A Sense of Place

'The mere inhabitation of space, existence itself, merits dwelling' (Edward, 2013:17), 'as a dwelling is not merely a shelter, but a space where we can be ourselves, form intimate relations, have safety from the world and keep our cherished belongings, all of which contribute to our wellbeing' (Abbey & Balamurali, 2016:2).

Therefore, if a dwelling then, is not just shelter, but implies an existence in time, of experiencing and of being sustained and sustaining, (Fry, 2006:195), then homelessness transcends merely lack of a place, is it impossible 'to insinuate that homelessness is affected by everything that design enables or does not, for design can either facilitate or negate our ability to dwell in spaces [environments] we occupy" (Fry, 2006:191)

PREFACE: *INTRODUCE*

TITLE:

Seeking Identity Through Place

The Hidden Faces Sheltered

'An architecture for the hidden faces of society, often feeling helpless and placeless seeking to belong.'

PROJECT SUMMARY

The dissertation explores the process of seeking identity through place, and how it can hinder healing, becoming and empowerment, especially in the lives of those who are most vulnerable who are the homeless.

PROGRAMME: Shelter for Homeless Children

SITE: Between Struben Street and Shepherds Street,

Inner City, Pretoria, South Africa

RESEARCH FIELD: Human Settlements

CLIENT: Tshwane Homeless Foundation

THEORETICAL PREMISE: Place Identity, Spatial Justice, Shelter

STUDY LEADER: Dr Nico Botes

YEAR CO-ORDINATOR: Prof. Arthur Barker

In accordance with Regulation 4(e) of the Genera Regulations (G.57) for the dissertations and thesis, O declare that this dissertation, which I hereby submit for the degree of Masters in Architecture (Professional) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

I further state that no part of my dissertation has already been, or is currently being submitted for any such degree, diploma or other qualifications. I declare that this thesis is substantially my own work. Where reference is made to the works of others, the extent to which that work has been used is indicated and fully acknowledged in the text and list of references.

<div align="center">Boineelo Gaitsiwe Masuku</div>

ABSTRACT

Homeless children are often a hidden part of the society, though their need visible in plain sight, regarded as those that exist on the edge, perceived as shadows within society, often living in learnt fear.

The intent of this dissertation is to discover how architecture can be used to convey a sense of security and stability, while providing the user with a sense of identity. That through the architecture, one can understand themselves within a space, and how space can allow them to live individually and collectively with others.

The Programme of a shelter for Child-Headed families, seeks to explore the value of a shelter within an urban fabric, as a space that provides a semi-permanent solution to children who have experienced loss, and are in vulnerable situations. Exploring the notion of homelessness as far more than just a lack of shelter or having no place to sleep but advancing an opportunity to improve the lives of this socially excluded group, through architecture that speaks to identity, social inclusion and creating a sense of place. Exploring the value of a shelter within an urban fabric, as a space that engages the socio-spatial concepts, to create spaces and environments that are inclusive, and yet exclusive enough to create a haven of safety for its user, which they can identify with.

EXPRESSION OF THANKS

Contents

CHAPTER 1:

INTRODUCTION (THE ISSUES)

Global Issue

Homelessness has long been a problem globally and locally (Cross et al, 2010), since the beginning of time, when man began to make permanent dwelling for themselves (Levinson & Ross, 2007), but its nature has changed through time globally. South Africa being no exception to this problem of homelessness, as it is estimated that there are about 200,000 truly homeless street people (Human Science Research Council HRSC 2010), and 6244 in the city of Tshwane (Statistic South Africa, 2011). The face of homelessness, as has changed considerably in many regions around the world, has changed from between 1994 and 2014 in South Africa (Tshwane Homelessness Policy, 2015), mainly due to change in migration patterns as the apartheid control systems of legislation were uplifted, where rural-to-urban migration and black urbanisation was no-longer restricted. This increased the number of people of all ages, sexes and races migrating into the city for a variety of reasons (Cross et al, 2010:5-20).

Urban Issue

Statistics South Africa, (2011), further indicates that of the 6244 homeless people in the City of Tshwane, 54% are Male, 46% female, 55% black, 39% white, 3.1% coloured, 2.1% Indian, 0.6% other. As for age, the largest number of homeless people are between ages of 20-29 (33.4%), and an alarming 21% over the age of 65. It is however difficult to obtain accurate figures of homeless, as it is believed that the actual number of homeless people is likely much higher than recorded (Cross & Seager 2010:143).
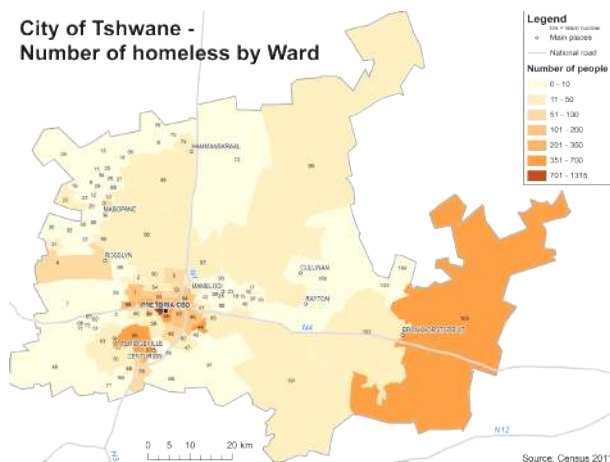
Fig showing late apartheid city, adapted from S. Davies
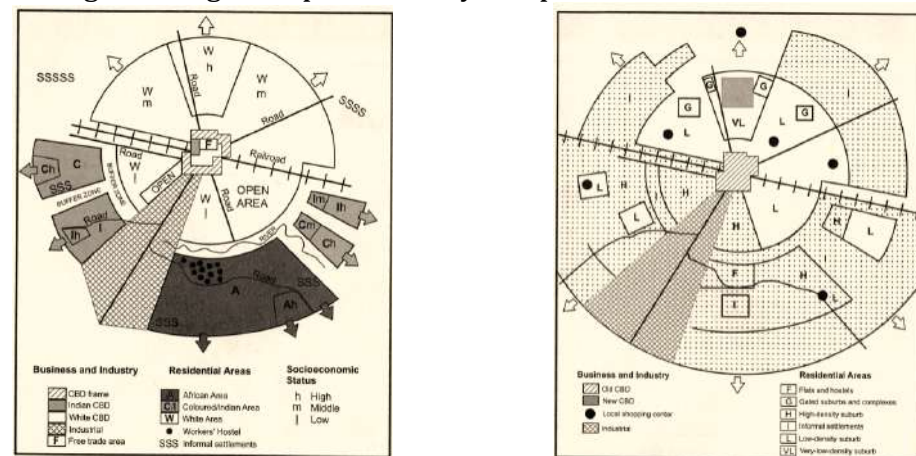
Homelessness has been attributed to the prevalent and current spatial structures of the apartheid city structure (Tshwane homelessness report, 2015:71), where low-income population are placed on the periphery or outside the city, far from the economic opportunities (Cross & Seager, 2010). However this is spatial separation of removing individuals from the central zone, and redevelop areas in the outer city for their inhabitation in the long run is futile, as they tend to move back to the areas they have been removed from (Cross & Seager, 2010; Huchzermeyer, 2004). The spatial planning in the new democracy has not transformed this, as it too has failed to redress the special legacy of the apartheid system, through promotion of integrated socio-economic development of access to well-located affordable housing within economic zones and decent transport (Tissington, 2011; NDP, 2016).

Recent research indicates that street homelessness is no longer concentrated in the central parts of the city (Region 3) but now extends and is visible in other areas of the city (region 2 and 7), which are perceived as areas of economic opportunity (Tshwane Homelessness Report, 2015:67).

Architectural Issue

'Institutional architecture that constrain and foreshorten the ability of homeless people to enact citizenship claims'
Mcnaughton 2008:95

The architecture within the Inner city of Pretoria commonly expresses itself as isolated islands, each battling personal rights of existence, and not paying much homage to their surroundings or environment. This architecture as is not adaptive or interactive to its environment, also contributes to the social exclusion to the users of these spaces in the city. The architecture stands very removed from social interaction or permeability from the street.
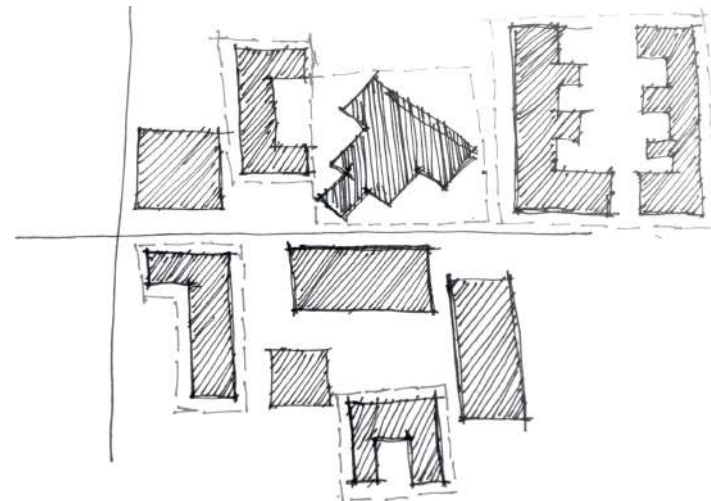
Problem Statement

This dissertation investigates how space and place can hinder the healing, empowering and becoming of people in vulnerable situations, specifically the street homeless children to re-integrate themselves into society, in the inner city of Tshwane, through an architectural approach.

Architectural Intent

The architectural intent is to provide an architecture that can allow children who have experienced loss and are gravely vulnerable to find their identity and grounding through spaces that provide safety, security and comfort.

Research Method and Methodology

The methodology employed is both qualitative and quantitative. The quantitative is based on measurable data, which is sourced through surveys done by researchers, which provides insight to requirements of facilities, numbers of the concerned individuals to be considered and appropriate needs which speaks to the diversity of the concerned populace. Furthermore, the use of observation-based mapping with no confrontation or interviews with the sample group.

As is realised, that some of the definitions relate to the psychological perception of space, a qualitative approach will also be used, which encompasses the human senses and experiential sense of space. The experience of the architecture or space is then combined with the empirical data collected from research and observation to create an architecture that is responsive to the user. The dissertation is structured such that the term or state of homelessness is explained through the experience and research, to substantiate what homelessness means through those who have experienced it, and the complexities of what it 'truly' means. The backgrounds, pathways in and out of homelessness are established to structure the understanding of the needs of those who are homeless so that the architecture becomes meaningful, sensible and responsive.

Aspects of the experience of the homeless are analysed to evaluate the appropriate architecture to foster healing and re-integration to normalcy through exploring requirements of spaces which can encourage 'dwelling.

The context is further investigated to understand what has influenced or can influence becoming homeless. Mapping is done to explore the areas or spaces of refuge for the homeless to understand the characters of the spaces that provide refuge within the streets. The current facilities available provided within the inner city of Tshwane of are also investigated to assess what gap exists within the provision of these facilities.

Limitations

The study seeks to investigate aspects of homelessness within South Africa in an attempt to understand it so that the architectural approach would be relevant to the needs of the users. That through this understanding, the identified gap within the system could begin to speak to specific needs of the users through architecture. The approach however does not prevent homelessness, but only offers suggestions of how architecture can contribute to reduce already existing homelessness.

Since the topic of homelessness has only been reviewed in 2015 for the first time with the inclusion of those affected or previously affected by homelessness, along with the census of homeless people conducted in the 2011 national census, the information of the state of homelessness is still limited within the country.

Though homelessness is a global problem, the reasons, effects and solutions to it are unique to location and context. The analysis is therefore uniquely for the mentioned area of the Inner city of Pretoria and cannot be applied holistically to another region.

CHAPTER 2:

PROGRAM *(THE SCHEME)*

Introducing the Program

Defining It

The programme is a shelter for children of ages above 8 years, specifically of child headed families. The shelter would act as a temporal to a semi-permanent solution in providing a 'home' for the user. The programme seeks to enable an environment which can begin to empower the young impressionable homeless children, such that they can break away from their earlier cycles, bonds of their past and traumatic experiences of loss and living on the streets, to (re)integrate them into society for meaningfully contribution and life.

Currently there are several facilities within the Pretoria Inner City that cater for children, however these centres separate children by sex and some by age. The available facilities do not recognise that there are families that have remained under the raider with fear of being discovered and separated from one another. **The Child-Headed families.**

To define the programme fully requires an understanding of the definition and perception of homelessness, along with consideration of the needs of the homeless and the complexities of their current state. In considering also, self-reflection of their situation and their vulnerability, this stance gives emphasis to their needs and justifies further the programme and the architectural intention.

It needs to be understood that homelessness is not just being without a home or just a housing problem, but is rather a more complex problem (Naidoo, 2010). Though lacking a shelter is a major lack, yet homelessness is more than just this (Fry, 2006:193), therefore homelessness is more than being without a roof over one's head (Cross, 2001; fry, 2006:195; Mcnaughton,2008:14; Naidoo 2010:130). It is a complex notion that Cross, 2001, describes as 'placelessness'. That it is "a lack of psychological and emotional connection that is fundamental to our sense of identification and well-being" (Cross, 2010:12). Fry, 2006:195, further describes it as "a lack of a place of anchorage and return, of a place that enables journeying".

Framing Homelessness

Understanding

In finding an understanding to the complexities of homelessness and its diverse faces, framing the definition based on Hartshorne, (1992), provides grounding to unveiling these complexities. Hartshorne states that there are four types of homelessness, which are *Economic, Situational, Chronic* and *Near Homelessness*.

Economic Homelessness-This refer to those who arrive in the city in search of better livelihood. Research shows that in some cases, these individuals have jobs, however due to unaffordable accommodation within economic opportunities and high transport cost to commute to their homes; they resolve to remain on the streets and send money home.

Situational Homelessness- This refers to people who are homeless due to domestic abuse, family difficulties or conflicts, or due to a loss of a person in the family, who may have been caregiver. This category also includes asylum seekers and refugees.

Chronic Homelessness- This category refers to people who have been on the streets for extended periods, and no longer have access to housing incentives by government or are unable to receive employment.
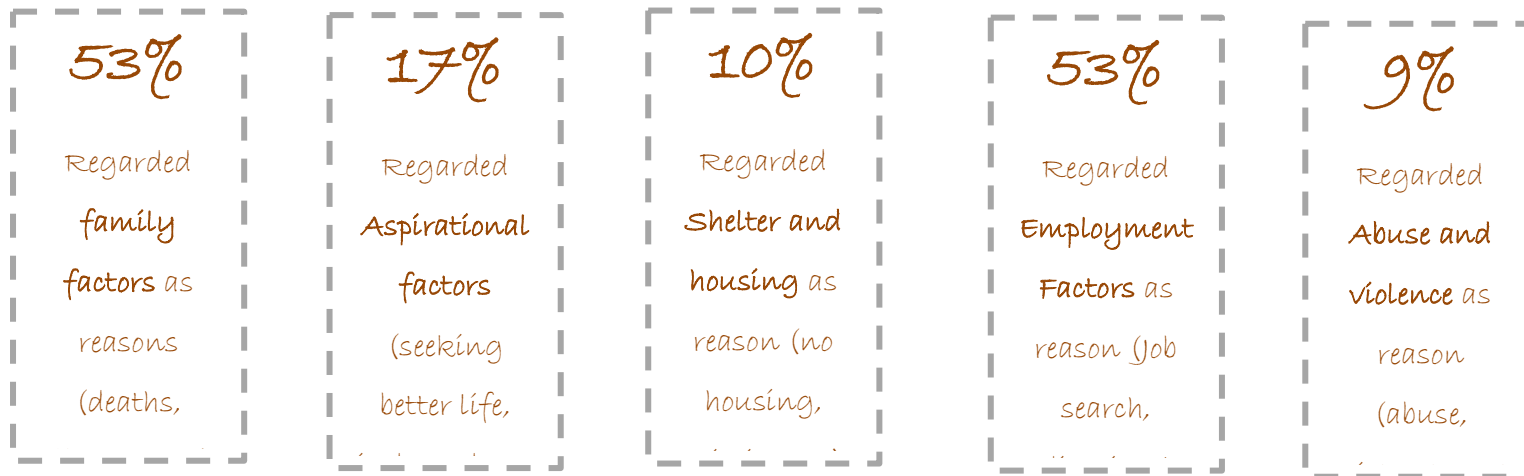

Near Homelessness- in this category, it is people who are not yet homeless, but live in precarious circumstances that may lead them into homelessness on any day. These individuals usually may be those such as child-headed families, women living in abusive situations or those in correctional facilities.

Homelessness in Pretoria

Contextualising It

The Urban context is sometimes a consequence of homelessness, of inaccessible architecture, none interactive and creating no sense of place, described as placelessness. Even though 'Nearly every inch of the urban environment is built by human hands. Through Architecture, human intentions take shape as dwelling spaces', as stated by Edward (2013), it is still not designed to suit user interaction or support it. Such spaces or places can sometimes be supposed to create a lack of belonging and being cut off from any ties of a community (Berens, 2008:25). A situation that is still prevalent in Pretoria

Research shows that further to architecture and its social injustice, pathways that often set people into homelessness are not always a direct a lack of economic factors, but are far more complex scenarios (Cross & Seager, 2010). These factors range from urban planning, where affordable housing is outside of economic opportunity areas, family factors or abuse/violence.

53%	17%	10%	53%	9%
Regarded family factors as reasons (deaths,	Regarded Aspirational factors (seeking better life,	Regarded Shelter and housing as reason (no housing,	Regarded Employment Factors as reason (Job search,	Regarded Abuse and violence as reason (abuse,

Based on results of a survey conducted by Cross & Seager (2010), on homeless people, regarding reasons for their homelessness, the above mentioned is clear that factors which may drive one to homelessness are not always financial factor.

Where They Sleep

	Streets	Shelters	Park	friends or connections	Other
Adults	46%	10%	13%	4%	26%
Children	75%	4%	9%	1%	11%
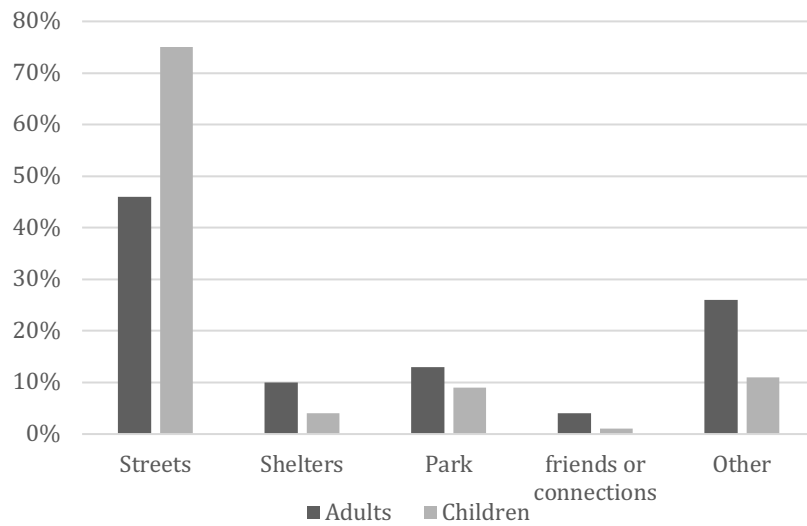
Reason For Street Sleeping

	No permanent Home	Temporarily Stranded	Home too Far to Commute	Other Reasons
Adults	34%	23%	40%	5%
Children	27%	11%	61%	1%
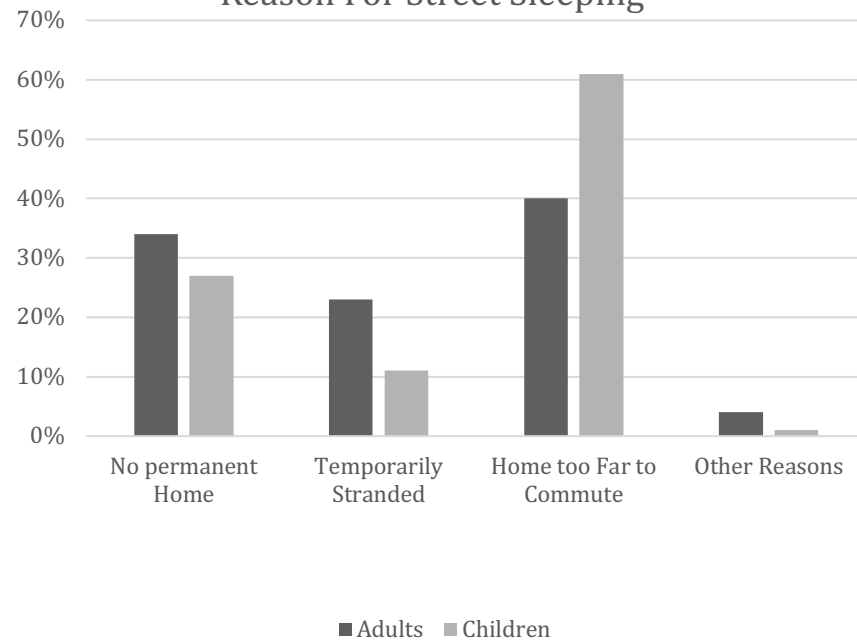
Currently, from data collected within the Pretoria area, in 2011, it is recorded that 60% of homeless people were found in the Inner City, and the remaining percent in the suburbs. This shows the magnitude of unaffordable housing within areas that are considered economic opportunity areas. The following are figures from a survey carried out by Kok et al, (2010:32), on where homeless people have found refuge. There seems to be a huge distinction between response given by adults and those given by children:

The data collected shows that a high number of children sleep on the streets as opposed to shelters. It would seem that the preference for children is to sleep on the streets rather than in a shelter. However, this may be due to the fact that there are not enough shelters or none that cater for particular needs. The summary of these statistics exemplifies the high lack of housing in the economic zones where people have come for better opportunities. However, along with the shortage of housing, there are other factors that lead to homelessness such as those promoted by psychological reasons such as family problems, abuse, neglect or mistreatment.

The surveys demonstrate that aside from the shortage of affordable housing in the Pretoria Inner city, there is a vast shortage of social support services to address issues relating to basic needs of the homeless within the city, when even the few facilities that are there are overcrowded.

There is an astounding number of children as opposed to adults who seem to prefer to stay on the streets than in homes that provide for their needs and away from their caregivers, on the basis of their homes being too far to commute. To this end, it shows that there is neglect in the household, and preference would be to remain on the streets. (Ntakirutimana, 2015).

The Tshwane Homelessness Forum (2015), states that the largest percentage of homeless people is age group of a young age of 20-29years old. The age range of children from 5-19 years old on the streets is a shocking 11% percent of the total homeless population. It further shows that 84% of homeless people are South African, and 16% are foreigners, some of whom are young children without adult caregivers.

AGE DISTRUBUTION OF HOMELESS
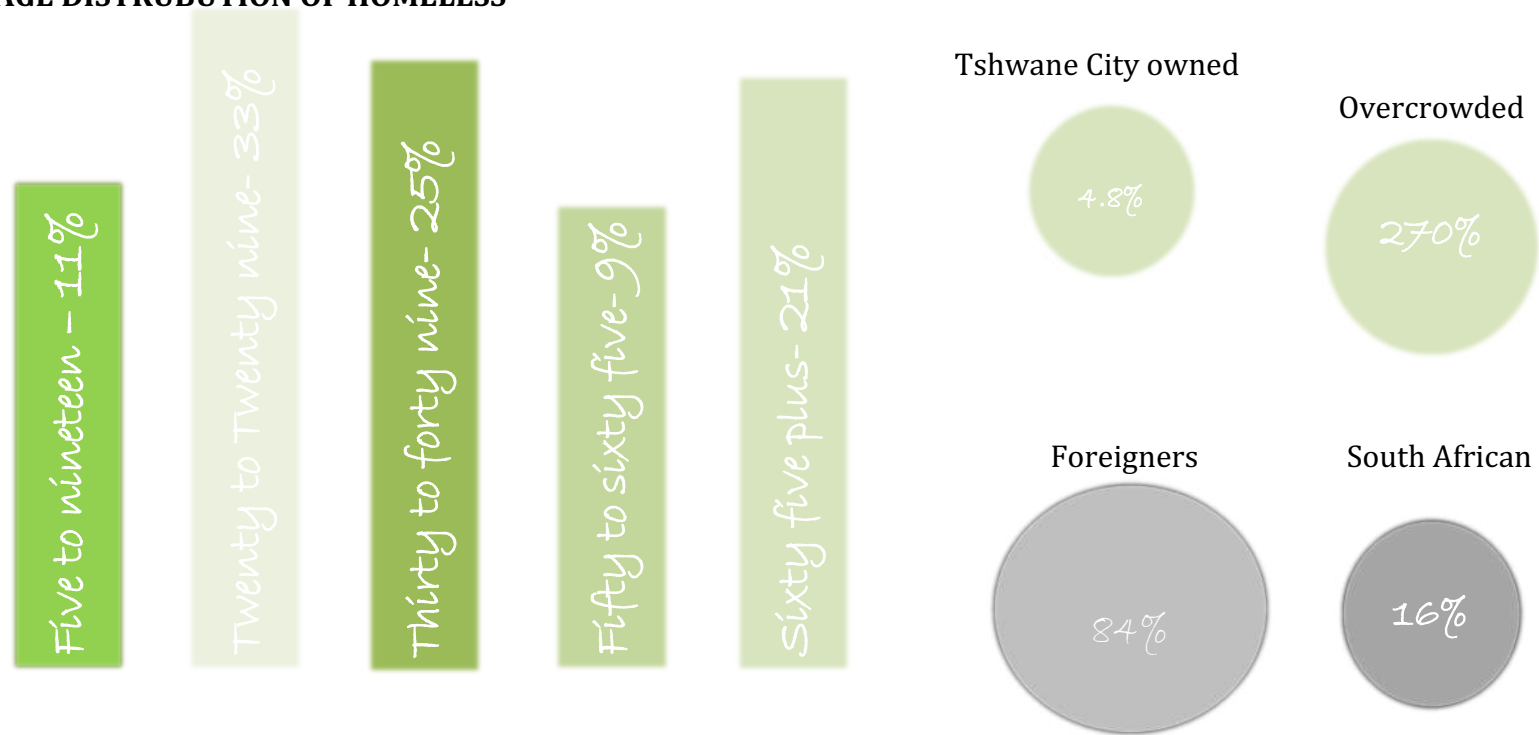
Research done by Ntakirutimana (2015), along with his experience as being homeless implies that interventions in dealing with homelessness is far from appropriate for dealing with the complexities of homelessness. This is further emphasized by a participant of a survey, Sonile, a homeless woman living on the streets with her children when seeking social service assistance, was advised to consent to her children being placed in an institution of care, separate from her. This apparently discouraged her so much to get any assistance from social services to the point of feeling psychologically disturbed (Sonile, 2012). This testimony, along with many other similar ones, such as siblings who had lost their care taker, where the eldest child then assumes the responsibility of caretaker (child-headed), have been advised that they would be separated into institution categorized by gender and age, which would leave the family separated, express the reason for children choosing to stay on the streets as a family rather than being institutionalised and separated (Okumu, 2006). Fig showing faces of homeless children.

Pathways out of homelessness

As homelessness is a complex, non-static interaction of varying aspects, as explained, solutions out of homelessness cannot be considered in isolation or simplistically. The Tshwane Homelessness Research Report (2015), states that it should be explored in relation to the physical, spatial, psycho-social, spiritual, political and economic dimensions which define people and life.

The Tshwane Leadership Forum (TLF), (2015) has noted, similarly to research done by Ntakirutimana (2010), that the interventions in resolving the state of homelessness in Pretoria has not been approached with realisation of its complexity. The TLF identifies priority areas of pathways out of homelessness as:
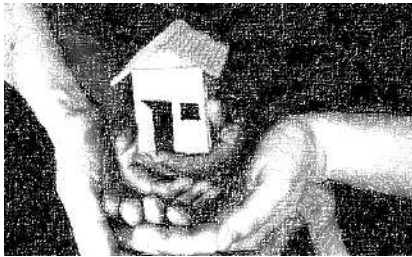
Diverse Housing Options

for different users & needs

Institutional Infrastructure.

Economic opportunities

Education

Awareness-Rising   programme.

This research shows that pathways out of homelessness are not only through housing, but a variety of aspects are required to work towards eliminating homelessness. Other factors which may be easily overlooked, is the importance of a physical address, which brings about rippling effect to enabling alleviation to homelessness.

Physical Address'

Doomed to live as voiceless and invisible victims of socio-political structures that render them nonrecognisable' (De Beer & Valley, 2015:20)

The vicious cycle, of not being unable to acquire legal documentation to attain any social assistance (Ntakiratimana, 2015) due to a lack of a fixed physical address continues to exacerbate the homelessness cycle. The lack of legal documentation, such as Identity cards, birth certificates, etc., has been expressed by homeless people as a hindrance that restricts changing their situation. Where the lack of a fixed physical address restricts the homeless the ability to acquire these documents, as this is requirement for eligibility to apply for these documents.
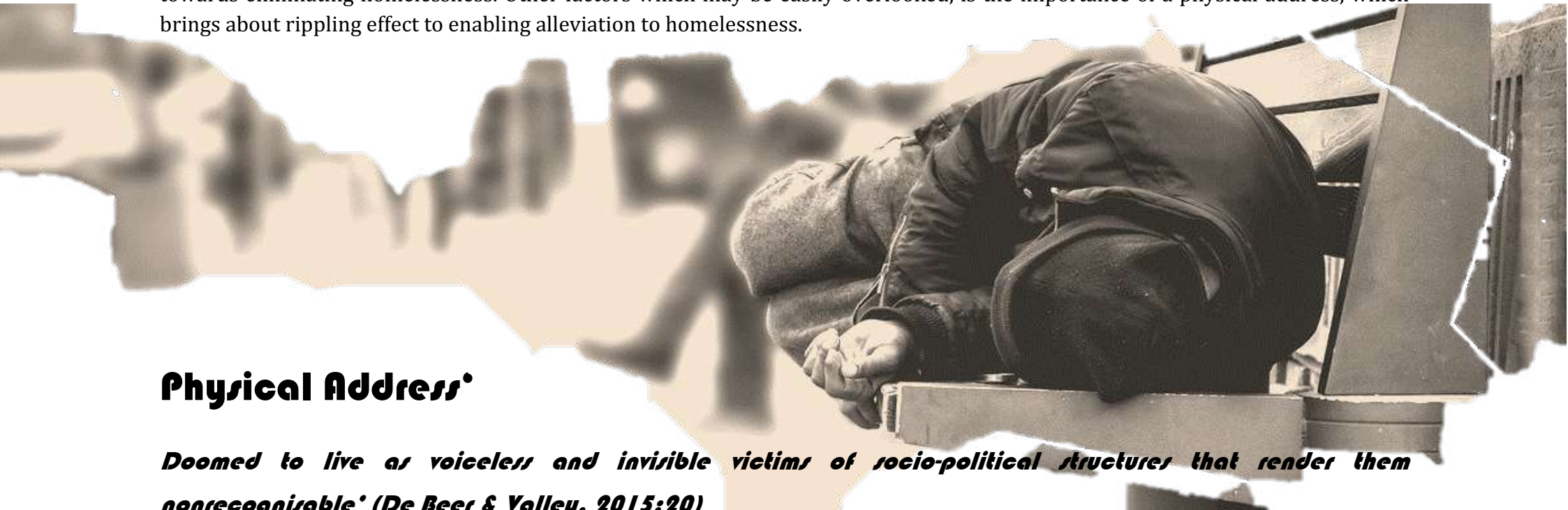
Consequences of Homelessness

Effects

The effects of homelessness can be both physical and psychological, which can create a low self-perception to an individual and lower what others perceive them to be, leading to a stigmatisation of their situation.

As described in the Tshwane Homelessness Research Report, 2015, as a chronic malady that steals a person's visibility and dignity, reducing them in the eyes of the public as far less than what they may be, the homeless, as a result of this viewpoint lose their sense of identity and relevance to society (McGarthy, 2013). It may be said that homeless individuals may form and assert identities that are similar with their low internally formed social and self-identities. It has been argued that, 'Homelessness means a loss of social identity-loss of permanent address, work, school, relationships-and go as far as to say it can mean loss of a sense of self' (Boydell et al, 2000; McCarthy. L, 2013:10)

In the words of the homeless,

"They appear cut off from their earlier networks in society, nervous about approaching government, suffering learnt helplessness and friendliness, often ashamed of their situation, and living in fear" (Cross & Seager, 2010:153)"

The homeless are thus regarded as those who exist on the edge, on margins and the periphery, imagined as those opposing the efforts of society, being perceived as shadows or degraded citizens (Cross et al, 2008:89), this forming emphasis on the programme further.
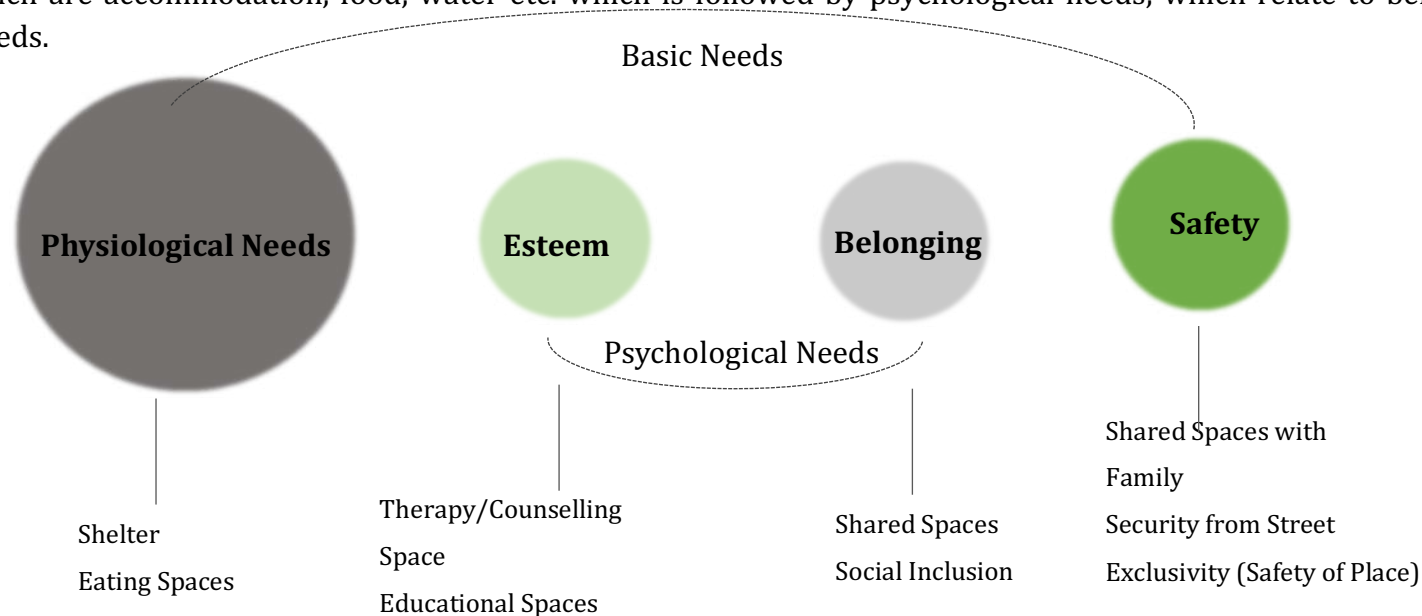
"The Street homeless are the proverbial skeletons at the feast, the excluded poorest who enter unobserved and stand by, gaunt and starved, terrifying to the invited guests but deprived of any capacity to join the party" (Cross et al 2010:18)
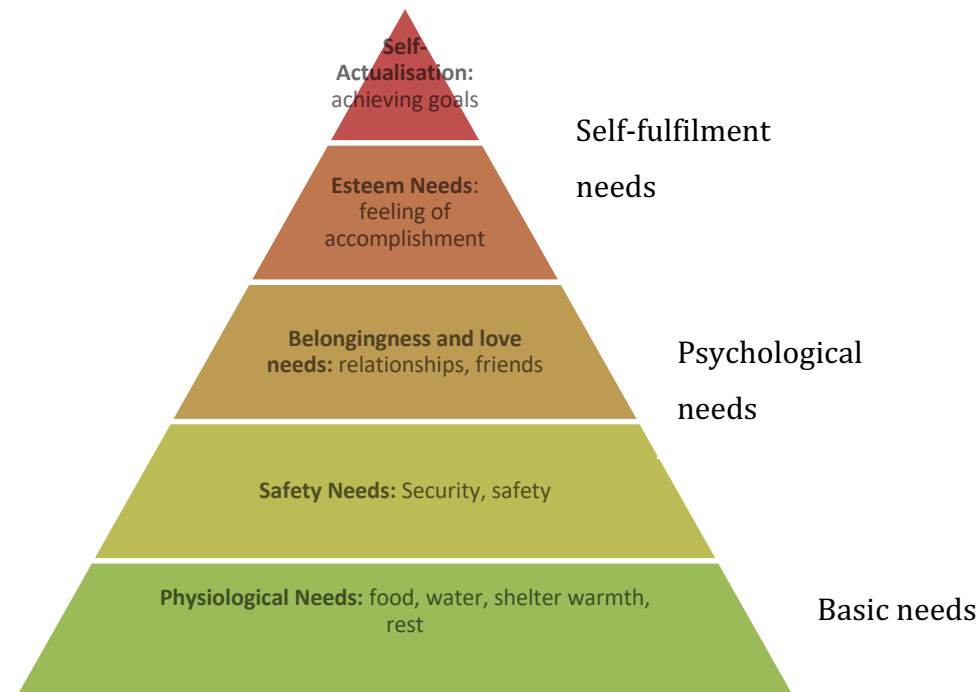
Programme Analysis

Identifying the Gap

The programme seeks to enable an environment which can begin to empower homeless children from child-headed families, such that they can survive their traumatic experiences of living on the streets, loss of parents and caregivers or abandonment to integrate them back into society.

The programme is based on an identified gap that exists, through the analysis of the complexities of homelessness, comparative data of existing facilities and the needs of the homeless. In considering also, the self-reflection of their situation and their vulnerability, this stance gives emphasis to their needs and justifies further the programme and the architectural intention. Maslow's Hierarchy, 1943, is used as a basis to determine the needs of holistic being, from housing the mind (Abbey, 2016). Maslow's Hierarchy that states the importance of basic needs to fulfil other needs and reach an individual's aspirations and goals. The law is based on a 5tieer model of human needs. Stating that the most important would be the psychological needs, which are accommodation, food, water etc. which is followed by psychological needs, which relate to belonging & esteem needs.

Basic Needs

Physiological Needs   **Esteem**   **Belonging**   **Safety**

Psychological Needs

Shelter

Eating Spaces

Therapy/Counselling Space

Educational Spaces

Shared Spaces

Social Inclusion

Shared Spaces with Family

Security from Street

Exclusivity (Safety of Place)

The theory argues that once the four(4) bottom tiers are satisfied, then the last tier of 'self-fulfilment' can be reached by individuals. Maslow's hierarchy:

Based on Maslow's Hierarchy, the programme will provide its users the basic physiological needs and psychological needs, the hierarchy of these as below. The physiological needs being the most important and significant to the user, being shelter, safety and security, followed by the psychological needs of counselling/therapy through shared spaces, educational facilities and socially inclusive spaces.

