



SKILL DEVELOPMENT CENTRE IN STRAND ROAD, BELLVILLE

CATALYST BETWEEN URBAN GROWTH & COMMUNITY INVOLVEMENT



“ Dull, inert cities, do contain the seeds of their own destruction and little else. But lively, diverse, intense cities contain the seeds of their own regeneration, with energy enough to carry over for problems and needs outside themselves. ”

- Jane Jacobs, *The Death and Life of Great American Cities*

DECLARATION

This dissertation document is submitted in partial fulfilment of the requirements for the Masters degree in
Architecture at The University of the Free State.

Unless stated otherwise the research in this document is entirely my own work.

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Authorship:

The work in this dissertation has not been previously submitted at this or
any other institution of higher education.

To the best of my knowledge, the content of this document contains no material that has been previously published, except
where referenced.

TITLE:

Skill development centre in Strand Road,
Bellville

SUBTITLE:

Catalyst of urban growth and community gathering

PREAMBLE

This design is a proposed urban catalyst project located in between the residential and commercial Bellville. The site is not within the city centre, but close enough to provide a direct link towards, not only Bellville's CBD, but also to Cape Town, Somerset West and the greater Tygerberg areas. The focus of this thesis stems from the local vibrancy and exploration of "dead" spaces within the urban framework. These spaces connect to busy parts of the street or city, but lack vibrancy and interest. Therefore the inspiration for this project grew to empower these "dead" spaces so that they can connect to these vibrant areas, and also become part of the social gathering. Gathering spaces plays a big role within this investigation, as people learn from other where they gather, knowledge exchange occur and a vibrant space then spurts life into the surrounding areas.

The research conducted in this document investigates how people gather within the urban context – and how this forms a typology of an educational institute on a social level. Services such as cooking, learning and entertainment, along with a prototype for urban growth on an economical and social platform, guides the interest for this proposal. Connecting with the surrounding area and its people, but transforming these typologies and morphologies to have a more porous adaptation. The solid transforming into an open tectonic learning space – close to the urban grain allows the proposal to become an architectural investigation, encompassing many urban catalyst and social gathering principles.

Challenges and perimeters associated with the project will be laid out along with a research question and aims. Concepts of adaptation, growth and transformation will be explored throughout the design stages from: the interpretation of the context to the form-giving and materiality possibilities – to create a design that can be applied as a prototype catalyst project within the Bellville area. Lastly, a reflection upon the design investigation decisions will end this document, and evaluate the final design as being successful based on the research question provided at the start.



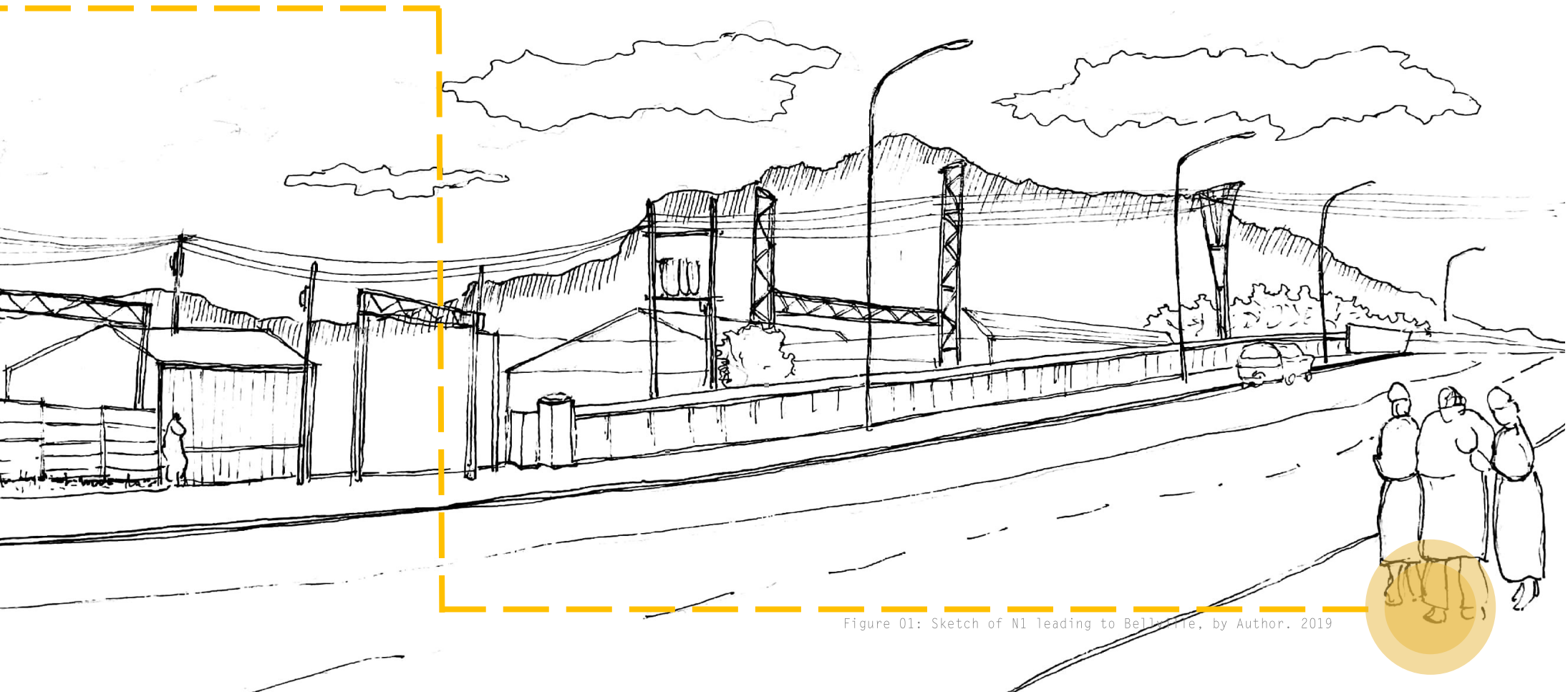


Figure 01: Sketch of N1 leading to Bellville, by Author. 2019



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INTRODUCTION

Stretching alongside the railway line from Somerset West to Cape Town, Voortrekker /Strand Road becomes an important connector of the Bellville community. Today the road exhibits the diverse economy of the surrounding areas, whilst harbouring foreign nationals from across Africa.

Immigrants, working class and middle class South Africans transact business deals on a daily basis. The complexities that lies within this road, not only as a transport route, but a destination, forms the base of this project study. A transitional society, ready to embrace the much needed growth and unearth the potential that lies within.



Figure 02: Cover Art of VRCI, Edited by Author. 2019.

Cape Town CBD might over power Bellville in term of capital change and aesthetics, but Bellville has the cultural diversity to allow for a change in image. Cultural diversity can become a great economic value, which means that Bellville can become more cosmopolitan if these image changes are welcomed.

Investment can become difficult as many businesses are already firmly established. Start-ups, local and small businesses should create a market strategy to empower growth within the Strand Road/ Voortrekker Road corridor. This would ultimately rise the economic influx within this area, whilst still having the local feel.



Figure 03-06: Edited Photographic Essay of Voortrekker Road. By R. Ferguson, 2019.

STRUCTURE OF DOCUMENT

PART ONE

1.1 Situation

- project rationale
- client
- background
- programme
- challenges + aims

1.2 Site Analysis

- urban grain
- regulations
- social influences



Figure 07: Phot of Peak Traffic in Strand Road, by Author, 2019

PART TWO

2.1 Conceptual Framework

- research question
- touchstone investigation
- conceptualisation
- theoretical conclusions

2.2 Design Methodology

- programmatic requirements
- typology investigation
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PART THREE

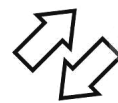
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- services
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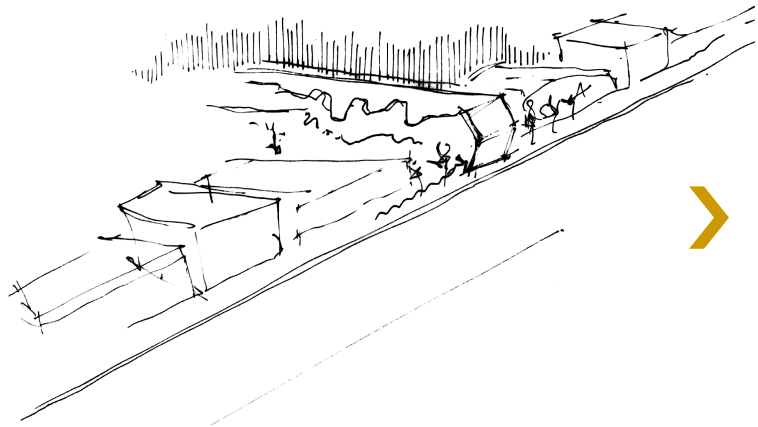
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- final design

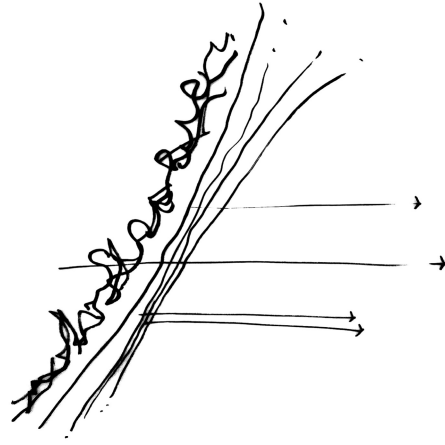
RESEARCH METHODOLOGY



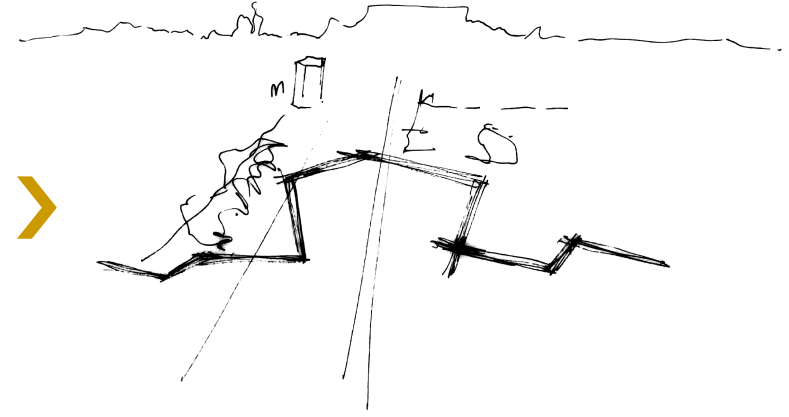
The research in this document is structured around the exploration of challenges surrounding the urban architecture prototype and the influence of society as opposed to e.g. gentrification. Exploration of the client, function and contextual influences, as well as potential users will lead to the final design. This will then inform the program, accommodation list and site appropriate project functionality. These factors influence architectural form-giving and the tectonics and materiality of the proposed structure. The site, aims, themes and client share a common interest of development, but the research within this document will explore various aspects of this development factors further, so that each individual can become part of the design goal.



light articulation



movement catalyst



contextual transformation

1.1 SITUATION





1.1.1 PROJECT RATIONALE

This dissertation intends to develop Strand Road by inserting a catalyst project, within the streetscape, that aims to gather the community with one purpose. The purpose is the act of development, of individual skills, as well as highlighting the vibrant street potential for development. The proposed architectural design - a skill development centre - will provide the potential to the community to develop themselves through training. This gives the community a set of skills they can use to catalyse further development of the area.

Many educational or similar institutions focus on providing a classroom space where knowledge can be transferred from a teacher to the pupils. However, this design aims to help pupils discover these skills on their own via a facilitator in a practical way. The focus of this project will focus on how people gather, and focus on how food can act as a catalyst for this activity. This will drive the design as a prototype project for urban growth, but will also aim to do this on an individual level.



Figure 11: Food market in Voortrekker Road, by DNA Photography . 2016.



“Cooking is all about people. Food is maybe the only universal thing that really has the power to bring every one together. No matter what culture, everywhere around the world, people get together to eat.”

- Guy Fieri

1.1.2 CLIENT AND BACKGROUND

The client Tygerberg District Municipality (TDM), guided by the Cape Town Metropolitan Spatial Development Framework (MSDF), recently updated their urban design regulations and by-laws. These by-laws allow for the development of Cape Town's outer districts, focusing on main corridors such as, Voortrekker Road (Cape Town to Bellville) and Walter Sisulu Drive (Cape Town to Khayelitsha) - fig. #. The development of these nodes, allows the Cape Town CBD to grow further.

The MSDF works with 3 strategic guidelines:

- 1 - Build an inclusive, integrate, vibrant city.
- 2 - Manage urban growth and create a balance between urban growth and environmental protection.
- 3 - Plan for employment and improve access to economic opportunities.

As the potential of these nodes seem prominent, development, in the form of architectural interventions, has not yet taken place. Therefore this design would be seen as a prototype project, working with the principles of the local municipality. Research and visions for this urban catalyst project, stems from these guidelines, with additional research on how to implement the specific accommodation of this building into the urban grain,

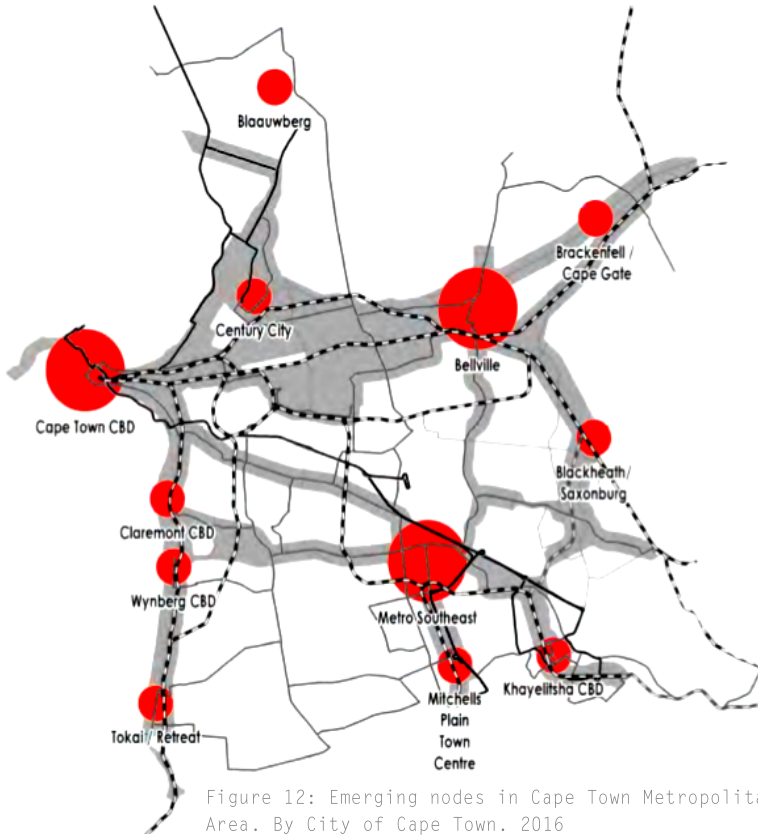


Figure 12: Emerging nodes in Cape Town Metropolitan Area. By City of Cape Town. 2016

Figure 13: Photographic Essay of Voortrekker Road Corridor. By DNA Photographers. 2018



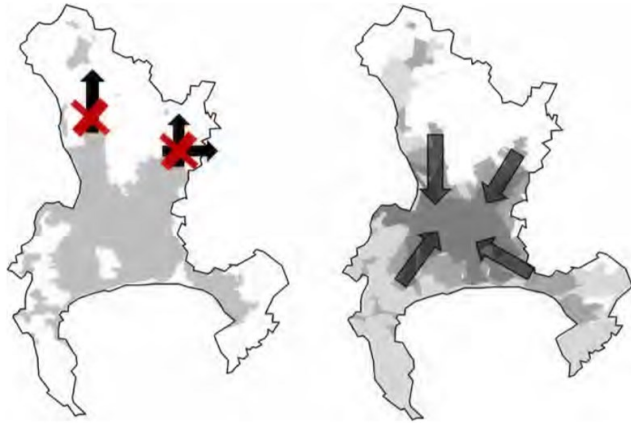


Figure 14: 2012 vs 2017 municipal spatial vision. By MSDF 2018

1.1.3 PROGRAMME

The proposed building will accommodate the following:

- Cooking classrooms and practice areas
- General classrooms to accommodate various subjects and lectures
- A deli to serve food prepared within the classrooms
- An entertainment space on the rooftop with a bar area
- Rentable offices and boardrooms for thriving business owners
- Reception desk to manage school and offices
- Storage, services and staff quarters
- Small library and study space for students
- Rooftop garden space to study and growing fresh produce

Figure 15: Edited Google Map image of Bellville, By Author, 2019.

1.1.4 USERS

User of this proposed building will be divided into 3 main groups:



1 - general public (gatherings)



2 - students



3 - staff (facilitators, office employees, examiners and cleaners)



1.1.5 CHALLENGES + AIMS

The site, located between two vastly different streets, namely Linda street, which is residentially focused, and Strand Road, which carries the main traffic from Cape Town to Bellville and Somerset West. The challenge with this project comes by connecting these two streets with the same function, but finding a balance to suit both characteristics.



1.1.5.1 TYPOLOGY

- Interaction between the two different sides of the street should provide fluent movement over the site.
- To generate more accessibility, the building should allow for public interaction and with the surrounding context.
- The semi-educational nature of the building should fit appropriately within the business and residential context of the streets at either end of the site the challenge would be to integrate the full function and divide the experience to suit both.

Figure 16:
Illustration of vision for urban design in MSDF. By MSDF, 2018.

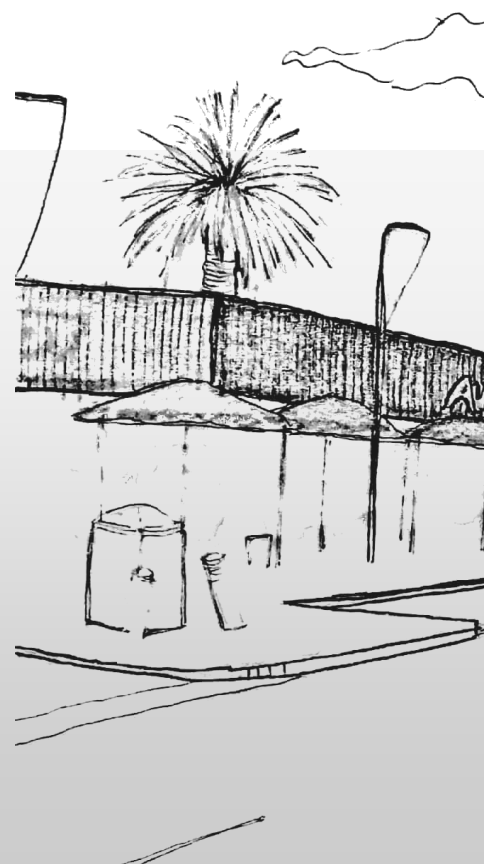
1.1.5.2 TOPOLOGY

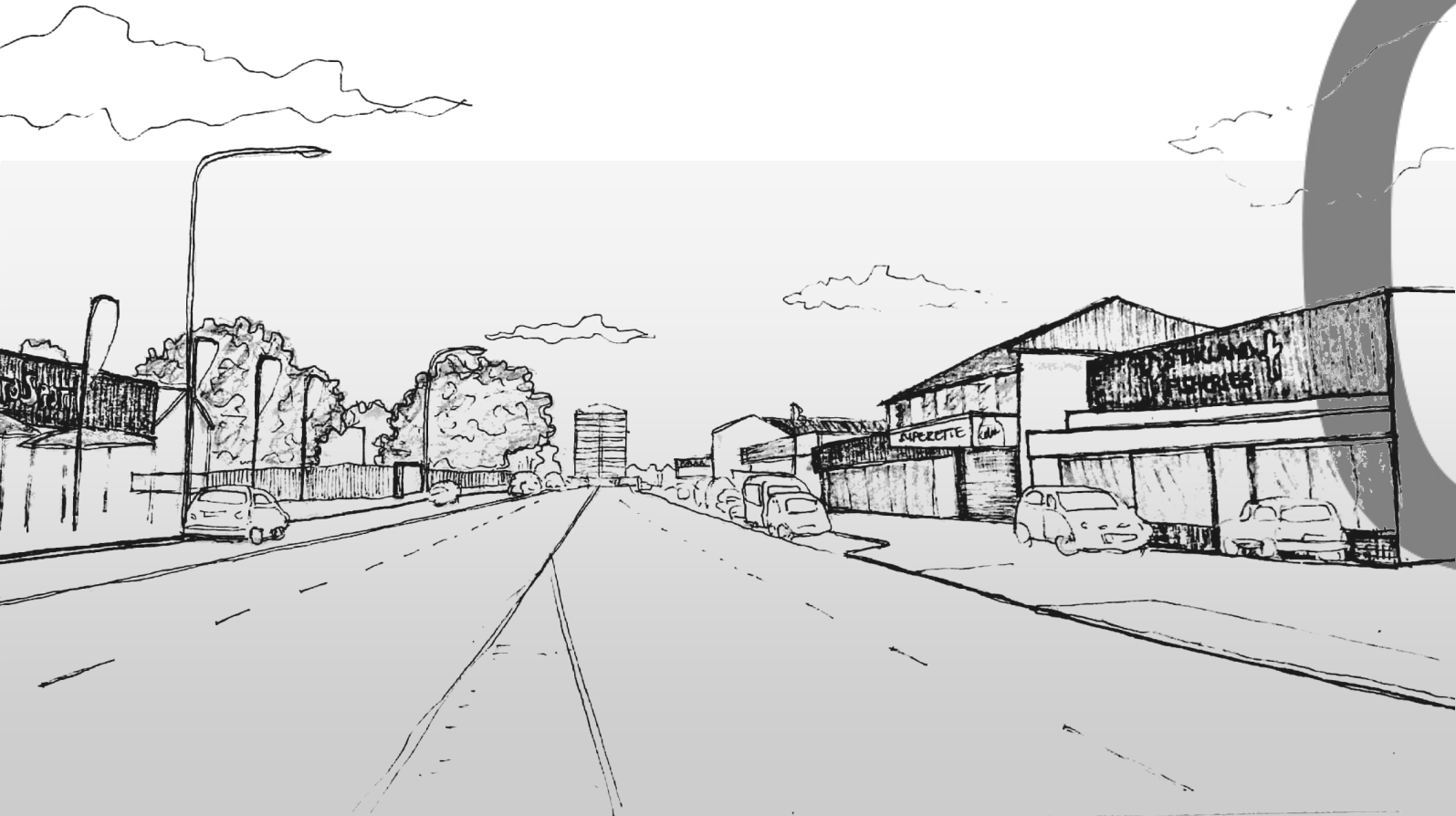
- The building should interact with the various textures and materials found within the context, but also adapt these to fit the purpose of becoming a catalyst for change.
- The balance between natural vegetation within the urban context should be subtle, but enough to show improvement over the existing streetscape.
- Natural light and wind must be closely examined to form a building that is not only sustainable, but more user friendly.
- To avoid the appearance of gentrification, the building should make use of elements to give the building the feel of human-scale, even if it will be a high rise building.

1.1.5.2 MORPHOLOGY & TECTONICS

- The form giving and construction is determined by the urban context of Bellville and Strand road.
- The height of the building should aim to find a balance between the residential Linda Street and business Strand Road, to fit within both.
- Classrooms must be adaptable for many different types of subjects, but not be too general so that it becomes open for interpretation.
- Light should shape the morphology of the building, by making the site appear wider than it currently is, for greater accessibility.
 - As this building will be the first potential high rise building within its immediate context, it should not portray images of gentrification.

1.2 SITE INVESTIGATION





01



1.2.1 QUANTITATIVE ANALYSIS

The outer districts leading towards Cape Town lacks vibrancy and mixed-use possibilities, generating spaces for development and socio-economic growth allows the locals to generate their own income, which, in turn, could help the municipality to prosper.

The current imbalance stems from the high mixed-use densified city of Cape Town, as a tourist destination, vs. the lack of local gathering spaces surrounding the city. Living spaces, mixed with social spaces, generate safer spaces, which will then generate a greater local community feel.

Figure 17: Urban lifestyle, Voortrekker Road. By DNA Photographers. 2018

1.2.1.1 URBAN GRAIN

The proposed site is currently a mixed-use building with a convenience store on ground floor and single apartment units on the upper floors. The Tygerberg District Municipality changed its bylaws in 2016, to accommodate high density mixed-use spaces in areas close to public transport. Strand Road height restrictions changed from 10m to 25m. This raises the opportunity to produce a prototype for the development of the street on an urban scale, influenced by these municipal changes.

The proposed site acts as a connector between Linda Street and the heavy traffic street of Strand Road. It is also the only site that connects both the residential and the business areas, together. A project within this site would combine the mixed-use possibilities of the street, with the imagined future development of the urban environment.

