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URBANITY AND ARCHITECTURE:

Towards a Sustainable Concept for Urban Dwelling

In the Umgeni Road Precinct, Durban

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Supervised by: Dr. Yashaen Luckan

Dissertation submitted in partial fulfilment for the degree:

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[ABSTRACT]

The purpose of the dissertation is to determine the significance of an appropriate architectural typology, within an industrial area of the city, to ease the problems associated with workers commuting long distances to work and back; as well as its influence on the city fabric and contribution to revitalising areas within the city that are not currently suitable for human comfort.
The primary research question is how can the Architecture of a mixed use architectural typology address the needs of the working commuters, and influence urban regeneration, within a semi-industrial area in the Umgeni Road precinct of Durban?
The research will analyse a mixed use architectural typology and its effect on the urban environment and thereafter investigate the main causes of people having to travel long distances for work and to amenities, and the lack of suitable accommodation within the industrial portions of the city to cater for the working commuters. The research necessitates a mixed methodology of primary and secondary sources.
The research further explores how intervention can be used as a step towards simultaneously regenerating an old industrial area in a sustainable way and bringing life to the area, especially after working hours.

The dissertation focuses on areas which are seen as misused or used only during the day, abandoned or derelict. In a sense, the spaces which are wasted yet have the potential to be transformed into important architectural structures and quality urban spaces.
The design of the proposed architectural and urban catalyst will be assisted through the analysis of literature, theories, case studies, precedents as well as interviews with working commuters and surveys distributed to professionals in the architectural and related fields. The research will provide the reasons as to why a mixed use architectural typology will be beneficial within the context of study and the way in which the architectural intervention will be developed to produce a more sustainable architecture that meets the needs of the users. The research will discuss theories and concepts through three main components. Firstly accommodating the needs of the people via the theory of place making. Secondly the regeneration of an old industrial area in the city through the principles of New Urbanism and finally, sustaining the proposed intervention through the concept of flexibility where the needs of the workers will be explored in a mixed use setting.

[DECLARATION]

A document submitted in partial fulfilment of the requirements for the degree of Master in Architecture, in the Graduate Programme in Howard College, University of KwaZulu-Natal, South Africa.

I declare, that this dissertation is my own unaided work under the supervision of Dr. Yashaen Luckan. All references, citations and borrowed ideas have been duly acknowledged. It is being submitted for the degree of Master in Architecture in the Faculty of Humanities, School of Built Environment and Development Studies, University of KwaZulu-Natal, South Africa.

None of the presented work has been submitted previously for any degree or examination in any other University.

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Student name and number

12 March 2018

Date

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Thank you God, for providing me with the strength to persist in my path to complete this degree. Your presence is always felt and I am thankful for the blessings you always bring into my life.

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To my dear daughter Mishka Atalya. You are my source of inspiration and the reason I persevere. I love you with all my heart and soul.

[DEDICATION]

This dissertation is dedicated to the hard workers within society. Your contribution, however small, is great in the eyes of the world.

Do not let the past, or even your current situation, define the person you are destined to become.

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CHAPTER 1: INTRODUCTION

1.1 BACKGROUND STATEMENT – OUTLINING THE PROBLEM

One of the problems faced in South Africa today is the large number of people living in the outlying areas away from their workplaces within the city.

This is as a result of the lack of proper and affordable housing and interactive spaces within the city, along with the zoning of areas which remained Post-Apartheid.

Thus the effect is people being forced to travel long distances, which is costly in terms of money and time.

The city has great potential to provide quality spaces in which people can live and interact. However, certain areas such as the semi industrial precincts and other inner city zones do not make full use of the spaces, especially after working hours. Thus, the present state is one which exudes wastage of potential spaces, abandoned buildings and derelict conditions (Sharkey, D M. 2012:17).

The need for proper infrastructure, that eases these current issues is vital as the existing architecture, more than often, is the cause of people having to adapt to a lifestyle they are somewhat forced into.

Social cohesion, working hand in hand with sustainability at an economic level, needs to come into play and because of the increase in urbanisation, the need for decent yet affordable living is great.

Policies during apartheid play a part in this issue whereby racial groups were separated, moving many families and households away from areas close to the central business district areas.

The high cost of commuting may also add to the high rates of poverty, reduced productivity of workers and less time spent with loved ones.

According to an article in the Ooba News Archive (2017) regarding travel woes, the rise in petrol costs, increased traffic congestion, and the slow upgrade of transport systems are driving people to purchase properties nearer to their places of work.

"There is a global trend of people buying near their workplaces, and South Africa is no exception," says Saul Geffen, the Chief Executive of Mortgage SA, within the article.

The article goes on to state the negative effects of commuting long distances from home to work and vice versa and the benefits of having to stay closer to the work place. With commuting comes stress, expenses, consumption of time and various forms of pollution.

According to the 2005 Social Housing Policy: ''successful regeneration initiatives in other parts of the world indicate that comprehensive strategies are necessary and that the introduction of social housing into blighted environments has had positive external impacts on the surrounding environments'' (HDA NASHO research report. 2013:11).

Thus, by working toward areas within the city that have been neglected or misused, one is able to provide a means of living closer to work whilst simultaneously regenerating areas.

In addition to this, the area will be restructured spatially (reversing the effects of apartheid zoning), economically (creating jobs and revitalising areas so that more people frequent the areas) and socially (there will be a mixture of races and incomes as well as a decrease in crime, as a neighbourhood community will be formed)

By addressing the issues above and producing buildings that provide comfort whilst still being affordable, there is great potential in catalysing the process of Urban Regeneration and in turn combatting the effects of living further away from amenities and work.

1.2 MOTIVATION /JUSTIFICATION OF THE STUDY

There are many areas within the industrial zones of the city that are capable of possessing quality spaces, so that the urban environment can be used to its full potential. The perception of certain areas within the city and the lack of comfortable and affordable living spaces can be avoided by the creation of far more interactive areas and revitalising buildings and spaces to accommodate the needs of those who use the area

1.3 DEFINITION OF THE PROBLEM, AIMS AND OBJECTIVES

1.3.1 Defining the Research Problem

The image of present day life is one in which the cost of living is relatively high. Areas which offer comfort central to all services are usually those which are not affordable by the poorer working population. Following from this, if cheaper accommodation is available closer to places of work and amenities, the spaces are not ideal to live in as they do not address the user's comfort and situation, as well as there being insufficient places in which one could reside centrally.

There are many places within the city and surrounds which have been used for specific functions such as industrial work. These areas are used at certain times of the day, in most cases, and dead at night. This condition, along with abandoned / derelict sites and buildings, are breeding grounds for crime to take place as well other illegal and undesirable activities (Sharkey, D M. 2012:24).

The architecture of an area can either influence positive change or a negative perception. Urban designers and architects have the power to transform areas into positive spaces that are used to their potential. There are a number of ways in which these spaces and structures can be sustained.

The dissertation will explore how the design of a mixed use architectural typology could positively impact an area within the city that requires regeneration and how the building can meet the needs of the working commuters within the area. Further to this, the research will look into ways the building is able to be sustainable and how conceptualising flexibility within the building can allow for transient user comfort and a sense of place.

1.3.2 Hypothesis

Architecture impacts perception, which can be a positive or negative influence on an area. Regenerating derelict areas and creating flexible spaces may be a sustainable way for spatial transformation whereby human needs and aspirations are addressed within an ever changing and indeterminate context.

1.4 AIM AND OBJECTIVES OF THE STUDY

1.4.1 Aim of the Study

The aim of this dissertation is to explore the concept of a mixed use architectural typology within a semi industrial context in the city as a response to the needs of the commuters in the Umgeni road precinct. This will in turn establish design principles to aid urban regeneration of the precinct.

1.4.2 Objectives of the Study

The intended objectives of the research are as follows:

1.4.2.1. To explore the evolution and characteristics of a mixed use architectural typology.

1.4.2.2. To explore the housing and economic needs of the commuter.

1.4.2.3. To determine urban design principles in order to resolve problems of traffic congestion.

1.4.2.4. To identify how a mixed use architectural typology may contribute to the urban environment by revitalising / repairing the physical fabric of the area.

1.4.2.5. To investigate adaptable spaces as a response to the urban commuters needs and the ever changing context.

1.5 DELINEATING THE RESEARCH PROBLEM

The dissertation firstly deals with the current problems that cause people to commute on a daily basis to places of work and leisure; which would be things such as the lack of affordable accommodation in the city areas as well as the segregation of which they are accustomed to. Further to this the research looks into areas within the city, specifically the industrial parts of the city that are rife with wasted spaces, abandoned buildings and so forth. People are therefore not quick to venture into these areas as they are not seen in a positive light, especially since they are only used at specific times during the day and more secluded at night. Observations and research was therefore done during times that are considered less dangerous and with a few people to accompany the researcher.

There would also be a language barrier due to the researcher only fluent in English; therefore someone who is fluent with the language dominating the area will accompany the researcher to translate if necessary.

A catalyst is required which benefits these areas and the needs of the people. The idea of a mixed use architectural typology is explored and the benefits of introducing this type of architecture along with principles of New Urbanism that allow for the area to be more open to a positive perception.
In doing so, the research looks at a diverse group of people in terms of age, gender and race. However, if looked at in the sense of the rural working class, we are more inclined to limit the economic status to that of the poorer population. This however can be relooked at as people are drawn to the area only through perception of the area and the services available.

The macro and micro context of areas relative to New Urbanism will be discussed along with regeneration of the architecture and spaces in the context of study. By considering these, the research is able to incorporate principles to create a pleasant and convenient environment and a more meaningful architecture by means of a live-work–play architecture.
Due to time constraints, the scope of the research will need to be limited and focused. There are many facets to the research but the most important and relevant will be discussed.

1.6 RESEARCH QUESTIONS

1.6.1 Primary Question

1.6.1.2 How can the Architecture of a mixed use architectural typology address the needs of the working commuters, and influence urban regeneration, within a semi-industrial area in the Umgeni Road precinct of Durban?

1.6.2 Sub Questions

1.6.2.1 What are the characteristics of the current mixed use buildings in the Umgeni Road Precinct?

1.6.2.2 What are the needs for a live, work, play environment in the Umgeni road precinct?

1.6.2.3 What principles need to be adopted within the area to minimise traffic congestion?

1.6.2.4 How can the proposed intervention influence urban regeneration within the precinct?

1.6.2.5 How would adaptability be conceptualised to inform a sustainable design catering for the transient people?

1.7 CONCEPTUAL AND THEORETICAL FRAMEWORK

The theories and concepts to be discussed within the research form the foundation to the research topic. They ultimately provide the framework for the research. The theories and concepts which are briefly mentioned below will assist in the understanding of architectural environments where the user's needs are accommodated in a sustainable way as well as regeneration of the surrounding context.

1.7.1 PLACE MAKING

The theory of place making will allow one to understand the importance of accommodating the user's needs within their context and how finding spaces within the city work to achieve this as well.

The research analyses Roger Trancik's book, Finding Lost Space, in which neglected spaces within the city are used in a positive way to aid regeneration of areas.

The re-connection of these spaces within the city are discussed by Trancik through Figure Ground Theory, Linkage Theory and Place Theory.

Essentially, Trancik explains how a space becomes a place once meaning is given to the space. To further elaborate, once a function is given to a space, the space now has purpose and only then does this become a place…a place of value (Trancik, R. 1986:114).

Following from this, place theory promotes a community being created by encouraging social interaction. This is achieved by responding to the requirements of the context in which the catalyst is placed and those of the people who will ultimately occupy the spaces.

1.7.2 NEW URBANISM

The revolt against urban sprawl and modernist urban planning, New Urbanism, began in the 1980's with the intention of creating a higher quality of life for people to live and work in.

The principles adopted in New Urbanism looks to promote a healthier and happier lifestyle to those who function within the context of the proposed catalyst as well as providing a healthier environment.

In turn, New Urbanism allows for areas which are neglected or misused to be regenerated and given purpose. By bringing life back into these areas, a better experience is created for the user and therefore more opportunities for social interaction amongst people of different walks will be created (Sharkey,D.M. 2012:9). In turn, the use of an area that requires regeneration rather than a green-field site, allows for less impact on the environment and therefore an architecture of sustainability is created.

Mixed use spaces have the benefits of easing the need of travelling long distances by the allowance of easy access to areas within a pleasant environment that one would want to experience.

1.7.3 FLEXIBILITY

The concept of flexibility is used to create sustainable spaces within an ever changing context. The catalyst will have allowance to be adaptable, especially to the transient workers within Umgeni Road. Relative to New Urbanism and creating a sense of community, the building has to provide a sense of permanence and security to the transient community by giving them a setting in which they are able to create an identity of their own (Flores, L. 2015:3). One must not confuse the type of transient population that the research refers to. Whilst some define the transient population as those who are just passing by, the research looks at those individuals travelling long distances to their places of work.

By catering then for their needs, the idea of flexibility and adapting the spaces comes in with the idea of these spaces being sustained for future occupancy being reinforced.

CHAPTER 2: RESEARCH METHODOLOGY

2.1 RESEARCH DESIGN

The research conducted for this dissertation focused on understanding the needs of the working commuters of Umgeni Road and gaining a deeper insight into their perceptions of the area and as a result, their requirements in the context of the Umgeni Road precinct.

Once all the research is synthesised, it will be assessed to obtain a greater insight into the need for the design and thereafter integrated into the design process. This research will be used as a base to inform the design of a mixed use architectural typology.

The research approached to this study was a mixture of qualitative and quantitative methods. This chapter of the dissertation plays an important role as it explores methods to collect valuable information.

2.2 RESEARCH METHODS

The study is informed by both primary and secondary data collection.

Primary data will include the use of questionnaires, case studies, site observations and a survey to gain a greater insight into the perception and needs of the area and the people who occupy it. The case studies will be used to critically illustrate how people work and live within a context relative to their commuting woes. The observations and analysis of the site area and context study area will be to gain knowledge of the area.

Secondary data will be in the review of literature linked to mixed use building typology and the city image presently as well as looking at precedent studies.