The Facilities in the Inner City

Name of Facilities	For Women Only	For Men & Women	For Women & Children	For Young Boys	For young Girls	For Toddlers	With Shower Facilities	With soup Kitchen	Educational facilities	12+ Month stay	For families/ siblings
The Potters House			√					√			
Beth Shen			√								
Leratong House				√			√				
Precious Pearls					√				√		
Struben Street Shelter		√									
Rivinogo Care		√									

Salvokop Care Centre						√		√	√		
Tswelelang										Foster Care	
Zama Zama				√							
Home of Hope					√						
Mercy House			√								
Cosmos & Maranata	√						√	√			

The Client

The client for this programme would be the Tshwane Leadership Foundation (TLF), which has been instrumental in the development of facilities that have assisted homeless and vulnerable people in desperate situations. Many facilities in Pretoria inner city are run or owned by the TLF and therefore continuity in dealing with the situation would be best. The TLF is a community organization committed to socially inclusive urban transformation, which was founded in 1993. The TLF would also be able to form synergy with already existing care centres where interlinking or interaction is required. It further prides itself with creating inclusive, innovate programmes for homeless people or in vulnerable situations. This programme therefore would be suitably placed in their care. The programmes that are currently implemented by TLC are:

The User

The users are child-headed families who have suffered loss of their caregiver. Some of whom immigrated to South Africa, and do not have or know where they originate from.

Yamba (2006) reports on a child from Zambia called Loveness, aged 9. Her parents immigrated to South Africa and then her mother died. Loveness and her two brothers moved 50km to live with her grandparents, who died three months later. Loveness moved back to her original home and became a child-headed household." (Yamba, 2006, p. 207). Loveness reported that she feared that if this was found out, she would be separate from her siblings, but didn't even know where they came from in Zambia.

'Me and my brother (lucky) have always stayed alone. My parents were always away, even at night, on weekends. Our parents drunk a lot and left us without food'

Aapjes River
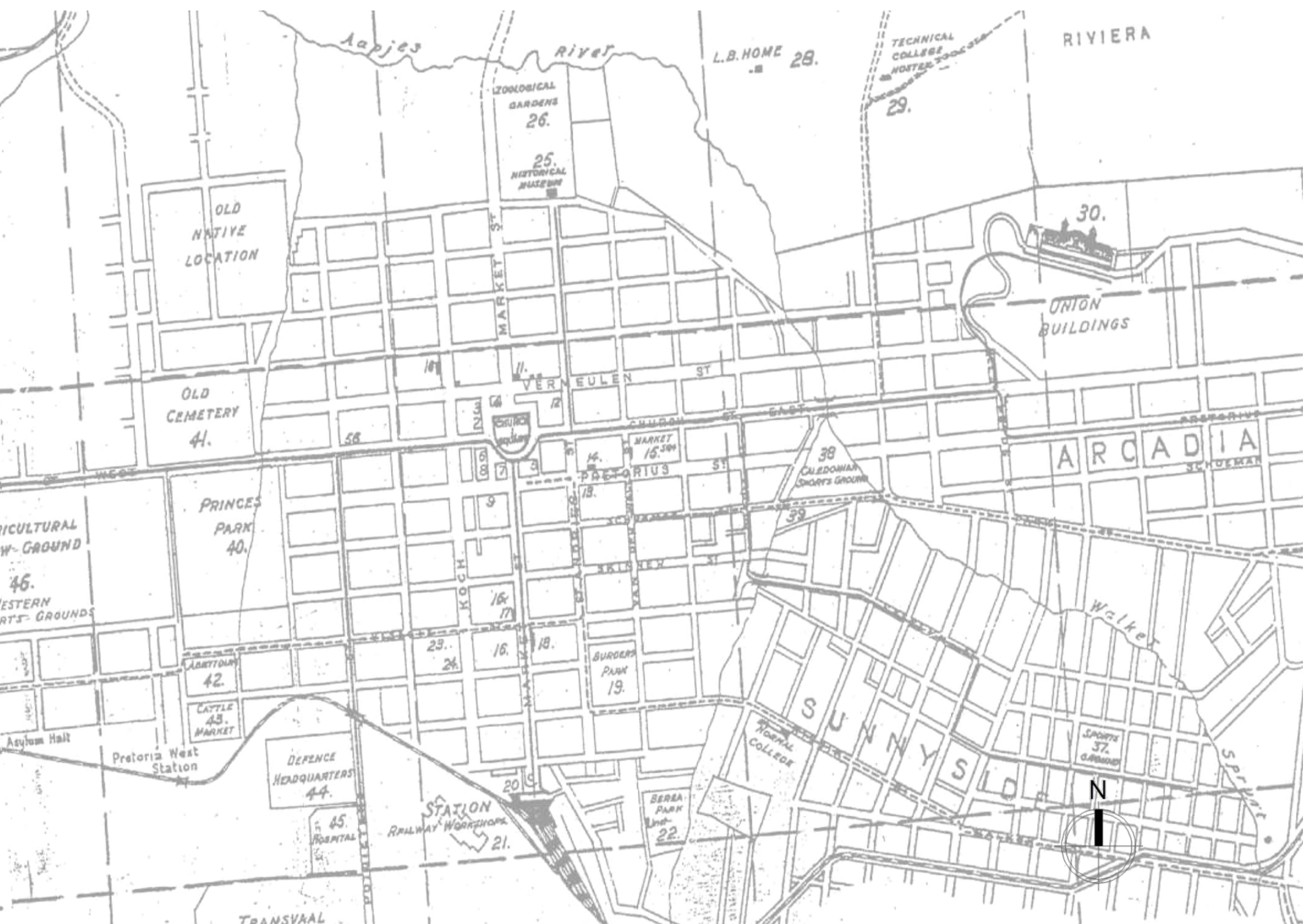
RIVIERA

L.B. HOME 28.

TECHNICAL
COLLEGE
HOSTEL
29.

ZOOLOGICAL
GARDENS
26.

25.
HISTORICAL
MUSEUM

30.

OLD
NATIVE
LOCATION

UNION
BUILDINGS

MARKET ST.

OLD
CEMETERY
41.

10.

11.

VERMEULEN ST.

12.

ARCADIA

CHURCH ST EAST

CHURCH
SQUARE

56.

13.

14.

MARKET
15. SQ.

38.
CALEDONIAN
SPORTS GROUND

SCHOEMAN

AGRICULTURAL
SHOW GROUND

PRINCES
PARK
40.

7.

3.

PRETORIUS ST.

9.

13.

39.

46.
WESTERN
SPORTS GROUNDS

KOCH ST.

SKINNER ST.

16A.

17.

WALKER

42.
ABATTOIR

23.

24.

16.

18.

MARKET ST.

BURGERS
PARK
19.

SUNNYSIDE

SPRUIT

Asylum Halt

43. CATTLE
MARKET

NORMAL
COLLEGE

SPORTS
37.
GROUND

Pretoria West
Station

DEFENCE
HEADQUARTERS
44.

20.

N

45.
HOSPITAL

STATION
RAILWAY WORKSHOP
21.

BEREA
PARK
Unit
22.

TRANSVAAL

CHAPTER 3: CONTEXT *(THE SCENE)*

Introduction

"Everyone uses a space, changes its story a bit, every new building changes the story about the city a little. The city and its stories can never be completed, it is always retold and keeps on changing with the narrators, the users, and with the on-going processes and forces outside its realm. The role of the narrator is not necessarily to tell a finished story about a place, but to create conditions for the people who live in it to develop new ideas, leave new traces and signs and take part in telling the future stories of the place" (City Story, 2008).

The region of focus, as the capital of the country and a hub for economic prospects, Tshwane has attracted high activity of inhabitants ranging from within the area, all areas of South Africa and around the continent. The inner city of Tshwane as such has experienced a large number of settlers from rural areas, nearby settlements and immigrants from neighbouring countries in search of economic opportunities.

The particular context, which is the Inner city of Tshwane is studied as a basis of influence or effect towards homelessness. The Urban context which deals with issues of zoning, density mapping and transportation nodes are analysed for insight into the influences and effects of spaces within the inner city to the dwellers of the spaces. The physical and social aspects of the character of the context have been assessed to conclude how the urban planning and the architecture affect interaction with spaces in the area. Further to this, observations of pedestrian movement and activity are noted to unpack how the users of the spaces in the city respond to the spaces.
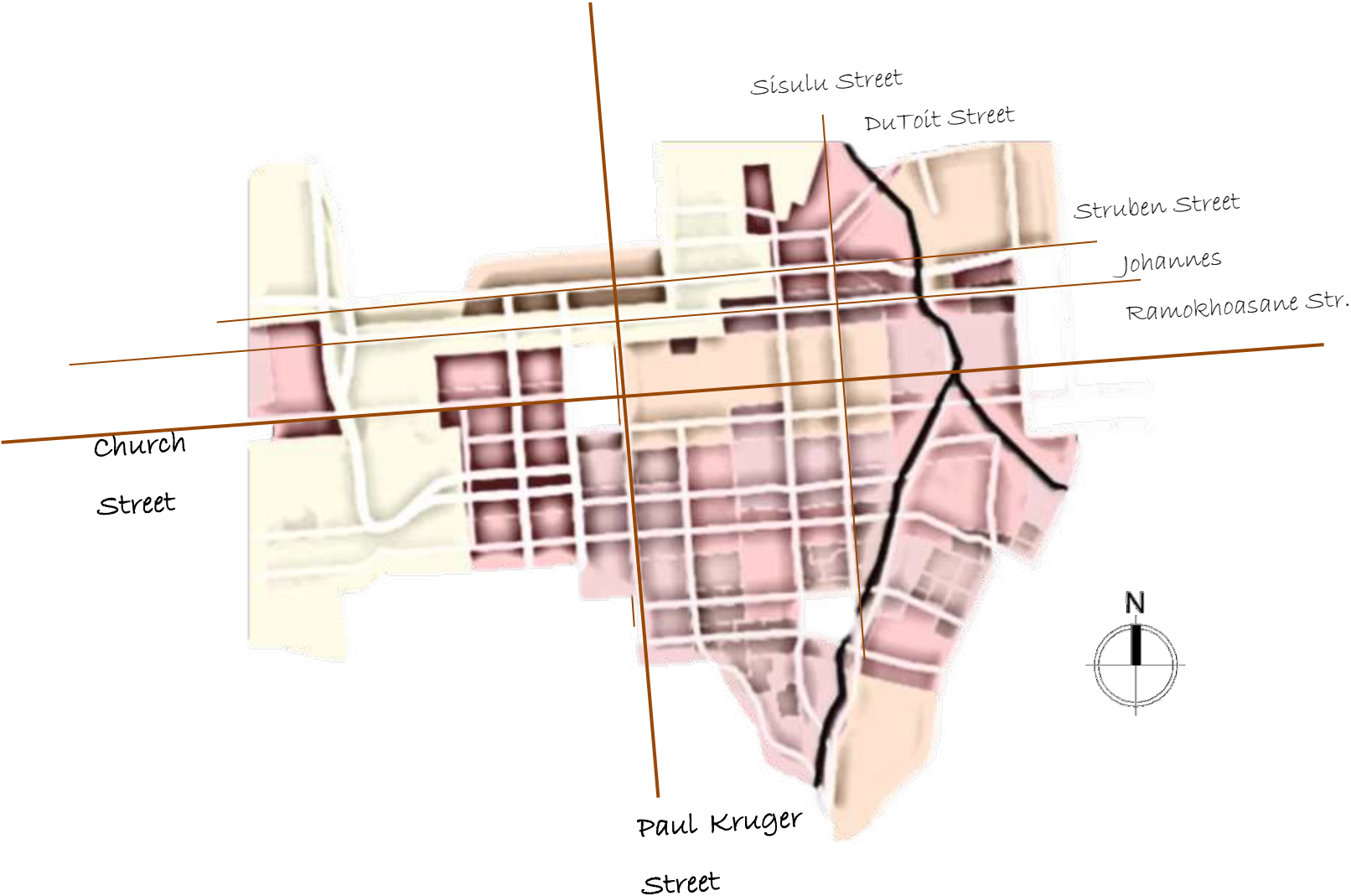
Mini summaries are synthesized to formulate conclusions on architectural intent and response to the context and appropriateness of the specific site selected for programme development. Also, the social influences of space based on theory are brought to focus, so that along with the site analysis & observations, and physical qualities, the information is synthesized to understand the effects these have had on homelessness.

The mapping explored is as a means to understand the physical character of the area and how it can influence pedestrian patterns and other influences of the inner city. The physical characters studied are: population densities, Zoning, Public transport, Social support facilities (health facilities, educational facilities, religious institutions and homeless support services).
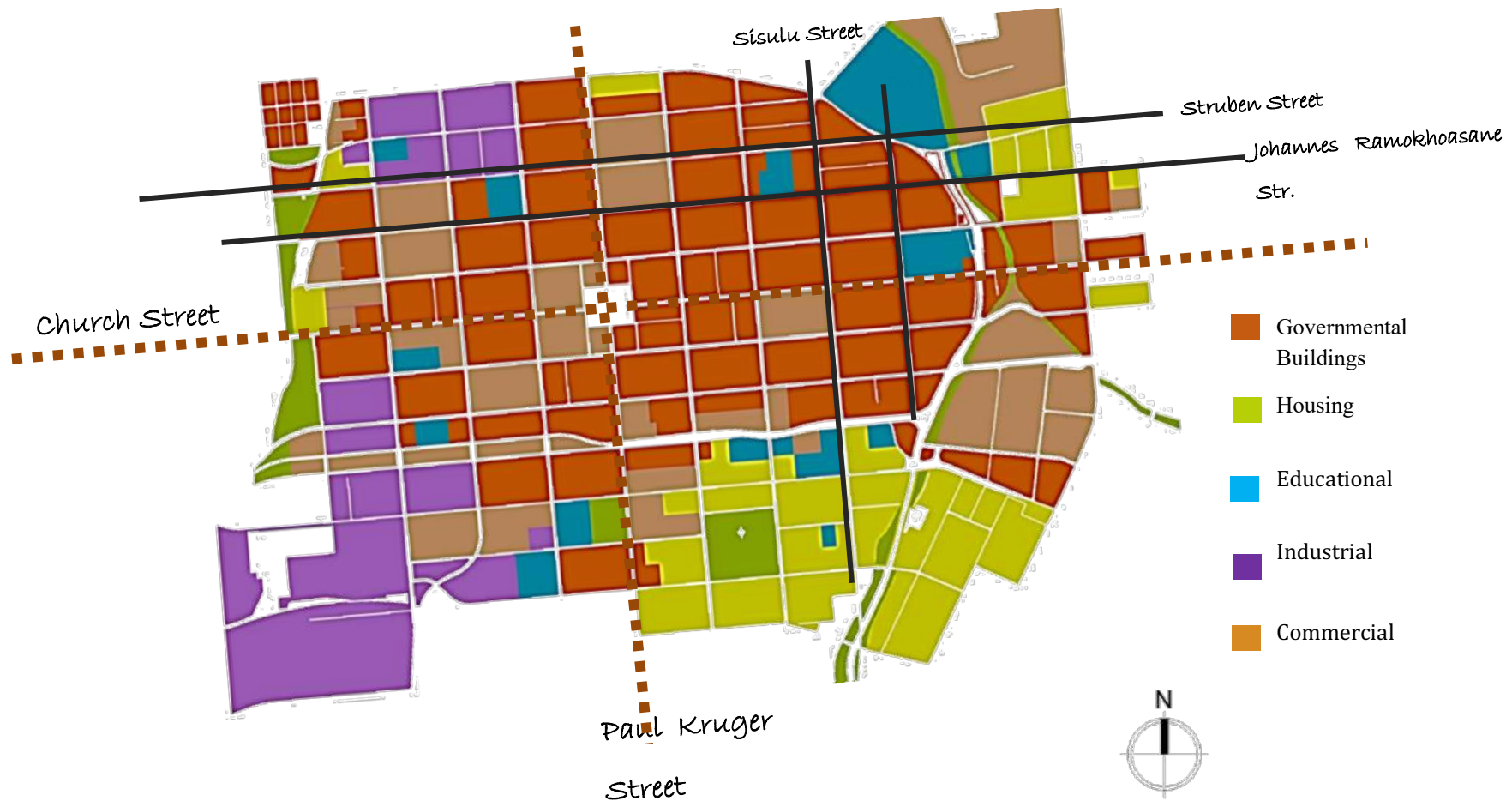
Density Map

 The density map depicts the patterns of density in the Inner city. These densities of the inner city are higher towards the south side of the city. This is acclaimed to the residential areas which have more people living/occupying per square area. With the industrial area with the lowest population density.

Sisulu Street

DuToit Street

Struben Street

Johannes

Ramokhoasane Str.

Church

Street

N

Paul Kruger

Street

Zoning Map

The zoning of the blocks shows predominantly commercial use, followed by government facilities. This mono-functionality of the zoning and institutionalised planning has created restriction in social movement and inclusivity within the city. The southern parts of city zoned as residential, and similarly towards the lower eastern parts. This type of urban planning seems to have great influence in pedestrian patterns and influences the uneven density patterns for the areas.

Sisulu Street

Struben Street

Johannes Ramokhoasane Str.

Church Street

Paul Kruger Street

Governmental Buildings

Housing

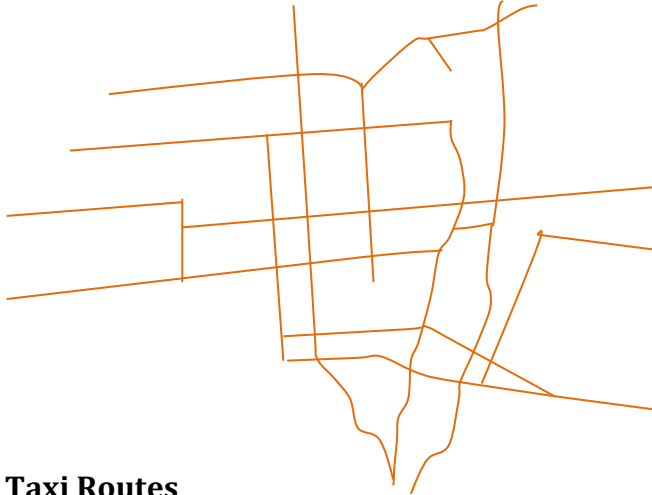Educational

Industrial

Commercial

N

Main Road Map

The main roads within the inner city are open for use to both private and public vehicular use. Most of the roads are one ways, which is designed for better flow of traffic. The roads open to both public transport and individual users. The main arterial roads connecting to areas outside of the inner city are dual carriage, while those in between are single lane. The main social character of the streets is influenced by the use of the buildings along those streets. With more activity where the use of the building is on everyday life. The character of the roads is that of being more predominantly vehicular supported rather than pedestrianized.
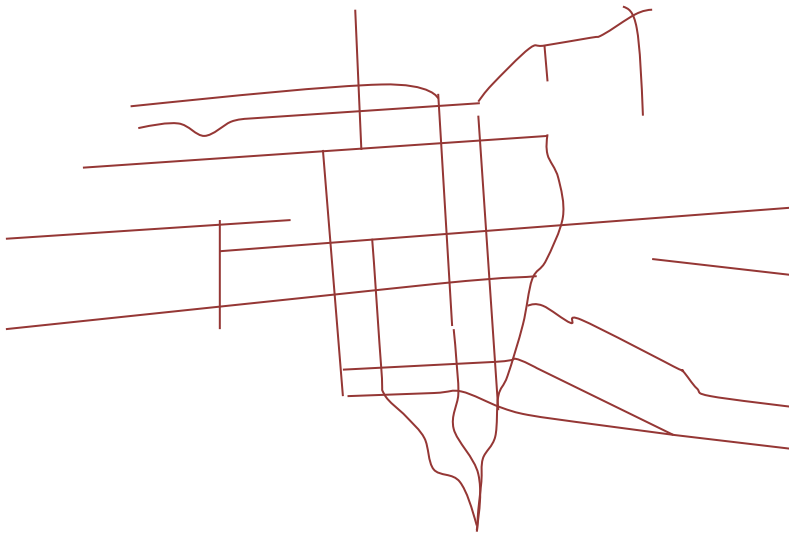

Sisulu Street

Struben Street

Church Street

Johannes

Ramokhoasane Str.

Paul Kruger Street

N
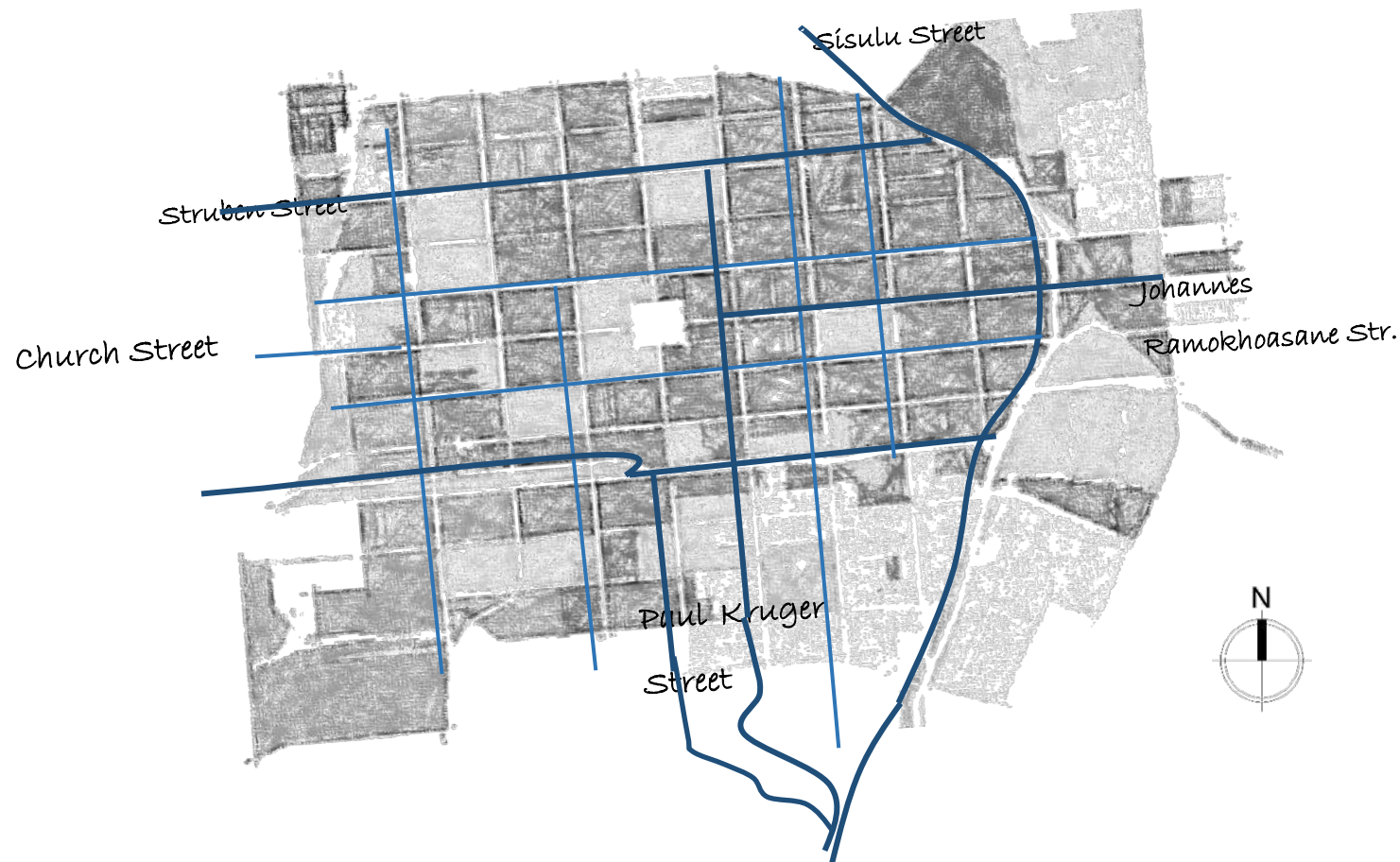
Public Transport Routes

## The bus and taxi routes Bus Routes

There is a variety of bus routes, however they are limited to main roads, and the smaller roads are not serviced. The bus routes are through Areyeng Buses and Guabus.

Taxi Routes

Taxis move within in more routes than the buses, this may be attributed to their informal setting. The taxis also connecting to areas outside of the inner city, especially township areas. These are however more expensive than the buses, even though they may be more preferred by their users for their convenience and the access to more places.

Educational & Places of Worship Mapping

N
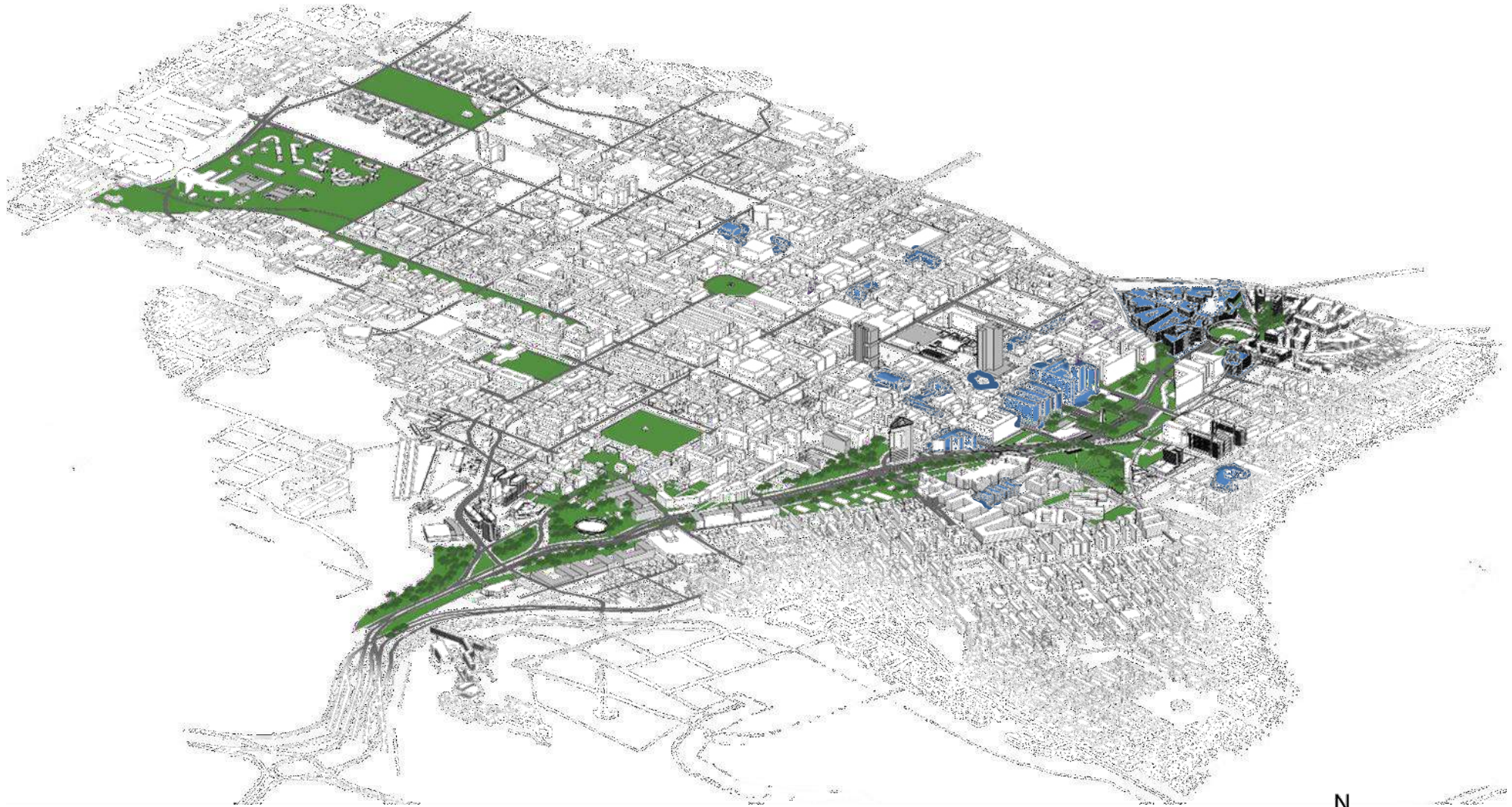
Educational Facilities

The schools within the inner city range from Primary to Secondary Schools, through to Tertiary Institutes (In blue). The range of schools are public and private schools, with the main Tertiary Institutes being, University of Pretoria (medical School), University of South Africa and Tshwane University of Technology. The variety of education facilities available in the area, and potentially accessible for users. The range of educational facilities means that there is varied demographic of scholars from different areas.

Places of Worship

Places of worship are scattered all around inner city, and are easily within reach, on the transport nodes or within walking distance of transport nodes.

Public Green Spaces

There are not many open public green spaces within the inner city, considering the vast amount of building fabric in the area, the proportion of public green space/recreational spaces which are accessible is disproportionate to the built fabric, and in turn to the users of the buildings. However, due to the fact that such places are free to access they have been overwhelmed by homeless people and as a result of this many have now been closed off from the street, breaking the interaction of the users and facilities.

Gathering Spaces

It would seem that the areas where homeless gather are in areas which could provide safety, such as in front of the police station, or in areas where services for assistance are perceived or implied, such as the United Nations Building. The other areas occupied are either where there are services of toilets or water, while the last group of areas is in places that may be open to the public, which can be enjoyed by anyone within the city.

Support facilities for Homeless Mapping
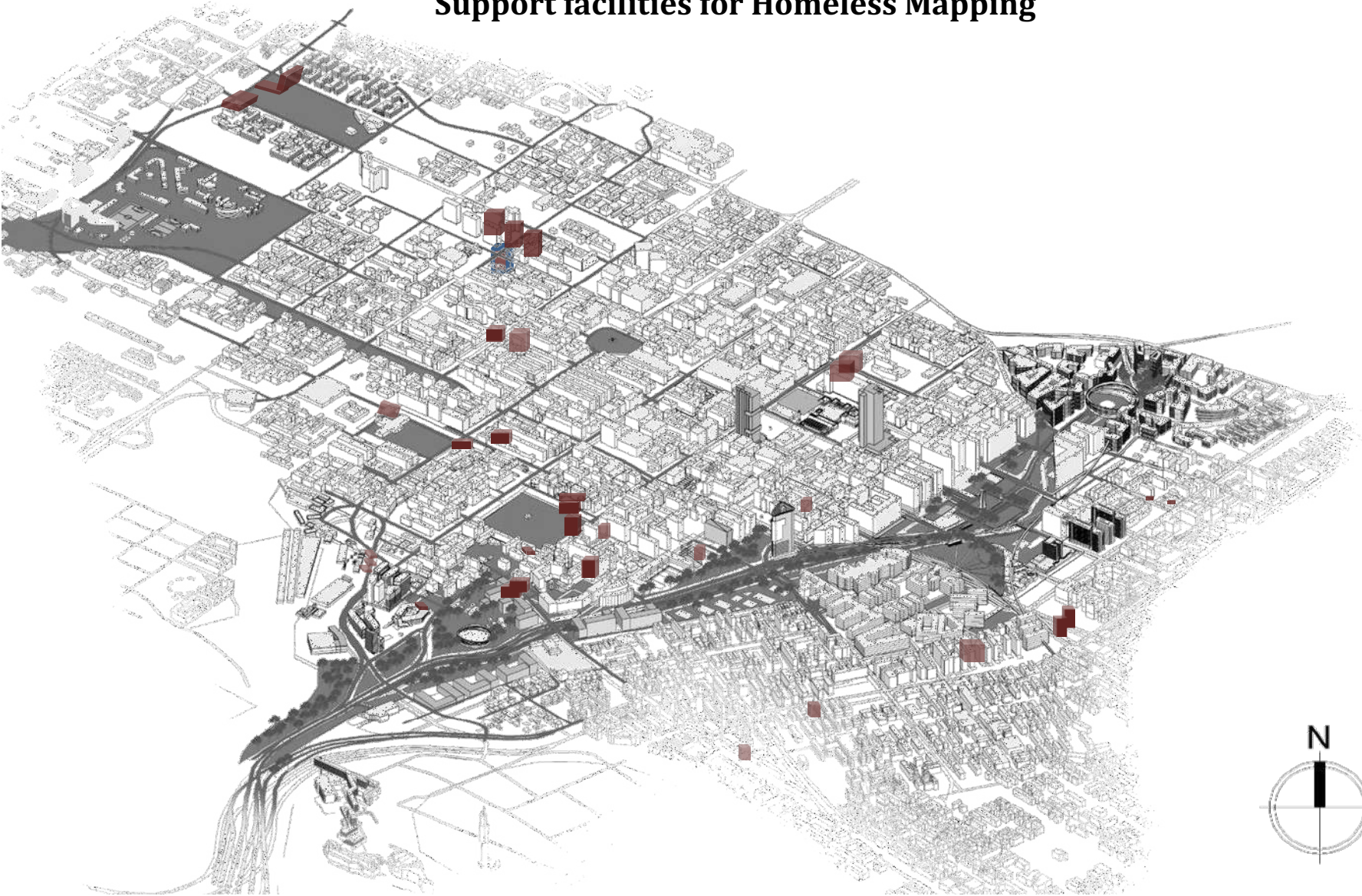
Social infrastructure support facilities

1. Sediba Hope
2. Pen drop-in centre
3. Inkukuleko Community Centre
4. Crossroads Boys shelter
5. POPUP
6. Tshwane Leadership Foundation
7. Yeast Housing
8. Akanani drop-in centre
9. Gilead community
10. Rivoningo Care centre
11. Lerato House
12. Tau social housing
13. Crossroads Coffee Bar
14. Christian Social Council
15. Kitso Lesedi
16. Homeless Solutions
17. Compassion Centre
18. Tshwane Home of Hope

Social housing and shelters

19. Struben Street Shelter
20. Thembehlihe Village
21. The Potter's House
22. Litakoemi
23. Hofmeyer House
24. Kopanong
25. Living Stones
26. Tshwelelang
27. Eloff Building, Housing Company Tshwane

Refugee support centres

28. Home Affairs: Marabastad Refugee reception office
29. Xaveri Movement
30. South African Catholic Bishops Conference
31. Jesuit Refugee Services
32. Refugee Aid Organisation
33. Office of the United Nations High Commissioner for Refugees (UNHCR)

Pedestrian Activity and Street Vendors
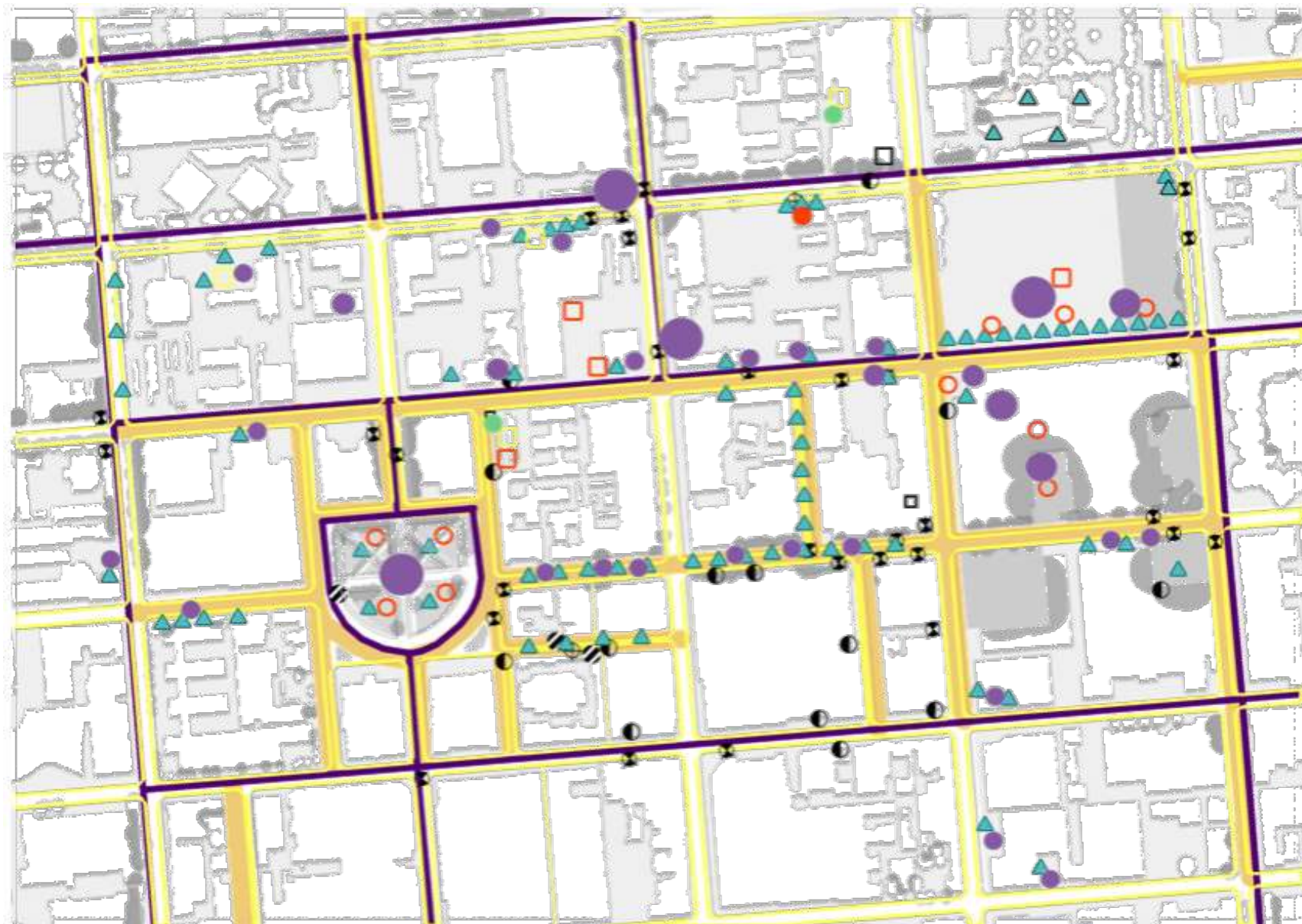
$\bigcirc$	Lingering spaces
▬	Pedestrian movement
▬	High Pedestrian Movement
▲	Street Vendors

Pedestrian activity is high in streets that have trading occurring on them, on sidewalks and pavements. Lingering is observed in open vacant spaces, although most open spaces that are unused and have abandoned buildings do not feel safe. Street trading is popular on the pedestrianized part of the, on Church Street, and Madiba Street. It further occurs outside government buildings and near informal taxi holdings.

Building Edge and Hot Spots

● Hot Spots

▬ Shop Fronts

▬ Solid/Hard Boundary

Perforated Boundary

The facades of buildings tend to have shop fronts closer to the city centre, and more abrasive harder edges as one moves away from the centre, with more solid boundaries or perforated boundaries. The pedestrian response to these shows that there is less activity along the edges of buildings with hard boundaries. The boundaries that have shop fronts have more activity occurring.

Conclusion of Physical Condition

The physical conditions of the inner city reflect that the **zoning of facilities and functions of buildings** influences the density patterns of the population. The more industrial areas have lower densities, and the residential have higher densities. This also affects the pedestrian movement patterns both during the day and at night.

The transport routes and nodes also influence pedestrian movement, as all the areas which have public transport access have high volumes of people. The more informal transport, such as taxis, have even higher traffic especially in areas temporary holding spaces, where informal trading.

The mapping of **Places of worship** in the Inner City have shown that they have been very instrumental in outreach programmes for people in vulnerable situations such as the homeless. Many of them have soup kitchens, bathing facilities for the homeless and support services that can alleviate homelessness. To this extent, homeless and vulnerable people in the inner city seem to gather in areas that they deem as safe or protected, as reflected by the hot spot areas of **gathering spaces** of homeless.

Educational facilities also influence the users in the area, drawing many types of scholars from all areas, even outside of the inner city. This suggests that there would be a lot of movement of children to and from schools. Activity would therefore follow school times, which are early mornings, lunch time and afternoon. Further to this, the presence of these facilities, and others such as places of worship, social support infrastructure and transport routes, provides an opportunity for development of infrastructure for support of the vulnerable and homeless.

Political, Social & Historic Influences

Davey (2001:50) indicates that "urban space must be negotiated through layers of economics, cultures, religion and identity."

The above is to say that not only physical aspects affect the character and relation inhabitants have with the architecture, but other influences have affected both the character of the architecture, and the social experience and relation of user to architecture.

