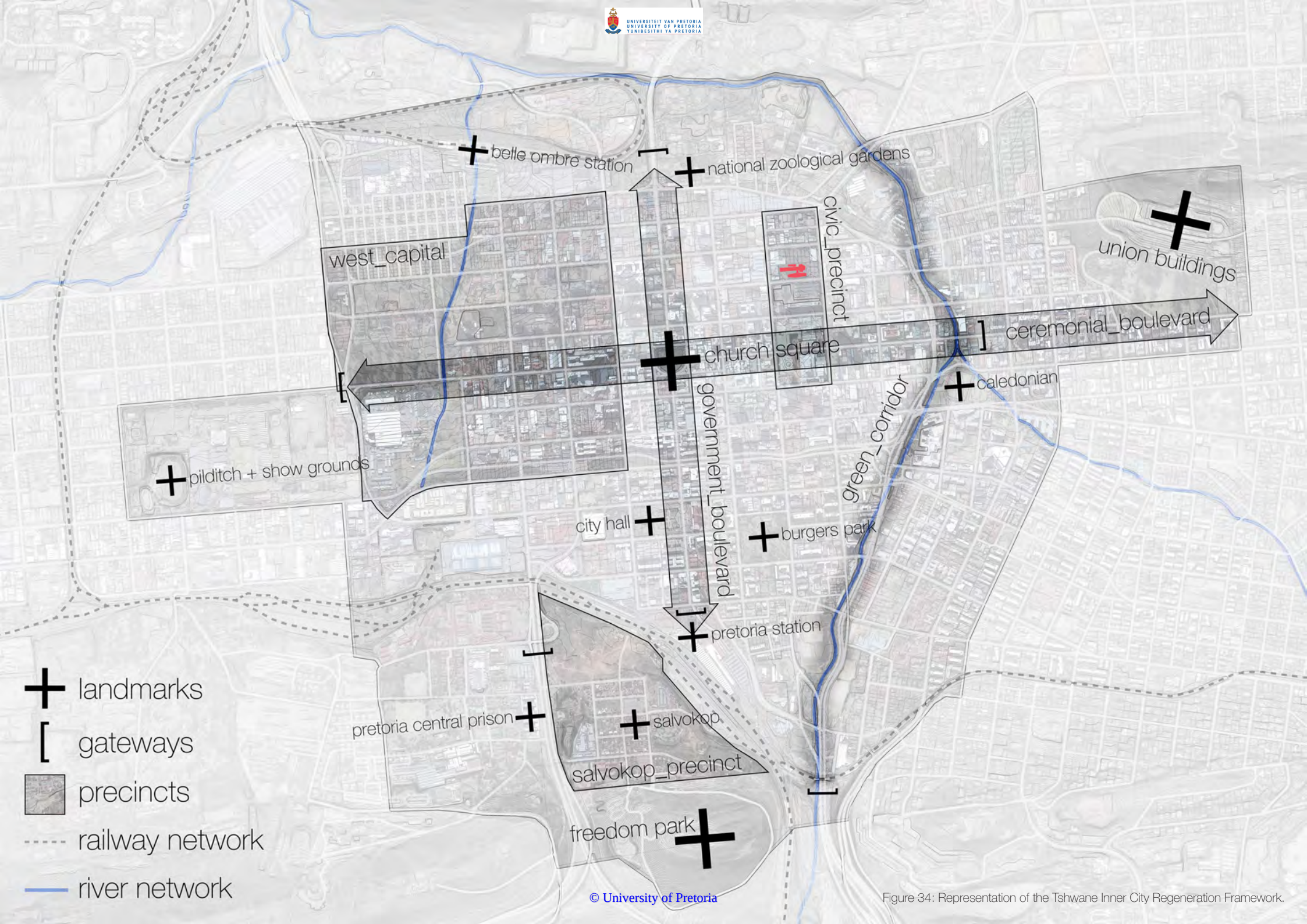


Figure 34: Representation of the Tshwane Inner City Regeneration Framework.

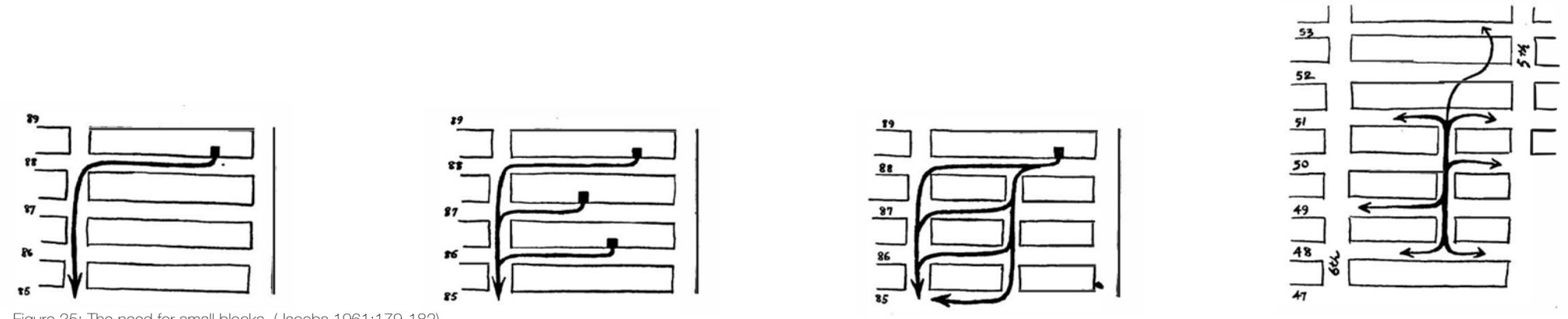


Figure 35: The need for small blocks. (Jacobs 1961:179-182)

Block Morphology

In *The death and life of great American cities*, Jane Jacobs (1961:150) states: "Most blocks must be short, that is, streets and opportunities to turn corners must be frequent." She explains that the need for small blocks alongside the need for aged buildings and the need for concentration are conditions that allow the generation of diversity in city streets and districts. She uses New York's long blocks as an example to illustrate how they isolate one another and choke economic growth. Increasing the opportunities to turn a corner can improve the walkability of a city, stimulate the economic growth of a district, and ultimately aid in the generation of diversity within the city (Jacobs, 1961:179).

The blocks of New York City are comparable in length, from east to west, to the average block found in Pretoria's city centre. However, Pretoria's blocks are about twice as long in width, from north to south, compared to those of New York, which simultaneously exaggerates the size of the block and the problems that arise from the lack of opportunities for city dwellers to turn a corner.

In the early stages of the city's development a system of arcades in the form of narrow walkways and alleys developed as a result of the size and shape of its blocks. The majority of these arcades run from north to south as a mid-block means for pedestrians to navigate between parallel streets (Le Roux, 1990:48).

In the spirit of Jacobs's need for small city blocks, the development of the urban framework will attempt to subdivide the large blocks of the Civic Precinct to create routes for the inhabitants of the city to use and explore.

Psychogeography

Psychogeography is an alternative way of reading the city through the practice of 'drifting', a practice that encourages active participation, discovery and re-discovery. In an urban setting the term 'geography' takes on an entirely new life, a life not only concerned with the effects climate and soil composition have on the economic structures of a society (O'Rourke, 2013:7). In such a setting geography must expand to include the built environment and all the accompanying physical factors that arise from urbanity itself – factors that include the structure of the city, its composition, and the physical and implied boundaries that urbanity forms.

The Letterist International describes psychogeography as the science of relations and ambiances. Debord offers a more comprehensive definition as follows: psychogeography is the mapping of the physical environment and its specific effect on the emotions and behaviour of people (O'Rourke, 2013:7).

In 1971 William Whyte started the Street Life Project by documenting the behaviour of ordinary people and how they used various spaces (Whyte, 2001:8). The success of public space was measured and based on how much social activity takes place within it. Whyte's study was in itself a kind of psychogeographic investigation.

The study resulted in seven simple factors that hold the key to the success or failure of public space within the city. How a public space relates to the street is the first and most important factor that contributes to its success or failure (Whyte, 2001:54). A variety of sitting spaces that includes chairs, benches, ledges and stairs provides users with a choice of where to sit (Whyte, 2001:24). Sun, trees and water are the three natural amenities that contribute to the comfort of a public space. Providing choices to either sit in the sun or under the dappled shade of a tree is essential (Whyte, 2001:46). Drinking fountains provide the city dweller with free drinks of water. Water can also be used as an aesthetic feature, providing grey noise to drown out the sounds of the city, and can even be used for refreshing one's feet (Whyte, 2001:48). Food attracts people to public spaces and offers a great social activity (Whyte, 2001:50). The final factor that contributes to the level of social activity in a public space is what Whyte refers to as triangulation. Triangulation is meant here as events, spectacles and performances – essentially anything that will make people stop and watch something happen (Whyte, 2001:94).

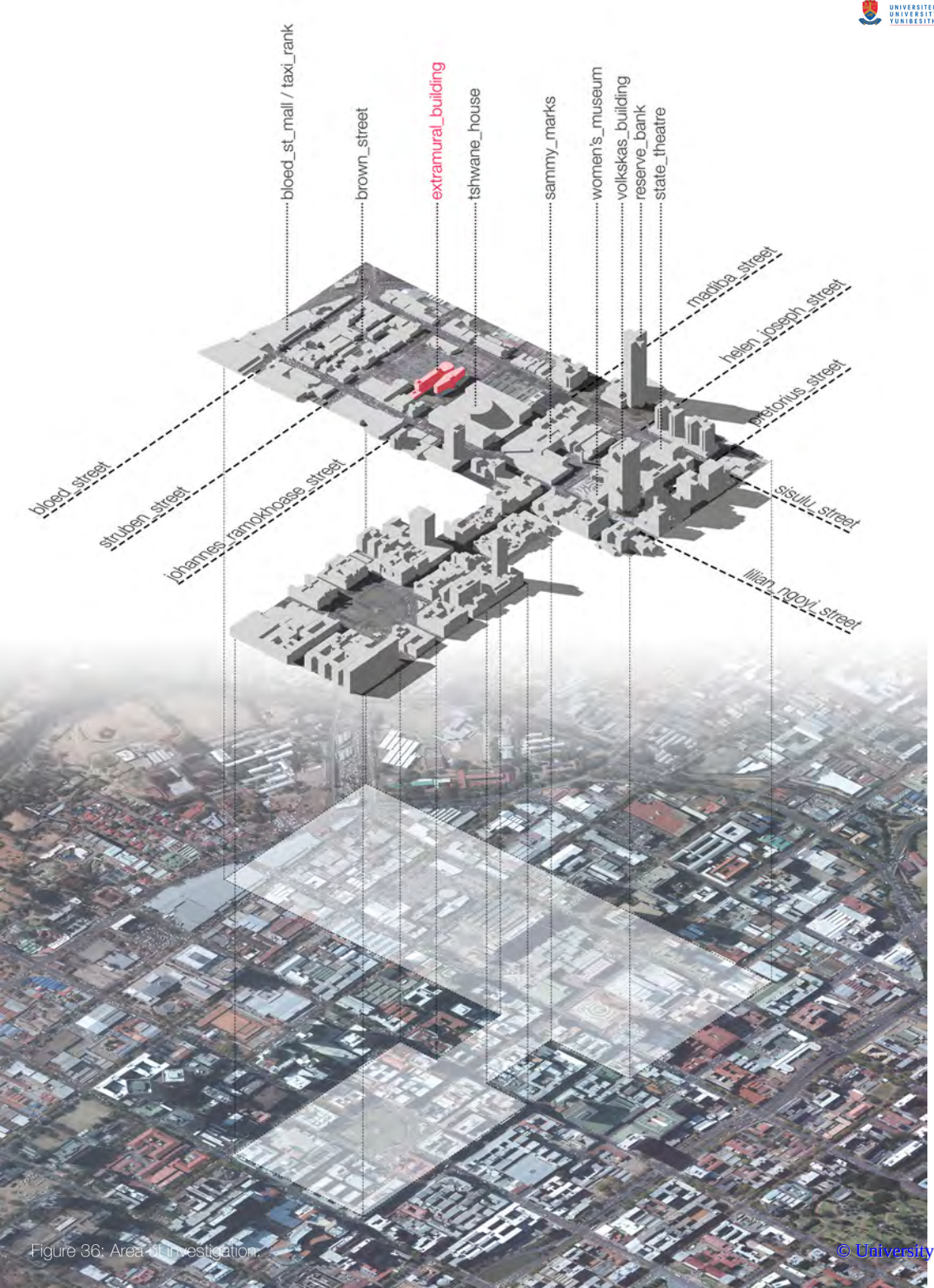


Figure 36: Area of investigation.

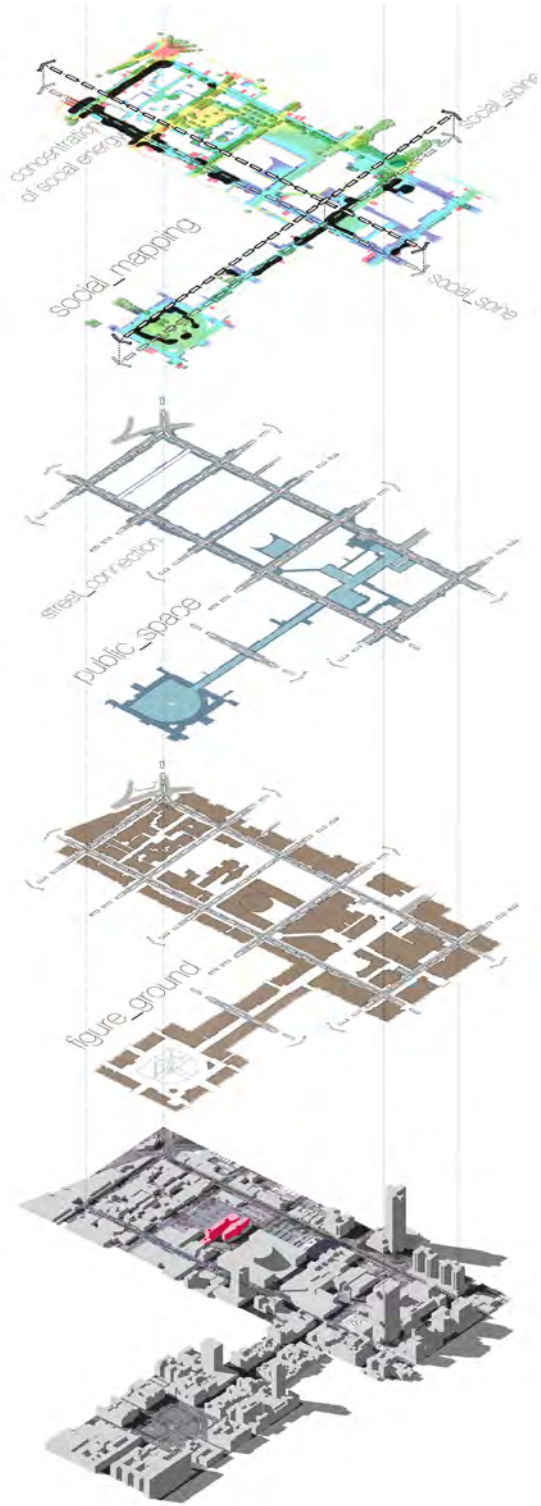


Figure 37: Mapping of civic precinct.

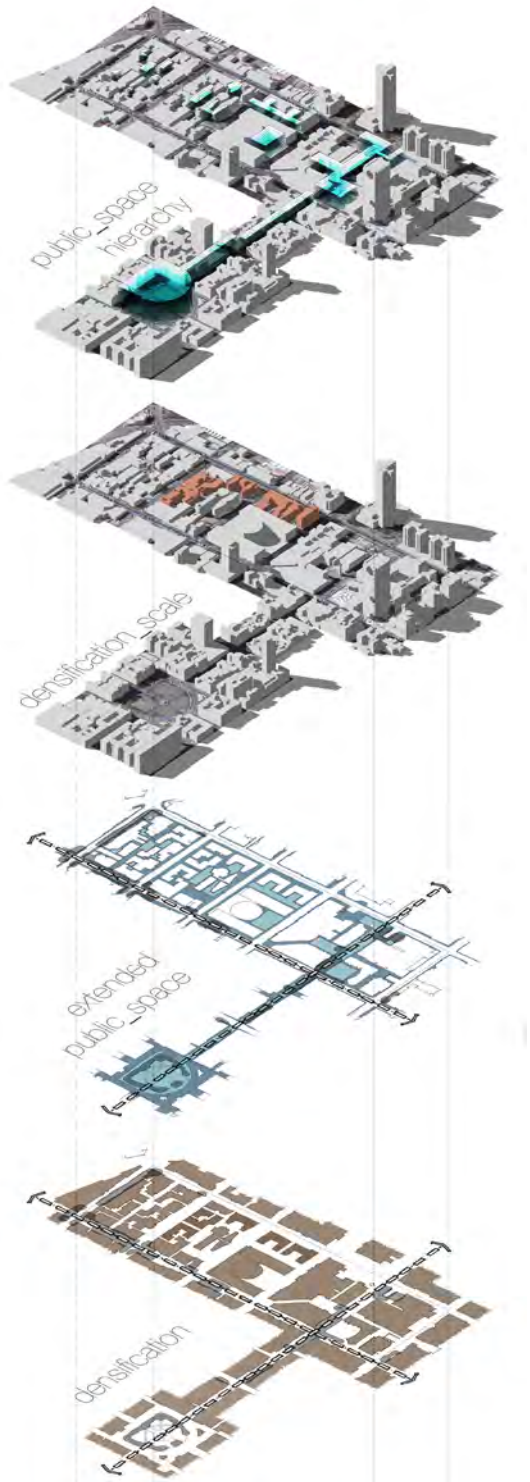


Figure 38: Mapping of civic precinct.

For this project Whyte's factors were mapped individually throughout the civic precinct, including Church Square, arguably the most important public space within in the city. The primary public spaces were identified and their relation to the street was documented. Sitting space was limited and often took the form of stairs or ledges. Streets and spaces that ran from east to west received more sunlight, while streets and spaces that ran from north to south were distinctly darker. Trees were mostly found along street edges and provided some pleasant sidewalks and pedestrian routes. A distinct lack of water was observed. Church Square hosted a number of fountains that are out of order, while a functional but inaccessible water fountain could be found outside the Reserve Bank. The only functional and accessible water fountain sat outside the entrance to the State Theatre. An abundance of formal restaurants and fast food establishments were scattered throughout the precinct. Mobile food vendors were less abundant and mostly located on sidewalks. Triangulation took two forms: organised events that take place on the major squares of the precinct, and temporary market stalls along prominent routes that are erected on a daily basis.

The mapping of these physical factors resulted in a psychogeographic understanding of the precinct and led to the identification of social energy pockets. These energy pockets are nodes where three or more of the physical factors overlap. The culmination of the mapping is the identification of two social energy spines, the first running along Lilian Ngoyi Street and the second along Helen Joseph Street, where the majority of social energy and flow of people can be found.

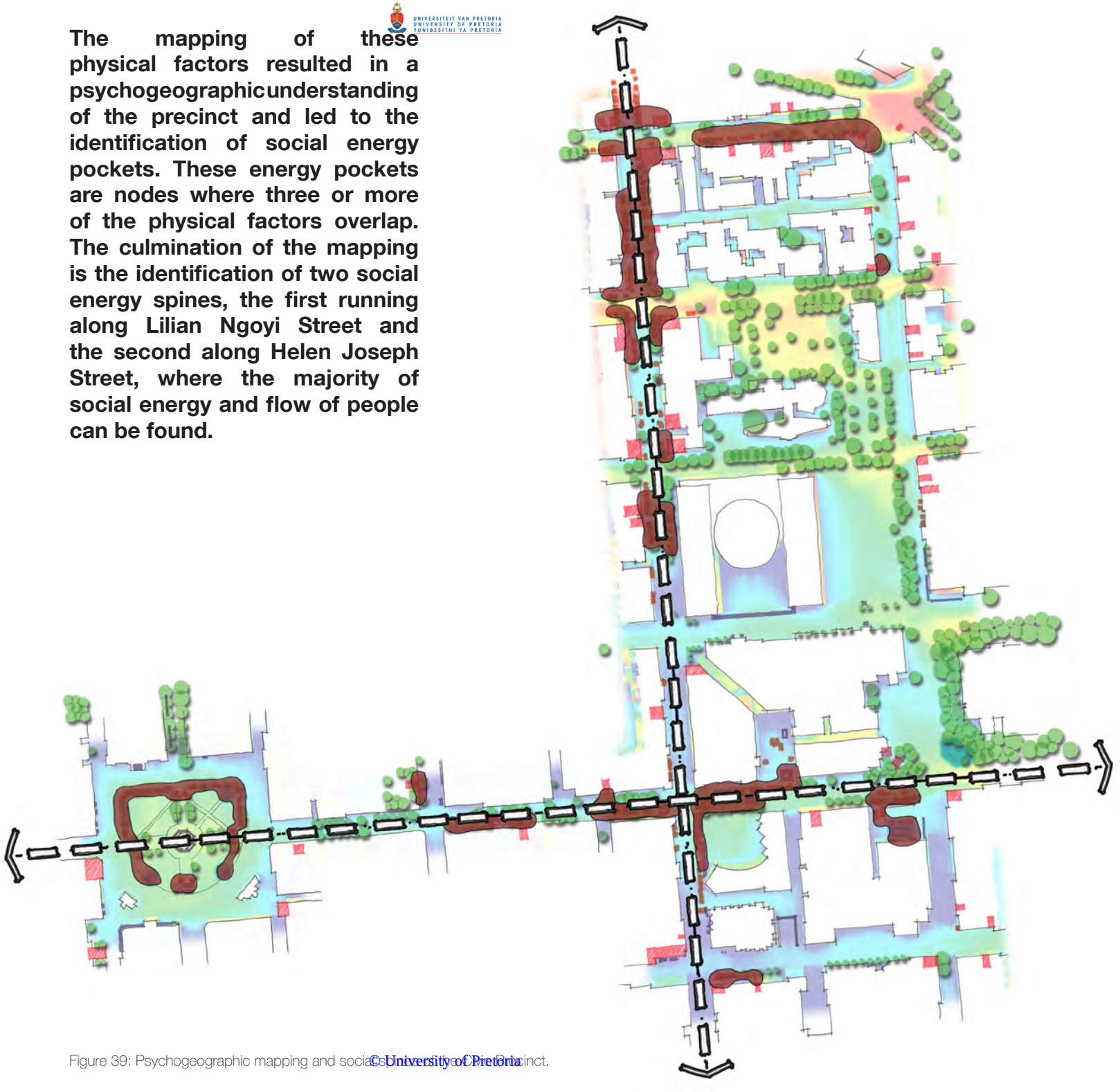


Figure 39: Psychogeographic mapping and social spines of the precinct.

Social Space Framework

In the spirit of Jacobs's need for small city blocks, the development of the urban framework attempts to subdivide the large blocks of the Civic Precinct to create routes for the inhabitants of the city to use and explore, resulting in an additional way to navigate the city. By allowing strategic movement avenues for pedestrians – conceptualised like open-air arcades – within the blocks of the Civic Precinct, the framework attempts to aid in the generation of diversity and the social and economic growth of the city.

While the intention with the framework is to extend the public realm, it is recognised that not all open space needs to be public, and not all public space needs to be social. The intention is not to move the energy that exists along the social spines. The framework aims to tap into the spines by providing space for it to grow, allowing the social energy to penetrate the blocks. The framework also recognises that there are different types and scales of public spaces and attempts to mediate among them by gradually adapting type and scale towards the culmination of public space in Church Square.

The intention with the development plan for the Civic Precinct is to create a world class place for the people by extending the public realm, and improving access to amenities. Along the proposed pedestrian route new parks and squares are proposed. The precinct is divided into four districts: social, legal, municipal and cultural. The amenities of each block are programmed according to their respective districts, placing a variety of public services throughout the precinct.

An additional layer of development was applied to the block surrounding the Extramural Building by applying Whyte's seven physical factors. This block features a series of legal amenities and social services that include the Centre of Constitutional Rights, the Workmen's Compensation Fund, the South African Police Service Criminal Records Centre, the Road Accident Fund Centre and the Justice College. Access to these services is gained from the street edge as well as the pedestrian route that runs through a central public space.

Figure 40: Programming of the Civic Precinct.

In conclusion, the Social Space Framework responds to the uncomfortable condition that arises from having to navigate the city alongside vehicular traffic. The framework stems from a certain understanding of 'the right to the city', i.e. that everyone has a right to participate in the daily rituals and activities of the city, to collectively shape the city, to occupy and use urban space, and even to produce it. The framework builds on the existing development plan that the City of Tshwane outlines in its Inner City Development and Regeneration Strategy by further developing the Civic Precinct. The framework attempts to mitigate the issues that arise from the immense size of Pretoria's city blocks by adding a new pedestrian route. Finally, the framework attempts to harness the social energy of the city by interpreting the results of a psychogeographic mapping exercise in an attempt to enhance the social and cultural value of the Civic Precinct.

Figure 41: Paley Park in winter

ntrance on 53rd Street

Contextual Precedent

Figure 43: Tree canopy

Figure 44: Public art

Figure 45: Moveable furniture

Architect
Zion & Breene Associates

Project
Paley Park

Program
Public Space

Location
New York City, New York, United States of America.

Year
1967

Paley Park is a small privately-owned public space in the heart of New York City, nestled among a couple of low-rise buildings just off East 53rd Street. The park was commissioned by William Paley and opened in 1967. It provides the inhabitants of the city with a much needed escape from the busy streets of Manhattan (https://www.pps.org).

The park is a great example of a successful small urban space that displays the factors that William Whyte formulated in his Street Life Project (Whyte, 2001). It has a great connection to the street, is raised above street level by only four steps, and gives passers-by a view into the space. It provides a variety of seating opportunities with light, moveable mesh chairs and tables as well as the steps themselves. The trees give a human scale to the space, while modulating sunlight and providing a meaningful connection to nature. A water feature drowns out the noise of the city. The park is flanked by a small restaurant, and mobile food vendors often set up just outside the park. Buskers often provide a bit of entertainment and a sense of occasion that attracts people to the space.

Program

In this section the thoughts and processes that led to the choice and development of an appropriate programme will be outlined. Programmatic intentions for the remodelling of the Extramural Building are derived from the statement of significance and the urban framework. The final choice and development are guided by the principles of the theoretical framework. The focus will start with a discussion on how the client was chosen, followed by a short description of the client. The focus then shifts to the needs of the client that inform the development of the program, followed by a short discussion on sub-programs.

The Search

The program results from an understanding of the site, the building, its context, its history and the current time and place. While the City of Tshwane Inner City Regeneration Framework earmarks the Extramural Building for use by the Justice College, alternatives were explored.

The *Burra Charter* places emphasis on the historical use of a place, and suggests that compatible uses should be explored if the historical use cannot be retained (The *Burra Charter* 1999:8). The historical use of the Extramural Building is educational in nature, focusing on providing part-time education to a mature corpus of students who would attend class at night. While the building has seen a change in ownership and occupant, its main function remains educational.

A series of programs that focus on the historical use was explored. The possibility of a community college was considered with the aim of providing free adult basic education. A film school and cinema that aim to provide creative and cultural education, focusing on performance and film making, were considered. A technical training and taxi service station were also considered as a program that focuses on education but adds a technical aspect that looks at the safety and maintenance of taxis.

The Extramural Building contains many lecture halls with sloped floors, restricting compatible uses to programs that are similar to that of teaching. Teaching is essentially a performance act that sees a speaker address an audience. A series of compatible uses were explored that take into account the specific nature of the lecture halls, but that are not educational in use. These programs included a multi-denominational worship centre that deals with the co-existence and variety of religious cultures in South Africa. A recreation centre that addresses the lack of recreational facilities in the city, and a centre for diversity that deals with the multitude of cultural, linguistic and spiritual cultures of our diverse nation were also considered. In all of these options the lecture halls were viewed as possible performance spaces.

Ultimately the choice was made to keep the Justice College as the client for the building, which mostly keeps the historical use of the building intact while allowing a variety of opportunities for the expansion of the program.

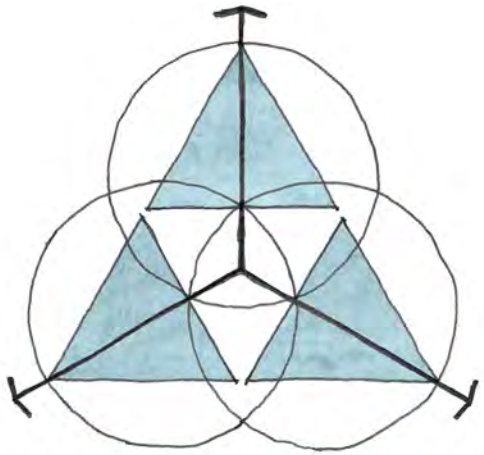


Figure 46: The search

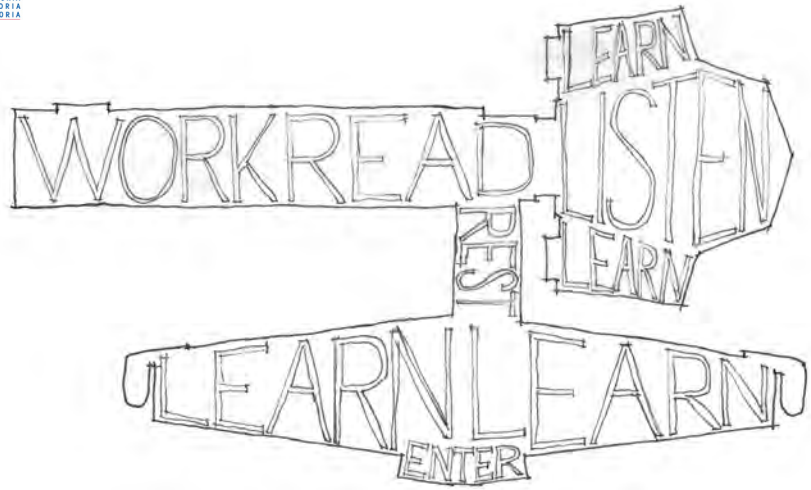


Figure 47: Programe diagram of existing building, on plan.