2.3 PRIMARY METHODS: Observations, Surveys, Interviews, Questionnaires and Case Studies

Site Analysis, Onsite Observations, Photographs:

The Umgeni Road precinct, the main focus area, will be studied and observed in detail. This will be in the forms of recording observations of people and vehicular movement at different times, analysis of the area and the types of buildings and functions.

Sampling:

The sample population used for the research will be as follows:

People who commute and work in Umgeni Road, residents of Umgeni Road, shop employers of Umgeni Road, eThekwini officials with knowledge on Umgeni Road, people in the architectural and related fields.

The sample size for the population used for the research will be as follows:

- 20 people who commute and work in Umgeni Road.
- 3 Residents of Umgeni Road.
- 2 Shop Employers of Umgeni Road.
- 2 eThekwini officials with knowledge on Umgeni Road.
- 80 people in the architectural and related fields (resulting size dependant on those who respond).

The research questionnaires will gather a suitable sample size of research participants who fit the criteria of being from different backgrounds, race, age and gender. This will be focused to the Umgeni road precinct and to the working commuters, shop employers and residents in the area as mentioned above.

The questionnaires and interviews will use probability sampling technique of stratified random sampling. The research looks to the perceptions and experiences of the people who are within Umgeni Road on a daily basis due to a work or live purpose and as well as those who have knowledge on the area.
The sample population will be divided into four groups (mentioned earlier):

- Commuting workers of Umgeni Road
- Residents of Umgeni Road
- Shop Employers of Umgeni Road
- eThekwini officials with knowledge on Umgeni Road

The technique will be done in order to explore the existing conditions within the area and whether this forms basis for the design intent. This method allows for the researcher to obtain diverse views from the people of the area by looking at the different socio-economic conditions that prevail.

The online/web based survey will use a non-probability sampling technique of Self-selection sampling. As the survey has been distributed to many people in the architectural and related fields, they will have the ability to choose whether they are willing to take part in the research survey.

The case study was selected by a non-probability sampling technique of the purposive sampling method as it meets specific characteristics that the research wishes to look at in a critical way, relative to the current success or lack of cohesion between structures and the context in which buildings are placed; and how this has been defined by means of the amount of people utilising the spaces and structures.

The following description will note how the data collection will be achieved.

Case Study:

The Case study will focus on a unique type of mixed use architecture in an area that requires some sort of regeneration. The case study exhibits real life scenarios of the capabilities and /or limits of the theories and concepts researched in this document.

The case study will allow for a greater insight into the current use of the building and the setting in which the building is placed. The study will indicate what works and any shortfalls or flaws in design, which hinder the success of revitalising the areas.

The Case study will be the Strollers Overnight Facility in Mansel Road, Durban, South Africa which is a unique form of mixed use and an attempt at responding to the issues of workers and traders who have to travel long distances to get to work. Further to this, a look at the history of the area and its development will be done to gain greater insight on the reasons for the change and the potential for a more positive outcome.

By analysing the area, specific characteristics and the conditions that prevail are revealed, thereby forming the base for the research proposal.

Survey Questionnaires / Interviews:

Data will be gathered through focused interviews, with the working commuters of Umgeni road, using survey questionnaires. These interviews will be voluntary and the participant will be given the option to remain anonymous.

Three in-depth interviews, using survey questionnaires, will be conducted with people who reside within or near Umgeni Road so that a comparative analysis can be undertaken between those who live further away from their work and those who live in close proximity to all amenities.

The research will look to find these people at the businesses within the area and places of public transport. A suitable time at which they would be able to talk will thereafter be discussed, such as on their lunch breaks or whilst waiting for their transport. The research will also look into contacting businesses within the area and query whether the researcher would be able to liase with staff members.

The research methods will also look to find people living within the area and commuting/ working so that the interviews can take place.

The research will have questionnaires for the shop owners in Umgeni Road in order to provide their view on the current state of the area and the influence this has on their businesses.

The researcher will be undertaking two in-depth interviews with eThekwini officials who have knowledge of the area or are involved in regeneration of the precinct.

This type of one on one interview will greatly assist in providing the perspectives of those that hold influence within the area relative to the research questions.

Online / Web Based Survey:

A survey will be set up and emailed to random local architects, town planners, technicians and engineers for their take on the precinct. This will entail yes/no or rating questions and will provide their perspective on the precinct relative to the research.

2.4 SECONDARY METHODS: Literature Review and Precedent Studies

The secondary sources will investigate the broad theories and principles of mixed use typologies. Urban regeneration theories and principles are also vital to the study. Secondary data will be sourced by use of literature reviews and precedent studies. The literature sources will be in the form of published books, journals, online and media publications and scholarly articles. The broad range of literature sources will afford the investigation into the history of mixed use building relative to the problem statement as well as exploration into themes and theories related to the topic.
The data will also look into the negative impacts caused by the problems stated.

Precedent Studies:

Precedent studies which encompass themes and concepts relative to the topic will be studied in order to integrate elements into the design. Qualitative and analytical precedent study will be necessary to form a deep understanding of architectural character, expression and narrative, as well as the spatial relationships and technological resolution of built forms.
Further to this, there will be theoretical precedent studies which assist in providing examples to the theories and concepts explained.

2.5 CHAPTER SUMMARY

The primary and secondary research data are vital for a deeper understanding of the research problem within the context of the broader theoretical discourse as well as the dynamics and nuances of the city of Durban. The research data will be analysed to develop a set of principles as a conceptual framework which will define a brief to assist the researcher develop an appropriate design intervention for the city. The information gained will inform the appropriateness of a mixed use architectural typology and the spatial requirements, how the building responds to the urban environment, what facilities are required and so forth. As mentioned earlier, this section of the research is important in determining the all-encompassing requirements of the proposed building design.

CHAPTER 3: URBAN REGENERATION AND THE RELEVANCE OF THE MIXED USE TYPOLOGY

3.1 INTRODUCTION

The intention of this literature review is to examine published works to result in urban regeneration within an old industrial area of the inner city, informed by the needs of the city workers and commuters who travel long distances from home to work and back.

The research explores how a mixed use architectural typology can be used, in a beneficial way, to achieve this.

In order to understand how a mixed use architectural typology comes into play, relative to the above, one needs to look at this form of building and development from the time of its inception through to an intermittent stage in which it took a backseat so to speak and thereafter, the return of a mixed use architectural typology; and the success or challenges thereof. Thereafter, the context of the study area is criticised as to whether the spatial planning post-apartheid was either negative or positive. The literature speaks of the city image at present which has spaces that are wasted and some being abandoned or derelict, questioning the lack of proper and affordable residential spaces and thereafter, a background into the current social housing perceptions.

The research looks to possible strategies of urban regeneration of the city in a sustainable way via the implementation of the proposed catalyst that inhibits the properties of a mixed use building typology. The literature concludes with the benefits of introducing a mixed use architectural typology and the impact of such a type, especially at night when the area has no life.

3.2 A BRIEF HISTORY OF THE MIXED USE ARCHITECTURAL TYPOLOGY

3.2.1 The Birth and Impact of Mixed Use Building and Developments

A mixed use development as one that integrates various building uses such as residential, commercial, institutional and so forth whilst simultaneously making provision for pedestrian connections. This term can also be used to describe a specific mixed use building (Sackey, C. 2009:4).

The mixed use building therefore takes into consideration the theory of place making and how vital the role in providing functions to spaces whereby people's needs are accommodated is. With building uses being in close proximity, the user is able to walk from place to place without much use for personal motor vehicles. There should therefore be consideration for the surrounding environment such as the application of new-urbanism principles to the context, for provision of a better quality of life for the occupants and users of the area (Frederick, M. 2007).

If one delves into the history behind mixed use buildings, earlier times suggest that human settlements were first derived within mixed use environments. Although people made use of animals, such as horses, for transportation; walking was the primary means by which people moved about (Morris, A.1994). Figure 3.1 below depicts the use of horses for transportation.

In relation to this, people paired domestic life with that of work life by integrating their work (selling or making of items) within their homes. As such, neighbourhoods were diversified by the different trades that were run from homes; homes which were not yet distinguished by what was private, semi-public and public spaces (Sackey, C. 2009:7).

Figure 3.1: *Indicating early travel by horse. (Source: https://nyoobserver.files.wordpress.com. Accessed 23 May 2017)*

Figure 3.2*: A fisherman's place of residence which is also used as a place of work.*
(Source: Sackey, C. 2009:8)

As civilisation and the human population increased, we see the creation of markets and town centres. Socio-economic factors certainly influenced the type of functions and trades that dominated certain neighbourhoods. Though in general, neighbourhoods were diverse with uses. The resultant of the increase in population and the walkability between different activities was dense neighbourhoods, as the line between where one lived and one worked was now blurred (Sackey, C. 2009:8). This was not an unusual way of living and working within developing cities, prior to zoning which will be discussed in the next section (Olivier, J M. 1988:12).

This had a knock off effect of a rise in towns and cities, and changes were now to be implemented to ease the densification by relooking at the spaces in which one worked and lived, the transition from private spaces to public spaces and vice versa. An instance would be people creating workable spaces on street level whilst their living areas were on the upper floors or toward the back of the building thereby separating spaces, as depicted in Figure 3.3 below (Sackey, C. 2009:8).

Figure 3.3: *of Overholser's Live-Work Buildings by Shane Hampton .*
(Source: http://iqc.ou.edu/wp-content/uploads/2011/09/OverholserShops .Accessed 25 May 2017)

3.2.2 Reasons for the Decline of the Mixed Use Building Type and the Consequences thereof

Industrialisation brought about a substantial amount of people from the rural areas coming into the cities as they were seduced by the jobs that were being provided or those that they had heard of. As a result of this population increase, there was no further thought placed into constructions of any mixed use type buildings and developments but rather single function buildings and a separation of residential type buildings from manufacturing type buildings (Sackey, C. 2009:8). There was more emphasis now placed on manufacturer of goods, as depicted in Figure 3.5 below, at a mass level rather than an agricultural based society. This separation of land use saw a zoning of areas that led to the development of separated residential areas as the factories which caused pollution, etc, as depicted in Figure 3.4 below. These areas were required to be at a distance to minimise any harmful effects that could be caused.

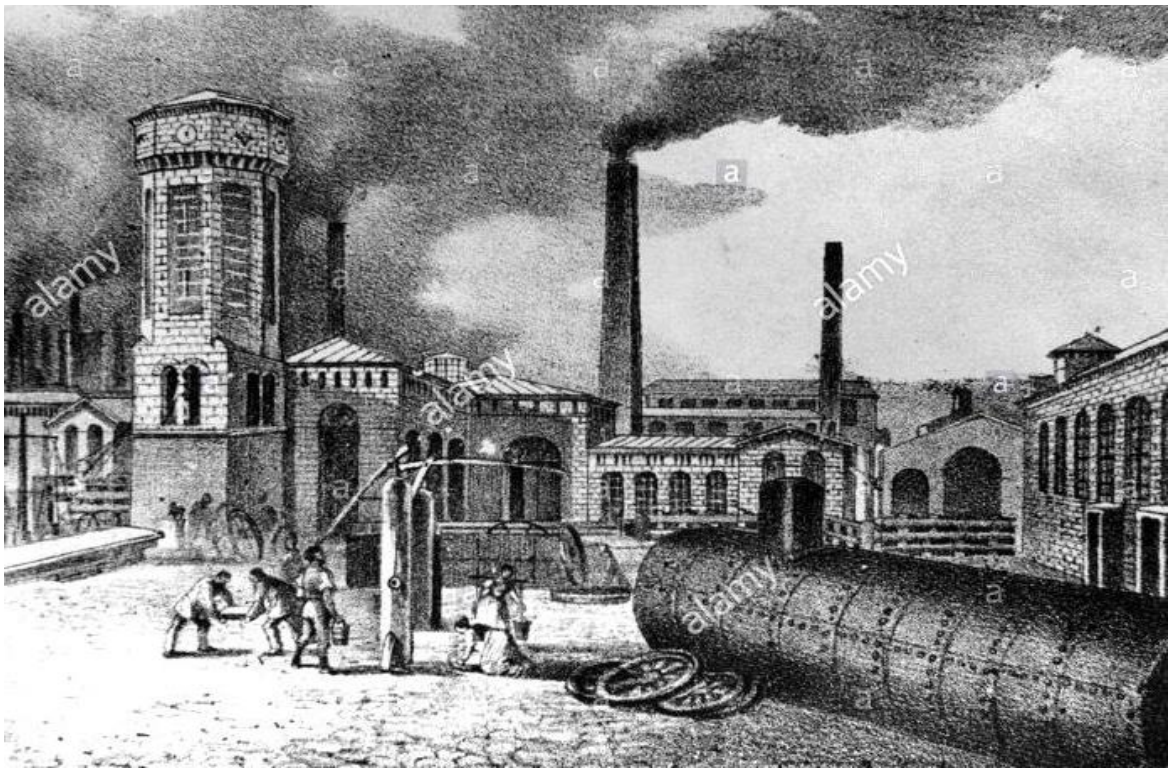


Figure 3.4*: illustrating the pollution caused by Industrialisation and the construction of the large factories for production of goods. (Source: http://c8.alamy.com/comp/BJNDW5/industry-metal-iron-smelting-plant-lithograph-1st-half-19th-century. Accessed 23 May 2017)*