"The dance on the periphery may not be leading anywhere, but at least it celebrates a refusal to sleep; a resistance to arrest; a mode of motion turns out to be a way, perhaps the only way, of life." (Cohen & Taylor, 1992:236)

The influences of the character of the city and its development can be attributed to a combination of aspects being, political, social and historic. These influences are not always independent of each other, but rather interconnected. The spatial aspects of the region but can be attributed to both a political background and historic dispensation, which has led to a socially exclusive outcome. These political effects of laws such as the Public Health Act of 1919 and Housing Act 35 of 1930, which segregated black or poorer national to the periphery away from the white central urban areas resulted in the racial driven urban planning which is in the inner city, where there was restricted access and lack of affordable housing in the areas of economic opportunities. At Post-apartheid, when access and movement was not restricted people began to exercise their rights such as those of rights to the city and social justice in areas that were restricted.

Right to the City/ Urban Citizenship

As segregation, access and movement restrictions were lifted, people began to exercise the right to the city or urban citizenship, which may be acclaimed to the 'complex and fluid interaction of physical, institutional and socio-political landscapes' of the urban context (Whiteford, 2008:88). Lefebvre summarizes the right to the city as an idea that "demand for a transformed and renewed access to urban life", while David Harvey describes it as 'more than the liberty use and access urban resources, but as a right to change ourselves through changing our cities'. It can therefore be said that this right, from a political influence of how the city was planned and developed, has shaped and continues to shape the character of the city, in as far as the physical and social use of space.

Whiteford, 2008, states that the right and perception of the homeless, in terms of the spaces they occupy and spaces they identify as their own, aside the individuals who passively occupy or use spaces at different times, is however complex and dynamic, as they may claim spaces for themselves, that they perceive as public.

Social Justice

This refers to how the physical aspect of the city allows or does not allow for social interaction. The social justice speaks to how architecture and social being connect. The analysis of boundaries has proven that there is a social injustice in the city, with the architecture as a man-made barrier restricting socialisation by its users. This having both a political and historical influence, as the past architecture is subjectively planned, and adversely affects social conditions (Lefebvre, 1991). This condition has however created a sense of social resilience of the homeless, nonetheless continue to use these socially exclusive buildings.

Conclusion of Condition & Influences

The mapping investigation would suggest that:

In totality, the physical conditions of the inner city are interlinked with the political, social and historical influences of the spaces. The focus area can then be understood holistically in relation to all aspects

Shop fronts and perforated edges encourage street socialisation and activity	Open public spaces can be claimed by residents or city inhabitants as they relate to or identify with.	Activity of pedestrians is high in public transport areas	Mono-functionality of block zoning restricts interactive spaces, which have bearing on times of day of street activity	Trading and activity relating to food creates street activity	Educational facilities attract children activity	Pedestrian activity reduces 'dead' areas

STRUBEN STR

SISULU STR

DU TOIT STR

JOHANNES RAMOKHASANE STR

PRETORIUS STREET

MADIBA STREET

LILLIAN NYGONI STR

CHURCH STREET

PAUL KRUGER STR

FRANCIS BAARD STREET

N

The Site

The site identified, as a result of the context analysis, is not on the periphery, but on the edge of the inner city, and not central to the inner city, but in close proximity to the central facilities. This is to allow for access into the city, while recognising the right to the city, however, remain slightly secluded from the busy and very institutional language of the inner city. The perception or claim on the right to the city can still be felt in this area as it can still be considered as part of the inner city. The site represents the inner city and the residential urban fabric which is in close proximity.

STRUBEN STREET

SISULU STREET

DU TOIT STREET

SHEPHERD STREET

JOHANNES RAMOKHOSANAE STREET

1
2
3
4
1
1
6
7
8

N

The Block

Between Struben and Sisulu Street

The Block is one of two blocks in this part of the city which are divided by a street running across it, this one being Shepherd Street, the other is Brown Street. The street received its name from the Shepherd Orphanage that was built on the street in the early 1900's (Afrikana Collection). This street is very quiet, and has very little vehicular movement on it, aside form the one or two delivery trucks. The facades on this street are harsh, with most buildings with their backs towards it.

Struben Street, which is the front façade of the block (North side), is a busy vehicular street towards the east and the traffic of vehicles and taxis, die down towards the East approaching DuToit Street.

The street on the West side of the block, Sisulu Street, is very busy with vehicular movement, and has a temporary taxi holding on the street.

The block is zoned for Commercial/General Business, with Height restriction of 25metres or 5storeys. There are no density restrictions, and currently the uses of buildings on the block are, Church, Residential apartments, shops, business, educational facilities, social halls and light industrial warehouses.

The Buildings 1, 2 & 3 are currently in use. Building one is a mixed-use space, with offices and some residential. Building 2 is a church, which has a warehouse typology. Building 3, which is in good condition is residential apartments. The buildings attract pedestrian movement. The buildings face Struben Street, with their windows overlooking the street, facing the north side.

The building 9 currently houses retail on the ground floor, which faces Sisulu Street, and residential apartments on top. The walkways of the building are covered and are busy pedestrian route. The building is well kept and was undergoing maintenance. It sits opposite to a block which has some retail stores, and a large parkade which is currently being used as temporary taxi holding, for taxis going to Sunnyside and Menlyn. The building on this block is currently derelict and houses many homeless people.

Confidence College (Building 8), was originally an office block, but has been running as a school since 1993, is a secondary school, with around 40% of its students from within the city, and the rest from outside the city. The back of the premises (parking) are used as spaces for the sports activities for the students


These 2 buildings (4, 6 & 7) are warehouses and are occupied by the same company. The buildings function as a depot for delivery of empty soda bottles are and filling the bottles up. The warehouses are internally facing and from street view the entrance is not visible. The facades of the building facing both Struben Street and Shepherd Street are harsh and brutal. There are very few openings to these warehouses being clerestory windows. The buildings present a very harsh abrasive façade to the proposed site, with no opening at all, creating a cold edge

The Besthesda Church (Building 5) is an international church with a membership of over 1000 members. The church draws large crowds during their times of sermon service, on Wednesday and Sunday. The church is said to organise inter-denominational games such as soccer, volleyball and basketball games within their premises on these days. The Church has established a business school in the area, on the western side of the block. It covers a large portion of the block and creates the most street activity.
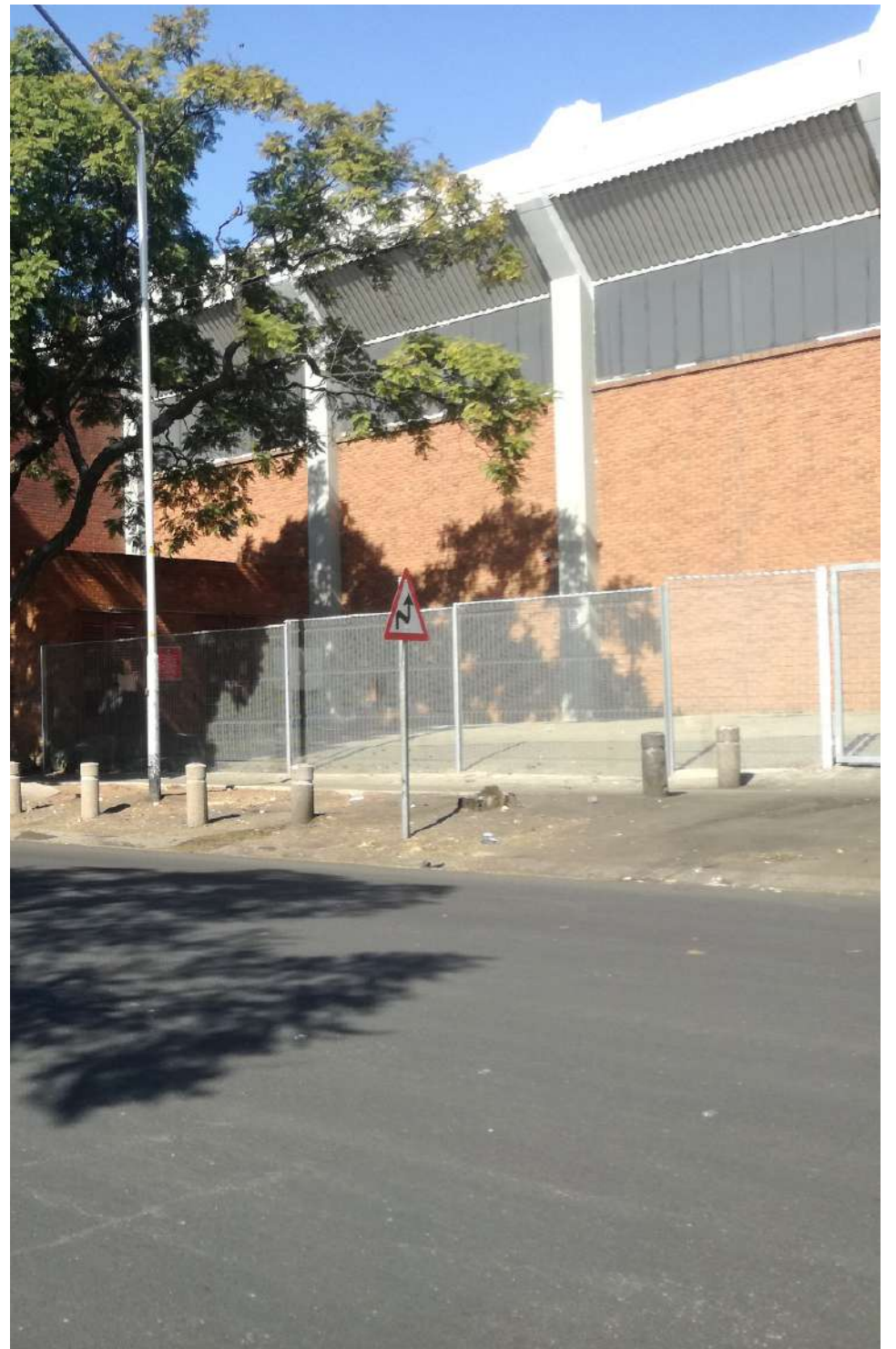
CHAPTER 4:

THEORY (THE PRINCIPLES)
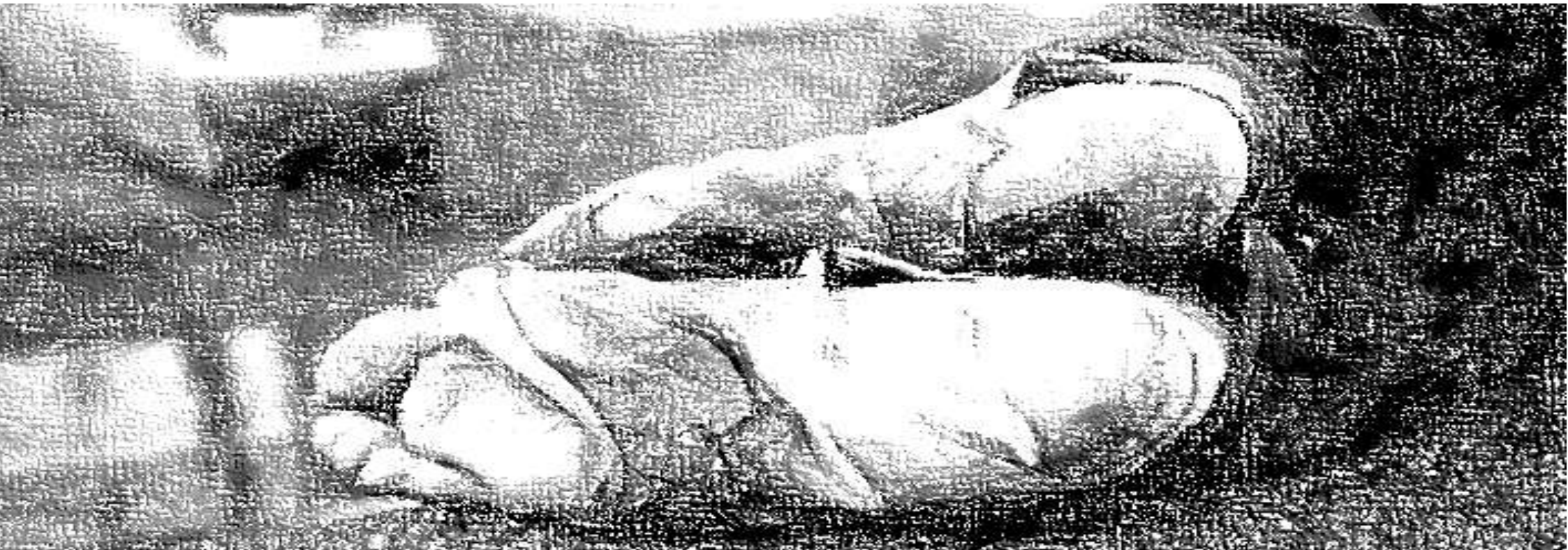
Introduction

In understanding how physical environments affect an individual's sense of identity, worth, dignity, and empowerment, it is essential that in designing supportive and healing environments for trauma-experienced users (Berens, 2015), there needs to be a consideration of notions that influence the interaction between a person and their environment. The creation of places and spaces, and how these spaces relate to their users, particularly those in vulnerable situations becomes integral to the design of those spaces and places. It should be however noted that the influence of these spaces is not necessarily specific to particular geographic places, nor on exact models or theories, but based on the understanding of places and the people that use them.

The essence of place then is not based on location, or function or community, though these aspects are important to sense of place, but from experiences, from the everyday life of the users or those that interact with the spaces. The sense of place then necessitates to be understood in the context of these aspects of human everyday life and experiences.

As stated by Relph .E, (2018:102)

"It is about the various ways place is manifest in our experiences, the characteristics of places as they are expressed in landscapes, and about how these are being increasingly threatened by processes of placelessness that weaken diverse experiences and identities of places."
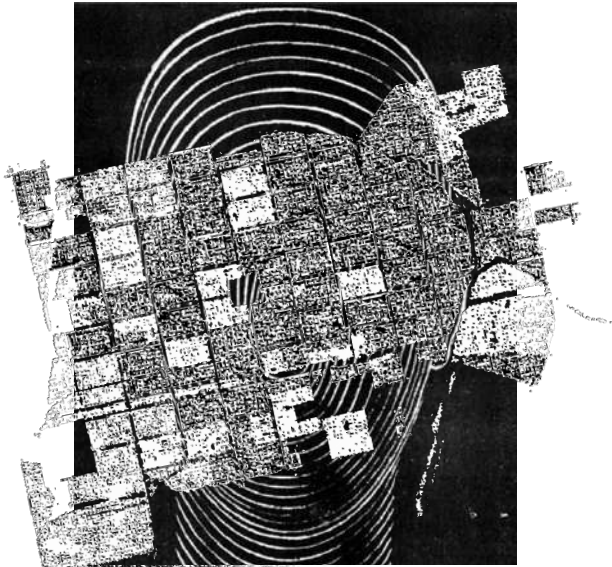
Sense of Place

"People affect places, and places influence how people see themselves".

A sense of place can be described as a place that one can relate to, connect with, interact in or have the ability for one to become. The idea of sense of place, is central to human existence and centres for meaning, even forming identities within a community and as an individual, it is stated to be rudimentary to how a person interacts or feels about a place (Tuan, 1977). This is not necessarily of geographic location, but speaks to an array of senses one has to particular place. It is noted that place has an influence on identity, where there is a rounded mutual interaction between people and the environment they live in, as stated by Hauge, 2007:37

Regarding this perspective, place has to be perceived as a profound, meaningful and indeed complex factor of everyday encounters (Relph Edward, 2018). So, the sense of place, or its opposite, placelessness is an exploration of the lived world experiences, of the everyday. (Relph Edward, 2018)

Najafi & Shariff, 2011, describe a sense of place as a central impression including the ways in which we feel about a place, their sense towards it, and in turn what values, emotions and concepts they assign to the place.

In this particular instance, the aspects of sense of place that are concerned have been identified as **Place Identity** and **Spatial Justice.**

A sense of place as an aspect of Place-Identity, is described as places becoming a part of our identity as it can give feelings of security, control and privacy, in addition people use this to distinguish themselves from others (Zakariya & Ujang, 2014). All these concerning place, can help provide; control, consistency, security, self-esteem enhancement, privacy, anxiety control, feelings of belonging and differentiation from others (Korpela, 2011; Twigger-Ross & Uzzell, 1996).
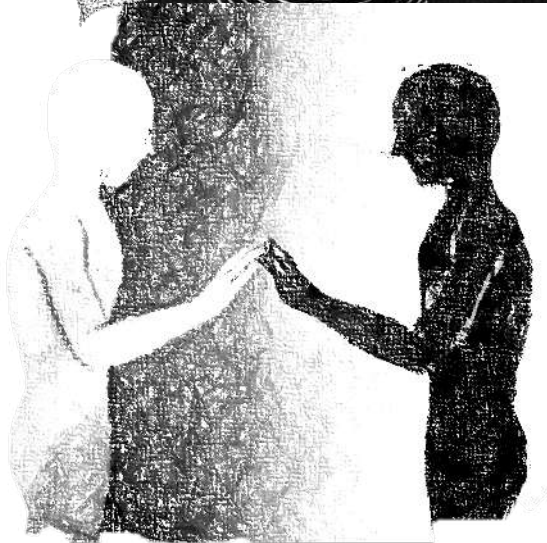

A sense of place as an aspect of Spatial Justice relates to the relationship between the spatial implications of architecture, and the social justice that it reflects in the public realm, as described through Edward Soja (2009 & 2010) theory. This relates to what spaces allow or do not allow; the relation between social justice/injustice and the spatial dimensions, and how these two characters interac

It can be noted that, many youths who find themselves homeless, become socially inept and suffer from low self-esteem. Many youths who find themselves homeless are socially inadequate and suffering from low self-esteem (Zubrzycki 1989), and is further suggested that fragmentation and reconstruction of families contributes to their self-reflection. It is therefore important to understand the importance of place and the aspects of spatial justice for children.

SENSE OF PLACE

It can be noted that, many youth who find themselves homeless, become socially inept and suffer from low self-esteem. Many youth who find themselves homeless are socially inadequate and suffering from low self-esteem (Zubrzycki 1989), and is further suggested that fragmentation and reconstruction of families contributes to their self-reflection. It is therefore import to understand the importance of place and the aspects of spatial justice for children.

Place-Identity
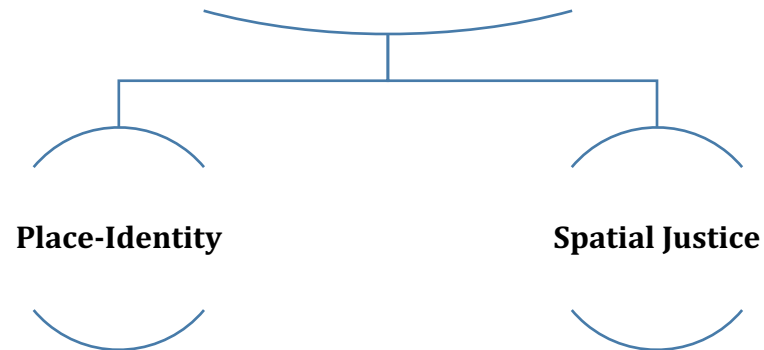
Identity is a dynamic product of the interaction between on the one side the capacities for memory, consciousness and organized construal which are characteristic of the biological organism and on the other the physical and societal structures and influence processes which constitute the social context (Breakwell, 1986).

Spatial Justice

The right to the city or citizenship may be acclaimed to the 'complex and fluid interaction of physical, institutional and socio-political landscapes' of the urban context. (Whiteford, 2008:88). This links together social justice/injustice with space (Soja, E & Harvey, D, 2010), that the organisation of space as a crucial dimension of human societies, and reflects influences of social space (Lefebvre, 1968, 1972)

Place Identity

Proshansky et al (1995:23) refers to place-identity as "the symbolic importance of place as a repository for emotions and relationships that give meaning and purpose to life reflects a sense of belonging and important to a person's well-being"

It is said that Place-Identity is established over time and not through activities that occur in a space, but the importance of place and its significance and meaning (Anton, 2016; Moore & Graefe, 2014). Proshansky further urges in support of this, but also emphasises that self is not just developed from self but from the environment in which self develops, with interaction of people and the environment, in a physical setting. Williams and Vaske, 2015, further argue, based on Proshansky's theory of Place-Identity, that place can enhance self-esteem and emotions of belonging, formulated by cognition and experience with places that cause one to self-regulate Korpela (2012). Where Anton (2016:25) states that 'Self-regulation needs consistency, anxiety reduction and self-esteem maintenance, and this is why places are used to achieve these.'
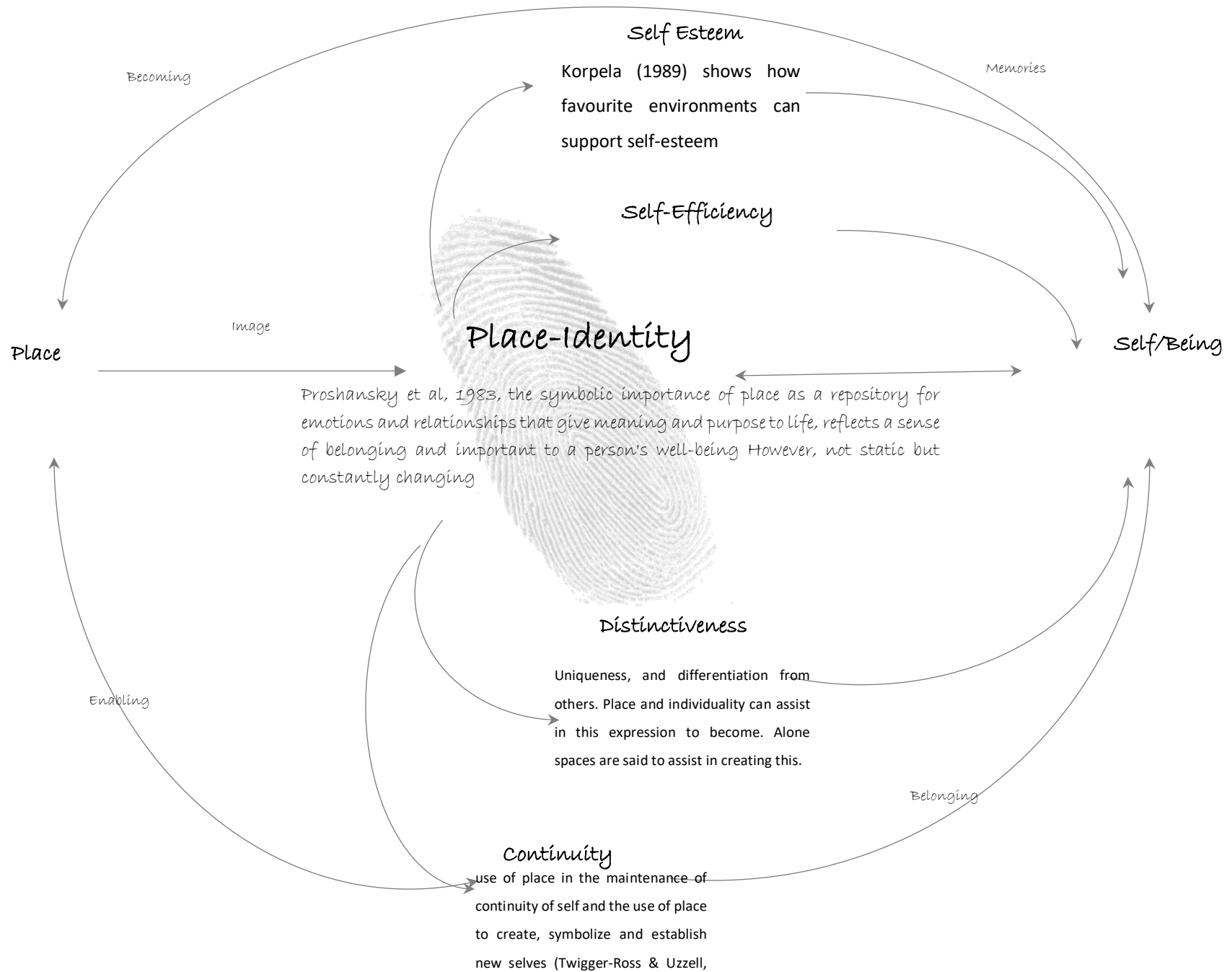
Hauge, 2007 states that in children, Identity develops as they begin to differentiate themselves from others around them, and similarly when the child begins to see themselves distinct from a physical environment yet related to it. Where the physical environment are settings where interactions occur, where places begin to represent personal memories or shared histories, where culture as a social process can occur, all leading to place as backdrop of these activities (Cohen, 1994; Breakwell,1983; Twigger et al, 2003). However, Hauge, 2007, does have permanent meaning, but rather their meaning is renegotiated continually and their contribution to identity is therefore not the same, but important, nonetheless.

As the programme is for children, aspects of place within their development becomes critical, and how this is expressed. As is said, that people often "remember their childhood home with feelings of affection and report their identity and character as being shaped by the places they grew up in" (Morgan, 2010; Anton, 2016). Breakwell, 1986:24 & Korpela, 1989 highlights the principles that govern place-identity as:

- Distinctiveness or uniqueness
- Continuity
- Self-esteem & Self -Sufficiency

Where **self-esteem** can be supported by favourite environments, or as children have said to have described a positive self-esteem to be gained from being in their own rooms in times of distress (Twigger-Ross & Uzzell, 1996), and **uniqueness or differentiation** can be created from these alone spaces. While the use of place in the maintenance of **continuity** of self and the use of place to create, symbolize and establish new selves (Twigger-Ross & Uzzell, 1996; Sadkowski, 1993).

It therefore becomes an important aspect of what the children's shelter seeks to create, how place can begin to influence identity development, which is an important aspect to children's' cognitive development, even when it is temporal, as is in this case. The shelter as a basis, provides a home for these vulnerable children, which as Cooper 1974, describes is a symbol of self, where experiences in place, such as home and its connected spaces like backyards or outdoors, can instil confidence.

Self Esteem

Korpela (1989) shows how favourite environments can support self-esteem

Becoming

Memories

Self-Efficiency

Image

Place

Place-Identity

Self/Being

Proshansky et al, 1983, the symbolic importance of place as a repository for emotions and relationships that give meaning and purpose to life, reflects a sense of belonging and important to a person's well-being However, not static but constantly changing

Distinctiveness

Uniqueness, and differentiation from others. Place and individuality can assist in this expression to become. Alone spaces are said to assist in creating this.

Enabling

Belonging

Continuity

use of place in the maintenance of continuity of self and the use of place to create, symbolize and establish new selves (Twigger-Ross & Uzzell,

The role of hidden spaces in a home is also said to be an aspect vital to social development, where these spaces enable one to experience the association of darkness and fear, and enables the individual to face difficulties (Korosec, 1984). That these places can help with physically and psychologically withdrawal, and hence assist those who have been homeless develop coping mechanisms where they can eventually leave aversive situations (Sadkowski, 1993).

Spatial Justice

Spatial Justice as adapted from Edward Soja, having three main aspects that make up Spatial Justice, these concepts being; justice, social beings and spatiality. Where he describes the complex interaction between social justice and spatial sphere as the ability of the environment to allow or not allow a connection of people with the built environment. This understanding of spatial justice or injustice begins to express how the spaces created can either oppress or enable our everyday activities. Sarah Bassett, 2013, from her adaptation of Spatial Justice definition by Edward Soja, breaks it up into three categories.

Which are: Spatial link, spatial power and spatial claim.

As described by Sarah Basset below

Spatial Link

"The ability to connect to and access other spaces"

This refers to a person's right to connect, and have access to a space. This may consider places that are in close proximity to transport routes, not cut off physically from being accessed, or are inclusive, where there is a physical connection to the public spaces.

Spatial Power

"The ability of a community to succeed in a space, or contribute to it"

This category refers to a person's right to succeed within a community, and equally positively contribute back to that community. This aspect would include the ability to grow and expand, and how the space can allow those beyond the boundary to express themselves in it.

Spatial Claim

"The communities' ability to live, work and experience space"

This aspect can be seen as an overlap of the right to the city, as it refers to a person's right to live, and work in an environment or place of their community, and additionally to experience the social platforms that are offered by that community.

Conclusion of Theory

This section summarizes the theoretical influences on the design of the shelter, to investigate the existing condition and explore how the design of the shelter can incorporate these theories to best fit the user.

Place-Identity

As discussed, the notion of identity in relation to experience of space, particularly spaces to consider that would relate to those that allow this, are:

- **Sleeping spaces** which are said to have impact on self as a place of withdrawal.
- Additionally, to consider are the spaces that are connected with becoming, or being, which are the **socially interactive spaces** such as outdoor areas, social spaces, which through interaction with others can build confidence, these can also be treated as front stage spaces.
- **Hidden spaces** such as nooks that allow individuals to face their fears and adverse situations, considered as back stage spaces, but also an opportunity to discover themselves through architecture.

Spatial Justice

As mentioned, spatial justice, which relates to the accessibility to spaces within a place, and how the architecture responds to the user or intended user, and how the spaces is socially just or unjust. The Spaces that can be considered as connected to spatial claim are:

- **Public-private interface**, shared amenities, multifunctional spaces, safety barriers.

For Spatial power, spaces to consider are:

- Spaces of **social cohesion, ability to express** oneself, **access to resources**.

Consideration for Spatial link would be:

- **Connectivity** and **accessibility,** through physical connection and the perception of being welcomed.

Place-Identity and spatial Justice have aspects which overlap or are interconnected. This shows the similarity in the notions, and that both are important to the expression of architecture with the interrelation to the user.

Creating an architecture which seeks to enable its users from vulnerable situations to dwell and relate to the environments such that they can have a sense of belonging, experience healing and start to come into their own.
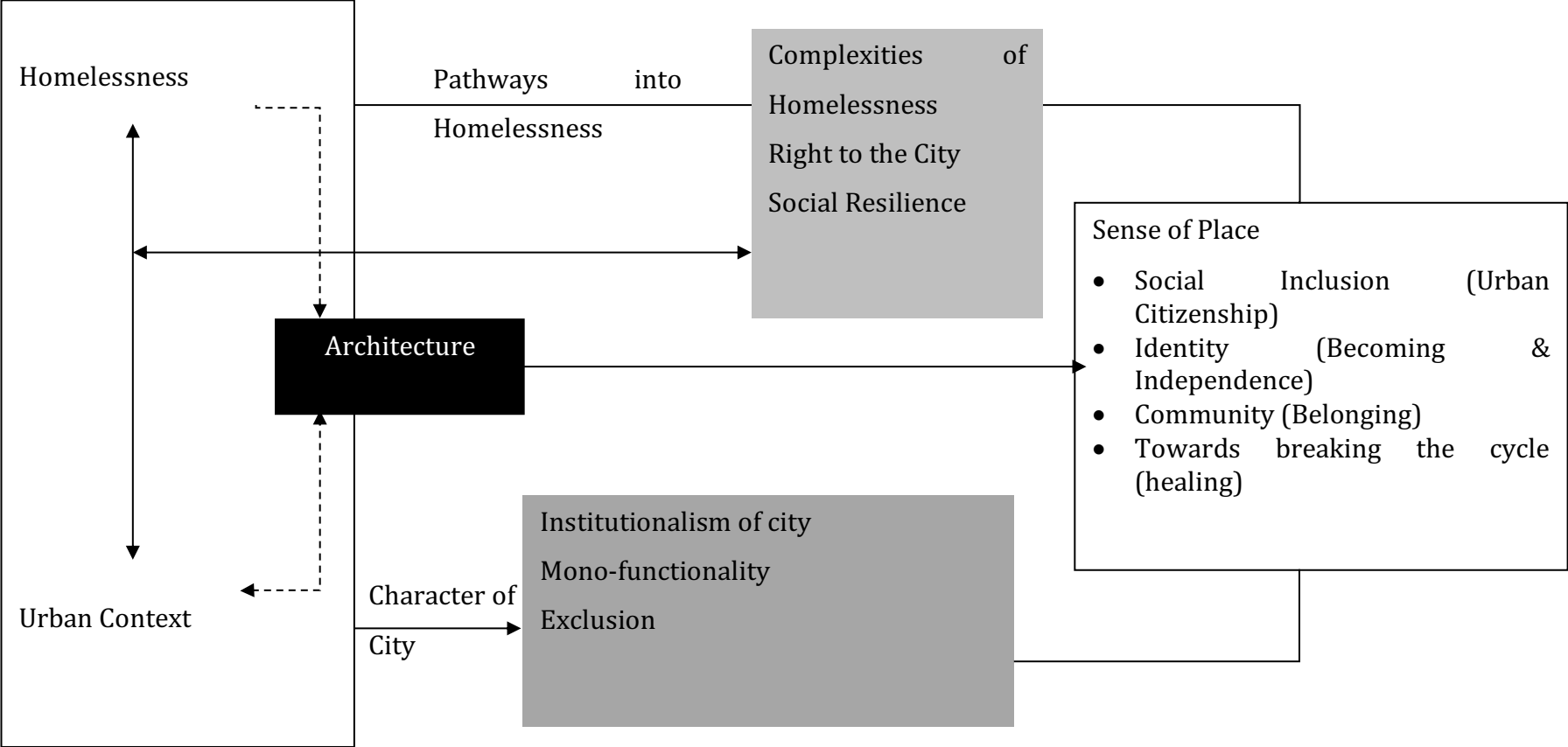
CHAPTER 5:

PRECEDENTS *(LEARNINGS)*

Introduction of Learnings

In this chapter, architectural precedents are analysed as lessons that can be adopted into the design, and how the theory used can be applied with the precedents to develop an architectural blue print for the design. The precedents indicate how the theory and analysis from the context, and the user group. The aspects under consideration are:

Precedent 1, which reflects spatial power which refers to the spaces that the community can express themselves in or access resources, such as the public spaces which are also multi-functional.

Precedent 2, Social Inclusion or Spatial link, which expresses connectivity and accessibility,

Precedent 3 represents Place-Identity that relates to social spaces, where connection to others within a defined community is integral,

Precedent 4, relating to hidden spaces, allow for discovering oneself through architecture, where architecture becomes exploratory.

PRECEDENT 1

Project Name: The Danish Foundation for Culture & Sports, Balling, Denmark, 2011

Architects: SEA and Elkiær + Ebbeskov Partners

"A home for everyone"

PUBLIC ACTIVITY SPACE

INSIDE - OUTSIDE
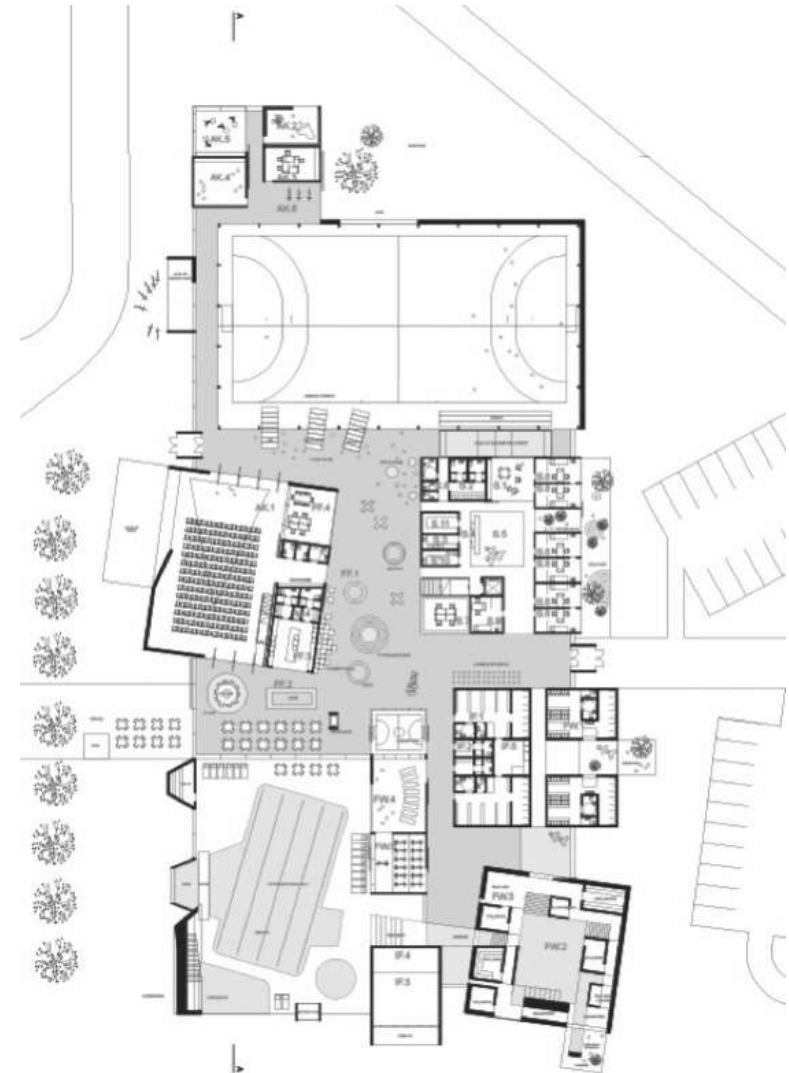
The sports centre caters for a variety of activities, which are both for individual enjoyment and communal interaction. The layout of the centre is arranged as a village within a village, with the main functions of the centre separated, so that they can be connected by squares and covered streets, to resemble the layout of the village it sits in. The connecting spaces creating play areas, and providing opportunity to socialize. This arrangement therefore encourages movement between the different buildings, and in essence enabling and encouraging social interaction. The fragmentation of the buildings allow for linkage spaces as thoroughfare for those passing to connect to other places.