Figure 48: Programe diagram of existing building, on elevation.

Figure 49: Programe diagram of new building, on elevation.

The Justice College

The Justice College is a State Academy that provides programmes that are designed to teach functional skills that enhance the participant's knowledge, skill and behavioural competencies. The vision of the Justice College's is to be the legal learning provider of choice in the Public Sector (DoJ&CD: Justice College, 2016). It caters predominantly for the workforce of the Department of Justice by providing further educational training.

The college offers a wide range of courses and programs in four faculties. The IT and Systems Training Faculty offers programmes like a National Certificate in Information Technology focusing on end user computing. The Legal and Quasi-judicial Faculty offers programs in Civil Matters Training, Family Advocate Training and Prosecutorial Training. The Public Management Faculty offers programmes in Management Development, Service Excellence and Public Administration. The National School of Government's programmes include a compulsory Induction Programme and a Managing Performance in the Public Service Programme (DoJ&CD: Justice College, 2016).

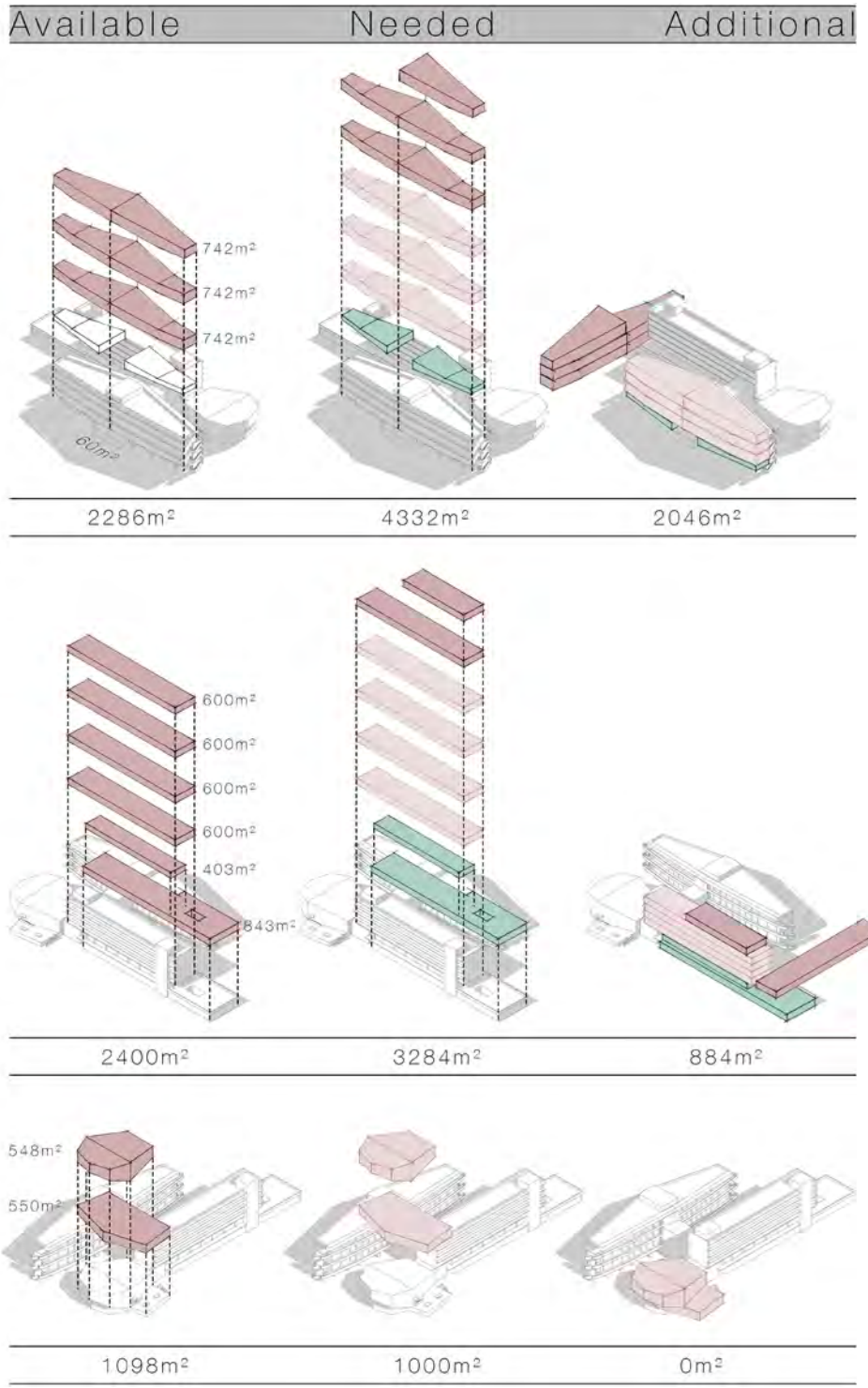


 Figure 50: Supply and demand.

Program Development

Y+K architects were approached by the Justice College to generate renovation plans for the building. They were supplied with a schedule of required spaces that the Justice College drew up. This schedule can be found as an appendix to the document. The Justice College has as yet not been able to implement the renovation plans for the building, with the result that the building has stood vacant for years.

The development of the program started with comparing the needs of the Justice College to the space that the Extramural Building could support. Even though the college's schedule states that more lecture halls were needed than the existing building could supply, it was discovered that the spaces weren't used often enough to justify the additional requirements. This meant that the existing building had a sufficient number of lecture spaces.

Ultimately this programmatic investigation revealed that the existing building could support the majority of the needs of the Justice College. The investigation also revealed that an addition would have to be built. This new portion of the building would consist of a 600 m^2 library, a 150 m^2 resource centre, a 30 m^2 online library, a 50 m^2 language lab, 125 m^2 of breakaway rooms, and approximately 250 m^2 of ablutions that would serve the new 1205 m^2 facility.

The only change to the C-block would be the removal of the old library that occupied the uninspiring space of the fourth floor, which meant that the C-block could now be a dedicated office block for the staff of the college, while the A- and D-blocks could resume their historical uses.

Sub-Programs

The urban framework exposed a series of sub-programs that add a hybrid nature to the design intentions for the Justice College. The framework proposes a route that moves past the north and east edges of the Extramural Building, in accordance with Jane Jacobs's argument for the need for smaller city blocks. She however also warns that adding walkways and arcades are not going to work if they are not properly activated (Jacobs, 1961:179). There should be something on the path that attracts people and encourages them to take this particular route.

The ground floor of the Extramural Building offers a great opportunity to activate the route by introducing an active edge along the north of the building. A similar opportunity can be found in the space below the A-Block that faces Johannes Ramokhoase Street. It introduces the possibility of café's, coffee shops and other retail establishments that can provide the Justice College with passive rental income. It also starts to address the programmatic need for a cafeteria by introducing a restaurant that caters to the Justice College as well as the general public.

The urban investigation revealed a lack of drinkable water and public toilets within the public spaces of the Civic Precinct, which is a public amenity that the Justice College could potentially provide for the inhabitants of the city as an altruistic act. This amenity aims to provide a public toilet facility as well as a fountain house where the public could have access to drinkable water.

A legal clinic is also proposed to act as a mediator between the public and private functions of the building. As a semi-private function, this service can be located on the first floor of the C-block, above the public functions of the first floor and below the private offices of the college. This sub-program can be run jointly by the Justice College and other law faculties in the city, and would offer a meaningful service to the public in an easily accessible location within the city.

The final sub-program stems from a historical practice started by the Extramural Department in 1923. This was the tradition of hosting lectures that were free and open to the public to attend. The introduction of a venue for public lectures, similar to an open-air amphitheatre, could provide opportunities to host screenings, performances, lectures, graduation ceremonies and other events. This function would add additional complexity to the programmatic intentions for the Extramural Building while reinstating a forgotten tradition.

Figure 51: Proposed program diagram for the A-block

Figure 52: Proposed program diagram of C and D-block

Figure 53: Final programe diagram of resource centre

The programmatic intentions are derived from the statement of significance and the urban framework; these intentions are led by the principles stated in the theoretical framework. The Justice College is selected as an appropriate client and a program is developed that mediates between the needs of the college and the availability of space within the Extramural Building. A library and resource centre is proposed in a new addition to the building. After analysis of the site and context an appropriate sub-programmatic response was developed. A series of sub-programs are proposed that recognises the Justice College as a private program, adds a fountain house as a public program, and mediates between the public and private realms by providing a legal clinic. The addition of a public lecture venue adds a civil nature to the building by which past traditions can be remembered.

Figure 54: Seattle Central Library exterior view

Functional Precedent

Figure 55: Building meets sidewalk

Architect
OMA + LMN

Project
Seattle Central Library

Program
Library

Location
Seattle, Washington, United States of America

Year
2004

The Seattle Central Library is reconceptualised as a civic space where the people of the city can access and exchange all forms of media. The program is separated between spaces that are stable and will not need to change in the near future, and the unstable programs that will change a fair amount over time. The building effectively acts as an indoor urban space, and separates the spaces that accommodate the stable programs across five platforms. The spaces in-between the platforms are conceived as public spaces, including mixing chambers and reading rooms – essentially the program in flux. The final form of the building is the result of stretching a skin over the program (http://oma.eu).

The strength of the project lies in the way the program was interrogated and expanded, including a book spiral, electronic library and an urban living room. It cleverly takes a program that is seen as outdated and gives it new life by allowing it to transform into something new. It displays how internal spaces of a building can be seen as an extension of the urban realm.

Figure 56: Interior space

Figure 57: Reading room

Figure 58: Program development

Concusion of Part One

From this paper four outputs emerge: a theoretical framework, a written statement of significance, an urban framework and, finally, a programmatic intention for the Extramural Building.

Buildings are constantly changing and it is the responsibility of the designer to understand the forces that drive this change and how the process can be managed. An understanding of formal intervention upon existing form is gained through Brand's concept of change as well as Robert's principles of adaptation. Machado holds the link to the past in his theoretical approach that sees old buildings as palimpsest, which is the glue that binds adaptation with heritage practice. A multivalent and inclusive heritage practice is established that is strongly rooted within a post-colonial attitude. The National Heritage Resources Act offers an understanding of what is worth conserving as well as a legal framework of protection. Finally, the *Burra Charter* guides heritage practice by providing meaningful definitions, principles and practices.

Stewart Brand, Philippe Robert, the National Heritage Resources Act and the *Burra Charter* are all valuable resources that contribute a great deal to their respective fields. From these resources a theoretical framework of practices emerges that is useful for the understanding and development of old buildings. The theoretical framework consists of a series of practices illustrated by diagrams, a vocabulary of definitions, and a set of principles to guide the process of remodelling. These practices represent a spectrum of possibilities that should allow for an appropriate formal engagement with existing form.

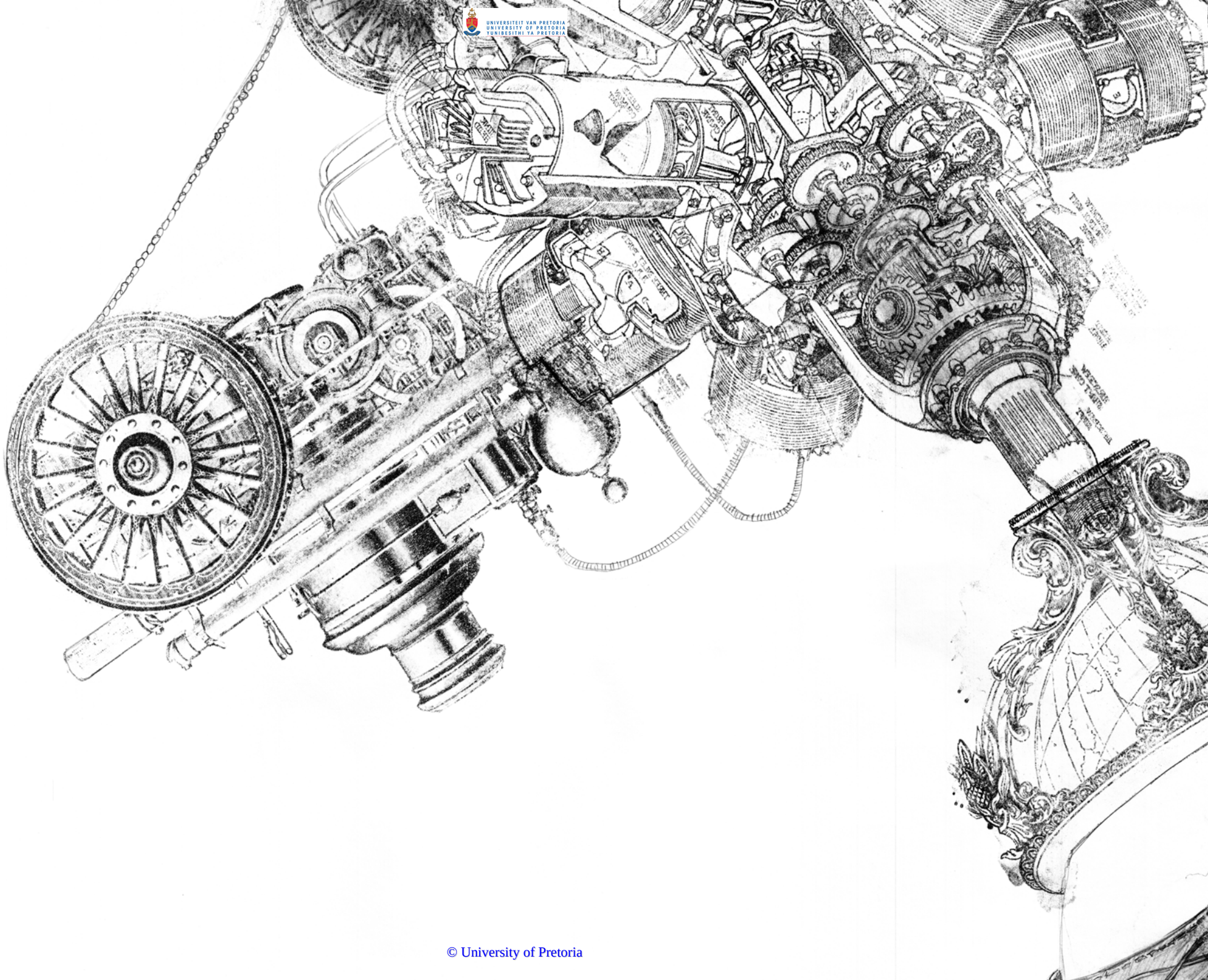
The Extramural Building contributes to the rich history of Pretoria and is strongly linked with the other narratives that exist. The building is on the verge of being lost and intervention is immediately necessary before the point is reach at which it can no longer be salvaged. The historical context that led to the existence of the building offers an insight into its cultural significance. From this historical overview a statement of significance was written within an understanding of the role of modernism in the development of South Africa.

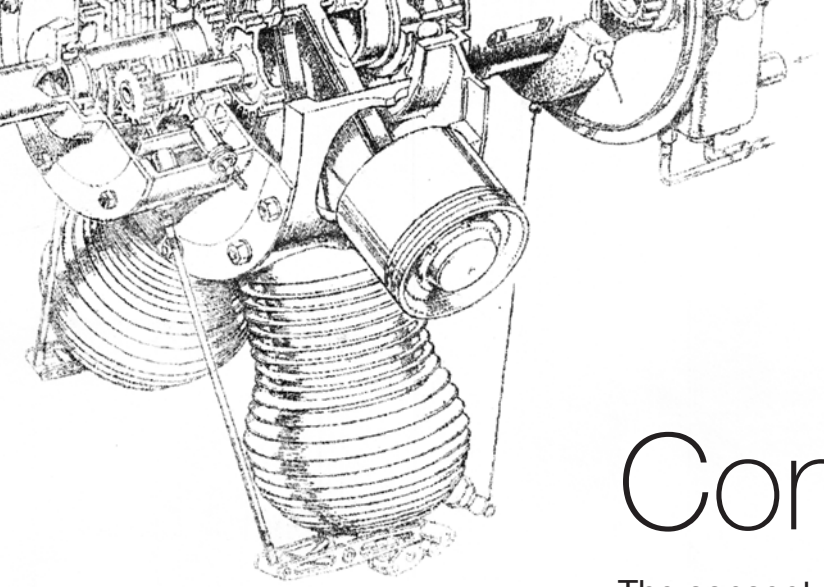
The Social Space Framework responds to the uncomfortable condition that arises from having to navigate the city alongside vehicular traffic. The framework stems from a certain understanding of 'the right to the city', an understanding that everyone has a right to participate in the daily rituals and activities of the city, to collectively shape the city, to occupy and use urban space, and even to produce it. The framework builds on the existing development plan that the City of Tshwane outlines in its Inner City Regeneration Framework by further developing the Civic Precinct. The strategy attempts to mitigate the issues that arise from the immense size of the city's blocks by adding a new pedestrian route. Finally, the framework attempts to harness the social energy of the city by interpreting the results of a psychogeographic mapping exercise, in an attempt to enhance the social and cultural value of the Civic Precinct.

The programmatic intentions are derived from the statement of significance and the urban framework. These intentions are led by principles stated in the theoretical framework. The Justice College is selected as an appropriate client and a program is developed that mediates between the needs of the college and the availability of space within the Extramural Building. A library and resource centre is proposed in a new addition to the building. After analysis of the site and context, an appropriate sub-programmatic response was developed. A series of sub-programs are proposed that recognises the Justice College as a private program, adds a fountain house as a public program, and mediates between public and private realms by providing a legal clinic. The addition of a public lecture venue adds a civil nature to the building by which past traditions can be remembered.

In conclusion, the argument relies on the complexities and interactions between the theories of adaptation and heritage practice. The argument is developed into a theoretical framework, a written statement of significance, an urban framework, and a programmatic intention for the remodelling of the Extramural Building.

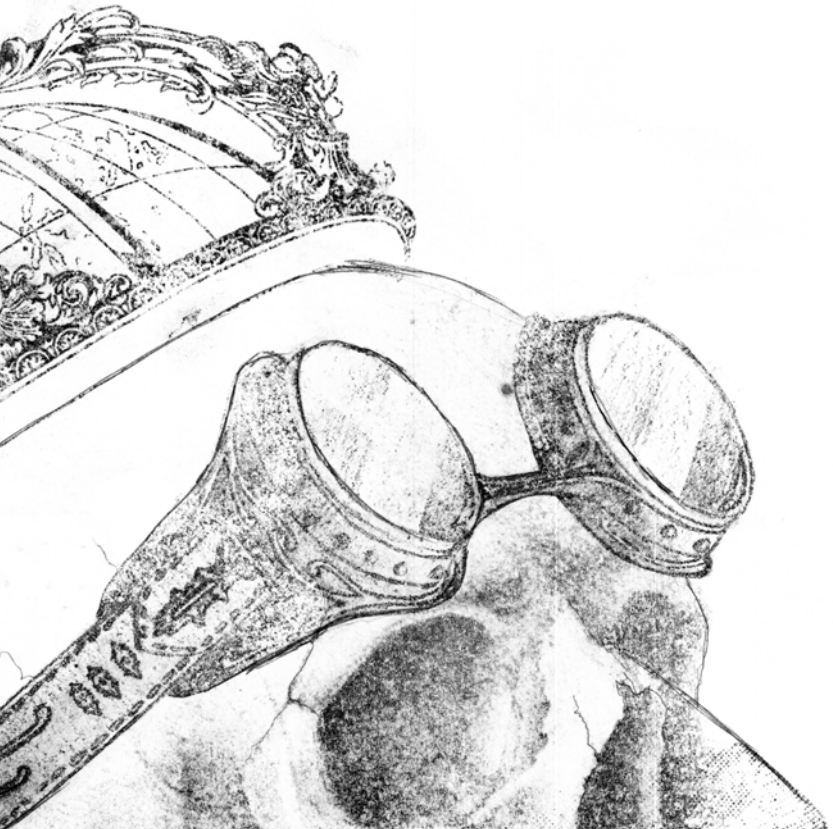
PART TWO _ Expression





Concept Development

The conceptual development attempts to amalgamate the thoughts and notions discussed in the previous chapters, resulting in a layered concept.



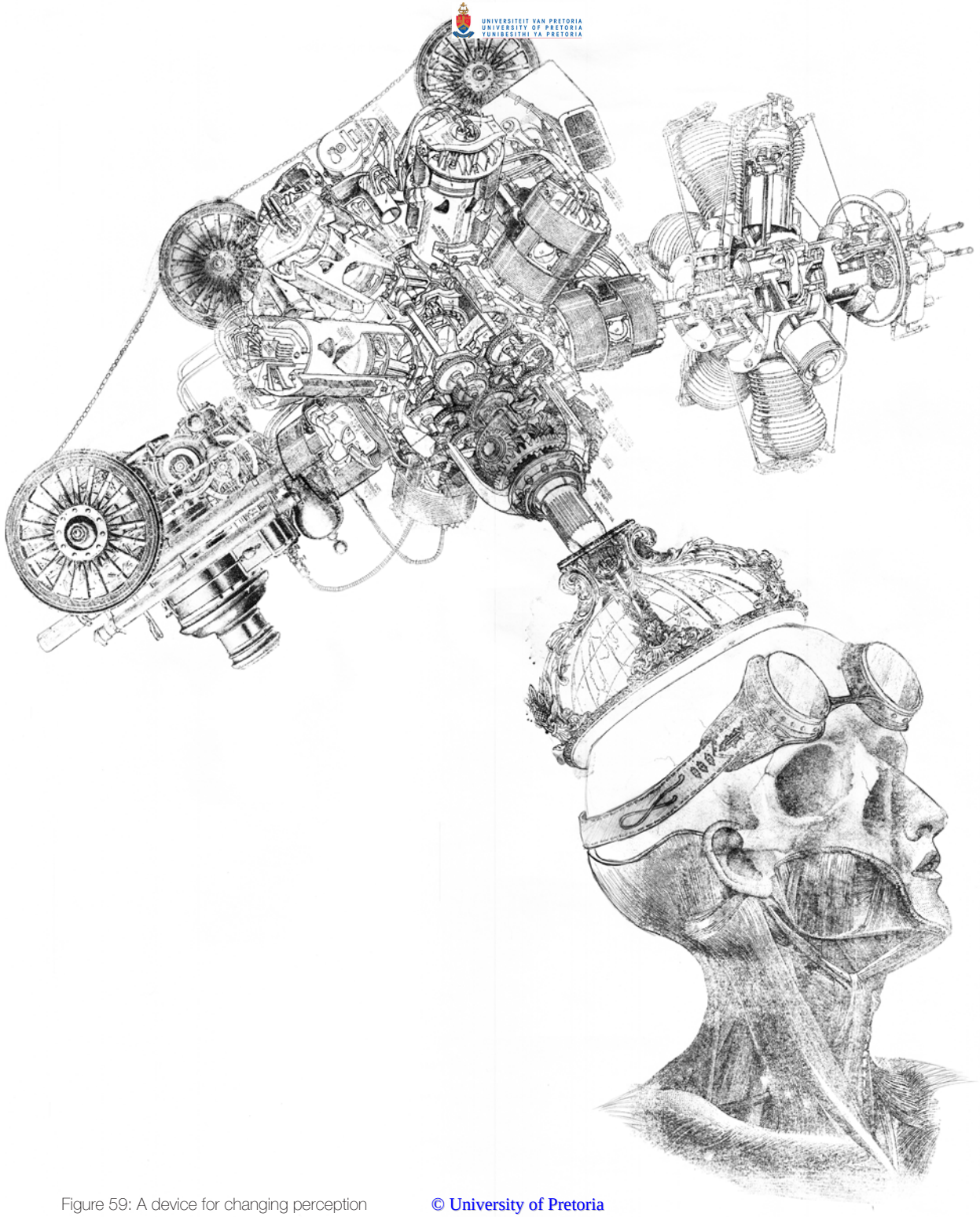


Figure 59: A device for changing perception

An intuitive conceptual exercise resulted in a graphic that took several existing images and re-interpreted them into something new (Figure 59). Images were selected, organised and layered upside down over one another to create a rubbing. The result was a graphic that represents a device that changes perceptions. Palimpsest is at the core of the graphic. Several other ideas and notions are also present in the graphic; education, lenses, layers, skin, bones, hiding and revealing.

The original intentions of the project asks the question if it is possible to recognise and unlock the latent potential of the Extramural Building to enable it to reclaim its role in the city by exploring architecture as an extension of the public realm. Ultimately the concept grew from the ideas and intentions of the theoretical premise, contextual issues, and programmatic intentions of the project.

The theoretical framework relies on the idea of palimpsest and takes a layered approach to the remodelling of old buildings. The urban framework investigates an alternative way to navigate the city by proposing inner block paths, much like the arcade system that has emerged as a result of Pretoria's rough urban grain. The program development resulted in a hybrid approach, allowing a variety of public programs while catering for the growing needs of the Justice College. The most notable of these programs is a public lecture hall that acts as a link to the past practices of the extramural department and the public lectures it use to present.

These ideas and notions come together in a rather complex manner, gesturing towards ideas of flow and flux. The continuous surface becomes a meaningful tool to conceptualise the architecture for this project.

This surface can be approached from a public perspective, resulting in a continuous urban surface that facilitates inner-block movement. This allows the building itself to become a public platform for discussing, debating and disseminating matters of law, enriching the knowledge of both the public and the practitioners that use the facilities. Similarly, the surface can also be viewed from a private vantage point, allowing the interior of the building to be conceptualised as a continuous surface that accommodates the private functions of the building. This promotes interaction and chance encounters within the building, allowing the city's social spirit to penetrate into the building.

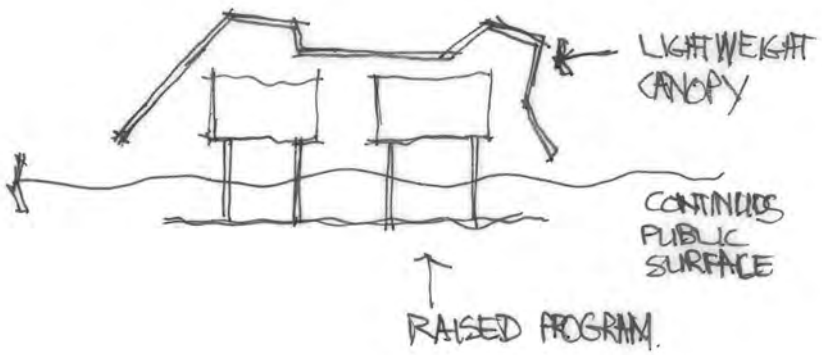


Figure 60: Conceptual diagram.

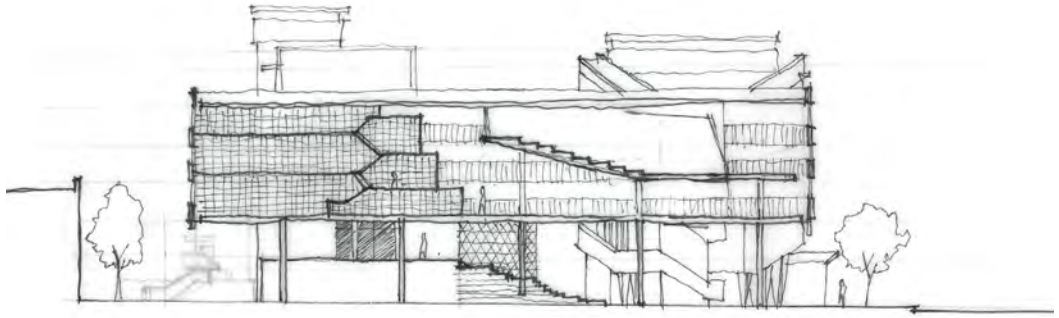


Figure 61: Early conceptual section.

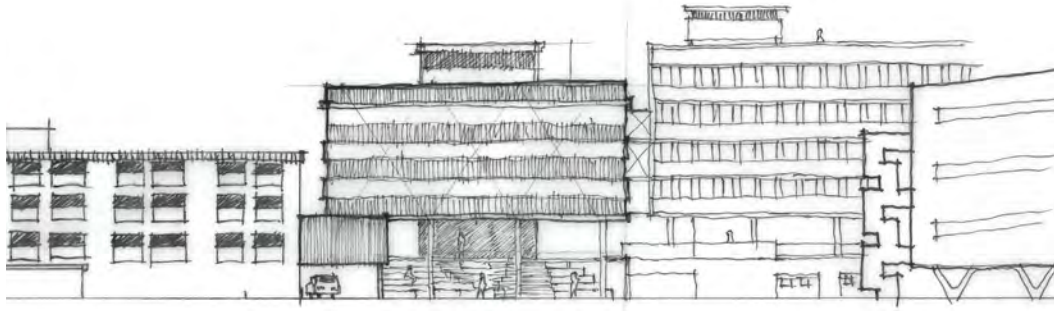


Figure 62: Early conceptual elevation.

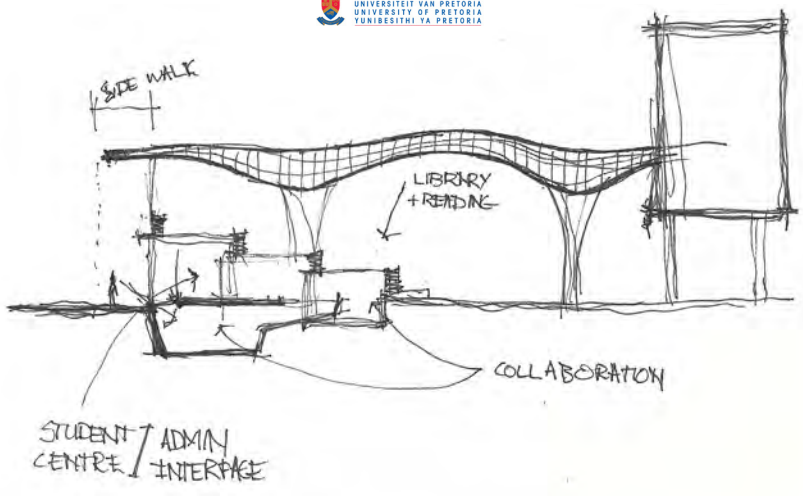


Figure 63: Sketch of floating roof over public space.