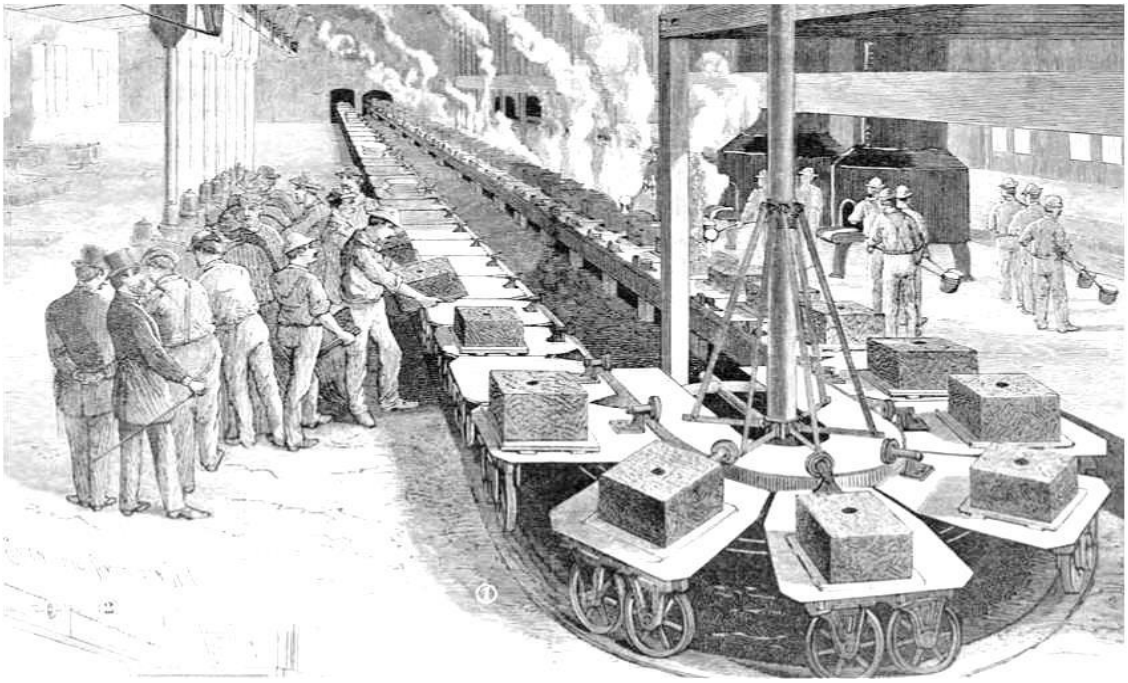


Figure 3.5: *illustrating the rise of mass production used due to the same product being produced at a more efficient, inexpensive rate. (Source: http://www.worldhistory.biz/uploads/posts/2015-08/403w-46.jpg. Accessed 23 May 2017)*

Smaller trade and artisan shops were now replaced with large factories. However, despite the attempt at distance, the cities were of a size where people were able to walk to different areas without the means of transportation. This resulted in a compartmentalising of districts and buildings into individually zoned spaces (Herndon, J D. 2011:4)

Urbanisation saw the increase of people from rural areas migrating into the city for work, as mentioned above, and led to a need for more residential space. As the population grew, ideas of expanding buildings vertically rather than horizontally became the new trend. There were many architects and thinkers who looked for better ways in which the conflict of land use could be minimised relative to Euclidean zoning, single zoning in lamen terms, whereby there was a rigid idea of compartmentalising areas by use of the land. Le Corbusier for instance, proposed ways in which city centres were re-invented by the use of towers surrounded by greenery rather than single storey buildings, with the more industrial uses positioned away from the residential and retail sectors (Sackey, C. 2009:9).

However, this dense population was so overwhelming and at such a rapid pace that the municipalities could not keep up in terms of the proper and adequate provision of infrastructure. Thus, cities now took on negative undertones of neglect (Herndon, J D. 2011:4-5)

One must be aware that this type of zoning was applicable to America and Australia and whilst the focus of the research is based within South Africa, one needs to also understand circumstances that prevailed globally in terms of zoning and land uses and the reasons behind this.

Transportation. When the manufacturing of automobiles and mass transit systems began, people were now able to escape the dismal circumstances of the city and live long distances away from city life. This resulted in cities now becoming less dense and the beginning of a decline in walkability to the various amenities and spaces of interest. People now accepted the idea of transportation as means to move around and this type of convenience in terms of time to get from one place to the other (Herndon, J D. 2011:5). The thought of travelling distances to places of work was not considered as this was merely an escape from the negative effects that prevailed in the city at the time. The lack of quality spaces within the city is a clear contribution of one having to move further away. No thought was placed on the individual and their needs when mass factories and pollution over took the city.

Figure 3.6: *illustrating the emergence of privatised motor vehicle transportation.*
(Source: Pg. 4 ULI: Urban Land Institute.2011. Mixed-Use Development 101: The Design of Mixed-Use Buildings. Available http://triangle.uli.org/wp-content/uploads/sites/54/2013/01/Design-of-Mixed-Use-Buildings.pdf. Accessed 22 May 2017)

Zoning. Post-world war two saw zoning standards being applied throughout municipalities in the United States due to the rise in pollution and other such factors that were a detriment to the public's health and safety.

Standards were therefore enforced to address the issue, in what we see today being suburban design. This separation of land uses was to minimise any effects of city life. These standards were applied in many other countries through planning and construction professionals. This resulted in the decline and eventually a death, so to speak, of mixed use developments and design as the zoning of areas were rigid the in planning process and this type of separation of land uses. Buffer zones, for example, were now used between industrial and residential areas. There was no integration of spaces and buildings but an emphasis on single use zoning, isolation of areas from each other (Olivier, J M. 1988:12). Cities were detached in terms of uses and ,even though it was to the benefit of the public health wise, this caused segregation and an almost banishment of the mixed use type building (Grant,J. 2007:57-76).

Figure 3.7: *illustrating the zoning of areas and the standardised compartmentalisation so evident. (Source: Pg. 5 ULI: Urban Land Institute.2011. Mixed-Use Development 101: The Design of Mixed-Use Buildings. Available http://triangle.uli.org/wp-content/uploads/sites/54/2013/01/Design-of-Mixed-Use-Buildings.pdf. Accessed 22 May 2017)*

3.2.3 The Return of the Mixed Use Building: How Effective is the Mixed Use architectural Typology?

Affluence: Whilst industrialisation saw rewards of increased incomes due to the benefits of production and now, along with the convenience of automobiles and people being able to live more comfortably in larger houses away from the city, the 20th century saw a rapid increase in the population within the CBD. This growth was more than the infrastructural development. Hence leading to issues such as crowding, congestions of vehicles and humans, urban sprawl and general pressure on the existing infrastructure available (Sackey, C. 2009:10).

Urban sprawl has always been seen in a negative light as the sprawl added to the environmental degradation and encouraged segregation of both people and uses, the effect being the radical flattening of population density (Bruegmann, R. 2005). This was as a result of building and developing more toward the periphery away from the city centres (Johnson, M.2001:717).
If we look at cities such as Boston, Las Vegas and even Durban and Johannesburg, one can see the characteristics of Urban Sprawl. Such is evident in figure 3.8 and 3.9 below, indicating the sprawl.

Figure 3.8: *Urban sprawl spreading in Johannesburg. Natural environments being destroyed by low density developments. (Source: http://urbanchoreography.net/2011/03/. Accessed 22 May 2017)*

Figure 3.9: *Urban sprawl in Los Angeles. More vehicle inclined context with lack of any greenery or public spaces. (Source: http://slideplayer.com/slide/7589277/. Accessed 22 May 2017)*

With the advancement in transportation, came the effects of vehicular congestion, incomes being spent more on transportation costs, the time factor, pollution and the overall stress of travelling which added to the negative image of the city. To ease these problems, people began to look for places nearer to work in which they could live (Sackey, C. 2009:10). This advancement along with the sprawl, led to people relying on their cars to move around, which resulted in negative effects such as pollution, as mentioned above and in addition, a lack of physical activity (Bray, R etal. Elliot etal. C Vakil.C 2005:8).

We therefore see a shift in the late 20th century, where many design inclined professionals realised the positive aspects behind mixed use developments and buildings, thus the re-introduction of this building type. One saw the isolation behind the zoning of areas and the disadvantage of amenities being further away from places where people resided and worked, making one more dependent on transportation as

a result. In order for there to actually be a healthy urban environment, one needs to consider an integration of different uses within areas (Jacobs, J. 2006).

Figure 3.10: *Sprawl in Melbourne heading east as the population continues to grow and therefore more homes are needed. (Source: http://hearldsun.com. Accessed 22 May 2017)*

Jacobs advocates the notion of diverse activities for the social and economic viability within the area and rejects the idea of singular planning (Jacobs, J. 2006).

The mixed use typology added a new dynamic to locations which would otherwise be lost within sites and areas that weren't always used to their full potential. The benefits seen were endless (Olivier, J M. 1988:13). Trancik speaks of lost buildings and sites within cities and the importance of revitalising these structures and spaces into places which hold functions. Only then will these places make a positive impact on the city fabric (Trancik, R. 1986).

As a result of the promotion of mixed use buildings, zoning laws were revised, allowing for these type of developments to hold a community in a sense. There was now a gravitation of building types toward each other such as commercial activities near residential neighbourhoods and vice versa (Sackey, C. 2009:10).

Despite the hype behind the mixed use pattern, there were a number of designers who were against this idea and therefore leaning toward promoting more single use types, not realising the restrictions that this brought about such as the building being used at a certain time only and not an integration to create an area and building which operated all the time, be it for residential aspects or commercial. In doing so and in isolating functions in such large areas of space, the interaction of spaces was now destroyed as well (Olivier, J M. 1988:13).

However good the thought of mixed use buildings are, the approach is a new one. One needs to understand the mixed use building cannot just be based on that which existed in earlier times due to the buildings now having to be placed in the context of the existing zoning (Schwanke, D etal. Philps, P. 2003).

The designer and planner now needs to take this into account and be more aware of this when considering the benefits of a mixed use building type on a site or within an area in which it otherwise would not exist, example having to have residential functions within an industrial setting.

Once this is considered, one can reap the benefits of an environmentally friendly approach to planning and design in response to sprawl and the negative connotations of travelling long distances to work and back home. This form of building is intended to provide convenience to the user where the idea of travelling is now diminished and a live-work-play environment is created within a single location (Tesso, GT. 2013:3).

3.3 THE STUDY AREA : DURBAN

3.3.1 Historical Context of study area: Durban

Following from above, Industrialisation in South Africa began in the early 1870s and had effects on the population and built environment of the country. However, Africa differed slightly as the concept of Urbanisation was more driven by people coming into the city in response to rural poverty rather than as a result of a country focused on Industrialisation, as what happened in other areas worldwide (Karuri-Sebina,G. 2016:24)

The research looks at Durban, in particular, as the study area and in doing so the research requires a look into the history of Durban and Zoning relative to what transpired globally.
First colonised in 1844 by the British, Durban, transformed into a city with a diverse population as a result of the many races that existed, being the natives, the labourers imported to Durban and the colonies that took authority of the land somewhat (Marx, C etal. Charlton S. 2003:3).
However, the image of a rainbow nation was hardly existent in early times and the diversity of the nation was not celebrated but rather segregated.

In the mid-1900s, based on the enactment of the Group Areas Act and the having the Nationalist party in power, the government now freely allowed for the act of planning the city in such a way that the majority of non-whites were forcibly relocated to more formal areas which were located on the edge of the city so that the inner city was now cleared of the majority of those of colour, depicted in figure 3.11 below (Marx, C etal. Charlton S. 2003:11).These were strict policies of segregation otherwise known as apartheid, which allowed for the city to now be of white ownership (Maharaj ,B etal. Khan, S etal. Desai, A. 2016:2).

By the 1970s the areas were well zoned in terms of separating races and although most had jobs located within the city centre, there was still notable sprawl which, to the disadvantaged communities, meant daily commuting with the accompanied expenses. The main justification for these forced removals was the many riots and recurring violence in areas where Africans and Indians resided. However by the late 1900s political struggles arose and the disintegration of the Apartheid regime, due to the high cost factor of maintaining the regime (Marx, C etal. Charlton S. 2003:11).There were many struggles that arose throughout the years prior to the end of the Apartheid era but the distinct spatial configuration of racial boundaries remained.

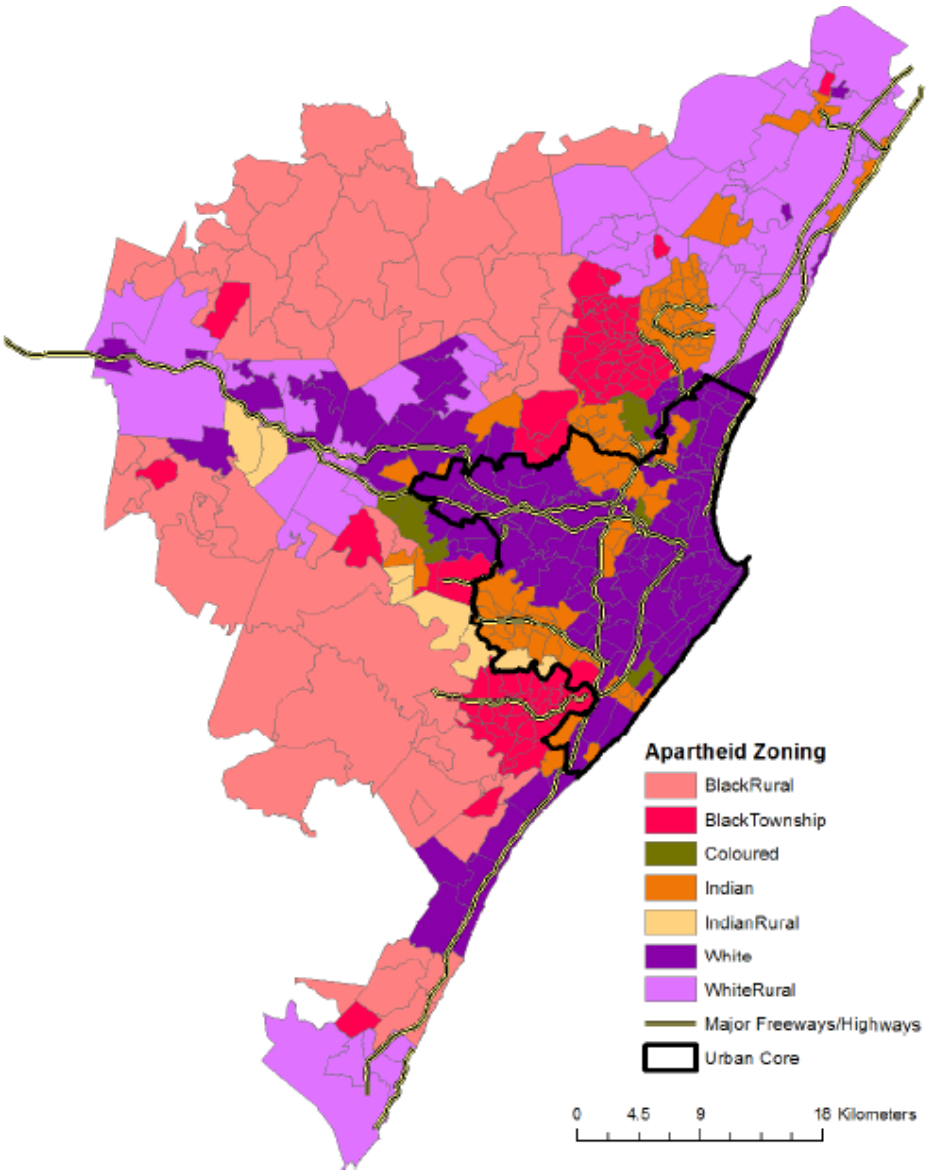


Figure 3.11: *Group Areas Act 1950 –Racial Apartheid Zoning in Durban (Source: Schensul, 2009: 143)*

3.3.2 The Spatial consequences of Apartheid: Has this really impacted negatively?

When democracy began in 1994, planners and related industries had begun the attempt at transformation of these zoned spaces into more sustainable and all-inclusive urban areas. However, post-apartheid still indicates evidence of the apartheid planning, especially since most people have now become accustomed to this way of living (Maharaj , B etal. Khan, S etal. Desai, A . 2016:2)

Although there has been attempts at spatial planning post-apartheid, there has also been doubt as the urban environments in the South African cities has remained to be inefficient. The progress on reversing the apartheid geography has been minimal with most spatial planning remaining to be segregated and fragmented with many areas being unsuccessful in restructuring spatial patterns that occurred during apartheid (Du Plessis, D. 2013:3).