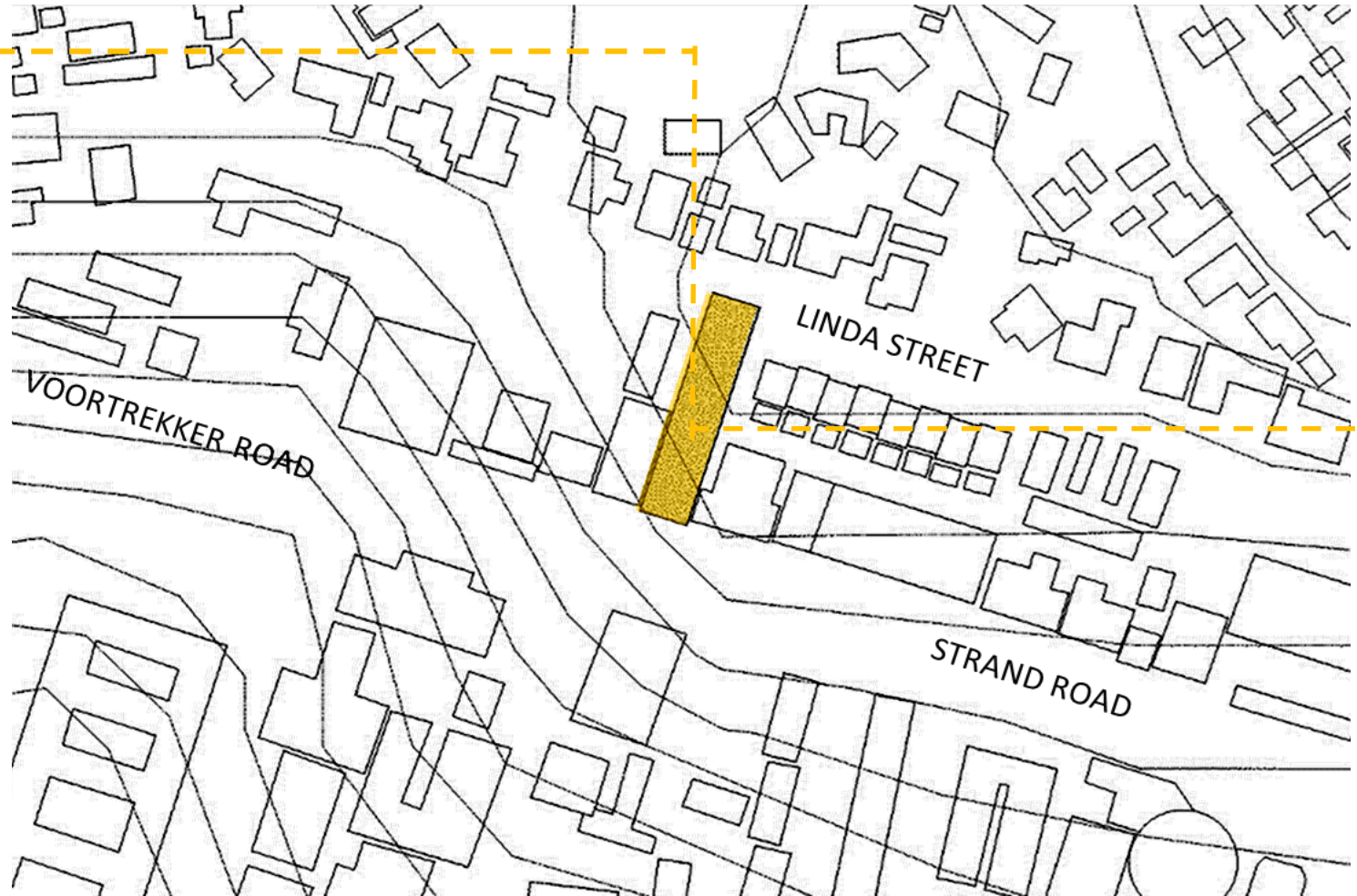


Figure 18: Sketch of site location within the urban and topographical context, by Author. 2019

1.2.1.2 TRANSPORTATION

The area could benefit from better functioning public transport nodes and using this corridor as a mixed-use hub. Integrating the community within itself, not to separate work and living spaces, but to join them, and share the space as a community, that could and hopefully strengthen the community growth potential.

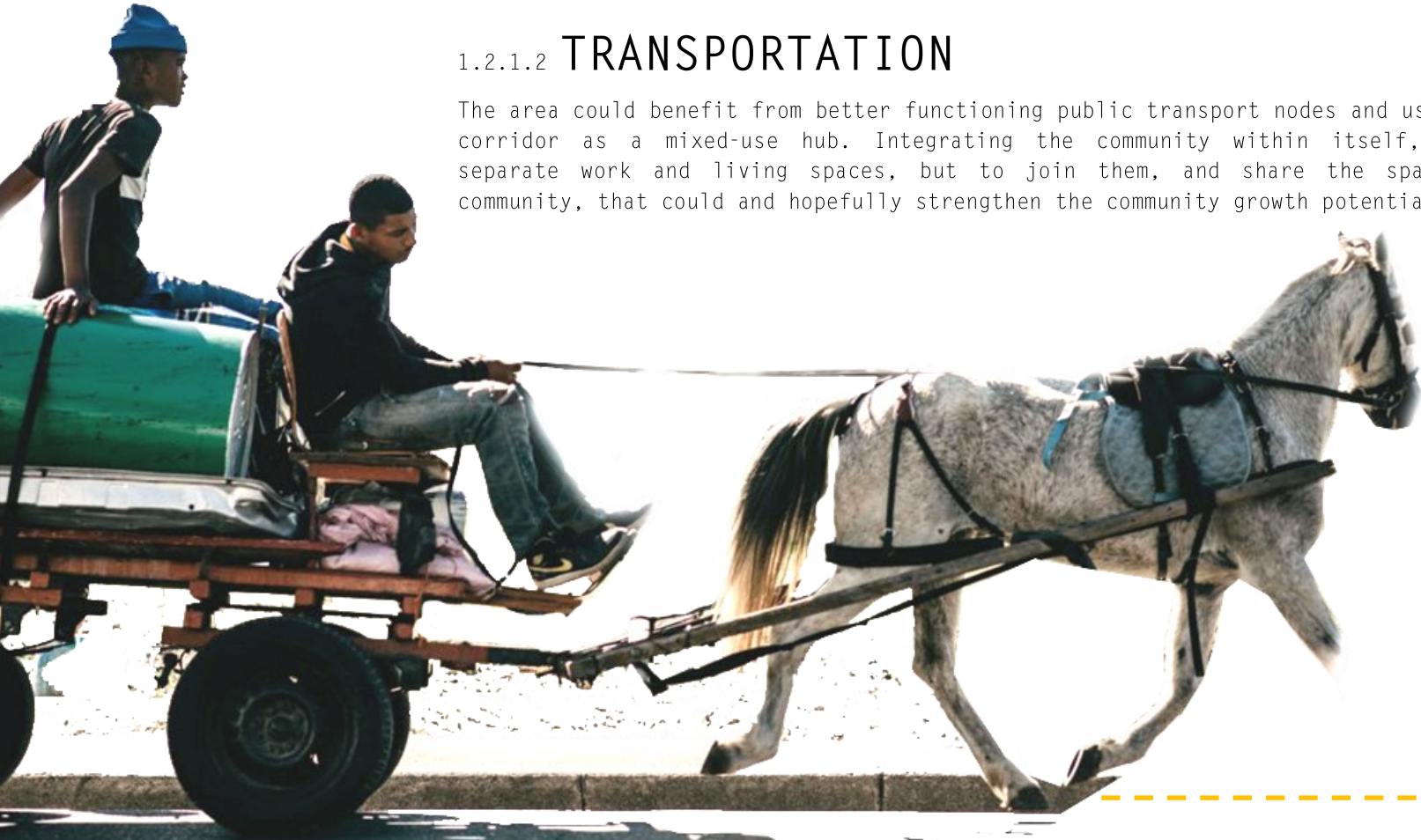


Figure 19: Horse draw carriages are not uncommon in Bellville, JNA. Photographers. 2018

The proposed site is located close to various forms of public transportation - an informal taxi and bus pick-up stop located in Strand Road, and the site is also within walking distance of the Stikland Train Station and a major transportation hub, Bellstar Junction. This is also accompanied with the busy Strand Road traffic, that connects Central Bellville with Cape Town and Somerset Strand. This allows pedestrians to walk across the site and follow their daily commute.



Figure 20: Vehicle and Train Route Layout. Edited by Author. 2019

1.2.1.3 PEDESTRIANS



Figure 21: Urban grain with pedestrian movement, by Author, 2019.

1.2.1.4 ECONOMIC AND SOCIAL SPACES

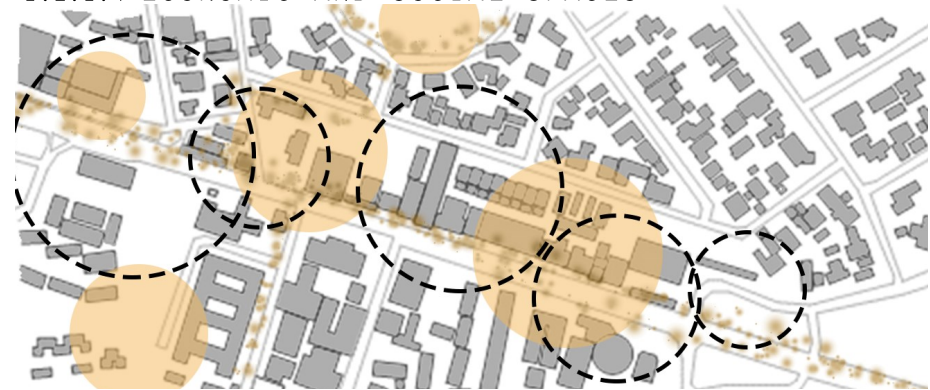


Figure 22: Boundaries of different spaces crossing, by Author, 2019.

Movement mostly relies on the traffic patterns along Strand Road. The Northern side of Strand Road is busier, because of the shade cast from the buildings next to it. As the street is busy throughout the day, zebra crossings are situated across the busy areas and next to bus stops. Linda Street consists of residents walking their dogs or riding their bicycles. The project aims to connect these different pedestrians within one space to promote social connection and development.

1.2.1.5 VEGETATION



Figure 23: Green spaces, by Author, 2019.

1.2.1.6 SUN & WIND & NOISE



Figure 24: Sun, wind and noise study, by Author, 2019.

Spaces overlap and form various boundaries on the site. Mental and physical boundaries change as people move through them. The quality of the existing space lacks diversity with regards to green spaces and noise barriers. As Strand Road is constantly busy, noise becomes a problem and would therefore need some sort of barrier.

1.2.2 COGNITIVE ANALYSIS

Strand Road is a very busy street and is the main connector route between Somerset Strand and Cape Town via Bellville. The heavy traffic area includes small private businesses and car fitment centres. Locals also use this street to buy take-aways and commute to and from informal bus and taxi pick-up stops.



Figure 25: Photographic collage of Strand Road, by Author, 2019.

Linda Street is a quiet, single and multi-residential street that runs to the back of the busy Strand Road. This street also becomes a connector route between Stikland Train Station and Voortrekker Road and the larger Bellville area. Various new multi-storey residential developments are planned within this street, to densify areas close to transport nodes on the larger urban scale.



Figure 26: Photographic collage of Linda Street, by Author, 2019.

1.2.6 EXISTING CONDITIONS



Figures 27-29: Views from Strand Road, By Author. 2019.



Figures 28-30: Views from Linda Street, by Author, 2019.

CAPE TOWN STATION WRAP (2010)

ARCHSTATION, MDL, DHK & COMRIE ARCHITECTS

The intervention aims to humanise (Comrie: online) the urban scale through the use of light weight materials. These materials cover the existing Apartheid-era facades. Strategic openings within the wall breaks the past open to allow new a new vision for the commuter.

This design was part of the transformation of the CBD for the 2010 Soccer World Cup, and connects with the human scale, not only through material use, but by using light to make the daily commute more bearable and inviting. Connection with the urban context comes more naturally and opens a place for social interaction, rather than avoiding dark unused spaces.



Figure 31: New Strand Road Façade for Cape Town Station. By Architects. 2012



Figure 32,33: Interior and exterior of new roof structure, by Architects. 2012.

Light shapes the interior of the station building, and allows the existing building to gain new life - as gathering spaces are formed inside and outside the station.

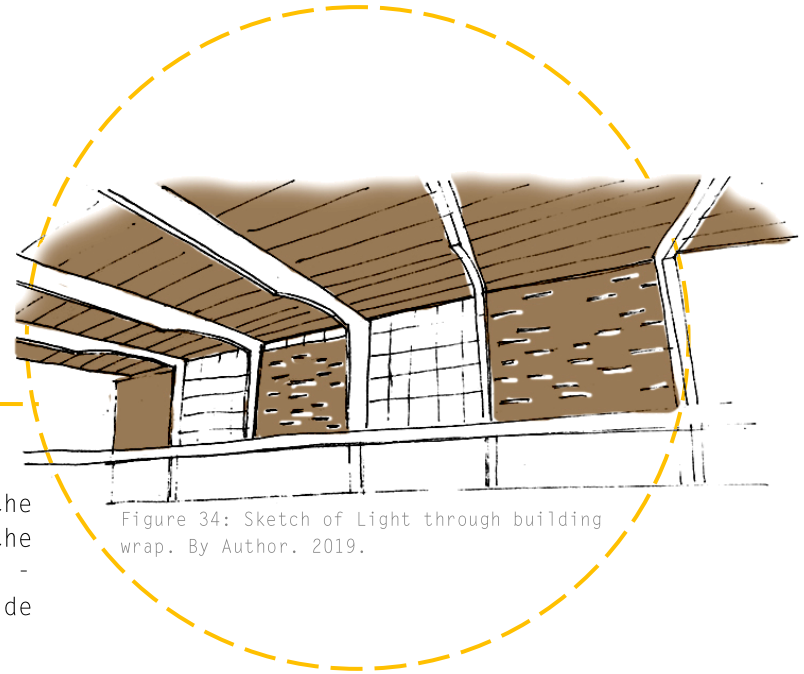
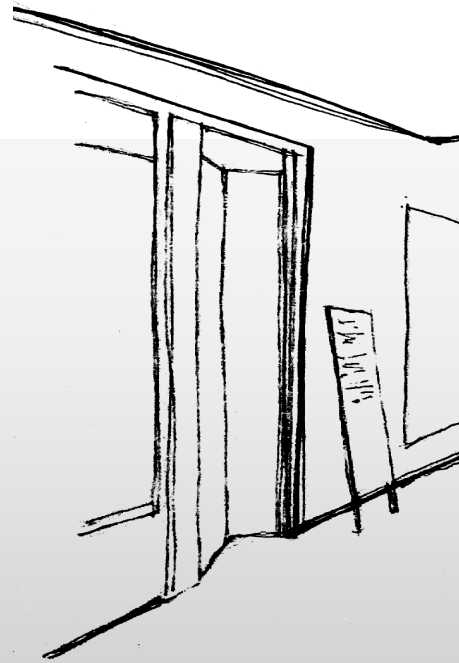
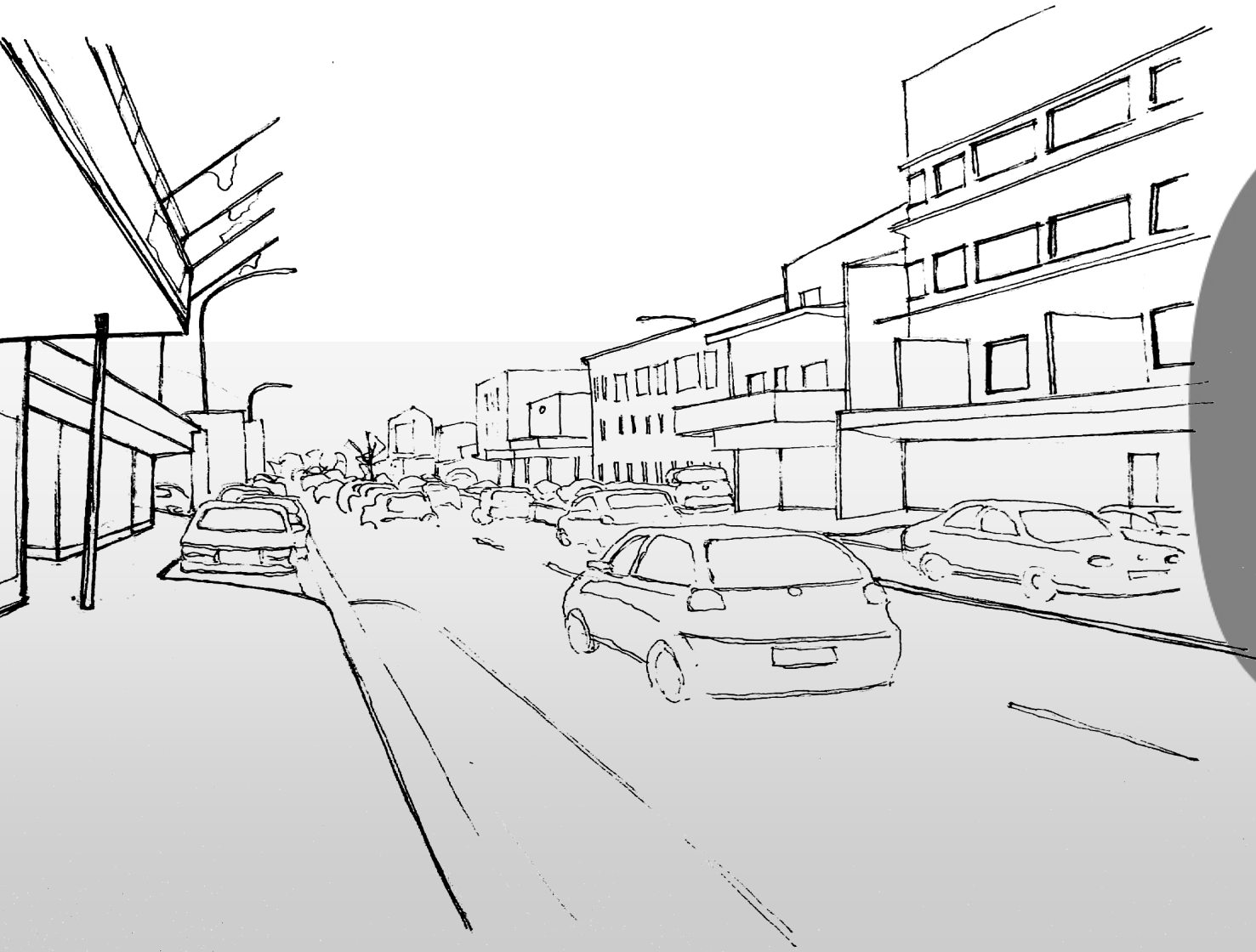


Figure 34: Sketch of Light through building wrap. By Author. 2019.

2.1 CONCEPTUAL FRAMEWORK





02



2.1.1 FORMULATING A DESIGN RESEARCH QUESTION

HOW CAN A BUILDING BECOME A CATALYST FOR URBAN GROWTH AND COMMUNITY GATHERING?

> THEME:

Using light as a concept to unearth the potential found within the urban grain to provide a place of gathering and community skill development

> SUB-THEME:

Using the building as a way to promote social and urban progressions by leaving lasting impressions on the users.

2.1.2 TOUCHSTONE

The touchstone model shows an image of chaotic black sticks protruding through a colourful platform. This explains the existing situation of the site within Strand Road. All the elements seem chaotic and unorganised, placed to serve an individual goal, rather than one of the community.

When the sticks are pushed through and interacted with, they become straight and organised, level with the platform. This introduction of the individual interaction also reveals skill sets that help to balance these sticks. In doing this, the skills and organisation only become prominent when human interaction has taken place.

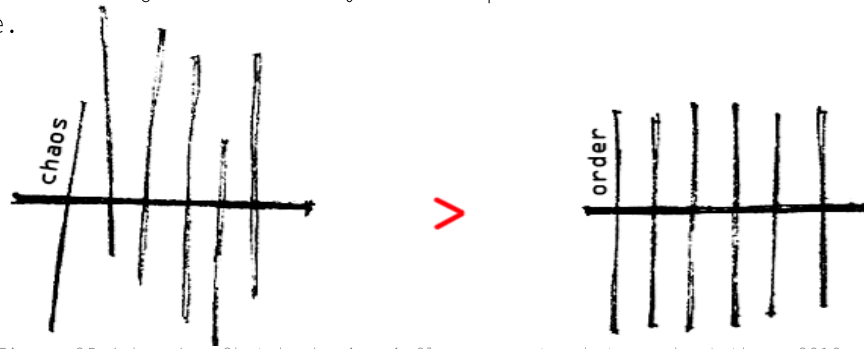


Figure 35 (above): Sketch showing influence on touchstone, by Author. 2019.

Figures 36 (right): Touchstone model and revealing skill flaps, by Author. 2019.





Figure 37: Concept model 1 - Catalyst Architecture, by Author. 2019.

2.1.3 CONCEPTUALISATION



Figure 38: Concept 2.1 - Light Revealing Connections, by Author. 2019.

These concept models are depicted to show the potential of the chosen site, and provide clarity on the concepts that will guide this architectural investigation.

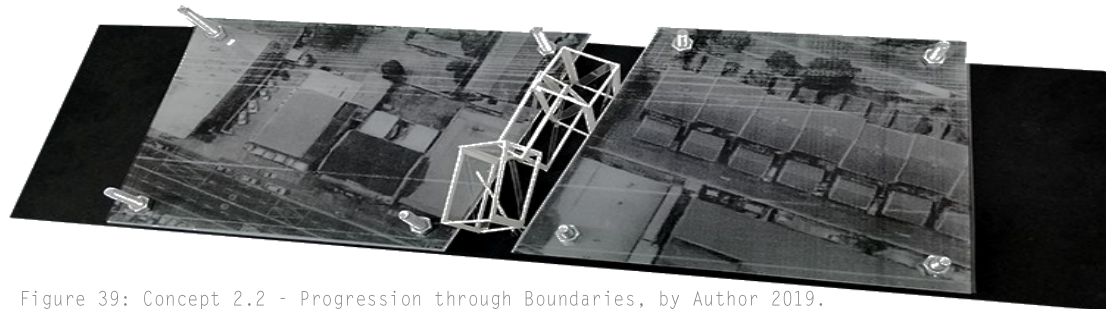


Figure 39: Concept 2.2 - Progression through Boundaries, by Author 2019.

The site is printed on transparent sheets and layered with either building, people, and vegetation. The layers are placed at various heights to highlight the diverse social, natural and economic demographic present on the current site. These key factors provide insight towards the potential that lies within the development of the entire area.

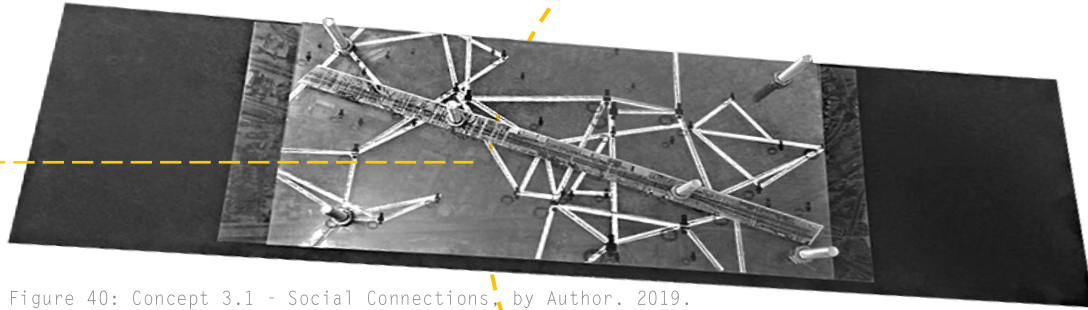


Figure 40: Concept 3.1 - Social Connections, by Author. 2019.

- 1- Architecture to reach above and beyond the confines of the street boundaries.
- 2- Light to reveal the true materiality and connections between them.
- 3- Lines between social and urban boundaries to be negotiated within one building.
- 4- Gathering people together with the purpose of creating their own connections
- 5- Architecture to provide hierarchy within the social and urban context of the street.



Figure 41: Concept 3.2 - Social Impressions, by Author. 2019.

CONCEPTUAL IDEA 1

2.1.3.1 CATALYST - AS SETTING IN MOTION




Figure 42: Context diagram depicting urban influence from reference point outward, by Author. 2019.

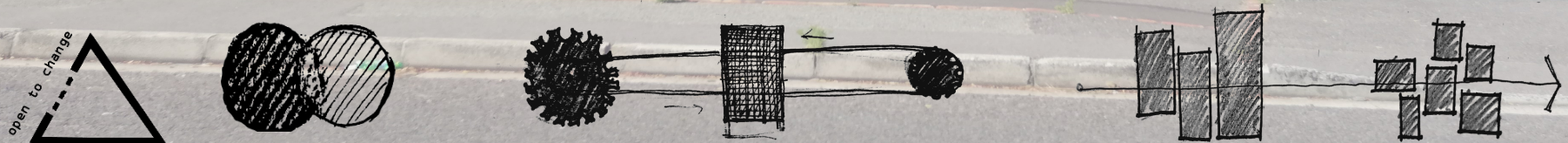
The theory of a catalyst is to add something that creates a reaction. It combines all elements, in this case, the project combines the community with the site via the building function as a catalyst intervention.

By opening the site to create new connections, the building makes it possible for people from the residential and commercial sides of the street to interact – activating both in the process.

The building that connects both Linda Street and Strand Road creates a movement corridor that act as a social and commercial catalyst to either sides of the site.



Catalyst develop other actions, and in turn, help themselves. The constraint is not to destroy the urban fibre and current social context, but aid in financial and community development. The goal is to moderate this impact to the local identity of the place, whilst opening business opportunities to the larger urban scale.



Figures 43-46: Symbols depicting events that can change the original from one state to the other, by Author. 2019.

KUYASA LIBRARY COMPLEX (2016)

CCNI ARCHITECTS

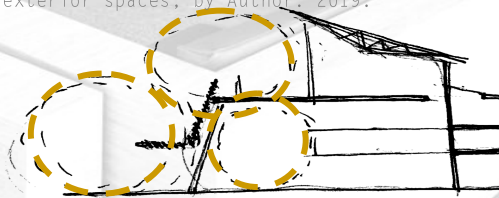
The new Kuyasa Regional Library Complex forms part of the larger Kuyasa Station Precinct development. The design and proposed facilities not only serve the needs of the local residents but also the surrounding areas of Khayelitsha.