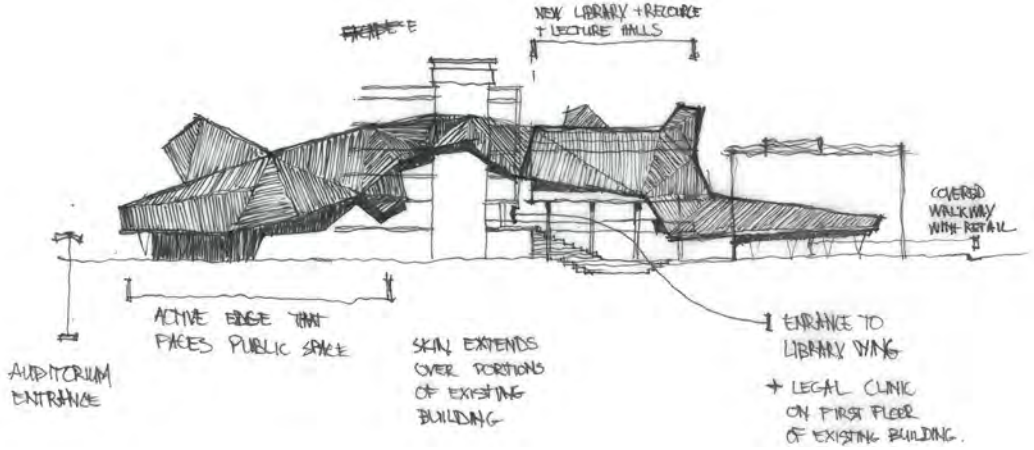


Figure 64: Continuous skin.concept sketc.

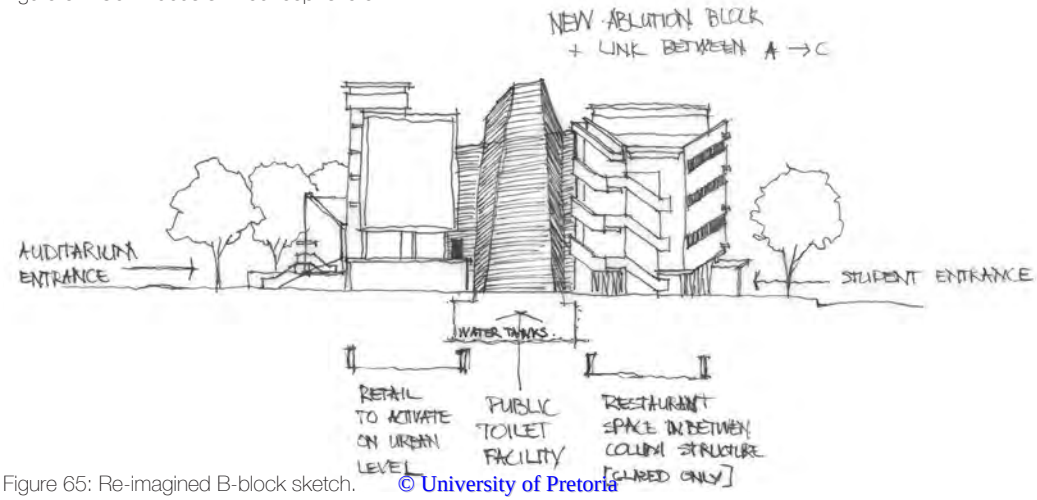


Figure 65: Re-imagined B-block sketch.

Figure 67: View from air

Figure 66: View from water

Conceptual Precedent

Figure 68: Public lobby

Architect
Snøhetta

Project
Norwegian National Opera and Ballet

Program
Opera House

Location
Oslo, Norway

Year
2008

Snøhetta produced the winning entry to design the Norwegian National Opera and Ballet, a project that was completed in 2008. The building places emphasis on culture and place and has a unique expression of form. The building presents a low silhouette, accessible roof and open public lobbies that allow the building to become an extension of the urban realm, integrating the building with the social fabric of Oslo. The building allows glimpses into the scenery workshop that fosters an awareness of arts and culture with the public. Cafes, a gift shop, waterfront and other public amenities are seamlessly integrated and further enhances the buildings urban character (http://snohetta.com).

This project serves as a great example of a continuous urban surface, by allowing the roof of the building to become a freely accessible urban landscape. The program is neatly organised and tucked underneath the urban surface.

Figure 69: View from water

Design Development

The design development will focus on the various responses to the issues presented earlier in this document, starting with the generic and working its way to specific design decisions. The development attempts to apply the theoretical framework to the project, while addressing contextual issues that rise from the history of the building as well as the urban framework. The development also attempts to address issues that arose from the programmatic intentions of the project as well as the conceptual intentions. Even though the document describes the process in a linear manner, it is worth noting that the design process often jumpes between the issues, even attempting to solve multiple issues simultaneously.

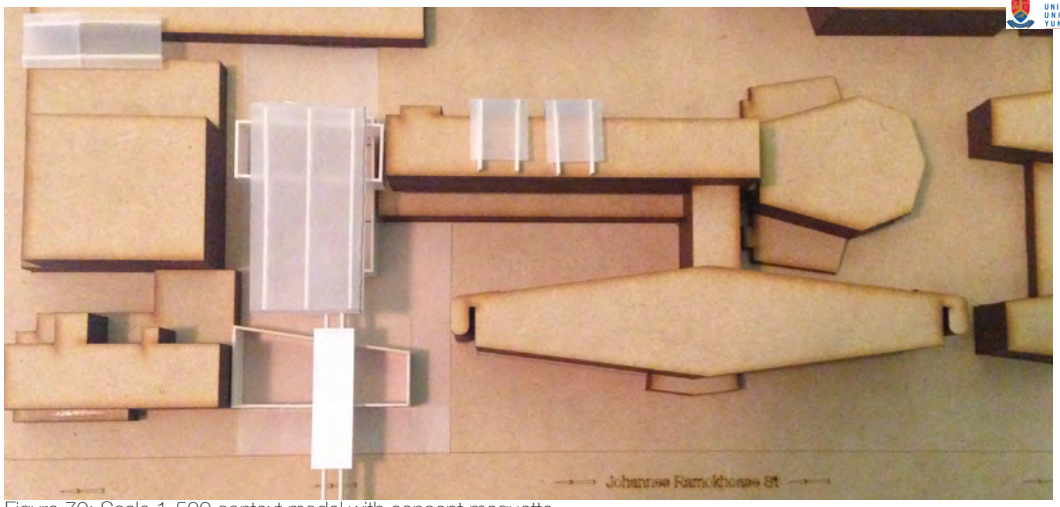


Figure 70: Scale 1-500 context model with concept maquette.


Figure 71: Scale 1-200 context model.

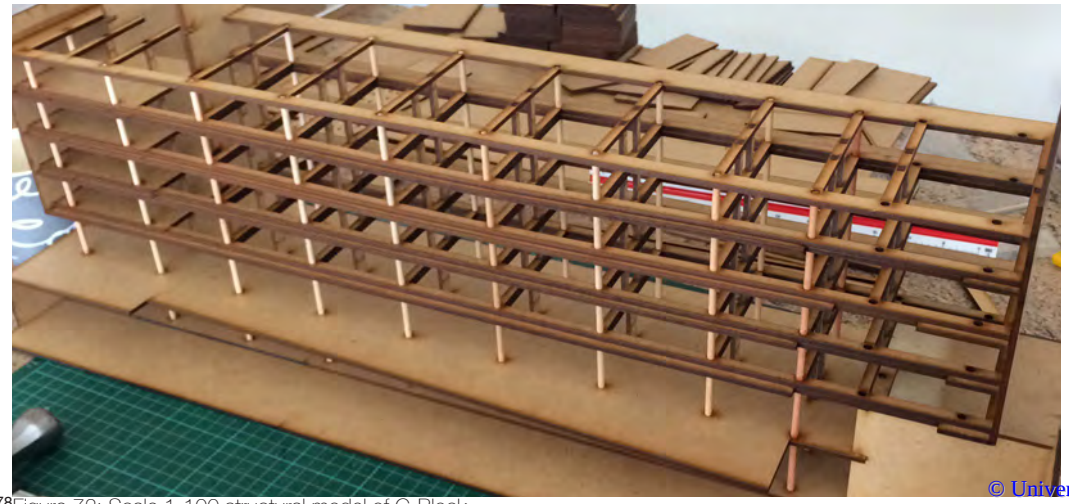


Figure 72: Scale 1-100 structural model of C-Block.

The process

The design process focused mainly on the building of physical models and sometimes relied on quick sketches to aid the process. The project was explored at various scales, a scale 1-500 context model was made that allowed interventions to be placed in the context and tested. This scale resulted in models that were largely diagrammatic and focused mainly on contextual issues. A second context model was built at scale 1-200 that was used in a similar manner. This larger scale allowed models to become more complex and allowed a greater level of detail to be generated with each iteration. Only after a couple formal iterations, an attempt was made to generate sketch plans. These plans were then translated into maquettes and tested in context until an appropriate design solution was achieved.

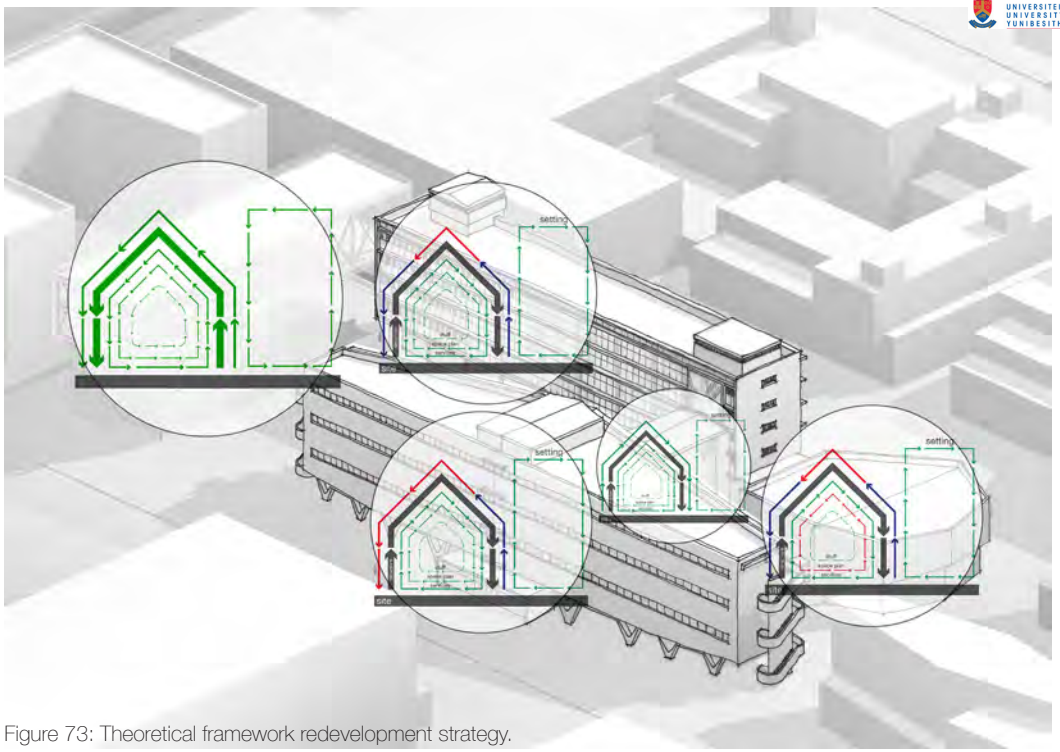


Figure 73: Theoretical framework redevelopment strategy.

Response to theoretical framework

…“changing as much as necessary but as little as possible.” (The Burra Charter. 1999:3)

This principle was the point of departure for the development of the design in terms of the theoretical framework. Each part of The Extramural Building was explored and defined in terms of the framework, resulting in a series of conservation and remodelling practice diagrams (Figure 73).

Block A requires remodelling in terms of The Building Within while its skin requires conservation in terms of restoration and reconstruction. Block B requires remodelling in terms of ‘The Building Within while its skin requires reconstruction. Block C requires remodelling in terms of ‘The Building Within’ while its skin requires conservation in terms of restoration and reconstruction. A scale 1-100 model of Block C was built to illustrate the remodelling practice in terms of ‘The Building Within’, as well as its conservation in terms of the restoration and reconstruction of its skin. Block D requires remodelling in terms of ‘The Building Within’, however in this case the space plan is reconstructed instead of remodelled. The skin of Block D requires conservation largely in terms of restoration and some reconstruction. These strategies seem very similar at first glance, however, each one has a slight variation that addresses its specific challenges.

The most appropriate way to add additional space to meet the requirements of the Justice College is to introduce new fabric to the site. In terms of the Theoretical framework, this can be achieved by applying one of three remodelling strategies; ‘The Building Above’, ‘The Building Alongside’ or ‘The Building Around’. The formal investigations on the context model revealed that ‘The Building Around’ was ultimately the most appropriate strategy for the project. The other strategies are not disregarded, and still play a role in the development of the site.

The combination of these strategies, firstly to engage with the existing and secondly to introduce the new fabric, result in a hybrid approach to reinterpret The Extramural Building.

Figure 74: Block Framework indicating route, zoning and activities

Response to historical context

“The ways in which an existing building has or has not acknowledged the requirements of its cultural context over time becomes the most important feature of the context for the remodeler.” (Machado, 1976:49)

The theoretical framework provides a good start to engage with the existing building. The buildings abandonment speaks volumes of the way the building has acknowledged the cultural context it finds itself in. The building needs to reclaim its role in the city. The old cultural context was one of separation, notably present in the way the building steps away from the street and sits behind a fence to keep the public away. The new cultural context is one of inclusion and the building should reflect that. This is achieved by allowing the public to engage with the building by incorporating an open-air public lecture that continues a forgotten tradition of the Extramural Department.

Response to urban framework

The level of public engagement with the building is further explored by investigating the design in terms of the urban framework.

The framework introduces a path that allows the public to walk through the block and around the building, reinstating a modernist ideal that sees a building as an object in space. Two primary public spaces were identified in the block, a central space that sits north of C-Block and a courtyard nestled in-between A, B and C-Block. These two spaces function in different ways. The larger one sits in line with the proposed walkway, while the courtyard sits away from the street and is slightly obscured from view. The design developed in such a way to keep these spaces separate, in an attempt to enrich their individual qualities and implied spatial meanings. This allows the courtyard to become a bit more enclosed and protected, while lending a more social nature to the central public space.

Jacobs warns that adding walkways and arcades to big city blocks will not work if they are not properly activated (Jacobs, 1961: 179). Whyte’s seven simple factors for successful social spaces provides some solutions to activate the walkway and adds to the design development of the setting. The connection to the street is dealt with by the walkway. Trees provide the walkway with shade. A variety of sittable space is provided; movable chairs in the courtyard, the low walls of planters in the central space and an abundance of stair seats provided by the public lecture hall. Food is introduced in two forms, the first as an extension of the social spine in the form of mobile food vendors. The ground floor of A and C-Block is reprogramed to provide restaurants and coffee shops and retail shops, activating the edges of the building and encourage the public to engage with the building and proposed walkway. Water is introduced in the form of drinking fountains. Finally the public lecture hall adds a dynamic component to the building and surrounding spaces through planned and spontaneous events. This event space is a way to stimulate Whyte’s idea of triangulation (Figure 74).

Figure 75: Programing maquette test placed on a plan.

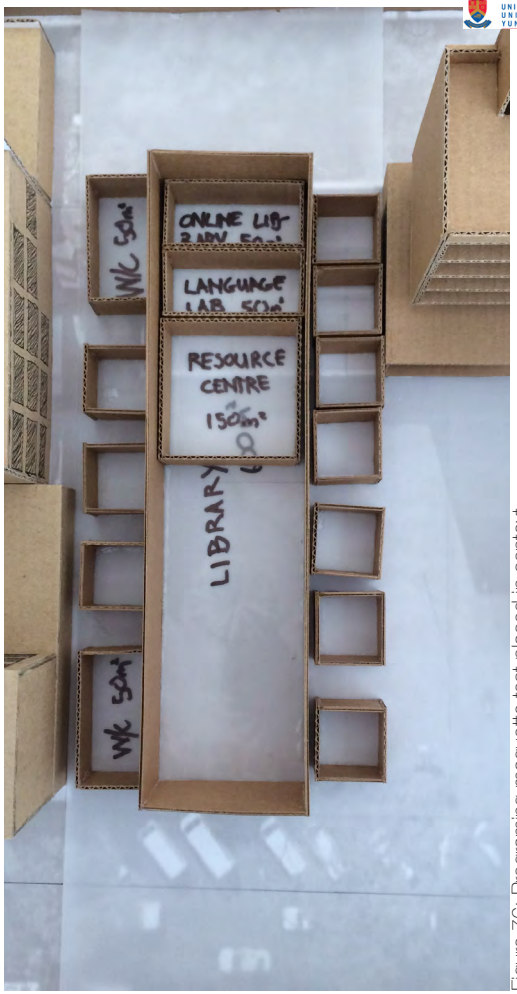


Figure 76: Programing maquette test placed in context.

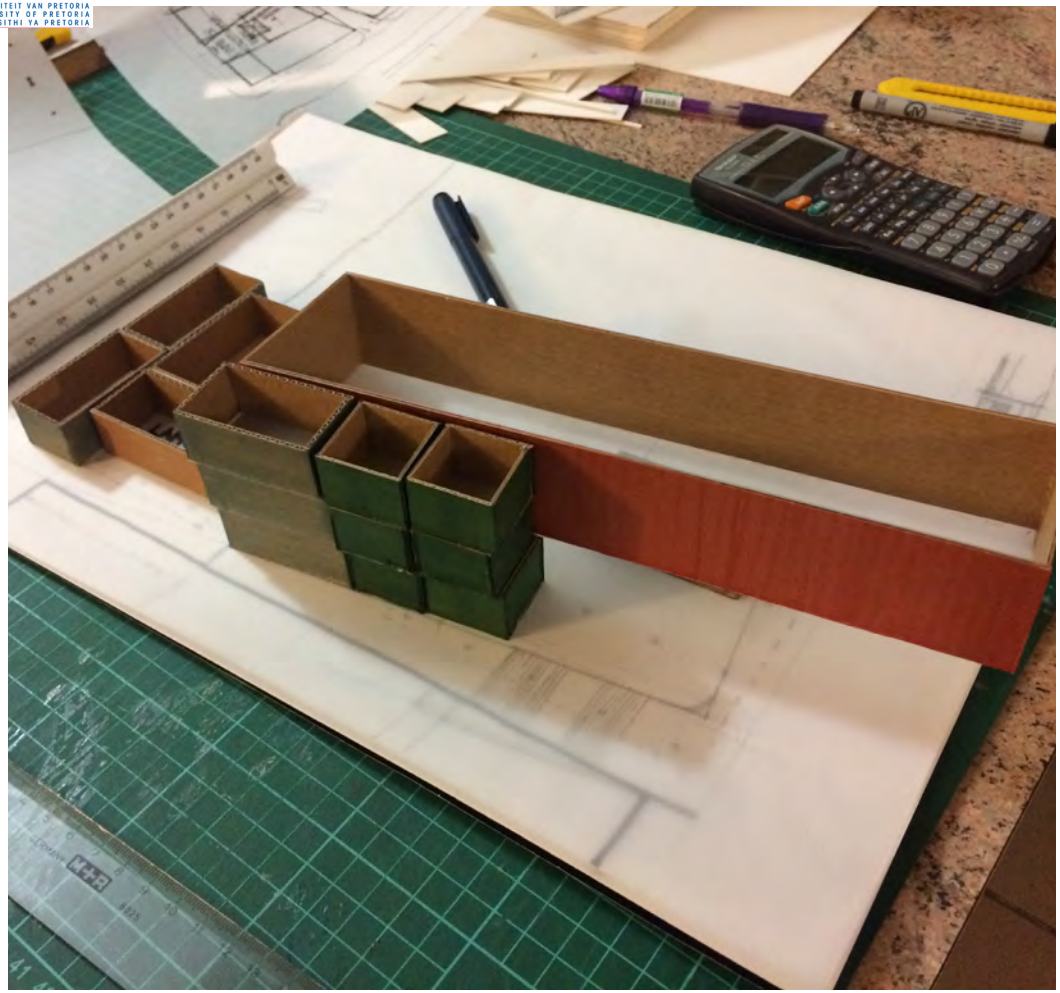


Figure 77: Alternative arrangements of programing maquette.

Response to program development

The program of the existing building as well as the proposed Resource Centre was used to further the development of the design. This was explored in a spatial manner, aided by model building. Additional space requirements were identified, sized and translated into a maquette. This maquette allowed the organisation of the spaces to be tested within the context by stacking and arranging them in different ways. This process ultimately aided in the production of sketch plans.

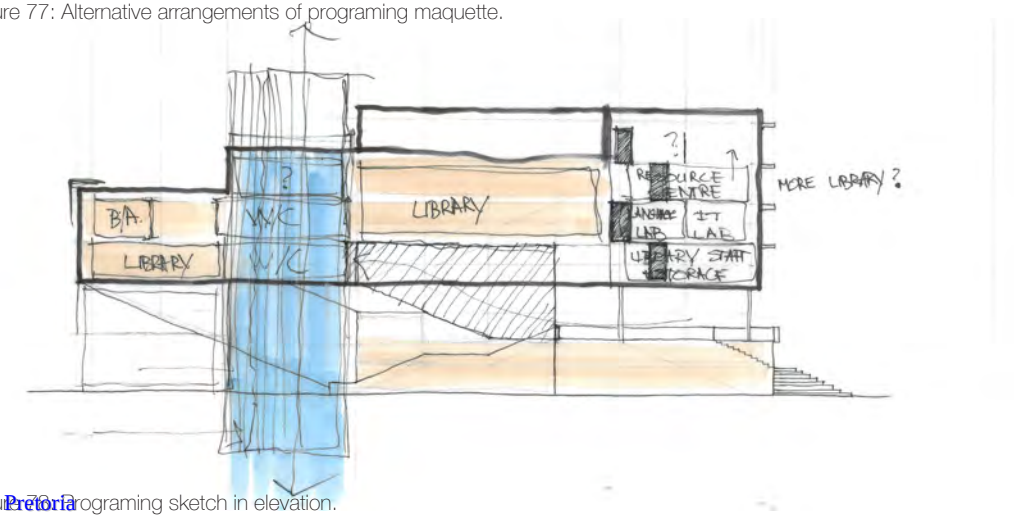


Figure 78: Programing sketch in elevation.

Response to concept development

The conceptual intention of the project is to explore architecture as an extension of the public realm, this manifested into the concept of the continuous urban surface.

The C-Block of the exiting building consists of a top, middle and bottom. The bottom is essentially a single story plinth with a balcony to the north and a walkway that overlooks the courtyard. A legal clinic is proposed for the first floor of the C-Block, in an attempt to mediate between private and public realms. In this regard it becomes important to integrate the urban surface with the plinth to allow the public access to this service. The continuous urban surface starts with this gesture, raising the public realm up with a set of steps and seats that face the northern walkway.

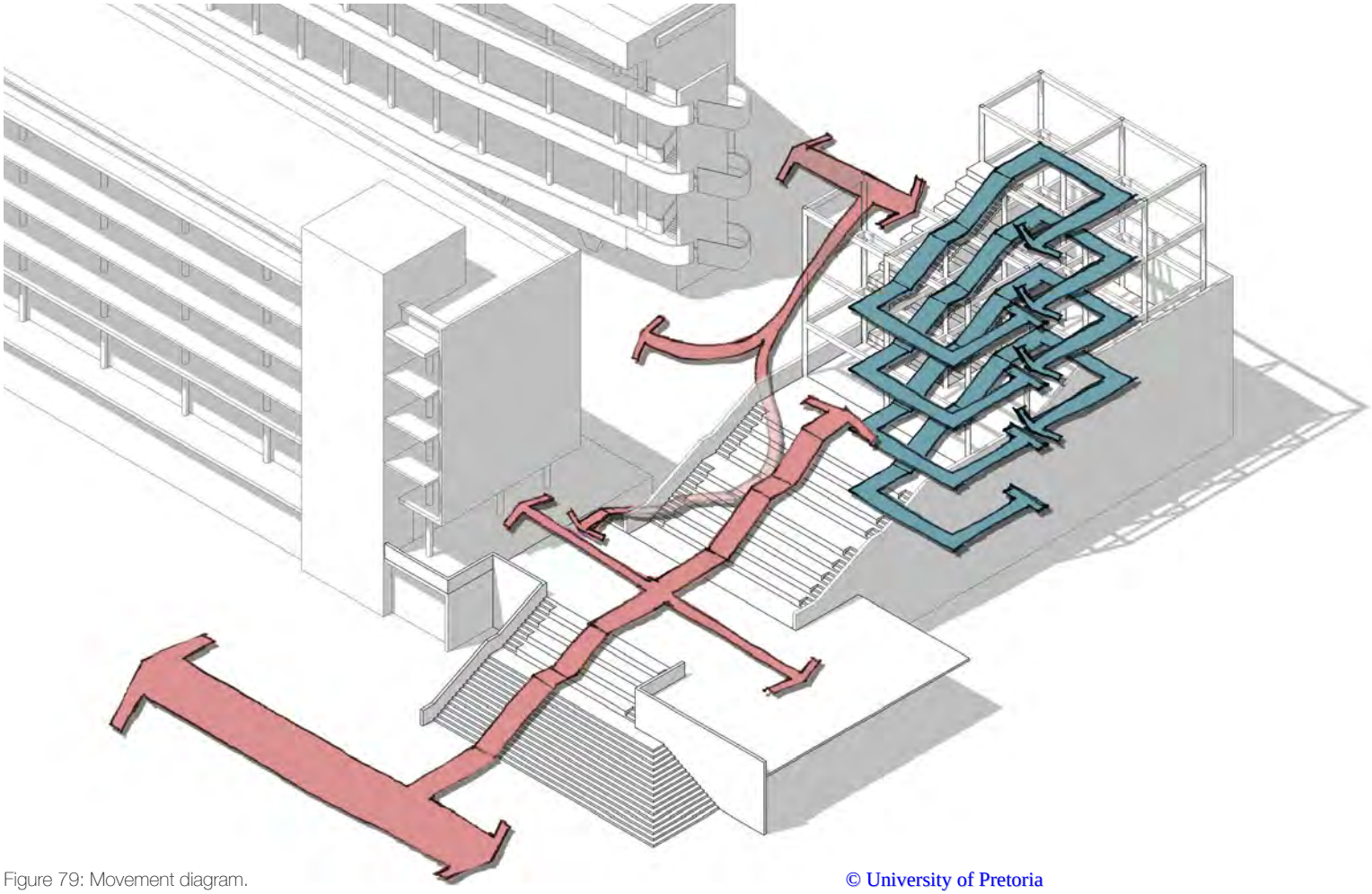


Figure 79: Movement diagram.

While ramps would have visually suited the concept the best, the choice was made to rather use stairs as a means to elevate the urban surface. While stairs don't constitute a physical barrier, it does provide some form of resistance and lends meaning to the space following it. It provides a simple threshold that indicates to the user that they are now entering a different space that requires an alternative set of social behaviours from them.

The plinth is viewed as a stage for a public lecture hall that continues the urban surface upwards with a set of stairs and seats. This allows the building itself to become a public platform for discussing, debating and disseminating matters of law, enriching the knowledge of both the public and the practitioners that use the facilities. This space flows into the Resource Centre and as a result changes in its characteristic. The circulation space of the building is viewed as an extension of the continuous surface, flowing around an atrium with a series of sittable staircases creating a vertical circulation core. This promotes interaction and chance encounters within the building, allowing the city's social spirit to penetrate into the building.

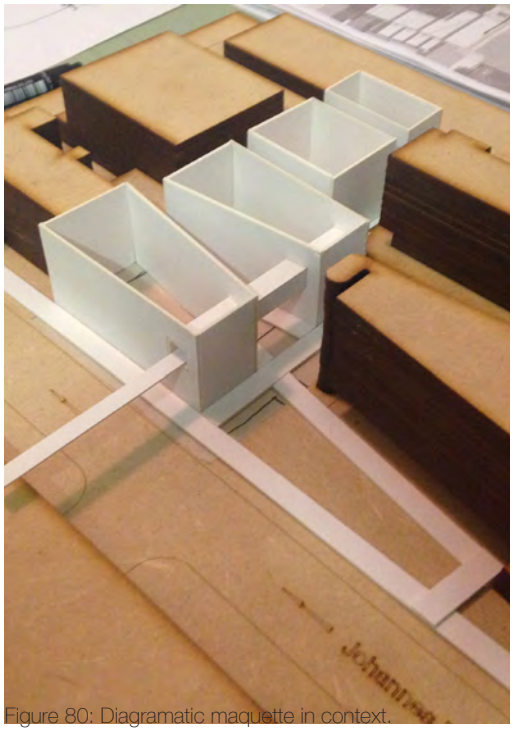


Figure 80: Diagramatic maquette in context.