It seems the wealthy and more affluent now live closer to the more convenient areas centrally whilst the poorer or less wealthy live further away from amenities and the economic opportunities. Those affluent people who reside in areas further away from the central amenities have economic states which allow for an extent of comfort with the advantage of their own personal automobiles or the use of luxury services somewhat, which allows travelling at their convenience and comfort. This is no comparison to those who are not privileged in that sense, those who take one or more modes of public transport just to get to and from work and recreation every day. In that sense, one can see the impact of zoning post-apartheid and how this remains an issue, which stunts progress in a way, as most people are now set in the ways of what has occurred and have accepted the fate of areas in which they reside (Marx, C etal. Charlton S. 2003:3)

3.4 THE CITY IMAGE

3.4.1 The Present Image of the City

Figure 3.12: *Figure indicating a derelict building (Source: Author)*

Figure 3.13: (Left) *Figure indicating a neglected area (Source: Author)*

Figure 3.14: (Right) *Figure indicating a neglected building (Source: Author)*

The vibrancy of the movement of people and vehicles during the day does not mask the state in which the city is in. The overall appearance of neglect and wasted spaces, with abandoned buildings and sites (shown in figures 3.12, 3.13 and 3.14 above) are breeding grounds for crime and encouragement of utilising these as dumping grounds for garbage or a place in which vagrants seek refuge. By revitalising these areas, especially those within old industrial areas that have no or little life after working hours, communities are allowed to exist. The idea of providing different components to an area begins the process of Urban Regeneration (Olivier, J M. 1988:19).Within the context of South Africa,

there are many areas that cannot deal with the amount of people coming into the city. As a result, areas are rife with informal settlements or high poverty within areas outside of the cities that is, within the outlying areas. Provisions made for low income housing cannot be seen as a total success as people are still having to pay high travel costs to come into the city as a result of these housing types being located on the borders of the cities due to the lack of affordable accommodation more centrally (Karuri-Sebina, G. 2016:29).

In relation to this, there are many informal places of trade within the city as a result of the high cost of formalising such trades and travel to and from work areas. This hinders growth as the means does not support the end (Mapetla, M. 2006:18)

The past two decades has led one to witness the transformations within South Africa, being citizen rights (which were previously denied) and so forth. There are spatial changes being implemented though these are at different rates in areas as well as different forms. Although government has responded somewhat to basic needs required, the private sector has being invested in gated estates, office parks , etc. which allowed for people being in close proximity to work and other services or have access to personal vehicles that allow for periphery living without having to make use of public transport. This seems like progress if one fails to see that this investing is only linked to those who can afford this type of living (Karuri-Sebina, G. 2016:49). There is no consideration into the use of existing sites within the city which would be a preferred solution to those who encourage the regeneration of areas rather than degradation of greenfield sites.

3.4.2 Questioning the Lack of Adequate, Affordable Housing within the City

One of the basic human needs is housing and its provision of privacy and security for the occupant. With the rapid growth of people coming into the city to work, one may look to residing in the area. The demand for residential spaces therefore increases at a rate more than the infrastructure can handle leading to overcrowding, homelessness and so forth (Lin, J. 2011:6). This therefore results in many having to live away from the city to avoid the negative consequences of having to accommodate inadequate residential spaces within the city.

Despite the attempt at provision of services, the lack of proper and equal integration within cities is dismal. There is more invested in urban residents to ensure their continued enjoyment of the city, alienating those living further away and reinforcing the idea of urban sprawl; and thereby more inefficiency of services or any spatial development. (Karuri-Sebina, G. 2016:50).

Figure 3.15: *showing land use. Blue being representative of commercial / business zoned. Green showing park and green spaces. Orange indicating residential zones and red being municipal buildings. Depicting the dominance of one use over others, especially the lack of adequate residential spaces. (Source: Sharkey, D M.2012:22)*

Figure 3.15 above clearly indicates how the current zoning within the Durban city encourages and adds to Urban sprawl. There is a great amount of area which is solely for businesses and commercial areas

and the problem with this is the lack of use during the night which contributes to wasted spaces and a dead area that encourages crime, vandalism and so forth. It is evident of the small amount of green spaces which does not allow for a lot of social interaction with a small amount of areas being residential (Sharkey, D M. 2012:22). One can realise from this, the need for a more diverse building typology within the city, especially the need for more residential spaces.

From the above and the readings of Trancik, one can establish the importance of creating a sense of place for the workers and users of the area rather than just a structure to provide shelter. One cannot stress enough how important it is for the building as well as the surrounding context to be given meaning by the user. By bringing character of the user, the space is given meaning and the user is now given an identity (Trancik, R. 1986).

The current image of the city is undesirable but the success in making the area healthy again is in creating more liveable spaces that appeal to people aesthetically, as well as meeting their needs. By having a space which is also visually appealing to the eye, there would be an increase of economic opportunities (Urban Strategies.2008:10).

This is not only done through place making but creating walkable spaces, noticeable centres and so forth.

3.4.3 An insight into Social Housing initiatives

Targeted at the lower income groups, social housing is set, by the government, for people who meet a certain income criteria (Lin, J. 2011:11).With many people working within the city, further away from home, the government is looking to initiate schemes in which the low income earning bracket of the population, who live further away. The government is looking to counteract the effects of the past segregation by providing housing nearer to economic opportunities and promoting a diversity of social class within the city by spatial diversity of building and spaces (eThekwini Status Update on Social Housing Delivery Plan. 2015:2).

Whilst there have been many social housing institutions established within South Africa and strategies via the government, these have been insufficient in solving the housing need to the growing population (Ngxubaza, V J. 2010:3).

Irrespective of the housing needs for the lower income population, future planning requires a sustainable environment and structures in order for the housing to work (Ngxubaza, V J. 2010:41). Instead of producing new schemes in newer areas, there needs to be a focus on regenerating spaces that have potential in a sustainable way relative to the context it is placed and the needs of the people.

3.5 STRATEGIES FOR A WAY FORWARD

3.5.1 Urban regeneration of the City

Regeneration is not solely to revitalise a specific building or site but encompasses the surrounding area as well. That is, the public environment has to be considered as well such as better street edges, transport systems, a generally safe place in which people are able to co-exist. However good this may look on paper, there are still major challenges economically in following this through (Mapetla, M. 2006:8). Whilst there has been active involvement within the city of Durban for urban revitalisation the fault here lies within the need to improve areas through the development of mega projects for economic gain rather than treating areas and being concerned with the needs of the citizens (Hannan, S. 2012:2-3).

Sustainability on the other hand looks at how the needs of a current state of an area can be improved for society without putting any future generations at risk. There should be a continuation or betterment of an area rather than a degradation thus sustaining an area (Hannan, S. 2012:4).

Although Jane Jacobs does not agree that use of new urbanism principles would be of any benefit, her argument is countered by those who believe a better quality of life can be achieved through implementation of the principles. In so doing, and providing an architecture that adapts to the needs of

the changing context and that of the user, a more flexible architecture is created and the building and context is sustained in that sense (Sackey, C. 2009).

The combination of an urban regeneration of a city and sustaining of this revitalisation creates what is otherwise known as a sustainable city (Hannan, S. 2012:4).

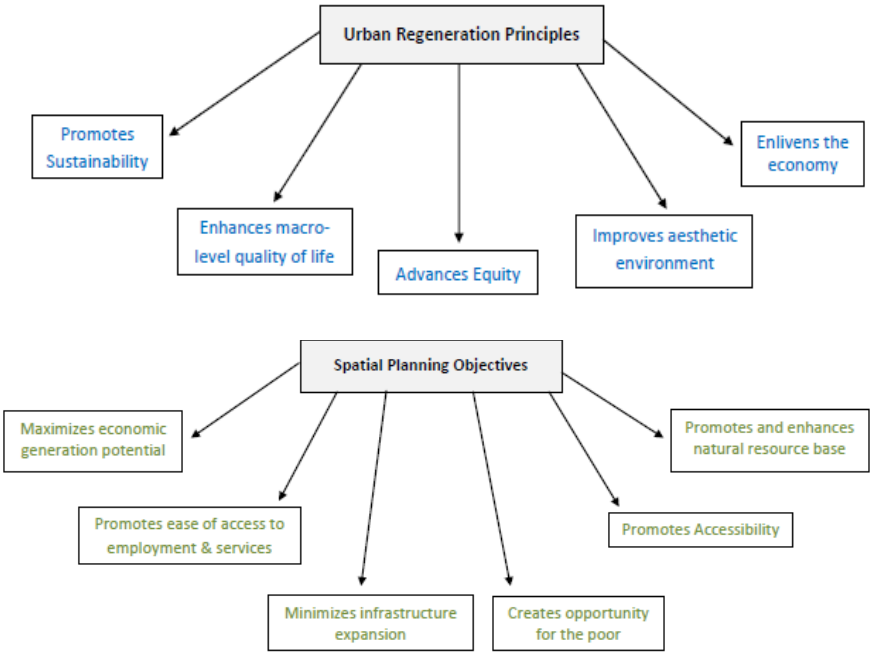
3.5.2 Sustainability within Cities

The current situation, especially in South Africa, is the growth of gated housing estates or housing developments which take up large amounts of land and claim to have a sustainable impact. It is evident this is a false view on sustainability as these type of periphery developments not only take up green spaces but allow for the use of motor vehicles on a daily basis. These, in addition to low cost housing, contribute to social exclusion and lack of integration (Karuri-Sebina, G. 2016:54). A good example of this type of power play would be Alexandra township vs Sandton in Johannesburg whereby Sandton, being an economic hub, has little influence over the way in which a township could participate in the city life or have any inclusion.

Figure 3.16: *indicating a gated community within Durban away from the city, encouraging sprawl and the increase usage of personal motor vehicles (Source: http: //www.ecoman.co.za/images/MECCE2.jpg. .Accessed 17 November 2017)*

Having more of a mixed use development or city allows for the accommodation of a diverse community and the diversity of building. The sustainability here lies in the close proximity of amenities and the minimised need to travel long distances thus reducing dependence on public or personal transport. In addition, the idea of buildings sustaining themselves by the various functions integrated is one to be considered in more formal terms once again and considered over spatial concepts that have failed to work effectively for an integrated city such as the low cost housing and their locations and the development of higher end gated communities which encourage social exclusion, such as that shown in figure 3.16 above (Karuri-Sebina, G. 2016:55).

South Africa is known globally for being a biodiverse country. Architecture plays a vital role in either assisting to preserve or destroy this. It is important when considering the built form and construction, that cities preserve these areas whether it be by creation of open spaces or protecting these spaces rather than building on these areas, poorly maintained areas leading to informal settlements and so forth (Karuri-Sebina, G. 2016:191).

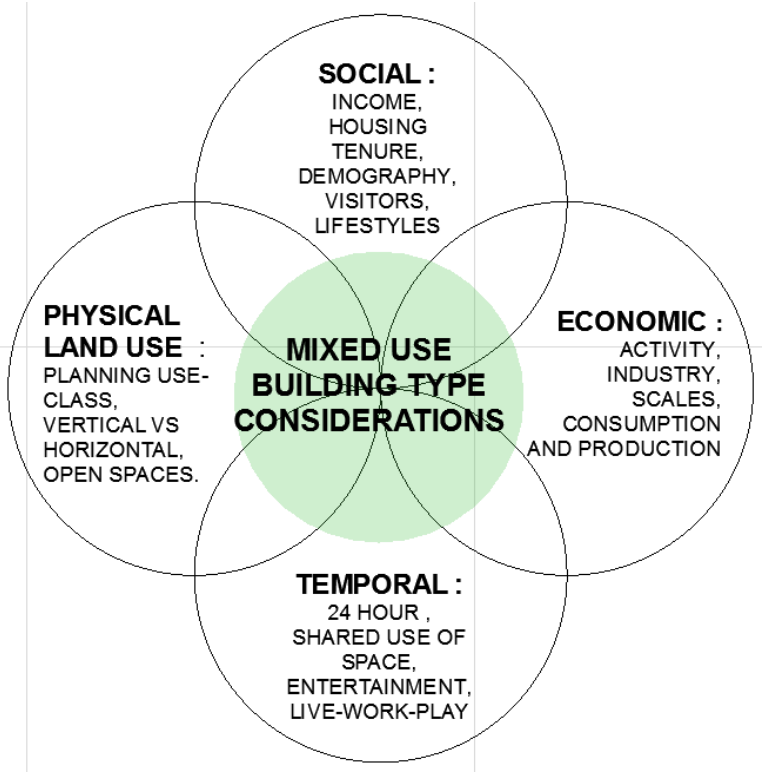


By reintroducing mixed use concepts within the city we are encouraging an improved quality of living and sustaining and adapting what is already there for better use and meaning. (Karuri-Sebina, G. 2016: 56).