The multi-functionality of the space, with activities that appeal to everyone, hence acquiring the name 'home for everyone'. The building typology is that of a 'collection of buildings' and moved away from a single building typology, which allowed for integration of the buildings in the landscape and forming the ability to create social/interactive spaces between the buildings, showing a new principal on multi-functionality.
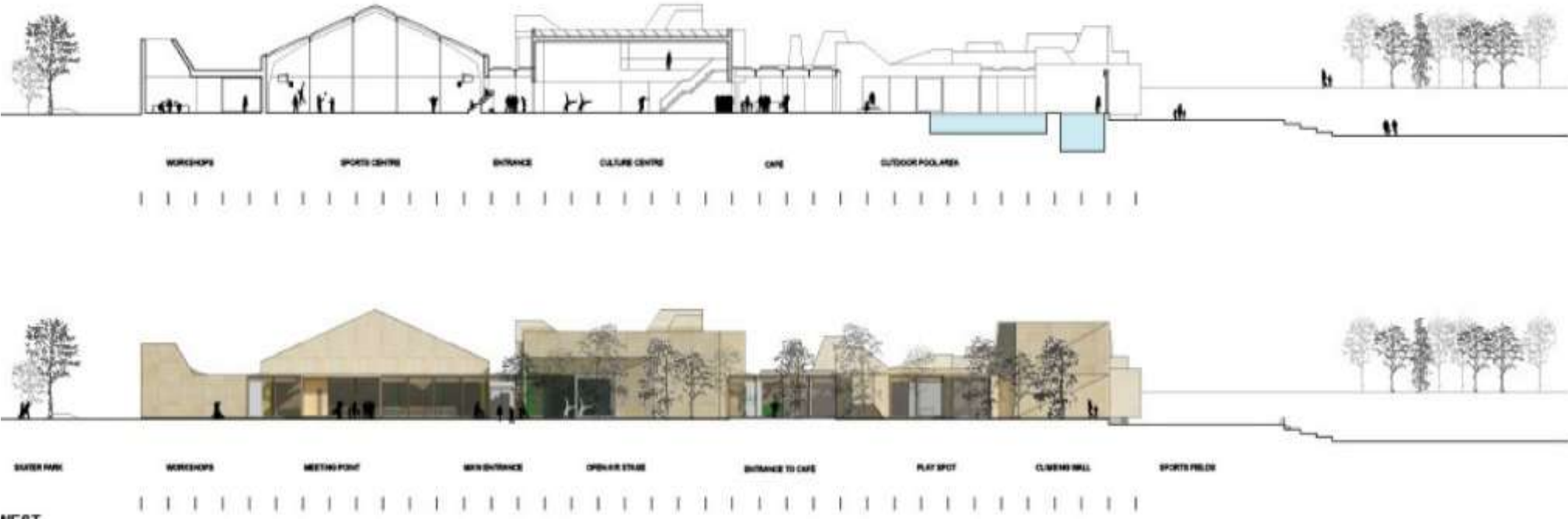
PRECEDENT 2

Project Name: The transitional Living Centre, Durban, South Africa, 2015
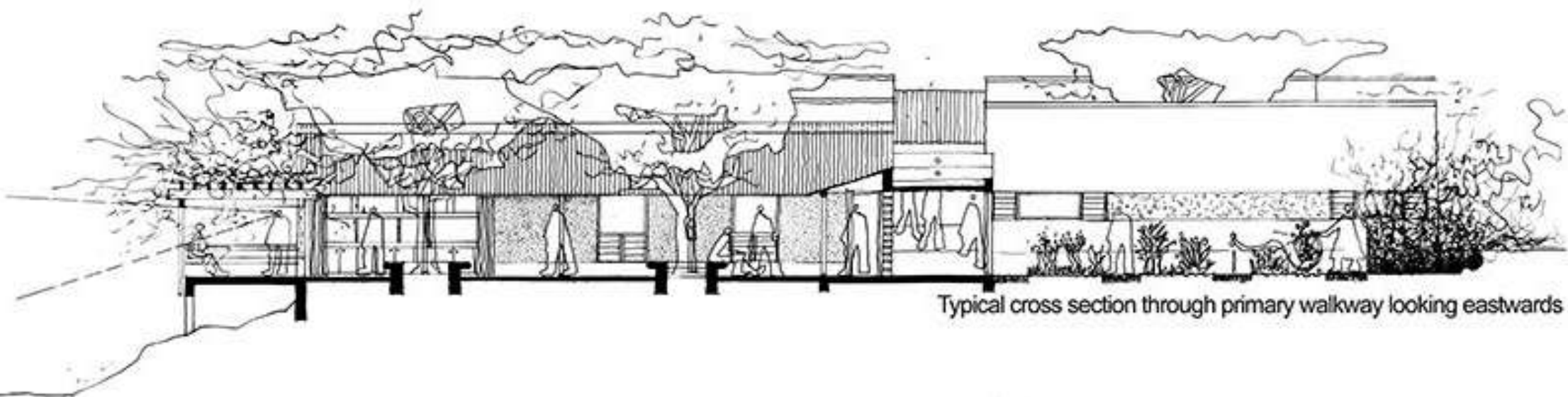
Architects: Neoro Architects

"The building as a City"

Designed along the street to structure and organise movement, this transitional living space sits along the length of the site. The organisation of space, implies the structure and order of the city it is in. The approach of this architecture is to adopt familiarity of the city it is set in, to give a sense awareness for the user, to be able to relate to the organisation of the city, to offer understanding of the centre through the city. As a centre for people with disability (physical and mental), the accommodation units are differentiated and organised around a separate courtyard, secluded or withdrawn from the street. The withdrawing of courtyards from the street edge is to provide security, with all spaces being universally accessible. The architecture here displays both the social inclusion and   connectivity to street and the city, through the expression of the architecture.
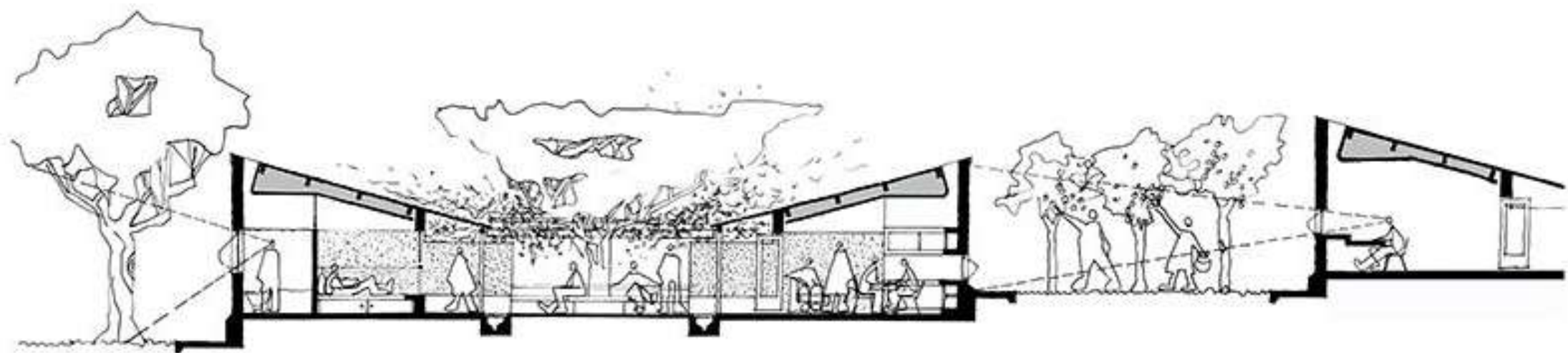
Typical section through courtyard between residentail units looking northwards

Typical cross section through primary walkway looking eastwards

PRECEDENT 3

Project Name: Eva's Phoenix Transitional Housing for Youth, Toronto, Canada, 2018

Architects: LGA Architectural Partners

"A neighbourhood within a neighbourhood"

The housing shelter was developed on an old warehouse as a community development for youth 16-24 years in the area struggling with homeliness. The front façade was kept relatively the same, so as to keep to the existing architecture. The roof was however replaced with sloping windows to allow light to flood into the interior, especially the social spaces. The internal communal space was designed as an internal street, with the living blocks facing it. The living blocks, designed as a series of communal blocks, to typically look like townhouses, similar to the architecture on the street. The ground floors designed to be the social/communal spaces which flow from the 'street' gathering space. The layers of how the living spaces were designed, allow comfort to the youth to decide whether to be a part of the social street space, or to watch

from a more secluded place, fig

GROUND   SECOND   THIRD

PRECEDENT 4

Project Name: Carl-Bolle Elementary School, Berlin, Germany, 2009

Architects: Die Baupiloten Group

"Spy with the shimmery cloak"

This centre is a space created under the idea of a 'spy with the shimmery cloak', as an exploratory learning space. The elementary school, which is full-time school, is designed with the leisure areas in areas near learning areas, so that it allows for a rhythmical exchange between play and learning, as a result the school is not only designed to be an educational institution, but also play space. In including the school's motto of 'language and movement', the design of the connecting hallway was created to experience the architecture through 'exploratory learning'. Through new acoustic and optical design applications, the children use scientific playful environments. The spaces allow exploration of spaces, through discovering hidden spaces, nooks and crannies, these spaces meant to encourage curiosity spirit. Fig. 27 depicts the phenomenological aspects of experiencing space through the senses, through the renovation of the existing part of the building, a mysterious and magical entrance is designed to celebrate the historic portion of the building. This is the entry and exit of the building encourages the dreaming aspect of a child, called the 'twinkling gate'.

FLASH-PUFFS
Set particles in motion through invisible and noiseless air streams and marvel at the haphazardly emerging flashes.

AFTERGLOW
Track down other kids. Feel the impression of coloured light and manipulate the space by yourself.

CODES
Develop codes to communicate with others. Get to know abstract forms of language.

COMPLEMENTARY COLOURS
Discover the colour wheel through complementary colours. Experience contrasting atmospheres.

READING HATCHES
Retreat and concoct a plan, or just get away from everyday school life by reading a tricky detective story.

PERISCOPE
Learn the functionality of a periscope by playing with one. Question spatial perceptions. Push the limits.

SPY CELL
Spy on other kids, become sensitized to the surrounding space, and sharpen the senses.

CRISSCROSSER
Rhomboidal openings serve as rungs and encourage the perception of one's own body.

SENSITIVE LISTENING
Activate sounds through motion and make music. Listen to music and eavesdrop on other kids.

LIGHT CONDUCTOR
Experiment with light and learn about the principles of light. Illuminate and uncover dark spaces.

RAINBOW SPECTRUM
Camouflage yourself with light and become invisible. Explore the colours of the light spectrum. Create additive and optical colour mixtures.

TWINKLING GATE
The kids are drawn in and catch a glimpse of the luminous tints and blurred silhouettes of the Spy World.

TWO-SIDEDNESS
Explore different perspectives. Experience changeability. Kids can sense and discover new worlds behind the appearance, allowing them to slip into new roles at will.
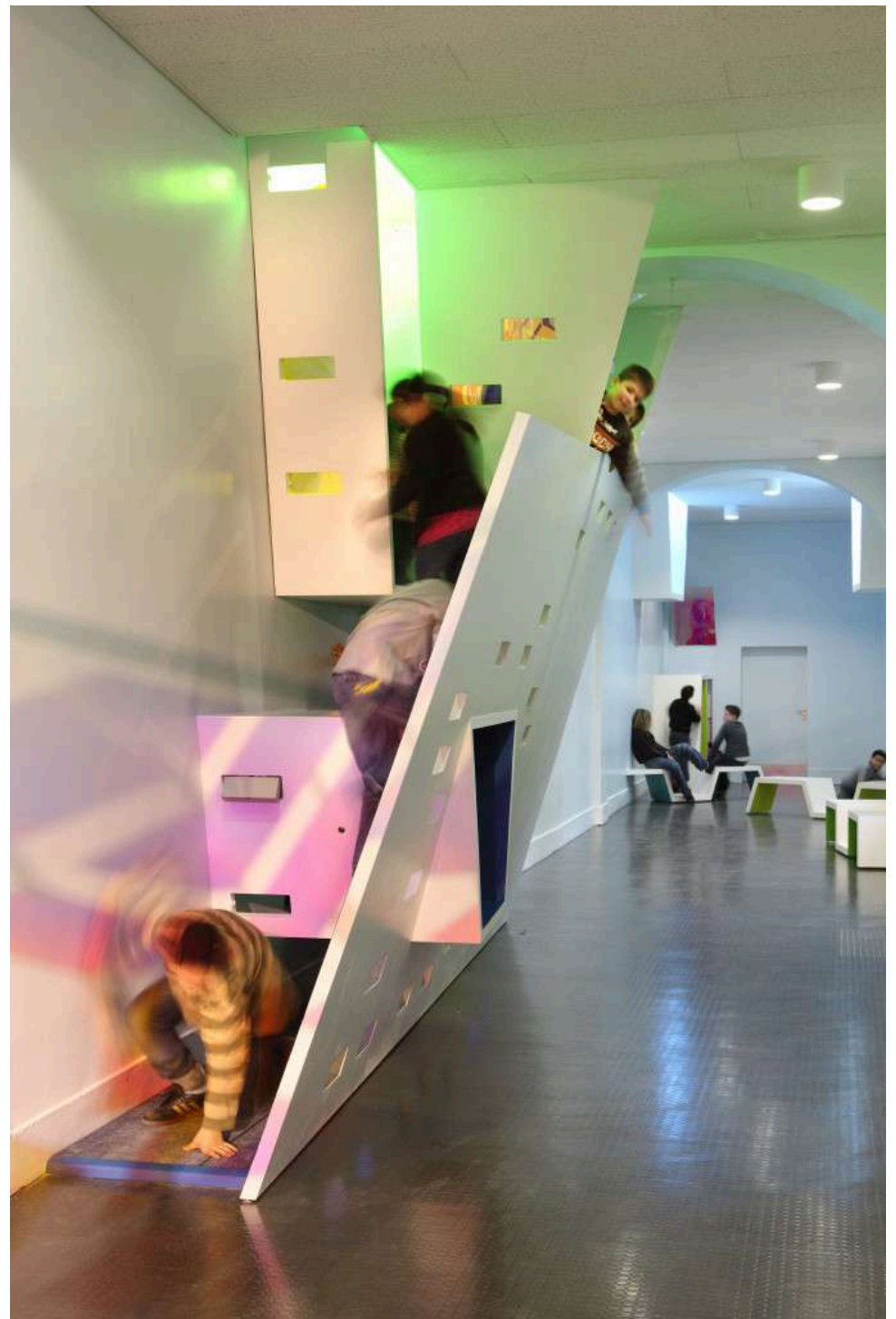
Conclusion on Precedent Learnings

The precedent studies are used to learn how architecture can be applied based on the theory, where hidden spaces are used to achieve creativity and curiosity yet satisfy how a child can use these spaces to confront their fears. Further learning is how interactive social spaces can create a feeling of belonging and connectivity to others.

The precedent studies exemplify how architecture can act dually to be both inclusive for everyday users and the street connection yet allow for exclusivity to provide for the users' safety. From the principles learnt, these can be applied to design development and have also led to the concept and ideas of what a Shelter for Children is.

CHAPTER 6: *(THE IDEAS)*

Introduction

As the programme is a 'Shelter' for children, in this chapter, the concept of a shelter is explored to understand what a shelter means, and how this meaning of a shelter can begin to relate to the development of the design. The chapter explores the original meaning of shelter as explained trough different meanings of the use of the word, and how it has been used through time.

In explaining the meaning or the understanding of shelter, this chapter also relates it to the meaning of dwelling, and how these aspects within architecture and the design relate.

The Idea of Shelter

'Not just A Shelter'

The notion of a shelter is one that may be considered as simply a temporal place, however it could transcend the mere lack of place, to become a place of intersection of struggles/oppression, fears and opportunity, where one can belong and become, understanding homelessness as far more than just a lack of shelter.

The definition of 'Shelter' though, has changed significantly through time, where the start of the use of the word in architecture defined it as a form that protects one from the weather elements as a basic notion, as described by the oxford dictionary. Still according to Oxford dictionary, the original meaning of shelter came from the word 'shield' which means to protect or find refuge. The original word then reflects that shelter is not just a roof over one's head but in a sense a place of protection or a place of refuge. The original word then reflects that shelter is not just a roof over one's head but in a sense a place of protection or a place of refuge. It is said that the word shelter started being used formally in 1850, by the Salvation Army as a place for temporary lodging, as a result of the many vagrants from the end of King Philip's war (Oxford Dictionary).Through these definitions of the word shelter, it is evident that shelter is not just a roof over one's head, but a place of refuge, a place that allows one to dwell.

Origin of Use of Shelter

Shelter as Verb

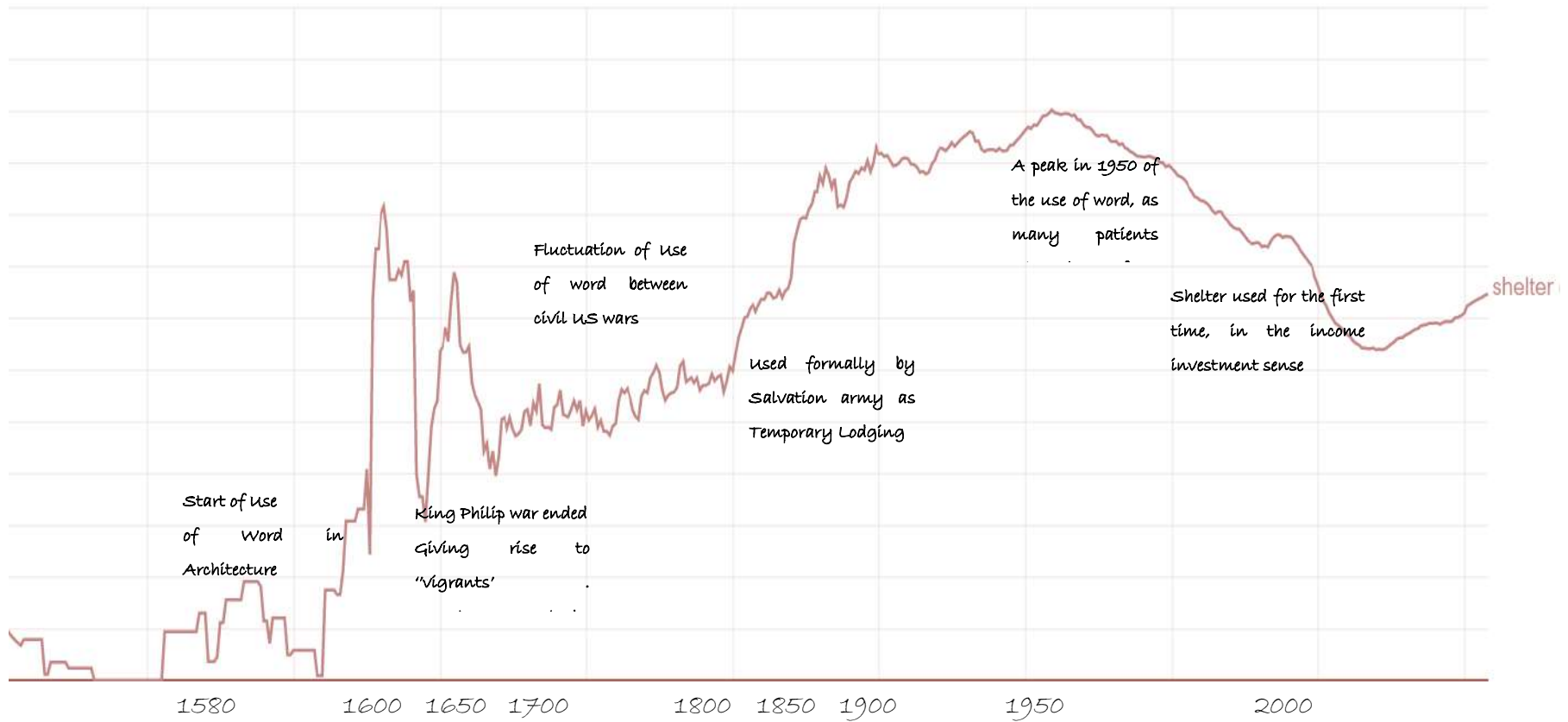Protect or shield from something harmful, especially bad weather,

- find refuge or take cover from bad weather or danger.

Shelter as Noun

A place giving temporary protection from bad weather or danger

Shelter as Noun

a shielded or safe condition; protection

A peak in 1950 of the use of word, as many patients

Fluctuation of Use of word between civil US wars

Shelter used for the first time, in the income investment sense

Used formally by Salvation army as Temporary Lodging

Start of use of Word in Architecture

King Philip war ended Giving rise to 'Vigrants'

shelter

1580 1600 1650 1700 1800 1850 1900 1950 2000

The Idea of Dwell

'To remain in Time, or stay in a place'

Heidegger suggests that to dwell relates to the way in which we exist, and shelter allows or does not allow this to happen. He states that "the basic character of dwelling is to spare, to preserve… dwelling itself is always a staying with things. Dwelling, as preserving, keeps the fourfold in that with which mortals stay: in things" (Heidegger 1951:150). He carries on to seek the meaning of what to build is, which he says is 'bauen', meaning to dwell, he therefore draws the conclusion that buildings (shelter) are dwelling spaces. As mentioned, "We do not dwell because we have built, but we build and have built because we dwell, that is, because we are dwellers" (Heidegger 1951:15).

It can then be conceived that we build to dwell and this is not to say that to dwell is permanent, but it means to allow for activities of human beings to happen. So then dwelling is to inhabit space and to exist. Therefore, as architecture is dwelling places, but is however a product of change as continuous layers of sediment (Schultz, 2015:101), as our buildings and cities are exposed to continuing change through additions or subtractions according to variety of influences such as the physical changes, social structures, economy or even transportation (Schultz 2015: 20), then the way we dwell can change and be expressed in different ways. As a building its self is created by a series of layers, to separate the inside from the out, to define and create spaces.

'Architectural layering will reflect the realms of time, space and material' (Schultz, 2015:12). This is much like the existence of dwelling, where time and space create a material place to dwell, where the elements of space themselves create spatial demarcation.

As expressed by Schultz, 2015:19, 'Layering allows varying expressions, articulating different functions and messages, within one structure, altered through time'.This layering is much like the lives of the homeless, as layers through time, through different experiences of their lives. These layers being through the experience of a lack of shelter as refuge & safe space, and a lack of ability to truly dwell in a space.

In conclusion, how can architecture enable its users, who are from vulnerable situations, to dwell and relate to the environments such that they can have a sense of belonging, experience healing and start to come into their own. This being the architectural intent.

Architectural Intent

The architectural intent is based on the concepts of Shelter and dwelling that have been explored to draw parallels in the understanding of what a shelter can truly mean to its inhabitants. This is also synthesized with the findings from context analysis, theory attached to homeless children and precedent studies, which form the blue print or informants that drive the design decision process. The architecture of the shelter will therefore:

1. Respond to context through mapping investigation, where the interface of the building with the street extends itself to encourage interaction and inclusivity, creating a new architectural typology of the building relating to street and not as blocked off from street social integration and interaction. Where street activity is not encouraged, the façade depicts this with solid edges.

2. Reflect how social justice is designed for, using theory and precedent study analysis, by deinstitutionalising the architecture to relate to children, creating spaces of spatial power, linkage and claim. The expression of the design speaking to the **relation** of the building to other existing buildings, how the architecture can **empower** the users to develop, to heal and become.

3. Express spatial justice, by enhancing the public interface of the street front to the main street to create socially just spaces, assuring that **connectivity** to the street is encouraged. Spatial justice notions are further used in access to resources, through the **shared used of spaces** or activities with the main users of the space, and the general public.

4. Responding to shelter as a means of **security, safety** and **refuge.** Exploring the ability of the architecture to have a sense of being **a shield**, not only for the weather, but as a psychological sense of security for children who have experienced loss. Use place-identity concepts to develop spaces such as **sleeping spaces** that allow for **privacy** at the same time to be a part of a **collective**, that express uniqueness within a collective, however offering as spaces that offers the character for spaces withdrawal. Further to this, place-identity concepts will be used to guide design in **social spaces** and **hidden spaces** to encourage creativity, and facing fears.

5. Finally, the exploration of how spaces can allow us to dwell. For children, especially those who are vulnerable, or have experienced loss, it is spaces that are social, can allow for private space, can integrate from inside to outside, all of which can **encourage play**.

A tool kit or design guide is developed on the basis of the analysis of the architectural intent, to guide the design principles and design decisions made.

DESIGN TOOL KIT:

INTERACTIVE & INCLUSIVE THROUGH THRESHOLDS

Where the interface of the building with the street extends itself to encourage interaction and inclusivity, creating a new architectural typology of the building relating to street and not as blocked off from street social integration and interaction.
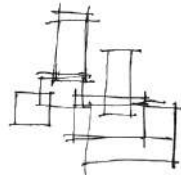
Overlap of spaces, creating, Thresholds through different planes
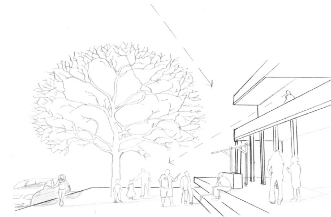
Interactive street front, offering seating, pausing and accessibility to architecture
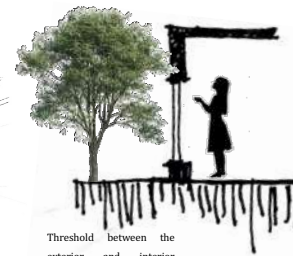
Threshold between the exterior and interior allowing visual connection as well as being porous.

CONNECTIVITY WITH STREET

Express spatial justice, by enhancing the public interface of the street front to the main street to create socially just spaces, assuring that **connectivity** to the street is encouraged.

Threshold between the street and the building not harsh, overhangs on the frontage to blur street edge.
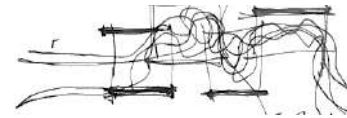
Easy accessibility between street and building, continued interaction of street and building allowing spatial claim.

RELATION TO EXISTING BUILDING & SHARED RESOURCES

Spatial justice notions are further used in access to resources, through the **shared used of spaces** or activities with the main users of the space, and the general public. Creating spaces of spatial power, linkage and claim. The expression of the design speaking to the **relation** of the building to other existing buildings

Familiarity of building material providing comfort. Research has shown that children respond differently to different material and experience different stimuli from interaction with different material. Research further states that a variety of shape, colour and other environmental aspects increase children's ability to discover, understand and grow.

SAFE AND SECURE, REFUGE

Responding to shelter as a means of **security, safety** and **refuge.** Exploring the ability of the architecture to have a sense of being **a shield**, not only for the weather, but as a psychological sense of security for children who have experienced loss
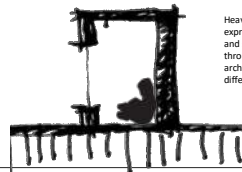
Heavy strong expression of safety and security through the architecture, in different planes.


In plan view, an impression of embrace from the architecture, a sense of a shield and place of refuge.

PLAY AS PART OF EVERYDAY

THE REGGIO EMILIA APPROACH which values the child as strong, capable and resilient; rich with wonder and knowledge.

Every child brings with them deep curiosity and potential and this innate curiosity drives their interest to understand their world and their place within it.

A HUNDRED LANGUAGES………………ALWAYS A HUNDRED
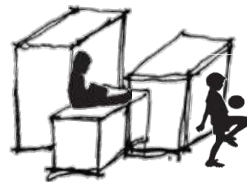
Spaces to climb under, over, jump over and sit in. Noisy spaces, quiet spaces…..

Alone spaces, together spaces….

PLACE-IDENTITY THROUGH SLEEPING AREAS AND HIDDEN SPACES

Place-identity concepts to develop spaces such as **sleeping spaces** that allow for **privacy** at the same time to be a part of a **collective**, that express uniqueness within a collective, however offering as spaces that offers the character for spaces withdrawal. Further to this, place-identity concepts will be used to guide design in **social spaces** and **hidden spaces** to encourage creativity, and facing fears.
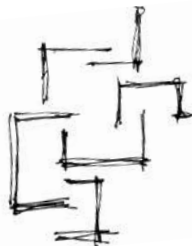
Spaces that allow seclusion, hidden, allowing discovery. Interconnected but allowing for privacy….a maze or labyrinth effect, which is noted to be therapeutic.
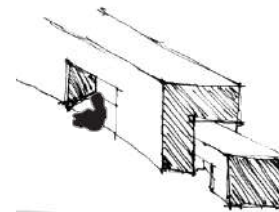
CHAPTER 7:

DESIGN DEVELOPMENT

In this chapter, the discussed architectural intention, which encompasses the investigated areas of context, theory and concept, are used through an iterative process to develop an appropriate architectural response. There are four (4) iterations, the fifth being the final iteration, through which the design is explored.

Iteration 1- Thresholds & Integration with surroundings

"All the structures in the town get their identity most clearly from the fact that you pass through a definite gateway to enter in...it is this gateway acting as a threshold which creates the unit" – Christopher Alexander, A pattern language.

Iteration 1 explores thresholds, and the ability of the architecture to integrate with its surroundings, especially that of the relation to the street, the main busiest street being Struben Street. Threshold as explained by Bhonsle Kirti, 2010:31 as 'an in-tangible moment that delineates spaces from each other'. The design begins by investigating the threshold of the building and the street. However, as discussed, the architecture in the area is very harsh and non-interactive with the users or not inclusive. Through this iteration, the exploration of how the front edge of the proposed building, which is the most active side, can relate to the street. On the eastern edge of the site, there is a church, which is taken up as part of the scheme. A church as seen in the mapping investigation, as an integral part of giving back to the community, fits well with the proposed shelter. The process of creating an inclusive architecture, where the building façade opens to the street and encourages interaction. Further to this extending to the block vision to create the interactive walkway, by increasing seating areas in the northern facade of the building and by extending the building beyond just the edge of the street building fabric.

Fig showing the intent of design, interaction, core in the center, exclusive spaces.
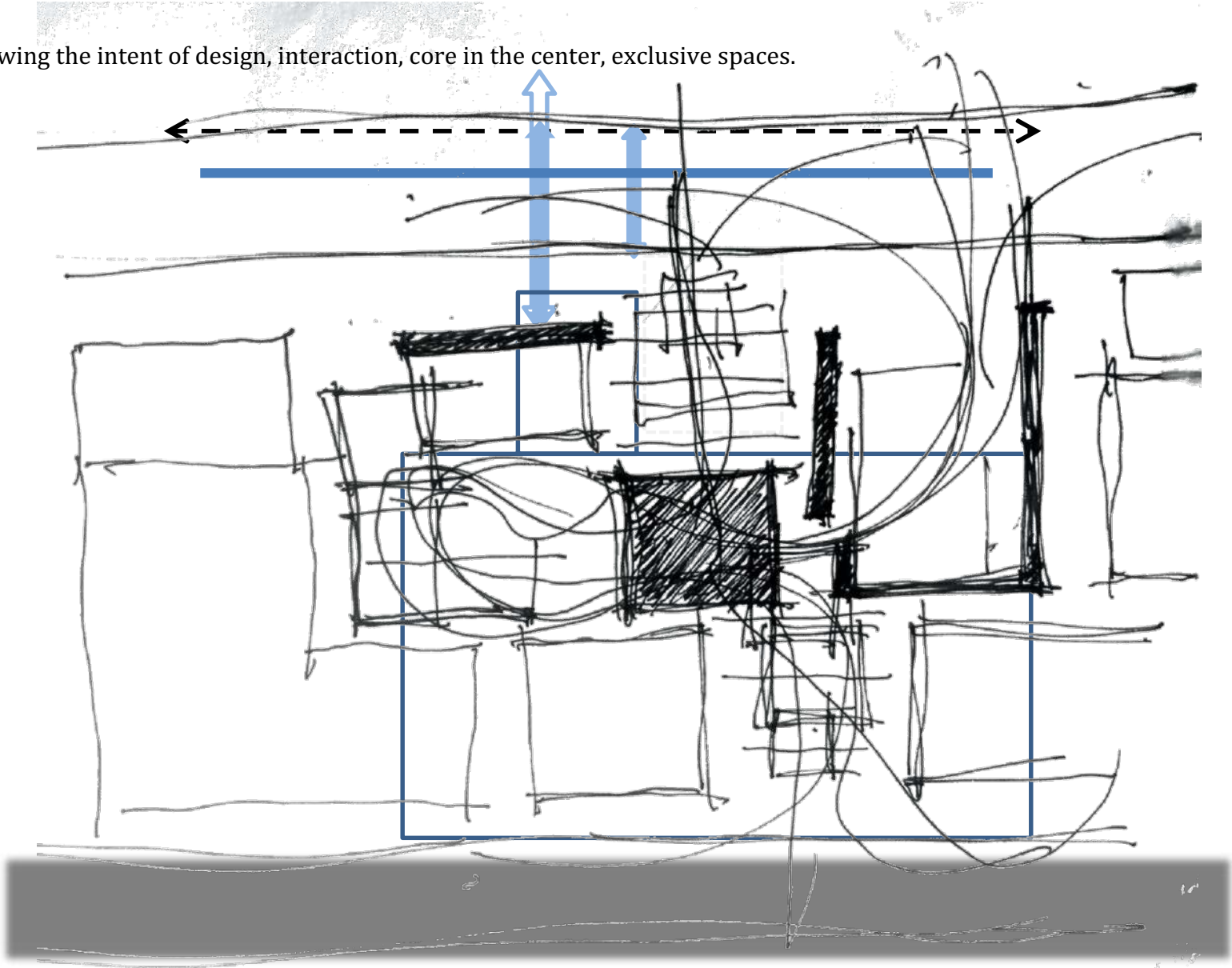
In the conceptual model, the front of the building integrates with the street to create inclusivity, where the threshold of this area almost becomes a part of the street. As described by Mathota, 1999, that the streets are progressive spaces which lead into the building and should create a livable space and transition for movement into the building. Mathota further states that the articulation of this space should both allow for livability and conveyor of people into the building.

Sleeping area. Overlooking the building. Different

Front as a room to the street. Interactive, stairs
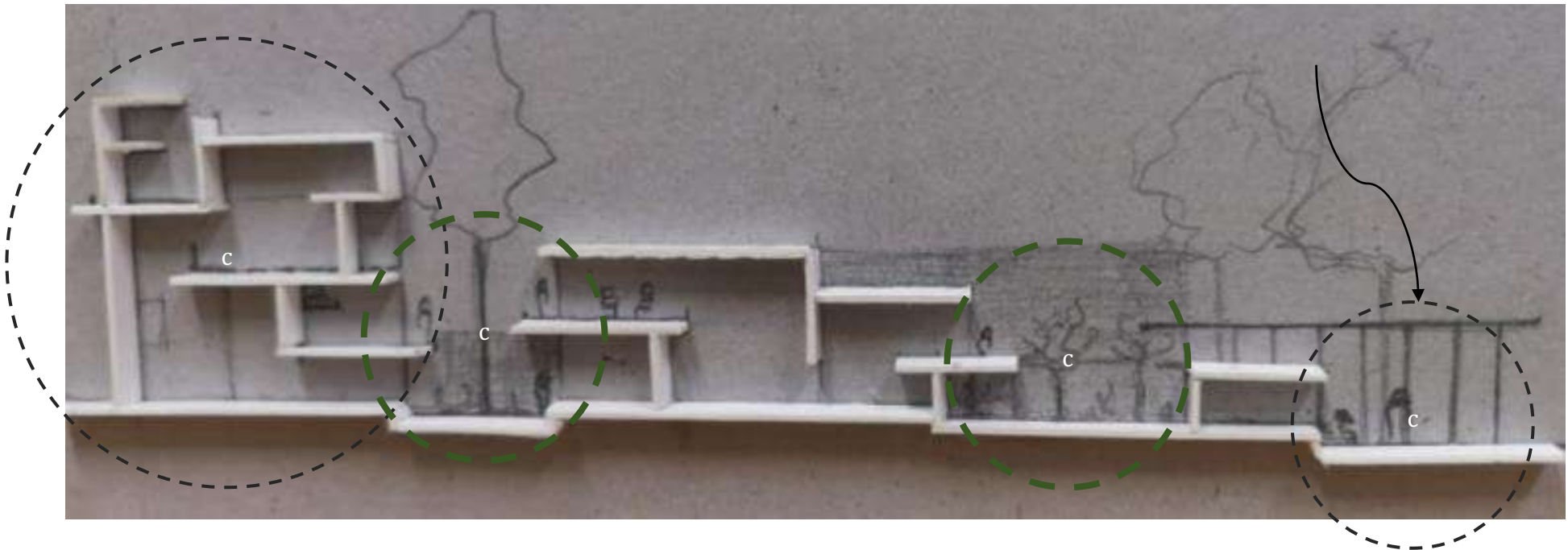
As such, programmatically, the front spaces of the shelter are resolved as public spaces to be used by the general public to create that deliberate connection with the street. The front of the building, which is an important building edge and the main entrance of the building Since this would be considered the main entrance of the building though, an entrance that is not directly open to the street for the side of entrance to the shelter is tucked away on the side.
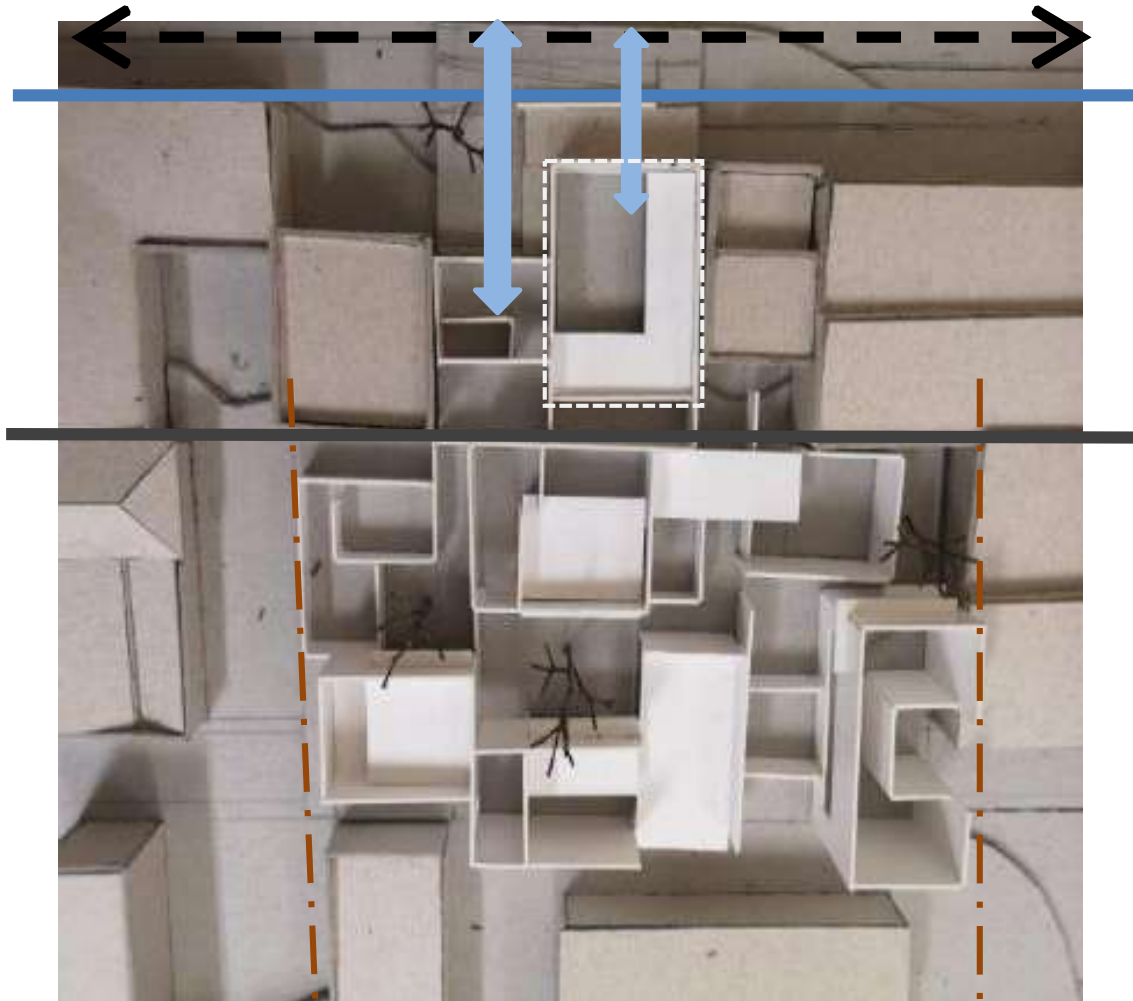
The next threshold defined through its arrangement of spaces of how spaces begin to become semi-private, an exchange area which is then defined by the programmatic arrangement of spaces.
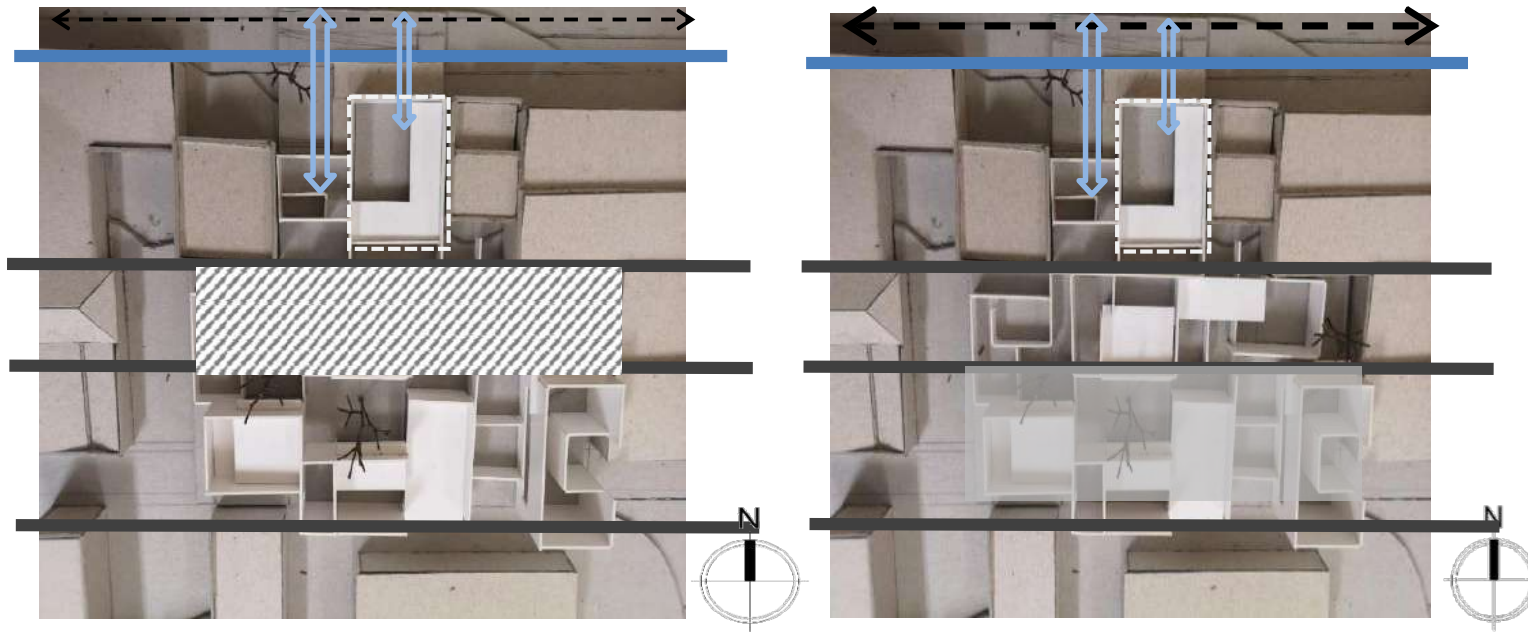
The exchange area being the spaces connecting the public areas and private areas. Bhonsle Kirti, 2010:32 further states that the expression or ability of a building to 'suggest rituals that guide one through a journey of exploration constitutes the richness of the architecture'. The furthest spaces from the busy street edge, are areas to seclude, which take advantage of the quieter part of the street. To fully take advantage of this street, cul-de-sacs are created on either end of the building to stop movement through this street, however still allowing for access for the surrounding buildings into their parking yards.