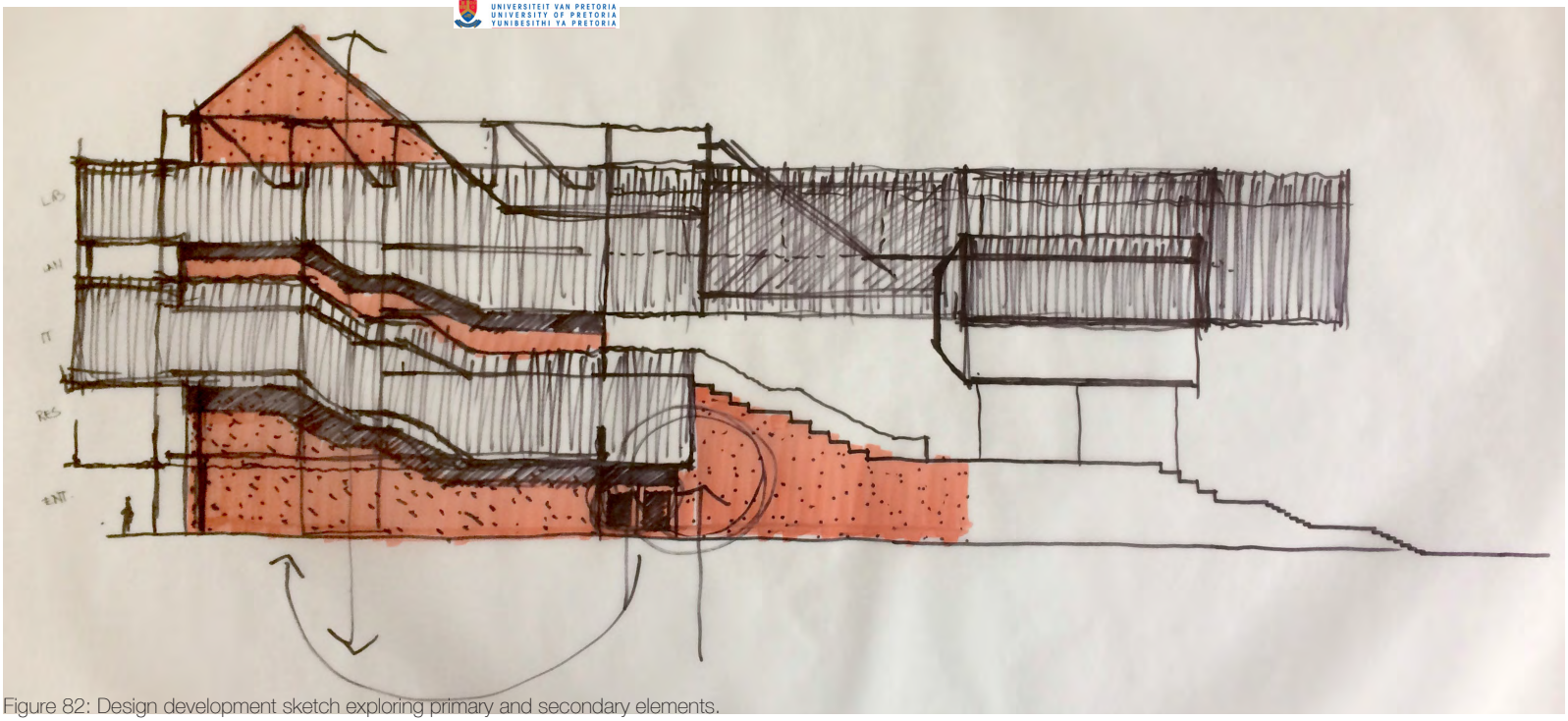


Figure 82: Design development sketch exploring primary and secondary elements.

Figure 81: Maquette adressing public space.

Figure 83: Massing maquette.

Figure 84: Maquette adressing covered public space

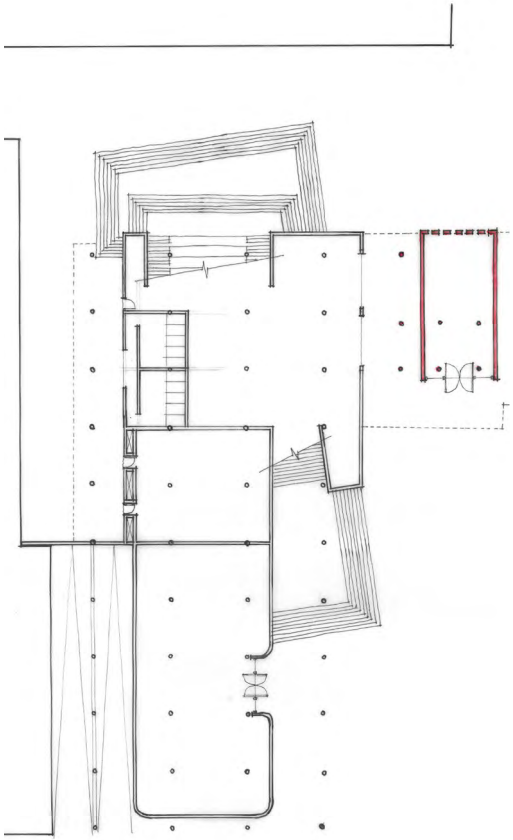


Figure 85: Ground floor sketch plan.

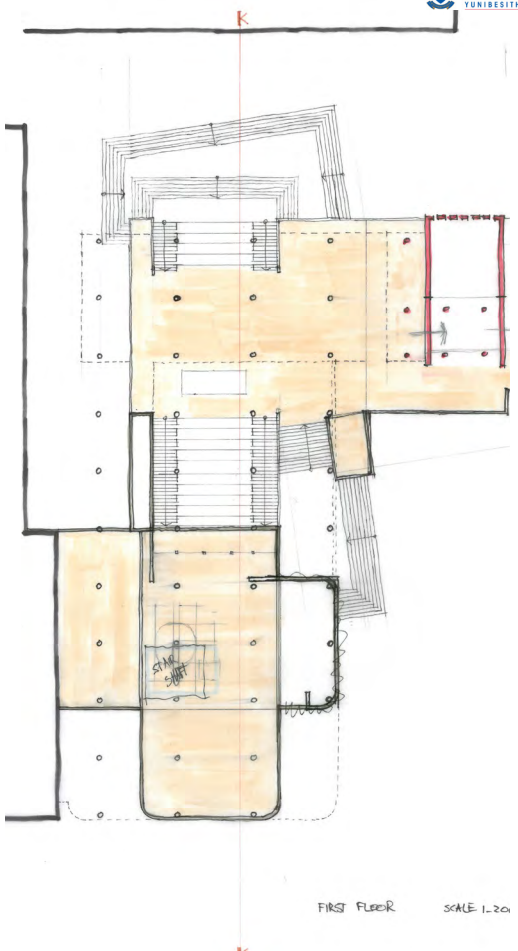


Figure 86: First floor sketch plan

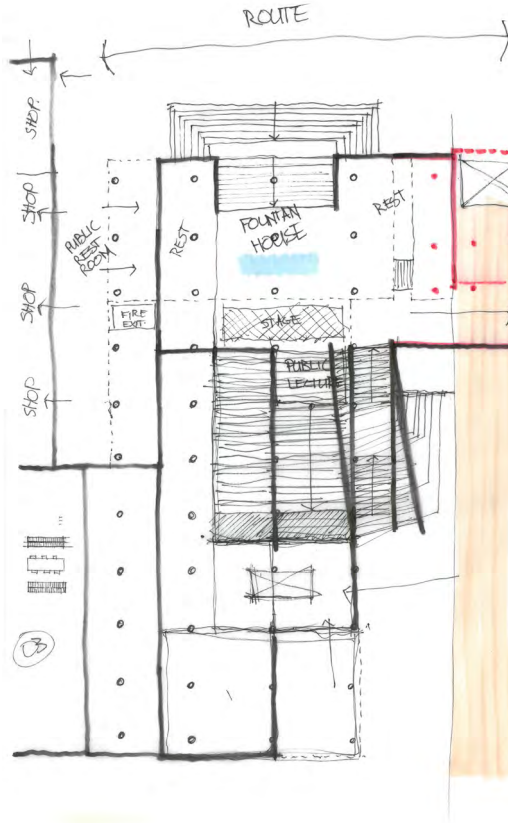


Figure 87: Development of first floor sketch plan.

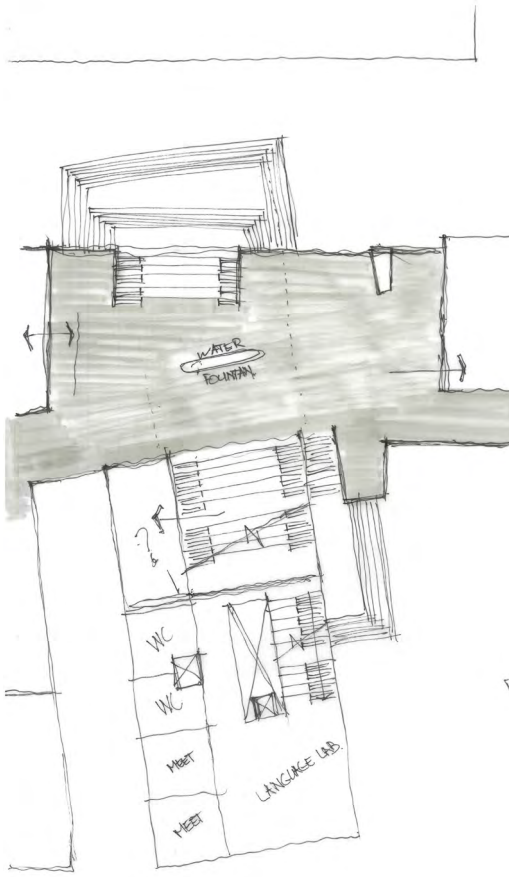


Figure 88: Diagramatic development of first floor layout.

The design development attempts to respond to the issues that rise from the theoretical framework, historic context, urban framework, programmatic intentions and conceptual idea. None of them can be viewed in isolation as they often overlap and influence one another. This was explored through a series of maquettes, in context and at a variety of scales, to find an appropriate design solution.

Technical Development

In reaction to the urban decay prevalent in the city, the technical development aims to remodel the Extramural Building in an attempt to retain its inherent value. Technical issues are explored as tools to regenerate and unlock the latent potential and further develop the design of the building. The development will focus on the resource centre while incorporating the existing building into a holistic strategy for its redevelopment. The technical issues explored include the application of the theoretical framework, the structural composition of the building, its materiality, and the building climate it produces.

The technical development of the project builds on the theoretical framework that investigates the combination of the theories of adaptation and heritage practice, examining the needs of each portion of the existing building through the lens of Brand's concept of shearing layers of change and Robert's seven principles. The technical strategy culminates in a series of diagrams that explain the level of change to and engagement with the various layers of each portion of the existing building (Figure 89). These conservation practice diagrams enable an immediate understanding of the physical actions that need to be taken to regenerate the existing building. The redevelopment strategy is expanded by introducing a new building, the Resource Centre, within the theoretical practice of 'the building around'. The palimpsestic approach views the building as an existing structural language. The base of the Resource Centre is viewed as a reinterpretation of the existing language, and the top portion of the building is viewed as a new language (Figure 90).

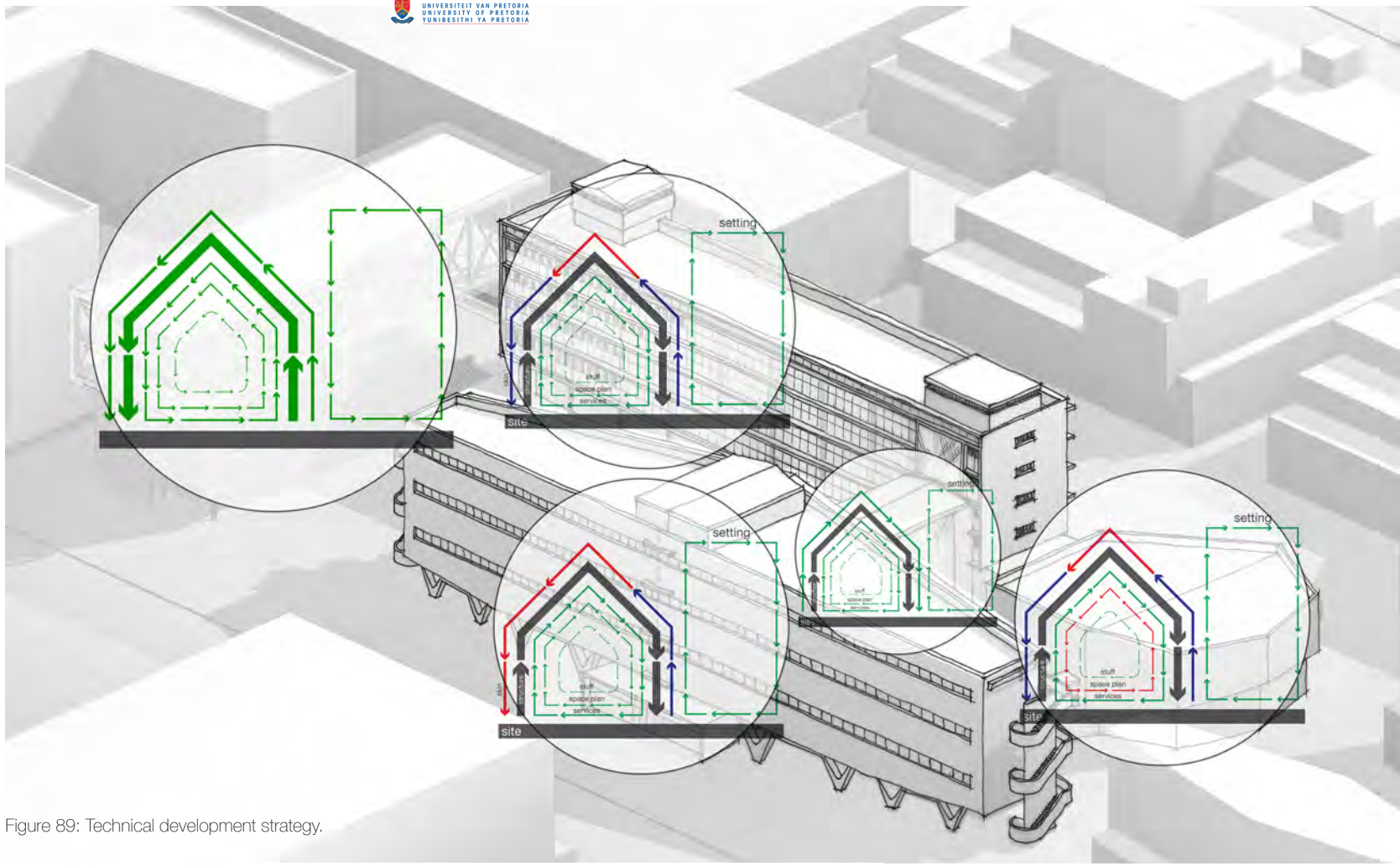


Figure 89: Technical development strategy.

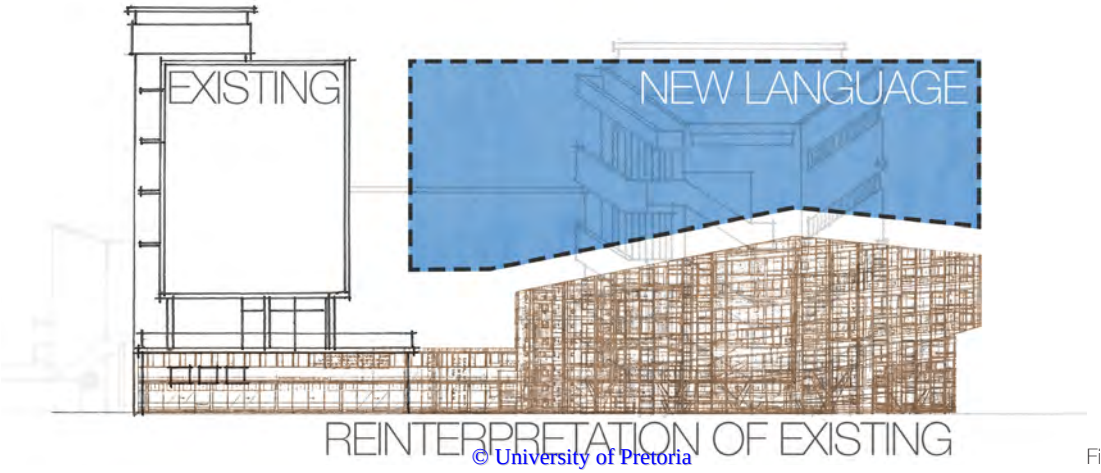


Figure 90: Technical concept.

Structural Systems

The structure of the building is made up of three parts: a structural core, a cantilevered frame and a skin. The primary structure consists of concrete columns, beams and floor slabs that form the structural core of the building. The core functions as a weighted base to allow the secondary structure to achieve a large cantilever over the public lecture hall. The secondary structure consists of two steel beams, connected to one another to form a portal frame that attaches to the structural core. A concrete floor and roof are cast on permanent shuttering that rests on a series of lattice joists. The framework is covered with a double-skin system – an internal skin of glazing, and an exterior skin that modulates the amount of natural light that is allowed into the spaces (Figure 92).

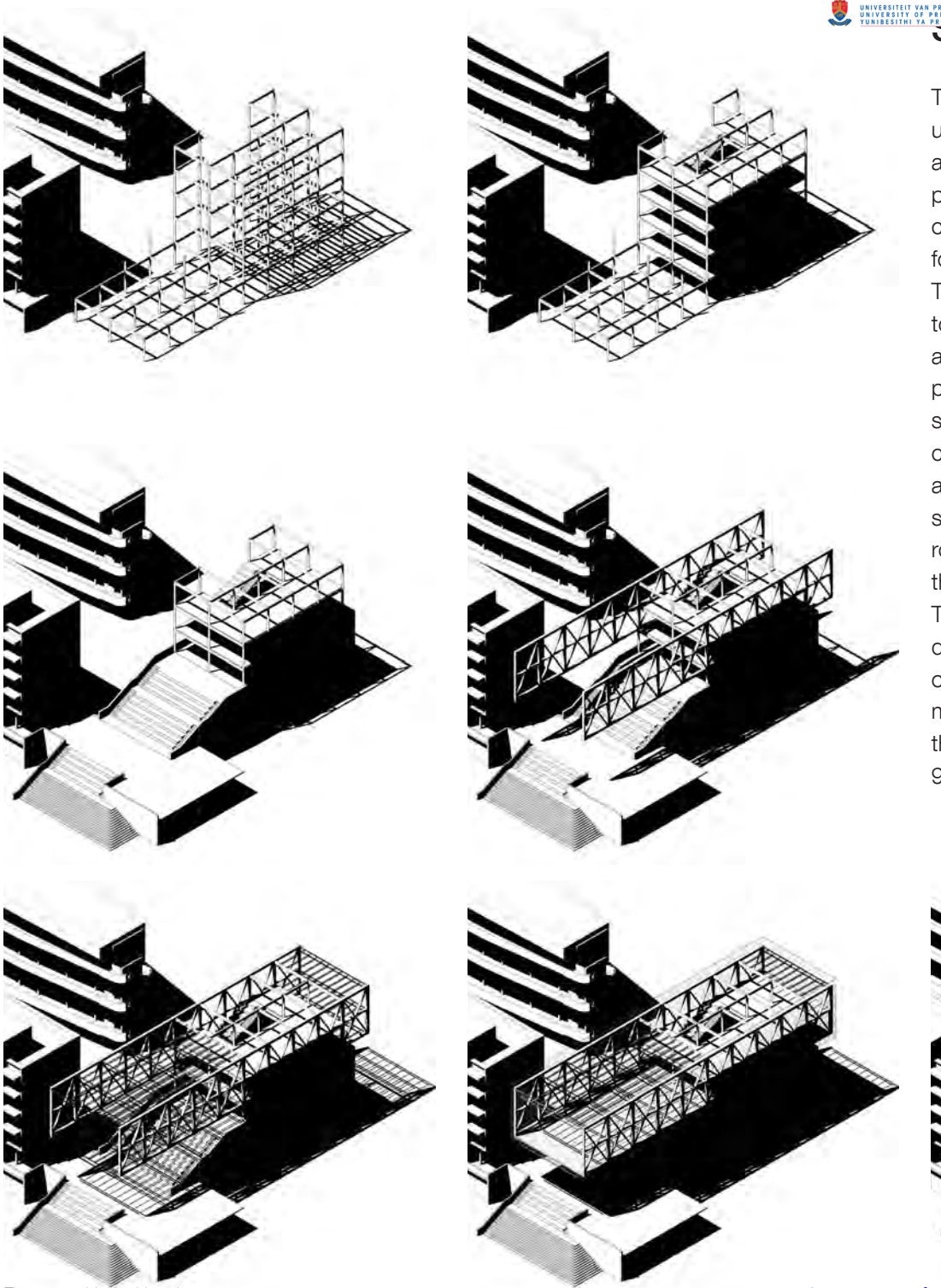


Figure 91: Unpacking the structure.

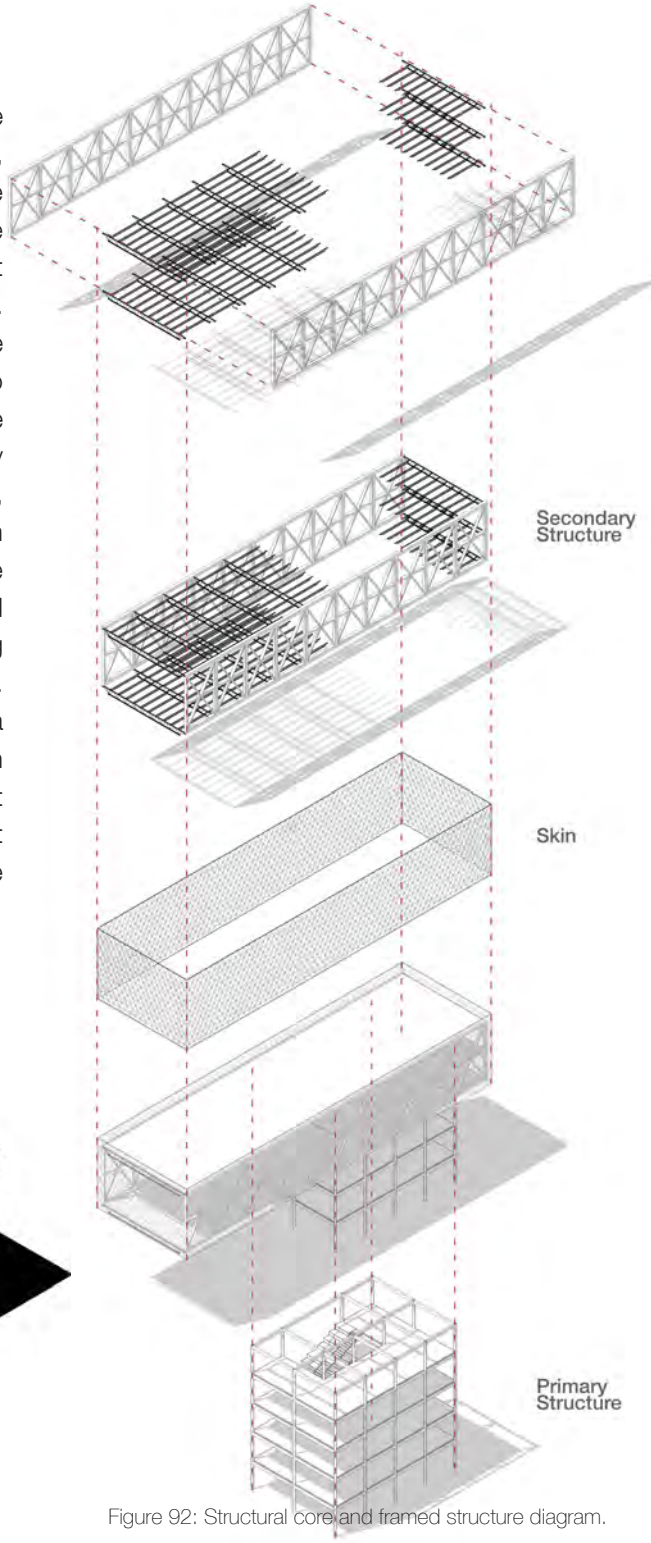


Figure 92: Structural core and framed structure diagram.

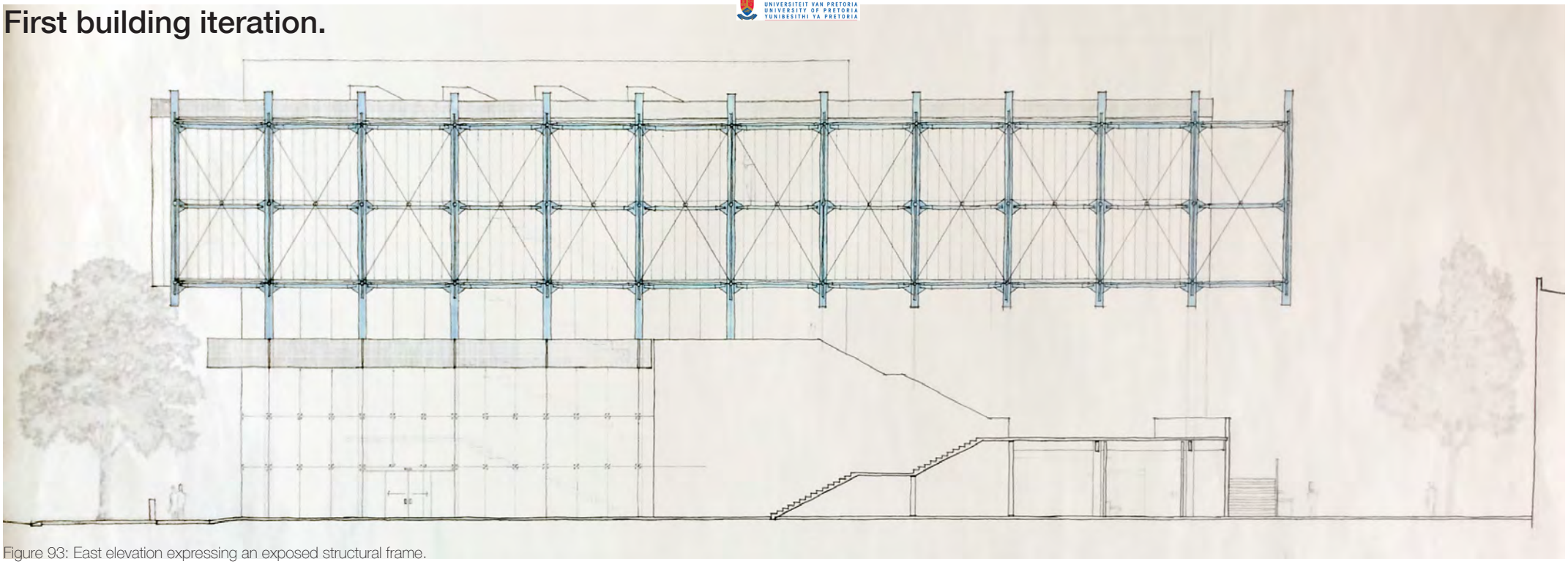


Figure 93: East elevation expressing an exposed structural frame.

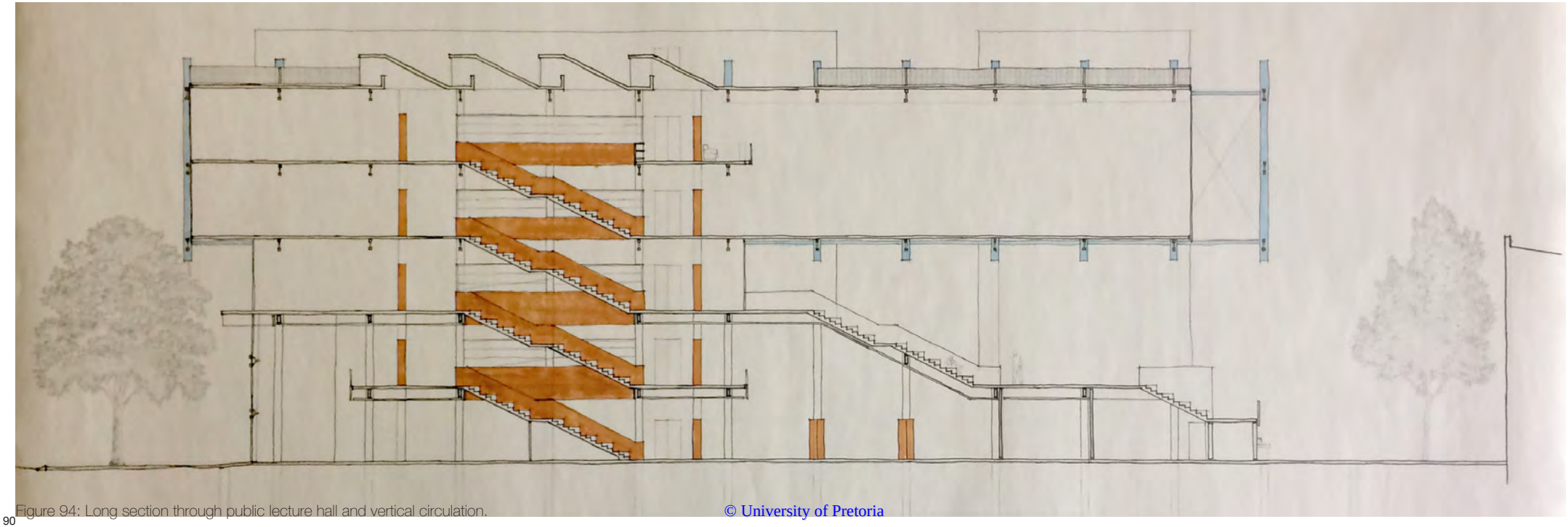


Figure 94: Long section through public lecture hall and vertical circulation.