Figure 3.17: *showing the main urban regeneration principles and spatial planning objectives. Methods vital for a city to succeed and thrive. (Source: Stephanus, M .2013)*

3.6 CHAPTER SUMMARY

The deep history behind mixed use buildings and development has led one to see the benefits of such a typology. Mixed use has a way in which it artfully adapts to a city context by the functions it possesses. The model of this typology allows for needs to be addressed at an individual level as well as an urban level. The ability of mixed use buildings to bring life to derelict and abandoned areas is a smart architectural design decision (Olivier, J M. 1988:12). By identifying lost spaces and revitalising them, a continuity of the cityscape is created and urban regeneration of the area becomes evident (Trancik, R. 1986:).



From above, it is evident, as per diagram below, that there needs to be four main elements that are encompassed within the idea of a mixed use building being: Social, Economic, Physical and Temporal elements. The combination of these elements set the scope for the building to be constructed.

Figure 3.18: *indicating elements encompassing mixed use design derived from the review of the literature (Source: By Author)*

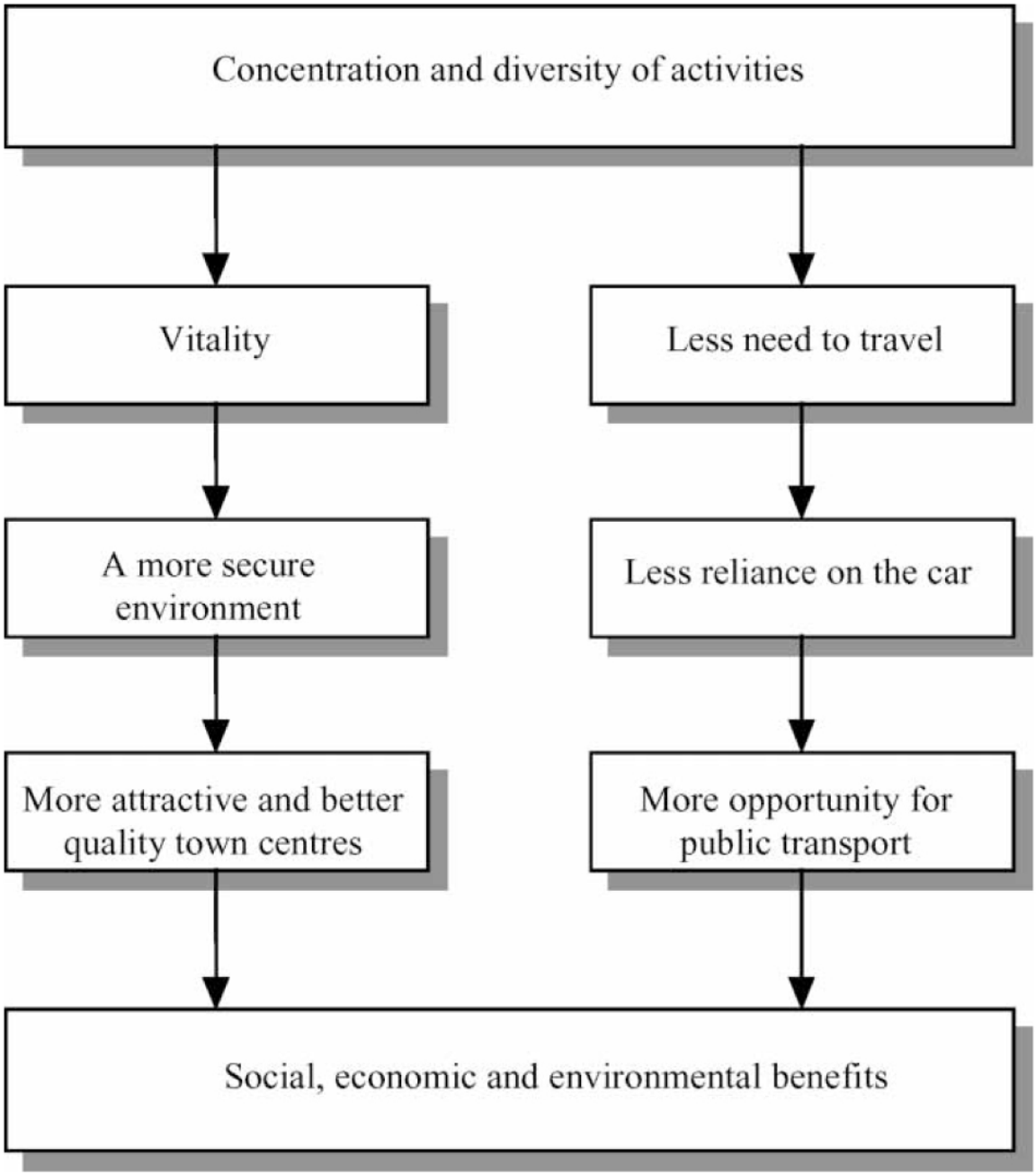


Figure 3.19: *showing benefits of mixed-use development. (Source: Coupland, A. 1997).*

Where the mixed- use aspect fits into a housing scenario is mainly due to the context in which the housing is required. In a city environment, there is the need for more formalised trading spaces for those who survive on informal means as these are more cost effective. Money is spent on travel rather than being focused on a growth of the business. Thus there is an effectiveness and convenience of

integrating housing with retail and commercial uses within buildings and sites that have potential to be transformed (Mapetla, M. 2006:18).

Once this is achieved, there is not only the attending to of the user's needs but producing an architecture that is able to adapt to the context it is in. The flexible architectural concept within a building allows for the building to be more interactive. The building is now not just a space, but holds function relative to the user's needs. This, in itself, allows for sustainability of the structure (Carbon, R etal. Naab, M. 2010).The identity of the people reflects through the building and therefore a sense of place is now created.

The re-emergence of mixed use building and development types indicate the pivotal nature of the architecture as a positive response to segregation of land uses and people, derelict city conditions and the lack of sustainable ways in which architecture can be transformed to contribute to a more integrated building type.

CHAPTER 4: THEORETICAL AND CONCEPTUAL FRAMEWORK

4.1 INTRODUCTION

The reading of Jane Jacobs (1961), '' The Death and Life of Great American Cities,'' is relative to the intention of regenerating the city by revitalising areas, and bringing together a community spirit within derelict and neglected areas by means of live , work , play concepts. The views of Jane Jacobs are interlinked to the theory and concepts which form the theoretical framework of the research.

This chapter looks at three components to form a framework. Firstly to Accommodate the needs of the people through the theory of place making, secondly to Regenerate an old industrial area by ap plying principles of New Urbanism and lastly to Sustain the proposed catalyst, as well as the occupants of the structure, through concepts of flexible and adaptable spaces. These will all, in turn, positively influence the idea of a sustainable urban regeneration within an industrial part of the city. However, the review will also look at the challenges behind these findings and how the research can conclude resolution.

4.2 ACCOMMODATING (DENSITY AND DIVERSITY) THE NEEDS OF THE PEOPLE THROUGH THE THEORY OF PLACEMAKING

4.2.1 Finding Lost Spaces within the City

In his book, Finding Lost Space, Roger Trancik defines lost space as areas which have been forgotten amidst the city fabric, a space that needs to be revitalised in order for it to make any impact within the city. These spaces result in voids within the fabric of the city, disrupting the city's form, giving a perception of a disorientated cityscape that lacks continuity and fails to connect elements in an articulate way (Trancik, R. 1986:8).

The research looks to spaces which require regeneration and are lost in the sense that the spaces are wasted, not used to their full potential and have become isolated within the city of Durban.

To re-connect this lost space into the city, Trancik has three urban design theories: Figure Ground Theory, Linkage theory and Place theory.

Figure ground theory indicates the relationship between solid and voids graphically. The process of figure ground assists in recognising the textures and patterns which exist within the urban fabric, and highlighting problem areas (Trancik, R. 1986:98).Relative to lost space, once these spaces are identified and are integrated into the spatial city planning, there will be an effective co-existence between the buildings and voids (Trancik, R. 1986:106).

People prefer to linger within spaces that are positive with movement occurring more in negative spaces. It is more so the spaces that determine this rather than the structure of the building or space. (Frederick, M. 2007:6). An interplay between positive and negative spaces, solids and voids assist greatly in providing a good experience.

Looking at the Umgeni Road precinct along with the sports area behind, one can see the large areas of underutilised land in contrast to the density of the suburbs. There needs to be more incorporation of connections through spaces by dividing underused site areas into smaller blocks to allow for permeability of spaces and accessibility.

Linkage theory looks to connections between portions of the city. These are physical links such as streets, pedestrian pathways and so forth which link the site to the city. Whilst Figure ground theory mentions movement in negative spaces, these negative spaces do not necessarily have bad connotations as they function to lead the user from one place to another and can be integrated as vibrant channels of movement through the city. These in turn form nodes which are interconnected, and allow different activities to function (Trancik, R. 1986:106).

It is important to recognise the voids and lost spaces in order for certain links to be made so that areas can be connected. If these barriers or voids are not identified, they prevent areas to be interconnected. In the Umgeni Road precinct, these barriers are the railroad lines and busy roads / freeways making east-west connections difficult as these run in a north-south direction. The Umgeni Road precinct has a large amount of pedestrian traffic coming through during the day therefore allowing for public access

and by relooking at ways in which the areas can be interconnected assists in allowing the precinct to become more active at all parts of the day / night.

Place theory allows for cities to have an image amongst a changing context by means of the people and the way in which spaces are created. Within the study context of Umgeni Road, one can see the blurred intention of buildings and the homogeneity of certain buildings. Those which are mixed in use are mundane in terms of user experience; with no identity, almost lost within the busy road.

The lost spaces within the city have no sense of place and in order to resolve the issue of wasted or lost spaces many planners have looked to the theory of place which responds to the needs of humans within their context. It is intended for the place to incorporate elements of the surroundings as well as accommodate the needs of the people occupying the spaces (Trancik, R. 1986:97).

Whilst architect Shultz describes a place as being just a space but with an individual character, Trancik also looks at place in a similar way, a space only becoming a place once it is given a specific meaning relative to the context it is in. A place should pick up on elements of its surroundings (Trancik, R. 1986:114).

One the lost spaces within the city is given life, be it in the form of connections or a structure, a sense of place is created and the space has meaning within the context of the precinct, therefore assisting in the transformation and regeneration of neglected urban areas….filling the voids within the existing city pattern (Trancik,R. 1986:114).

The next portion of the chapter discusses more of place making as a theoretical response to the working commuters and ties back into the writings of Trancik.

4.2.2 Creating a Sense of Place for the Working Commuters

When cities and structures are built, the planner needs to take into consideration the need for interesting and meaningful spaces for the user. Place making is a popular term which has been the centre point in sustainable architectural development for years, allowing for designs that inspire and delight one. The theory allows one to feel a connection with the space they occupy by providing the user with a sense of place (Urban Strategies.2008:6).

In this sense the proposed intervention needs to provide places which have meaning to the user and accommodate their needs relative to the context.

When one considers place making, urban thinkers such as Jane Jacobs and Kevin Lynch come to mind as they drew attention to the importance of designing spaces for social interaction and stressed the importance of this in determining the success of the area or building. (Urban Strategies.2008:7).

Trancik explains that once the culture and human characteristics of a space is understood spatially that the theory of place is evident. An example would be Umgeni Road precinct where the predominant characteristics of the area lies within commuting workers alongside transport and business factors. This scenario brings to mind a mixed use area with social interaction and workable spaces being important.

To bring identity and legibility to the area, the area should reinforce the character of mixed use spaces especially in the lost spaces so to speak. By bringing character into the spaces that are meaningful to the user, the place is now created (Trancik, R. 1986:114).

The creation of a liveable space needs to appeal to the user aesthetically whilst providing comfort. In turn the user will reflect their identity onto the space thereby creating an interesting area in which one can function. By having an attractive space, economic opportunities are encouraged by drawing entrepreneurs, employees and so forth to the area.

Public spaces are an important part of place making and focusing on these spaces indicates ones consideration to the response of the urban environment. Whilst the post war developments such as

transportation and traditional singular spaces characterised spaces for a long time, the theory of place allows for the planner to regard the human aspect of the building and their needs (Urban Strategies.2008:10).

Based on the urban planning organisation, named Project for Public Spaces, there are four factors that need to be taken into consideration during the place making process despite there not being one definite set principles and rules regarding the theory.

These would be Access and linkages, Uses and activities, Comfort and Image and Sociability. (Claasen, J M P. 2015:11). However, the context and user needs are important as these guide the way in which the building or area is developed.

Place making guidelines are derived from ideals created in European cities in the 19th and 20th centuries where a sense of place was promoted in the industrial cities such as the use of laneways, piazzas and so forth with the intention to liven the area and draw people to the public spaces.

This kind of approach has been adopted to areas that require some sort of revitalisation or areas that have single users and are isolated at certain parts of the day or night (Urban Strategies.2008:10).

By applying the place theory to the proposed site, the intention is to entice people to the area so that the perception changes to that of a live work play space.

From this one needs to question what makes a great place. There needs to be a sense of identity for the user, a place which has a focal point that draws one to the site, a space which provides the user with a pleasant experience …pleasant enough for the person to be drawn back with a platform provided so a community is developed.