The role of the Library Complex is to activate and populate the existing square formed by the new development. The facades bind the programme of the building with the activity on ground floor through the use of screens and balconies on the elevations overlooking the square.

The possibility of a mixed-use building with shopping and study spaces can be integrated towards the public even with the over-bearing scale of the building. Living, working, learning and traveling can be used together on an everyday environment, integrated urban scale.

Figure 47.48 (right): Community vibrancy around building, by Architects. 2016.

Figure 49.50 (below): Diagrams of merging interior and exterior spaces, by Author. 2019.



The library becomes a space where the local community gather to wait on public transport. People gathering in the same space, for the same reason, becomes the catalyst for the area to thrive as a ground for community prosperity.

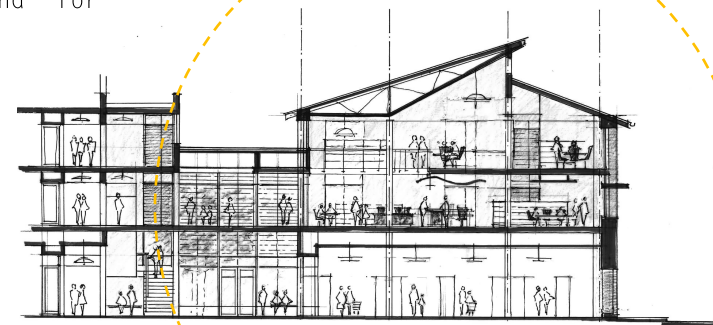
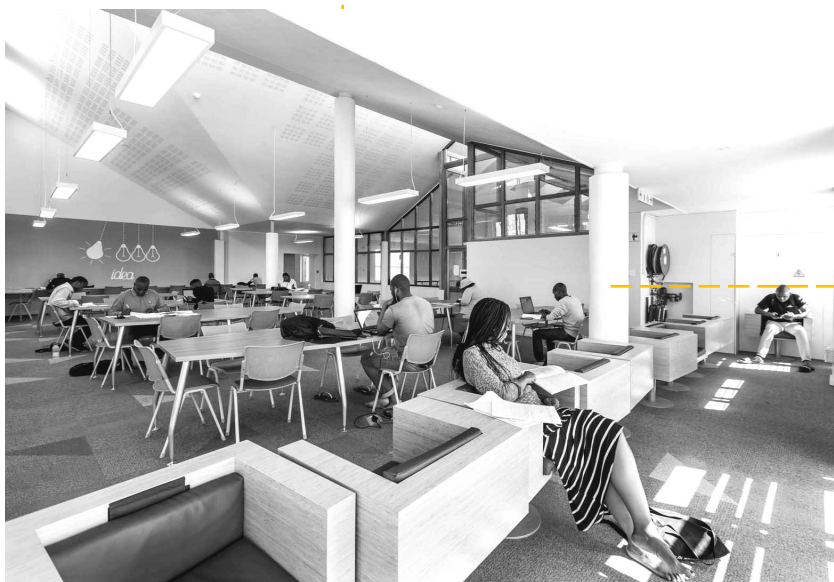
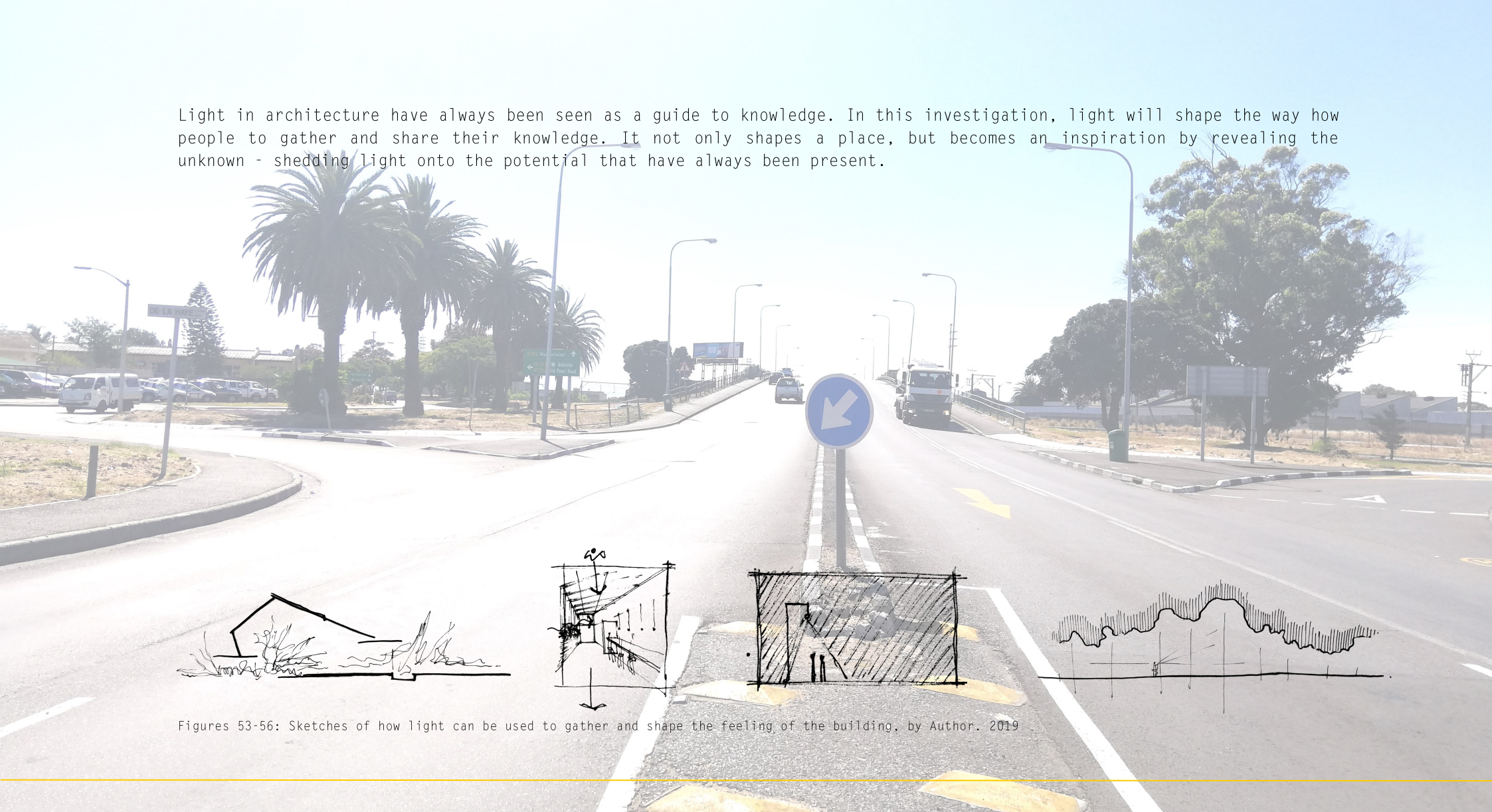


Figure 51 (left): Community gathering space inside Kuyasa Library, by Architects, 2016.
Figure 52 (right): Section sketch, by Architects, 2016.

Light in architecture have always been seen as a guide to knowledge. In this investigation, light will shape the way how people to gather and share their knowledge. It not only shapes a place, but becomes an inspiration by revealing the unknown - shedding light onto the potential that have always been present.

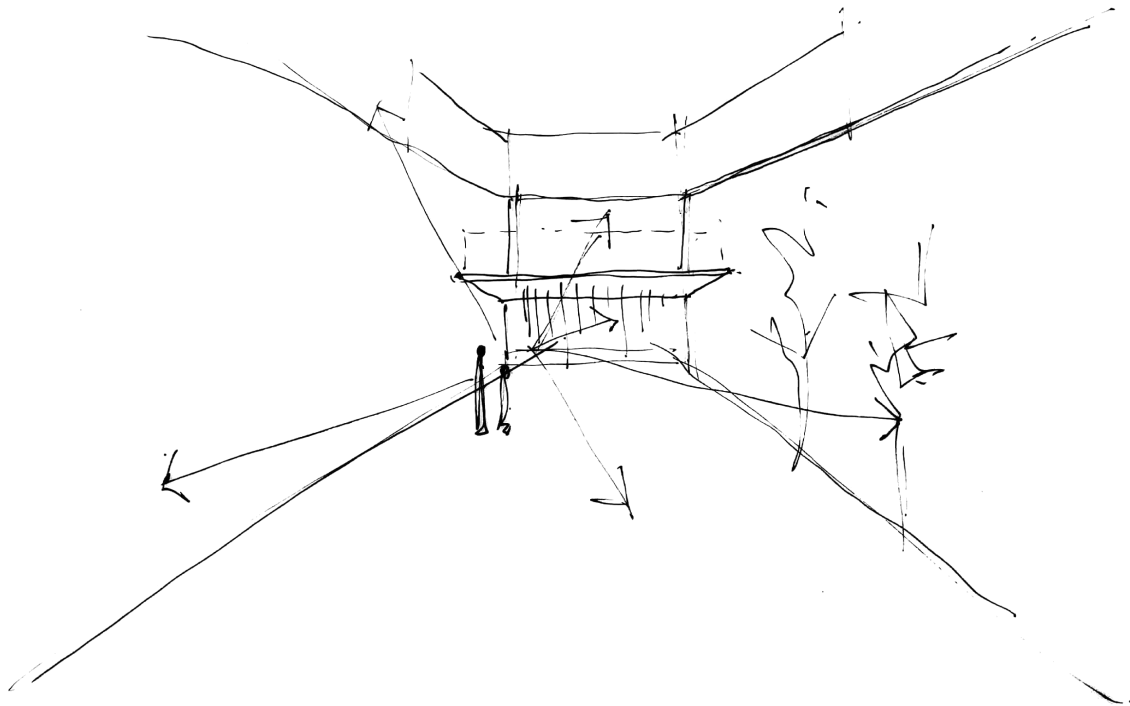


Figures 53-56: Sketches of how light can be used to gather and shape the feeling of the building, by Author. 2019

CONCEPTUAL IDEA 2

2.1.1.3.2 LIGHT - AS REVEALING CONNECTIONS

Figure 57: sketch on perception of light by shaping the interior, by Author. 2019.



This concept is focused on how the building will be shaped by its natural surroundings. Light will not only guide the form-giving, but it will also shape spaces inside the building where people can gather.

Most importantly, this concept, will also guide the construction and detailing on the proposed building, as this will become a skill development centre, it becomes important that the building accentuate the connections. Connections between different materials, and also how the materials interact with each other and the light are also an important guideline for the interior of the building.

LEWIS ART CENTRE COMPLEX (2017)

STEVEN HOLL ARCHITECTS + BNIM ARCHITECTS

The building by Steven Holl becomes a showcase of the arts spaces inside. Dance and theatre spaces are displayed within individual wooden boxes. The wooden boxes not only creates private paces to the interior, but can be seen through the glass wrapping around the building, and is even reflected on the water next to the centre.

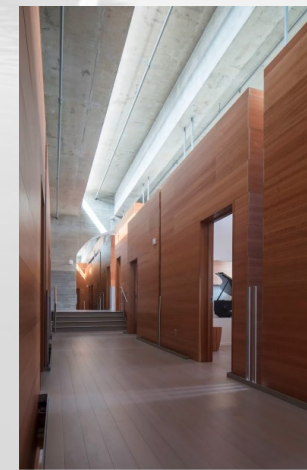
Individual spaces share the collective internal volumes, making the public spaces appear light and airy. The staircase becomes a feature on the internal spaces, and filters light through the bright materials as it bounces from roof level to ground floor. Many openings and light shafts allows light to fill the entire building. Light is also reflected from the water feature onto the external facades.

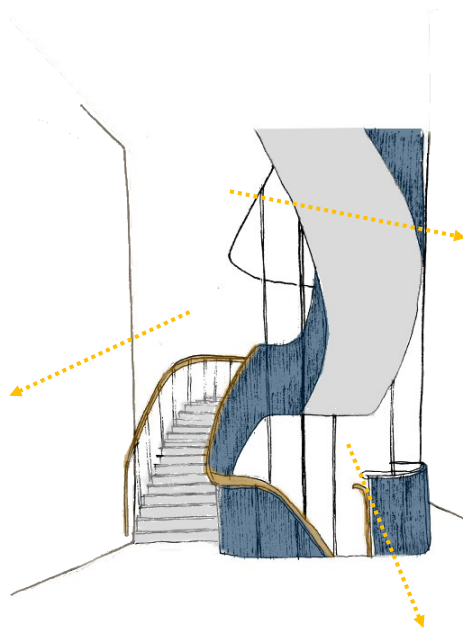


Figure 58 (above): Sections through Lewis Building, by Architects. 2017.

Figures 59 (top right): Lewis Building functionality and materiality on display, by Architects. 2017.

Figures 60,61 (bottom right): Light quality of building interior, by Architects. 2019.





Natural light enters the Lewis Art Complex through various openings on the façade and roof. Each material and texture is being complimented by the light as it enter the building.

The design uses light in a similar way, so that light becomes the shape and function of the building, as each material is chosen carefully to reflect, absorb or celebrate its texture.

As a skill development centre, the rough materials is highlighted by the use of natural light where possible. This way, light shapes a place of gathering, where knowledge can be gained through studying the materials and textures.

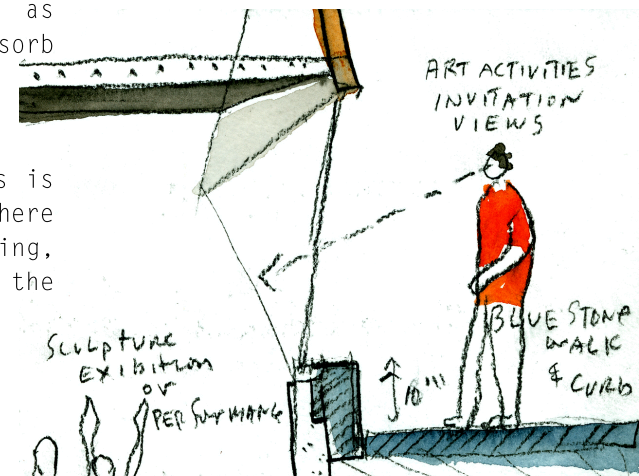


Figure 62 (left): Internal stairwell formed around natural light, by Author. 2019.

Figure 63 (right): Sketch by architect to indicate public involvement, by Architect. 2017.

LIGHT - AS PROGRESSION THROUGH BOUNDARIES

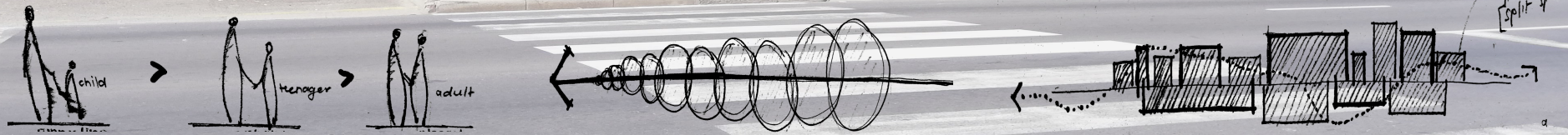


Figure 64: Diagram sketch of movement through boundaries before entering the building, by Author. 2019.

The existing site is open to both the busy and commercial Strand Road, and the reserved residential Linda Street. Mental and physical progression through the site allows the user to shape individual spaces that can adjust to both.

On Strand Road the buildings are in close proximity to each other, this quick succession allows individuals to move through various boundaries simultaneously. These overlapping mental and physical spaces are unique for each individual progressing through these spaces.

Chatzi insists that there is a relationship between the theory of urban catalyst and the imagery of power, when it comes to architecture. It becomes a dialectic trigger (Chatzi: online) to promote social activities, in and around the building. Functionally and psychologically the building operates in conjunction with the larger urban context.



Figures 65-67: Sketches of various boundaries and progressions, by Author. 2019.

NMMU B.ED FOUNDATION PHASE BUILDING (2016)

THE MATRIX URBAN DESIGNERS + ARCHITECTS

The new education building on the university, follows the axis of the pedestrian routes on the campus and lines up with the main entrance of the building. The strong pedestrian entrance allows the building to become part of the campus massing. Three volumes of the interior is filled with natural light and ventilation, maximized by the orientation. The central circulation connects all the classrooms and computer training areas and becomes communal spaces that allows a buffer between private and public spaces.

These buffer spaces are complimented by natural light, bouncing around the steel and concrete hallways. Face brick, steel and off shutter concrete materials are complimented by light and becomes an inspiration of what these materials can be through the knowledge of education. The contrast in materiality and colour plays with the dramatic effect created by the exterior.



Figure 68-72: Photos of NMMU Building. By Architects. 2016.

The light form the interior space as it bounces of the raw quality of the textures. Each material is celebrated as individuals that make up the whole. Textures and materials are articulated at the connections, and these articulations are emphasized by the use of light within the building.

The proposed building aims to use light as a way to articulate the materials within the new design.

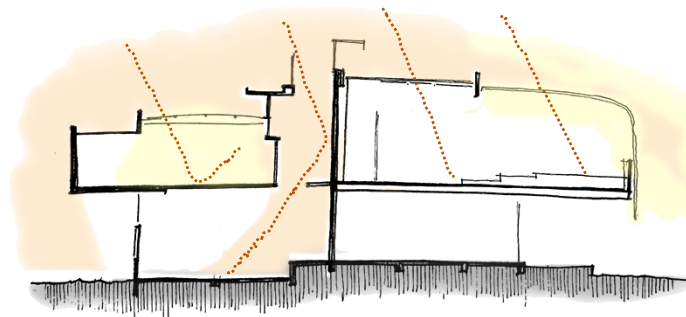


Figure 73 (right): Articulation between materials in NMMU Education building. Edited by Author. 2019
Figure 74 (left): Sketch showing light in building. By Author, 2019.



CONCEPTUAL IDEA 3

2.1.3.3 GATHERING - AS KNOWLEDGE EXCHANGE

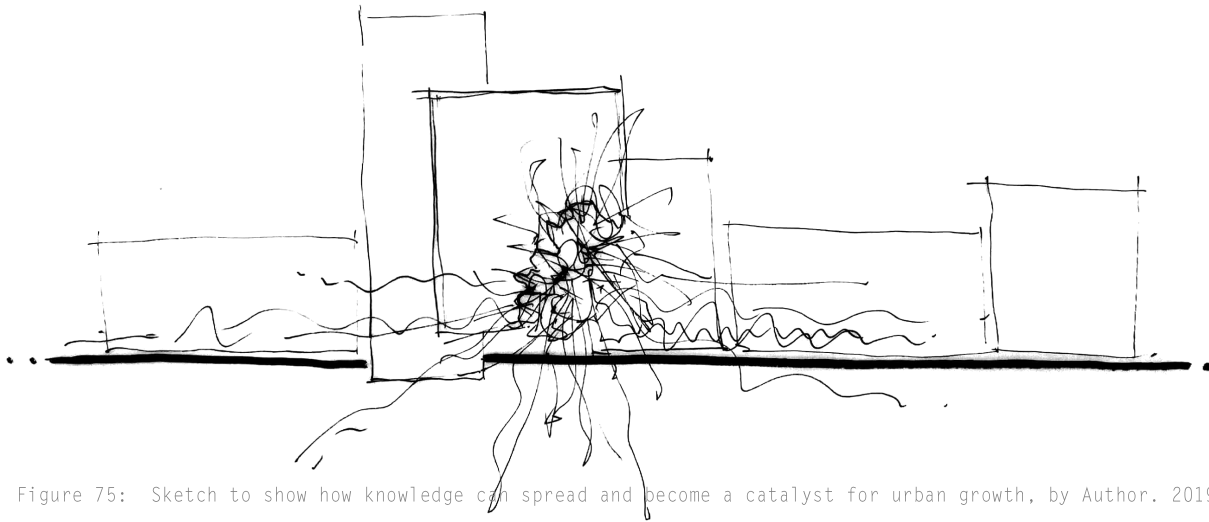
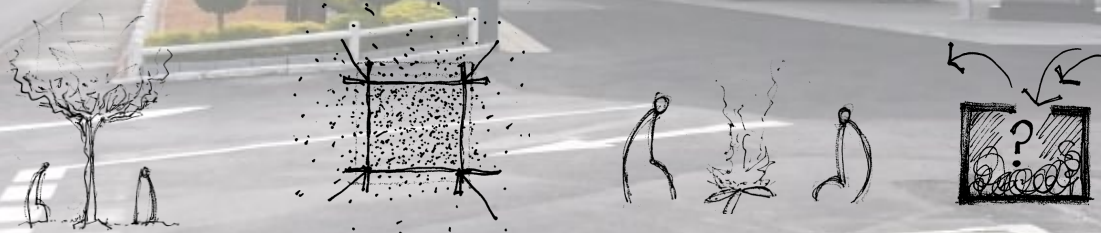


Figure 75: Sketch to show how knowledge can spread and become a catalyst for urban growth, by Author. 2019.

Social gathering can define a space or give quality to the space. How and why people gather have changed from gathering under a tree to standing under a streetlight. People come together for a single purpose or find themselves in the same space for a different purpose. Gatherings become a way of getting to know others or can create a space for knowledge transferral.

These gathering principles can be studied to influence the design layout. Public and private spaces within the design should not only be divided by architectural aspects, but also through social influence as spaces would function as different gathering platforms.

Gathering is a way people come together to share a single idea. This way of gathering become the key design principle for a educational function, as students and members of the community could come together and learn from each other.



Figures 76-79: Diagrams on principles of gathering, by Author. 2019.

Projects like these are shaped by the current city context which will then eventually become part of the tools used to shape the rest of the future context. The main purpose is to provide continuous regeneration possibilities. This type of project will never become a singular installation or end in a finalised end result. It is set around the human activities, formal businesses and transport network which will constantly change.



Figures 80-82: Sketches on physical and mental effects of social impressions, by Author. 2019.

GATHERING - AS CREATING IMPRESSIONS

Impressions made physically and socially creates a reaction, as in the case of the touchstone. In the site opposing structures creates a communication space in-between them.

Surrounding structures are lower than the existing and proposed building, therefore it becomes a point of hierarchy within the street elevation. this allows the building to create an impression on the passer-by, and the surrounding street.

The importance of the building is heightened through spatial awareness of the pedestrians. This potential becomes the magnet for the proposed project.

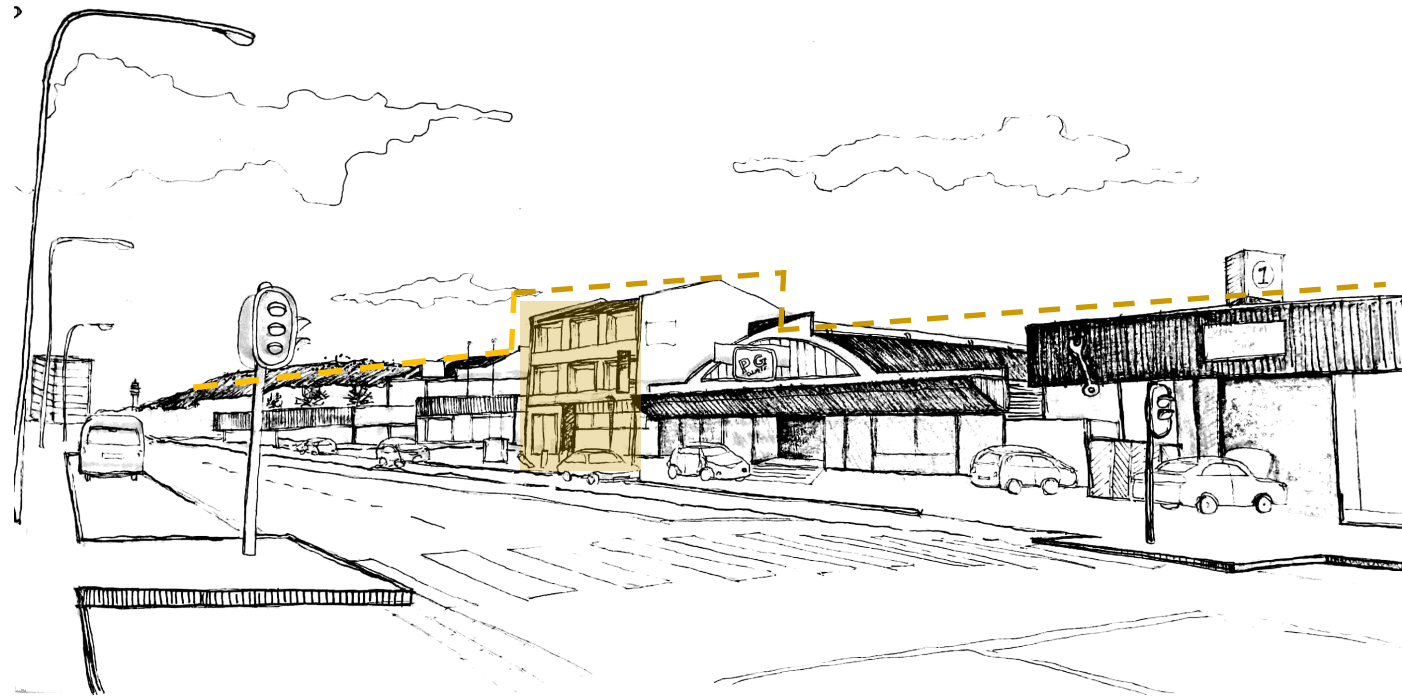
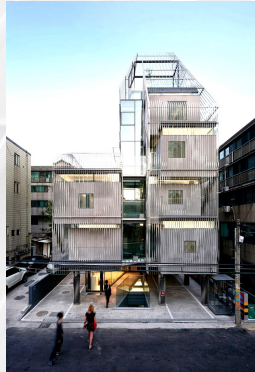


Figure 83: sketch showing impression existing site has on the surrounding context, by Author. 2019.