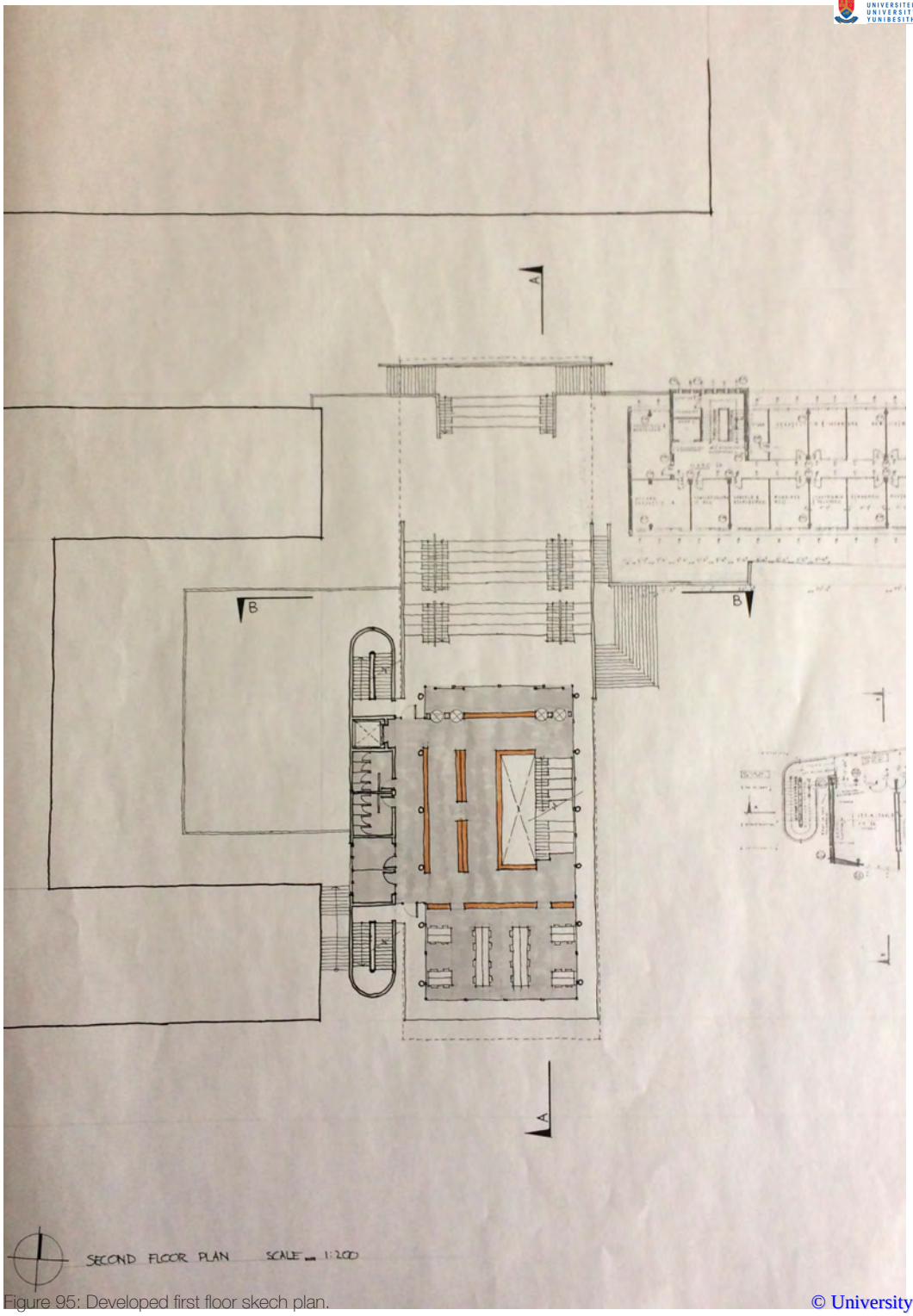


Figure 95: Developed first floor skech plan.

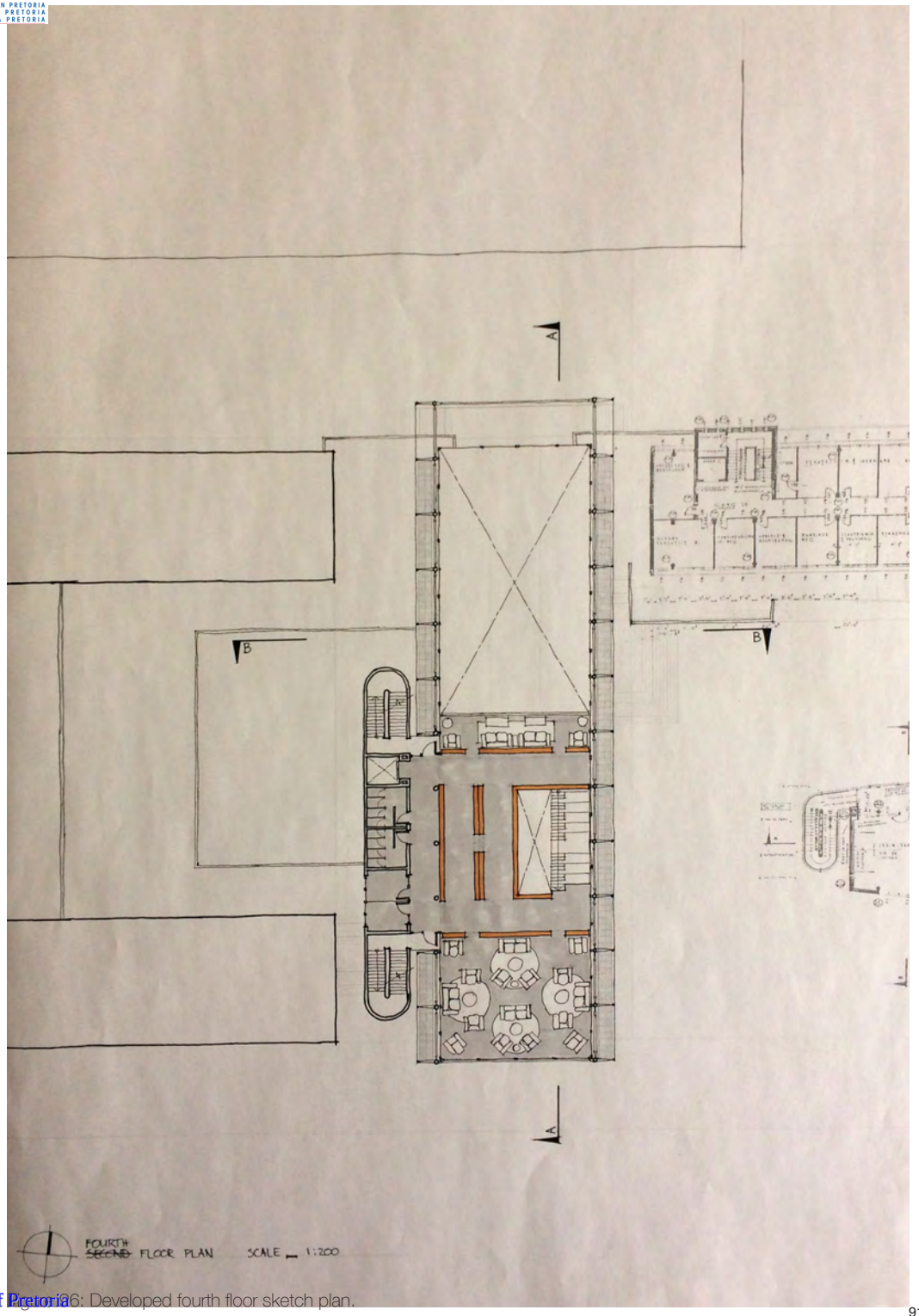


Figure 96: Developed fourth floor sketch plan.

Materiality

Figure 97: Existing building material palette.

The building displays an existing palette of materials. A fair amount of reconstruction has to take place as a result of the condition of the building, which would introduce new materials without changing the palette. The facades of the existing building are treated in a variety of ways. These include exposed face brick, plastered, tiled, fully glazed and clad with steel panels.

For the Resource Centre the existing material palette is used for the base and some new materials are introduced (Figure 97).

Building Climate

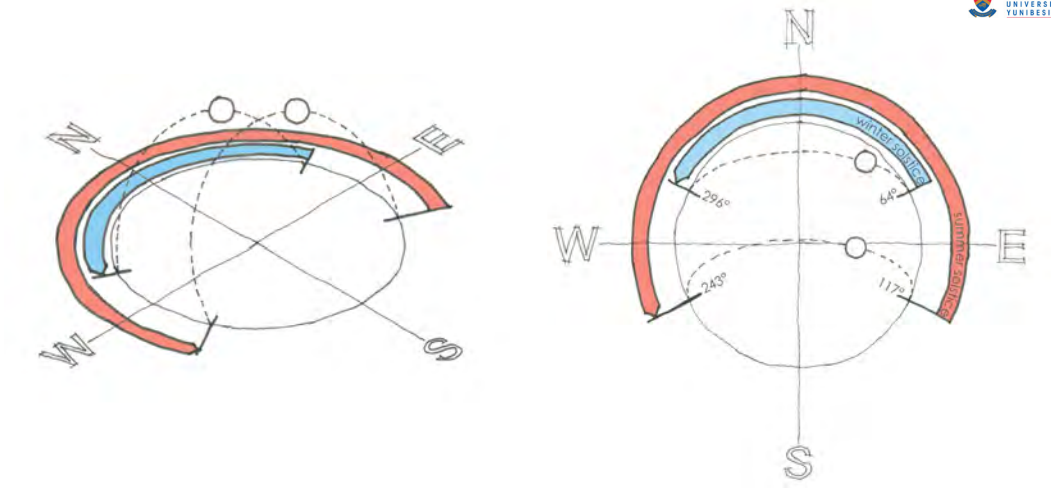


Figure 98: Solar movement.

The bioclimatic chart is often used as a guide to achieve and describe thermal comfort within a building. This chart augments the psychrometric chart to indicate the different climatic zones. It expresses what is considered to be a comfort zone and various strategies to achieve thermal comfort. The comfort zone is expressed as between 20 and 27 °C and between 20 and 80% relative humidity (Joubert, 2010: 56).

In order to maintain thermal comfort, the technical development focuses on the use of passive thermal comfort strategies that are appropriate for Pretoria. The appropriate strategies are: sun shading for windows, fan-forced ventilation, internal heat gain, direct passive solar gain, low/high mass, and heating. These strategies form a complete system in which all of the strategies are effective at different times of the day and year, working together to maintain thermal comfort throughout the year (Conradie, 2012: 105).

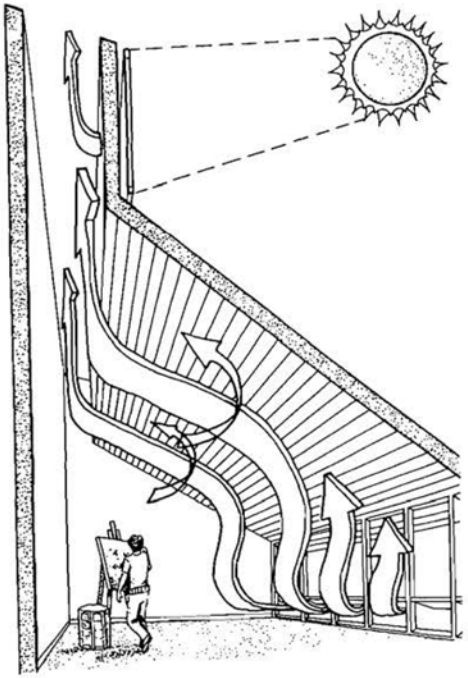


Figure 101: Solar chimney. (Bradshaw, V. 2006:224)

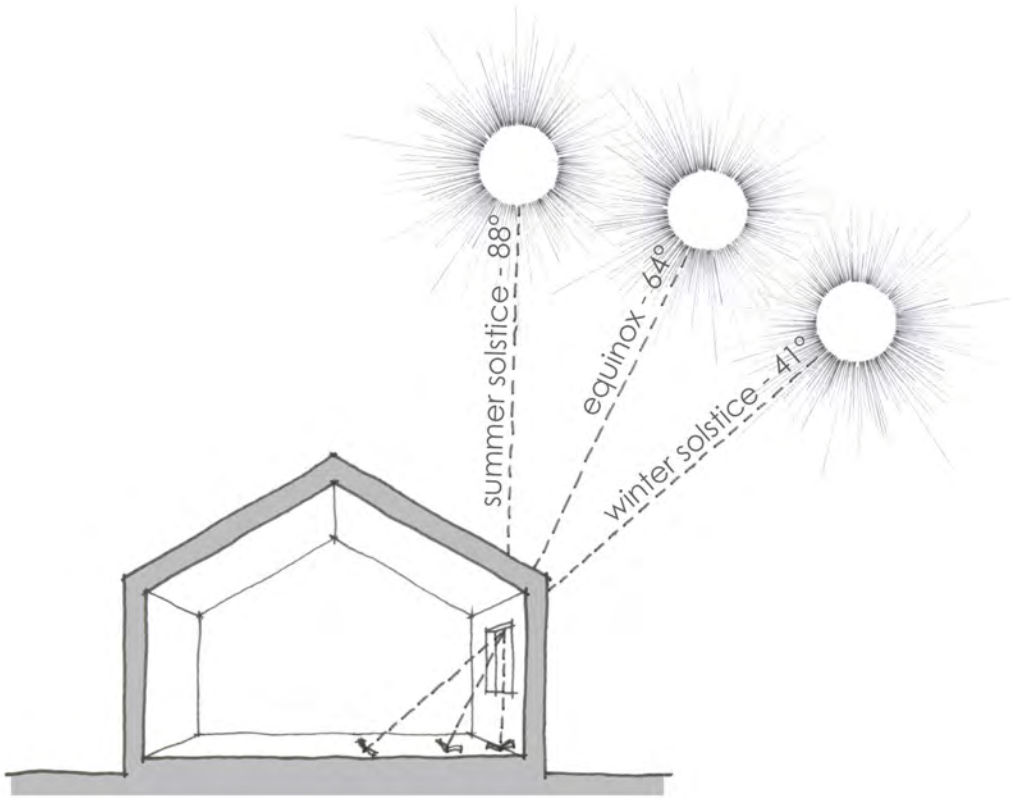


Figure 99: Solar angle at solstice and equinox.

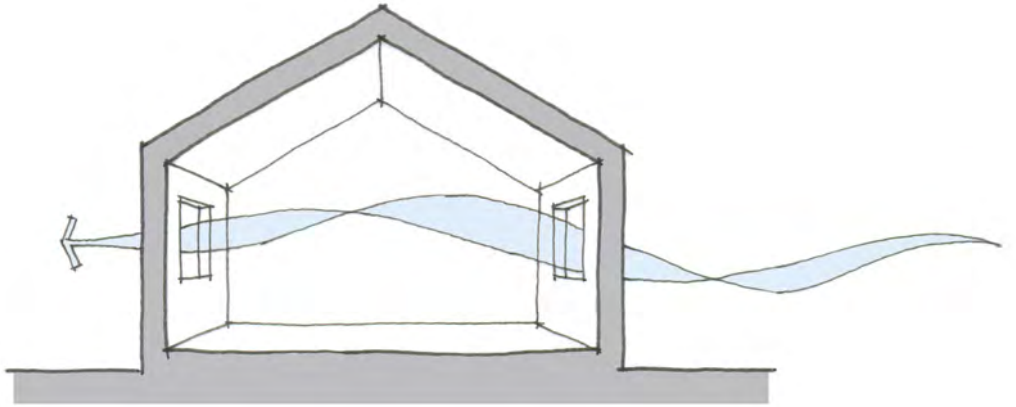


Figure 100: Cross ventilation.

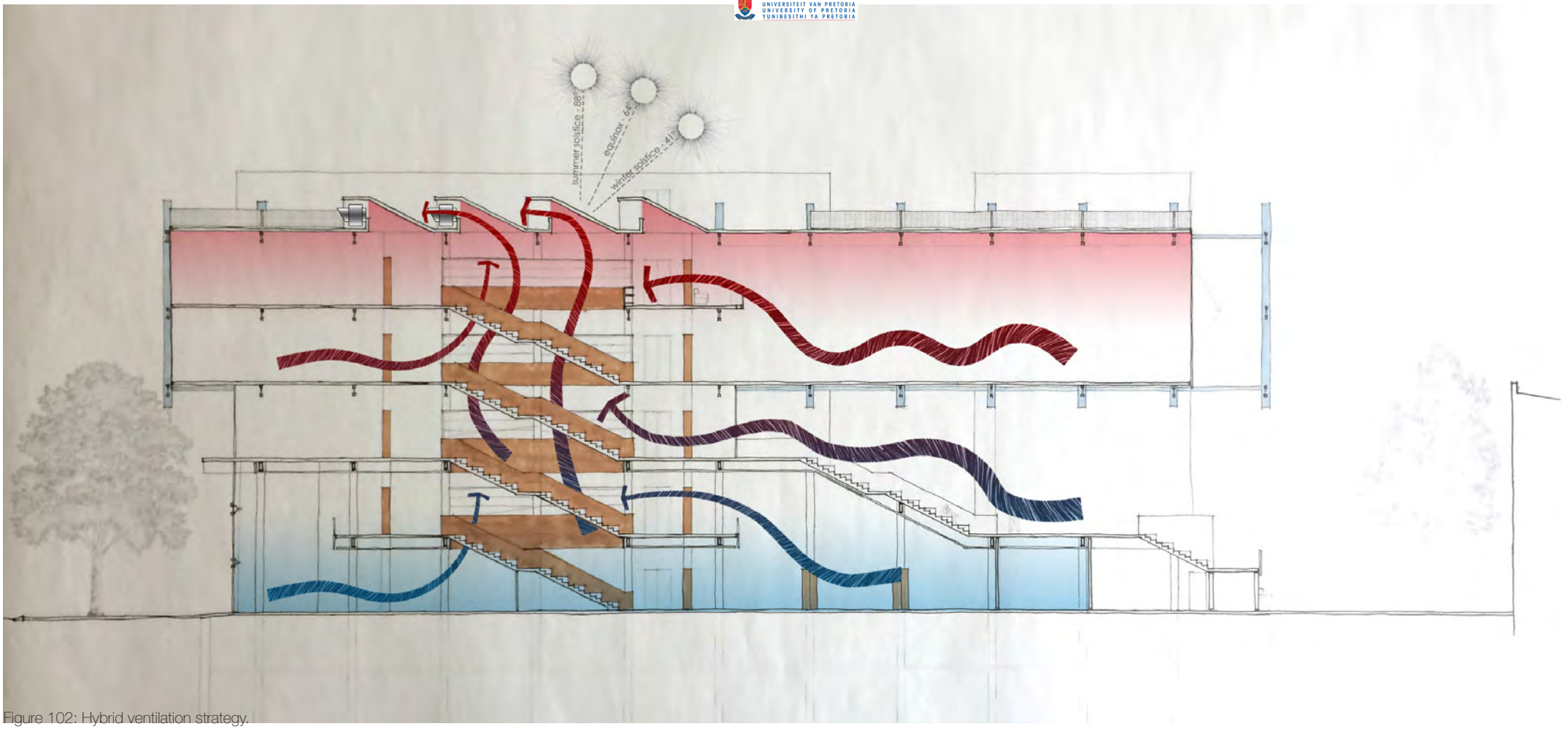


Figure 102: Hybrid ventilation strategy.

Cross ventilation is only effective if a space is no deeper than five times its height (Joubert, 2010: 74). This form of ventilation is not very effective in Pretoria and strategies to aid ventilation should be introduced. A hybrid system of fan-forced ventilation combined with a solar chimney will address the ventilation of the building.

The movement of the earth around the sun results in a variety of complex sun angles. These are explored in diagrammatic form to aid in the design of shading devices (Figure 102). The skin of the building acts as the primary solar shading device.

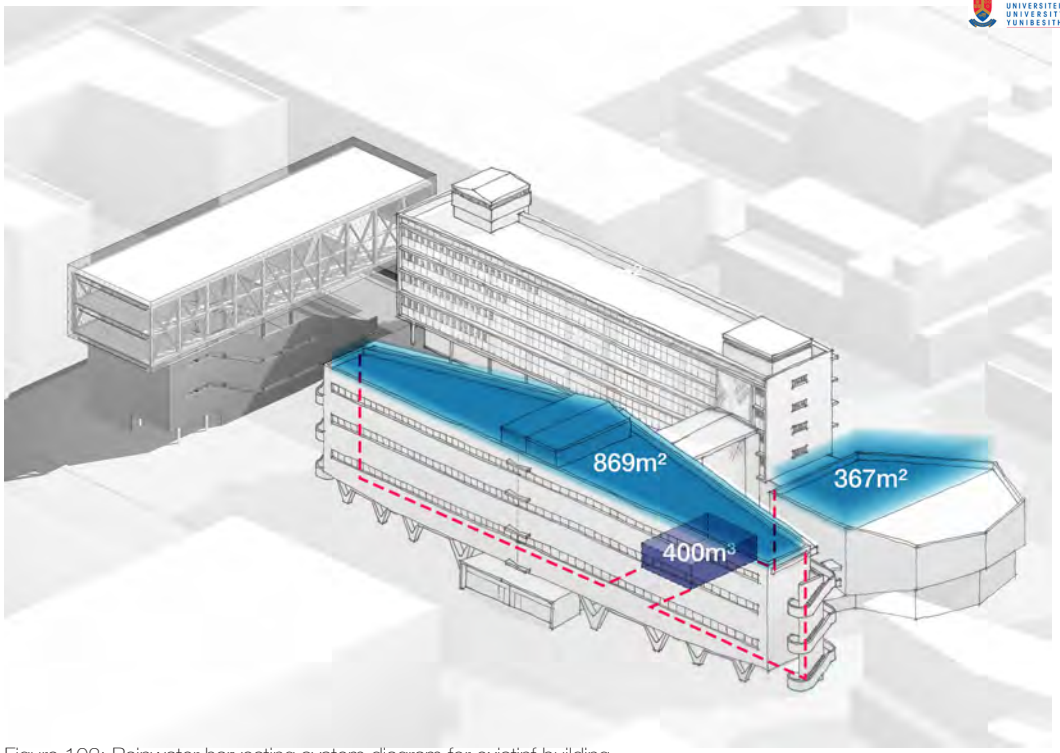


Figure 103: Rainwater harvesting system diagram for existinf building.

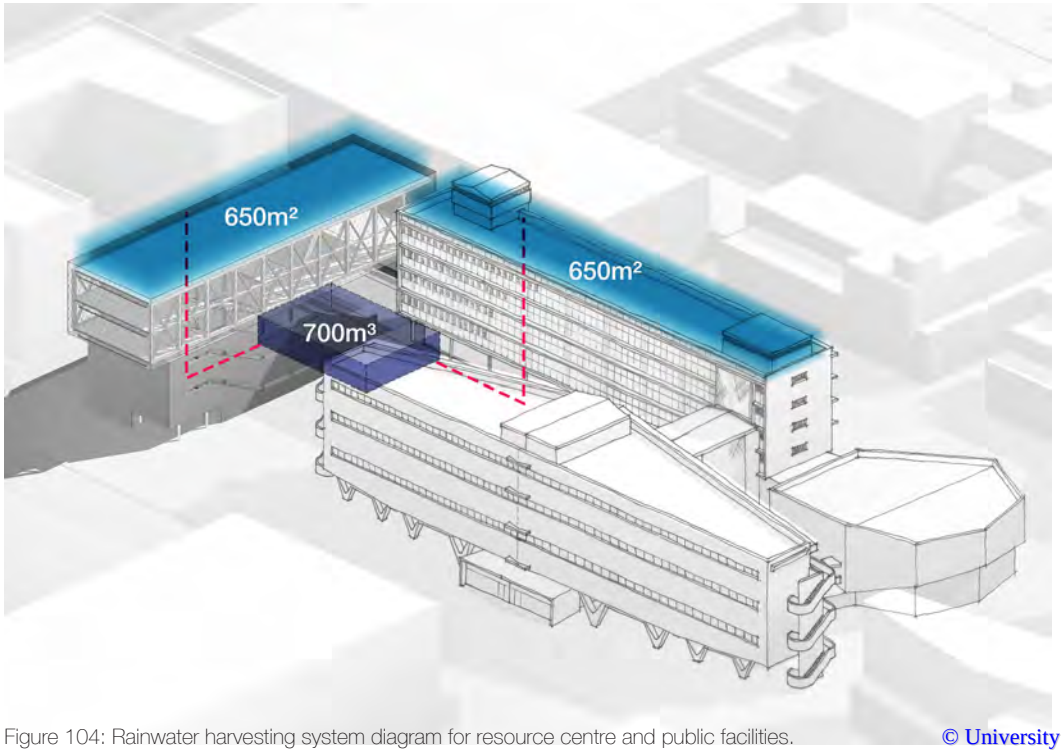


Figure 104: Rainwater harvesting system diagram for resource centre and public facilities.

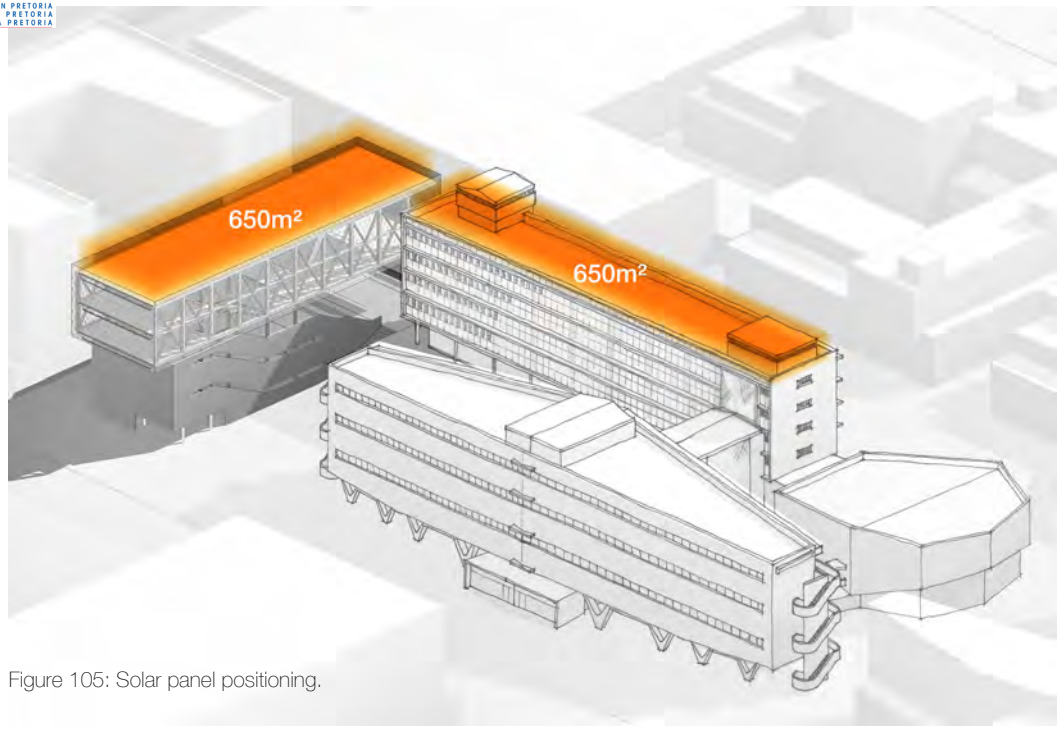


Figure 105: Solar panel positioning.

Rainwater harvesting

A rainwater harvesting strategy is developed to supply the site with enough water to satisfy the demands of staff, students and public. This strategy is separated into two systems, one that services the ablution facilities of the B-block (Figure 103), and a separate system that services the Resource Centre and public restrooms (Figure 104).

Water management calculations were done for each system. These calculations were based on the average annual rainfall of Pretoria, the available catchment area, and the design populations of the buildings. The system on the existing building can accommodate the needs of 80 staff members and 100 students (Figure 103), while the other can cater for 42 staff members and 800 pedestrians (Figure 104).