Density plays an important role on place making as the success of an area is dependent on the density of people who function within the space. A dense area would result in more opportunity for social interaction and developing community. This could be a challenge in areas which are not shown in a positive light. This is why draw factors are so important. Something which allows the person to stay long

enough for their perceptions to be changed. Whilst high densities are not suitable everywhere , areas which have the potential to accommodate more people will in turn reap the rewards of a better housing range and employment types and therefore creating an area of diversity both socially and economically (Urban Strategies.2008:25).

A mixture of functions is a good choice for an urban environment, where living, working and playing is combined and therefore fulfilling the needs of the area and the user in a smaller space. The mixture of uses dispels the idea of a homogenous area which comes across as very impersonal with no sense of place example a large shopping mall and industrial buildings which one travels to from their place of residence a longer distance away. This uniformity of zoning can be broken down by the integration of various functions into one development or building (Urban Strategies.2008:26).

This exploration of mixed use architecture along with a 24 hour use within the area will allow for the people to create and improve the public spaces as a community with the intention to shape the spaces they occupy (Claasen, J M P. 2015:11).This will ultimately lead to a betterment in terms of the persons wellbeing and the improvement of the area, also intended in the principles of New Urbanism.

Place making theorises the idea of responding to a placeless city and will assist in the process of regeneration of the area.

Ultimately place theory inspires social interaction and results in promoting the creation of a community which is important in this proposed intervention. (Urban Strategies.2008:8).

4.3 REGENERATING AN OLD INDUSTRIAL AREA IN THE CITY THROUGH THE PRINCIPLES OF NEW URBANISM

4.3.1 New Urbanism as a response to Urban Sprawl and the Degradation of the City

The Charter of the New Urbanism 1993, defines the theory as revitalising towns and areas within city centres and to thereby reduce and reconfigure the sprawl that has already occurred by the creation of diverse yet sustainable neighbourhoods. This restoration ultimately informs a sustainable architecture as the theory aims at preserving the existing context and encouraging walkability by developing a more diverse neighbourhood (Gibson, GL. 1997:114).

This revolt against Modernist planning, an America Movement that was conceived in the early 1980's, can be seen as a progression to enhance areas…away from the formal planning which segregated and distanced the idea of a community and created areas of neglect. By the use of principles which assist in the creation of enhanced environments for the users experience , the result is a sense of community and social interaction amongst people as well as neighbourhoods that exude safety, are vibrant and diverse in function and people; and encourages walkability (Sharkey, D.M.2012:30 etal. Sackey, C.2009:14).

However much the new urbanists disliked sprawl, this does not mean they encouraged the idea of dense cities. There was rather the suggestion of mixed land uses and building types to alleviate this and to create a diversity within residential units (Parker, S. 2004:66).

The success of a mixed use design is relative to the uses within. Ultimately a residential component is essential to the design as this promotes a more safe and lively neighbourhood and reinforces the idea of the site or building being used to its full potential and not just at certain times. (Jacobs, J. 1964:173). There needs to be a walkability to areas which reduces the amount of automobiles within the area as well as proper and efficient public transport to get around. (Gibson, GL.1997:114). This is relevant if one looks at it in context of the working poor who spend most of their income on travel expenses as a result of living further away from places of work and other activities. In addition, they do not have the

advantage of comfortable transportation as those who live nearer to central locations or those within the suburbs that are better off. This is where the theory of New Urbanism relates to the idea of the convenience for all by adopting principles which cater for the needs of society as a whole.
(Sackey, C. 2009:15)

New Urbanism does not just focus on a specific building but looks at the city as a whole and the way in which everything is integrated to form a successful neighbourhood. The perception of an area is therefore important as this informs the decision of the individual whether to reside there
(Solomon, D. 1992:46).

New Urbanism follows principles, according to the Charter of New Urbanism 1993, which form the integral part of an attempt to better city life and counteract negative effects such as sprawl and how the city is currently viewed by many (unsafe, areas of abandonment and wasted spaces). The following are some of the principles adopted.

- A noticeable centre: This would be a distinct area which allows for one to remember the area in which the building or development stands. There should ideally also be a transit stop found at this centre (Sackey, C. 2009:15).
- Walkability: The creation of a mixed use building or development allows for the reduction of motor vehicle use. An area in which everything is close by promotes, that being within approximately 0.4km from the discernible centre, walkable spaces which is one of the more important principles within new urbanism. It is clear to see that reduced traffic and congestion minimises any issues relative to personal problems or pollution. There is more of an awareness and interaction of people with each other and the environment (Sharkey, D.M. 2012: 32- 33 etal. Sackey, C. 2009:15).

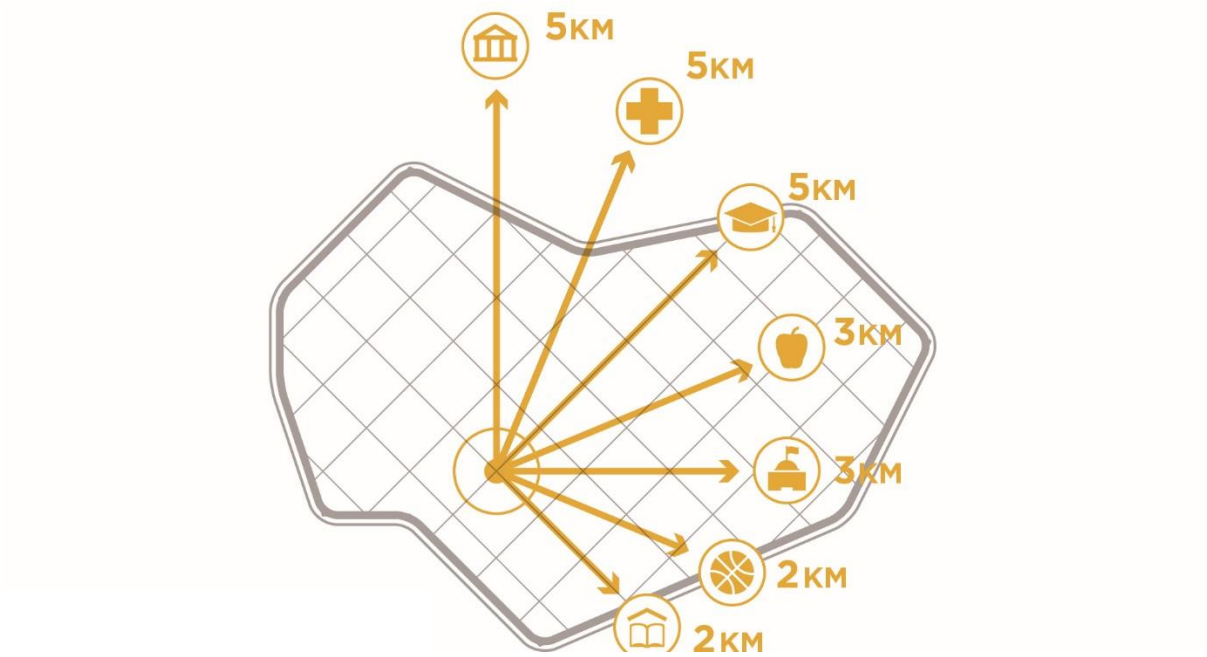


Figure 4.1: *indicating walkability of amenities. New Urbanism looks to areas close by to all amenities and public transport to encourage walkability and social integration.(Source: www.embarq.com. Accessed 14 May 2017)*

- Connectivity: By allowing options in terms of the way in which one travels by foot or vehicle, there is a dispersement of traffic. In addition, people are able to be linked and interconnected in an interesting fashion, whereby walking becomes sort of an adventure and is thereby favoured over driving. There is also a pleasantness created by the inclusion of trees which frame street views and diminish the harshness of the city image where people are now more inclined to walk and cycle as traffic is not a major issue anymore (Sharkey, D.M. 2012:32- 33 etal. Sackey, C.2009:16).

- Density and diversity: With buildings that accommodate various functions, uses and income brackets comes a diverse range of people (which ranges fin age, gender, race and so forth). This just makes for a more interesting neighbourhood which is not inclusive of one particular race or income bracket but rather a more tolerant and together community allowing for different socio economic classes to co-exist .This diversity thereby brings along density and a natural surveillance in terms of people always being around thereby creating safer places in which to

live and reinforcing the idea of the building or site used to its maximum potential (Sharkey, D.M.2012:32- 33 etal. Sackey, C.2009:15).

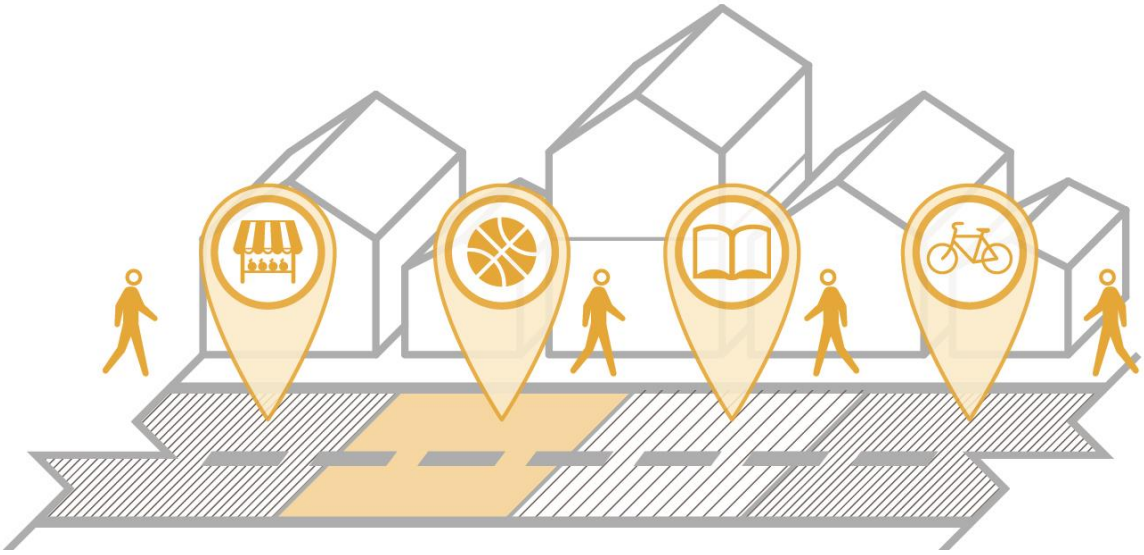


Figure 4.2: *indicating diversity of activities within a neighbourhood as well as various public spaces. (Source: www.embarq.com. Accessed 14 May 2017)*

- Smart Transit: By narrowing streets and creating more pedestrian friendly spaces, traffic begins to slow down and the environment is more conducive for walking and cycling. In a neighbourhood where buildings are compact and amenities are closer by, this is an ideal scenario. There will be good public transport close by such as the use of trains, buses and taxis. However, the congestion will be reduced not only due to reduced automobiles but having work, living and recreational spaces all in close proximity to one another.

- Planning and position of uses within the buildings: An outdoor room for trade can now be created by the positioning of the buildings closer to the street. This allows for interaction of the building with the people and the pavement and does not create a harsh end to the building itself. Parking on the other hand does not have any focus as the idea is to create more walkable areas. Therefore the parking of automobile are located more to the re ar of the buildings (Sackey, C. 2009:16).

- Sustainability: In practice of the above, the idea of sustainability then becomes clearer as the carbon footprint is now reduced (Sharkey, D.M.2012:33). One also needs to take into consideration the idea of restricting existing areas and buildings so that they sustain themselves though the way in which they exist. Not just merely existing but a cycle of one function feeding of another. This is particularly important in of New Urbanism as the theory works as an integrated whole (Sackey, C. 2009:16).

Jane Jacobs, in an interview with Reason Magazine, on the other hand does not feel that the principles allow for any connection. New Urbanism looks at a linking and creation of a community with centres in which people are familiar. However to Jacobs, once developers put this to action or on plan, the result is different. The centres become more impersonal (Steigerwald, B. 2001). However, if implemented properly, these principles can greatly assist in the creation of new neighbourhoods or the revitalisation of existing areas. The centres need to have a heart to it and be something which also provides the community with some sort of identity. When integrated one is able to see the benefits of creating mixed use spaces and allowing for easy access to areas without the inconvenience of having to travel long distances and the negative connotations that come with it (Sackey, C. 2009:16).

4.4 SUSTAINING THE PROPOSED INTERVENTION AND THE WORKING COMMUTER THROUGH FLEXIBLE AND ADAPTABLE IDEAS

4.4.1 Conceptualising Transient people and Flexibility of spaces– Creating a sense of Belonging to the Transient Workers

''Buildings no longer symbolise a static hierarchical order: instead, they have become flexible containers for use by a dynamic society.'' (Rogers, R . 1997:163)

In order to understand the concept of transience in architecture, we need to understand the reasoning behind the idea. In this case the architecture is directly related to the type of people being catered for. That is, the workers who travel as their job requires this and the need to stay in a place for a short period of time due to the long distances of their work from home. Therefore the individual is now seen as transient (Flores, L. 2015:2).

Looking back at the theory of New Urbanism, there is focus on the creation of a community and the sense of place within the area one inhabits. By creating areas in which transient populations are allowed to commune, a sense of permanence and security is provided as they are now able to engage within a social setting with others and form an identity of their own. Thus a community is created and belonging as a result (Flores, L. 2015:3). Although Jane Jacobs describes transient populations as those who are passing by and create a negative image on the city ,in this instance we are referring to those individuals and populations which are travelling long distances to their places of work .
Therein comes the idea of flexibility of spaces, whereby the architecture adapts to the changing or temporary needs of the occupant. Flexibility works in hand with sustainability to an extent as it supports changes that might occur from future situations or from what is required of the inhabitant (Carbon, R etal. Naab, M. 2010) with the attribute of transience, the concept of flexible architecture allows for structures to adapt to the ever changing and growing context of the city. With the advancements in technology this is achievable a step further than historical and present processes (Acharya, L. 2013:3).