As expressed by Schultz, 2015:19 earlier in the book, 'Layering allows varying expressions, articulating different functions and messages, within one structure….' This notion was explored with the different spaces layered to form transitions through space.

The threshold exploration was not just with the street edges, but with the internal edges and spaces as well. Where the boundary between inside and outside is blurred to create environments that are interconnected. However, where the need to define distinct controlled access to the building, bold and intentional distinctions of space through material and scalability are used to express this.

Reflection

On assessment against the design toolkit, the spaces created have achieved the separation of spaces that differ from another by the method of overlaying, expression of thresholds through a series of courtyard, however, the small courtyards created would be impractical. The courtyards would create more dead spaces as they would constantly be the shade of the building receiving little light and would not form livable spaces as intended.

However, the scalability of the front façade is feasible and will be explored further, as well as the use of the street as a livable entrance to building and convey people to the building with expression of ease.
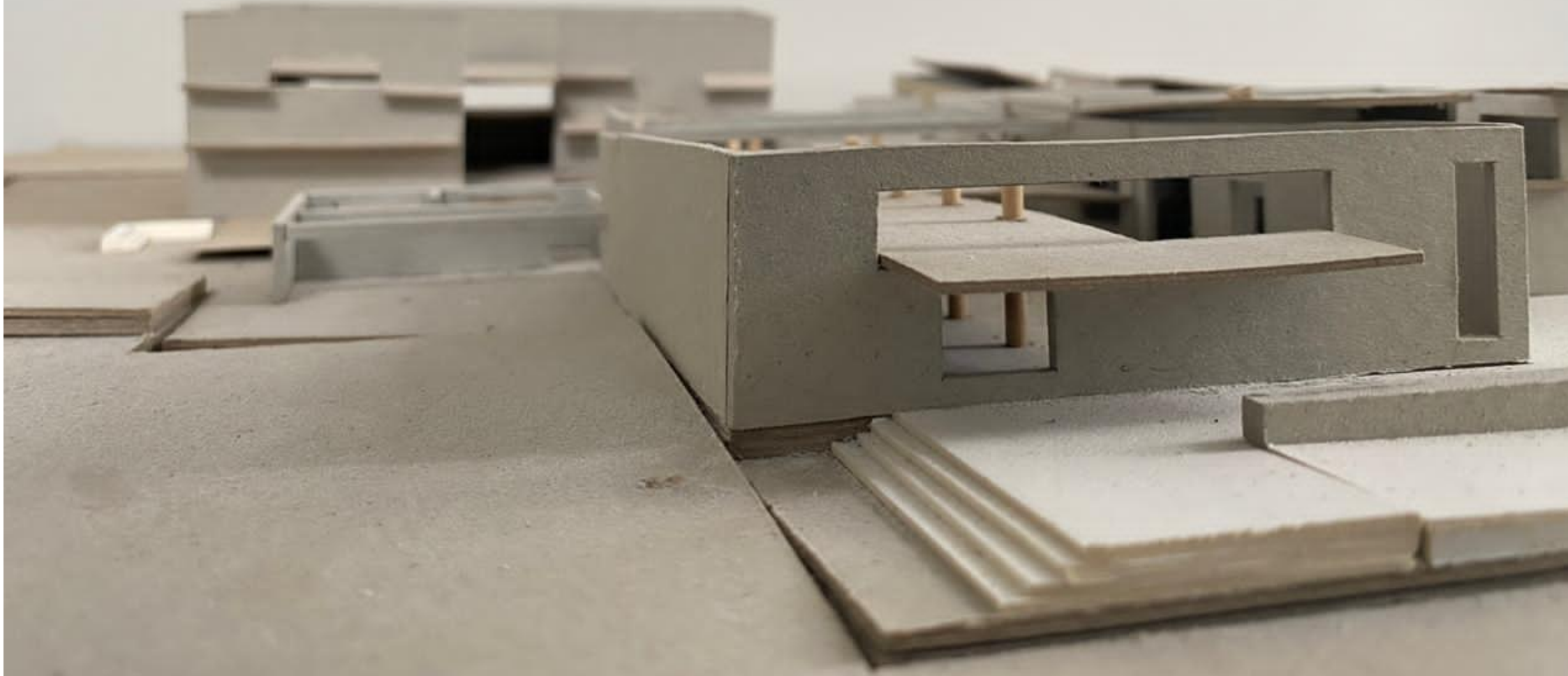
Iteration 2- Connectivity, Shared Space & Multi-Functionality

Iteration 2 explores the shortfalls in iteration 1, and further explores shared spaces and multi-functionality. Firstly, the connectivity with the street as a significant part of the relation to the street, which expresses the permeability of the building is explored as a continuation and further exploration of the front façade of the building and threshold from the street.

The streets are said to be places where people coexist collectively and experience connection. The street is thus an integral part of the building edge, and to an extent forms part of the environment created in a building (Simas D. Camila, 2017), "The streets tell our story". It is to this end, that the main entry street edge should enable a livable, habitable space, with visual connections and physical connections.
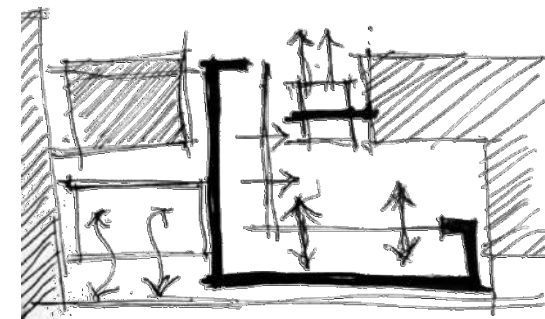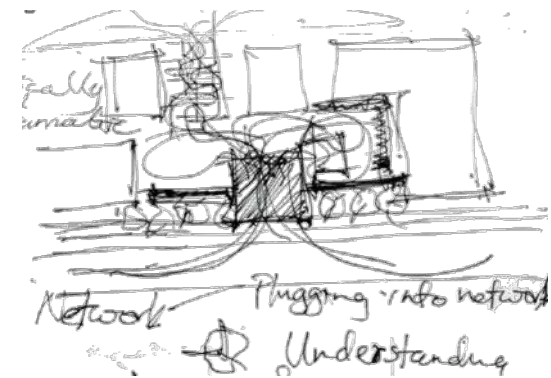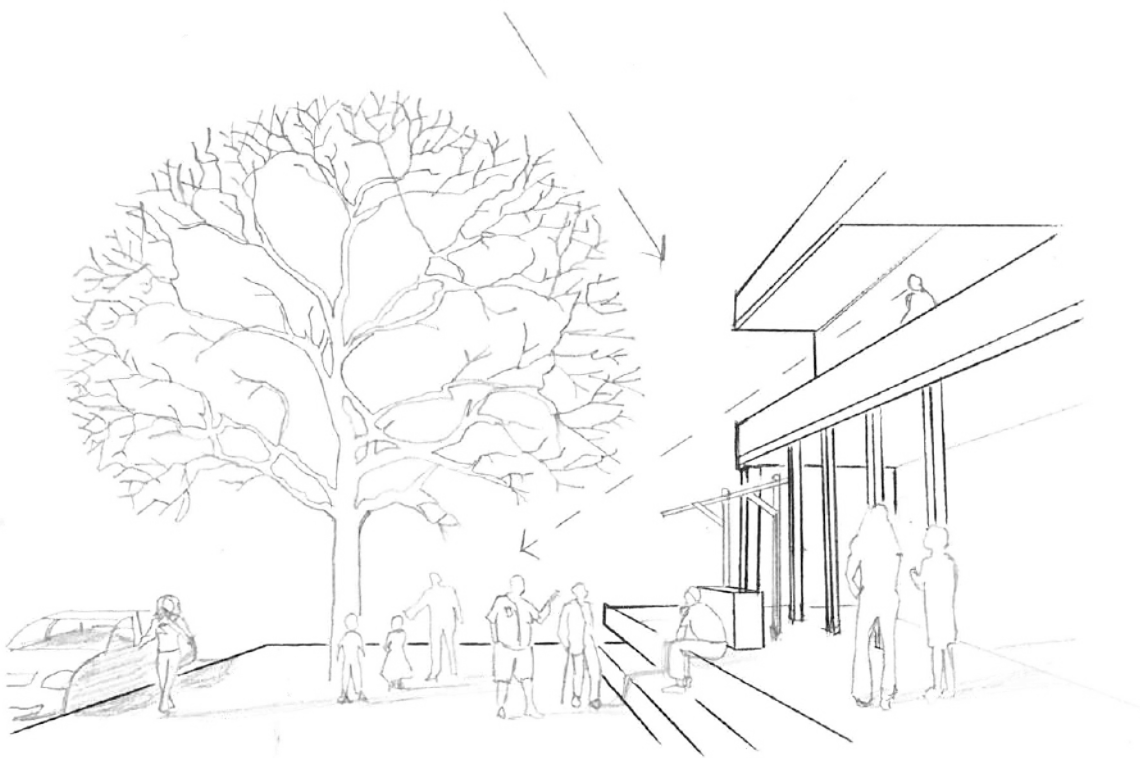
Iteration 2 further investigates the multi-functionality of the spaces and how they respond to each other and the street edge, through the learning of the precedent study, The Danish Cultural Centre: A home for everyone. "A multi-functional space can be described as a true integration of different functions in time and space" (Brandt & Vejre, 2004), further explained as being different from a mixed use space. The spaces are organized together programmatically, and allow for interaction between them, to both provide for social spaces and connectivity through open spaces. The open spaces take advantage of green spaces in between to allow for nature to integrate itself within the internal space of the building. The previous iteration had smaller courtyard spaces which did not function well as these would not allow light in them, and in this iteration, the courtyard spaces are therefore reduced in number, and their area increased. This exploration is done through layout drawings and models.

Though the Shelter is not primarily a learning facility, the architecture intends to enable learning as part of its multi-functionality. According to Dudek Mark, 2005:48, "Playing is part of this training and prepares us for more complex physical and intellectual activities that come later in life". He asserts that activities which are in turn life skill can be learnt through play, such as crossing a busy road or even moving through a busy airport. It is therefore of utmost importance that the architecture allows for developing such skills in children to enable their development in agility and intellectual responses to life. This aspect is so much more important in these particular users as their prior development may have been limited, and the stimulation of this would be even more to such a group. It is for this reason that it is important to create spaces that are diverse in landscape, within in the child's own size and developmental stage, so that all children can take part and that spaces become places of wonder and inspire. Again, a series of spaces are used to create thresholds to separate the most public space of the shelter to the most private. The connectivity to the street is further explored in this iteration, as reflection from iteration one. The back street, Shepherd street facades of the building are designed with solid edges, so as to show that activation of the part to the street is not required.

The front edge of the building, where activation on the street is encouraged has considered human scale, habitability of the street, accessibility and permeability, as these are needed to intentionally relate to those on the street. This façade further has overhangs, to allow for lingering, the large ramp to show inclusivity, which is integrated with large entrance stairs, that encourage seating and lingering. These are brought forward right on to the street, so that the line between street and where the building begins is not perceived.
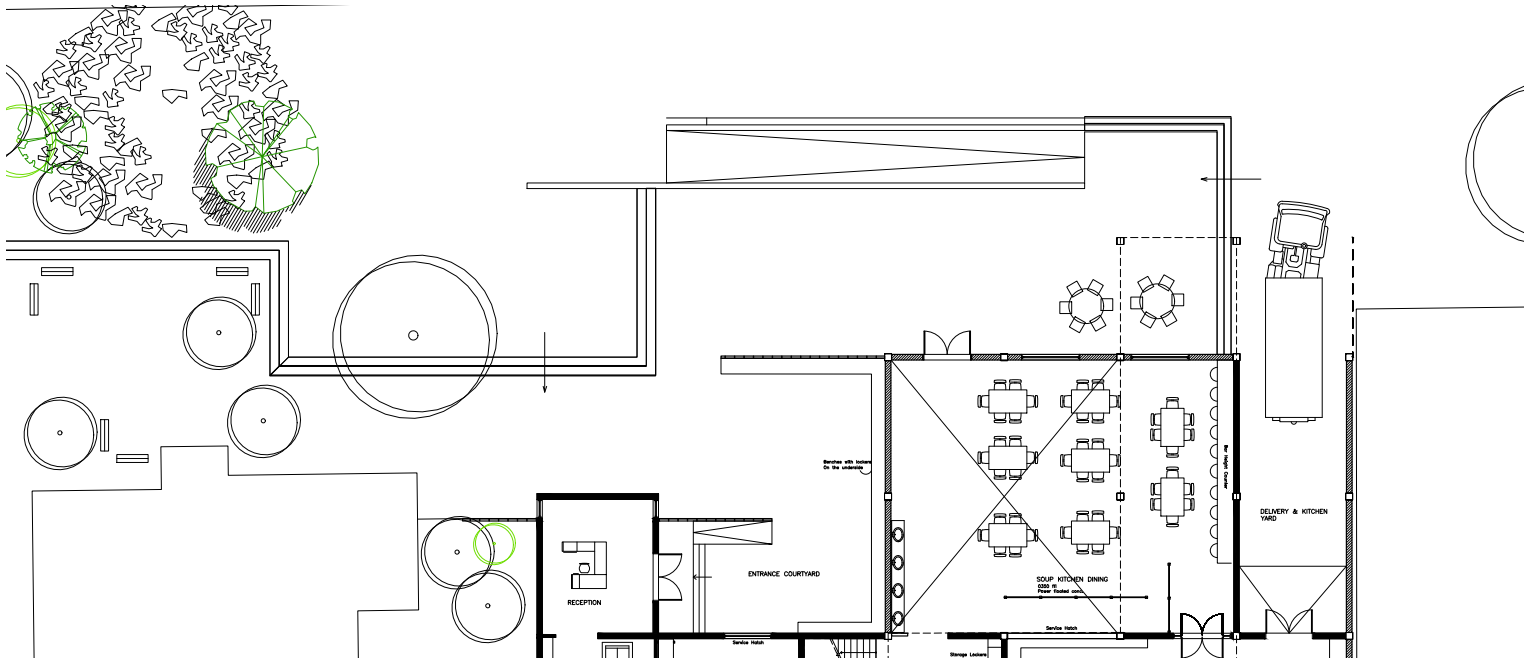
Fig. Illustrates the street as a room of interaction before entering the building. The stairs allow for seating, and the ramp is integrated with seating ledge. The soup kitchen opens onto the large fore courtyard.

Fig. Illustrates the Sports field as connecting to other spaces beyond the shelter, such as the adjacent school. And the toilet/shower facilities connecting to non-residents.
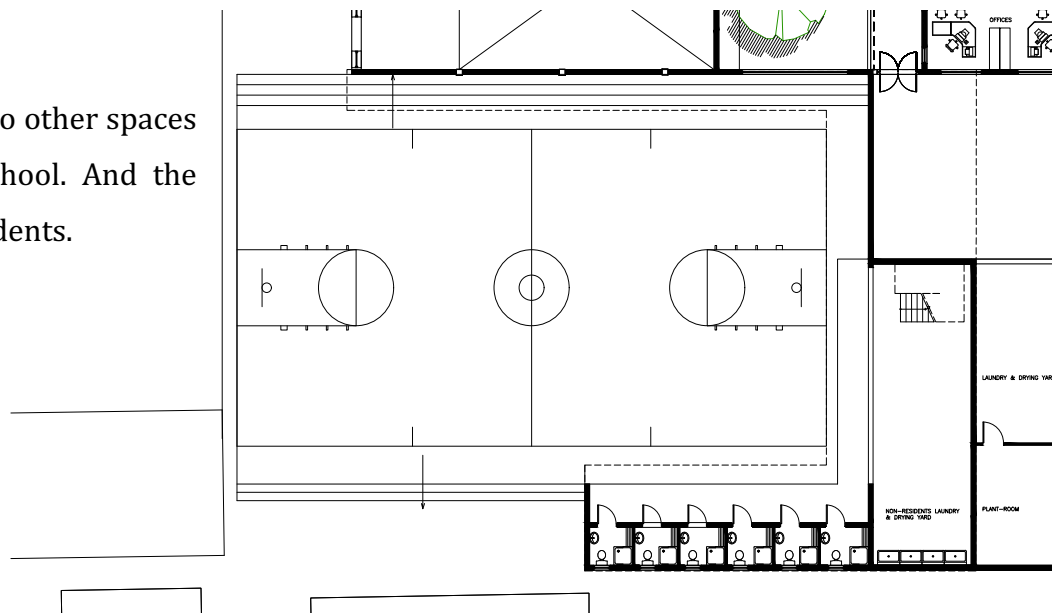
Reflection

The connectivity of the street is now explored both programmatically and architecturally. The programme on the edge of the street, now being a soup kitchen, as resolved in this iteration, where the space leading off the street was a library in iteration 1, the library has been placed internally as a space that is integrated with other living spaces so that learning, play and living becomes part of everyday life within the shelter. The SoupKitchen creates a sense of community and interactive spaces along the edge of the street. While the sports area is on the edge which is adjacent to the school (Confidence College), encouraging shared resources and again a sense of community. However, the design of the shelter still lacked the expression of safety through architecture, and the exploration of dwelling for children which starts to recognize a child as having many languages and being filled with wonder, (Reggio Emelia Approach).
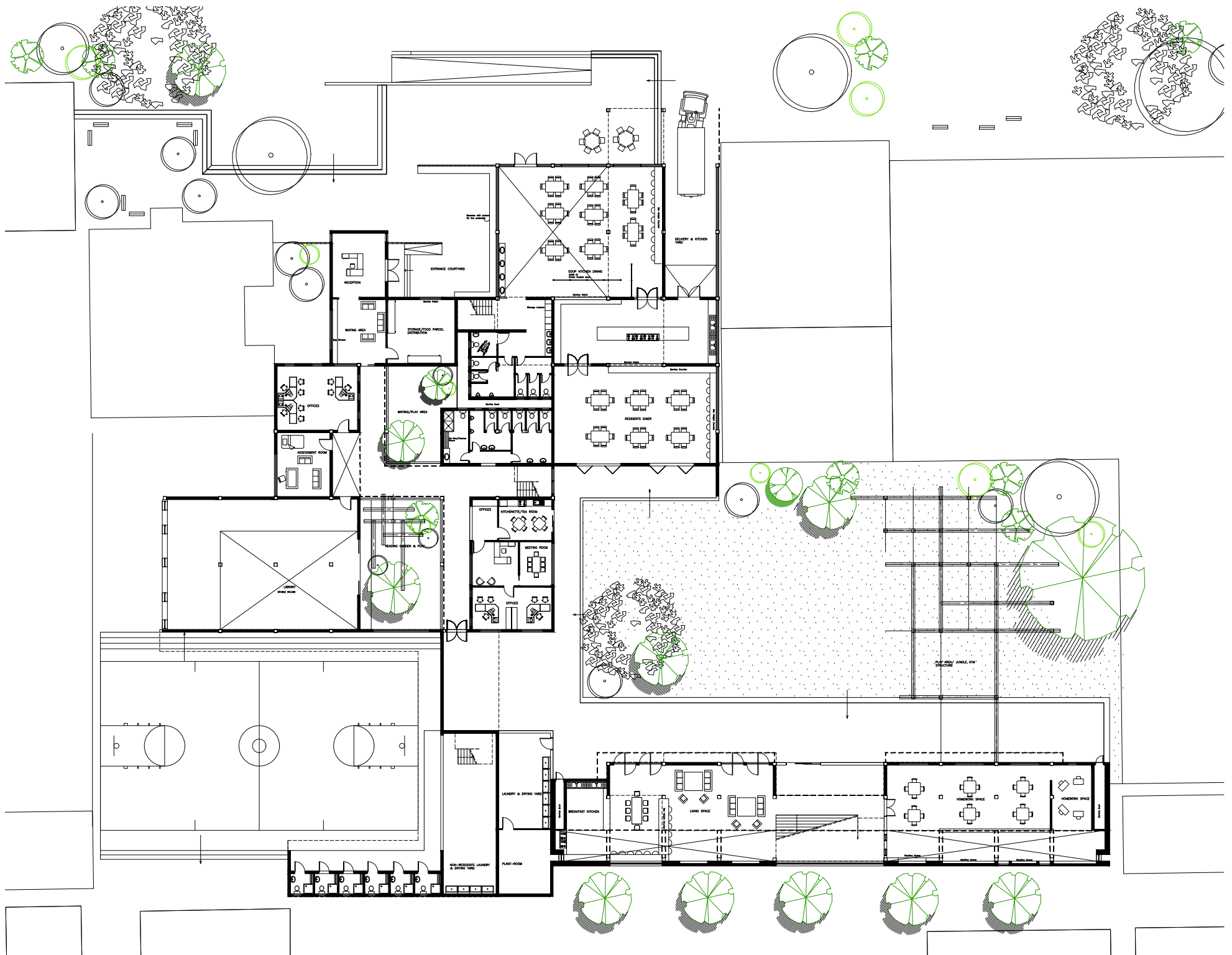
Section drawing showing the relation of street to Shelter and to depict courtyards as transition spaces

WALKWAY (Covered to create interactive room before building)

STREET FRONT

Courtyard

Courtyard
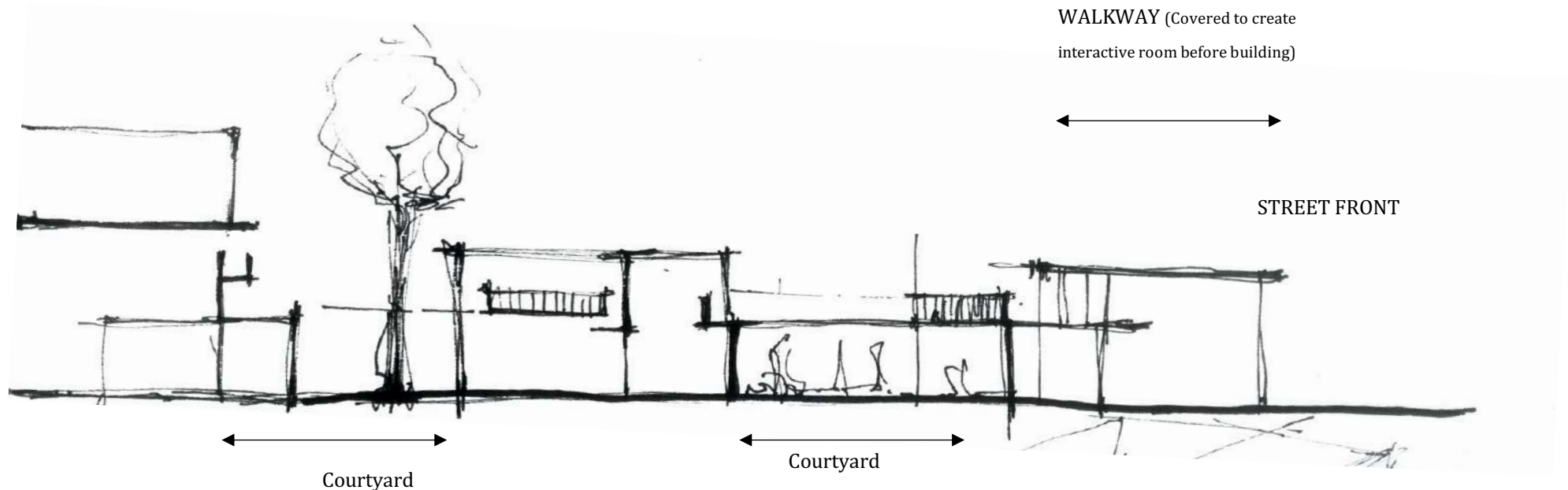
Iteration 3- Safety & Dwelling for children (Identity through place)

As part of the design tool kit and drivers, the aspect of safety and security is explored. Based on the learning of the previous iteration, the connection to the street is explored, as well as a multi-purpose spaces and shared facilities. The aspect of safety, as being an important part or requirement for the shelter to provide as the children who find themselves here have experienced great trauma and sadness. The need for the architecture to express a sense of safety and security is therefore of high importance. After the architecture has allowed for accessibility and permeability, the architecture needs to hold the user in a sense, and express strength and bold sense of safety. Through the end walls of the most private spaces (the sleeping area) in the shelter, a strong, thick wall is explored, almost as to hug and holding of the child/use in protection.

The sleeping areas, which are the most sensitive, and are personal spaces, are tucked away at the end of the site, far from the activated street edge.
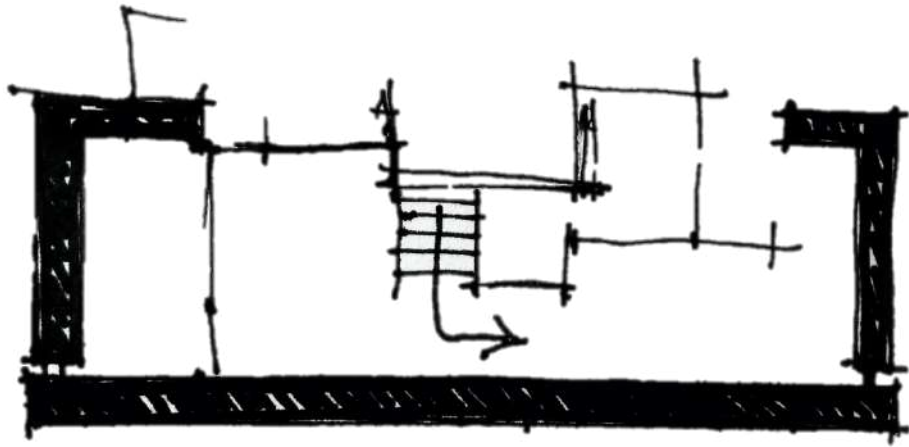
RECEPTION

ENTRANCE COURTYARD

SOUP KITCHEN DINING

DELIVERY & KITCHEN YARD

WAITING AREA

STORAGE/FOOD PARCEL DISTRIBUTION

OFFICES

WAITING/PLAY AREA

RESIDENTS DINER

ASSESSMENT ROOM

OFFICES

KITCHENETTE/TEA ROOM

READING GARDEN & POOL

MEETING ROOM

LIBRARY DOUBLE VOLUME

OFFICES

PLAY AREA/ JUNGLE GYM STRUCTURE

LAUNDRY & DRYING YARD

NON-RESIDENTS LAUNDRY & DRYING YARD

PLANT-ROOM

BREAKFAST KITCHEN

LIVING SPACE

HOMEWORK SPACE

HOMEWORK SPACE

Fig. Parti-diagram, showing thick solid walls & model of heavy wall with light very translucent façade.

This sleeping area is anchored on a mass solid brick wall, which gives perception of security, safety and refuge.
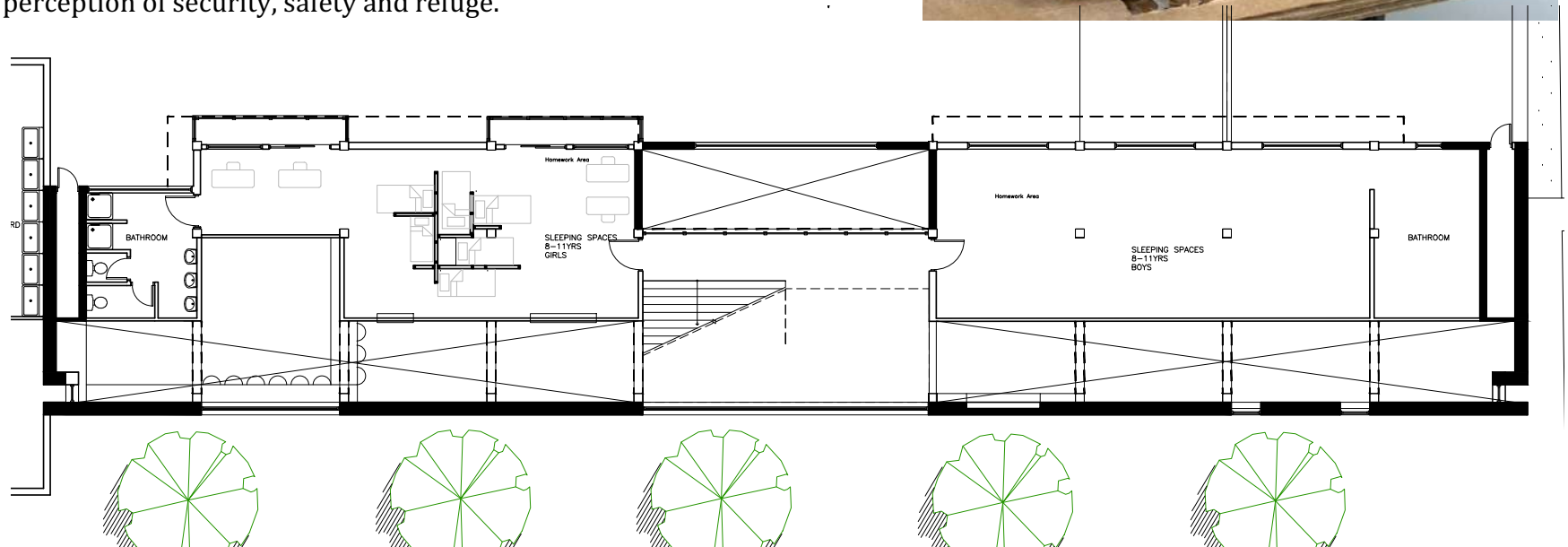
The reflection of space as being an enabler for which a child can discover, and through it gain or mold their identity is critical to a child's development *'... everything we make must be a catalyst to stimulate the individual to play the roles through which his identity will be enriched...'* Hertzberger Herman, (1969:219).

As mentioned in iteration 2, that though the shelter is not primary a place of learning, learning is an integral part of the everyday living in the shelter, as the shelter accommodates children. The need and desire for children to continuously discover and enrich their minds is through testing, creating and contributing to the space. The architecture therefore needs to be the catalyst to create this environment. Dudek Mark, 2005 explains that children learn through experience, how big they are, where they can fit, what they can reach and experiencing their bodies in different positions of down, up, under, over, upside down, in between. Dudek further states that this is done by younger kids to understand their body within space, but for the older children as they have a spatial understanding, 'they seek out greater spatial complexity'. The sleeping areas are therefore, are separated per age brackets of, 6-9 year old, 10-14 year old and finally 15-17 year old as they have different spatial requirements.
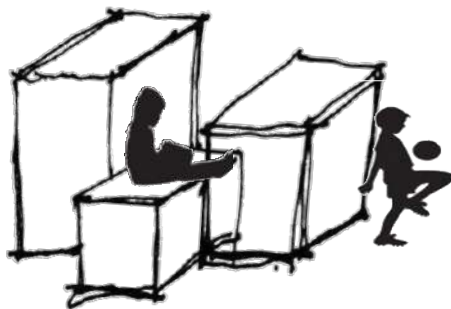
Children exploring

The previous iterations explored the thresholds through entry into the shelter and navigating through the spaces which are primarily public to semi-private, as well as multi-functionality and shared spaces. This iteration explores the most private space of the shelter, which is reached through granted access. A space that becomes exclusive and to an extent sacred to its user. There is both private from the general public yet is shared by the users where there is opportunity for a sense of community within the space.
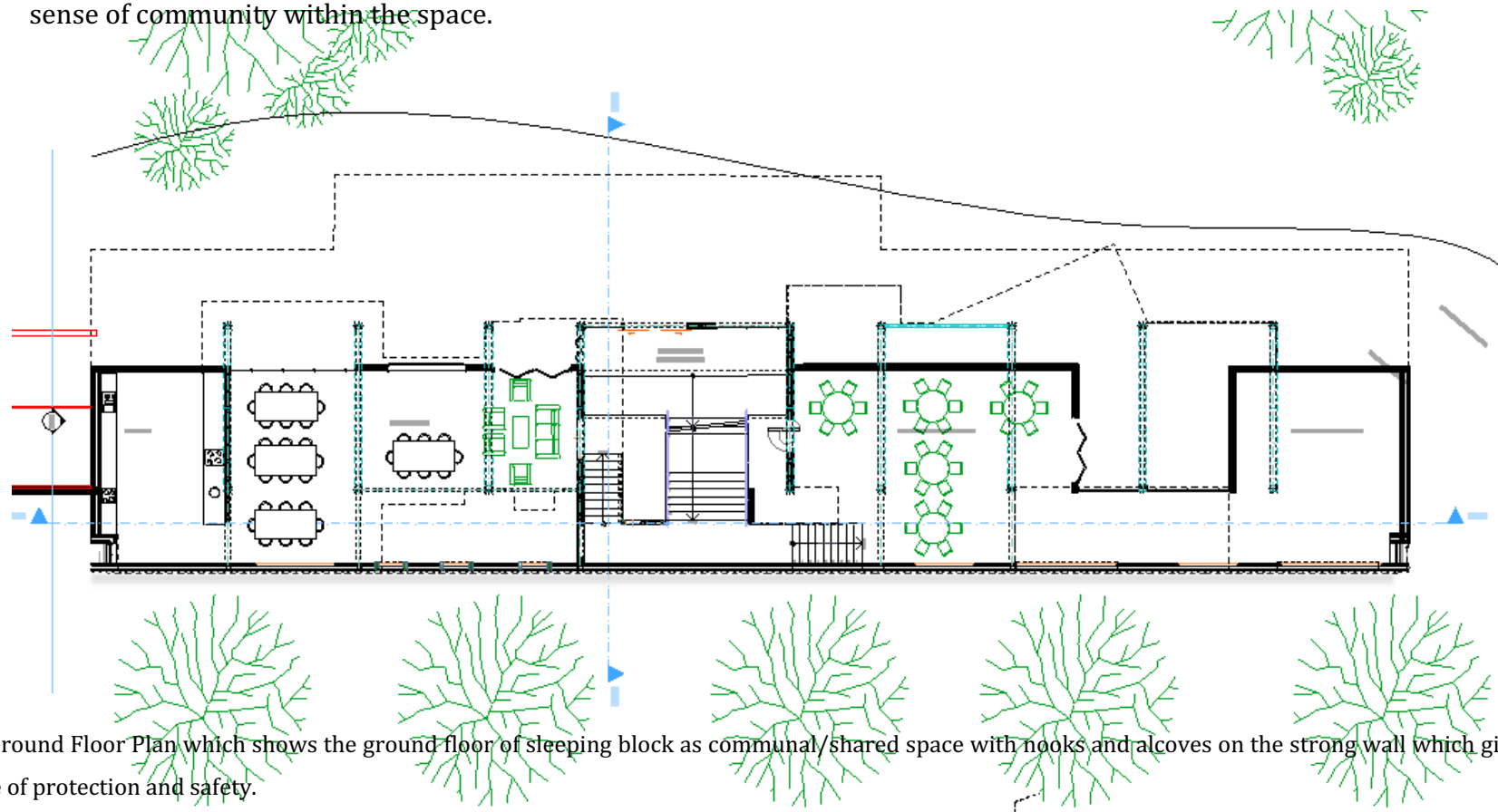
Fig. Ground Floor Plan which shows the ground floor of sleeping block as communal/shared space with nooks and alcoves on the strong wall which gives sense of protection and safety.

This part of the building, which provides the 'sleeping pods', as it needs to both be a communal space for the children who live here, yet provide privacy for each of them has been programmatically divided to provide shared spaces on the most accessible floor which is the ground floor, and more privacy by having separate spaces as expressed through different floor levels of the building
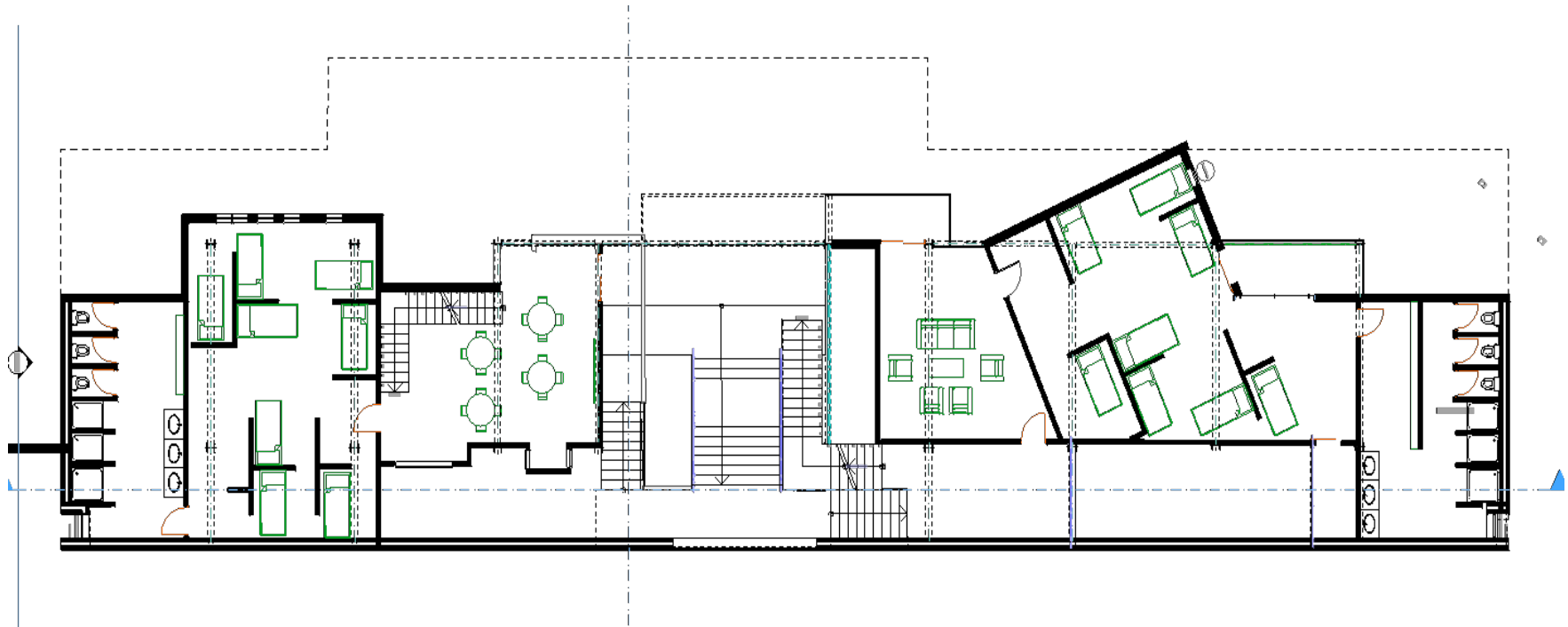

Fig. First Floor Plan which shows the first floor of sleeping block as 'sleeping pods.' To be annotated. showing a space within a space concept allowing for discovery, play and learning through spatial understanding.
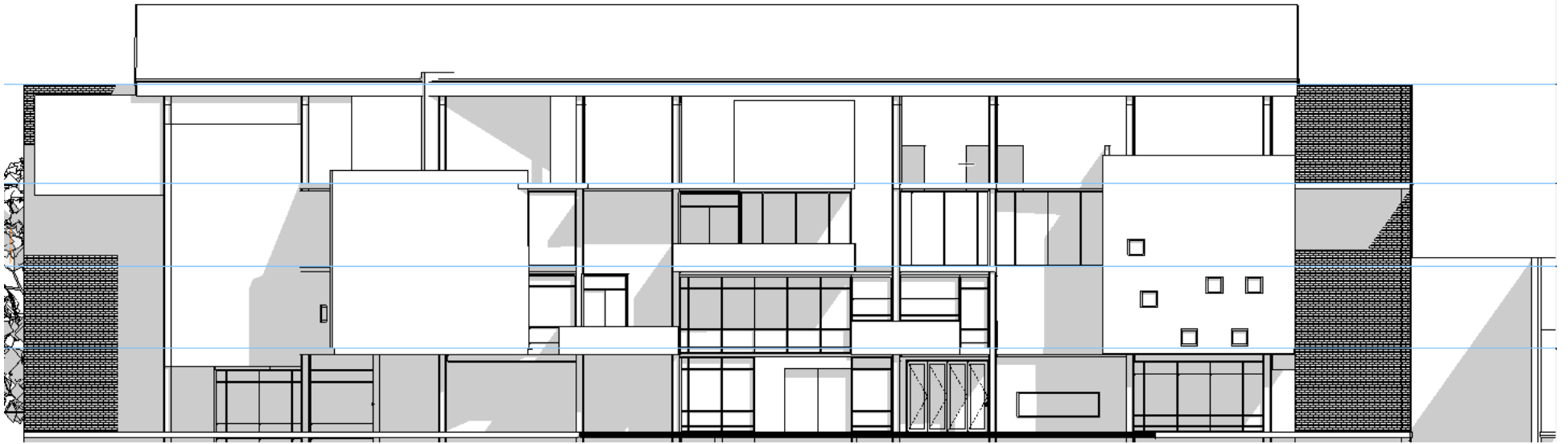
Fig. Front Elevation showing the relation of façade to the courtyard. Identity of spaces through the articulation of the façade.