Solar installation

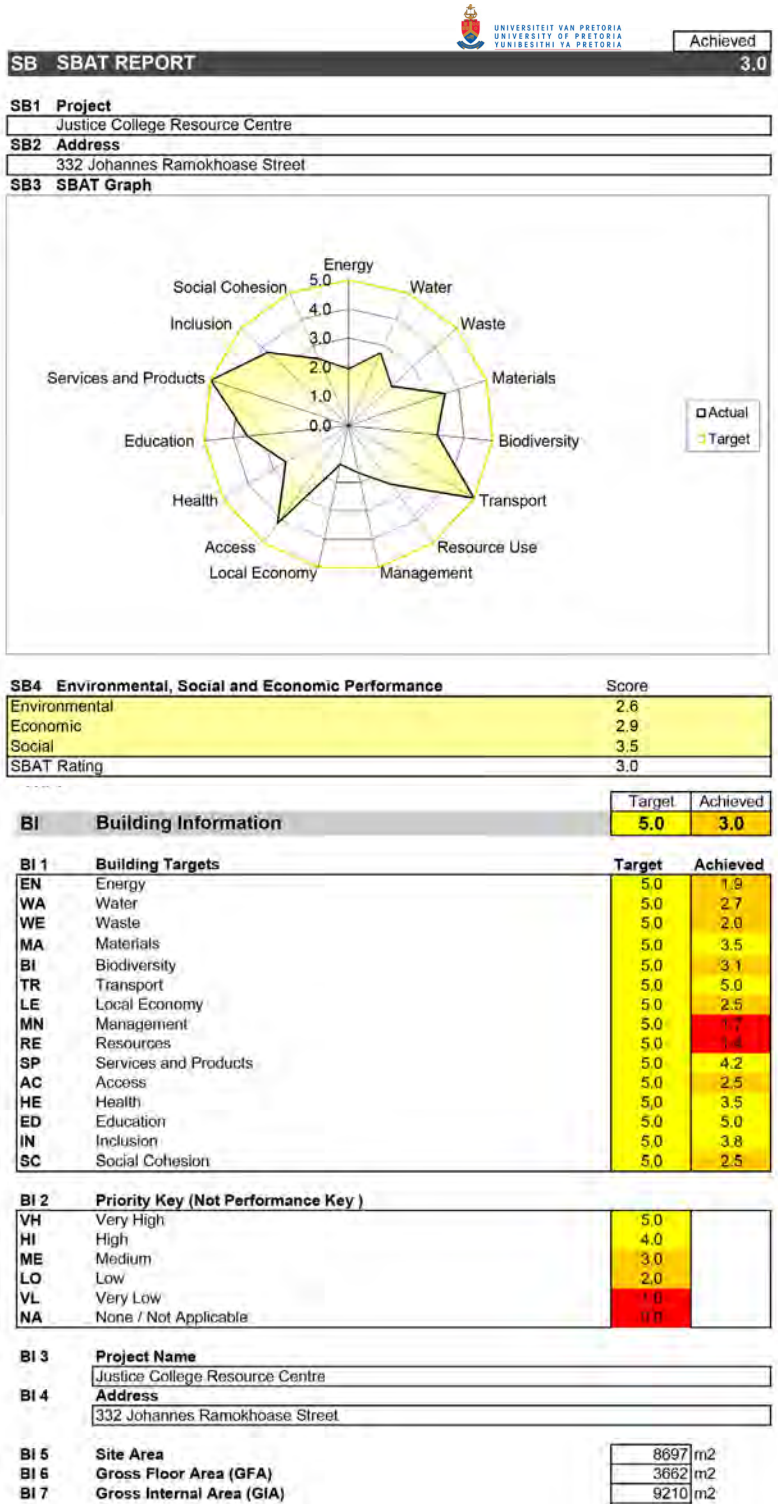
The roof space available for a photovoltaic system has an area of 1190m² (Figure 105). With a panel size of 1.94m² (992x1956mm) a maximum of 600 72-cell modules can be installed. Each panel can produce 300-320 Wp for a total of 180 000 Wp to provide the entire 8210m² campus with 21Wp/m² of electricity.

SBAT rating

The Sustainable Building Analysis Tool was used to analyse the Resource Centre (Figure 106), and it revealed both positive and negative aspects of the building. The tool showed that the social integration of the building initiated by the urban framework has a positive effect on its overall rating.

The three performance sections are environmental, economic and social. The most notable areas that can improve the environmental score of the building include energy, water and waste. To increase the economic rating of the building, focus should be placed on management, the local economy, and the use of resources. The social cohesion and health aspects of the building can help to improve the overall social rating.

A second SBAT analysis was performed on the final iteration of the building and resulted in an improved overall score (Figure 107).



SB	SBAT REPORT	Achieved 3.0

SB1 Project	Justice College Resource Centre
SB2 Address	332 Johannes Ramokhoase Street

SB3 SBAT Graph

SB4 Environmental, Social and Economic Performance	Score
Environmental	2.6
Economic	2.9
Social	3.5
SBAT Rating	3.0

BI Building Information	Target 5.0	Achieved 3.0

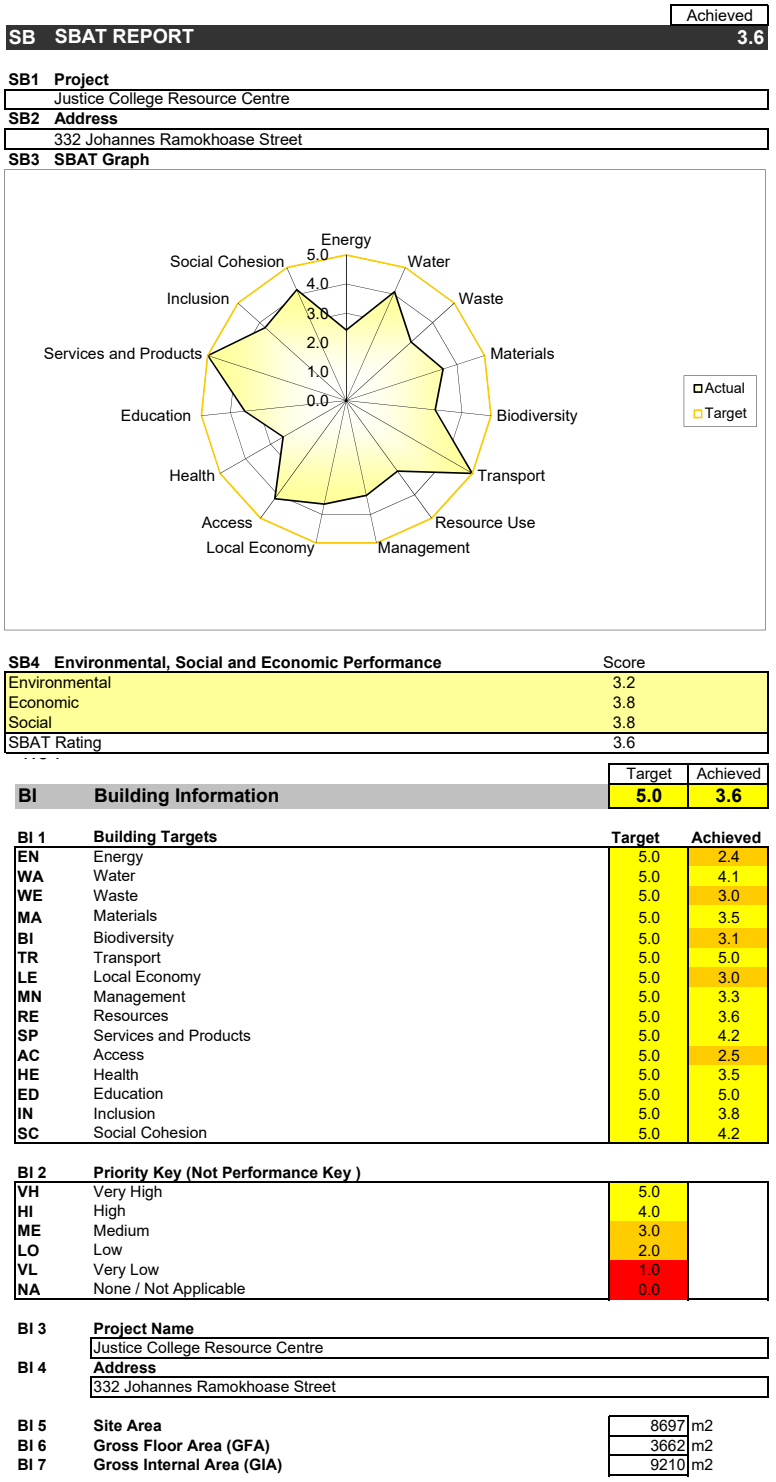
BI 1	Building Targets	Target	Achieved
EN	Energy	5.0	1.9
WA	Water	5.0	2.7
WE	Waste	5.0	2.0
MA	Materials	5.0	3.5
BI	Biodiversity	5.0	3.1
TR	Transport	5.0	5.0
LE	Local Economy	5.0	2.5
MN	Management	5.0	1.7
RE	Resources	5.0	1.4
SP	Services and Products	5.0	4.2
AC	Access	5.0	2.5
HE	Health	5.0	3.5
ED	Education	5.0	5.0
IN	Inclusion	5.0	3.8
SC	Social Cohesion	5.0	2.5

BI 2	Priority Key (Not Performance Key)	
VH	Very High	5.0
HI	High	4.0
ME	Medium	3.0
LO	Low	2.0
VL	Very Low	1.0
NA	None / Not Applicable	0.0

BI 3	Project Name	Justice College Resource Centre
BI 4	Address	332 Johannes Ramokhoase Street

BI 5	Site Area	8697 m2
BI 6	Gross Floor Area (GFA)	3662 m2
BI 7	Gross Internal Area (GIA)	9210 m2

Figure 106: SBAT report, first iteration.



SB	SBAT REPORT	Achieved 3.6

SB1 Project	Justice College Resource Centre
SB2 Address	332 Johannes Ramokhoase Street

SB3 SBAT Graph

SB4 Environmental, Social and Economic Performance	Score
Environmental	3.2
Economic	3.8
Social	3.8
SBAT Rating	3.6

BI Building Information	Target 5.0	Achieved 3.6

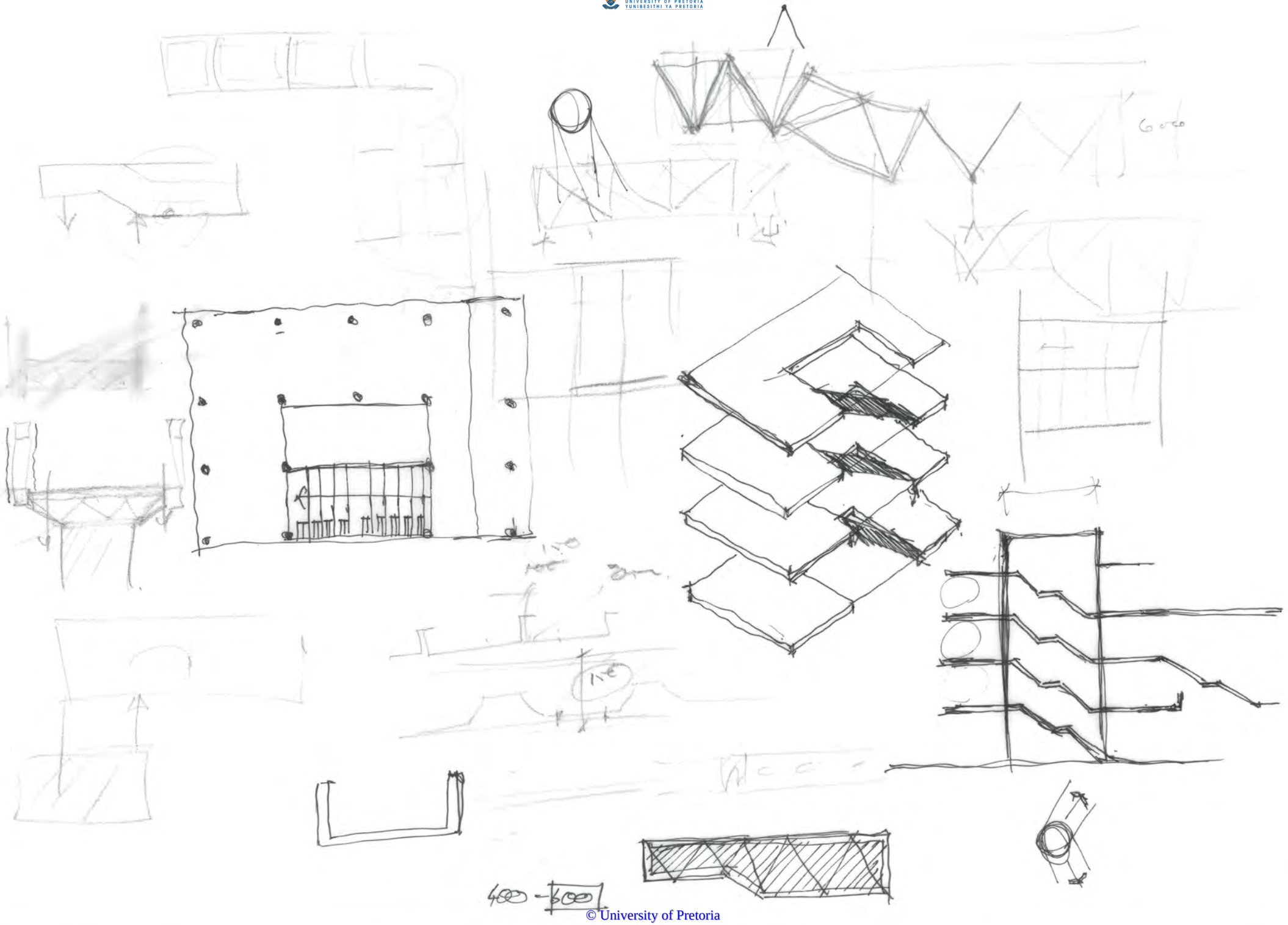
BI 1	Building Targets	Target	Achieved
EN	Energy	5.0	2.4
WA	Water	5.0	4.1
WE	Waste	5.0	3.0
MA	Materials	5.0	3.5
BI	Biodiversity	5.0	3.1
TR	Transport	5.0	5.0
LE	Local Economy	5.0	3.0
MN	Management	5.0	3.3
RE	Resources	5.0	3.6
SP	Services and Products	5.0	4.2
AC	Access	5.0	2.5
HE	Health	5.0	3.5
ED	Education	5.0	5.0
IN	Inclusion	5.0	3.8
SC	Social Cohesion	5.0	4.2

BI 2	Priority Key (Not Performance Key)	
VH	Very High	5.0
HI	High	4.0
ME	Medium	3.0
LO	Low	2.0
VL	Very Low	1.0
NA	None / Not Applicable	0.0

BI 3	Project Name	Justice College Resource Centre
BI 4	Address	332 Johannes Ramokhoase Street

BI 5	Site Area	8697 m2
BI 6	Gross Floor Area (GFA)	3662 m2
BI 7	Gross Internal Area (GIA)	9210 m2

Figure 107: SBAT report, second iteration.



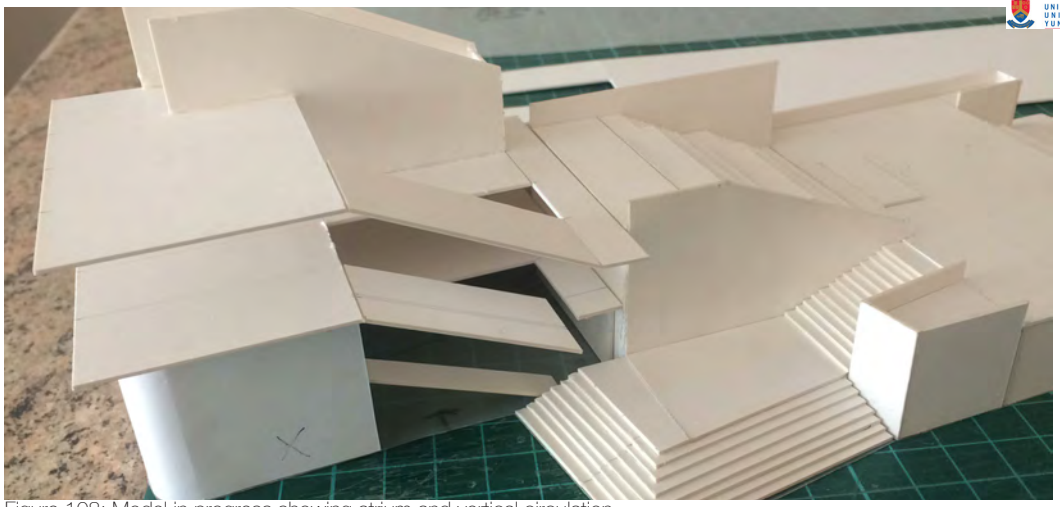


Figure 108: Model in progress showing atrium and vertical circulation.

Figure 109: Model in context as viewed from the street.

Figure 110: Model from northern walkway.

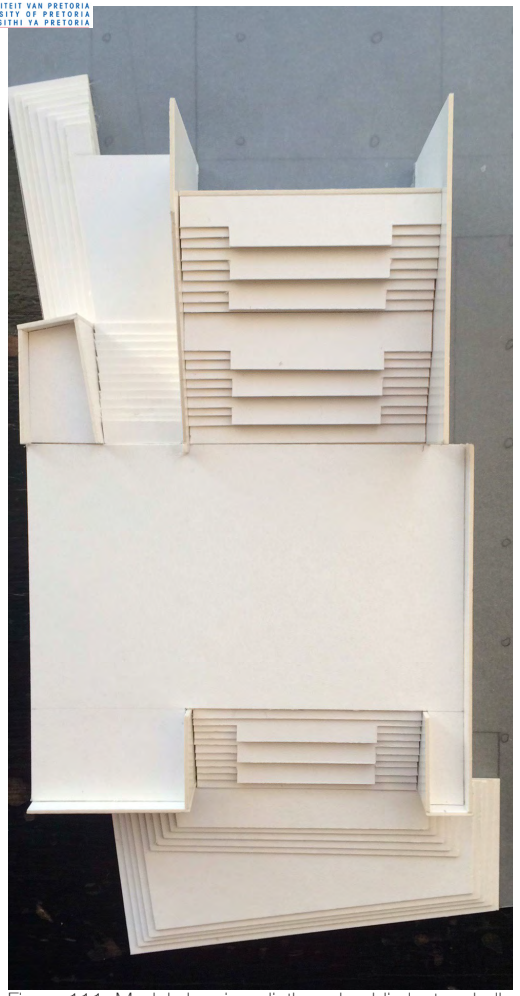


Figure 111: Model showing plinth and public lecture hall.

Figure 112: Model showing formal relationship to existing.

Figure 113: Medley of concept models.

Concusion of Part Two

The expression of the project dealt with the development of a concept that stems from a palimpsestic understanding of old buildings as context. The continuous urban surface conceptually connects the theoretical framework and historical and physical contexts, and aids in the overall intention of regenerating the Extramural Building.

The design development responded to the issues that arise from the theoretical framework, historical context, urban framework, programmatic intentions and conceptual ideas. None of these can be viewed in isolation as they often overlap and influence one another, as explored through a series of maquettes to find an appropriate design solution.

The technical development was aimed at remodelling the Extramural Building in an attempt to retain its inherent value and is seen as an integrated part of the design process. Technical issues were explored as tools to regenerate and unlock the building's latent potential and further develop its design. A holistic strategy was developed for the site that makes use of the theoretical framework. This resulted in a diagrammatic remodelling strategy that describes what physical conservation or adaptation practices that are applied to the existing building. The palimpsestic argument of the project was expanded into a technical concept that aided in the development the aesthetic and construction vocabulary of the resource centre. Appropriate thermal comfort strategies were discussed and illustrated and resulted in the adoption of a passive approach to controlling the building climate through the use of a combination of cross ventilation and fan assisted ventilation. The skin of the building was conceptualised as a solar shading device for the control of climate by only allowing a certain percentage of sunlight into the building. Finally the The Sustainable Building Analysis Tool was used to assess the first and second iteration of the building and lead to the incorporation of a rainwater harvesting systems and a photovoltaic system as a means to reduce the environmental impact of the project.

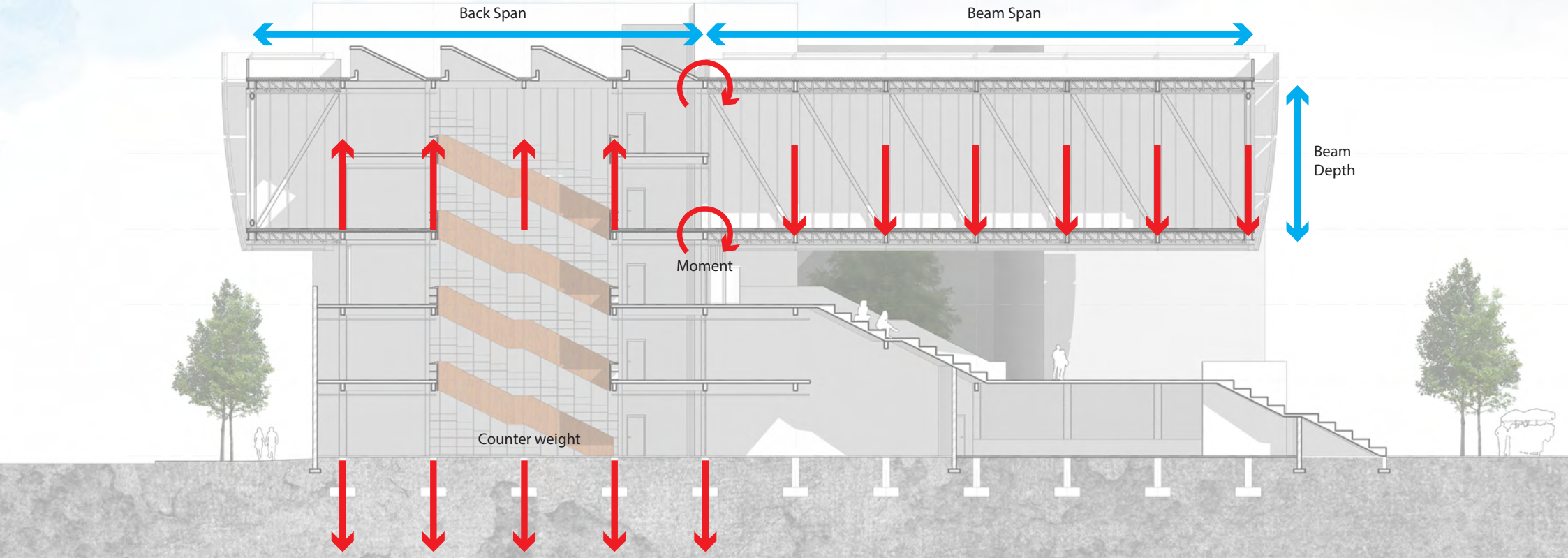


Figure 114: Forces diagram.

Conclusion

A wave of vandalism is sweeping Pretoria in the form of Building Mining. This form of urban decay has placed many iconic buildings in jeopardy, including the Extramural Building.

The dissertation aimed to find out if theories of adaptation and heritage practice can help the Extramural Building reclaim its role in the city by regenerating it. A comprehensive theoretical framework was produced and applied to the building. This framework navigated the complexities between heritage practice and remodelling.

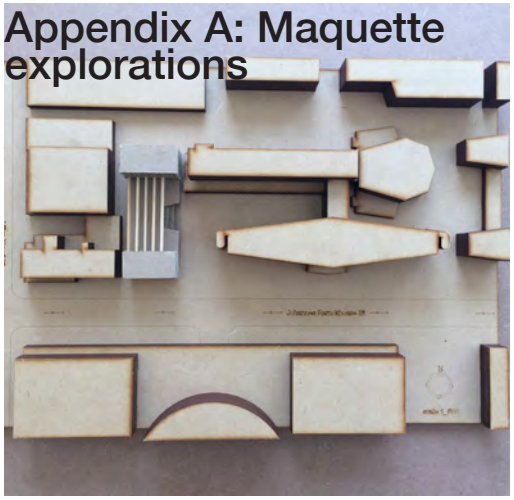
The uncomfortable condition that arises from having to navigate the city alongside vehicular traffic was addressed by a Social Space Framework. The framework builds on the existing development plan that the City of Tshwane outlines in its Inner City Regeneration Framework by further developing the Civic Precinct. The strategy mitigates the issues that arise from the immense size of the city's blocks by adding a new pedestrian route that continue the tradition of Arcade's in our city.

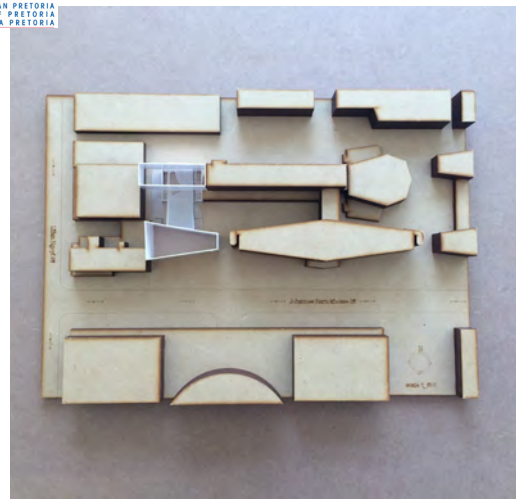
Architecture was explored as an extension of the public realm throughout the design and technical development of a Resource Centre for the Justice College. This development addressed issues of heritage practice, theories of adaptation, historical and contextual problems through the design of the centre that mitigates the harsh boundaries that often arise from the collision of public and private realms.

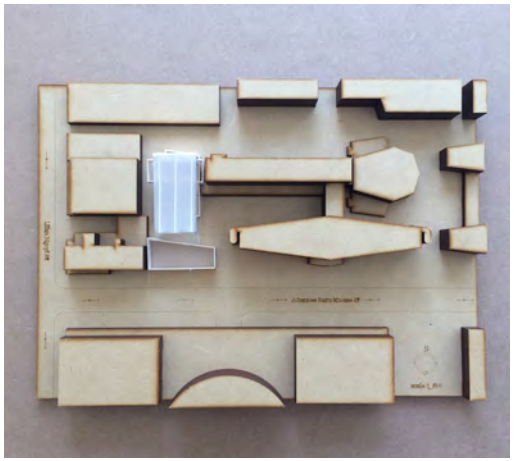
Through the application of appropriate remodelling practices, the Extramural Building can undoubtedly reclaim its role in the city and add a great deal of social and cultural value to the city of Pretoria. A rich global history is embodied by buildings that our generation inherited. The dissertation serves as an example to our nation that it is important to save our old buildings to ensure that we protect our global legacy.

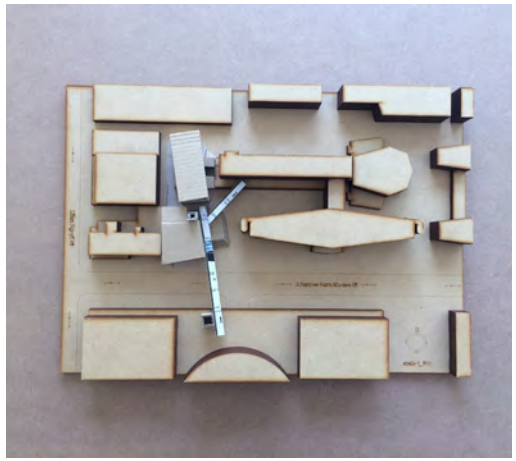
Appendices

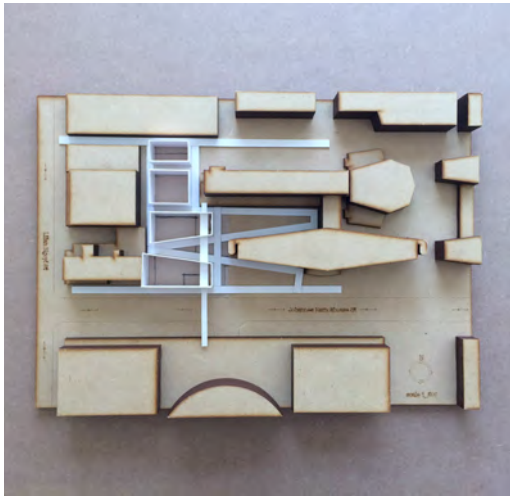
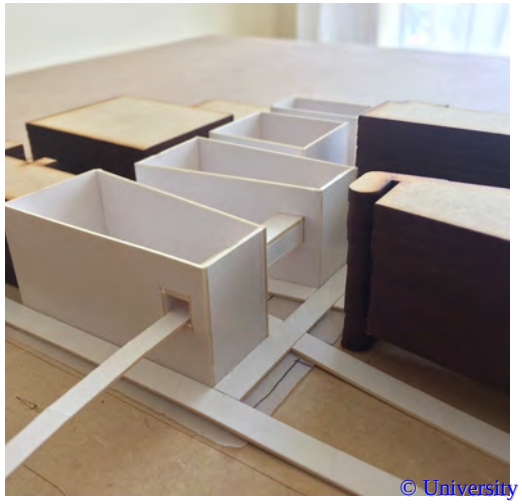
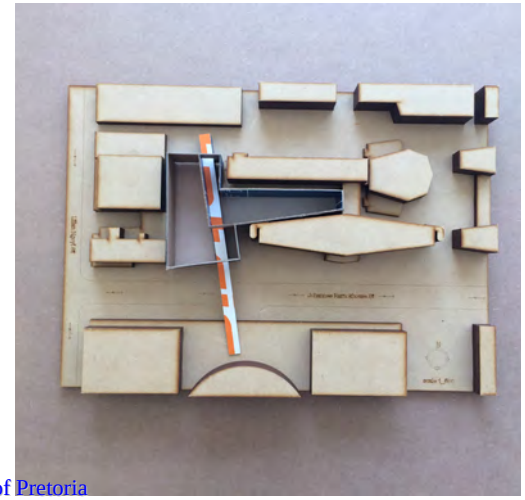
Appendix A: Maquette explorations