PRECEDENT 4 - URBAN GATHERING

Connecting city, building, and residents with spatial flexibility

SONGPA MICRO HOUSING (2019)

SSD ARCHITECTS

These living units in Seoul provides a new typology for micro housing, to maximize floor spaces to include circulation, balconies and visual extensions (Saieh: online). This allows for semi-public interaction spaces between neighbours. The ground floor is open to the public and becomes part of the street circulation, allowing for further interaction, not only between neighbouring occupants, but also the public pedestrians and visitors.

The skin of this building portrays this image of open circulation and interaction through the use of vertical steel blades. This allows the building to seem to be part of the urban fabric, whilst still acting as a threshold between the street and the building.



Figure 84-86 (left): Building circulation visible from street, by Architects. 2019.
Figure 87 (above): Section showing micro interactions, by Architects, 2019.



This micro-living housing project is placed within the urban setting of Seoul, thus allowing people - who would not usually interact - to find common ground within their living conditions. Shared spaces are a way of creating gathering pockets where interactions can form, and allow people to share individual traits with the group. Thus there lies opportunity for people to learn from each other.

This project also includes a pedestrian walkway underneath the building, where the community can gather, and share the public space. Once the public space is being used, it temporarily creates a mental boundary but is still part of the whole. The aim of this project is to open these boundaries and allow people to gather as a community and learn from each other, through design interaction spaces.

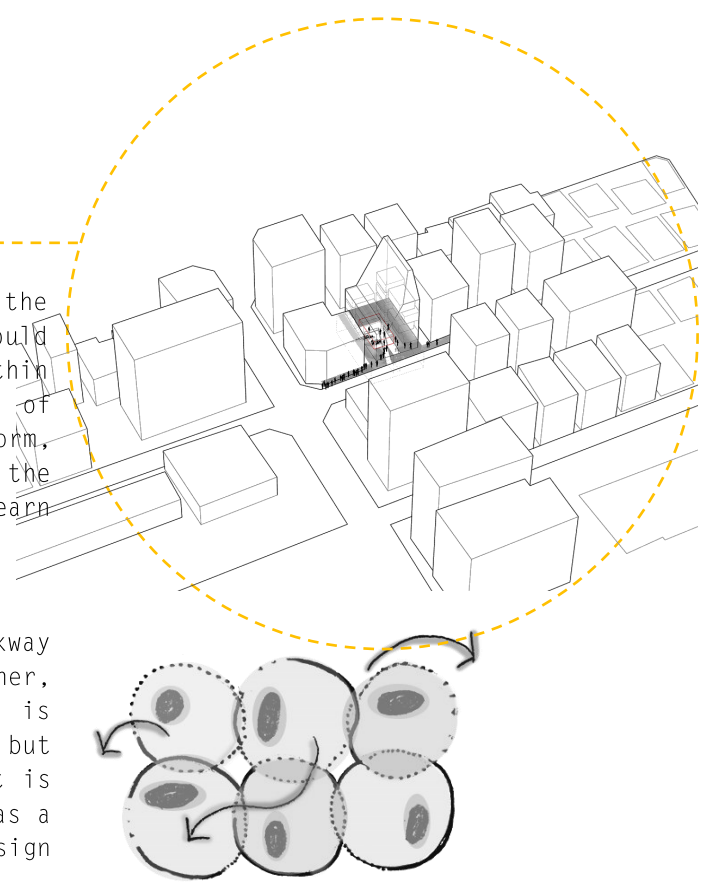


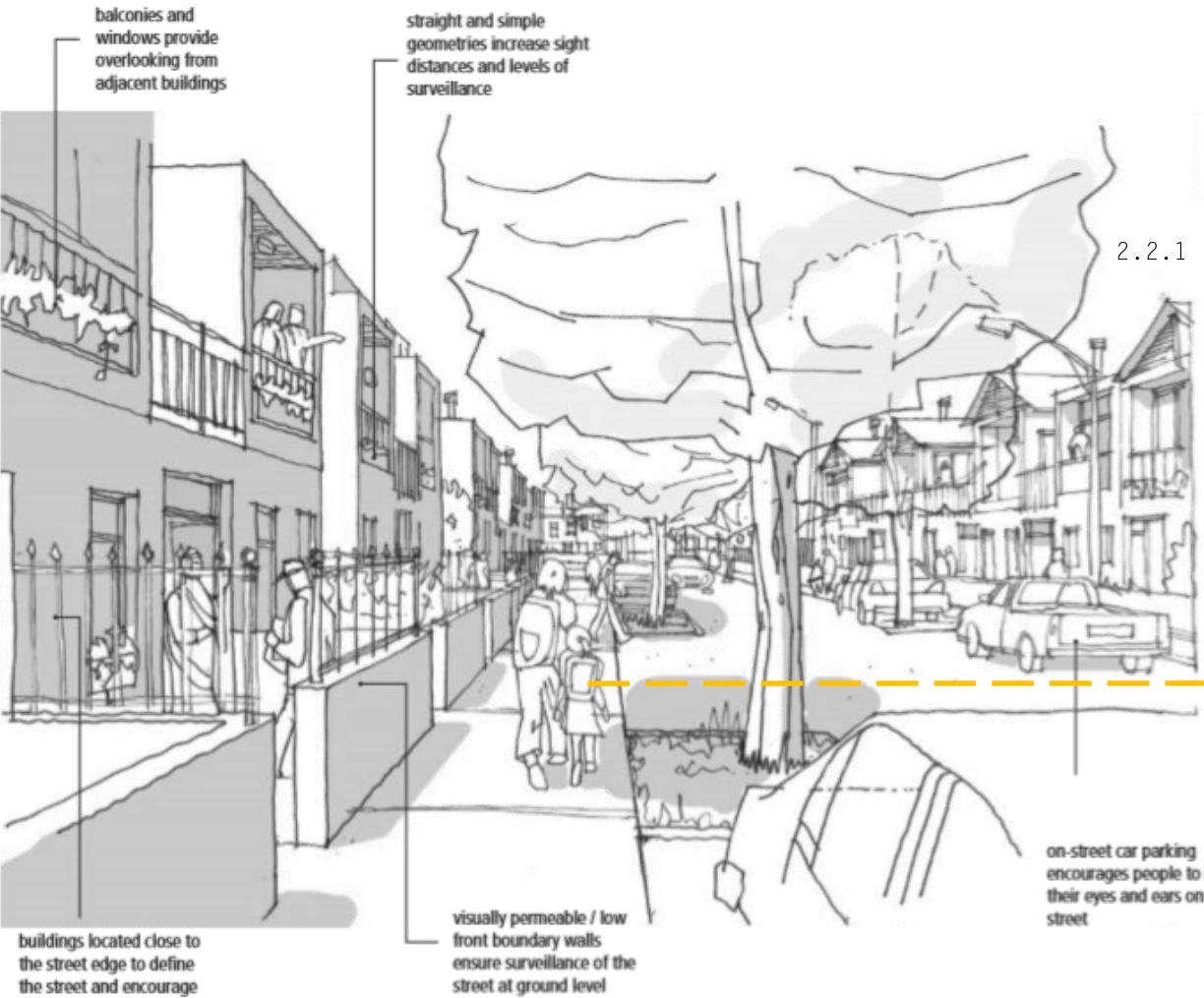
Figure 88.89 (right): Urban setting seen as a porous and cellular organism, by Author. 2019
Figure 90 (left): Section through building, showing gathering "cells", by Architects, 2019.

2.2 DESIGN METHODOLOGY





02



balconies and windows provide overlooking from adjacent buildings

straight and simple geometries increase sight distances and levels of surveillance

buildings located close to the street edge to define the street and encourage overlooking

visually permeable / low front boundary walls ensure surveillance of the street at ground level

on-street car parking encourages people to keep their eyes and ears on the street

2.2.1 PROGRAMMATIC REQUIREMENTS

- Public Spaces
- Private spaces
- Social spaces
- Learning Spaces
- Services
- General areas

Figure 91: Sketch of neighbourhood planning, by MSDF, 2016.

2.2.1.1 PUBLIC SPACES

- Deli /self-service restaurant
- Reception
- Public library
- Rentable entertainment spaces

2.2.1.2 PRIVATE SPACES

- Lecture halls
- Food preparation areas
- Administration offices
- Practical classrooms
- Study spaces
- Consultation rooms

2.2.1.3 SOCIAL SPACES

- Urban garden area
- Student reading area
- Rooftop entertainment area
- Multi-functional hall



2.2.1.4 LEARNING SPACES

1 - EDUCATIONAL CLASSROOMS

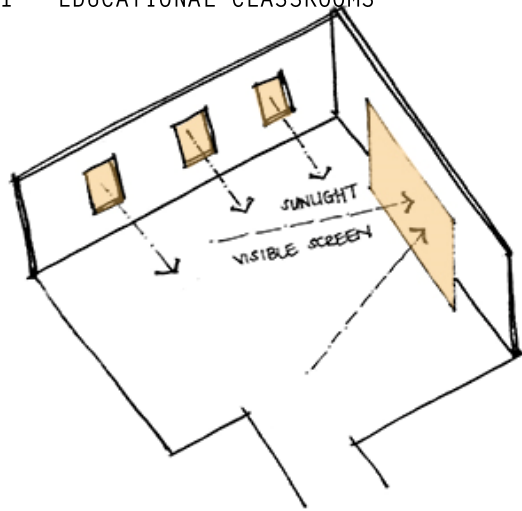


Figure 92: Natural sunlight and screens, by Author, 2019.

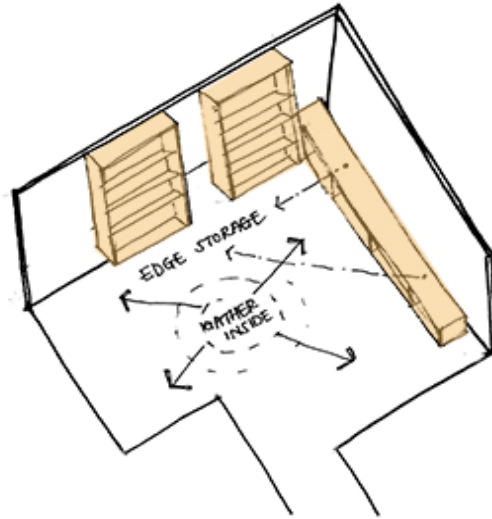


Figure 93: Edge storage and inside gathering, by Author, 2019.

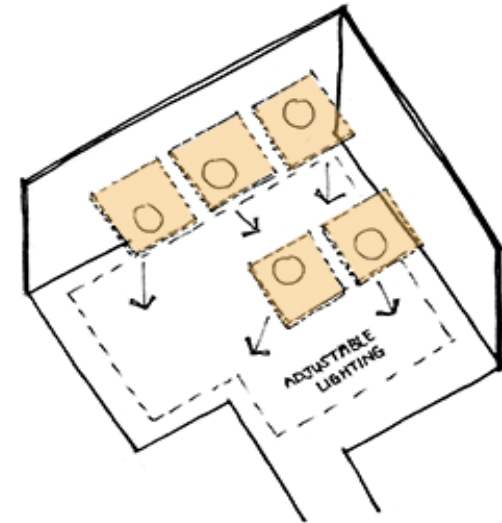


Figure 94: Adjustable lighting, by Author, 2019.

2 - PRACTICAL CLASSROOMS

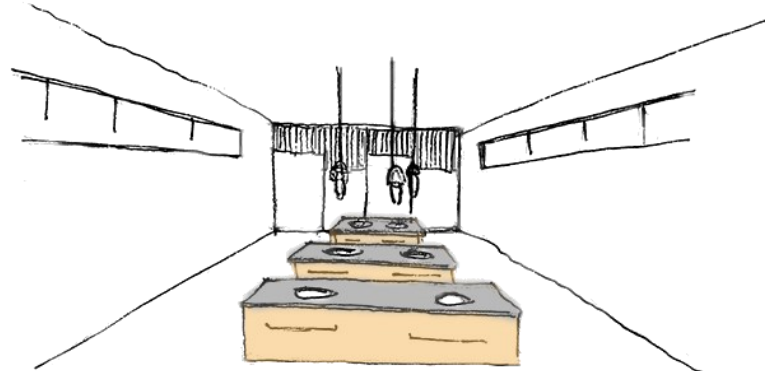


Figure 96: Sketch of kitchen classroom, by Auhtor.2019.

Visibility
Work space
Smooth materiality
Light

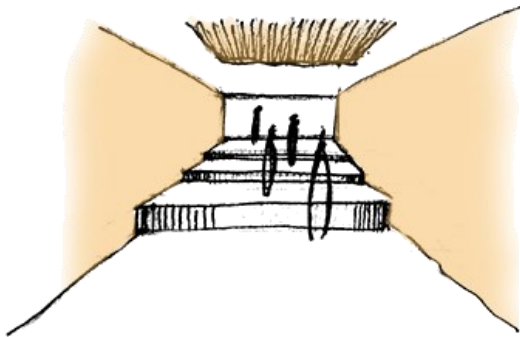


Figure 95: Sketch of terraced classroom , by Author. 2019.

High ceilings
Natural light
Accessibility
Acoustics

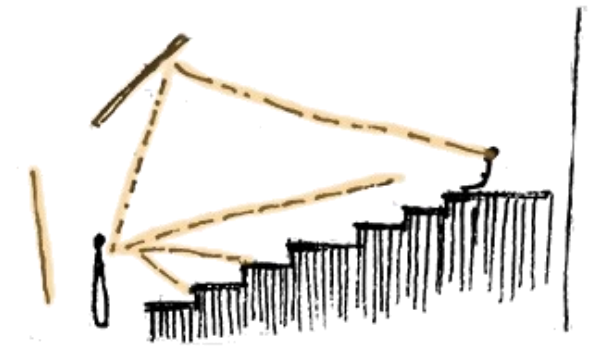


Figure 97: Sketch of lecture hall, by Auhtor. 2019.

2.2.2 TYPOLOGY INVESTIGATION



The massing is divided into two volumes, with a walkway down the middle. This allows the public to move through the space and interact with the students. Interaction between these volumes are connected by the social gathering space at the courtyard. Large openings on the ground floor maximize the pedestrian flow between the two volumes. By using the social spaces as defining elements between interior and exterior spaces, the cooking school relates to the proposed design for the skill development centre.

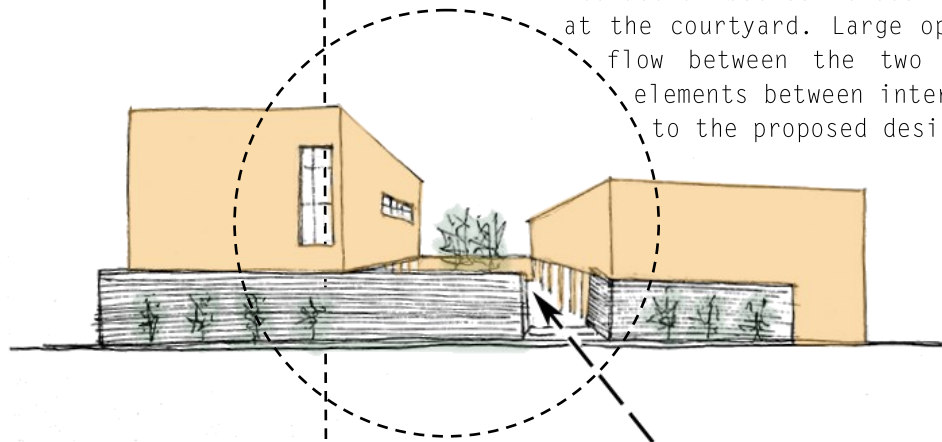


Figure 98 (above): Sketch showing movement of school, by Author, 2019.

Figure 99 (top right): Section, by Architects, 2010.

PRECEDENT 1 - URBAN TYPOLOGY

Conflict and contradiction stirs creative elements in self-creation

CULINARY ART SCHOOL (2010)

GRACIA STUDIO

The two volumes of the culinary school in California, Mexico, forms a grand plaza in the middle. This becomes a transition space between the two functions housed within the school: administration and cooking classrooms.

Honest use of materials defined in this building, expose the use of raw ingredients within the culinary arts. (Garcia: online) The cooking classrooms, are made to be almost transparent to the public, so that each student could cook with integrity, but also become a display of the art of cooking.

Being inside and outside simultaneously defines a third volume towards the middle of the building complex: an auditorium that links both sides of the plaza.

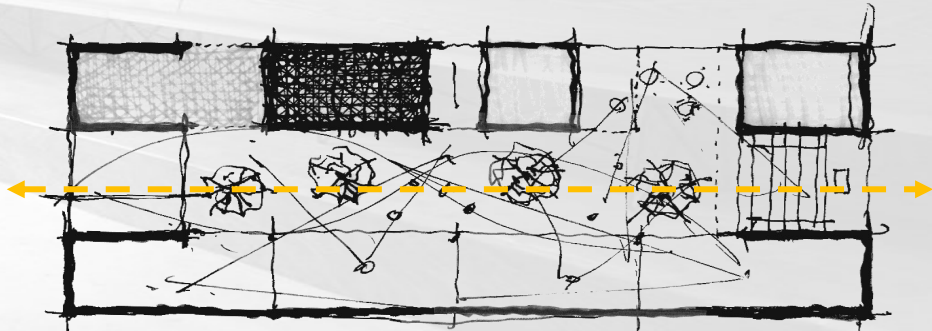


Figure 100-102 (left): Contrasting materials used in raw form, by Architects, 2019. Figure 103 (above): Sketch showing interior movement, by Architects, 2010.



PRECEDENT 2 - URBAN TYPOLOGY

Creative urban gathering and experimental learning spaces

HYUNDAI CARD - EXPERIMENTAL COOKING LIBRARY (2017)

BLACKSHEEP + ONE 0 ONE ARCHITECTS

The library in Seoul is designed to provide an escape from the fast-paced city life, and allow the community to enrich themselves with traditional cooking methods. Materiality was chosen to stimulate the learning environment and allow the pedestrians to effortlessly move through the building, whilst experiencing the rich cultural vibrancy on display.

The building showcases the main library on the upper levels, but also boasts with a small industrial kitchen, and dining area. There is also a gardening space on the roof level, where fresh produce can be grown within the urban context. The entire cooking experience is on display, from learning, growing, storage, detailing, preparation and dining.



Figure 104,105 (left): Interior spaces showcasing industrial materials, by Architects, 2017.
Figure 106 (above): Concept drawings, by Architect, 2017.

The dining area on the roof becomes an extension of the kitchen with an indoor-outdoor feel. The space on the terrace provides direct access from the kitchen to seasonal ingredients (Kuyongsub: online). Transitional areas allow for communal dining and gathering spaces. This also becomes the background for lectures, social events and lessons. The combination of industrial and luxury interior envelops the Seoul town where this building is located.

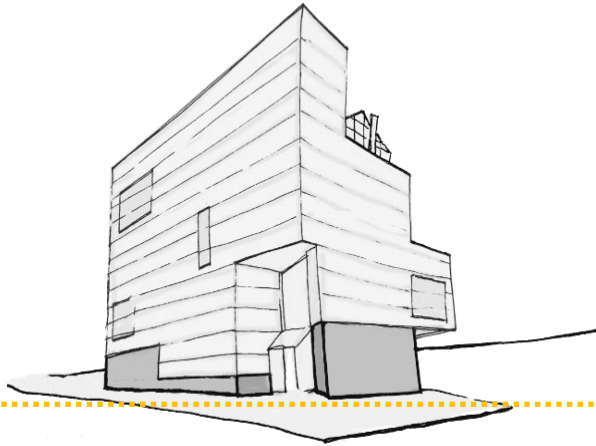


Figure 107 (above): Sketch of cooking library morphology, by Author, 2019.

Figure 108 (right): Indoor-outdoor gardening and dining area, by Architects, 2017.



2.2.3 MORPHOLOGY INVESTIGATION

The outreach foundation is placed within an urban setting, where the lowest part of the building is closest to the pedestrian walkway on the street level, and the grows in height towards the back. Openings on the pedestrian levels provide spaces for the public to interact and gather.

The upper level is shaped to form a hierarchy within the context, but does not appear overbearing as it is made from light steel framework and porous skin covering. This layered introduction of a new form within the surrounding area, helps the public to acclimatize to the new designed environment.

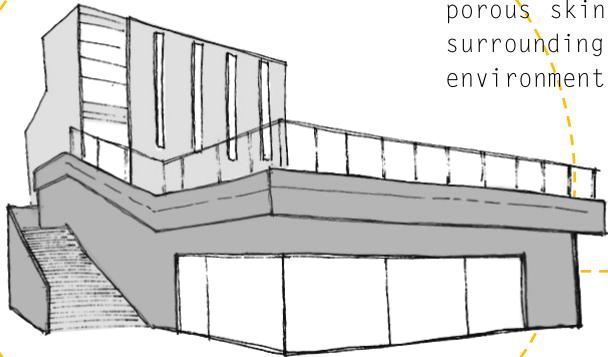


Figure 109: Sketch showing building morphology, by Author. 2019.

PRECEDENT 2 - URBAN MORPHOLOGY

OUTREACH FOUNDATION (2015)

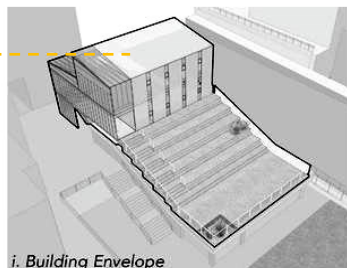
LOCAL STUDIO ARCHITECTS

The building consists of 3 main functions: a computer centre on the ground floor, a dance studio on the first floor and offices with meeting areas on the second floor. These functions are tied together within an angular roof that drapes over the site and the building.

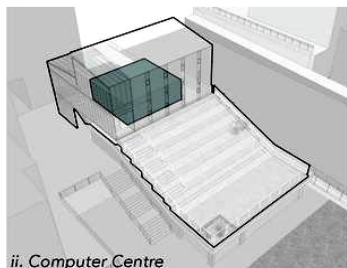
The form of the building is entirely governed by its functions. Materials like the white corrugated steel and clear corrugated polycarbonate cladding clearly establish the building as a new part of the city. (Southwood: online) An additional intervention included the construction of a steel bench, on the opposite side of the street, allows pedestrians to view the dancers while resting on their commuter.



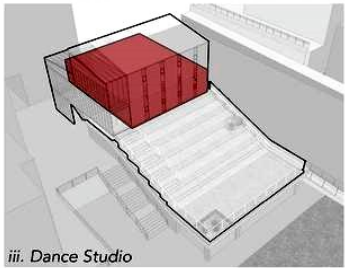
Figure 110 (left): Light within building, by Architects, 2019.
Figure 111 (below): Shape of building, by Architects, 2019.



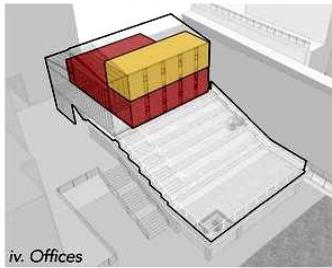
i. Building Envelope



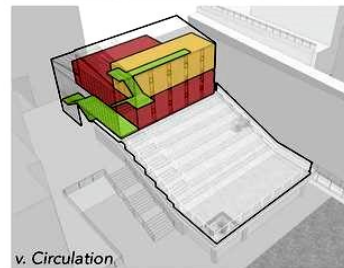
ii. Computer Centre



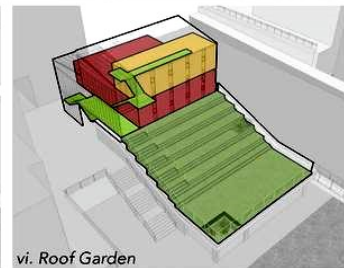
iii. Dance Studio



iv. Offices



v. Circulation



vi. Roof Garden

PRECEDENT 3 - URBAN MORPHOLOGY

WHITECHAPEL IDEA STORE (2005)

ADJAYE ASSOCIATES

Community facilities combining library and educational spaces revive the traditional libraries of the area. A large, daily street market runs along the high street and is partly sheltered beneath the overhanging structure.

The glass facade makes a prominent impression on the street elevation, but also allows views from the interior to the public spaces outside. Organisationally, the Idea Store combines and redesigns library and continuing educational spatial qualities, to serve the community. (Archilovers:online) Small exhibitions run in the open foyers, while stores and libraries occupy the spaces leading from this public corridor.



Figure 112 (left): Market space at the Main façade of Idea Store, by Architects, 2005.

Figure 113 (above): Interior space of Idea Store Library, by Architects, 2005.

The market spaces on both sides of the site are connected through this building. A corridor runs straight through the building, making the ground floor open for public use, whilst inserting a community development function, like the library. The building acts as a connector and development for the area, and the community. This design aims to do the same with the building acting as a connector between two separated areas, by becoming a catalyst for development.