Although the norm of architecture is to provide a building which is stable and static, the needs of the people the research targets requires an architecture which accommodates change and therefore has to have the element of being flexible. The idea of flexibility is not new and presumed, by Walter Gropius, to allow for the architecture to make provision for change. (Acharya, L. 2013:16-17)

Figure 4.3: *looking at the adaptability of spaces relative to flexibility and how the user can adjust or change the areas to suit their needs. (Source: www.wordpress.com. Accessed 27May 2017)*

Looking at one of the leading architects and theorists of the 1950s and 60s, Yona Friedman, the idea of flexibility led to the architecture of mobility. This did not mean mobile in terms of the structure but in terms of the people and creating structures in which they could be given the freedom to build upon their own dwellings within the structure provided (Acharya, L. 2013:14).

4.5 CHAPTER SUMMARY

The architecture of the research is driven by the socio economic conditions that prevail for the workers of Umgeni Road. In creating places in which these migrant workers have a means to thrive, the architecture then begins to revitalise places of business and residence. Through this a community is then built and spaces are reflective of the people and their needs. Whilst New Urbanism contains various elements and principles that are required to produce a successful outcome, social interaction which is a by-product of place making is encouraged. (Urban Strategies.2008:8).

Architecture is guided by principles and regulations rather than just a building and in turn the user experience defines the success or failures of the design and area. By transforming the city into a place which defines a better lifestyle, life is brought back. By creating buildings and spaces that have the ability to change to suit changes within the areas and context, functions and usage is created with less impact on the environment and thus a sustainable architecture is created.

CHAPTER 5: PRECEDENT STUDIES

5.1 INTRODUCTION

The following chapter deals with precedent studies that relate to elements of the research. Although the precedents are not an exact replica of what is intended, the ideas that accompany them are sought.

The precedents look at three components based on what the research looks to achieve, with some components inter related. The precedent studies are local and international examples with a variety of elements that will be considered in the design process and research.

Firstly, how the user is accommodated through low cost housing with a retail / live-work factor.

Secondly, the process of regenerating an old industrial area through the principles of New Urbanism to produce a tangible outcome. There will also be a look into a higher end area in South Africa, with the focus being on how the principles of New Urbanism are applied for a successful outcome.

Thirdly, to sustain the area and building via concepts of flexible, adaptable and sustainable methods.

5.2. ACCOMMODATE: Mixed Use Social Housing

5.2.1 Local: Brickfields Social and Rental Units

Figure 5.1: *indicating Brickfields Social Housing and Rental Units Exterior view. The first multi-storey affordable housing project in Johannesburg. (Source: http://www.gpf.org.za/portals/0/Images/ Projects_Funded, Accessed 13 September 2017)*

5.2.1.1 Project Description

Architects:	DODD Architects
Location:	New Town, Johannesburg
Project year:	2006
Area:	23 000sq.m

5.2.1.2 Site Location:

The Brickfields Housing precinct, on the site of the historic brickfields which dates back to the 1890s, is within the inner city of Johannesburg close to the Mandela Bridge and the Metro mall Taxi Rank.

5.2.1.3 Background:

Managed by the Johannesburg Housing Company, the Brickfields housing is part of the government's initiative for urban regeneration within the inner city of Johannesburg.

The project was financed by government subsidies as well as public private partnership loans and funding. The project was seen as the largest at the time, with a variety of financers coming together to fund the social housing project.

There was a lack of proper and sufficient housing within the area prior to the conception. With the construction came the fame of being the first multi storey, low income development in the area.

This was a true landmark achievement, not only for the housing company but depicting a change in the way affordable housing is viewed in terms of quality and perception; and how the mixed use housing precinct can be integrated within affordable entry level housing for a successful development.

5.2.1.4 Unit Options and Typology:

The Brickfields Housing is essentially a mixed use development which provides, in addition to the residential units, live-work units as well as community facilities such as a crèche, community recreation and playground areas.

The housing consists of two bedroom units, the ground floor accommodating live work units and the upper floors being loft units.

Figure 5.2: *indicating Brickfields Social Housing and Rental Units Exterior view. (Source, www.Bsc-projects.co.za, Accessed 15 September 2017)*

5.2.1.5 Design Components and Planning Considerations:

The development (which is actually three areas) as an entity is mixed use, consisting of live work units, retail units, residential units and community facilities.

The Brickfields Housing project consists of market related rentals with 20 percent social housing units as well as a small retail component.

Figure 5.3: *indicating Brickfields Social Housing and Rental Units Exterior view. (Source, www.Bsc-projects.co.za, Accessed 15 September 2017)*

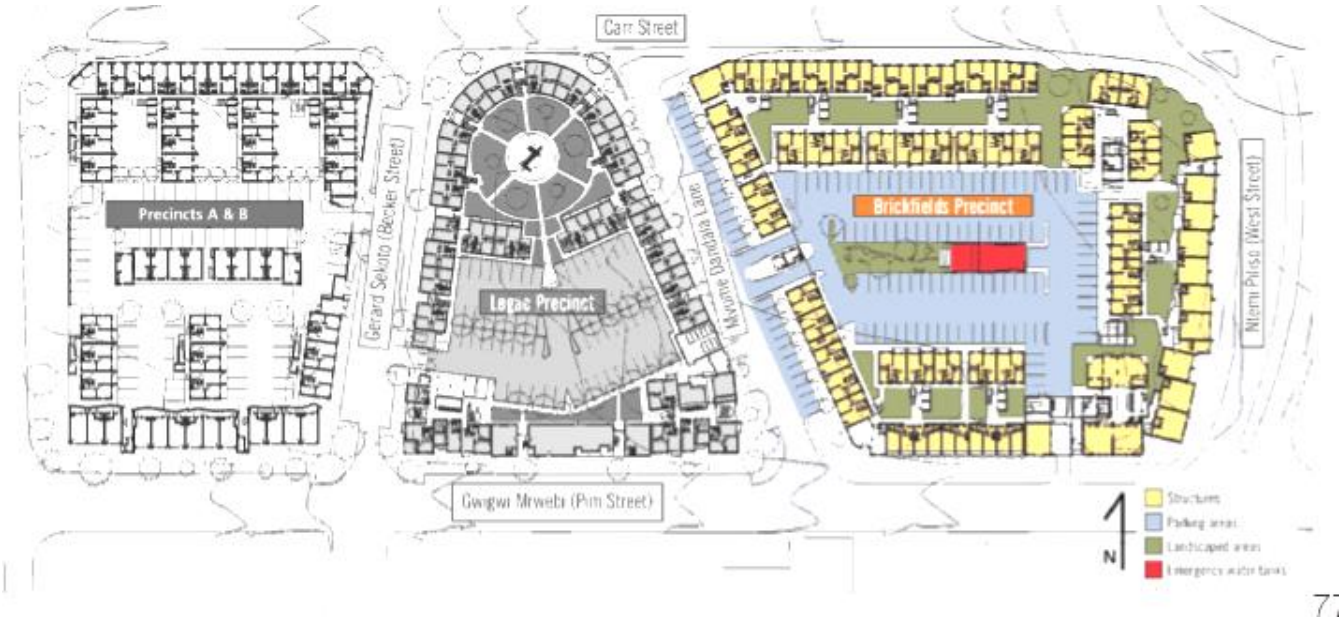


Figure 5.4: *indicating entire plan of precinct and Brickfields Social Housing in colour. (Source: Gloeck, K R .2012).*

The housing is a perimeter block development with a central parking courtyard enveloped by a 9 storey tower and 4 storey walk-up. There are smaller courtyards which function to separate the perimeter blocks from the inner blocks broken up by circulation staircases and drying yard elements.

Figure 5.5: *indicating courtyard spaces initially was to be landscaped. (Source: Gloeck, K R .2012).*

There are communal sky lobbies as features, which are shared between units as well.

These elements promote social interaction whilst simultaneously being space effective by the idea of sharing facilities.

Balconies protrude from the structure in the four storey walk ups, curving at the edge of the towers and framing facades in some cases, making for an interesting treatment.

Figure 5.6: *indicating Brickfields Social Housing and Rental Units Exterior view as well as playground area and inner parking. (Source: www.Bsc-projects.co.za, Accessed 15 September 2017)*

The towers, 9 storey blocks, are at either end of the precinct and provide high density living due to the increased number of vertical living units.

The live work units are located strategically on the roads which have the most pedestrian traffic for trade opportunity and visible services.

Figure 5.7: *indicating Brickfields Social Housing and Rental Units Exterior view. (Source: Germinate - Architecture of Growth. Accessed 15 September 2017)*

5.2.1.6 Material used:

Simple materials such as brick are used for the housing. By utilising exposed brick in areas, contrasting with brightly painted plaster, an interesting aesthetic is created.

The materials used were not just chosen for visual appeal but those which were durable and low maintenance, thus a smart cost saving move as well.

Figure 5.8: *indicating colours used in the housing as well as the protrusions of facades. (Source: eThekwini Municipality Housing Typologies Study Precedents and Bibliography Presentation 1. Accessed 15 September 2017)*

5.2.1.7 Success of the housing in accommodating the needs of the people:

The housing has effortlessly blended into the cityscape whilst making an impact in terms of meeting the needs of the people. In turn, a neighbourhood has been created which is able to cope within the city or on its own. As housing success is measured in terms of the people, this is evidently a positive architectural intervention.

5.2.2 INTERNATIONAL: La Valentina Station

Figure 5.9: *indicating La Valentina mixed use housing. (Source: http://www.archdaily.com, Accessed 05 August 2017)*

5.2.2.1 Project Description

Architects:	David Baker Architects
Location:	Sacramento, California
Project year:	2012
Area:	67 356 sq.f

5.2.2.2 Project Background:

For over 20 years the now sustainable and affordable family development was a vacant light rail station stopping in a historic urban neighbourhood area rife with crime.

The previously abandoned site is now a true transit oriented development home to 63 units of affordable housing.

5.2.2.3 Building Components:

The building consists of retail and a community room on the ground level as a free on site after school program and other urban amenities.

The residential component of the site provides a mix of studio units, as well as one - two and three bedroom units to cater for a diverse population and number of people.

Figure 5.10: *indicating Ground Level and Site Plan. (Source: http://www.archdaily.com, Accessed 05 August 2017)*

Figure 5.11: *Upper Level Floor Plan (Source: http://www.archdaily.com, Accessed 05 August 2017)*

Figure 5.12: *indicating façade at road interface with interesting vertical elements, curved structures and balconies. (Source, http://www.domusd.com/component/k2/item/22-la-valentina#sigProGalleria260772a44b Accessed 02 August 2017)*

5.2.2.4 Consideration toward the needs of the people and the design:

The idea was to bring compact transient orientated homes to the neglected area with new storm water and sewer infrastructure.

This transit idea was further encouraged by the provision of secure indoor and outdoor bicycle parking.

The building's façade facing the rail makes a strong statement with the use of private balcony spaces, stair tower and an outdoor lobby. These elements act as a natural surveillance and allows for the building to be porous whist providing a degree of security. These, along with the open air bridges create a transparency on all levels and sides of the site.

Figure 5.13 (above): *indicating the lobby area and green stair at La Valentina which opens to the sky (Source: http://www.archdaily.com, Accessed 05 August 2017)*

Figure 5.14 (to the left): *showing a view of the entrance from the mid-block courtyard (Source: http://www.archdaily.com, Accessed 05 August 2017)*

The 'barcoded' mural which spells out La Valentina provides illumination to the sidewalk at night and makes for an

interesting façade against a span of glass that screens a community room within the building.

The addition of retail spaces is as a result of neighbourhood concerns with the proposal of a café to open into the courtyard area. The café along with new commercial space activated the street edge, thus the idea of bringing life into the area and building.

Figure 5.15: *indicating a common room interior with 'barcode' mural that spells 'La Valentina' (Source: http://www.archdaily.com, Accessed 05 August 2017)*

We also see the idea of place and principles used to improve the quality of life for the residents being activated by the employment of green strategies to reduce any negative impacts of the building on the site.

Figure 5.16: *Interior view of a one bedroom living unit with open plan kitchen and private deck (Source: http://www.archdaily.com, Accessed 05 August 2017)*

With the site having units mainly facing east west, heat gain was inevitable.

This was minimised by having windows of the units facing the north and south sides around balconies as well as minimising west facing glazing and using the cladding materials to double as a sun shade.

Figure 5.17: *indicating entry plaza and façade treatment. (Source: http://www.archdaily.com, Accessed 05 August 2017*

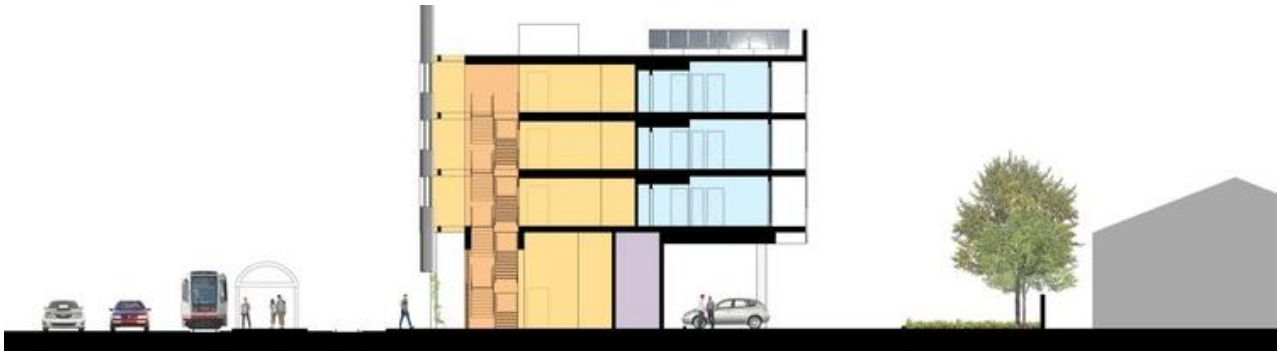


Figure 5.18: *indicating Section and how they interacting with road edges. (Source: http://www.archdaily.com, Accessed 18 August 2017)*

5.2.2.5 Materials and fixtures:

Low impact materials were used in the building and having low-VOC interiors. The landscaping responds to the context by being drought tolerant whilst permeable paving is also used.