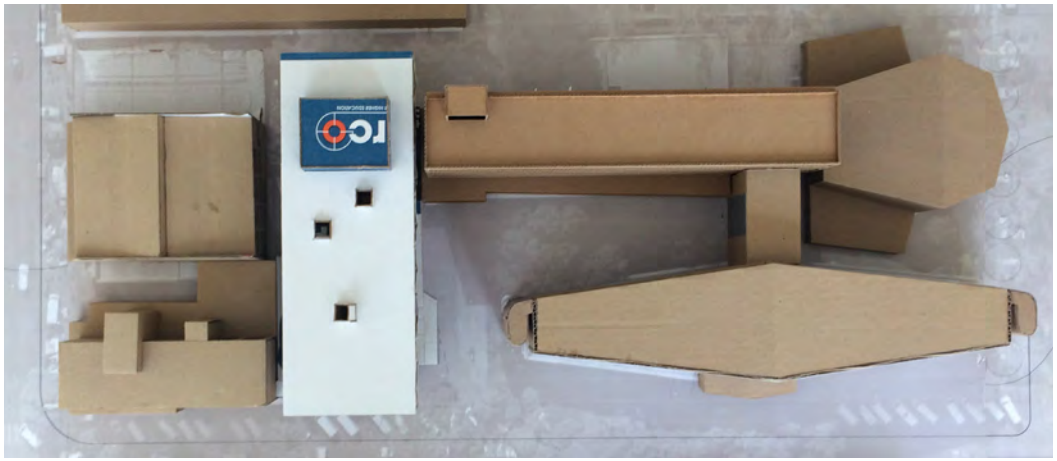


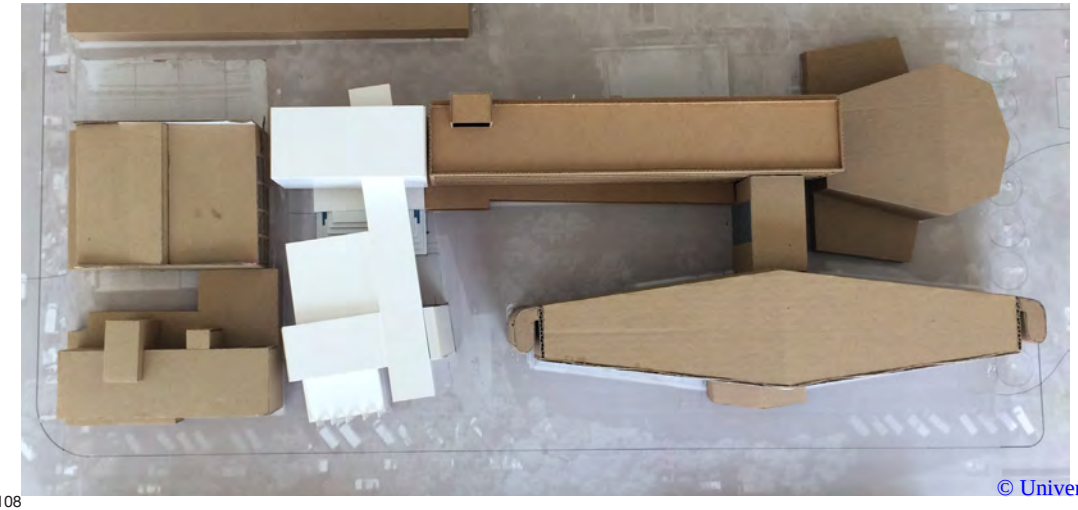


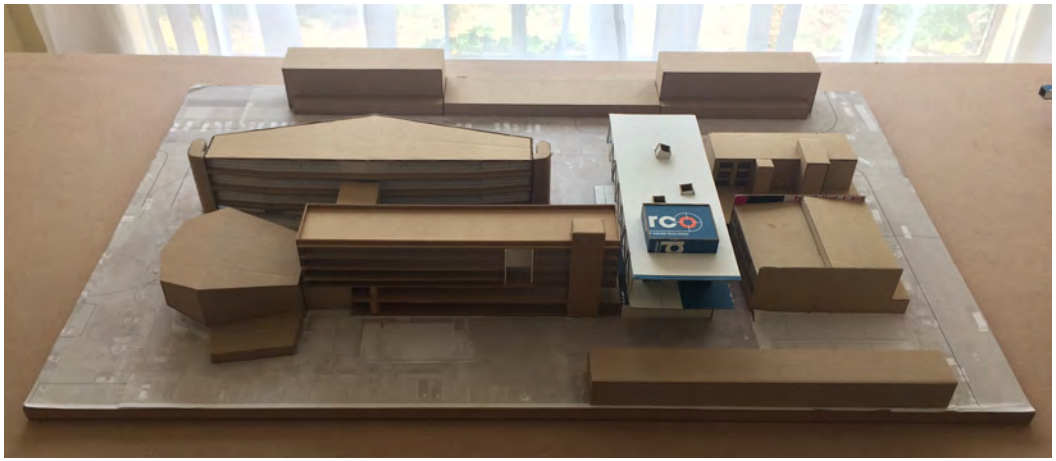


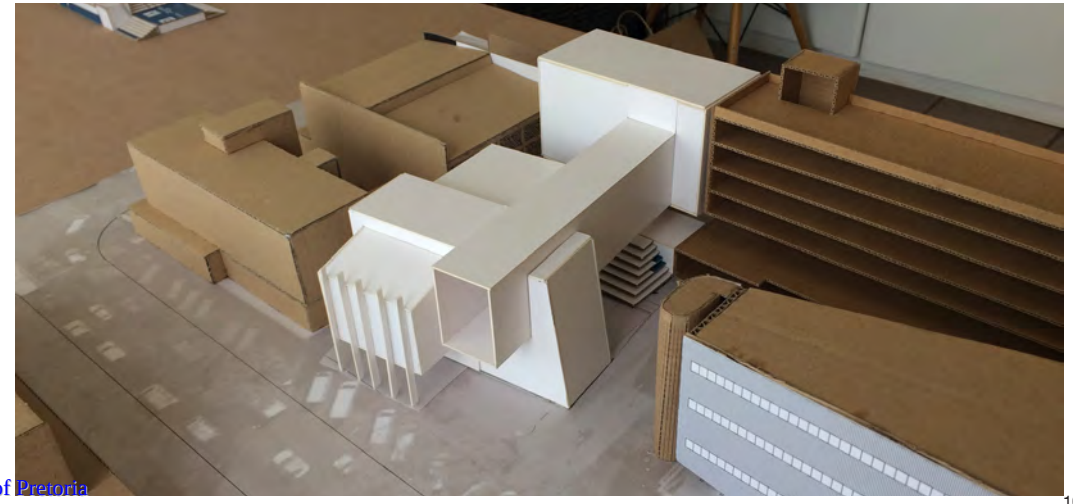








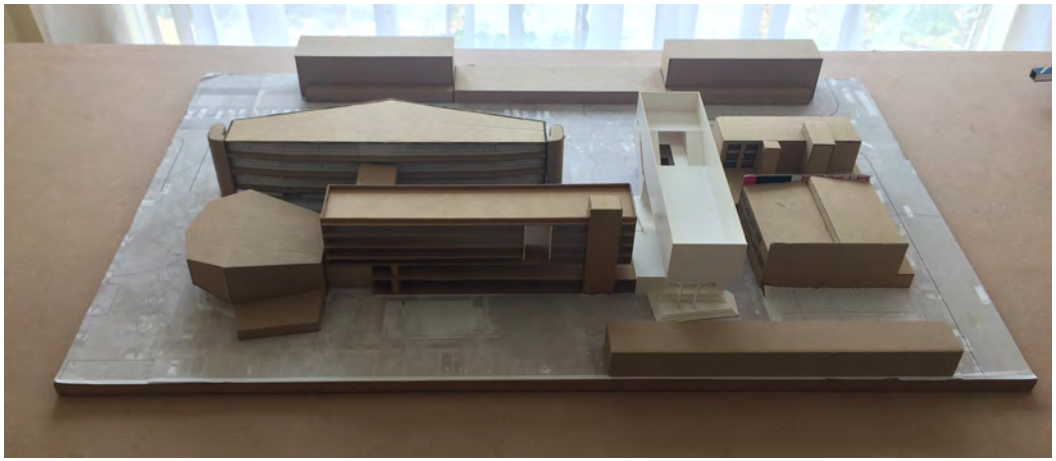





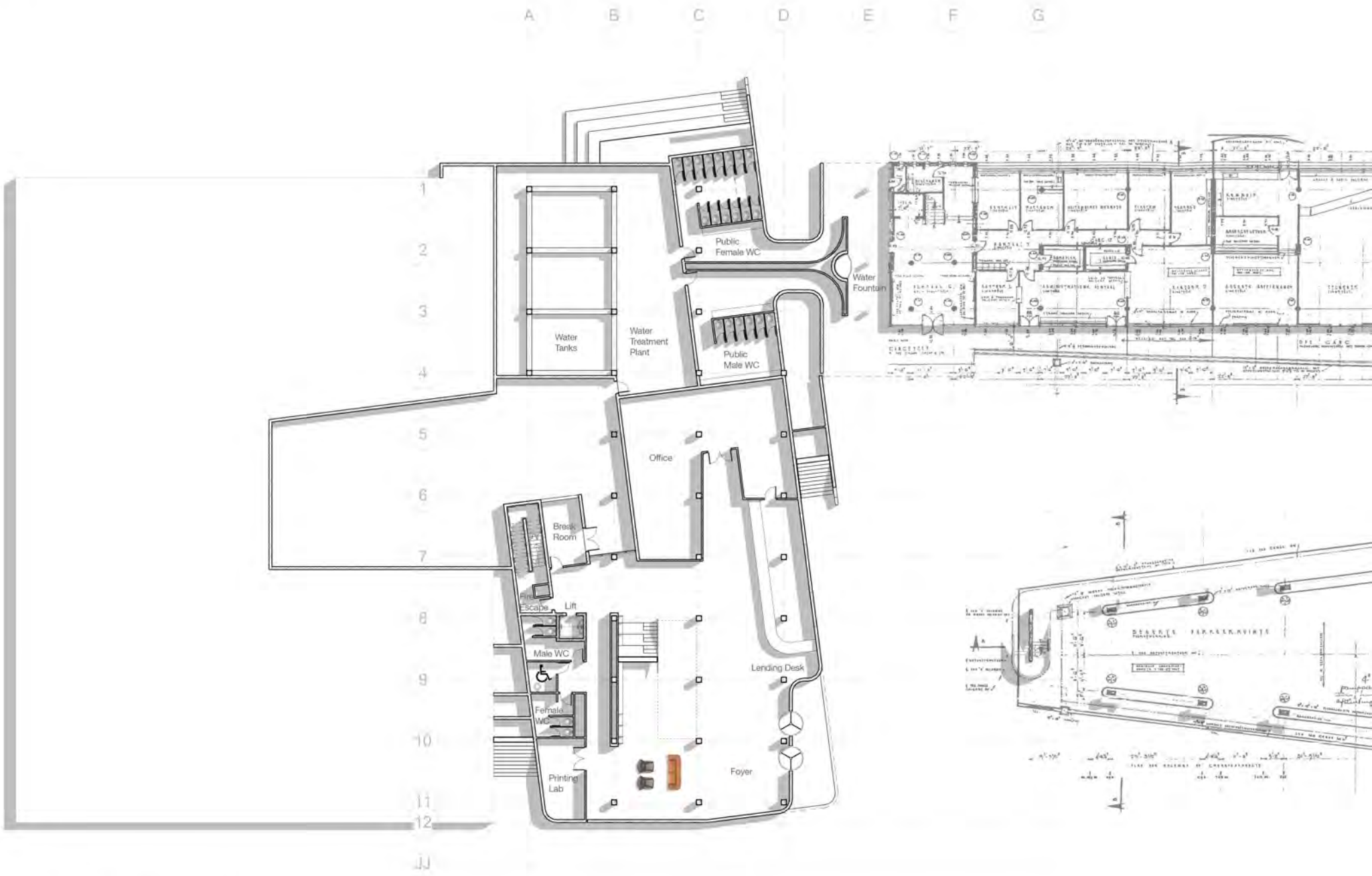




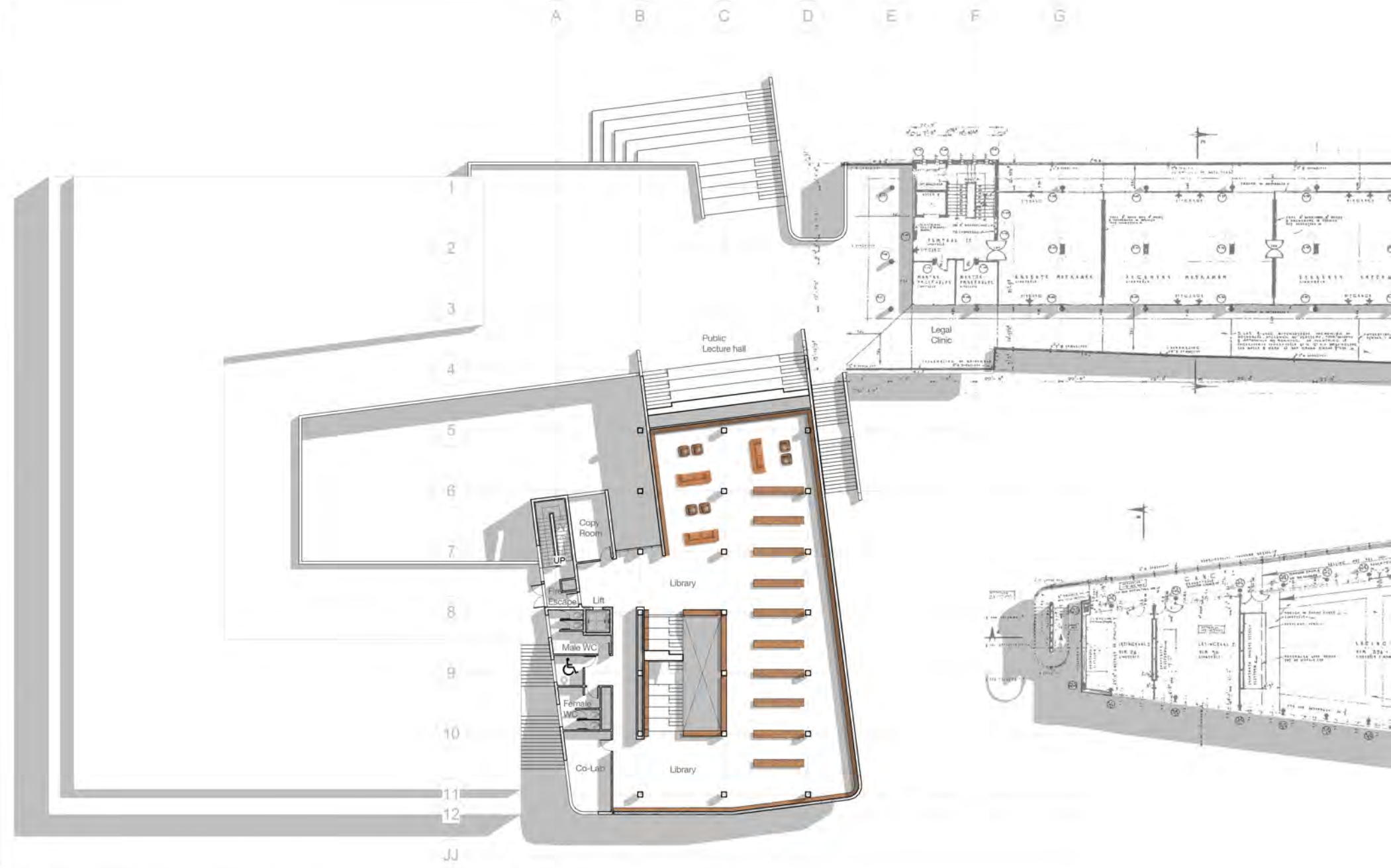




Appendix B: Final iteration of Resource Centre



Ground Floor Plan _ scale 1:200

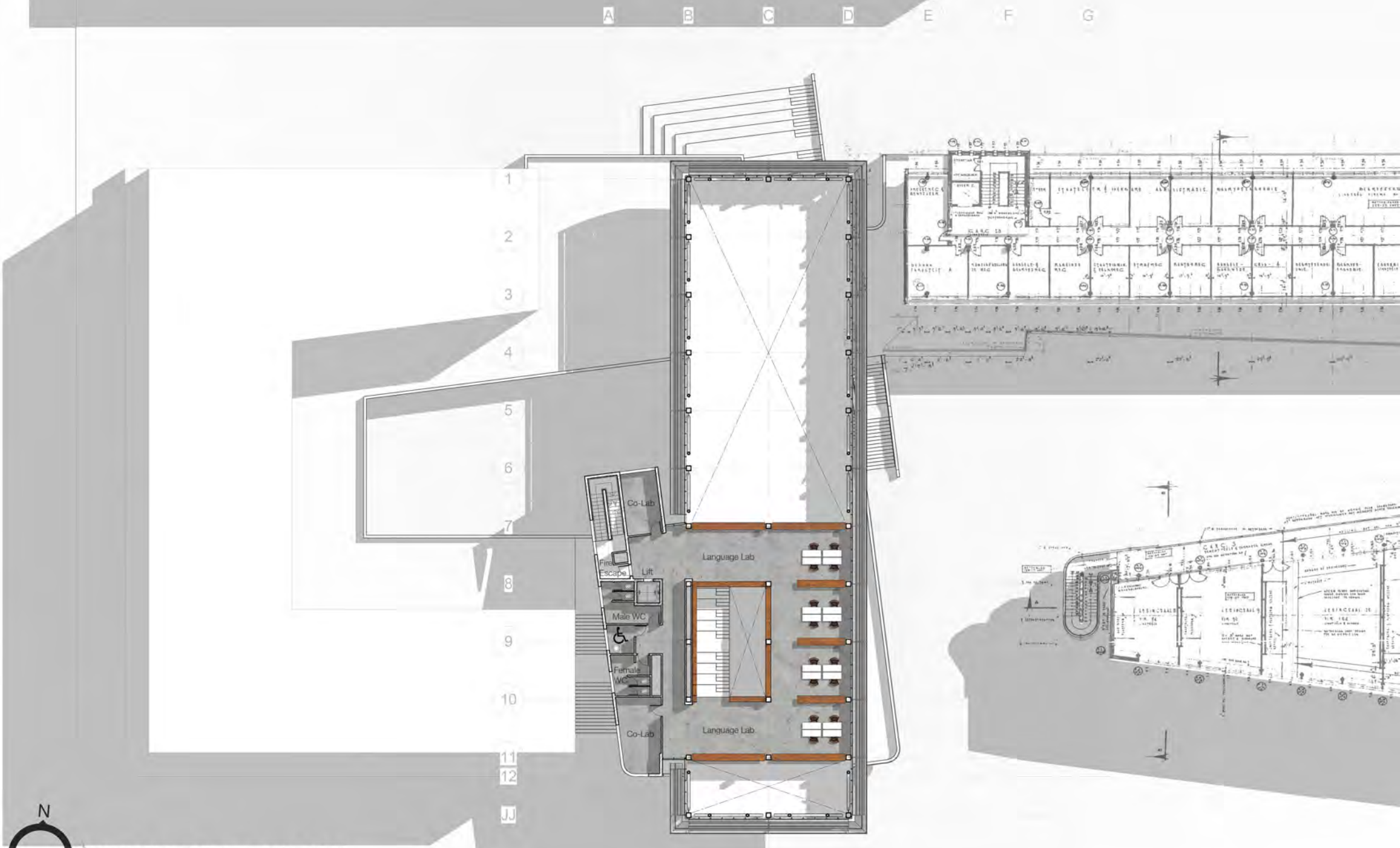


First Floor Plan _ scale 1:200

N

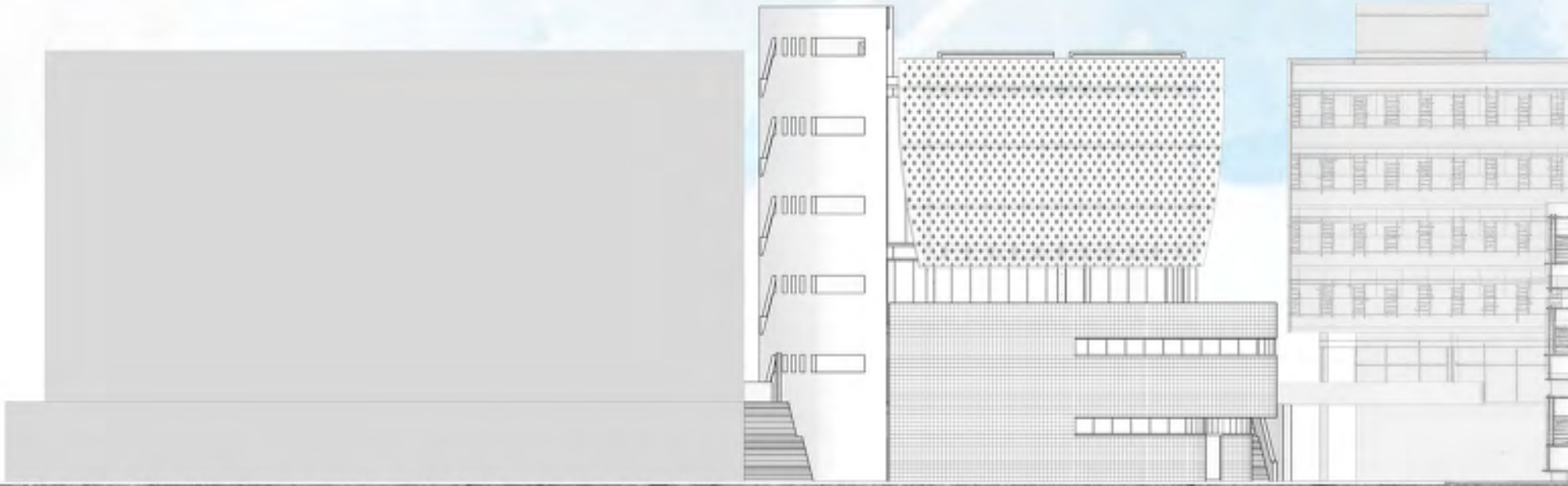
Second Floor Plan _ scale 1:100

Third Floor Plan _ scale 1:200

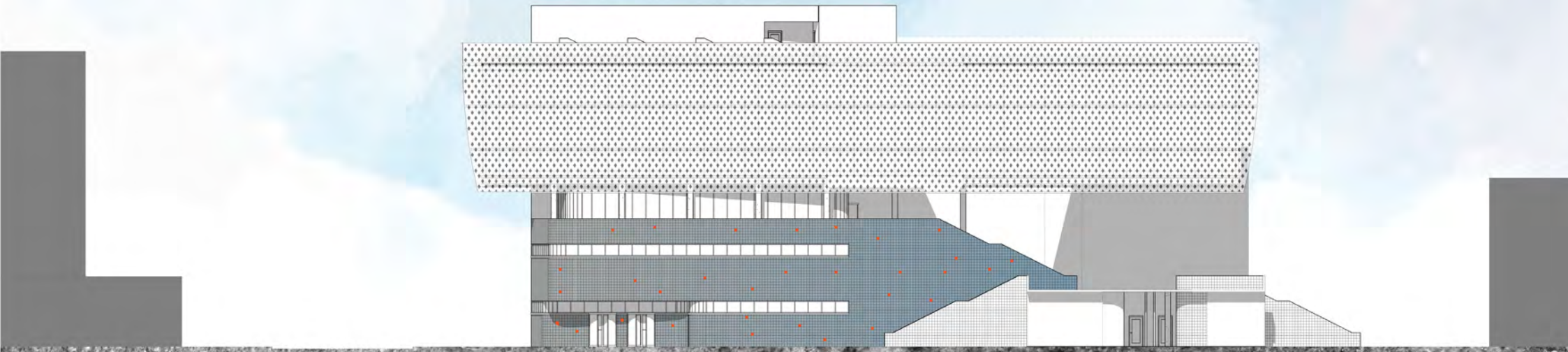


Fourth Floor Plan _ scale 1:200

East Elevation _ scale 1:200



East Elevation _ scale 1:200

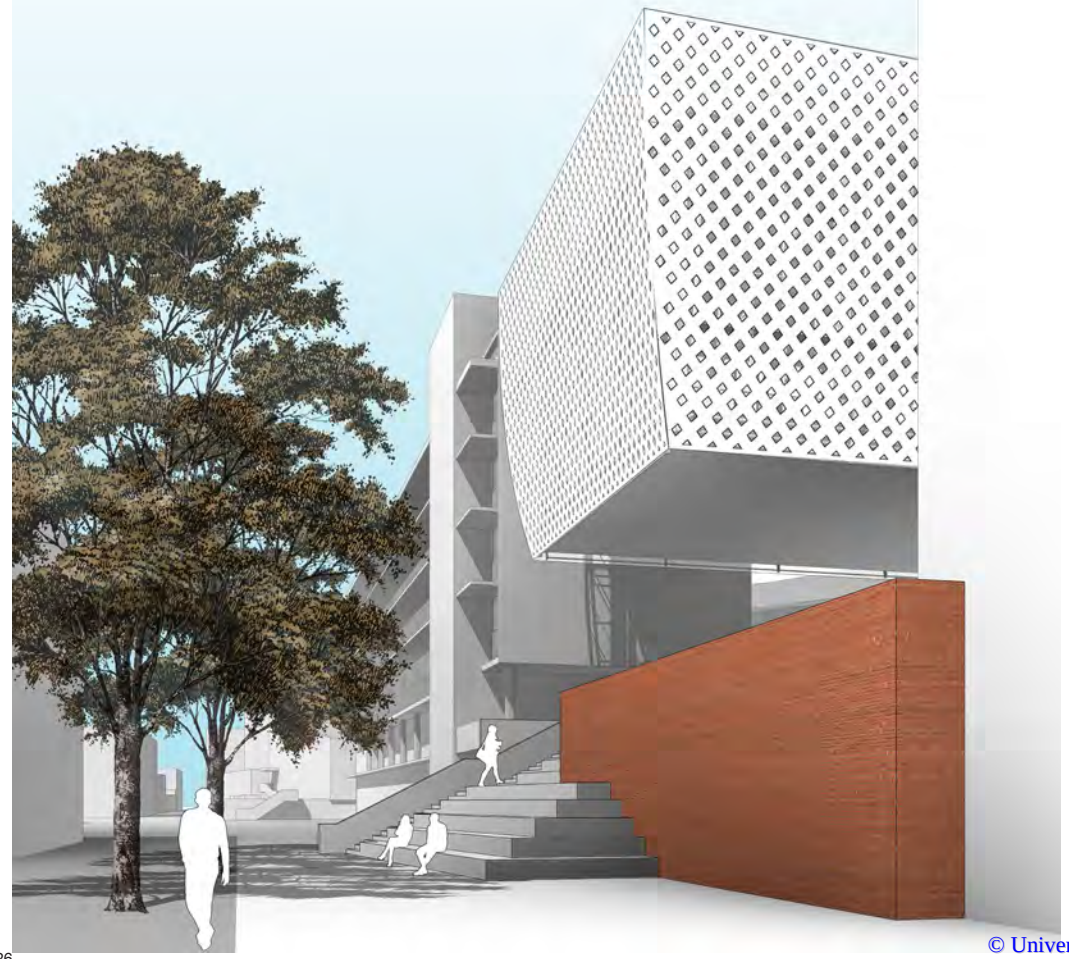


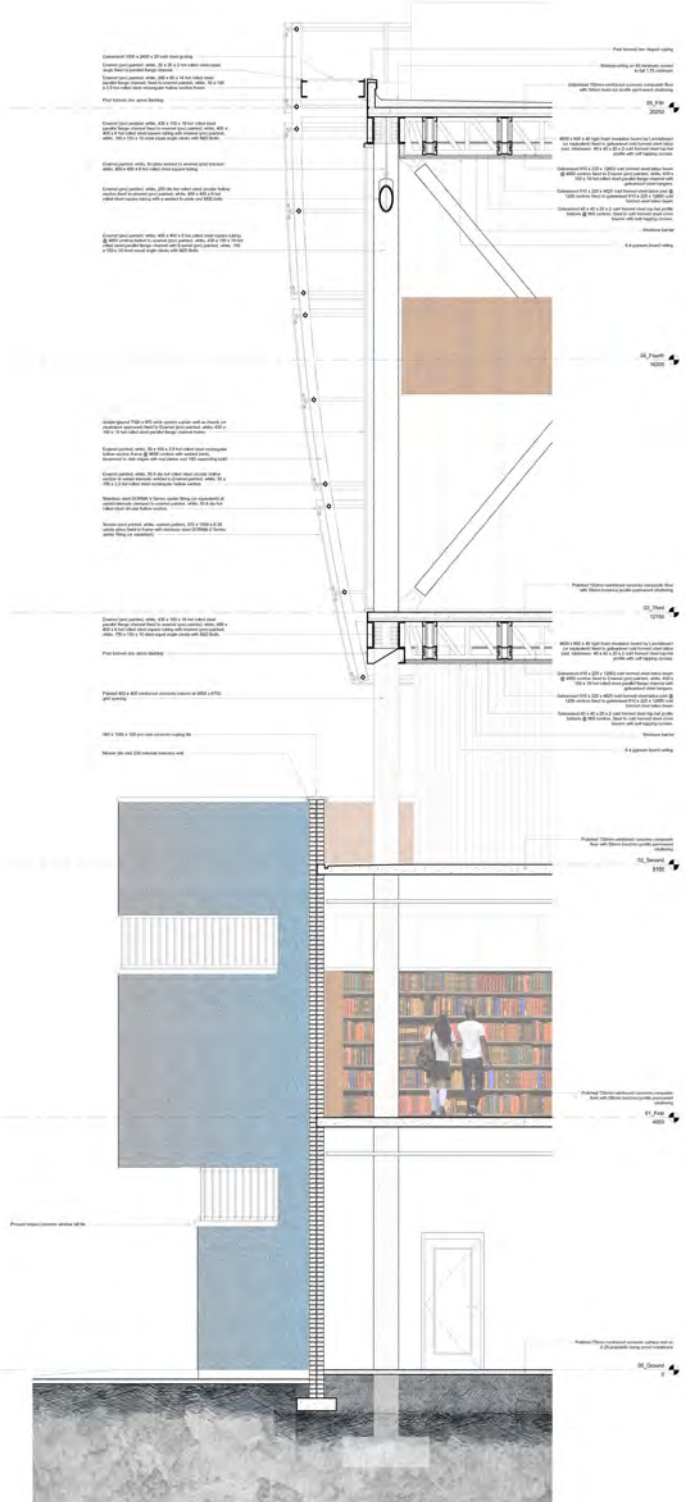