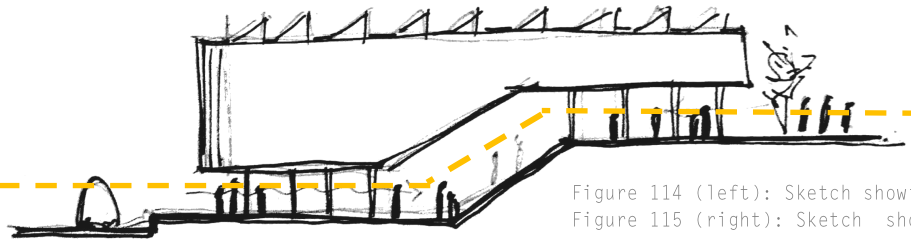


Figure 114 (left): Sketch showing ground floor movement through building, by Author, 2019.
Figure 115 (right): Sketch showing main façade at building entrance, by Author, 2019.

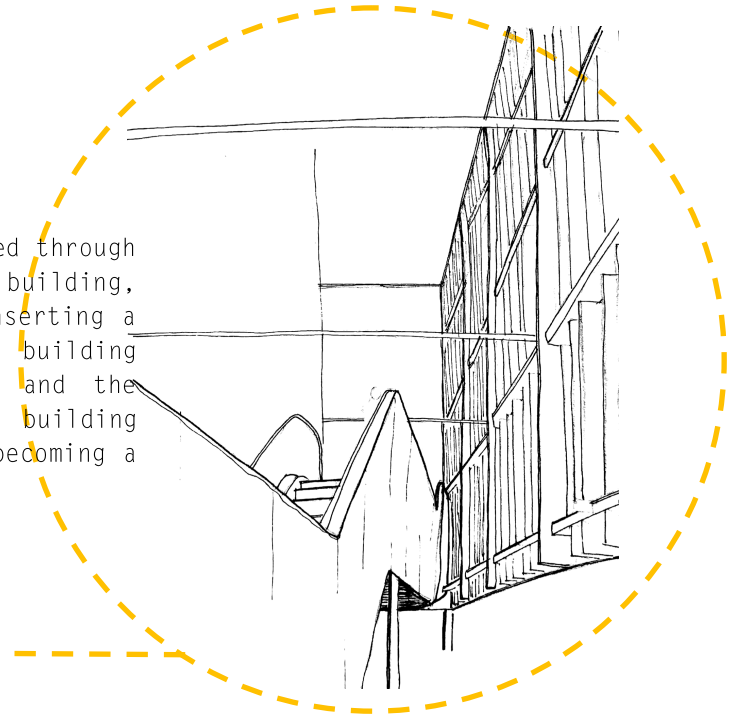




Figure 116: Street vibrancy potential as seen from municipal strategies, by MSDF, 2016.

2.2.4 OPERATIONAL PRINCIPLES

Each cooking school has its own set of principles to communicate their essence. This school shares their space with other spaces, such as classrooms and offices. In order to incorporate the idea of social and urban development into the design, along with the theories explored, the school will function as follows:

- 1- What you gather, you offer back
- 2- What you learn, you pass on
- 3- What you go through, becomes part of you

COOKING SCHOOL ESSENTIALS



Figure #: Hygienic area



Figure #: Running water



Figure #: Waste bin



Figure #: economic potential



Figure #: Cutting implements



Figure #: Cutting board



Figure #: Rolling pin



Figure #: Community involvement



Figure #: Creative space



Figure #: Fresh ingredients

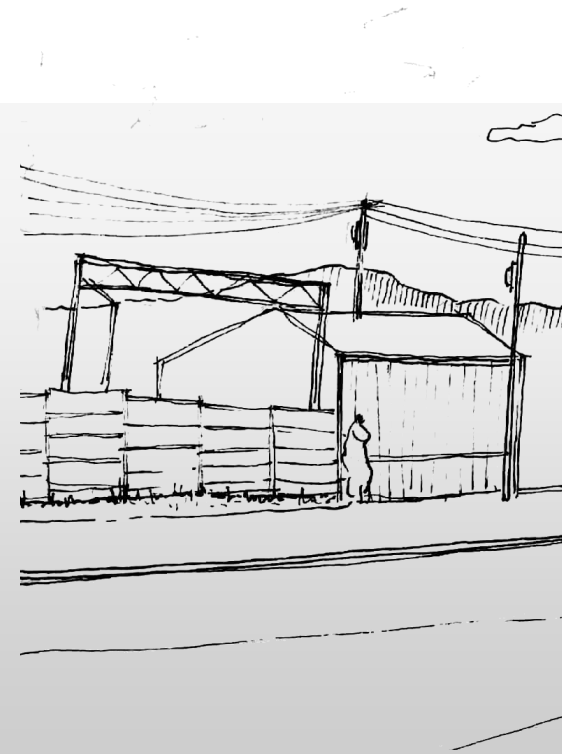


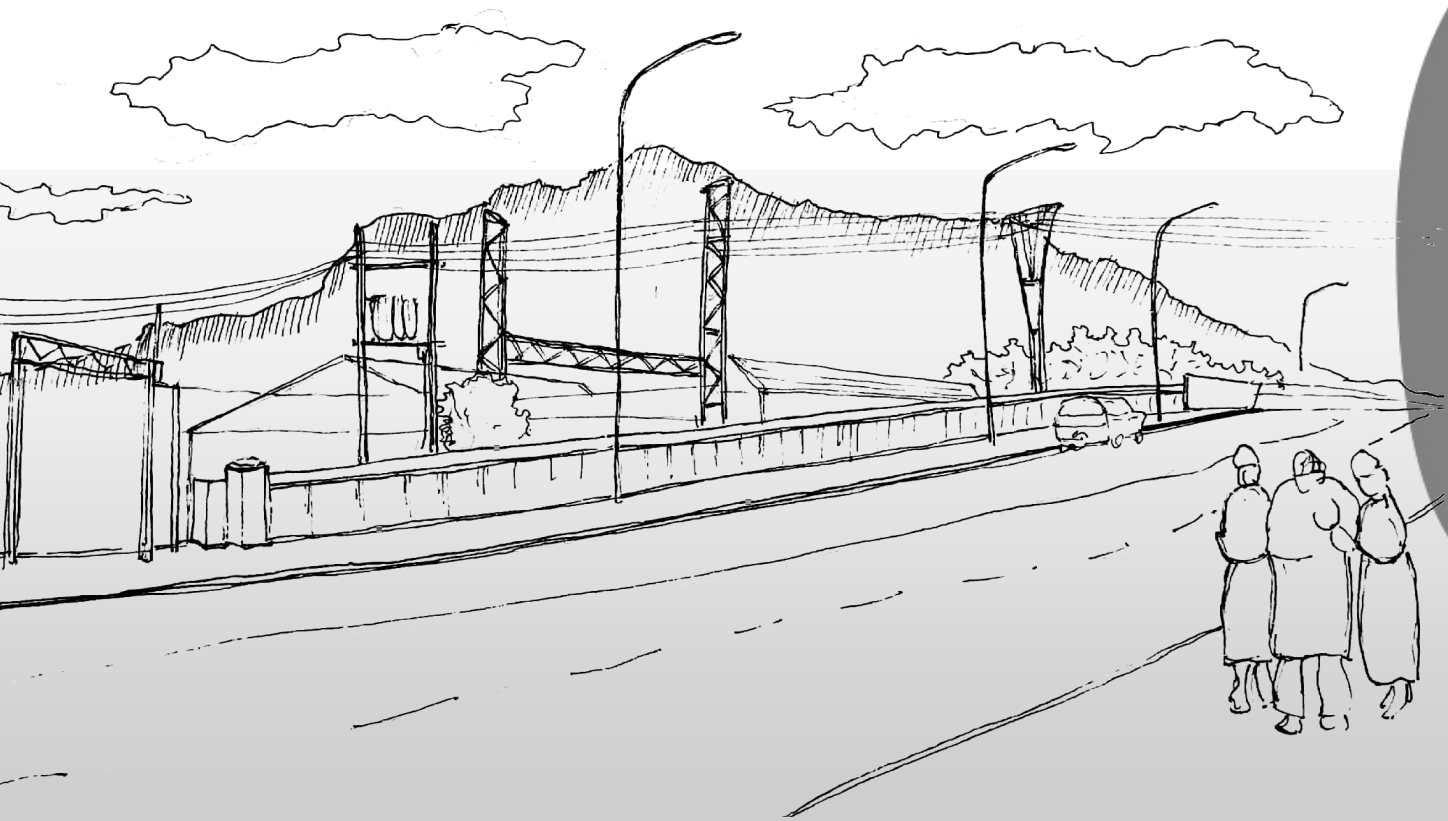
Figure #: Menu guideline



Figure #: Oven and timer

3.1 TECHNICAL RESOLUTION





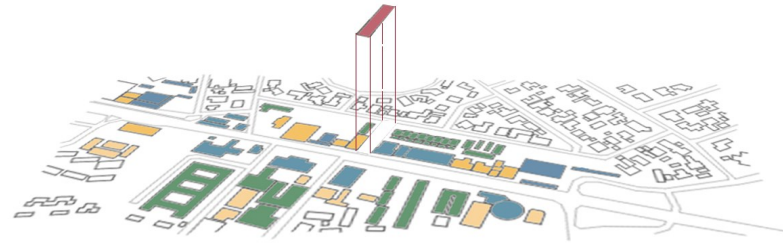
03

3.2.1 INTRODUCTION

This part of the document will focus on the technical issues and resolutions relating to the site, sustainability, materiality, services and the structure. It will also try to link the design theories with these resolutions so that the construction does not become separated from the design. The design document contains a detailed site analysis, therefore this will not be a repetition, but rather an insight towards the technical and cadastral information of the proposed site.



Figure 117 (below): Photo of existing site conditions, by Author, 2019.
Figure 118 (right): Diagrammatical site analysis, by Author, 2019.



Proposed site: Potential urban catalyst to ease connectivity between transport and job opportunities

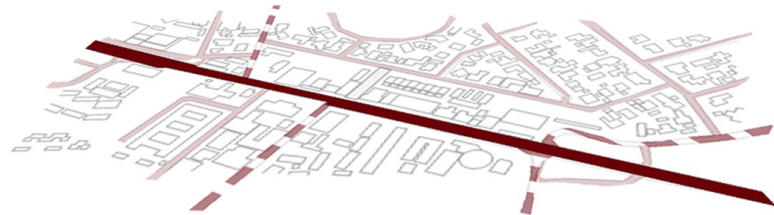


Existing infrastructure: Mix of amenities scattered throughout the area includes mostly motorcar -related properties with a few take-away and liquor stores.

Mobility: Main travelled routes by car indicated in red and frequent pedestrian routes in blue. Bus and taxi routes lined in yellow.



Land use: The area is zoned mostly for commercial activities (blue), mixed with single and multi-residential (yellow) sites around these commercial properties, with scattered green spaces (green).



Road hierarchy: Stand Road is a highly trafficked street, connecting Cape Town and Somerset. Arterial routes and connector routes are used less, but become busy during peak times.



Urban grain: The area consists of low to medium scaled residential, commercial and transport infrastructure. Most medium to high -rise buildings appear in the commercial zone next to Strand /Voortrekker Road.



Figure 120: Site plan, Edited by Author, 2019.

LEGEND

AB : 75,565m

BC : 15,752m

CD : 75,565m

DA : 15,752m

AD is 8m from Strand Road

BC is 3m from Linda Street

3.2.3.1 ZONING

The initial reason for the selection of the site as a potential property for development, was because of the change in the local and municipal by-laws. Tygerberg District Municipality changed the zoning of the sites directly adjacent to Strand Road, from Local Business 2 to General Business 3, which mostly affects the heights and business types of the site.

GENERAL BUSINESS AND MIXED USE ZONINGS	SUB-ZONING	FLOOR FACTOR	COVERAGE	MAXIMUM HEIGHT ABOVE BASE LEVEL	BUILDING LINES		STREET CENTRELINE SETBACK	OTHER PROVISIONS
					Street boundary	Common boundaries		
GENERAL BUSINESS SUBZONINGS (GB1–GB7) PRIMARY USES Business premises, dwelling house, second dwelling, boarding house, flats, place of instruction, place of worship, institution, hospital, place of assembly, place of entertainment, hotel, conference facility, service trade, authority use, utility service, rooftop base telecommunication station, multiple parking garage, private road, [and] open space, <u>veterinary practice and filming</u> CONSENT USES Adult shop, adult entertainment business, adult services, informal trading, expo-centre, motor repair garage, warehouse, freestanding base telecommunication station, wind turbine infrastructure, transport use, helicopter landing pad and service station	GB1	1,5	100%	15,0 m	0,0 m up to 10,0 m height; 4,5 m above 10,0 m	0,0 m	8,0 m	Residential incentive in respect of GB7
	GB2	2,0	100%	15,0 m	0,0 m up to 10,0 m height; 4,5 m above 10,0 m	0,0 m	8,0 m	Hotel floor space concession
	GB3	2,0	100%	25,0 m	0,0 m up to 10,0 m height; 4,5 m above 10,0 m	0,0 m	8,0 m	Canopy or balcony projection
	GB4	3,0	100%	25,0 m	0,0 m up to 10,0 m height; 4,5 m above 10,0 m	0,0 m	8,0 m	Public pedestrian footway along street boundary
	GB5	4,0	100%	25,0 m	0,0 m	0,0 m	8,0 m	Street corners
	GB6	6,0	100%	38,0 m	0,0 m up to 25,0 m height; ½ (H-25 m) above 25,0 m	0,0 m	8,0 m	Parking and access
	GB7	12,0	100%	60,0 m	0,0 m up to 38,0 m height; ½ (H-38 m) above 38,0 m	0,0 m	8,0 m	Loading Screening Wind mitigation
		Refer to item 60(c)	Refer to item 60(a)	Refer to item 60(d)	Refer to item 60(e)	Refer to item 60(e)	Refer to item 60(b)	Service station and motor repair garage Informal trading

Figure 121 (above): Municipal zoning regulations and requirements for site, by MSDF, 2016.

Figure 122 (right): Strand/Voortrekker Road from above, by MSDF, 2016.



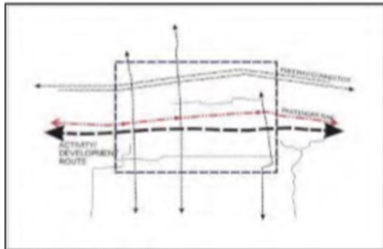
3.2.3.2 ADDITIONAL REGULATIONS

BUILDING LINES:

By referring to figure #: Common boundaries have a 0,0m setback and street boundaries are also 0,0m, but there are provisions for an 8m street line setback, as a possible road reserve for future expansions to Strand Road. There is an additional minimum clearance height of 4,5m from ground floor.

PARKING REQUIREMENTS:

The Tygerberg District Municipality aims to reduce traffic congestion within frequently travelled routes like Strand and Voortrekker Road, because it is located near many public transport nodes, parking spaces within the street itself, is very limited. Informal and Formal transport nodes are located in very close proximity of the site, and therefore, promote foot traffic. This project will however, provide the minimum parking spaces required, which is four spaces per 100m² of rentable office spaces.



THE CENTRAL SPATIAL STRATEGIES BY THE TYGERBERG DISTRICT MUNICIPALITY

Tygerberg District: The multi-directional accessibility grid

In the Tygerberg District, increased intensity and greater mix of land use is proposed along activity routes, structuring the road use to support road-based public transport services. This involves the reinforcement of the east-west Voortrekker Road corridor (turning into Strand Road).

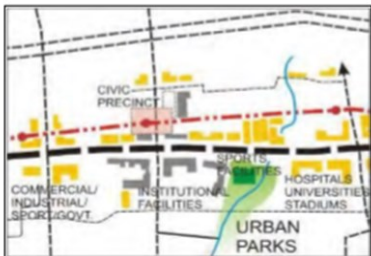


High intensity development and improved public transport services along the length of Voortrekker Road is proposed in certain areas where urban revitalisation is required - facilitating access to the urban core corridor and opportunities to the street façade.



Tygerberg District: Areas of Land Use Intensification

It is necessary to intensify the urban nodes along the street, so that the densification, not only increase in economic activities, but also in foot traffic along the streetscape. The aim is to reinforce Voortrekker Road corridor with the focus on a greater intensity of mixed use properties. And promote medium-high density housing within the urban grain.



“The area between Voortrekker Road and the Bellville railway line holds much potential for commercial and mixed-use intensification.”

Opportunities for small-scale economic development and informal businesses are likely to establish around urban and civic nodes, therefore it should be established within new developments, to promote pedestrian activated streets. This will also reduce travel times from one civic important space to the next.

Figure 122 (left): Future development spatial strategies, by Tygerberg District Municipality, 2012.
Figure 123 (right): Sketch of possible future urban influence, by Author, 2019.

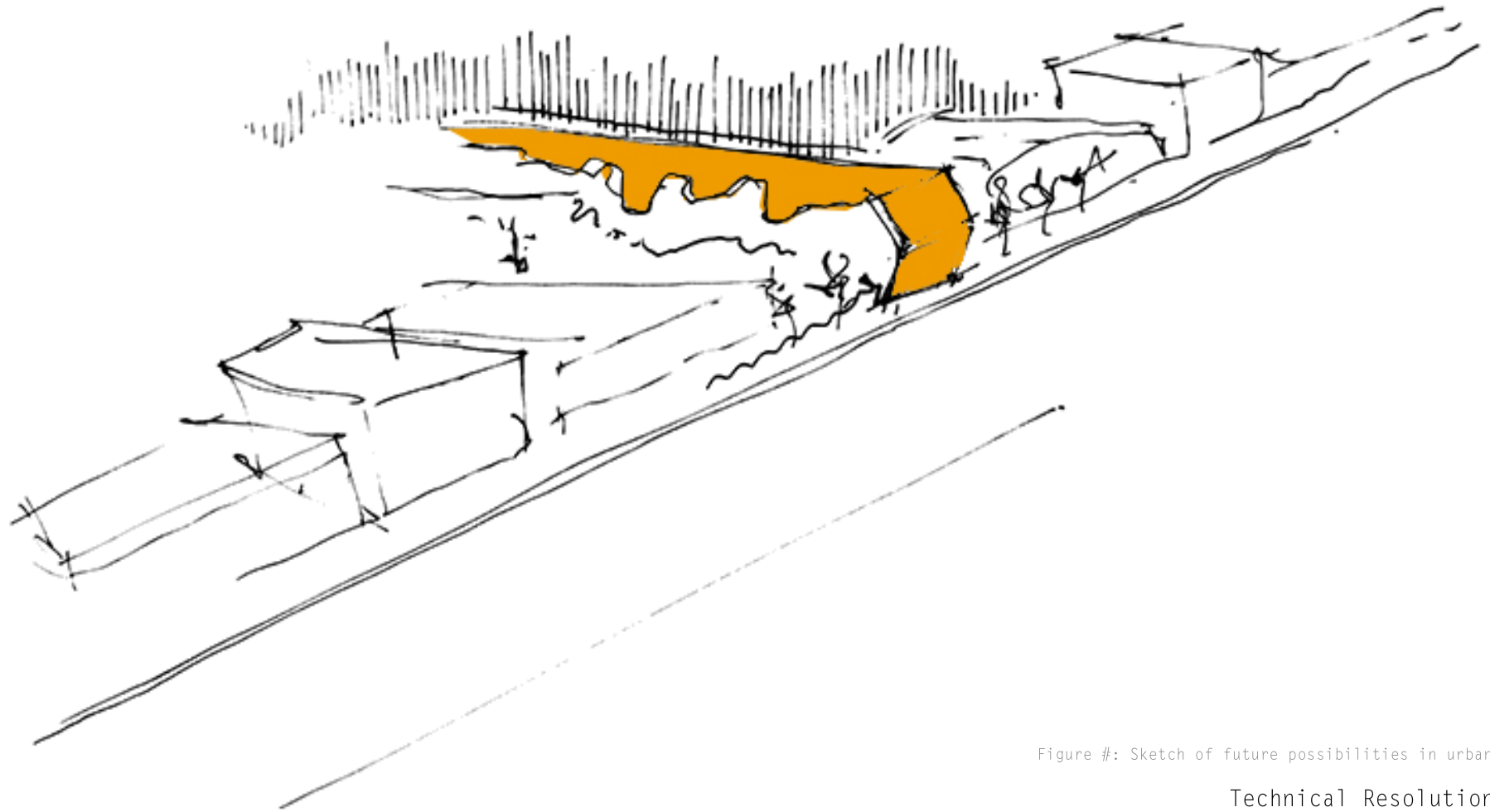


Figure #: Sketch of future possibilities in urban context

3.2.4 MATERIALITY

Surrounding textures and materials

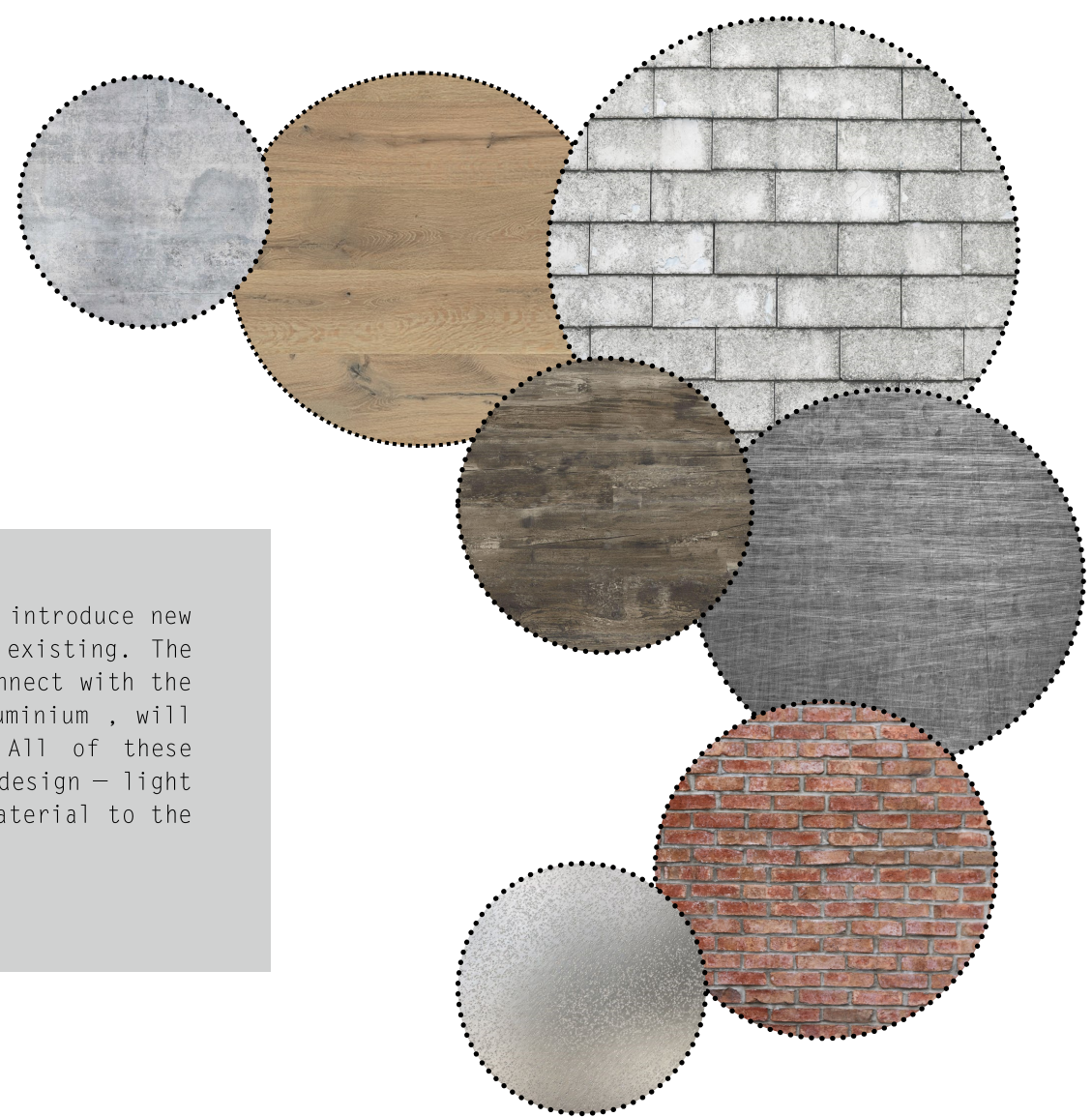


Figure 124: Surrounding textures compilation, by Author, 2019.

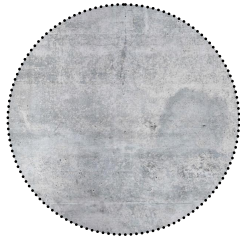
PROPOSED MATERIAL PALETTE

For skill development centre and cooking school

The proposed materials align with the existing context, but also introduce new materials to contrast the new building as an extension of the existing. The existing materials, such as bricks and metal, will be used to connect with the public façade, whilst new materials, like concrete, wood and aluminium, will be used as textures to guide the interior of the building. All of these materials will be used in raw form, to reflect the theory of the design – light as a quality of public spaces – exposing the properties of the material to the public within a learning space.

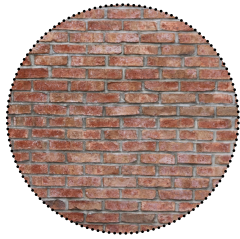


3.2.4.1 PRIMARY MATERIALS



CONCRETE

Concrete is a very rough and heavy material, but can also be used to carry the weight of the proposed building. It will blend with the exposed concrete floors and ceilings, to provide an unobscured view of the building's structure.



BRICK

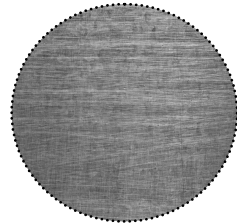
Exposed bricks will be used to match with the contextual brick facades, but also to articulate the sun's reflection, exposing the detailed brick pattern of the wall surface. Bricks will be used as infill between the concrete structure, or as exposed load-bearing walls on the interior.