The façade of the building forms a very important part of identity forming and identifying with parts of the spaces within the building, especially the sleeping pods. One is able to identify their sleeping area from the courtyard and connect back to spaces they can identify as their own. Each window placement in the sleeping pods being an identity place for individual sleeping bed. The strong red brick wall which wraps around the edges of the building as a reminder of the strength of the end wall, firm and sturdy.
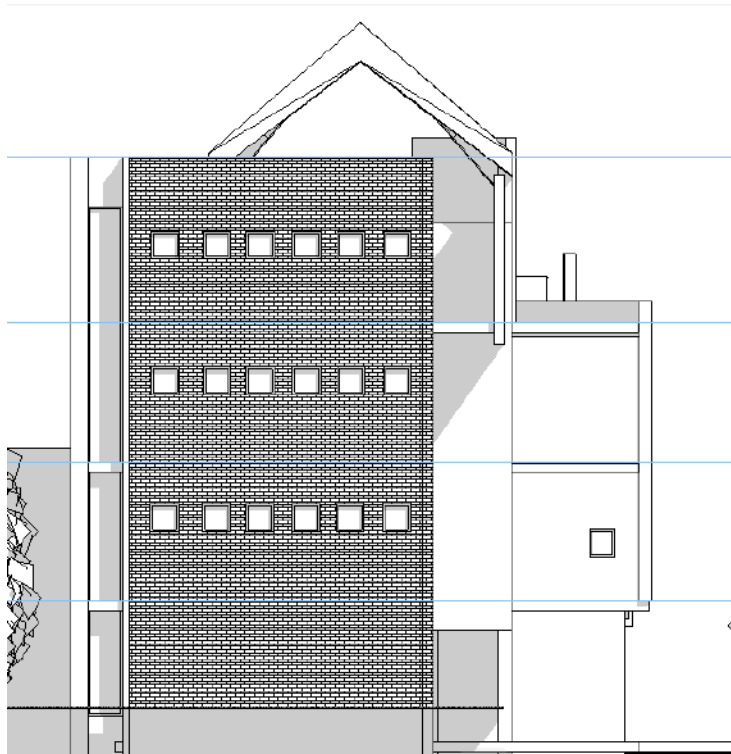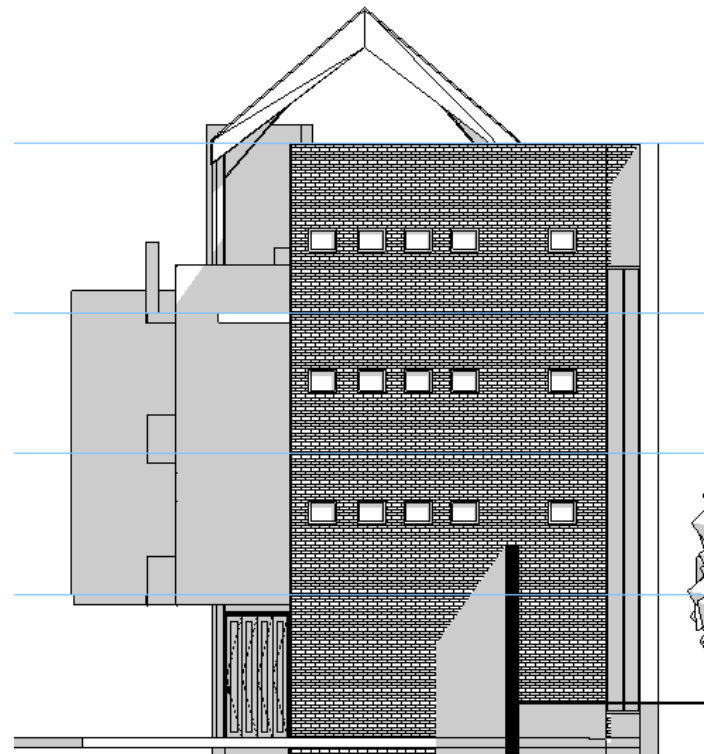
East Elevation   West Elevation

Figures showing East and West Elevation of the solid red brick wall on the east with few small windows.

The entrance area, which is the main circulation core of the sleeping pods is also a very interactive space which encourages collective participation in activities, and interaction. It is the first room in the area that the children will be see as their temporal home. The space allows for both vertical interaction between the floors which separate the different age groups and genders. Some of the material used such as wire-mesh for balustrades, as discussed in the materiality section, is to encourage permeability, and therefore interaction, while some of the balustrades express safety for the younger children. Flooded with light form the skylight, and the glazing from North facing façade, the space is designed to connect to the courtyard in front as well as having knocks for different uses.

Reflection

Though the design begins to recognize the user as one that is curious and in need of innovation to stimulate creativity, the iteration has not yet explored the details required to ensure that the spaces inspire creativity, innovation and excitement for their users. The design needs to investigate more on the child having a 'hundred language.

FINAL ITERATION

The final Iteration explores the spaces as places of discovery, interaction and exploration. The architecture creating a link between space, learning and discovery. The underlying understanding that space matters greatly, as the Reggio approach, it is said that the space 'reflects the vision of those who inhabit it and shapes those visions' Dudek Mark, 2005:55. With the realisation that children are born a natural sense to explore and interpret the world through touch, sight and hearing, this final iteration synthesises the already explored design tools with this unique requirement which is front and centre to the holistic developmental needs of children, especially these particular ones who have been through trauma and grief.

Firstly, this iteration emphasizes the Reggio Emelia approach through the theory of 'Loose parts play' by Nicholson Simon, 1971: 27, which proposes that 'loose parts in an environment empower creativity', and therefore the architecture or spaces should offer a variety of material that can be moved, combined, stacked, taken apart and put back together. This theory also leading to the architecture as the third teacher. Research shows that curiosity is an effective process of creativity. "Perhaps there is even a more profound message...that the very fabric of a building can teach children about the things which will be important ideals which they grasp and hold onto throughout their lives." Dudek Mark 2005:6.

LOOSE PARTS OF WHOLE IN PLAY

This concept, based on the Reggio Emelia notion, where the loose parts encourage creativity, develop problem-solving skills and motor development, all of which are essential to any growing child, but more important to these particular users as they may not have been exposed to these possibilities in certain environments. The sleeping pods, which offer the most private space allow the possibility of these loose parts, by having spaces that can easily become sleeping beds or a combined reading area and play. Still as per Reggio Emelia concept of children having a hundred languages, that every child brings with them deep curiosity and potential and this innate curiosity drives their interest to understand their world and their place within it. The maze-like sleeping pods allow the children to discover and their environment a catalyst to this curiosity.
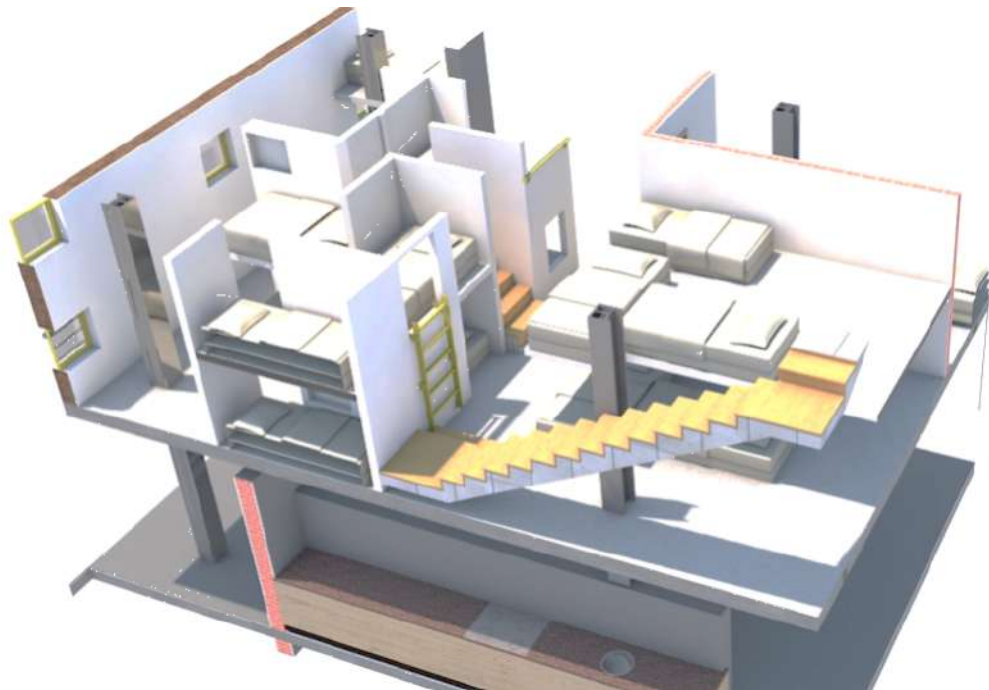
CODING/DECODING AND PATTERNS & WAY-FINDING

Further to experiencing the architecture as third teacher, patterns and symbols are investigated to create a coding for way-finding and connecting identities with the user. Nicholson Eleanor, 2005:100 asserts through evidence that children and young people are very aware and alive to symbolic messages which are transmitted though buildings. This therefore means that right through the very beginning or entry of the shelter, certain elements begin to represent codes or interpretations to space. That a golden thread is of colour, material use, and shape is used to create sense of identity, familiarity, comfort and safety for the children.

Graphic illustration of way-finding (Overall layout) Sleeping area layout. Ground floor.
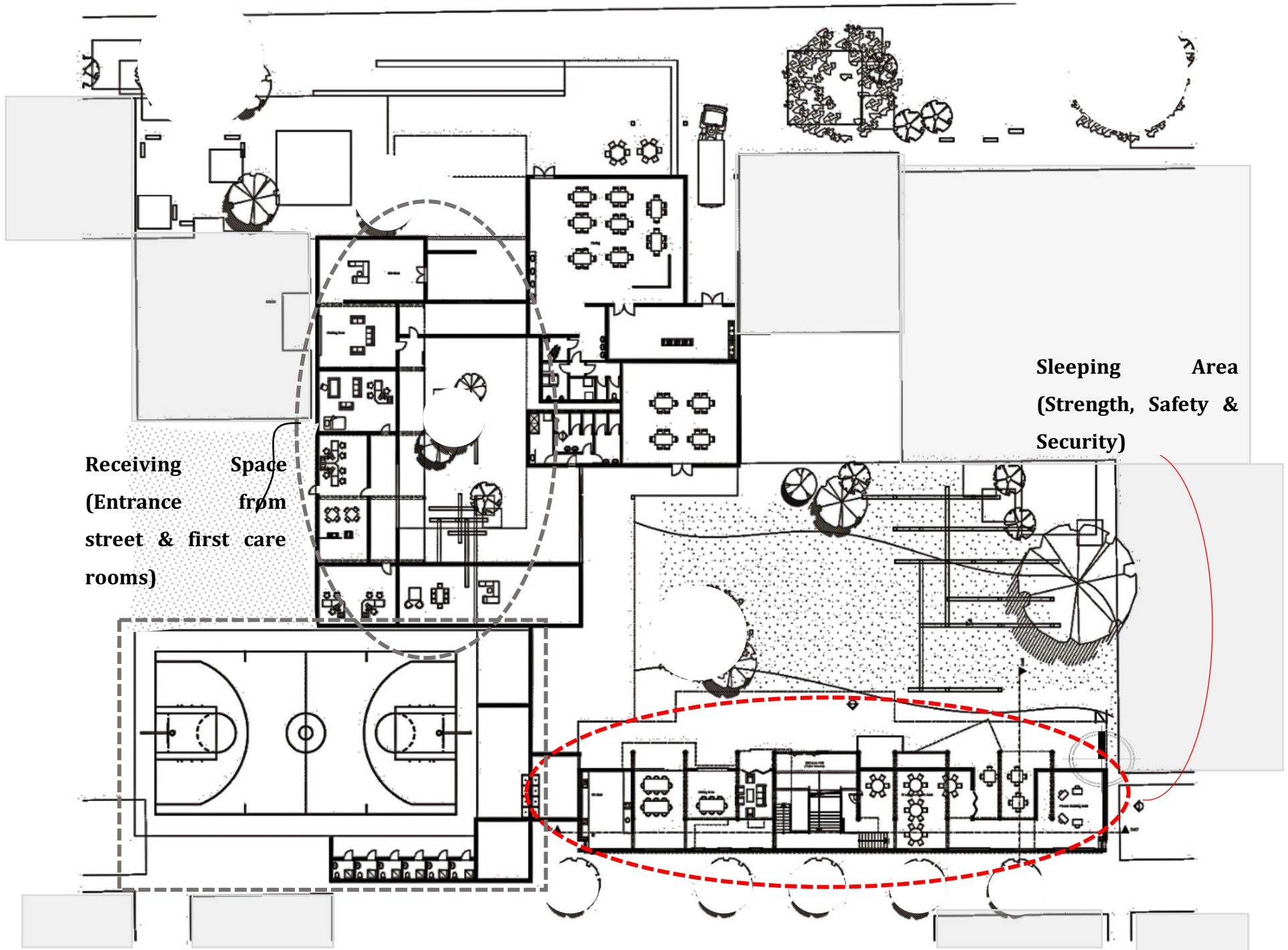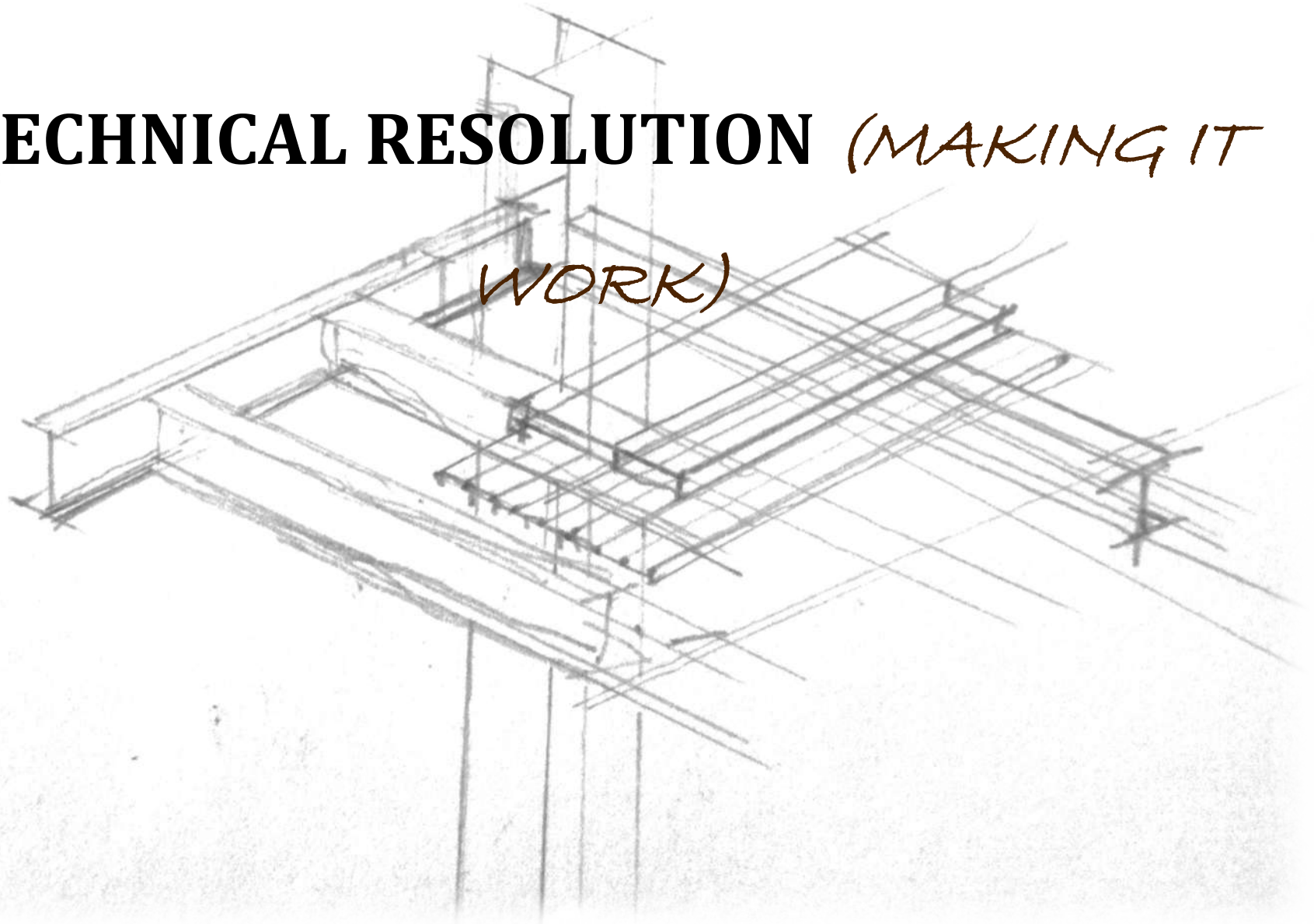
Receiving Space
(Entrance from street & first care rooms)

Sleeping Area (Strength, Safety & Security)

CHAPTER 8:

TECHNICAL RESOLUTION *(MAKING IT WORK)*

TECHNICAL CONCEPT

The technology strives to address Spatial-Social (In)Justice through expression of material, simplified structured technology and a natural sustainability approach. The technology traverses through the very heavy and solid structure, which is stereotomic at the furthest, South-end of the building to give sense of being grounded into the earth. This is expressed through the red brick that is so familiar in the inner city of Pretoria. The use of this structure gives perception of strength and safety, characters which are vital for the shelter, and children who are vulnerable situations.

In this solid wall are alcoves allowing for seating on the ground level and punctured only minimally on necessity on the upper floors, to create frames of views to the outside, or on functionality to allow well diffused south-light into a space or for cross-ventilation. On the ground level, these alcoves create seems of comfort, as though carved in a protective cave.

The technology of the front façade of the sleeping area of the shelter is a more tectonic architecture, which establishes itself as minimal contact on the earth in contrast to the solid, heavily grounded end fabric and façade of the building. This play on technology aims at providing a deep meaning to the building that would provide that both physical and emotional support to its users.

The Technical intent therefore is expressed through:

1. Material selection
2. Sustainable/Energy systems
   a. Ventilation, passive heating and cooling
   b. Solar water heating
   c. Rainwater harvesting and re-use
3. Structural approach of Stereotomic through to tectonic

This approach is intended to relate to the already discussed ideas of place identity through place-identity and spatial justice.

MATERIAL PALETTE

Material Selection Criteria

The material selection and technical resolution is intertwined, with no one aspect having precedence over the other, but rather the technical resolution and material selection working together. The material selection being based on structure and technical resolution, further seeks to keep to the essence of place so that a certain degree of familiarity remains for the user so that the architecture is not alienated from locality and user. The material selection, to a larger extent, is also based on natural materials or those that would give a perception of natural environmental elements, as these are said to have correlation with increased creativity (McCoy & Evans, 2002). Additionally, children's spaces help develop creativity where appropriate material is used (Edward & Sprigate, 1995). The inclusion of natural environments through landscape also encourages curiosity and development. The courtyards will therefore accommodate this by vegetation, provision of shading through tree canopies and edible garden space, which can also be therapeutic.

Research has shown that children respond differently to different material and experience different stimuli from interaction with different material. Research further states that a variety of shape, colour and other environmental aspects increase children's ability to discover, understand and grow. That this diversity of the physical environment has a positive effect on evolution of creativity and holistic growth (Thorisson, 2004).

PRIMARY STRUCTURE

This is the main structure of the
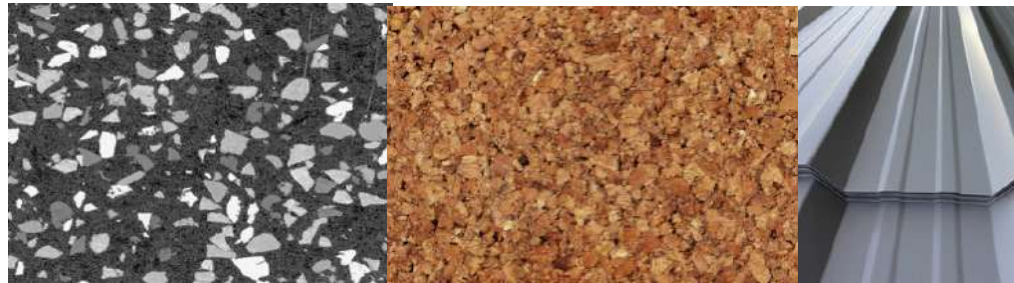building, The core/bones of the
building

Red Clay Brick   Steel (Portal structure)   Concrete (Cast in-situ)

SECONDARY STRUCTURE

These are finishes which fill between
the primary structure, as well as roof
covering.

Recycled rubber   Cork   Corrugated Roof Sheeting

TERTIARY STRUCTURE

Glass   Wire Mesh   Vegetation/Nature

RELEVANCE OF RED CLAY BRICK

The use of Red brick in the inner city goes back years and in particular the Kirkness Brick which is no longer in production, but has historic presence in the inner city of Pretoria and sometimes still considered he 'city of brick' (Fisher 1997:97). The Kirkness brick making factory, which was located on the current UNISA Groenkloof campus, closed down in 1958. Buildings that were constructed using this brick within the inner city of Pretoria are the Union Buildings, Old Arts building at the University of Pretoria, Ou Raadsaal.

There are also many houses in the inner city which used this brick in the 50s. The brick therefore is a part of the city and presents a certain familiarity to the region. The brick in the shelter design is used in portions of the entrance buildings in spaces that are communally used such as the soup kitchen and used as accent walls through the shelter as a reminder of familiarity as one walks through the building. The brick is further used at the most private area, in the sleeping part of the shelter. It is used here in the very thick wall that provides a sense of safety. Used to form a 440mm width structure which encompasses the South end of the shelter, forming primarily, the backbone of the structure.

SUSTAINABILITY OF CLAY BRICK

It is said that clay bricks are one of the most sustainable building materials as its biggest component clay is very sustainable (Sharma, 2017). They have excellent acoustic as they reduce noise pollution and can therefore reduce external noises of busy streets. They also have good air quality, as well as being durable and long lasting (Sharma, 2017).

BRICK AS BASE FOR WAYFINDING & CODING/DECODING

The colour of brick as the most dominant, and as the basis of emotional connection and comfort to the users, is chosen as the basis for the colour coding used. Ultimately the colour scheme that will indicative in showing direction, showing certain uses of space and certain colours that the user can start to identify with. Red is backdrop which is picked from the brick, yellow for wayfinding, purple reflecting young girls' spaces, green used in young boys' spaces, the natural colours to pick up on the calming colours, and in shared spaces a mix of use of these colours to show diversity in use, and personality. The colour choices are also based on research done by Mahnke, 1996, on colours and human responses to it, specifically age based, for academic spaces. The other colours will come from other materials used.

Red

A colour of passion, but if used well and in limited amounts can assist in detail oriented & repetitive tasks.

Purple

This is a striking colour that draws attention and can encourage creativity.

Yellow

A cheerful colour, which stimulates intelligence it can therefore be used in shared spaces, and give direction

Green/Olive

This colour represents abundance, can help relax and contributes to overall health.

RELEVANCE OF STEEL

As with the red brick choice, steel is used in many buildings in the inner City of Pretoria. It therefore also reflects familiarity for the user, and they can relate to it. Steel has many advantages to its use beyond the familiarity to place that it presents, it has advantageous aspects, as its highly durability and recyclable. As compared to wood which needs a lot of maintenance, steel does not need maintenance (Hall et al, 2012). It is also a faster construction method as compared to wood, as it can be formed off-site and only needs assembling on site (Hall, M et al, 2012). This is a beneficial aspect especially of fast construction is vital for a facility such as a shelter, as faster construction means less cost which is necessary for a social project as this.

Steel can sometimes be seen as cold, however, if used with other warm materials such as the red clay brick, and warmth of cork and colour, it provides a different texture to the other materials, providing a different touch and feel, which as stated before can provide for a good stimulant for children's creativity and curiosity.

SUSTAINABILITY OF STEEL

Bassam B & Michael S, 2006, states that during the production of steel, about 70% of embodied energy can be saved, making steel a sustainable product, but not only its production contributes to its sustainability but also is long-life span use, and its ability to be recycled and reused several times without losing its integrity. Vassart et al (2009) further states that steel can further provide a good indoor environment as the risk of Sick Building Syndrome is minimized, does not have structural deterioration and usually meets the high required regulation standards for sound insulation and thermal comfort.

CORK AS MATERIAL

The choice of cork as a secondary structure or skin to the building is based on its physical qualities of being soft, natural looking and warmth. On further investigation of the material, it is said to have other positive aspects to it such as durability and easy to clean. These being highly desirable features as the building will have high traffic and being used by children would have to withstand much physical pressures. As the material is soft and warm, it is also advantageous as the users can walk barefoot easily. The following are some of the characteristics cork has, which makes it a perfect choice in material:

- Highly resilient and lightweight
- Good thermal and sound insulation qualities
- It's a renewable resource and a natural fire retardant

SUSTAINABILITY OF CORK

As cork is made from the bark of a tree, it does not require the tree to be cut down or destroyed, it therefore, in its making has its first highest sustainable quality. The properties of the cork are derived from its natural composition of being a tree bark starting with its fire retarding components to others as mentioned such as its natural warmth, its durability as it is resistant to wear and tear because of its cellular composition. Cork as it also has different natural tones of colour does not require pigmentation to produce its variant warm colours which provide a varied base for children of different ages. Furthermore, due to its longevity, this also contributes to its sustainability.

RELEVANCE OF NATURE

It has been proven through research, that the inclusion of nature any environment has many benefits, and it is no different for a child's environment (Kellert, 2005). North Carolina Division of Child Development and Early Education, 2012, have through their research identified that children's interaction with nature can have some of the following benefits: Supports creativity and enhances problem-solving, increases academic performance and cognitive ability, improves social skills and can reduce stress. The stated benefits, especially those that improve skills that are vital to children such as problem solving, and reduction of stress are vital in these children that would need to engage these aspects due to their past experiences and loss. The inclusion therefore of nature in courtyards is imperative to the scheme. Nature inclusion does not only have the benefit of improving the lifestyle of children, and those that interactive with it, but also has an environmental benefit and can provide for a better thermal comfort in the building. The open courtyards in the design allow for the inclusion of nature, which at different spaces can serve different uses relating to the function and use of the spaces that surround them. The entry courtyard, as a receiving space can have plants and flowers that are aromatherapeutic which would contribute to calming children as they enter the building for the first time. These further provide thermal comfort as discussed in the passive heating and cooling topic through courtyards. Other courtyards would provide more varied plants such as trees and edible plants, which would encourage the physical interaction between the children and nature, and further contributing to such skills as motor skills, social skills and multiple development such as intellectual and physical skills (Kellert, 2005).

WIRE-MESH AS MATERIAL
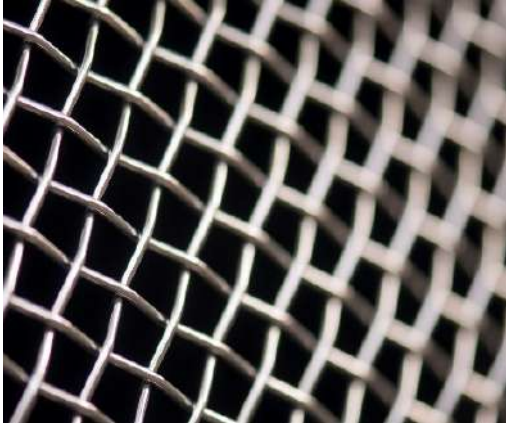
The selection of use of wire-mesh is prompted by the availability of wire mesh, and also its affordability with the option of having varied uses for it. The wire-mash is introduced as an alternative to the expensive balustrade option where it can provide a playful option whilst giving the safety requirement. It is further used as a screening devise which would still continues to be playful and functional while still as an affordable product as opposed to other shading devises and having the ability to flexible. As stated in the discussion of steel and its properties, steel wire-mesh would have similar benefits and therefore remains a good building material option, which allows permeability and visual connection to other spaces.

Fig illustrating material use

SUSTAINABLE/ ENERGY SAVING SYSTEMS & STRATEGIES

The approach to the technical resolution of the shelter in relation to sustainability and energy systems is based on systems that engage with nature and are therefore do not require added energy sources to create a comfortable internal environment which can influence user experience. This environment that the building envelop creates according to Rapport, 2016, can influences the user in many aspects such as physically, emotionally and psychologically and become an envelope of time. The design technical concept therefore that is followed, from a sustainable and environmental conscious perceptive will adopt the very essence that our spaces influence us, and a conscientious approach to the building lifecycle, which also conforms to the SANS 10400 building standards.

The aspects that can therefore be considered are the orientation of the building, where minimising openings on the East-West façade is considered. Passive cooling and heating are engaged, with the use of shading devices on the north side, allowing for cross ventilation and reflective materials used on the roof, all of which relate back to the theoretical argument.

PASSIVE HEATING AND COOLING

The below diagram is based on the passive cooling and heating concept used for the shelter, where natural resources as well as incorporating design principles that support the environment such as shading are utilised to cool and warm the building which would reduce incidental costs of running facility. The shelter as a place that may not have access to many resources would require such a low maintenance approach. These also relate to the theoretical base, form and orientation of the building.

The below is only an illustration of the concept
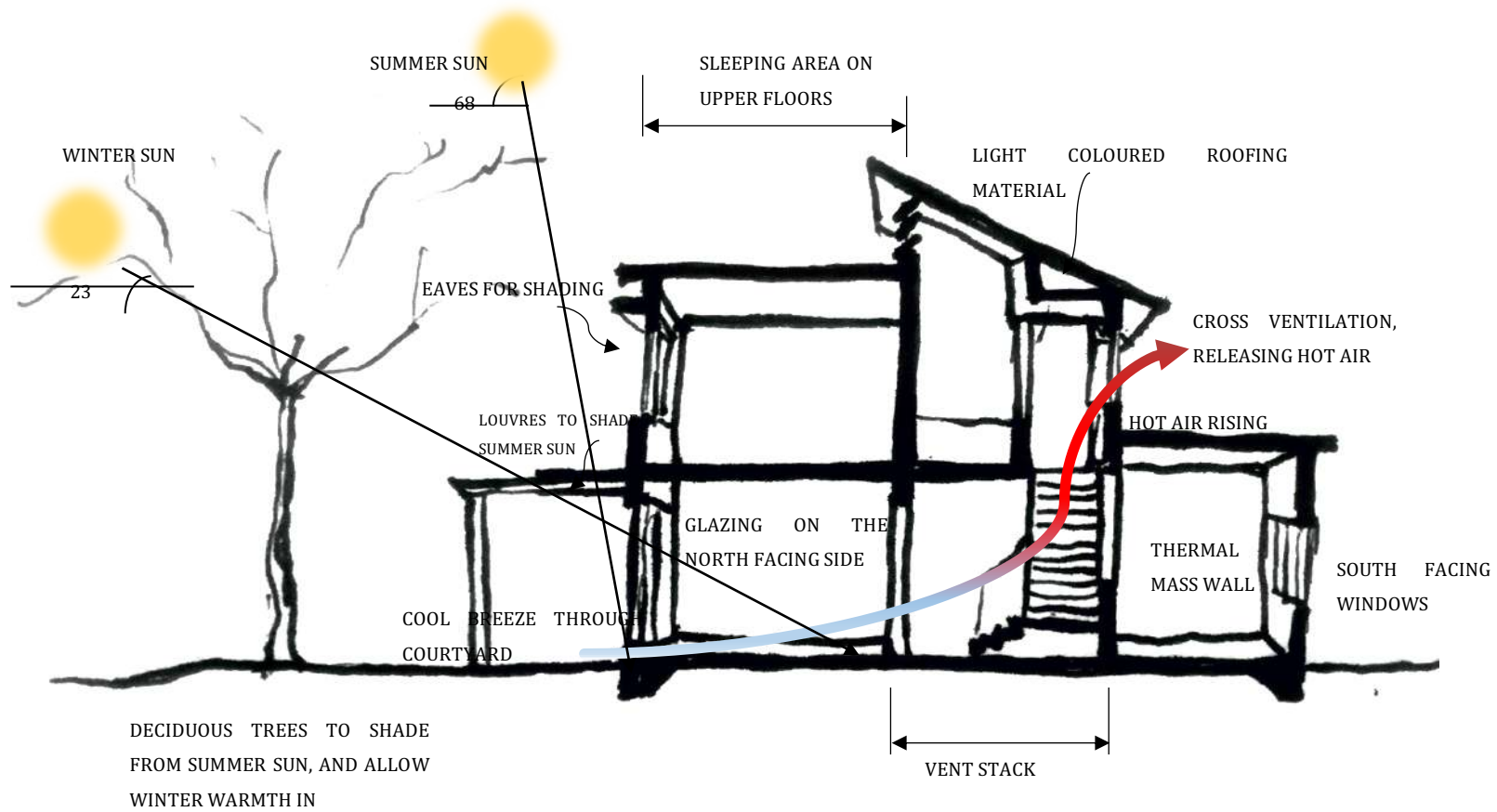
The heating and cooling concepts also conform to the SANS 10400-XA:2011.

The passive cooling in this diagram is based on use of natural elements in the environment in relation to the building design. These systems depend on the naturally changes in temperature, relative humidity, which cause evaporation, convection and radiation without the need for electrical devices (Safarzadeh H, Bahadori, M.N, 2006). Natural ventilation is achieved by having openings in opposite pressure zones. Air breezes as illustrated in the diagram enter the building, and a stack effect, of a high space within in the building allows the hot air which goes up to be released. The different air pressures cause almost a suction effect of cool air being drawn in, and hot being released out on the higher end of the building.

Further to using natural resources to ventilate through air circulation by using different pressure, principles of shading considering sun angles in different seasons are used. Louvres are engaged in the design to shade the summer sun and are positioned to allow winter sun into the building to capture the warmth of the sun in the cold season. By considering the seasonal sun angles, the design responses to natural changes in temperature, and takes advantage of heat from the sun in the cold season, reducing the need to use either electrical devices or environmentally harmful heat producing products.

It is also noted that passive cooling can be achieved by introduction of courtyards, and even more so when there is planting in the courtyards (Safarzadeh H, Bahadori, M.N, 2006). Freewan , 2019 states that the courtyard creates a microclimate which acts as a heat sink and a storage for cold air, which in areas such as this hot climatic region provides a solution to cooling spaces around the courtyard as well as providing daylight in those spaces.

SOLAR WATER HEATING

As continued strategies to implement systems that will reduce energy consumption and still provide the required comfort for using the facility, Solar Water Heating is incorporated into the design. As with the strategies used, the Solar Water Heating system is intertwined with the development of the design form and orientation, so that the design maximizes the use of natural resources to reduce energy consumption. The Solar Water Heaters systems consist of several collectors which collect heat through absorbing sunlight (Kakaza M & Folly K.A., 2015). To attain maximum exposure to the sun, the collectors are fixed on the roof which faces North to. The water is heated through the collectors and taken to a storage tank, where it is kept warm until use (Kakaza M & Folly K.A., 2015). Though the investment capital for solar water heaters are high, the long-term use has a payback advantage as the daily energy consumption in comparison to using other electrical appliances or devices is reduced by 48% (Kakaza M & Folly K.A., 2015). The diagram is a simplified illustration of this system.

COLLECTORS (ON THE ROOF)

PUMP

HOT WATER FOR USE

COLD WATER FROM SUPPLY

STORAGE TANK
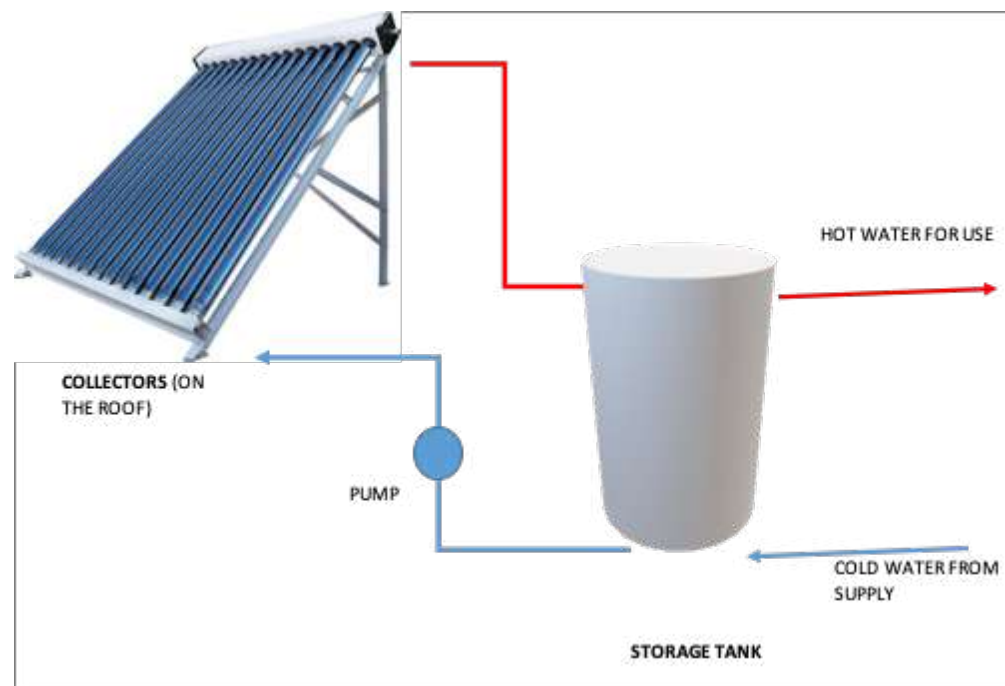
RAINWATER HARVESTING

As part of a continued effort towards a sustainable and environmental approach to the design, rainwater is harvested from several places to be re-used in irrigating the plants in the Shelter, and in some functions of the building such as toilets and laundry. As the growing scarcity of water becomes a growing concern in South Africa and worldwide, the need to engage water conservation strategies should remain at the forefront of the built environment.   It is to this end that rainwater harvesting and use strategy is investigated as a way of saving future costs of use of the building, reducing dependence on potable water supply, as well as conserving the tonnes of unused rainwater that would otherwise go to waste. It is said that South Africa has a water wastage of about 32% (Van Wyk 2015:13), which is mostly through loss of ground and surface rainwater. There are many benefits of rainwater harvesting and use, for both internal use and outdoor use. The following are just a few benefits of harvesting rainwater according to Van Wyk 2015:

- Reduces the impact of watershed hydrology as it reduces runoffs on site, peak stream flows and ground water discharge.
- Increases the water conservation as it reduces the reliance on potable water supply
- Reduces the need or stress on additional and additional infrastructure as the system of water reticulation becomes localised to the site and thereby reducing costs associated with the infrastructure.
- Is an environmentally friendly and sustainable approach, as well as ability to promote and create public awareness on water conservation and alternative systems.