East Elevation _ scale 1:200

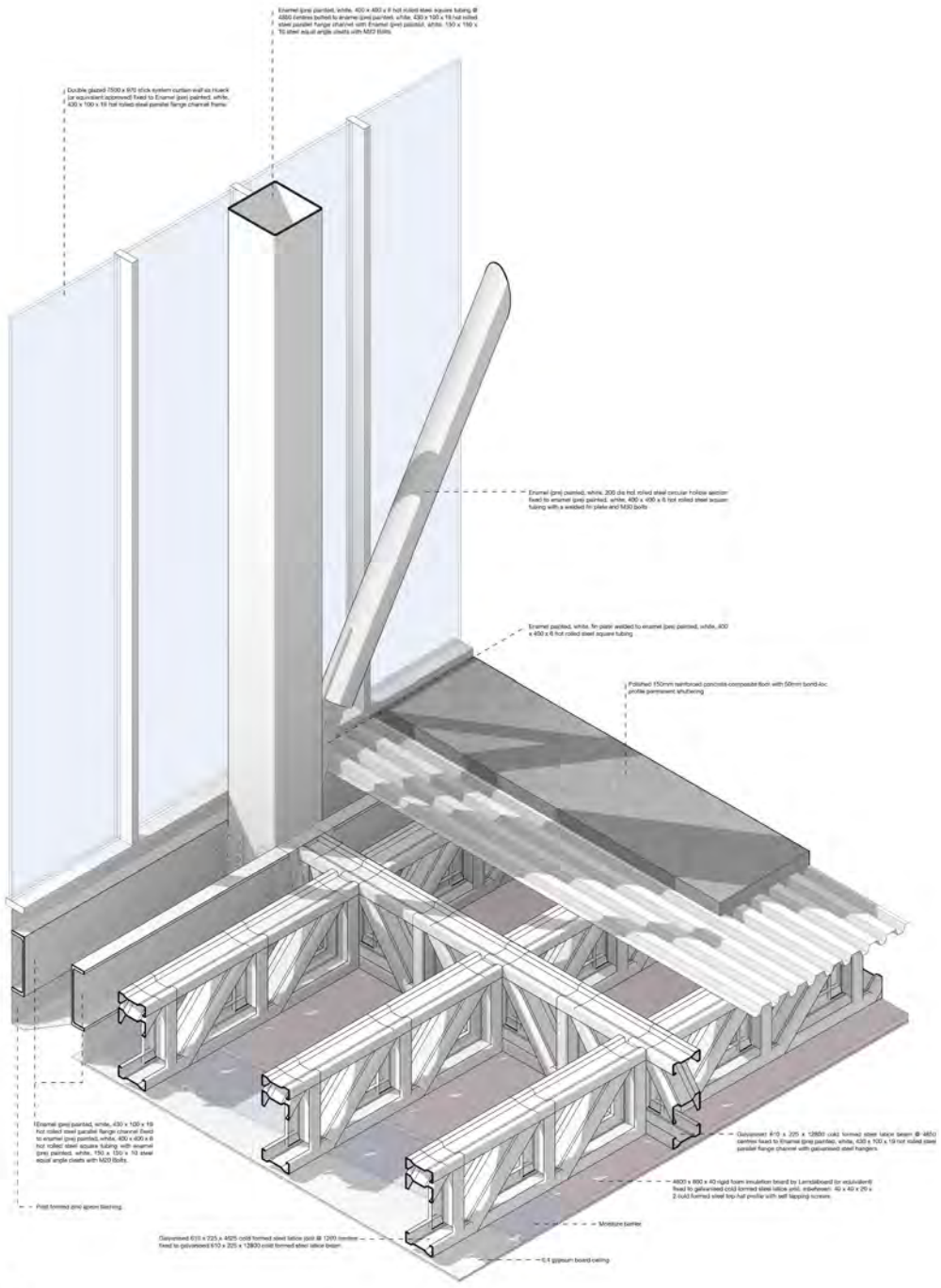
West Elevation _ scale 1:200

Section A A _ scale 1:100

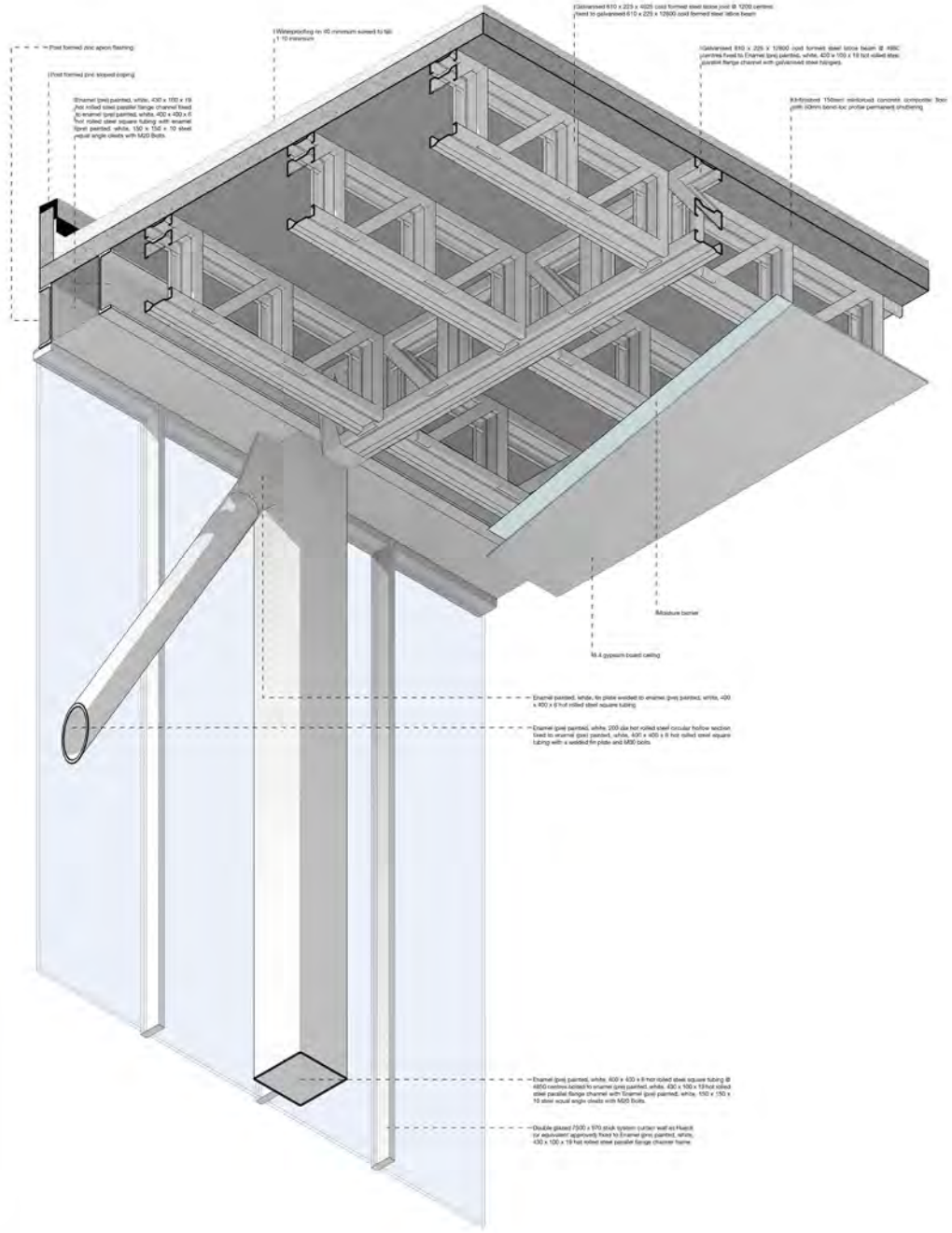
Section A A_ scale 1:100





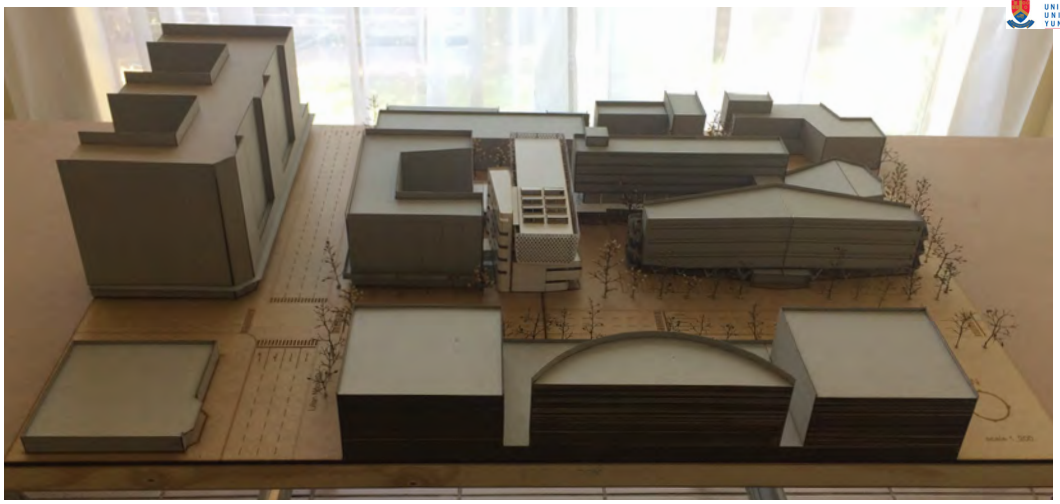


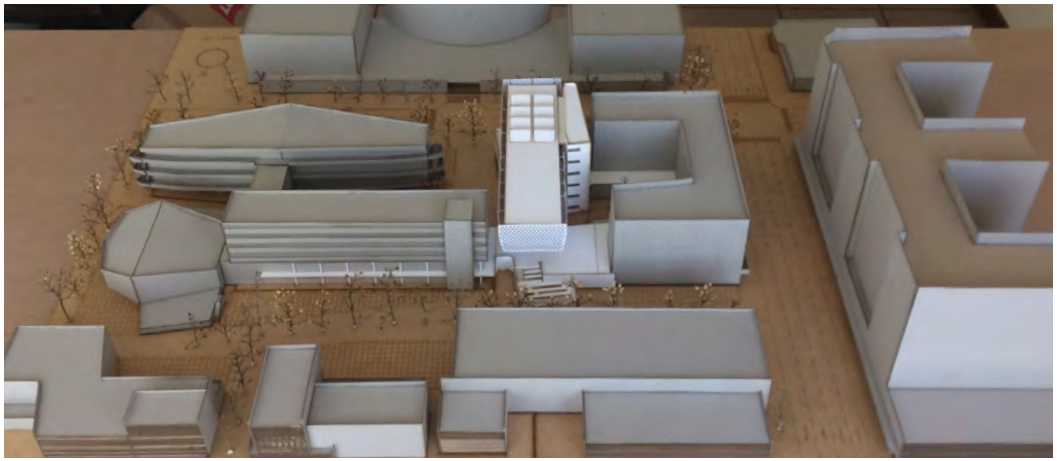
3D Assembly _ scale 1:10

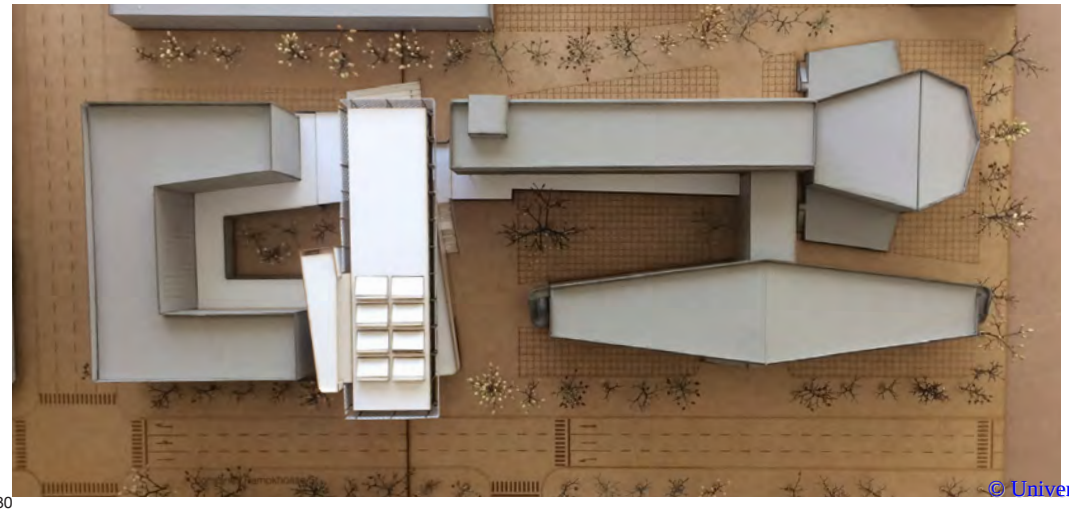


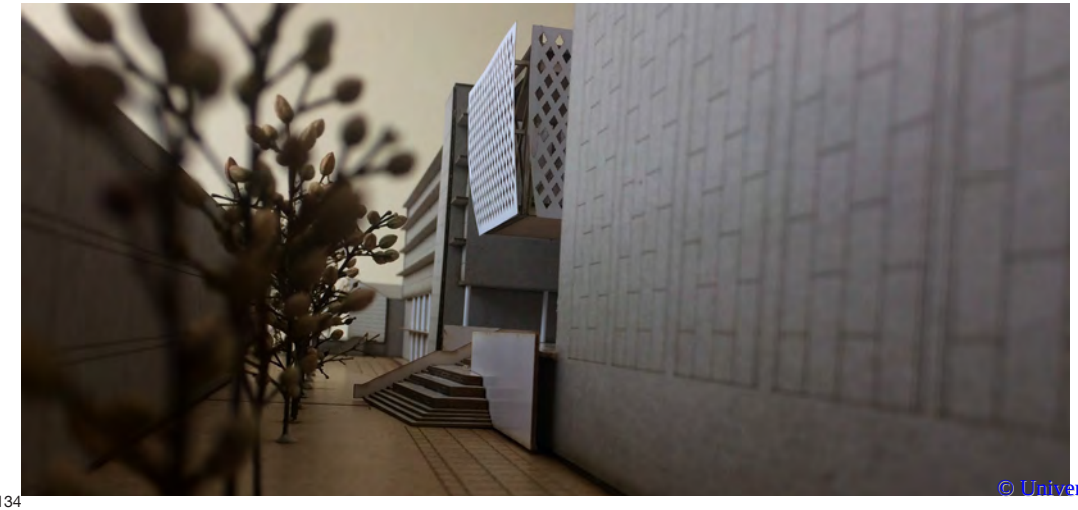
3D Assembly _ scale 1:10

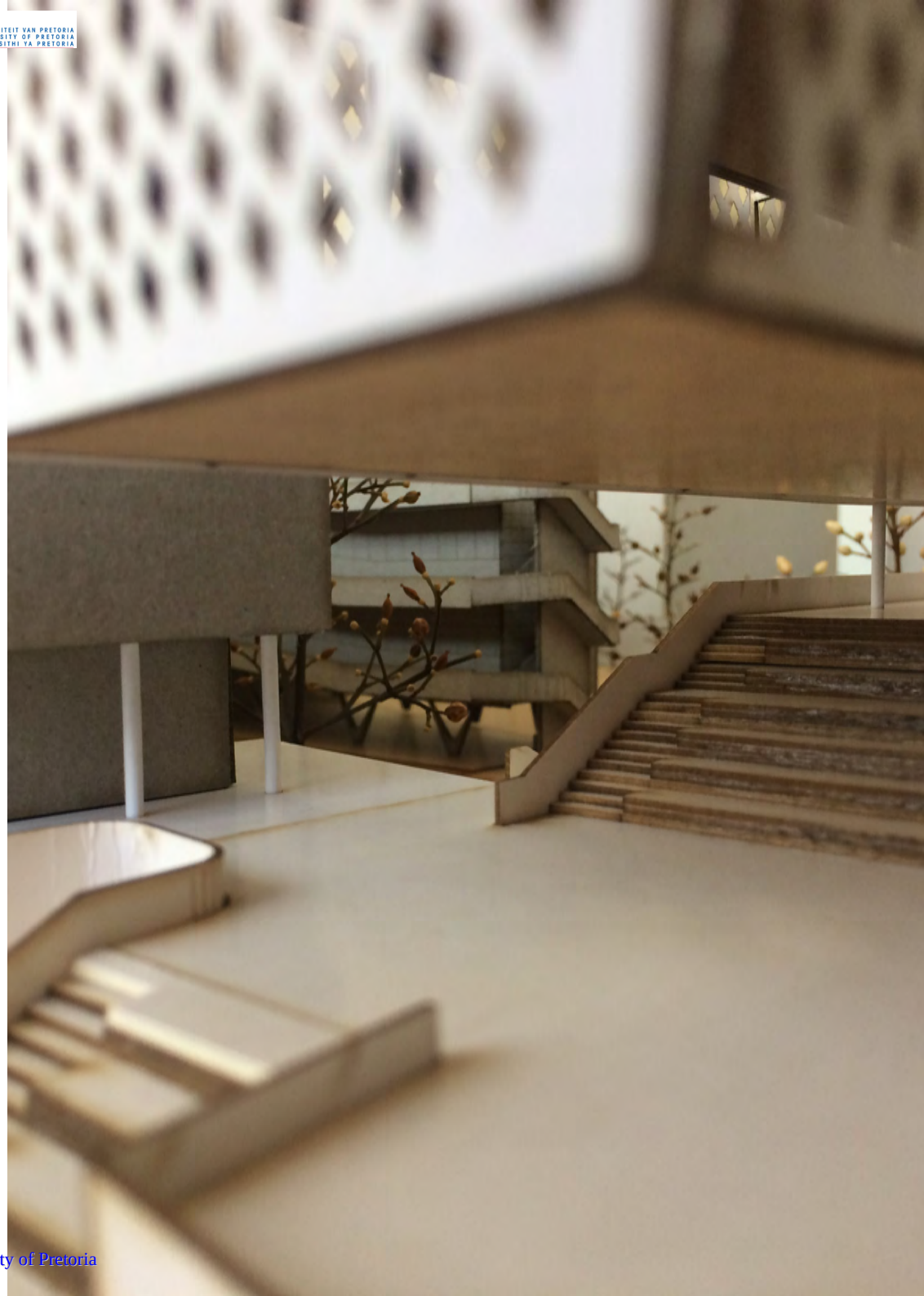
Appendix C: Final Model

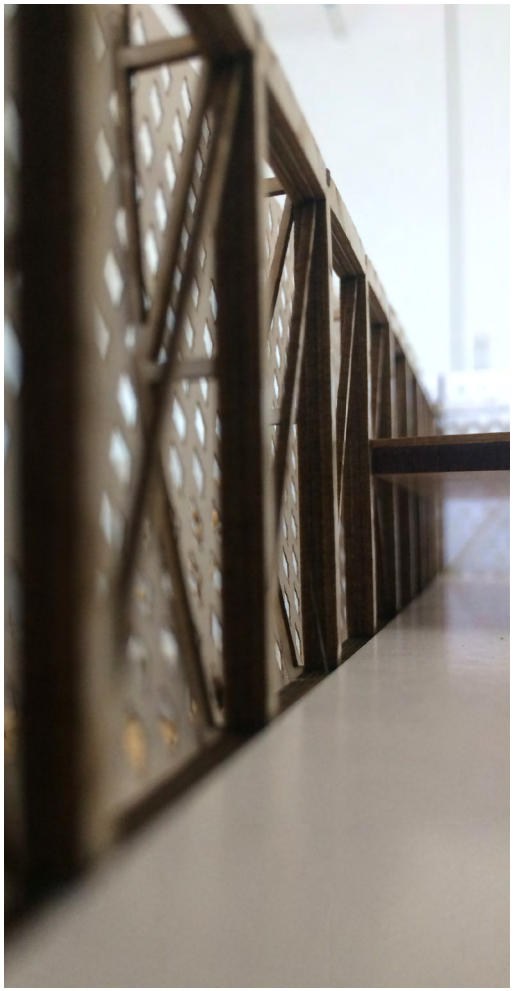


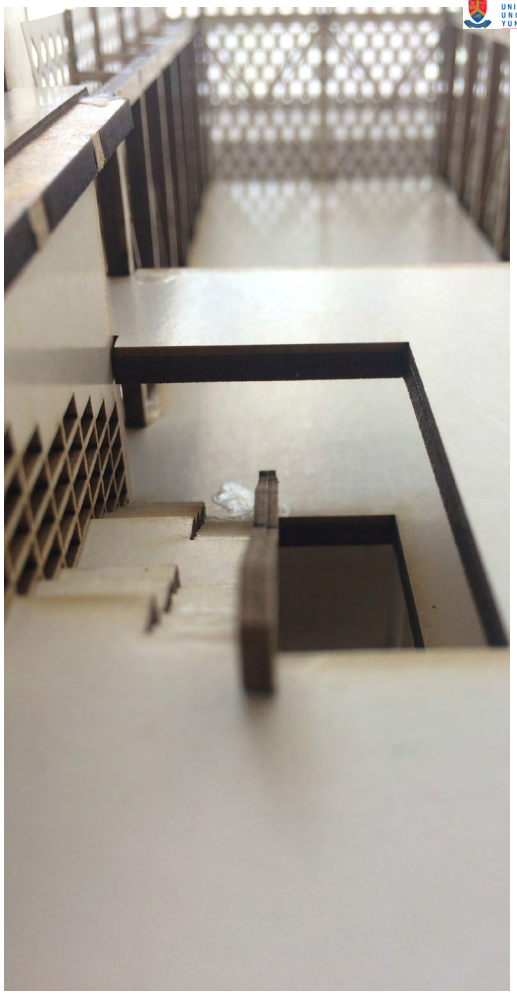


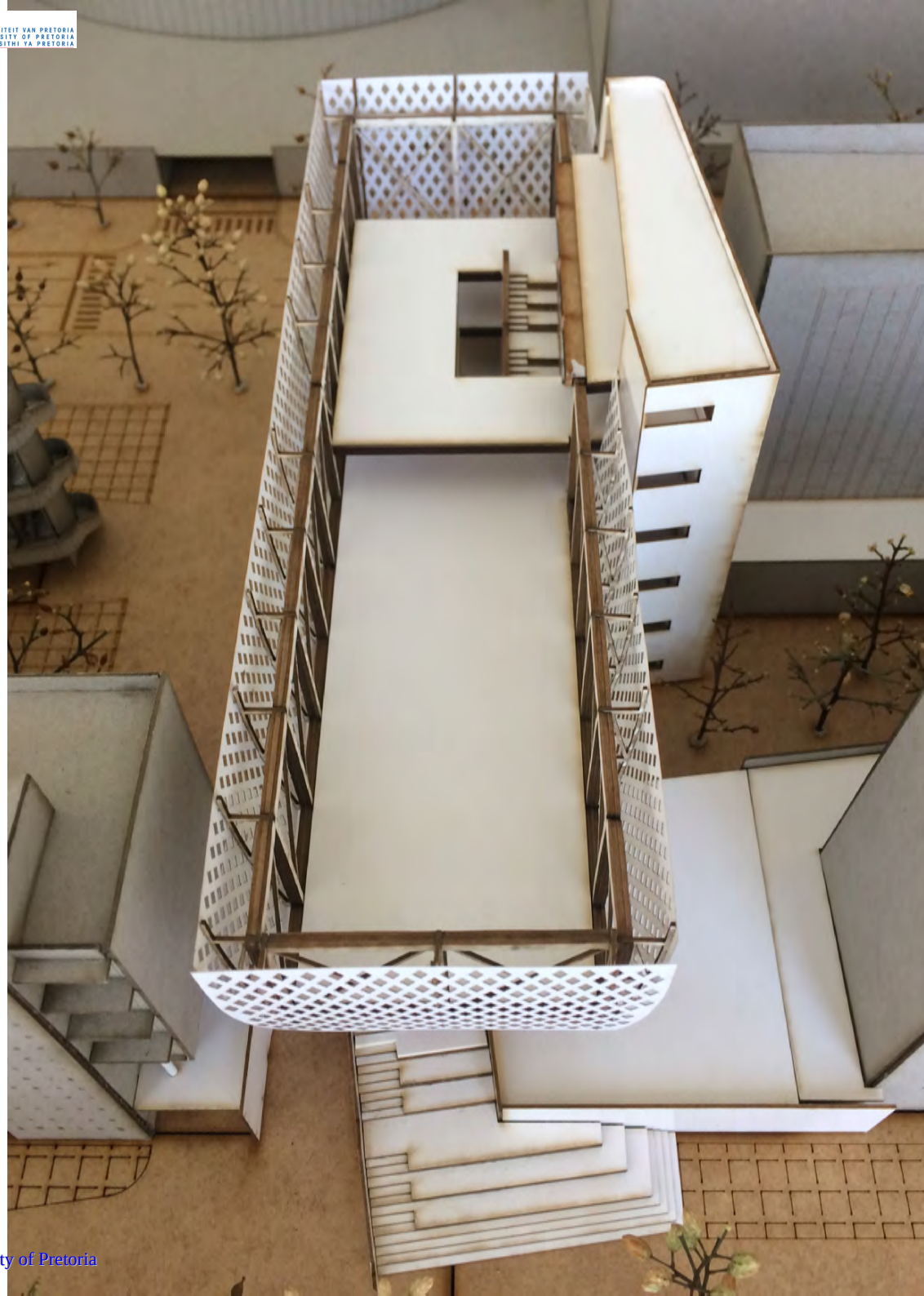


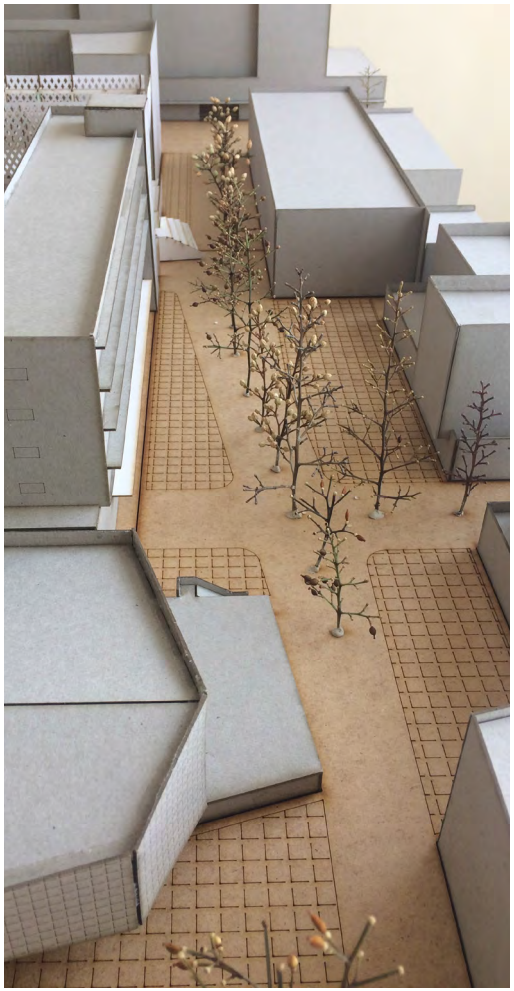


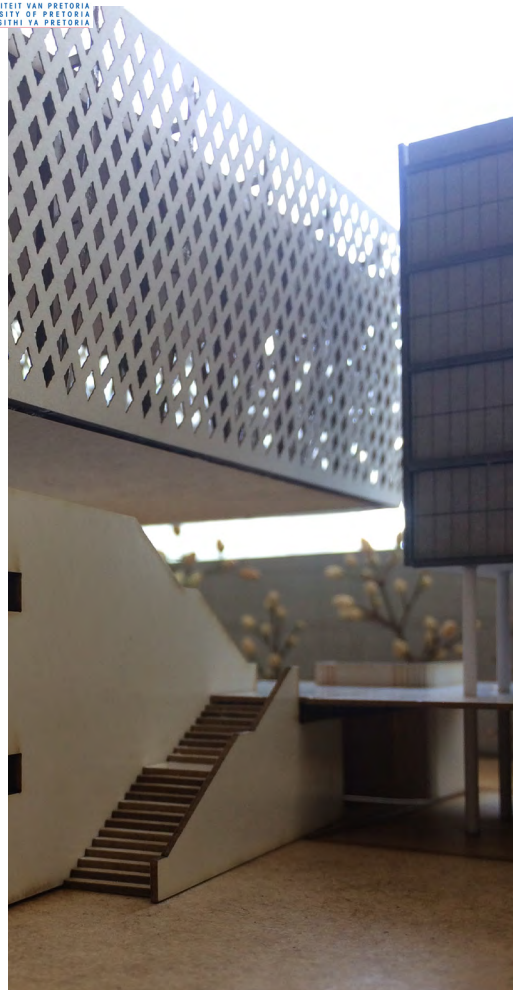


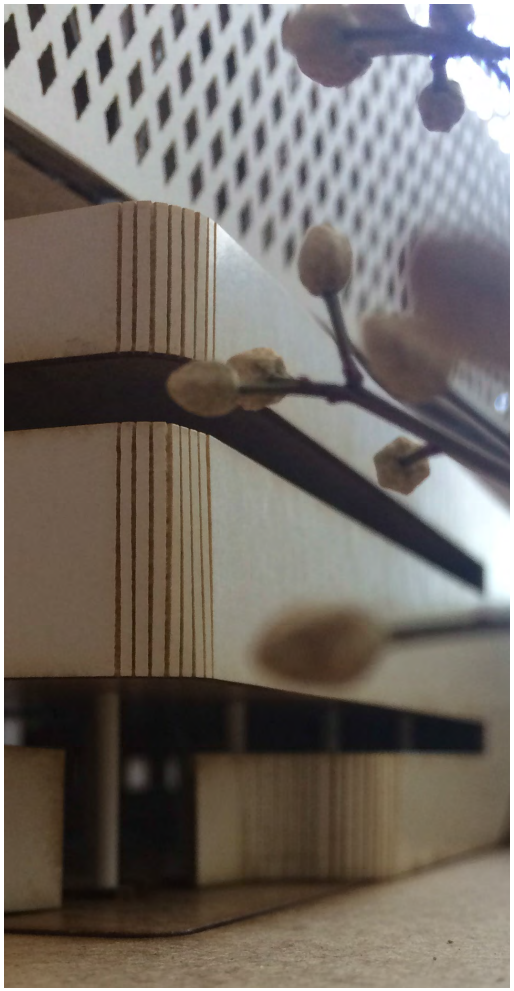














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