3.2.4.2 SECONDARY MATERIALS



WOOD

Wood is a very versatile material and can carry structural weight if it is proportioned correctly. Within this building wood will be used to demarcate public spaces from private spaces. It will blend with the 'earthy palette' of the raw brick and accentuate the exposed concrete of the structure.



STEEL

The secondary structure of this building will be carried by steel, as it can span vast distances, while carrying the skin of this front façade. Steel will also be used in conjunction with wood as the roofing material.

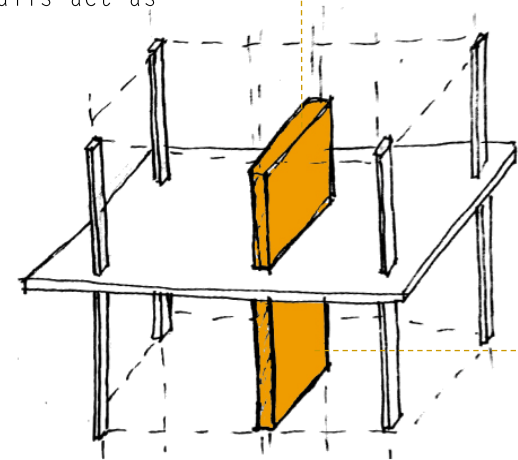
3.2.5 STRUCTURAL INVESTIGATION

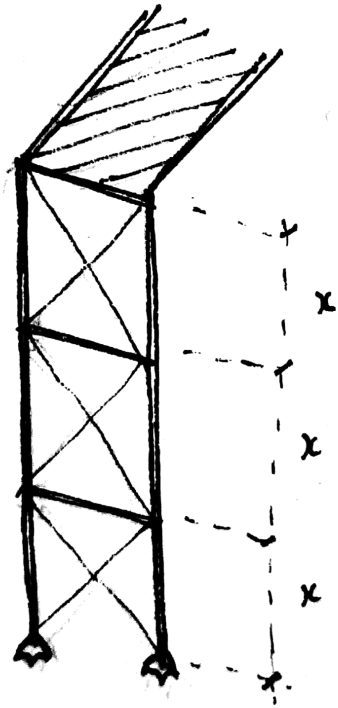
3.2.5.1 REINFORCED CONCRETE COLUMN & BEAM

A single continuous beam running across a number of support columns will carry a greater load than many simplified beams extending from support column to support column (124: Mrema). The moment load transfers from the structure to the foundation and to the ground. Introducing shear walls (fig.#) into this structure will help to resist lateral loads due to the building height. Shear walls act as large columns, although they appear as walls.



Figures 125,126 (above): Diagram showing one v simple concrete beams, by Author, 2019.
Figure 127 (right): Concrete sheer wall, by Author, 2019.





3.2.5.2 STEEL FRAME STRUCTURE

Steel frame structures can carry greater loads than that of timber or brick, but not as much as concrete, therefore, the steel within this building will be used as a skin structure, to carry the exterior forces onto the building, such as wind. Cross-bracing along all the levels and between columns are necessary to counter-act the loads carried by gale force winds found in the Cape Town area.

3.2.5.3 STEEL PORTAL STRUCTURE

Portal structures have to withstand vertical and horizontal bending moment loads. Therefore, cross-bracing within such a structure becomes important, and a versatile option when used on larger open spaces. This type of structure, would fit into the existing context of fitment centres, but as this project aims to move away from this, a portal structure would only be a viable option if there are remnants of this on the building itself, e.g. a secondary steel framework acting as a connection between the new proposal and existing context.

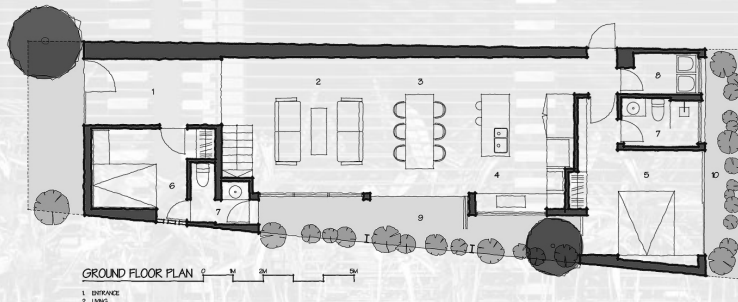
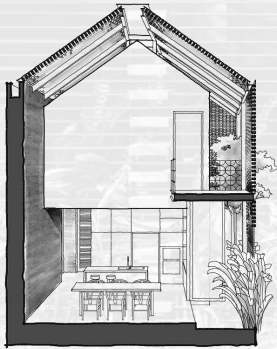
Figure 128: Diagram of steel frame structure with cross-bracing, by Author, 2019.

OLDMEETSNEW HOUSE (2018)

BLOCK ARCHITECTS

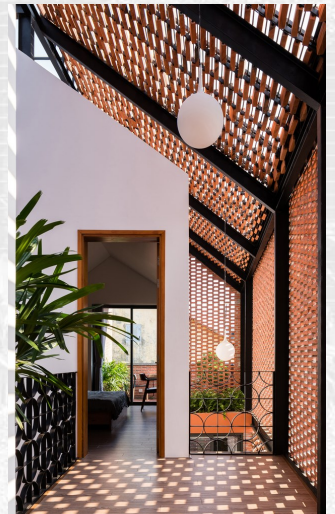
This new addition to the multi-cultural city in Vietnam, make use of the traditional brick, but in an innovative way. Bricks cover the entire house, to form light-filled interiors. The bricks not only plays with light, but filters the natural air, to create a micro-climate towards the interior parts.

The building is arranged to lie parallel on the site, to harness natural wind and light. This allows the house to filter fresh air into the interior. Volumes fit in with the traditional architecture of the surroundings (Vial: online), whilst creating a contemporary look and feel. The unique experience of the building is made successful not only through the use of the brick in a contemporary way, but also optimizing the natural environment and climate.



Figures 129,130 (above): Diagrams of building layout, by Architects, 2019.

Figures 131-133 (right): Interior of building showing light quality and patterns, by Architects, 2019.



3.2.5.4 STEEL AND BRICK SKIN

As brick patterns are common to the context, the aim of this project is to show how versatile this material can become if used in a different way. The proposed building however, will be taller than the context, and will therefore need steel reinforcement and bracing to aid in this endeavour.

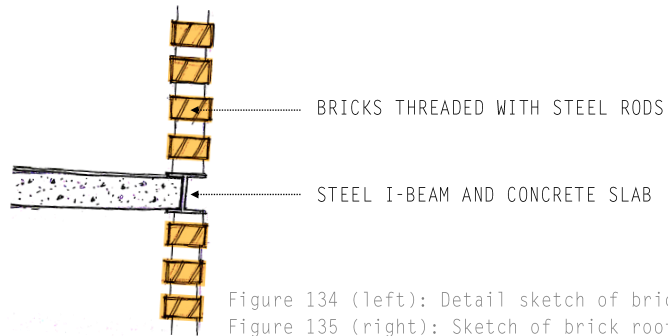
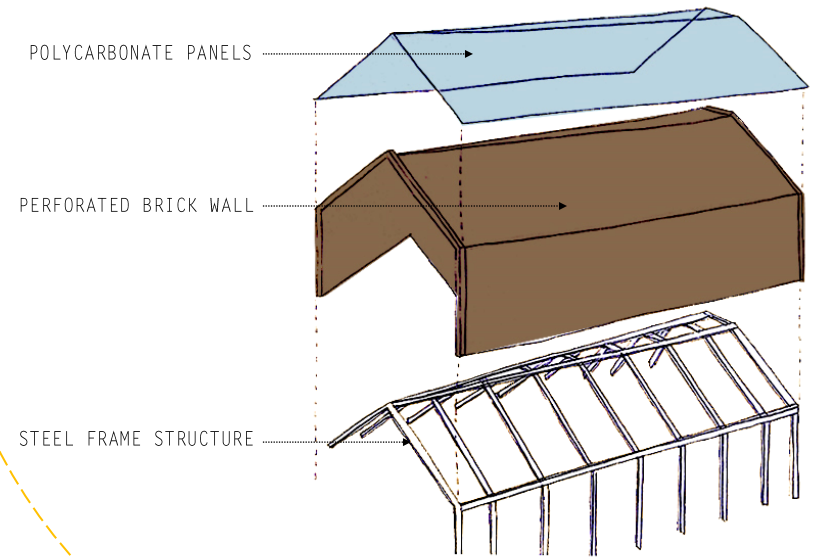


Figure 134 (left): Detail sketch of brick skin construction, by Author, 2019.

Figure 135 (right): Sketch of brick roof construction layers, by Author, 2019.



The steel and brick skin will be separated from the building and act as a perforated sun-screening device. This will form patterns of shadows as the sun filters through the screen, allowing the users to interact with the material through the quality of the light. This becomes an educational experience of the building, extending the functionality through the construction method.

THAYER BRICK HOUSE (2019)

SCARPA + BROOKS + STUDIO DWELL ARCHITECTS

The material used for this house in Chicago is type of indigenous brick, that is not the typical red colour. According to the architect, is commonly used in places where people would not usually see it, such as chimneys or garden walls.

The design features this “common” brick as a dynamic material on the street façade. The twisted vertical spirals appears to be in a constant moving state as pedestrians would walk past. Columns of light shines through the brick patterns (Pintos: online) on the façade to make the courtyard appear open, whilst still being closed. The use of the solid element, such as brick as a façade material, now has a dynamic and light appearance.

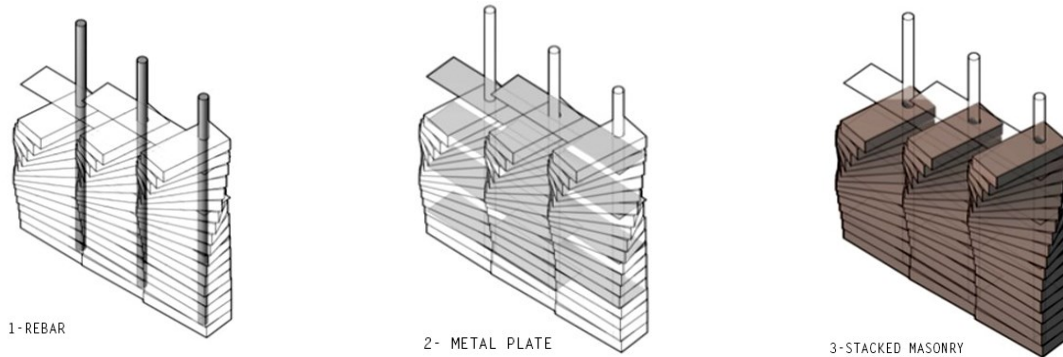
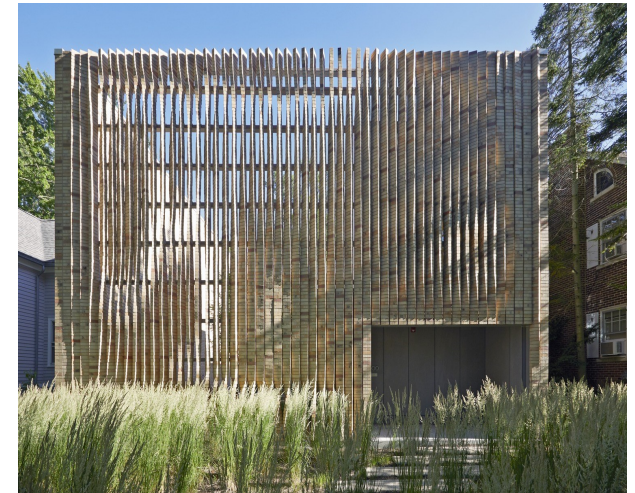


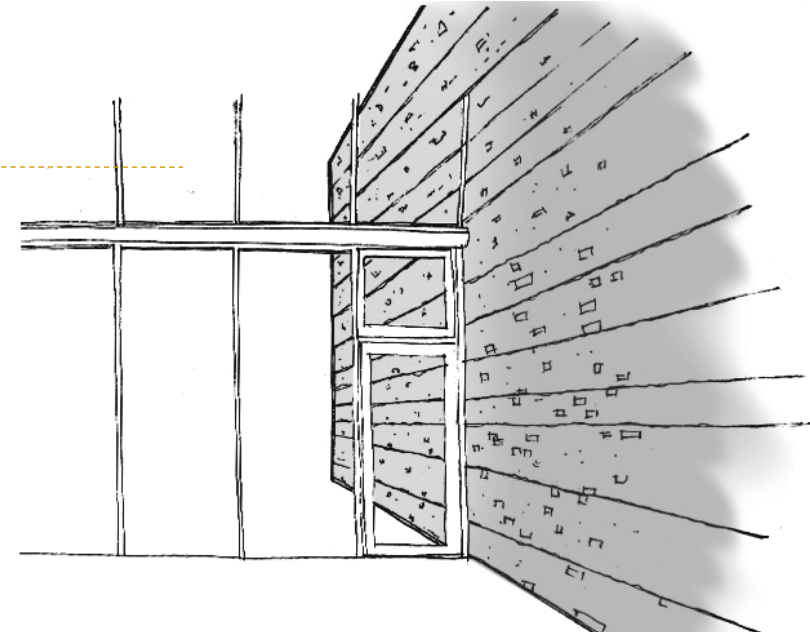
Figure 136 (above): Diagram of brick skin construction, by Architects, 2019.

Figures 137,138 (right) : Light quality through brick skin from front façade of building, by Architects, 2019.



3.2.5.5 LOADBEARING MASONRY WALLS

Rarely used on larger high-rise buildings, bricks are very versatile when it comes to the construction of a design. Brick will mostly be used as infill between the concrete structure, but will also be exposed where possible, to have a link with the theory of the design. Exposing the natural brick and showing how the building is constructed, help the user identify the various elements that make up this building and be able to learn through this experience.

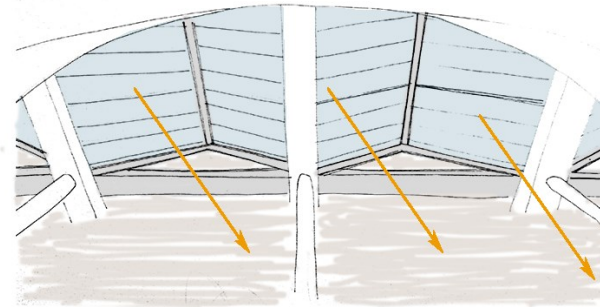
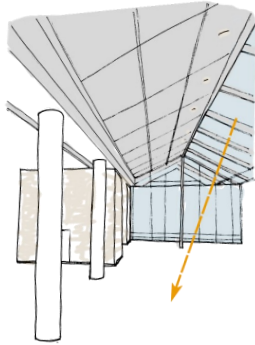


The rough texture of the bricks will be complimented by the smooth finishes of aluminium and glass of the windows next to it. As in the Thayer House, Scarpa uses these textures to compliment both of these materials together, but also celebrate them individually, by creating intricate patterns. Details of the brick screen within this design, not only serve the purpose of a sunshade, but will also become an urban attraction as part of the function. Therefore, this screen will also become an attraction in the art of brick detailing - educational and functional.

Figure 139 (right): Sketch of contrast between rough brick wall and smooth window frames, by Author, 2019.
Figure 140 (left): Detail of brick skin patterns, by Architects, 2019.

3.2.5.6 ROOF MORPHOLOGY AND STRUCTURE

The aim of the project is to use light as a design tool, to shape the morphology of the building. It is crucial that the roof mimics this to provide an open and comfortable public space that seamlessly flow from the interior to the exterior spaces. The roof structure will rest of the concrete frame of the building, but will visually connect with the secondary steel structure.



As in the UWC extensions, the steel roof frame rests on the concrete columns and beams of the exiting structure. This defines a more tectonic feel, that separates the roof structure from the building structure. Lifting the roof profile allows more light to enter the building - relating to the function of a public sport complex. In this design, the light will serve the purpose of discovery, that will enter the building via the roof and other openings within the design.

Figures 141,142 (right): Sketches of light quality within the UWC through adjustable roof panels, by Author, 2019.

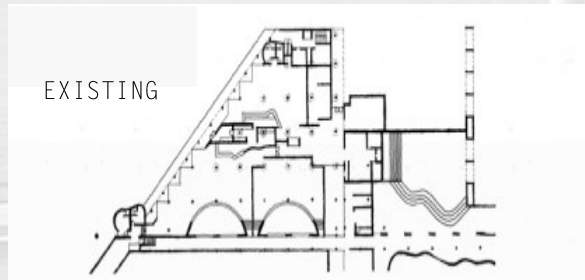
Figure 143 (left): Entrance foyer showing light patterns from brick screen, by Architects, 2016.

UWC EXTENTIONS (2016)

NOERO ARCHITECTS

The original UWC Sport Complex were designed by Roelof Uytenbogaardt, the challenge with these new additions, is to protect the heritage and present the new architecture with the same honour. Extensions required another floor above the existing sport facilities. The aim of Noero Architects is to enhance the existing, rather than diminish the original design.

The new roof extends similarly as the heritage part, but provides better protection against the harsh Western sun - where the extensions are placed. Materials chosen are similar in shape and colour to the heritage complex. (Noero: online). The light quality within this design, is shaped by the roof and the screen. The profile of the new roof section can control light intake, and heat build-up better than the existing roof profile.



Figures 144,145 (above): UWC existing floor plan, vs. new floor plan, by Architects, 2016.

Figures 147-149 (right): New roof profile to match the existing building and context, by Architects, 2019.



3.2.6 SERVICES

3.2.6.1 FIRE & CIRCULATION

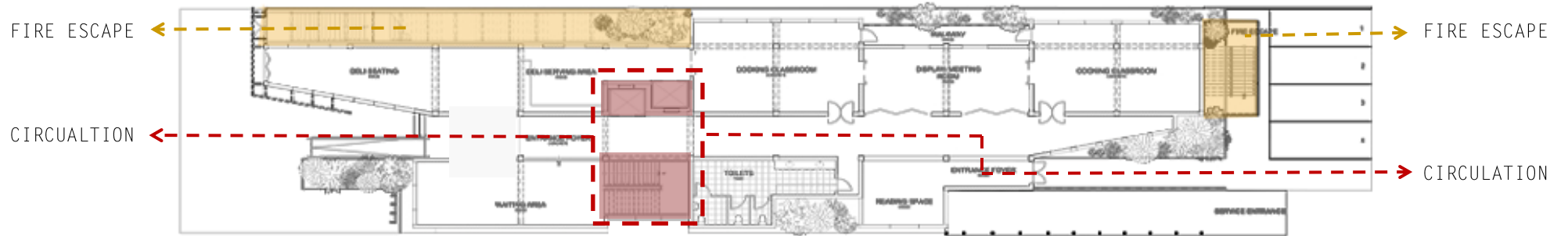


Figure 150: Circulation and fire escapes of proposed building, by Author, 2019.

The main axis of this building is designed around the circulation spine. This spine divides the building and acts as the public route through the building, not only horizontally, but vertically as well. The building functions partially as a cooking school, and will need appropriate fire systems in place.

Each classroom must be provided with its own portable fire extinguisher as well as a sprinkler system. Each of these classes will also be installed with smoke detection and 2h-fire-rating doors, to contain fires within allocated areas.

3.2.6.2 ACCESS CONTROL

The circulation spine is the main route for movement throughout the building, but certain areas are separated according to the function and has limited access. These spaces are accessed through different routes, so that public and private circulation do not clash.

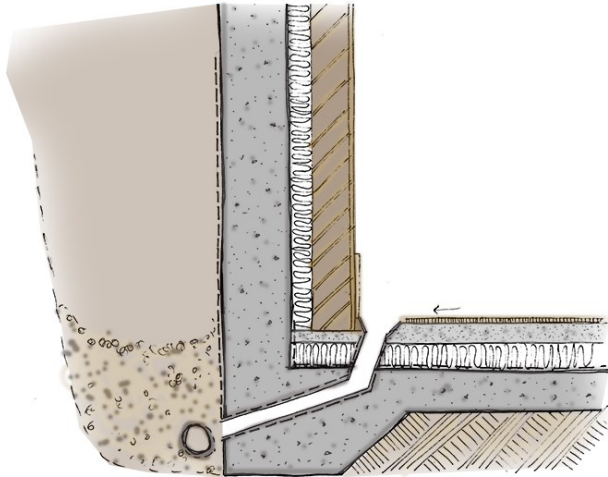
The public, including, staff and students, can enter the building from Linda Street or Strand Road, while cleaning staff can enter the building at either of these entrances, the route differs from the main circulation. A central information station will act as a secretary desk for temporary offices and boardrooms on the upper levels, and provide information about the functions of the school, the deli and keep an updated list of the classes throughout the week.

A service elevator connects the basement storage and cleaners quarters with the rest of the building, whilst there are also elevators for public use, accessed from the main circulation spine. Delivery of furniture, fresh produce or beverages will be controlled and received via the lower levels, and stored in the basement storage facilities. These items can be brought to their respective kitchens and entertainment spaces via the service elevator. Refuse disposal will also circulate along this shaft to the basement refuse storage and loading zone.

3.2.6.3 WATER AND DRAINAGE

ROOFTOP CONCRETE PLANTERS

The third floor of this building will house a roof top garden for students to grow fresh produce that can be used along with their cooking. These herbs and vegetables will be planted in concrete soil boxes, with drainage towards the sides. The water drained, will then gather in a gutter, taking the water through a weep hole down to the green areas at the sides of the building.



BASEMENT GROUND WATER RETENTION

Water collected from the inside the basement, flows towards gutters at ends of the screed sloping. This water will drain through the basement slab and wall, towards the perimeter drainage, that is also used to drain groundwater behind the basement wall. Details to be discussed by engineer.

Figure 151 (above): Proposed concrete planter box detail, by Author, 2019.

Figure 152 (left): Proposed basement drainage detail, by Author, 2019.

3.2.6.4 SPECIAL SERVICES

KITCHEN COUNTERTOPS

The cooking classrooms and the practical cooking areas will be equipped with built-in countertops. These counter stations are fitted with a sink, a 4-plate stove and an oven. Retractable electrical fittings will be installed and connected to the main electrical grid of the building through a panel behind the station. This panel can be removed to fit each countertop individually, and contains all the electrical connections needed. The sink can be accessed from below, and will only be connected to the cold water supply of the building.

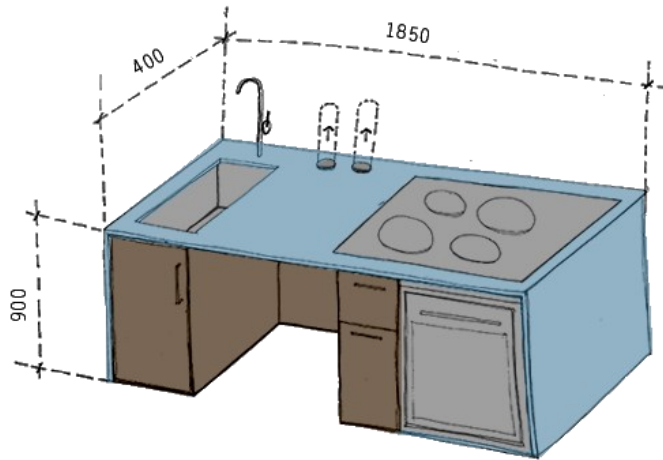
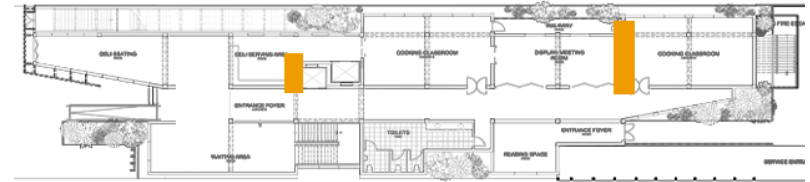


Figure 153 (above): Proposed kitchen custom countertop detail, by Author 2019.
Figure 154 (left): Proposed service and ventilation shafts, by Author, 2019.



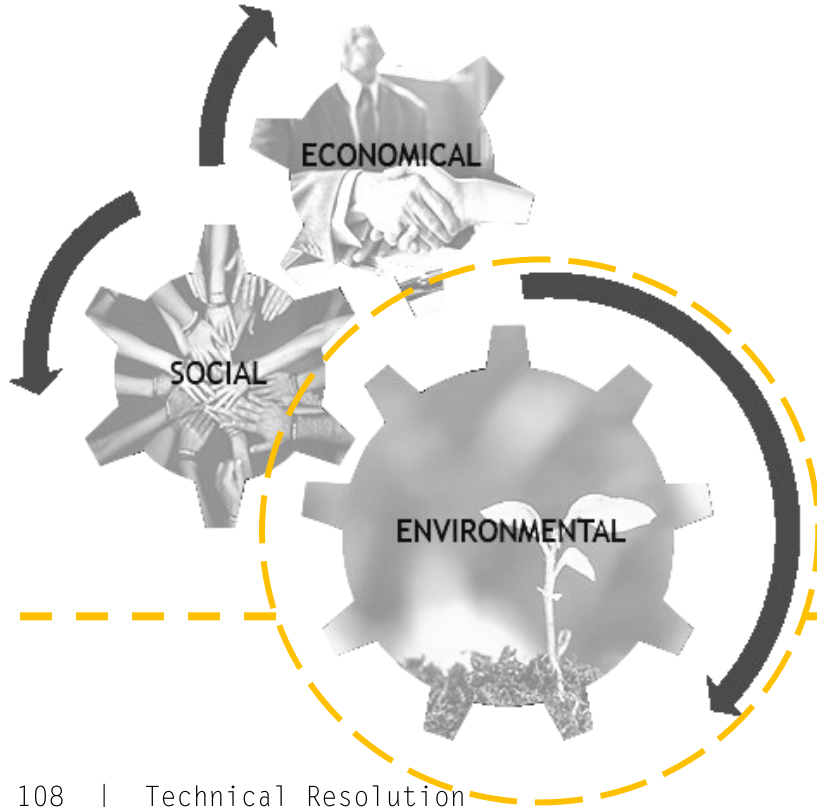
KITCHEN VENTILATION

Grease, smoke and other particles enter the air when food is being cooked. The kitchen ventilation system will remove the harmful and unhygienic particles from the air. The air cannot be circulated through the ventilation system and therefore must be extracted externally through a series of ducts. The building is fitted with two main service ducts, one next to the elevator shaft, and the second is located in between the two classrooms, minimizing ducting length.