In recognition of the many advantages of harvesting rainwater, the strategy of collecting rainwater becomes an integral part of the design. The rainwater harvesting system is through capturing storm water and run-offs from roof surfaces.

Roof Catchment Area- +/-1200sqm
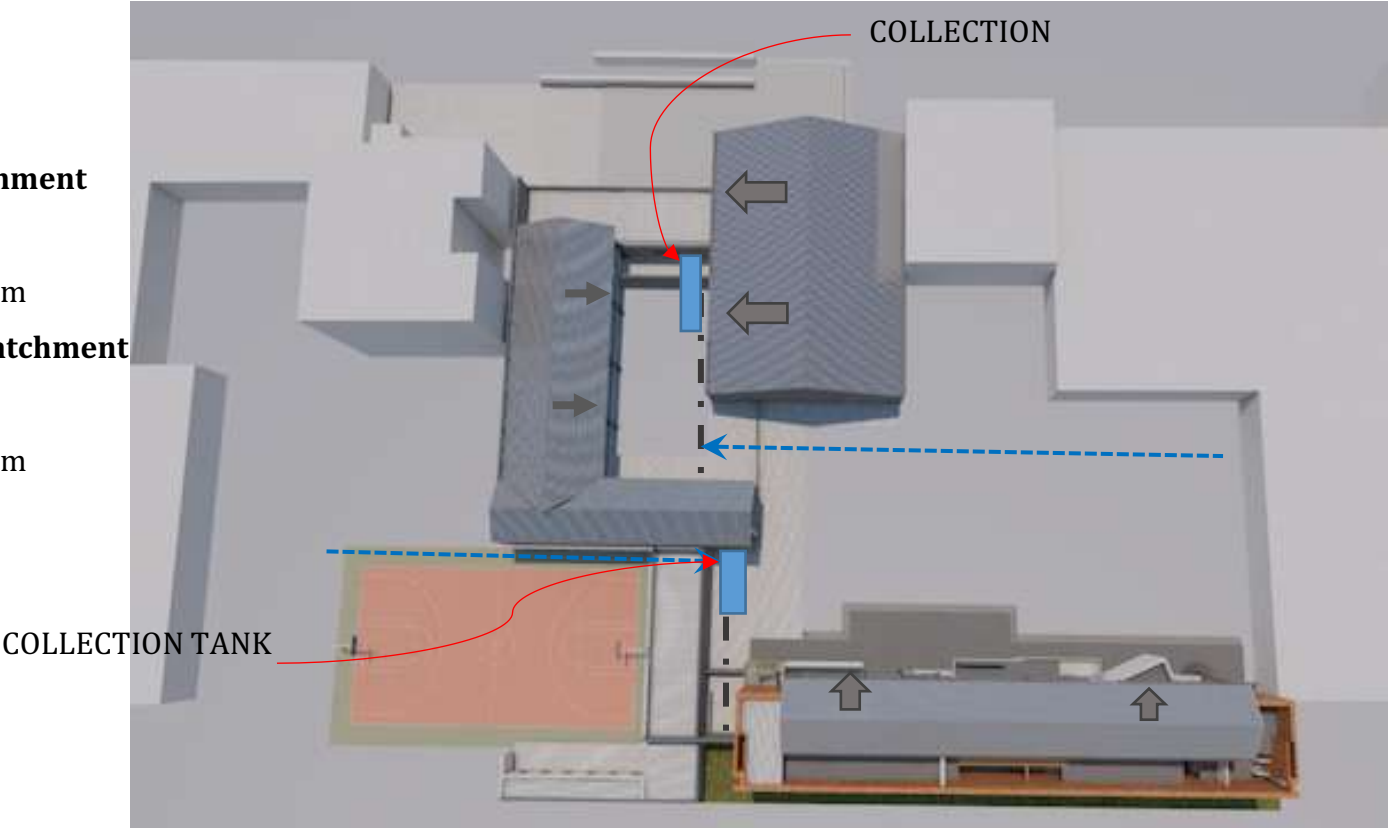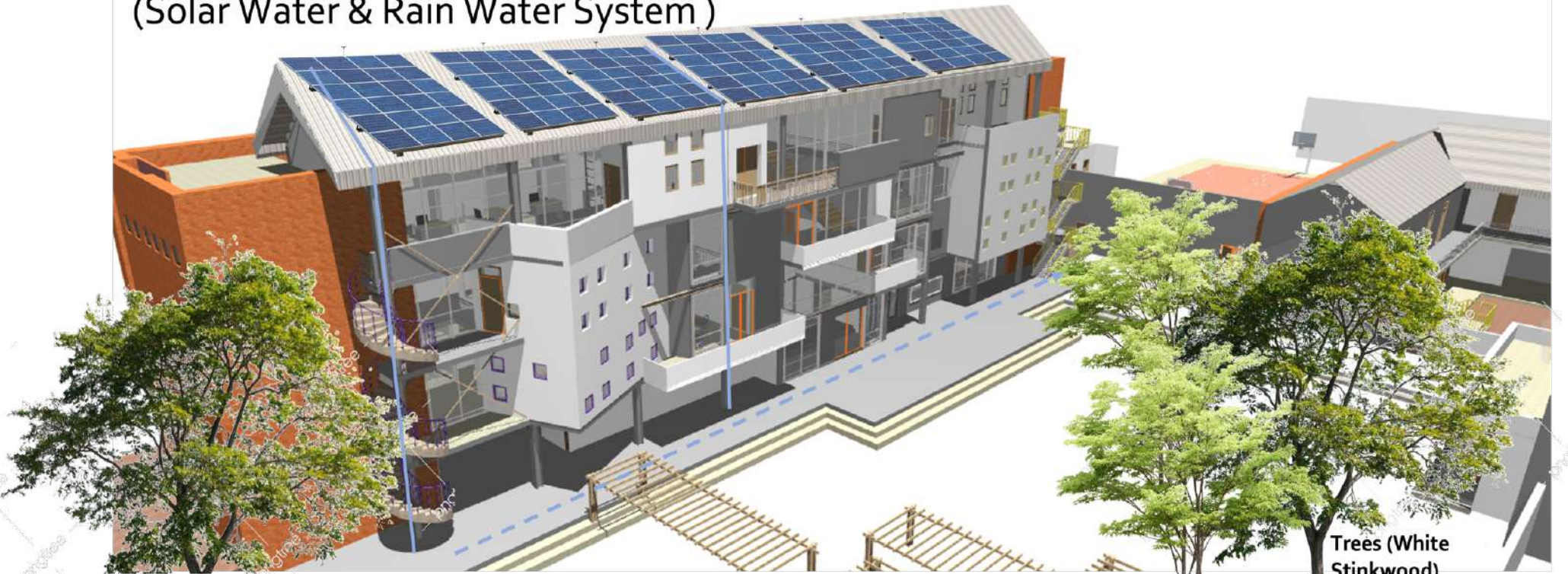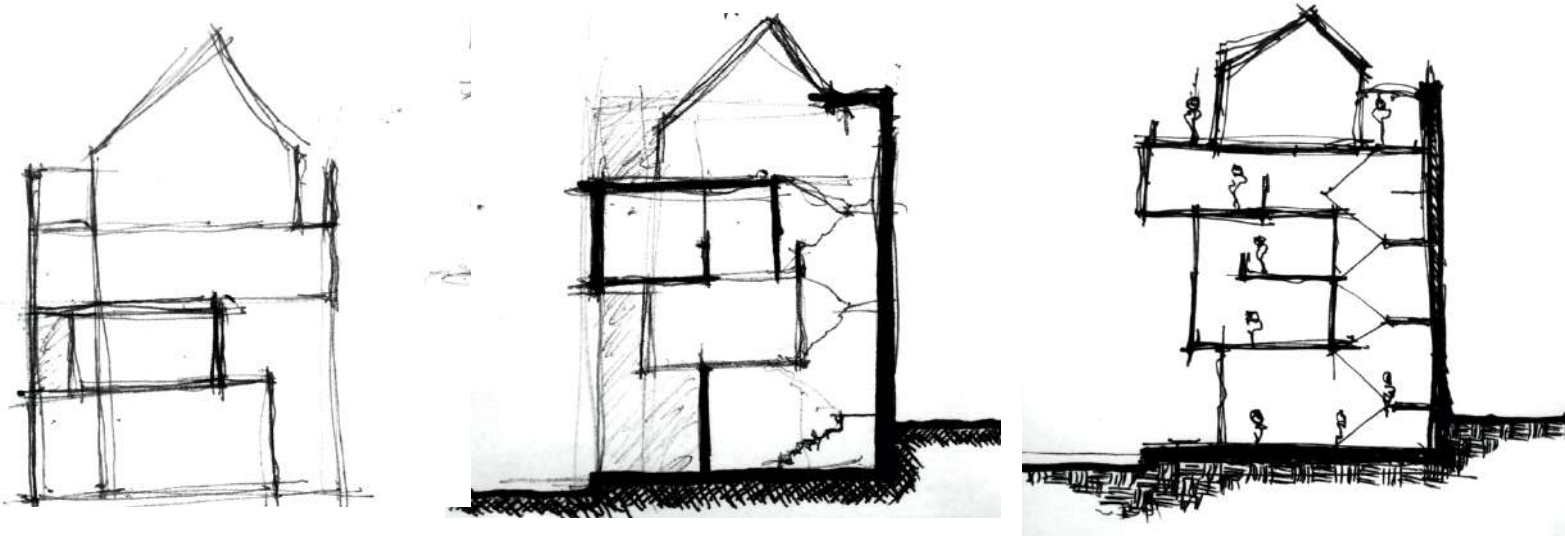
Surface Catchment Area- +/-5600sqm

COLLECTION

COLLECTION TANK

Fig. Catchment diagram and location of the water tanks for storage. There are two collection tank areas, which are strategically located to collect water, both surface stormwater, and roof water, and to distribute it near their intended uses.

(Solar Water & Rain Water System)

Trees (White Stinkwood)

This tree houses a variety of habitat and is drought resistant and frost resistant, making it a hardy tree. The tree provides a good shade and shelter. It is a deciduous tree, so allows for good shade in summer, and sunshine to filter through in winter as the leaves fall off.

It is a fast growing tree and needs very little tending, making it a perfect choice for the Shelter and the surrounding street edge.

Layout of Rainwater catchment & Reuse

As part of a continued effort towards a sustainable and environmental approach to the design, rainwater is harvested from several places to be re-used in irrigating the plants in the Shelter, and in some functions of the building such as toilets and laundry
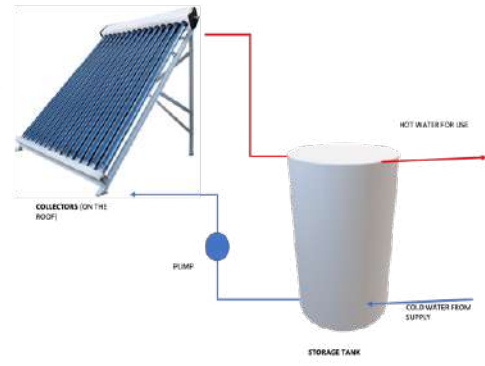
Solar Water Heating System

As continued strategies to implement systems that will reduce energy consumption and still provide the required comfort for using the facility, Solar Water Heating is incorporated into the design. As with the strategies used, the Solar Water Heating system is intertwined with the development of the design form and orientation, so that the design maximizes the use of natural resources to reduce energy consumption.
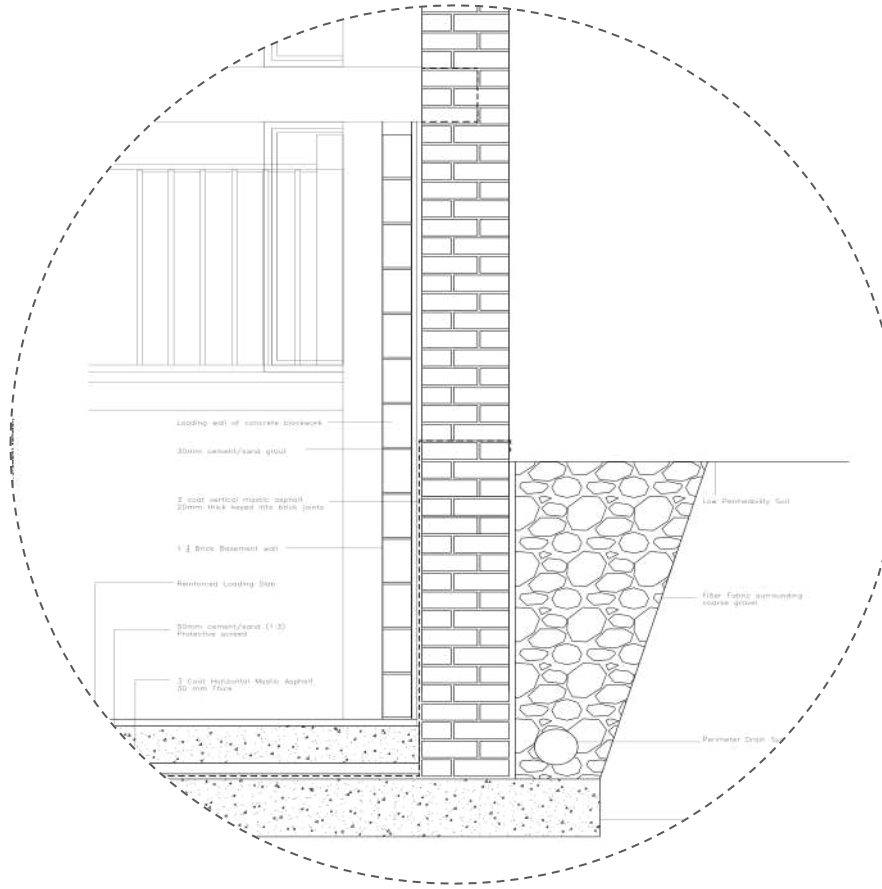
STRUCTURAL APPROACH

The structural approach is the culmination of the theoretical argument, materiality and sustainability and energy strategies engages in the design of the shelter. The stereotomic structure of the building which roots and grounds itself as discussed. In the design chapter forms the end wall of the Shelter, specifically in the sleeping spaces which are the most sensitive spaces, based on the theoretical argument and can be defined as instrumental in character forming and influence of the users, who are vulnerable and have experienced traumatic circumstances.

The heavy solid end wall which provides a sense of strength and security and define the end of the building are the stereotomic approach, which then flows to a tectonic structure which sits lightly on the site, as well as providing appearance of transparency and lightness. The tectonic side of the building is also designed to be an interactive space of the building, forming both psychological and physical sense of connectivity to the building through the identity concept and theory and as discussed in the design approach.
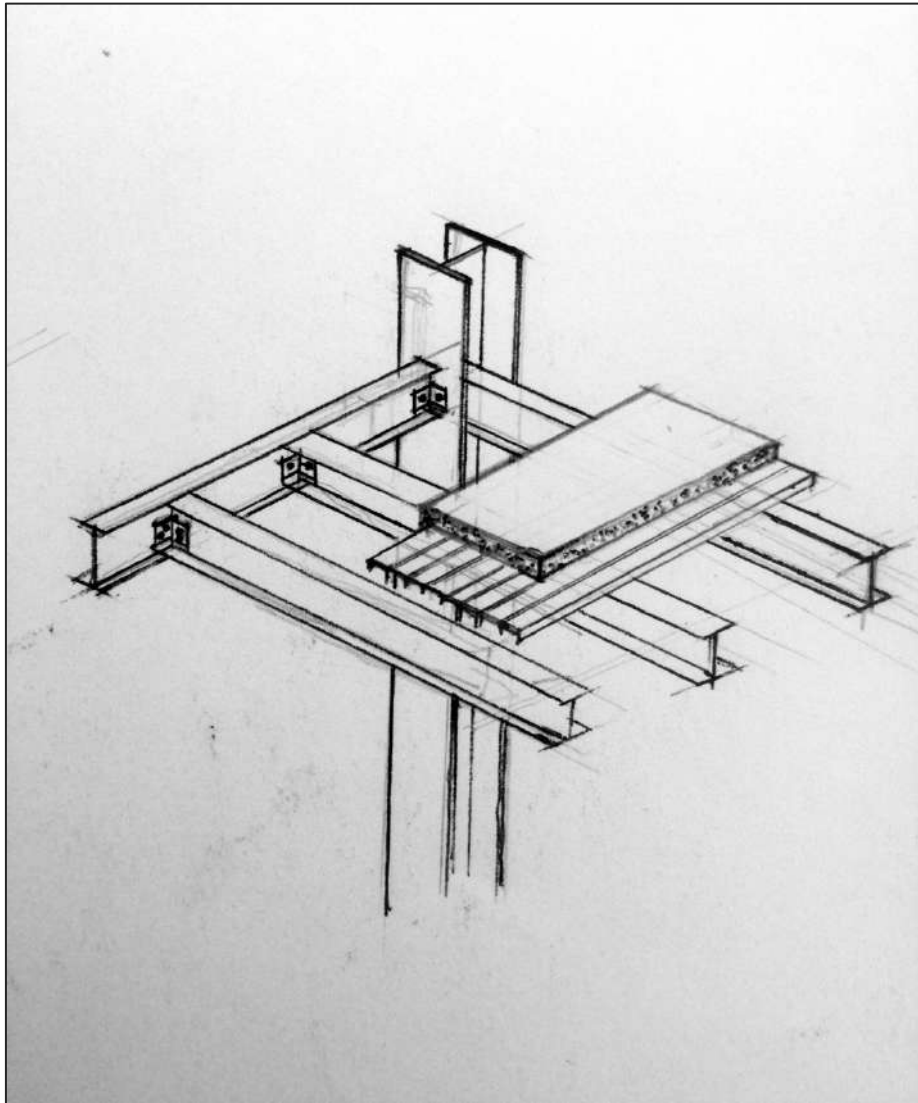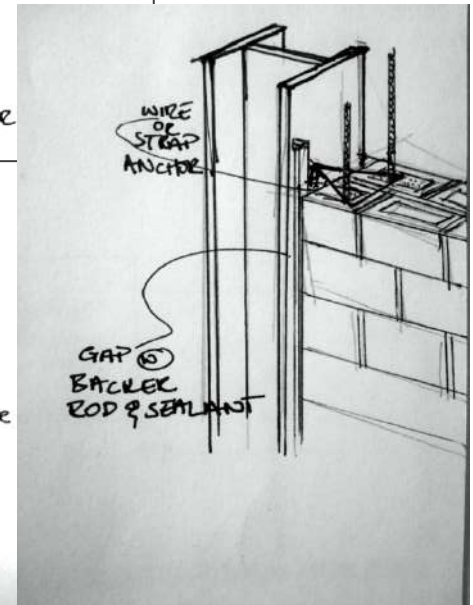
DETAIL A

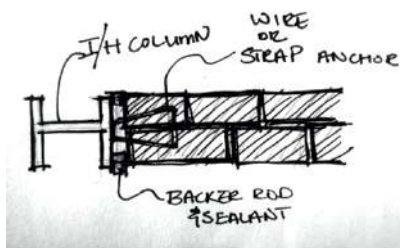Translucent polycarbonate sheets screwed to
50x75 timber purlins, anchored with wire ties and
bolted to the beam

Concealed Aluminium box gutter
fixed on a 50x150mm timber wallplate

DETAIL C

SLEEPING PODS
16—19yrs

DETAIL B

SLEEPING PODS
14—16yrs

Steel balustrades recessed and
fixed in bracket ad anchored
to the concrete

25mm Translucent Polycarbonate sheeting
fixed at 400x400mm cc,
on 38x 38 timber studs, on
76x56mm Stud fixed between 228x56mm
Joist, fixed by steel angle clips
with steel brackets web stiffeners and
through the bolts

SLEEPING PODS
8—13yrs

DETAIL D

20MM Floorboards on 228x56mm Joists
@ a grid of 400x400mm cc

DETAIL E

150mm Concrete Slab (Grade 30 Mpa/19)
On 250 Micron DPM
on 150 Thick Compacted G5
Material @ 95 % MOD

CONCRETE COLUMN—BEAM FRAME
STRUCTURE ON PAD FOOTING

+12700 TOP OF ROOF

+9700 TOP OF ROOF

+8500 SLAB OF ROOFTOP

+6180 TOP OF BALUSTRADE

+5040 TOP OF BEAM

+2100 FFL 1ST FLOOR

+1550 TOP OF GR FLOOR

0.0 NATURAL GROUND FLOOR

-1450 GROUND FLOOR

ITERATION 1 SECTION

DETAIL A
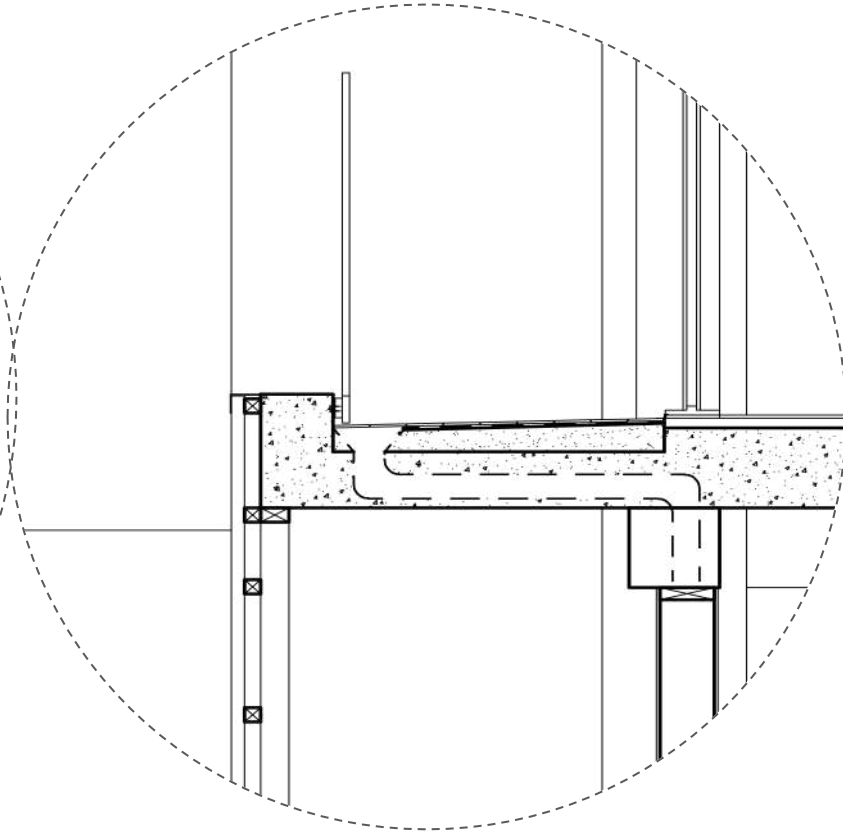
DETAIL B

DETAIL EXPLORATION

WIRE OR STRAP ANCHOR

BACKER ROD & SEALANT

H' COLUMN

LIGHT GAUGE METAL BACKER

WIRE OR STRAP ANCHOR

GAP @ BACKER ROD & SEALANT

J/H COLUMN

WIRE OR STRAP ANCHOR

BACKER ROD & SEALANT

STEEL
FLASHING

MESH WIRE

CORRUGATED   STEEL
ROOF SHEETING

STEEL RAIN GUTTER

INSULATION

STANCHION BRACKET

CLEAT ON STEEL
PURLIN

CORRUGATED   STEEL
ROOF SHEETING

C-CHANNEL

MAIN   STEEL   PORTAL
FRAME

+13,085
4 ROOF

SLEEPING   AREA
FOR 16-19 YRS

+9,485
3 THIRD FLOOR

CIRCULATION
AREA

+6,485
2 SECOND FLOOR

SLEEPING   AREA
FOR 8-13YRS

+3,325
1 FIRST FLOOR

ENTRANCE AREA

±0
0 GROUND FLOOR

-1,000
-1 FOUNDATION

ITERATION 2 TECHNICAL EXPLORATION

SLEEPING AREA FOR 16-19 YRS(GIRLS)

SLEEPING AREA FOR 16-19 YRS (BOYS)

SLEEPING AREA FOR 14-16 YRS(BOYS)

SLEEPING AREA FOR 8--14 YRS(GIRLS)

+13,085
4 ROOF

+9,485
3 THIRD FLOOR

+6,485
2 SECOND FLOOR

+3,325
1 FIRST FLOOR
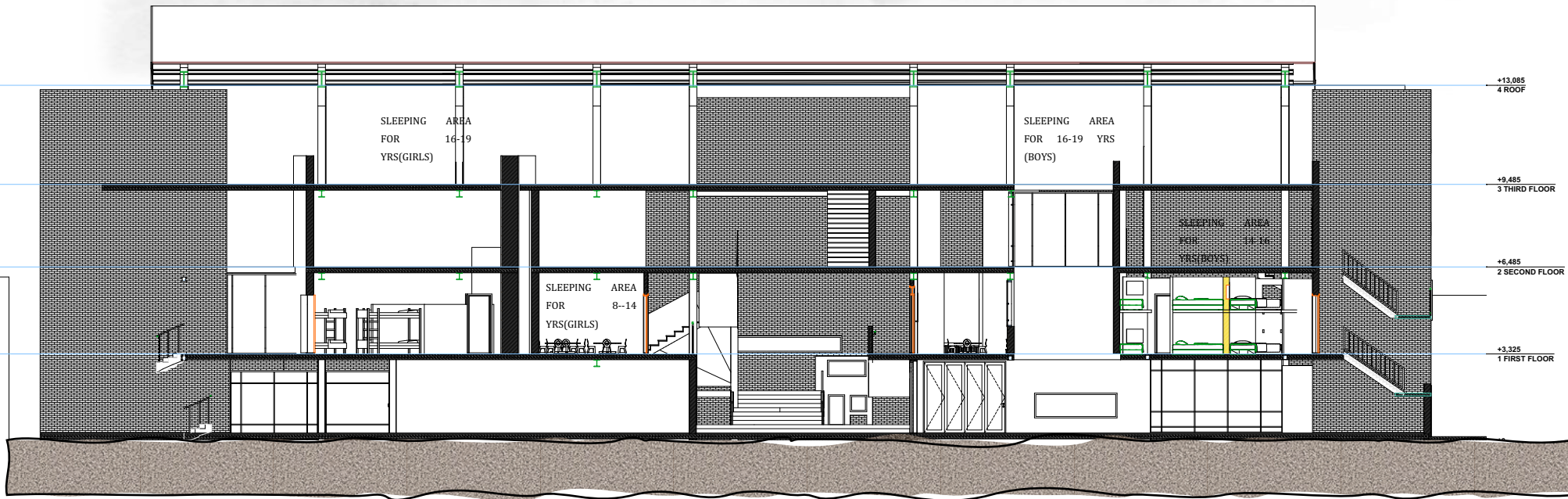
LONG SECTION/ELEVATION OF SLEEPING AREA

Summary

It can be said that architecture can create space that can create in children a sense of identity and belong. That children can derive pleasure from the spaces they occupy. From the combination of precedent studies, material and technical application, the issues of shelters for a demographic is difficult to track, and 'hidden', it would seem that when architecture is applied in a sensitive manner, cognizant to the fact that architecture creates spaces that can influence how we dwell.

However, due to the topic being one that is not studied popularly, and statistics for it very difficult to acquire, there still needs to be much more investigation to be done ion the topic.

FINAL DESIGN & PRESENTATION

STRUBEN STREET

SHOPS

RESIDENTIAL
BLOCK

Entrance Courtyard

RESIDENTIAL
BLOCK

CHURCH

SISULU STREET

SHOPS

House Courtyard
Play Area

Play Area

CHURCH

DE TOIT STREET

Shared Sports Field

Play Area

SHEPHERD STREET

SHEPHERD STREET

LIGHT INDUSTRIAL

SSECONDARY
SCHOOL

LIGHT INDUSTRIAL

JOHANNES RAMOKHOASE STREET
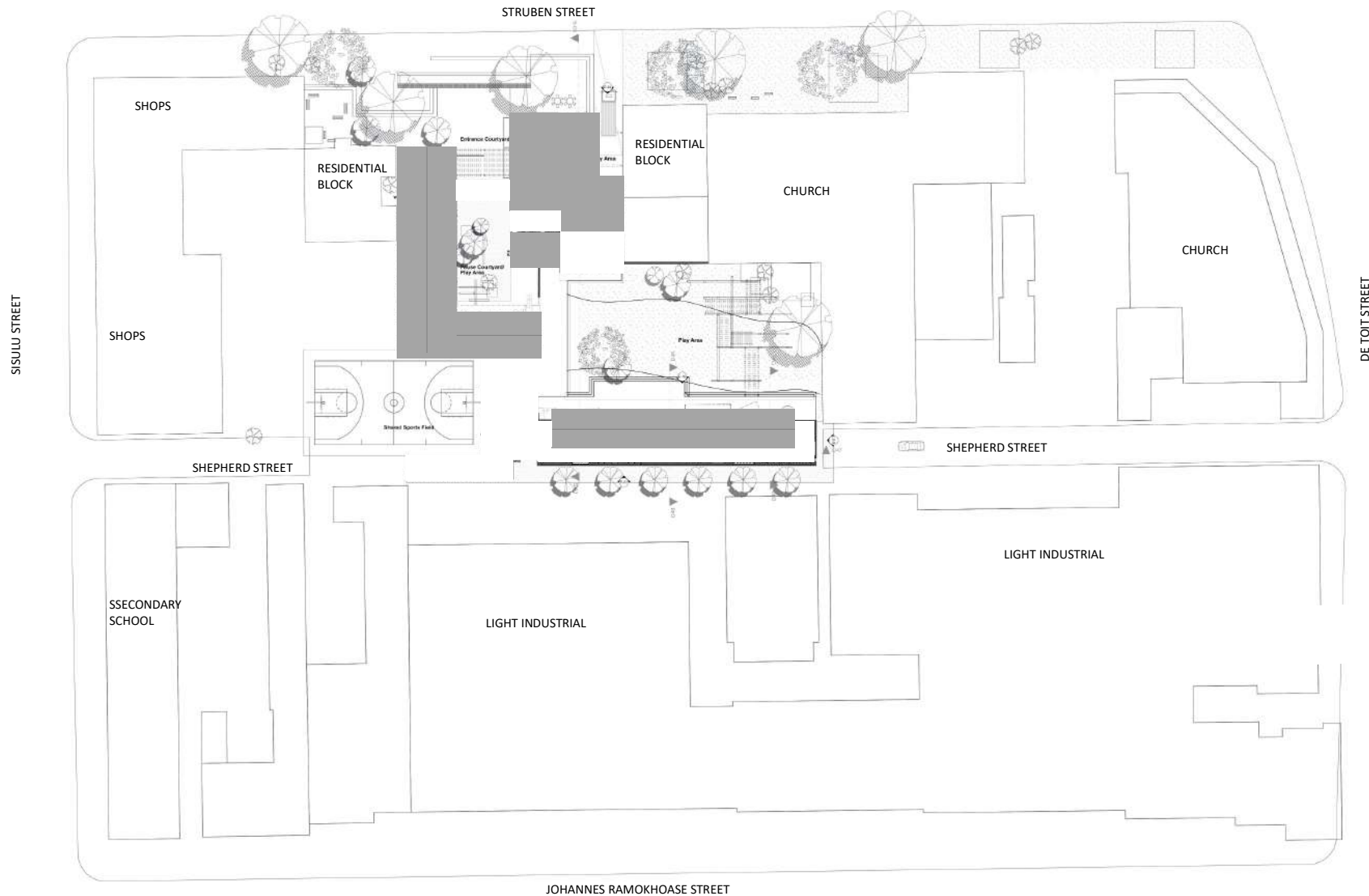
SITE LAYOUT PRINCIPLES
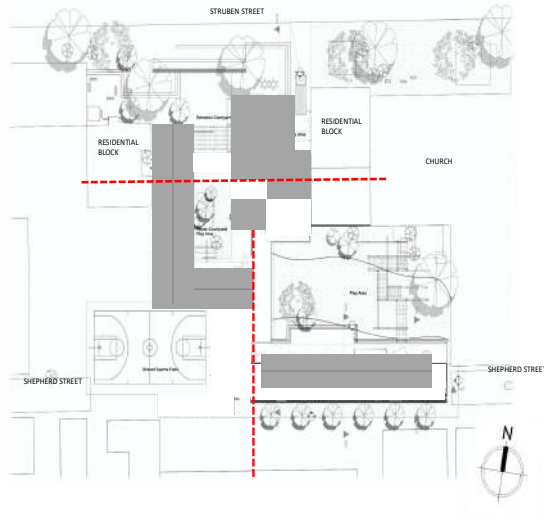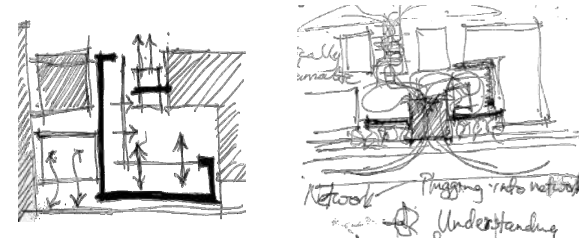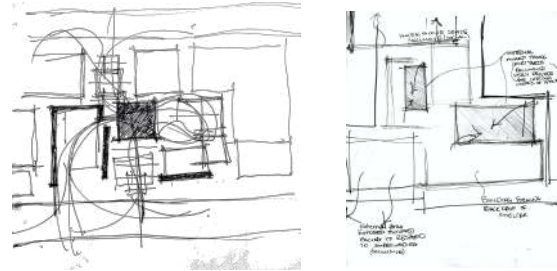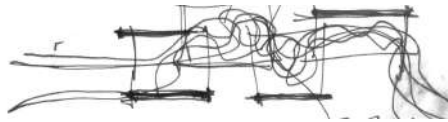
THRESHOLDS & CIRCULATION

Creating a series of thresholds to define different spaces and their accessibility to the users. The ability of the architecture to integrate with its surroundings, especially that of the relation to the street, the main, busiest street being Struben Street. The next threshold defined through a courtyard to hold and allow interaction as well as pause. The next threshold hold defined through a solid wall, expressing that passage through this area is restricted.

COURTYARDS & INTERACTIVE SPACES

There are two types of courtyards which have different forms of interaction. The orange external courtyards have strong connection to the street and encourage users that do not stay at the shelter. These courtyards encourage activation of those edges of the building. The green courtyards are more internalized spaces, that encourage interaction of users who have crossed beyond certain thresholds.
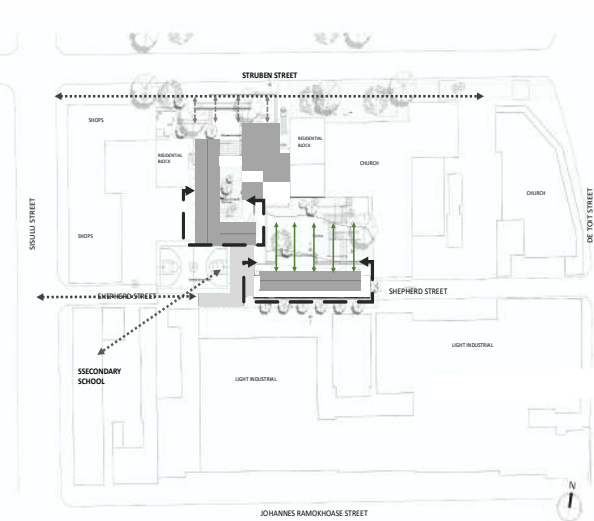
CONNECTIONS

The expression of connections in the front and west side of the building are such that the street becomes an outside room, connecting the street edge and the activities of the building. The front edge connects and encourages interaction of those passing on the street, sharing exchange, with an easy flow of between the threshold hold of the façade, especially that of the soup kitchen. The west connections are with the school adjacent to the shelter, encouraging shared spaces, as well as shower and bathroom facilities for homeless who are not resident in the shelter.
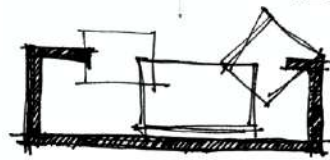
GROUND FLOOR PLAN

Entrance Courtyard

Dining

Delivery Area

Pause Courtyard/ Play Area

Library

Shared Sports Field

Play Area

Mechanical Room

N

STRUBEN
STREET

SHEPHERD STREET CUL-DE-SAC

SHEPHERD
STREET
CUL-DE-SAC

N
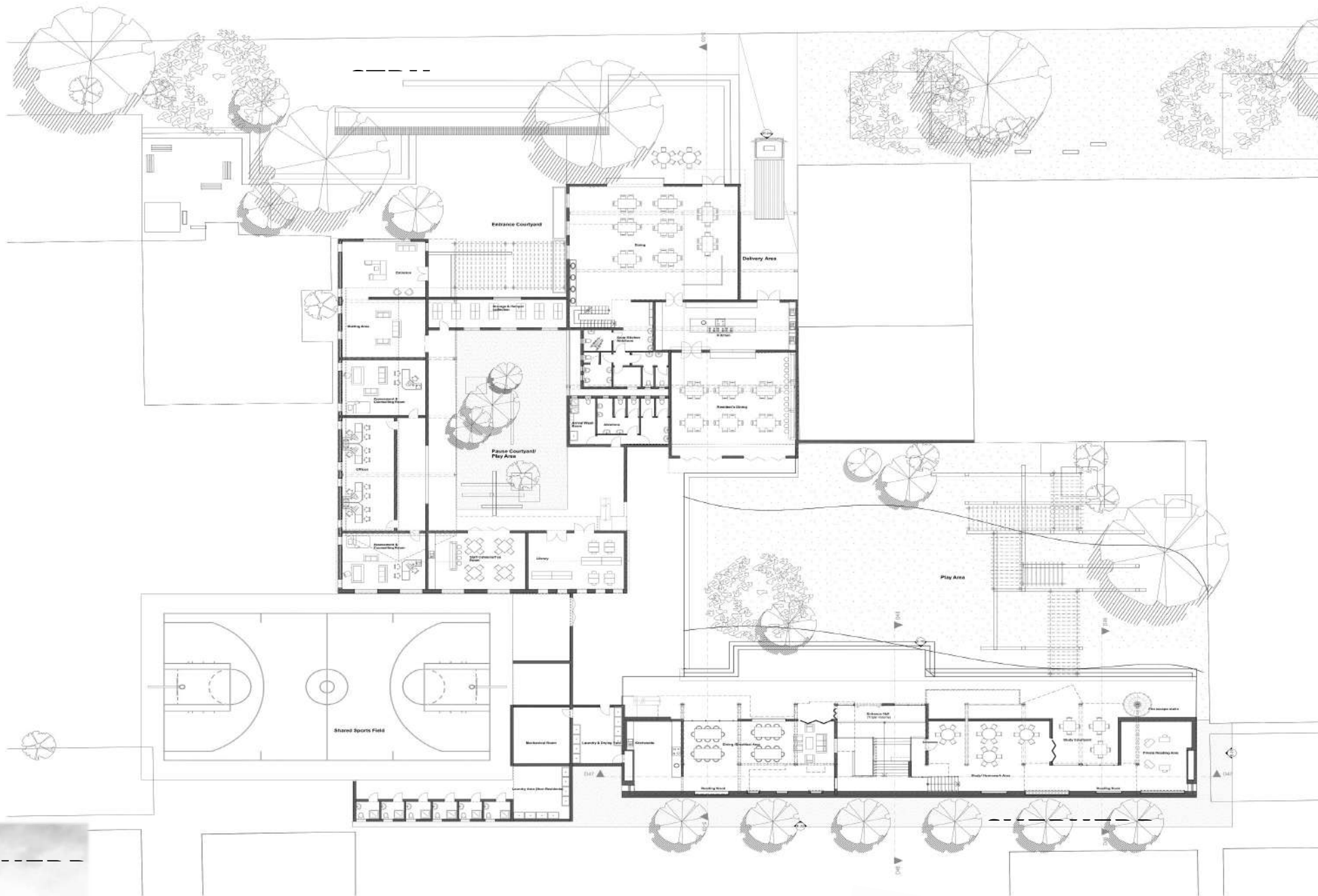
FIRST FLOOR PLAN
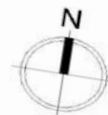
Sleeping Pods/Nest
Design Principle

This part of the building, which provides the 'sleeping pods', as it needs to be both a communal space for the children who live here, yet provide privacy for each of them has been programmatically divided to provide shared spaces on the most accessible floor which is the ground floor, and more privacy by having separate spaces as expressed through different floor levels of the building.