3.2.7 SUSTAINABILITY

Sustainability can be defined to encompass various characteristics. The main theme guiding this document – Urban Catalyst – directly links with sustainability, not only on an environmental level, but also on economical and social levels. This will form the base understanding of the sustainability factors within the design approach.

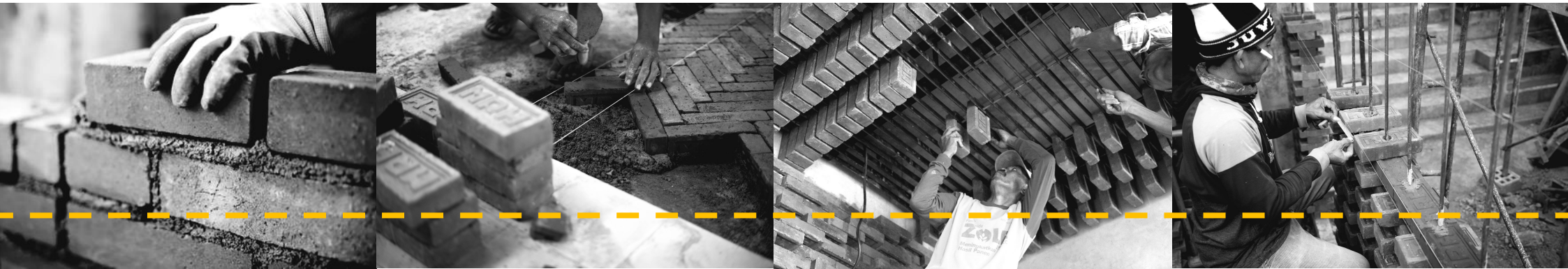
The aim of this project is to preserve the cultural vibrancy whilst introducing new elements that can activate the area as a potential social and economic centre. This should include elements of the existing vibrancy but introduce new ways of implementing these elements into the design and construction of the building project.



IMPLEMENTATION

The design aims to work with local skilled brick labourers but also provides the opportunity to teach these individuals new ways of using bricks within this design. Socially this can become part of the sustainability characteristics of the design process. Increasing the local craftsmanship, and introducing new skills to the community could promote future urban developments within the Strand Street area.

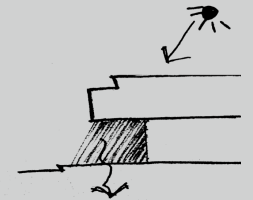
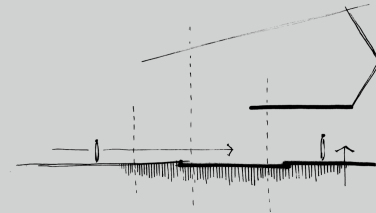
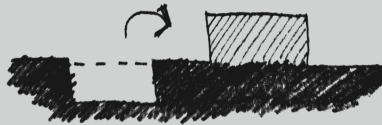
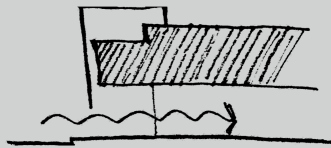
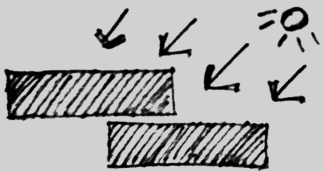
The existing building in Strand Street is proposed to be remodelled or demolished. If the existing building is demolished, the bricks of the demolition could be used as rubble in the aggregate for the new building - if the bricks are graded fit for the purpose by an engineer.



Figures 155-158: Brick detailing from Omah Boto House, by Architects, 2019.

3.2.7.1 SUSTAINABLE DESIGN

- Passive design principles such as optimizing natural air flow and blocking harsh western sun can reduce the electrical impact of the building. Using light, as a theory, to design the morphology of the building, helps light the building without the use of additional lighting during the day.
- Organic waste from the cooking school and deli can be used to fertilise the garden beds on the roof top. These garden beds will grow fresh produce which will then supply the deli and cooking classes. The garden will also serve the purpose of teaching sustainable gardening methods to members of the community.
- Water collection tanks on the balcony and roof top spaces will provide water that can be used to feed the garden as well as any other green spaces around the building. No water will be pumped to the upper levels therefore these collection tanks will be on the third level, close to the roof garden.



Figures 159-163: Sustainability diagrams, by Author, 2019.

→ 3.2.7.2 CHALLENGES

- Social skill development centres like this, will need some initial start-up plans. This building will act as a urban catalyst, not only for economic development of the area, but also social and community development. Skills, such as cooking, gardening and business development will be available to the community - and in turn promote urban and social-growth through these classes.
- Food that will be prepared in the classroom settings, will be available at the deli on ground floor. This menu will change each day as the classes differ. The aim is to stop food waste, and promote healthy urban cooking. The challenge however, will be to sustain a menu to attract customers to the deli and prevent any food items going to waste.



Figures 154-168: Sustainability diagrams, by Author, 2019.

3.2 DESIGN SYNTHESIS





03

3.2.1 FROM-GIVING PRINCIPLES

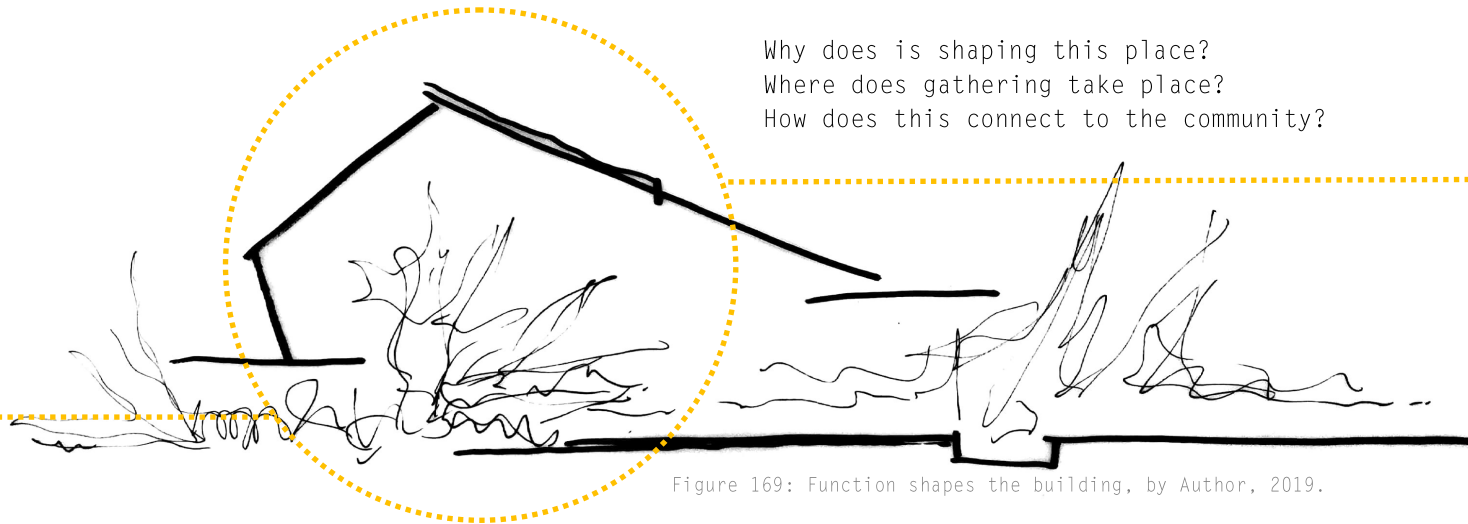


Figure 169: Function shapes the building, by Author, 2019.

Visible material use - Connection to building itself
Visible social use - Connection to activities throughout building

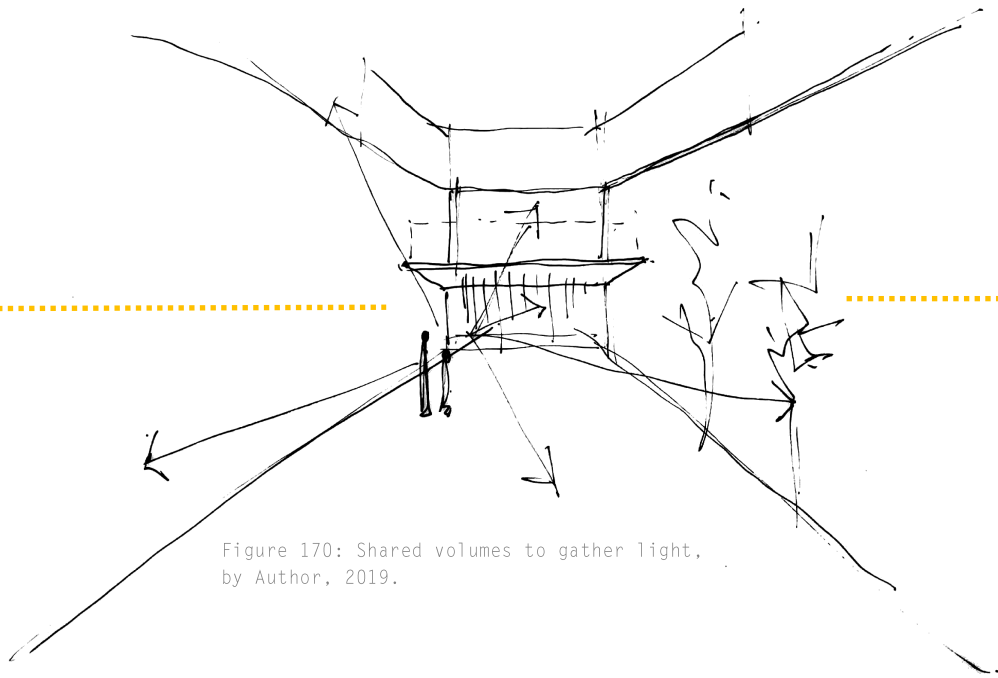


Figure 170: Shared volumes to gather light,
by Author, 2019.

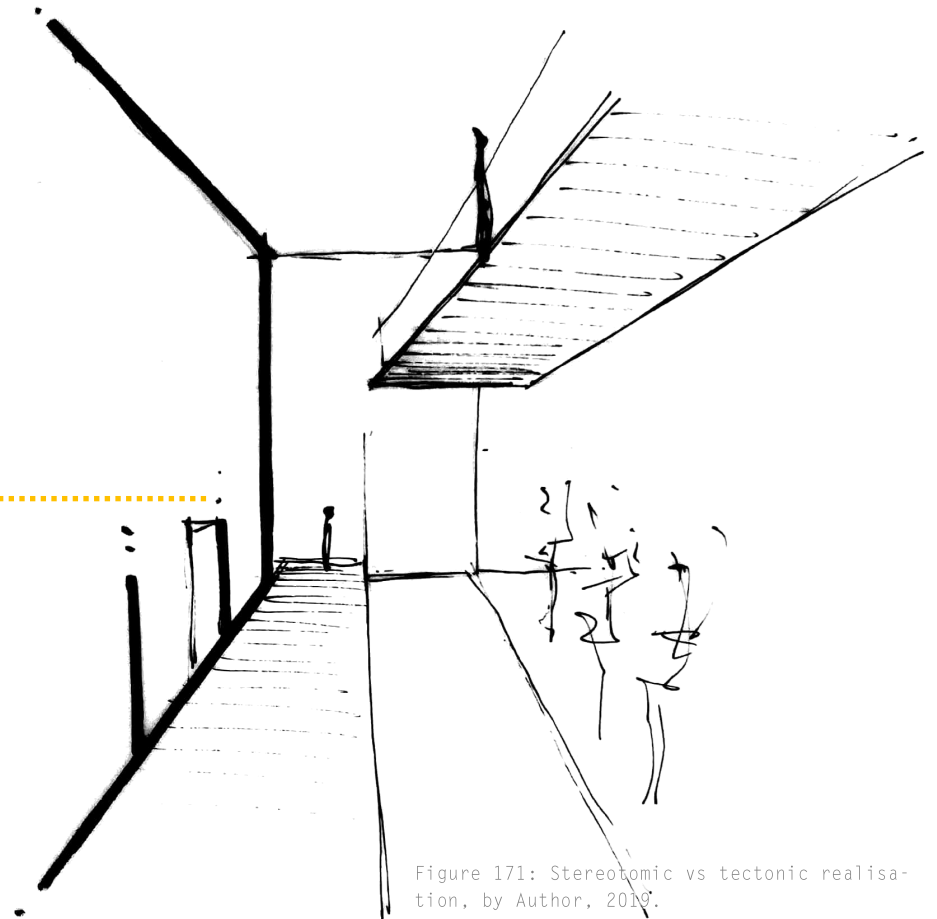


Figure 171: Stereotomic vs tectonic realisation,
by Author, 2019.

3.2.1 DESIGN PROGRESSION

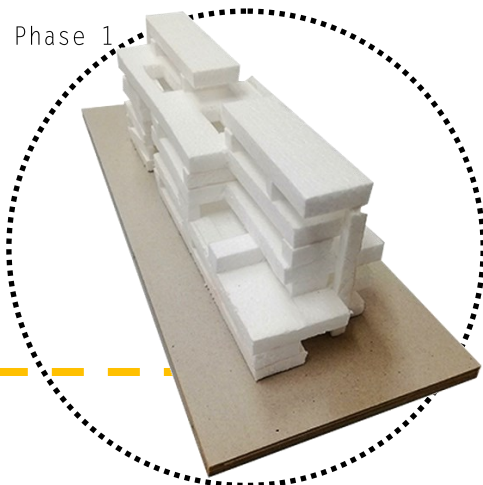


Figure 172: Phase 1, by Author, 2019.

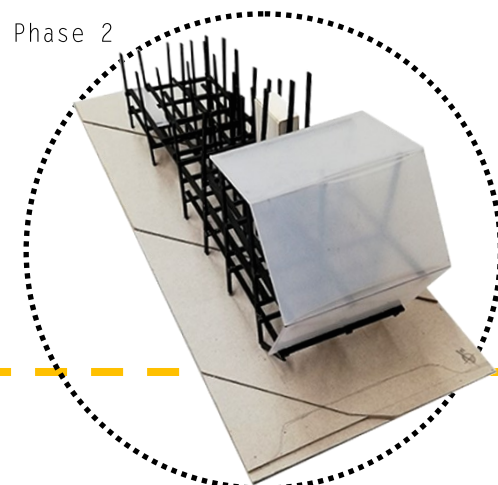


Figure 173: Phase 2, by Author, 2019.

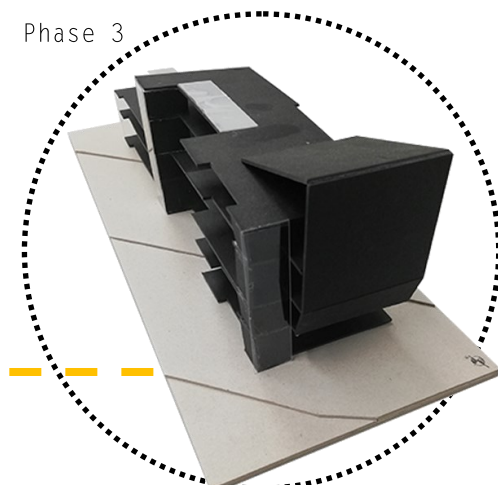


Figure 174: Phase 3, by Author, 2019.

Phase 4

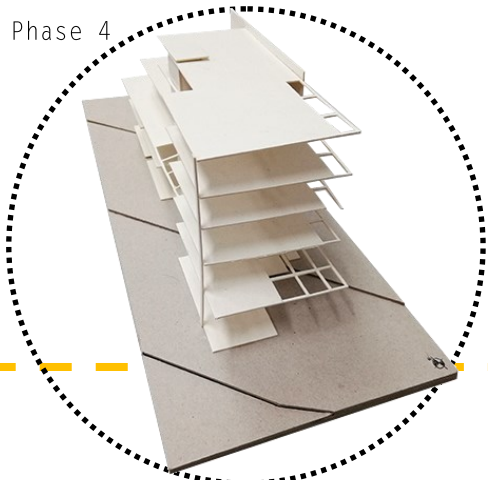


Figure 175: Phase 4, by Author, 2019.

Phase 5

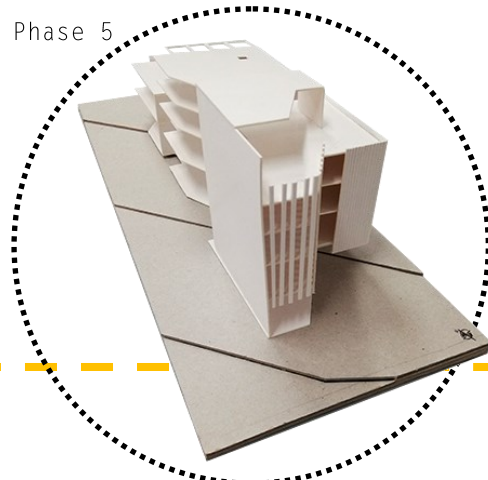


Figure 176: Phase 5, by Author, 2019.

Phase 6

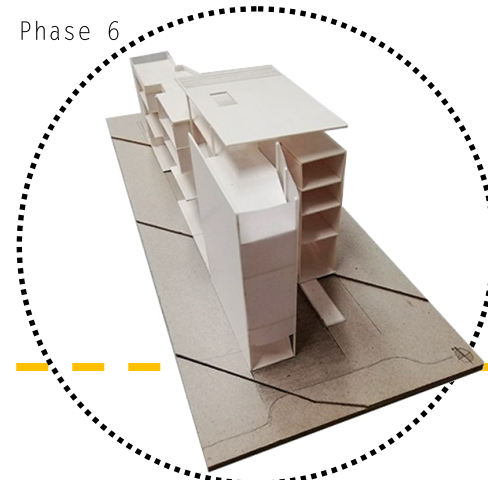
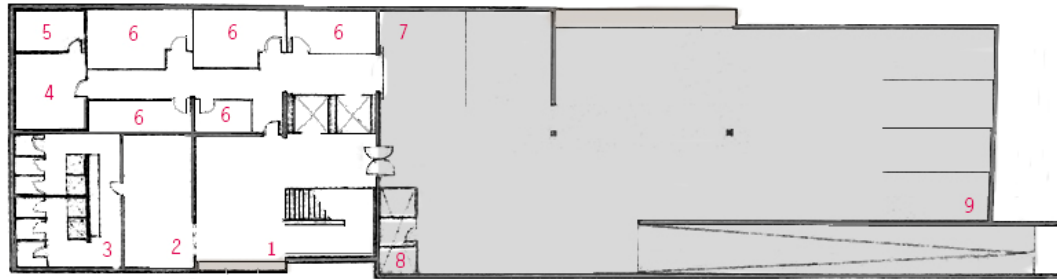
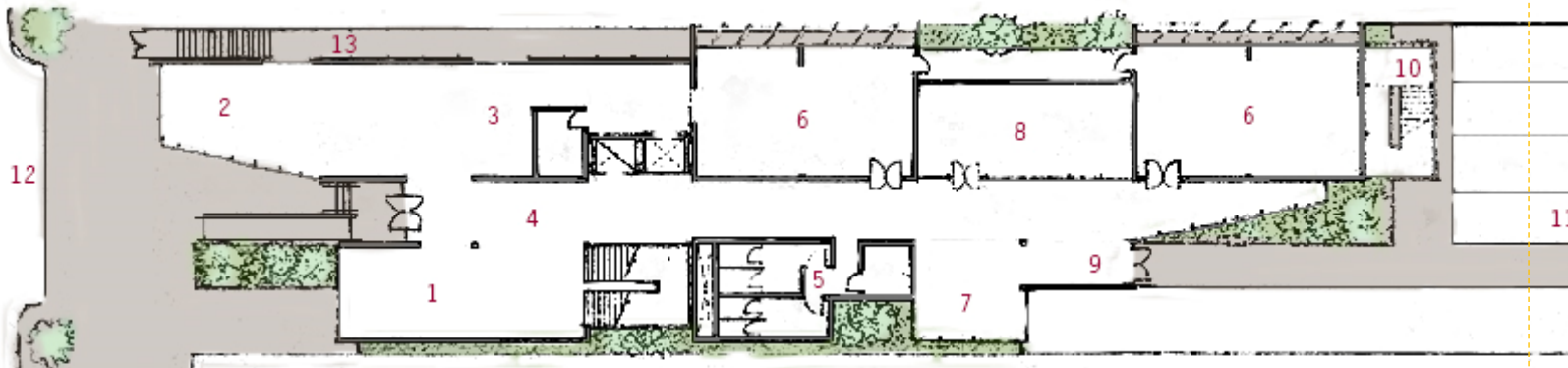


Figure 177: Phase 6, by Author, 2019.



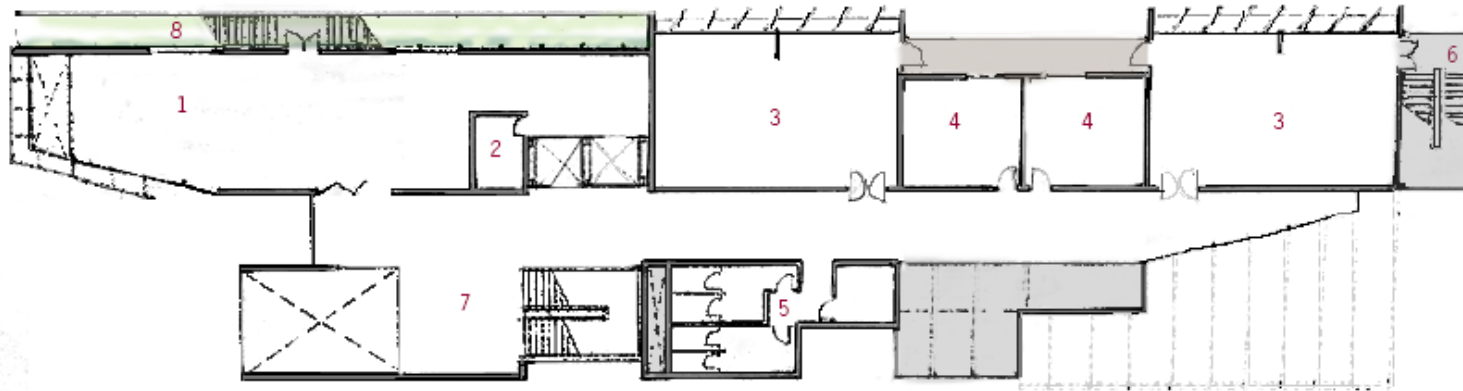
BASEMENT PLAN

- 1- BASEMENT LOBBY
- 2- STAFF ROOM
- 3- STAFF BATHROOMS
- 4- COLD ROOM
- 5- FREEZER
- 6- STORAGE
- 7- LOADING ZONE
- 8- SERVICE STORAGE
- 9- STAFF PARKING



GROUND FLOOR PLAN

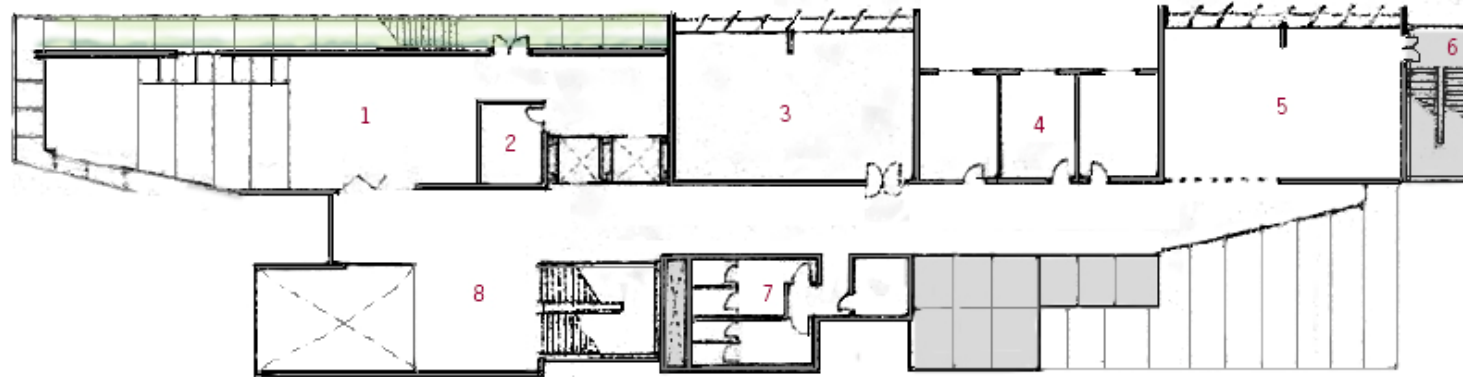
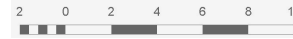
- 1- WAITING AREA
- 2- DELI RESTAURANT
- 3- DELI SERVING AREA
- 4- ENTRANCE FOYER
- 5- TOILETS
- 6- COOKING CLASSROOMS
- 7- READING CORNER
- 8- DISPLAY & DINING AREA
- 9- ENTRANCE
- 10- FIRE ESCAPE
- 11- PUBLIC PARKING
- 12- DROP-OFF PARKING
- 13- FIRE ESCAPE



- 1- COOKING CLASSROOM
- 2- STORAGE
- 3- LECTURE CLASSROOMS
- 4- CONSULTATION OFFICE
- 5- TOILETS
- 6- FIRE ESCAPE
- 7- LOBBY



FIRST FLOOR PLAN

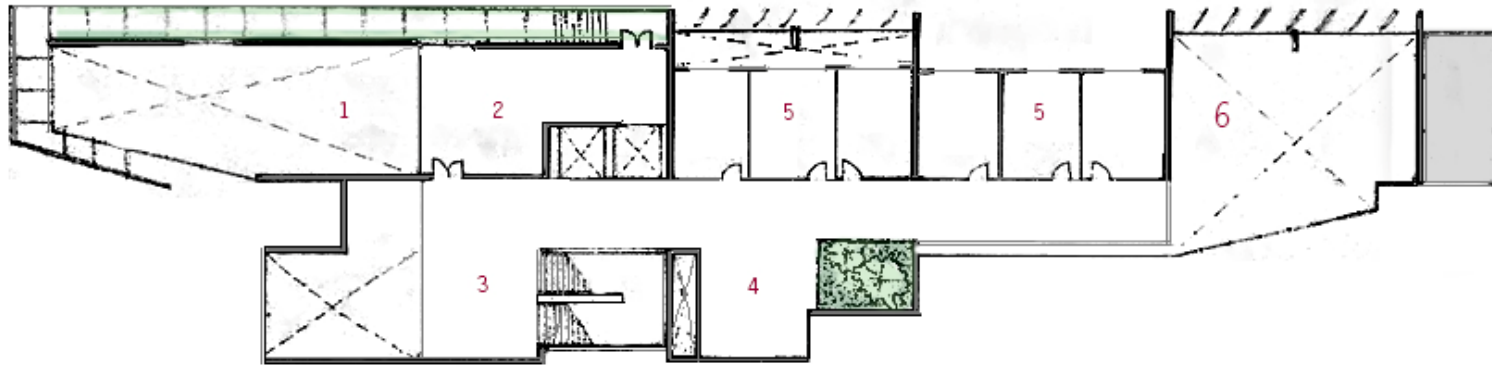


- 1- LECTURE HALL
- 2- SOUND ROOM
- 3- CLASSROOM
- 4- OFFICES
- 5- RENTABLE YOGA ROOM
- 6- FIRE ESCAPE
- 7- TOILETS
- 8- LOBBY



SECOND FLOOR PLAN

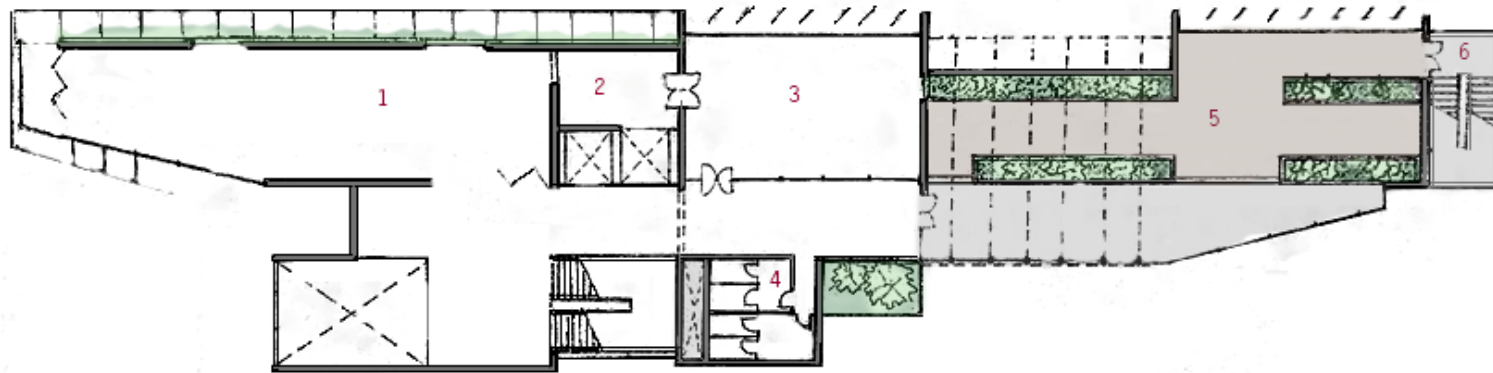




- 1- DOUBLE VOLUME
- 2- GALLERY SPACE
- 3- LOBBY
- 4- KITCHENETTE
- 5- RENTABLE OFFICES
- 6- DOUBLE VOLUME



MEZZANINE FLOOR PLAN

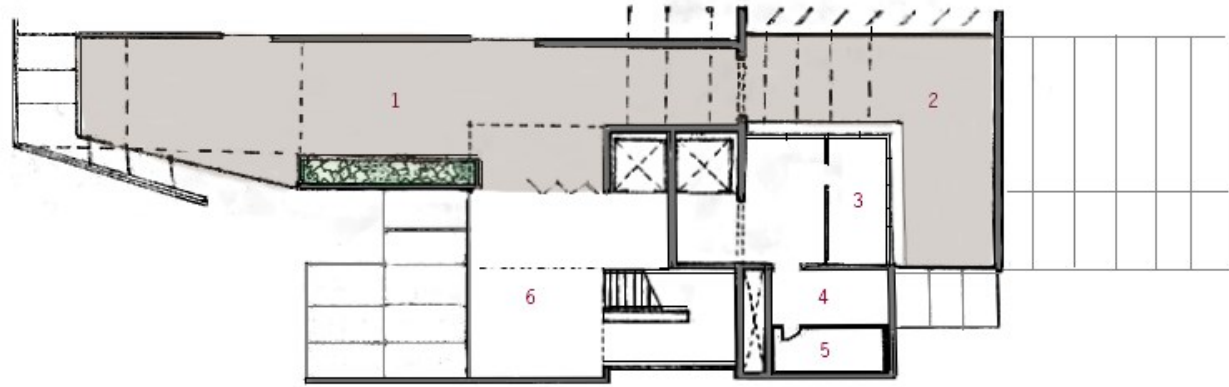


- 1- MULTI-FUNCTIONAL SPACE
- 2- DROP-OFF AREA
- 3- DISPLAY KITCHEN
- 4- TOILETS
- 5- OUTDOOR GARDEN SPACE
- 6- FIRE ESCAPE



THIRD FLOOR PLAN

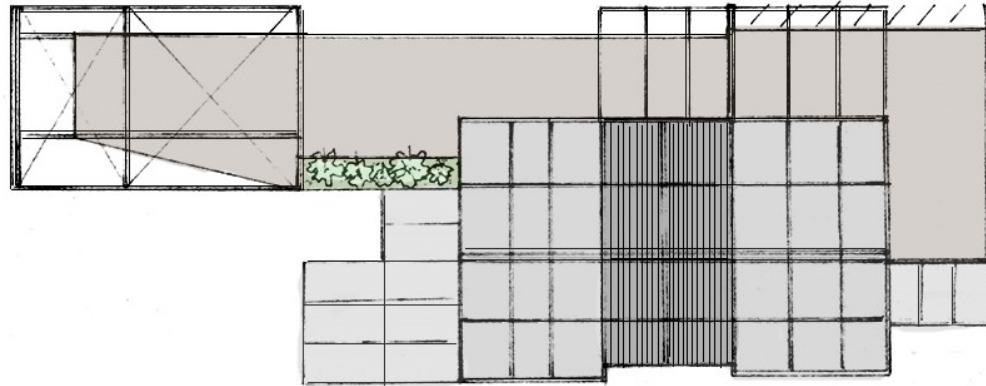




- 1- OUTDOOR ENTERTAINMENT AREA
- 2- OUTDOOR AREA
- 3- CASH BAR/ SERVING
- 4- STORAGE
- 5- COLD SPACE
- 6- LOBBY

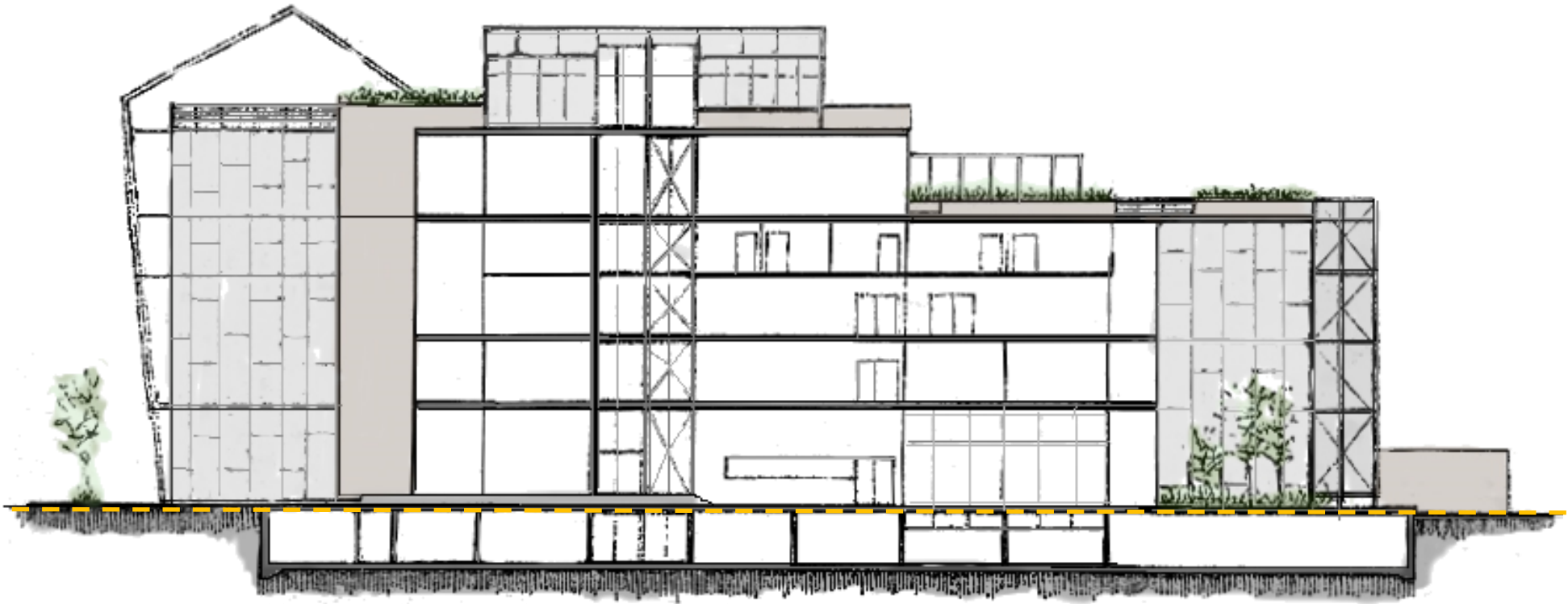


FOURTH FLOOR PLAN



ROOF PLAN

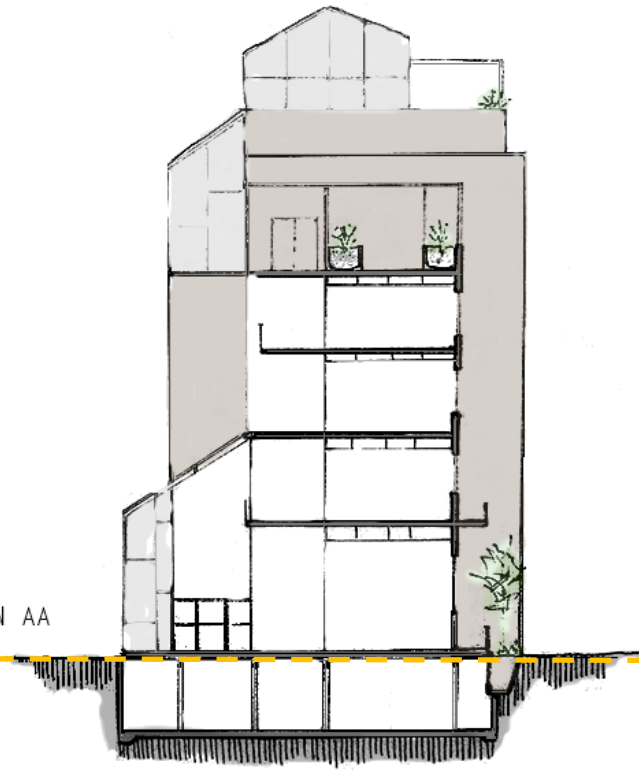




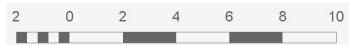
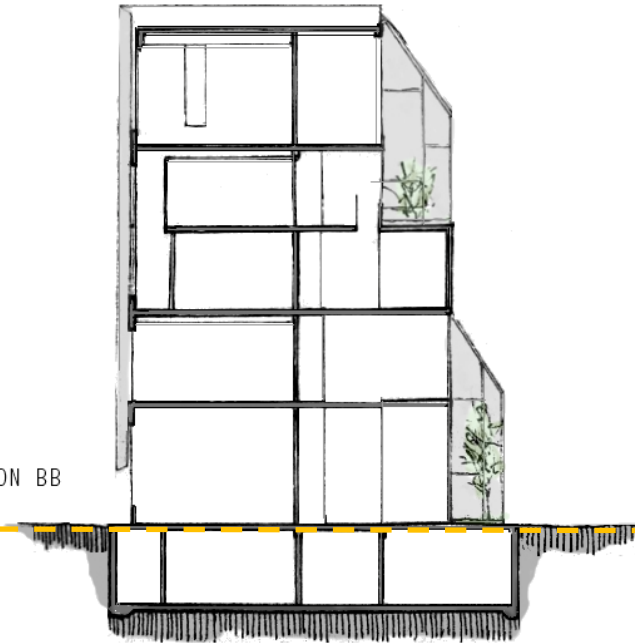
LONGITUDINAL SECTION



CROSS SECTION AA



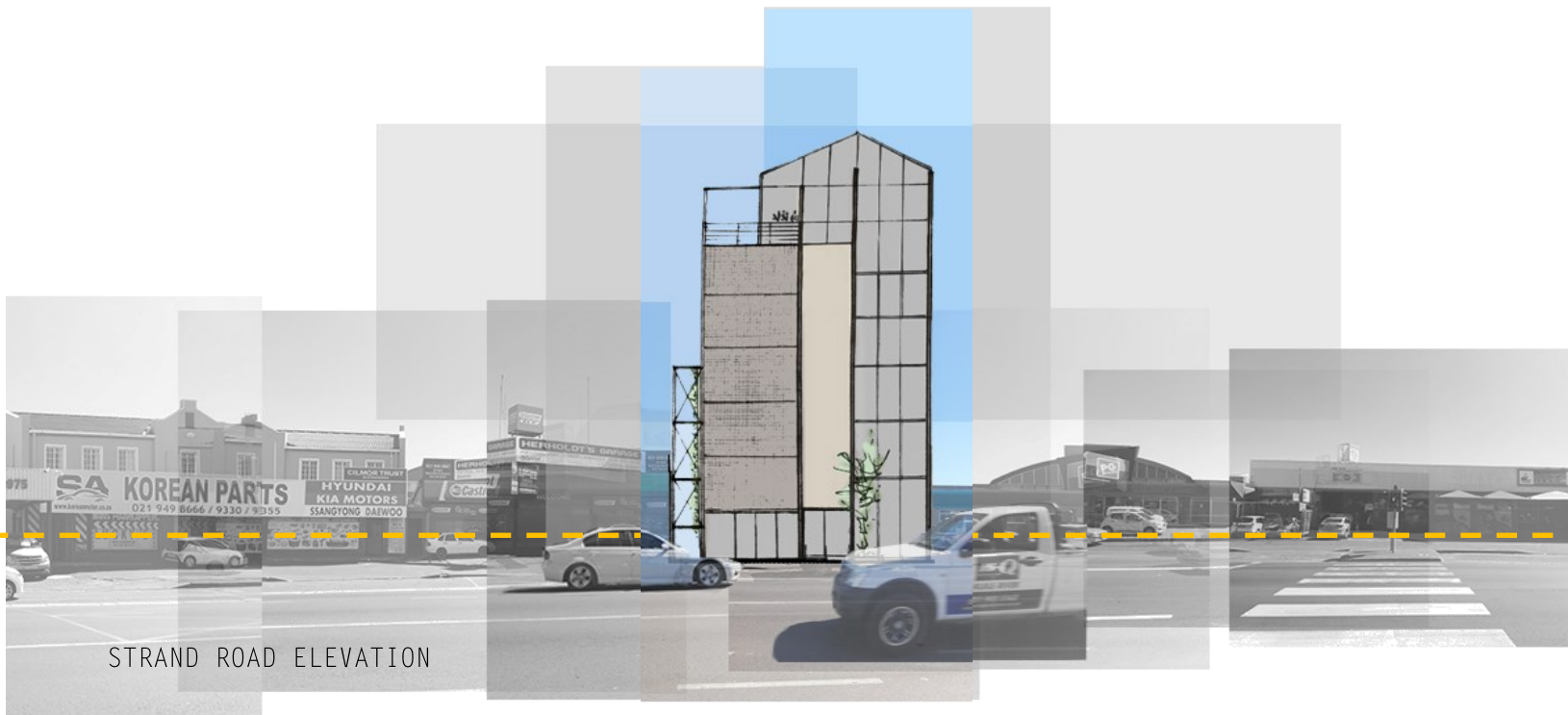
CROSS SECTION BB





LINDA STREET ELEVATION

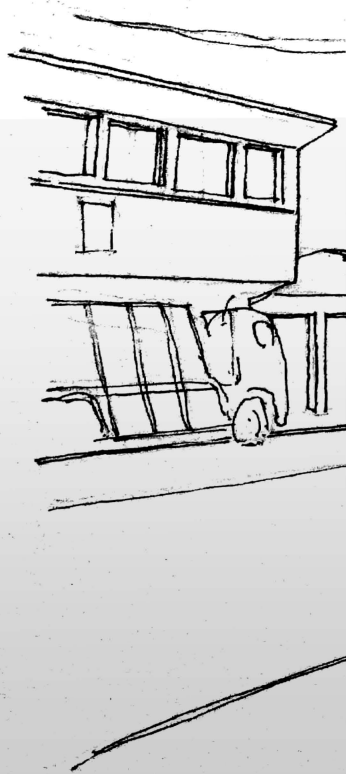
Figure 178: Linda Street Elevation, by Author, 2019.



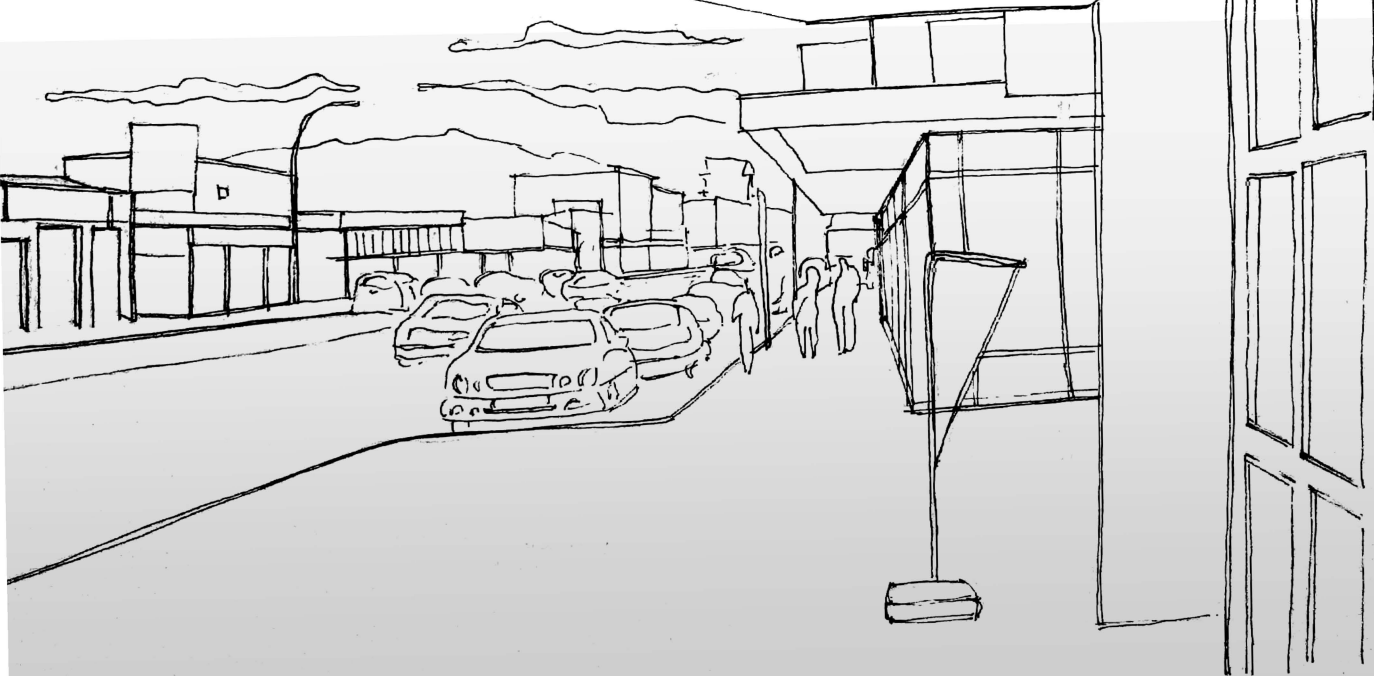
STRAND ROAD ELEVATION

Figure 179: Strand Road Elevation, by Author, 2019.

4.1 PROJECT CONCLUSION



Coca-Cola LA PONTE ROSE



04

4.1.1 REFLECTION

The start to this project was very slow, because I firstly proposed a mixed-use development, focussing on multi-residential housing. With the municipal suggestions for the site being mixed-use, the project provided an open opportunity to provide the community with anything. This struggle was met with the intense research and many conceptual ideas that the design started with. As it changed from a residential project to a skill development centre, the thought processes started to line up with my initial reaction upon choosing the site.

The initial ideas did not seem to match the goal I had in mind for this project. Through the process of discovering what I needed to do within the development in the area, the project became clear and the research followed more naturally. As the investigation focussed more on the potential that one project can spark, the design started to take shape and narrowed the rest of the conceptual ideas down to encompass the entirety of the design.

This dissertation project helped me to grow and understand what architecture can do if it is approached with the right mind-set and proper investigation. This process also helped me realise the potential the urban context provides to the communities. The urban jungle is not just a system where the individual is lost, but it becomes a place where people can unearth many opportunities to interact and help others.

Without the help of my supervisor, lecturers, fellow students, and parents, this project would not have been possible. I want to thank everyone for their great support and allowing me this opportunity.

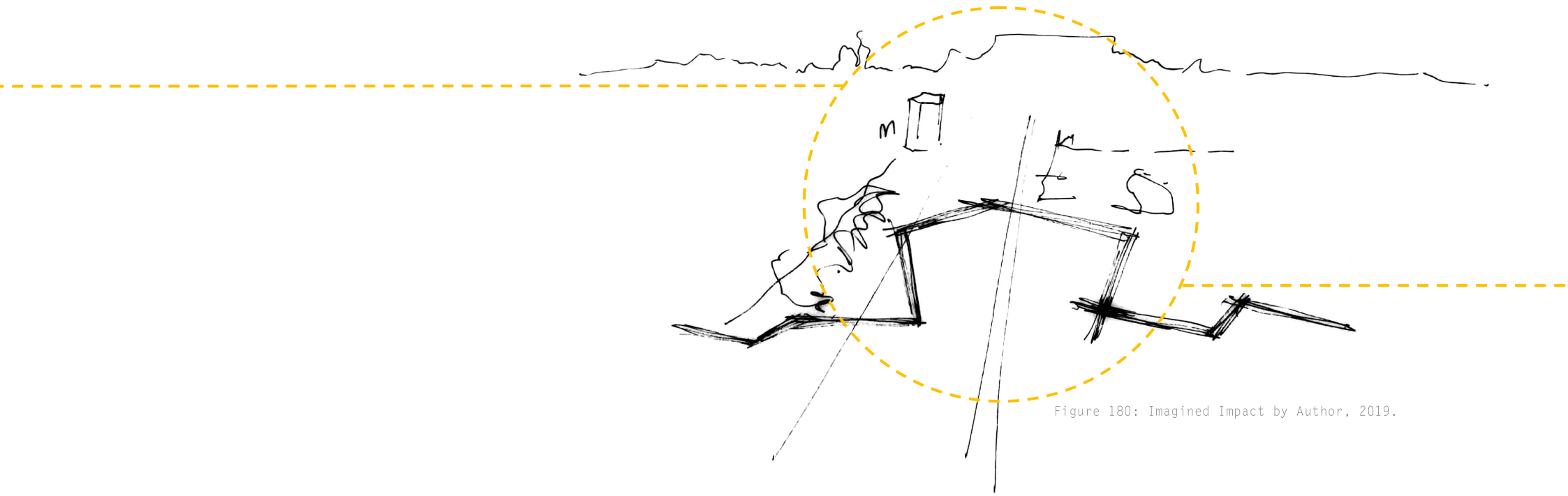


Figure 180: Imagined Impact by Author, 2019.

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