The strong red brick wall which wraps around the edges of the building as a reminder of the strength of the end wall, firm and sturdy.
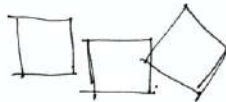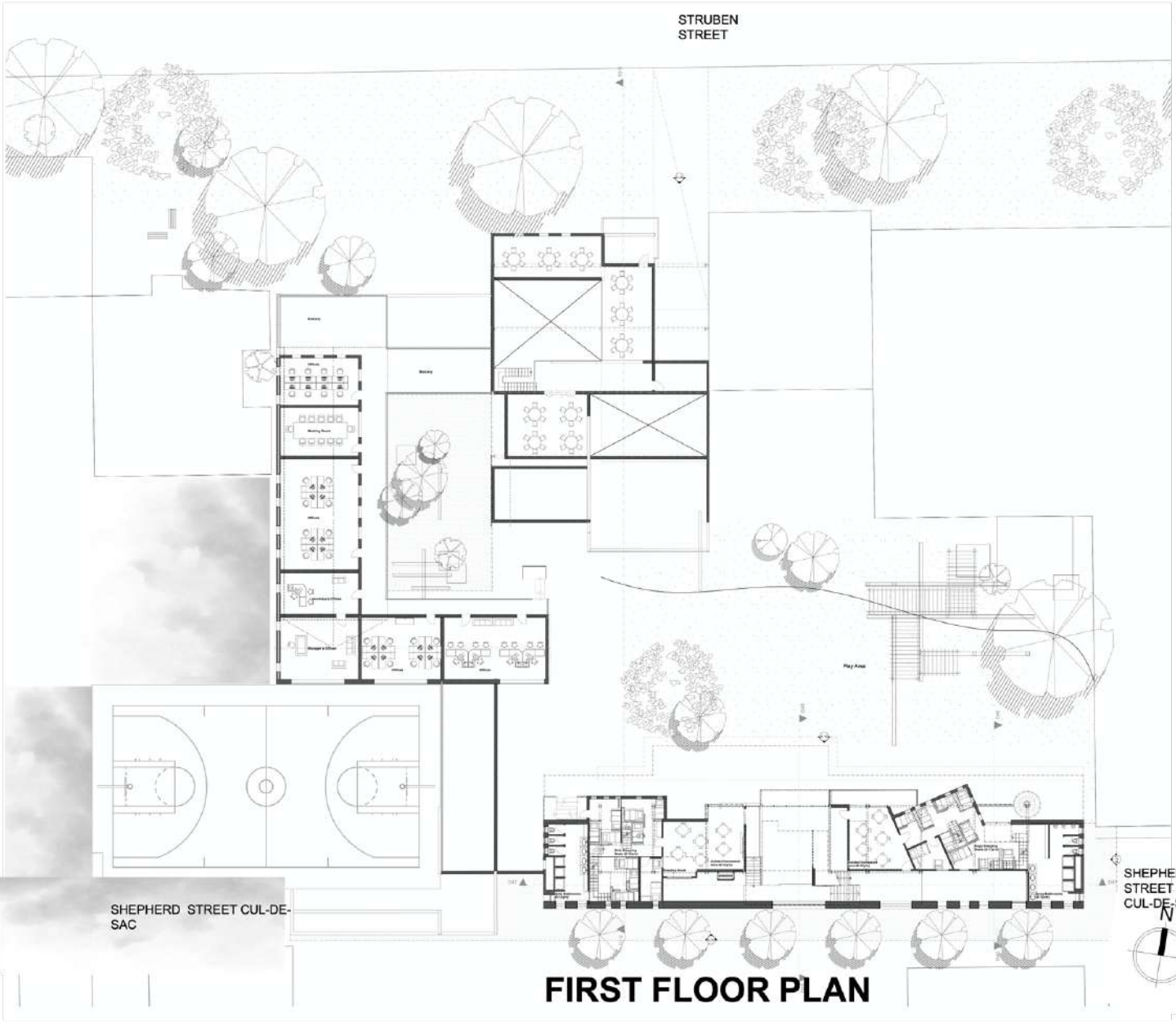

Different parts of a whole

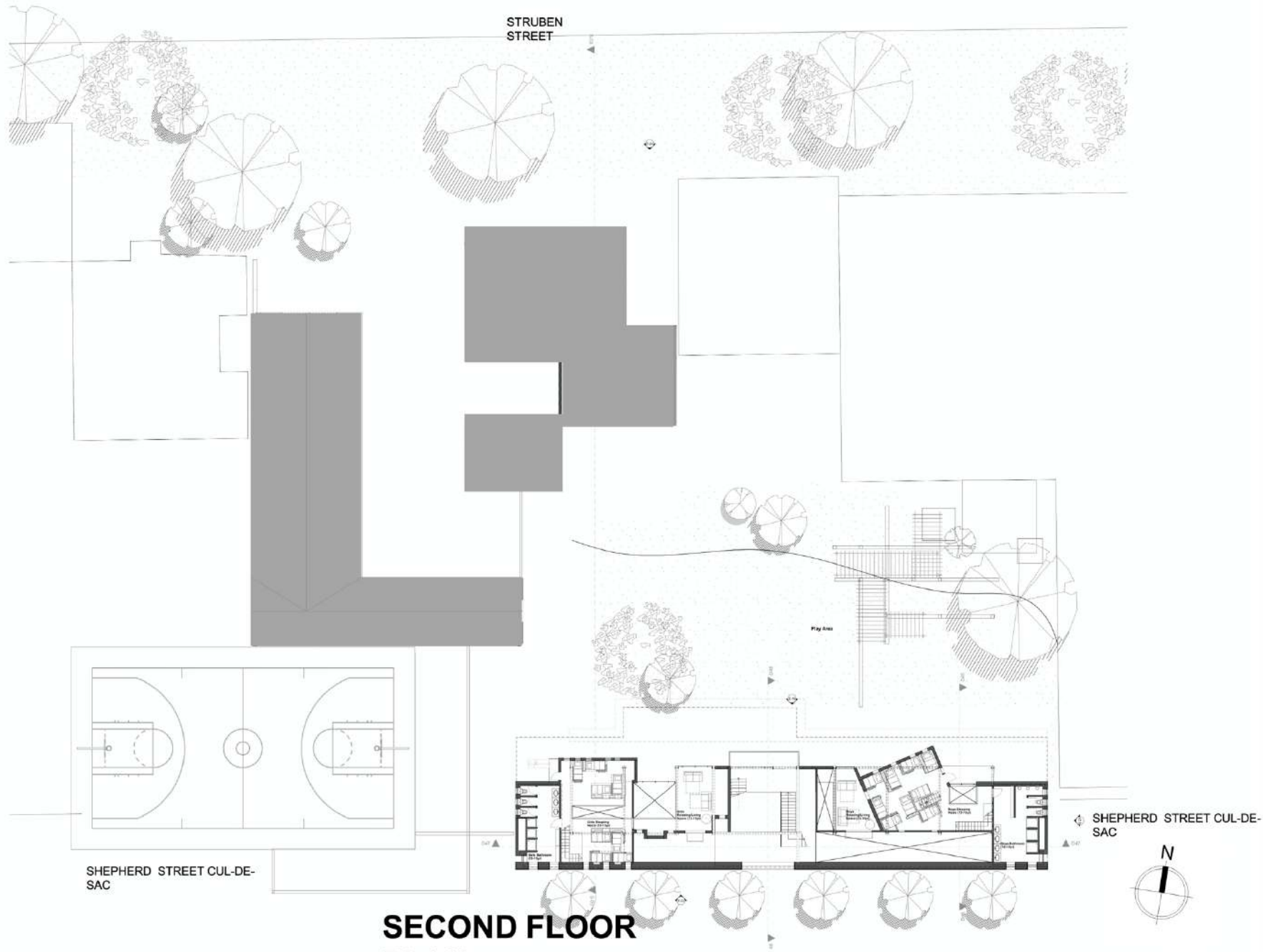Connectivity of the different parts by binding strong wall
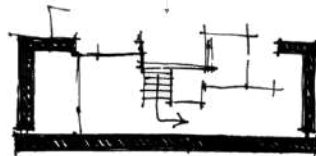
Circulation through the different parts of the spaces
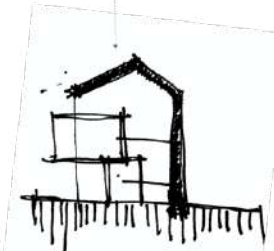
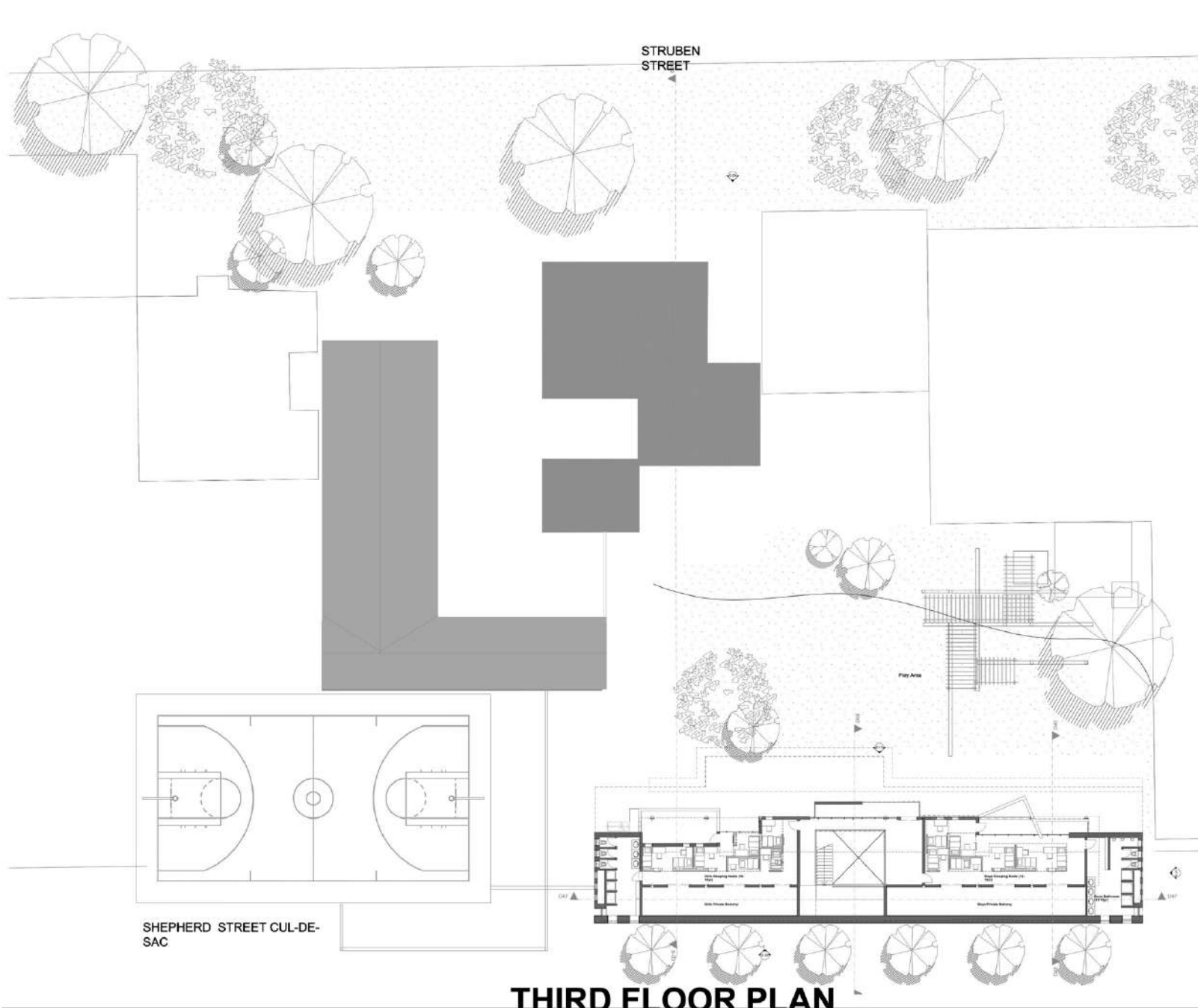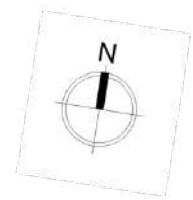Connection of all the spaces as encompassed by the wall and roof envelope.

STRUBEN
STREET

SHEPHERD STREET CUL-DE-
SAC

SHEPHERD STREET CUL-DE-
SAC

Play Area

**SECOND FLOOR
PLAN**

N

STRUBEN
STREET

Play Area

SHEPHERD STREET CUL-DE-
SAC

Girls Sleeping Area

Girls Private Balcony

Boys Sleeping Area

Boys Private Balcony

Boys Bathroom

THIRD FLOOR PLAN

N

SLEEPING

PLAYING

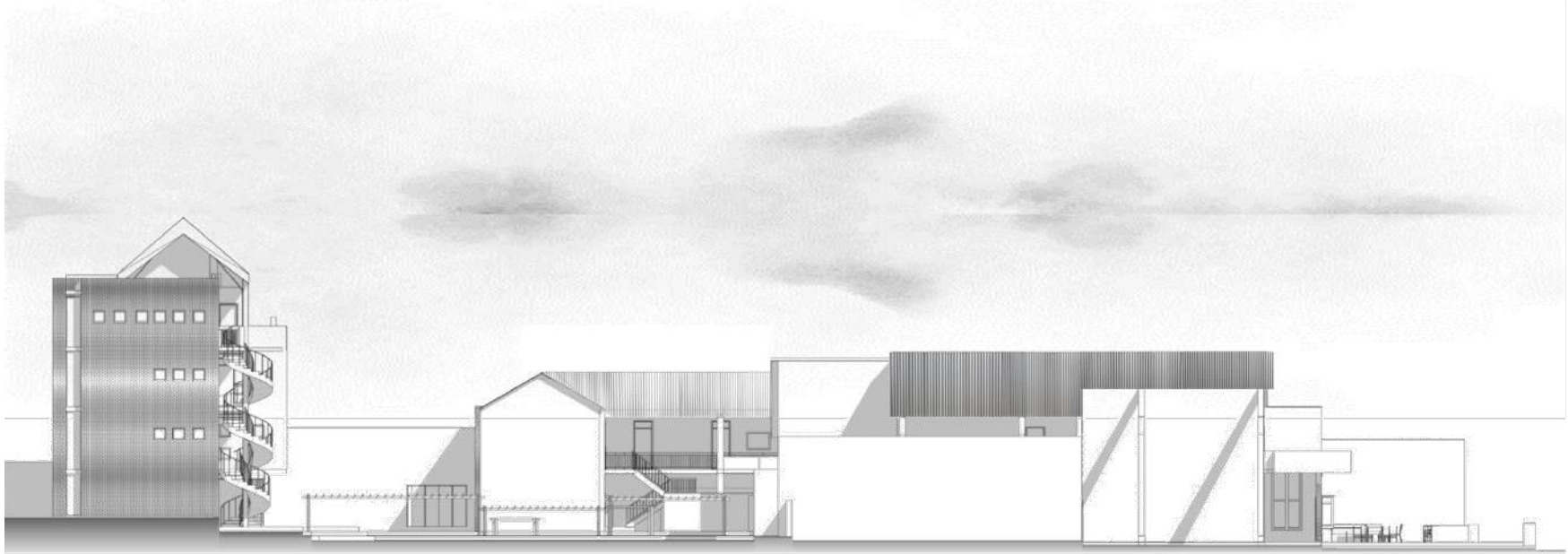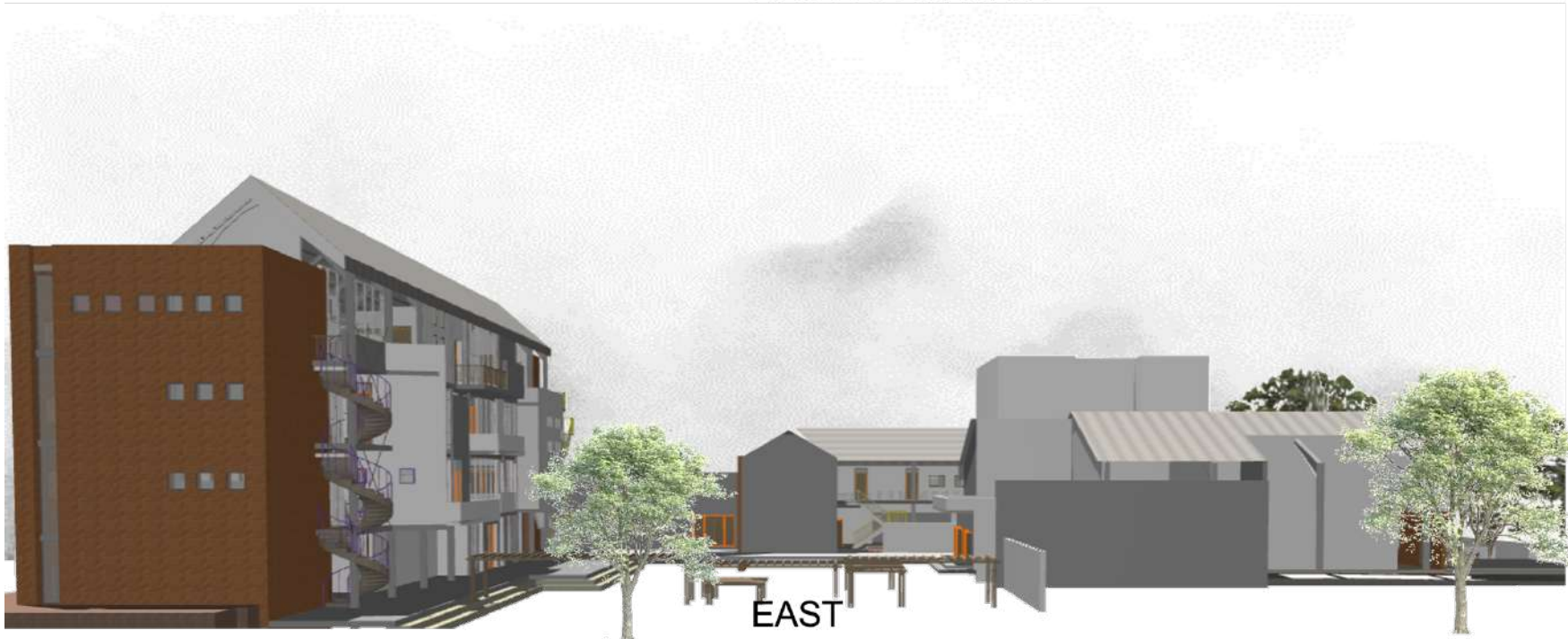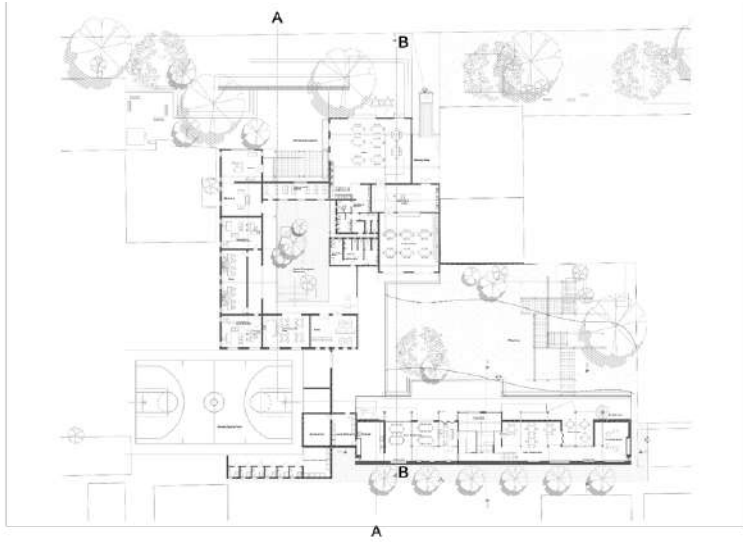NORTH/FRONT ELEVATION

NORTH/FRONT
PERSPECTIVE

EAST ELEVATION

EAST
PERSPECTIVE

FRONT COURTYARD/
FRONT ROOM

PAUSE COURTYARD/ PLAY AREA

SLEEPING NESTS

SECTION A-A

SECTION FOR SLEEPING PODS/NESTS

41 mm Galvanised Corrugated Klip-Lock roof sheet, screwed to 76mm x 50mm C-Channel steel purlins.

75mm Expanded Polysytrene Foam (EPS) insulation

150mmx75mm x 8mm Galvanised steel gutter (concealed) fixed to main steel Portal Frame

230mm plastered wall balcony at 900mm high on a 200mm thick concrete, on a cement screed laid to 1:80 fall

Connection of the steel girder & Filler beam bolted together with 22mm bolts & 150 x 203mm angle plate

270mm x 267mm Main I-Steel Column Portal frame @ 5000mm cc

600mm x 600mm acoustic suspended ceiling on cross T-sections

170mm thick reinforced concrete slab, poured in-situ on 38mm Profile steel deck Fixed to filler beam
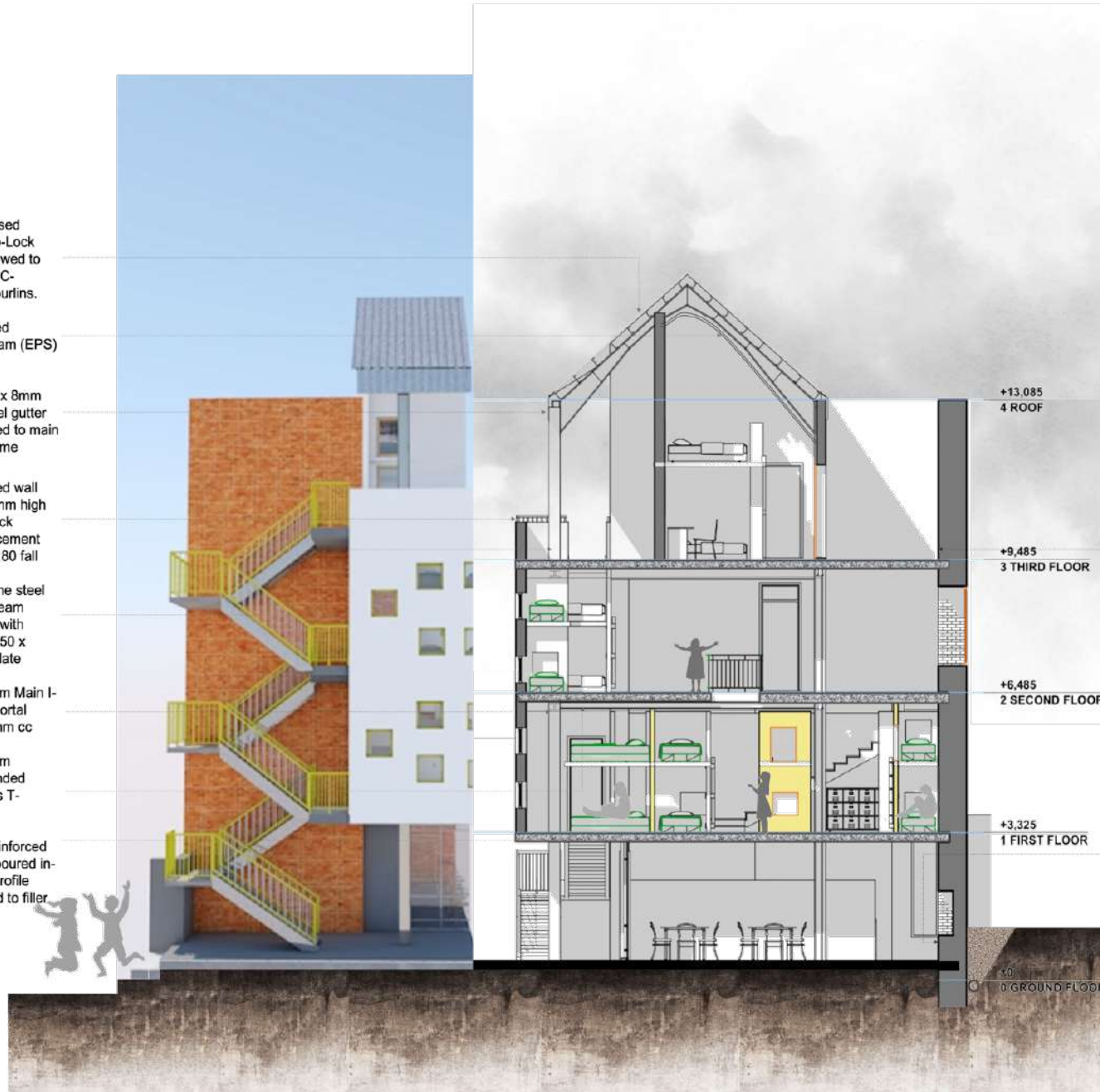
+13.085
4 ROOF

+9,485
3 THIRD FLOOR

+6,485
2 SECOND FLOOR

+3,325
1 FIRST FLOOR

+0
0 GROUND FLOOR

100mm Fulbore outlet fixed into 100mm diameter downpipe concealed in thick 660mm brick wall

Retaining wall with bituthene lapped & sealed onto underfloor DPM to form watertight barrier, with insulation. Internal 1 ½ brick block wall on a 30mm cement/sand grout On a loading slab, on a 30mm protective screed, on a 3 coat mastic asphalt 30mm thick

Granular backfill course gravel with filter fabric surround with a perimeter drain system on a mass concrete footing

INTERACTIVE STAIRCASE

Structure, Circulation and Play

The structure of the shelter, which is steel columns which form a portal frame to create the primary structure is exposed and allowed to be become a significant part of the finishes. The Structure further forms part of the interactive character of the staircase which is in the core part of the shelter where the sleeping pods exist. The staircase primarily is a circulation space but is explored to be more than just a space of connecting other spaces, but can lend itself to play, relaxing, and commons and allows for visual connectivity of spaces around it.

The staircase becomes a space that allows for activity, pausing and connection. The staircase is further connected visually to the outside space.
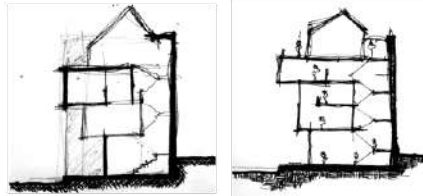
Back Wall & Circulation

(Allowing nooks for private space, while being interactive on many floors, and allowing visual connectivity)
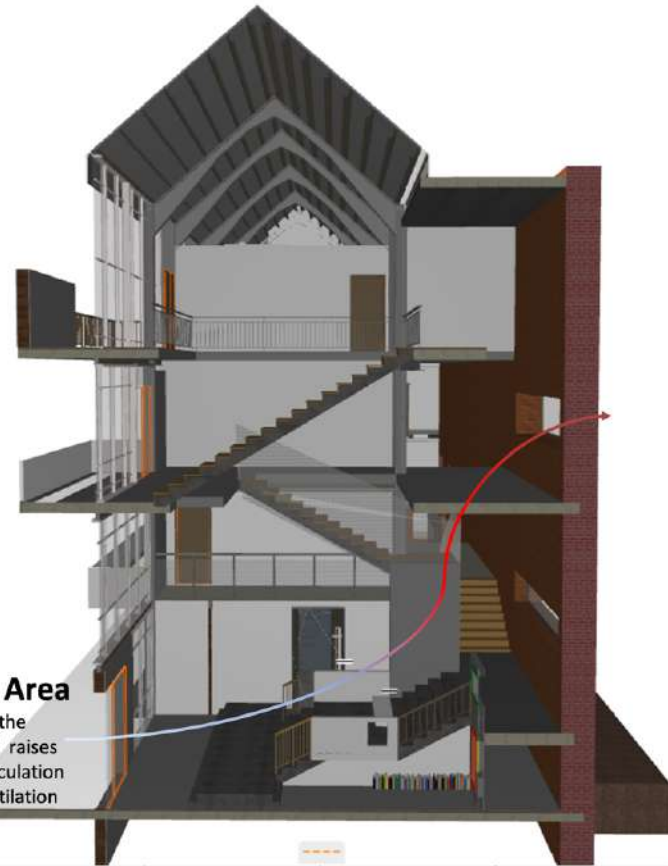
Entrance Area

Cool air enters the entry area, and raises through the circulation area. Cross ventilation

Entrance Area

(Allowing circulation, interaction, and exchange with many activities)

WEST ELEVATION

DETAILED LAYOUT SLEEPING PODS/NESTS

Girls Sleeping Nests (8-12yrs)

Reading Nook

Caretaker's Room

Girls Bathrooms (8-12yrs)

FIRST FLOOR
Sleeping nests

Girls Sleeping Nests (13-15yr)

Girls Relaxing/Living Space (13-15yr)

Girls Bathroom (13-15yr)

SECOND FLOOR Sleeping

Girls Sleeping Nests (16-18yr)

Girls Private Balcony
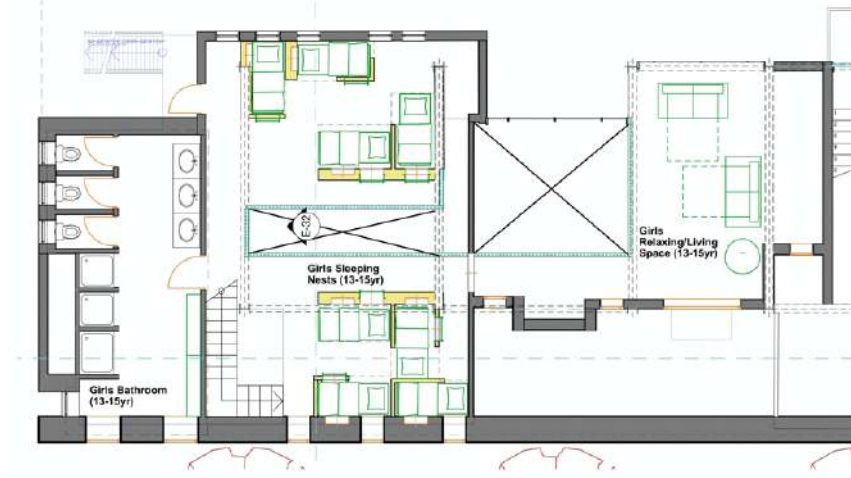
THIRD FLOOR
Sleeping nests

SLEEPING PODS/NESTS

(IDENTITY)

The nests offer comfort and seclusion to withdraw And allow one to find their own comfort. The nests are as a maze and offer variety and exploration for children With great wonder. The spaces can also be used as reading nooks or play areas when residents are few, but having the capacity to accommodate more children.
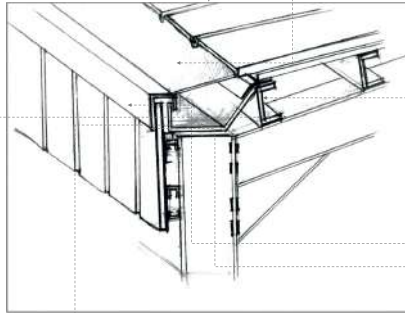

FIRST FLOOR
Sleeping nests

SECOND FLOOR Sleeping nests

THIRD FLOOR Sleeping nests

DETAILS

41 mm Galvanised Corrugated Klip-Lock roof sheet, screwed to 76mm x 50mm C-Channel steel purlins.

75mm Expanded Polysytrene Foam (EPS) insulation

150mmx75mm x 8mm Galvanised steel gutter (concealed) fixed to main steel Portal Frame

Wire Mesh fixed to the underside of klip-lock sheeting.

Cleat fixed on Steel Purlin

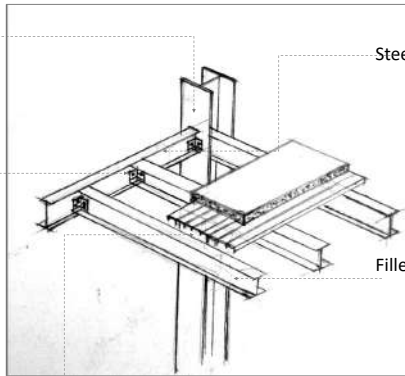75mm x75mm Flashing welded to stanchion bracket, fixed to steel gutter

DEATAIL A
Roof Detail 1:5

270mm x 267mm Main I-Steel Column Portal frame

Connection of the steel girder & Filler beam bolted together with 22mm bolts & 150 x 203mm angle plate

170mm thick reinforced concrete slab, poured in-situ on 38mm Profile steel deck Fixed to filler beam

Steel Girder

Filler Beam

DEATAIL B
Steel Connection 1:5

References:

Abbey Dr, C & Balamulari Dr, T, B, S. 2016. Architecture of Prosperity: Housing the Mind

Bassam A. Burgan, Michael R. Sansom, 2006. Sustainable steel construction. Journal of Constructional Steel Research, 62:11, 1178-1183,

Berens, J, Micheal. 2015. A review of research; Designing the built environment from recovery from homelessness

Bhonsle D. Kirti, 2010. Thresholds in architecture. Architecture-Time, space and people.30- 36

Cross, C & Seager, J, R. 2010. Towards identifying the causes of South Africa's street homelessness: Some policy recommendations, Development Southern Africa, 27:1, 143-158

Clare L. Twigger-Ross & David L. Uzzell, 1996. Place and Identity Processes, *Department of Psychology, University of Surrey, Guildford, GU2 5XH, U.K.* Journal of Environmental Psychology 16, 205–220

Dudek Mark, 2005. Children's Spaces

Edward. 2013

Freewan Ahmed A.Y. 2019. *Advances in Passive Cooling Design: An Integrated Design Approach, Zero and Net Zero Energy*, Getu Hailu, IntechOpen, DOI: 10.5772/intechopen.87123. Available from: https://www.intechopen.com/books/zero-and-net-zero-energy/advances-in-passive-cooling-design-an-integrated-design-approach.

Fry, T. 2005. Homelessness: A philosophical Architecture. Design Philosophy Papers, 3:3 191-203

Gauteng Department of Social Development, 2008. Child-Headed Households in the Gauteng Province; A survey of the prevalence and experiences of the families in Gauteng,

Hauge, Ashild Lappegard, 2007. Identity and place: a critical comparison of three identity theories. Article from: Architectural Science Review

Hall Matthew, R Lindsay, M Krayenhoff. 2012. Modern Earth Buildings; Materials, Engineering, Constructions and Applications

Herman Hertzberger. 1969. Educational Review, Harvard

Kakaza M & Folly K.A., 2015. *Effect of solar water heating system in reducing household energy consumption,* IFAC-PapersOnLine, 48: 30, 468-472,

Kok, P, Cross, C, Roux, N. 2010. Towards a demographic profile of the street homeless in South Africa, Development Southern Africa, 27:1, 21-37

Levinson & Ross. 2007. Homelessness Handbook

Mahnke, F. 1996. Color, Environment and Human Response for choosing colors based on age of kids especially for Academic environments.

Mathato, M. S. N. M. 1999. The Street as an architectural entity: an examination of the concept and the strategies used to balance the livable attribute of a street with that of the conveyor attribute. University of Mora tuwa. Sri Lanka (Masters Dissertation)

McCarthy, L, 2013. Homelessness and identity: a critical review of the literature and theory * PhD Research Student, Centre for Regional Economic and Social Research, Sheffield Hallam University

Mcnaughton, Carol. 2008. Transitions through homelessness: Lives on the Edge. Palgrave Macmillan

Najafi, M. & Shariff, M.K.B.M.. 2011. The concept of place and sense of place in architectural studies. World Academy of Science, Engineering and Technology. 80. 1100-1106.

Naidoo, V, 2010. Government responses to street homelessness in South Africa, Development Southern Africa, 27:1, 129-141.

National Development Plan*: Vision for 2030* (2012) 260.

North Carolina Division of Child Development and Early Education, 2012. *Benefits of connecting children with nature: Why naturalize outdoor learning environments, Natural Learning Initiative*, College of Design, North Caroline State University.

Ntakirutimana Ezekiel. 2015. Facing Homeless People in The Inner City Of Tshwane. A Missiological Conversation with The Wesleyan Tradition, Doctorate Of Theology In Missiology – With Specialisation In Urban Ministry At The University Of South Africa

Rapoport, A., 2016. *Human aspects of urban form: towards a man—environment approach to urban form and design*. Elsevier.

Safarzadeh H, Bahadori, M.N, 2006. Passive cooling effects of courtyards, Building and Environment, 40:1 89-104.

Sadkowski M. 1993. Place-identity and homelessness: The restorative nature of the home. Thesis, Edith Cowan University

South African National Standards (SANS). 2011. SANS 10400-O: Lighting and ventilation. Pretoria: Standards South Africa.

Schmidt, S., Pinheiro, D. and Architective Publications (South Africa). 2013. Architective: Building construction standards for South Africa. 1st ed. Mondeor, Johannesburg: Architective Publications/Daniel Pinheiro.

Simas Camila, 2017. Streets as storytellers: Defining places and connecting people. https://www.bdcnetwork.com/blog/streets-storytellers-defining-places-and-connecting-people

Statistics South Africa, 2011. Census 2011, Statistics South Africa, Pretoria.

Sharma Somali, 2017. Clay: A Sustainable Green Building Material Choice for Architects

Strauss, M. 2017. A right to the city for South Africa's urban poor. Stellenbosh University, South Africa

Tshwane Homeless Forum. 2015. Draft homelessness policy. Available at: https://tshwanehomelessresearch.wordpress.com/ Accessed on 10/03/2019.

The Brick Development Association, 2016. Brick sustainability report.

Tissington, K. 2011 *Resource Guide to Housing in South Africa 1994-2010: Legislation, Policy, Programmes and Practice* (2011) 5.
Whiteford. 2008

Vassart, O, Cajot, L & Labory, F. 2009. Sustainability of buildings made of steel.

Zakariya, K & Ujang, N. 2014. The Notion of Place, Place Meaning and Identity in Urban Regeneration Procedia - Social and Behavioural Sciences 170:2015, 709 – 717

Zubrzycki 1989

PICTURE REFERENCE

https://rekordeast.co.za/32358/millennium-development-goals-poverty-south-africa/,ACESSED 25/04/2019-Hands holding cup