The roofing has a high reflectance and therefore proves to be energy efficient as well as the use of LED fixtures for a consistent sustainable intention.

Figure 5.19: *indicating different types of materials and colours, as well as treatment against the elements (Source: http://www.archdaily.com, Accessed 05 August 2017)*

5.2.2.6 Energy Efficiency Building:

The building acted as a catalyst within the derelict area with its outdated zoning codes. This was even further considered when the building won an award in 2013 for smart growth achievement where its energy efficiency was recognised by the U.S Environmental Protection Agency.

The award recognises communities that are involved in assisting to protect the environment, the way in which an intervention allows for the provision of housing and smart transportation choices as well as any other innovative ideas which also allow for the communities to be strengthened.

The sustainable features used by La Valentina include:

• Remediated brownfield site • High density (76 units/acre)

• Transit-oriented development

• Exceeds Title 24 Energy Standards

• 34.141kW CEC AC solar array

• Cool roof • LED lighting

• Energy Star appliances • Healthy interiors

• Natural ventilation • Open-air "green" stair

• Recycled-content steel • Minimized south-facing glazing • Sun shading at retail level

• Low-flow fixtures • Draught-tolerant landscaping • Permeable paving • Storm-water management • Green Point Rating in progress

Figure 5.20: *Sectional Perspective illustrating sun shading strategies of the west façade (Source: http://www.archdaily.com, Accessed 05 August 2017)*

5.3 REGENERATE: New Urbanism Principles to Regenerate an Area

5.3.1 LOCAL: Melrose Arch

Figure 5.21: *indicating Melrose Arch at night (Source: http://www.melrosearch.co.za/blog/melrose-arch-travel-and-stay-in-true-hollywood-glam. Accessed 20 September 2017)*

5.3.1.1 Project Description

Architects:	Osmond Lange Architects and Planners: Arup
Location:	Johannesburg
Project year:	1996
Area:	225 000sq.m

5.3.1.2 Justification:

Although Melrose Arch cannot compare to the density or scale within the inner city of Johannesburg, being more of a luxury building development, the research looks to the way in which the principles of New Urbanism(discussed in Chapter 4) are used to make it a success, especially Post-Apartheid.

5.3.1.3 Background:

The importance of Melrose Arch is that this was the first development post-apartheid which applied the principles of New Urbanism and is one of the largest developments within Johannesburg.
Post-Apartheid during South African liberation in 1994, there was the need to shift the city into a new era of being known as a world class city. In order to minimise the effects of sprawl and decentralisation, planners looked at ideas used worldwide particularly in Europe and America where there was an experience of street activity based on pedestrian movements as well as some areas being considered models of how an urban experience should be. Following suit, the proposed development of Melrose Arch as a showcase to the rest of the world of South Africa's potential to be on par, namely Johannesburg in this case.
At the time however, the perception within South Africa was that of gated or isolated communities with little or no social interaction and the access to amenities being via personal motor vehicles. Therefore there was a need to dispel such views.

5.3.1.4 Description of site and spaces:

Since its establishment in 1996, Melrose Arch has been a tourist attraction as well as a famous location for social interaction. The project involved a collaboration of architects, led by Osmond Lange Architects and Planners in order to design a mixed use environment with allowed for retail, commercial and residential components.

The site is located within Bimam, a low density residential area between the CBD and Sandton, being triangular in shape and situated adjacent to the M1 highway and circulated by two major arterial roads. Thus making the site easily accessible from all areas of Johannesburg. The two arterial roads have off and on ramps to access the M1 Highway therefore allowing for an efficient flow of traffic.

Post Modernism Architecture is an evident influence in the Melrose Arch development and although there is uniqueness to each building (due to various design teams working on specific building) the connection of this type of Architecture is depicted as the teams collaborated thereafte r to produce a unified product.

Figure 5.22: *indicating Aerial view of the Melrose Arch precinct*
(Source: http://melrosearch.co.za/precinct-map/, Accessed 20 September 2017)

5.3.1.5 Materials Used:

There is a variety of materials used in the development ranging from masonry and plaster to steel or concrete frames and glazing to the use of face brick. The building has a character which is also dependant on the user and the buildings function

Figure 5.23: *indicating Materials used*
(Source: http:// eyesonafrica.net. Accessed 20 September 2017)

Figure 5.24: *indicating various materials and colours used within the building*
(Source: https://www.arup.com/projects/melrose-arch. Accessed 20 September 2017)

Above images illustrate the different forms and materials used to create a distinct character and unique building based on the function.

5.3.1.6 Design Analysis:

The context of Melrose Arch indicates pedestrian dominance and a sense of order is created by the way in which the area is planned. The development is legible in terms of movement and building mass. Melrose Arch is orientated around two main squares and ordered around two main roads. Pedestrian movement is encouraged along High Street through retail sides of a number of mixed use buildings whilst the main road of Melrose Boulevard being flanked by offices and creating connection to the arterial roads. This arrangement creates a buffer from the highway.

Street and basement parking is created compared to the creation of large parking lots which are more intrusive with large land being ‘’wasted’’ on just parking areas. Through the idea of integrating parking, the result is Melrose Arch resting on two levels of super basement which caters for the public as well as tenants.

Additional parking has been spread through the precinct so there is an ample amount and with the majority of parking being basement parking, Melrose arch can be enjoyed as a pedestrian friendly environment which exudes safety as well as a social destination for all.

Figure 5.25: *indicating urban planning of the district as well as the incorporation of the super basement to minimise impact of parking on street level (Source: https://www.arup.com/projects/melrose-arch. Accessed 20 September 2017)*

5.3.1.7 Application of the Principles of New Urbanism to the Development:

The following principles of New Urbanism are discussed relative to the success of Melrose Arch by how they have been implemented.

- Walkability: Encouraged by the close proximity of various use buildings as well as a pedestrian friendly design. There is also the strict control of security as well as street cameras for surveillance which makes foot travel possible.
- Connectivity: As mentioned there are three main streets which allow for the formation of a successful interconnected street grid.
- Mixed Use and Diversity: The application of mixed use functions within the development allows for a diversity not only of building functions but massing of buildings as well.
- Mixed Housing: There is a lack of empathy toward the lower income bracket population and consideration has only been places on the high to medium income population
- Architecture and Urban Design: The success in this lies in the fact that aesthetics, comfort of the user and the creation of a sense of place was all taken into consideration
- Traditional Neighbourhood Structure: There is adequate provision of public space with walkways and streets being thought of carefully. In addition, there is a centre within the development that houses a public space.
- Increased Density: Density has been successfully achieved through the construction of five to six storey buildings that hold a sufficient number of units as well as these structures being in close walking distance to each other.
- Transit Oriented: Despite the majority of people coming to the development by car, Melrose Arch does encourage public transport by the provision of bus stops and taxi ranks as well as a pedestrian friendly environment.

- Quality of Life: Although the area aims at a certain economic level, the development adheres to the principles of New Urbanism to create an area which encourages social interactions and allows for a place of substance in which the quality of life is not compromised.

Figure 5.26: *indicating pleasant pedestrian area in the precinct*
(Source: http://www.alamy.com/stock-photo-a-fountain-in-the-melrose-arch-pedestrian-area-johannesburg-gauteng-13138021.html .20 September 2017)

5.3.2 LOCAL: The Maboneng Precinct In Johannesburg

Figure 5.27: *indicating Maboneng signage on bridge (Source: www. propertuity.co.za/downloads/Maboneng-Developing-a-Neighbourhood-Economy.pdf. Accessed 16 November 2017)*

5.3.2.1 Project Description

Architects:	Propertuity
Location:	Johannesburg
Project year:	2008

5.3.2.2 Justification of Precedent Study

The precedent examines the Maboneng Precinct in Johannesburg where urban regeneration plays a major role in upliftment of an industrial area. Maboneng, which means place of light in Sesotho, is an apt name for an area that has been revitalised and used to its potential.

5.3.2.3 Project Background

Johannesburg's city centre played a significant role as an economic centre within South Africa up until the 1980s when a sequence of events resulted in widespread through the CBD. This led to people moving towards the suburbs as the city was now in a poor condition. Years later, an entrepreneur named Jonathan Liebmann, founder of a Johannesburg based property development company called Propertuity, launched a programme in 2008 which focused on urban regeneration of abandoned areas within the CBD.

The Maboneng Precinct was one such area which required revitalisation and was proposed to be transformed into a mixed use hub with the focus being on creative functions. The area was a light industrial area with a number of industrial warehouses. Liebmann saw the potential of adaptively re-using these buildings to create mixed use buildings of residential apartments, restaurants, shops and creative studios. He believed the creatives played an important role in adding to the life of the area and providing a visually appealing area, thus the inclusion of artistic and creative people. (Gregory, JJ. 2006:7).

The preliminary stages of the developing precinct saw the use of a catalyst to make this derelict and abandoned part of the city more appealing to a larger audience by converting an abandoned building into a weekly food and crafts market. This was the start of the urban regeneration to the area. (Murtagh, R.2005:58).

5.3.2.4 Location of the Maboneng Precinct

The precinct is located in a light industrial area on the eastern fringe of Johannesburg's central business district stretching over two suburbs: Jeppestown and City & Suburban. There is a series of empty warehouses and factories which indicate these building having being affected by the deindustrialisation processes in the 1980s. Toward the west of the precinct lies the retail and commercial sectors whilst Ellis Park sport stadium and University lies to the north. Most importantly the lower income urban neighbourhood lies to the east of the precinct. (Gregory, JJ. 2006:8).

The built environment, which was predominately a post industrial area, is now an area in which mixed

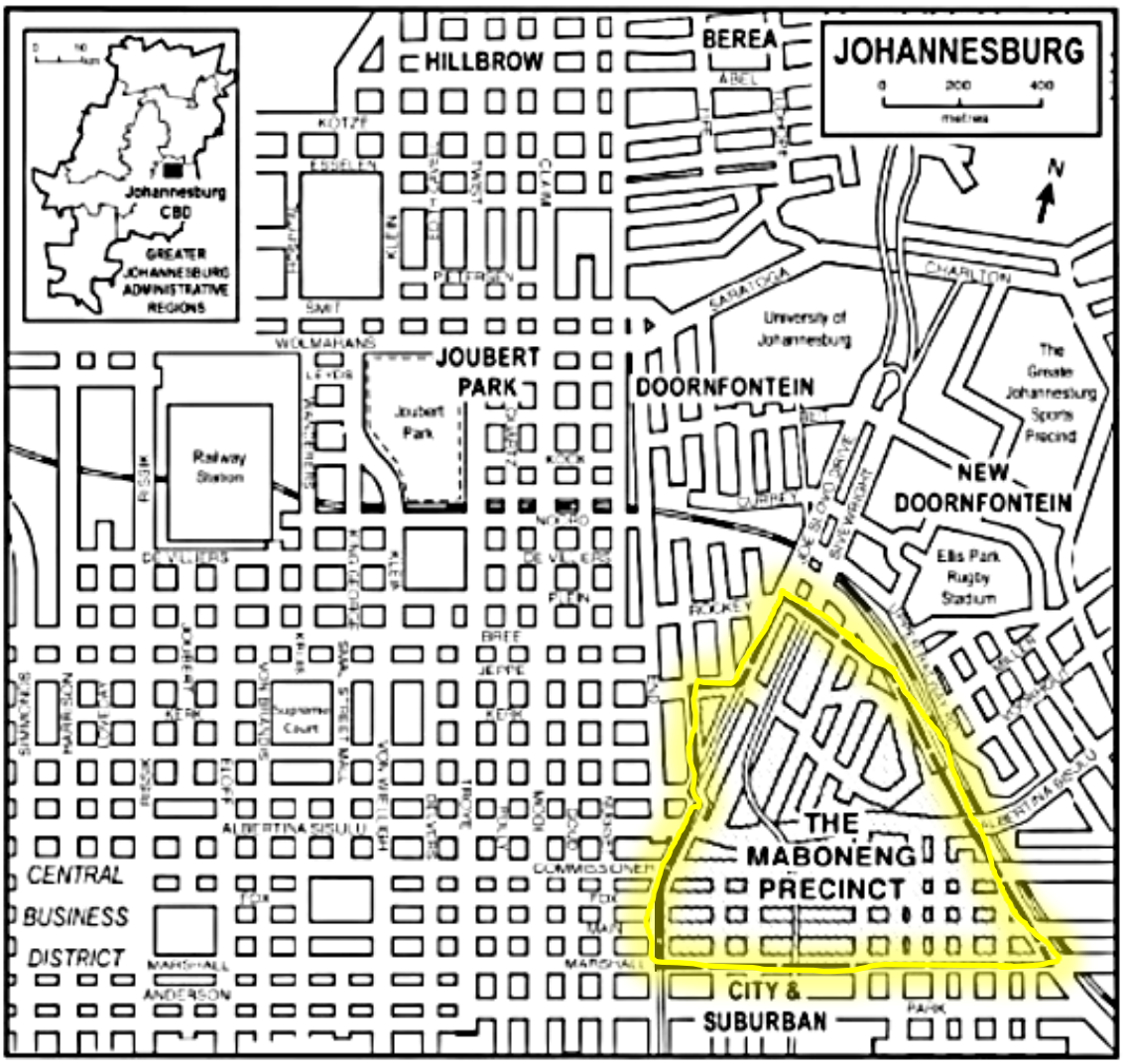


Figure 5.28: *indicating the location of the Maboneng Precinct (Source: Gregory, JJ. 2006:8).*

5.3.2.5 Building types in the precinct

- Residential units with studio spaces: Live work Units
- Weekly Market building
- Retail complexes with food services
- Permanent retail outlets
- Art Galleries
- Large Studio Spaces
- Food and beverage outlets
- A Theatre, Independent Cinema
- Open Air Park which hosts regular musical events
- Boutique Hotel and Backpacker lodge – due to the increasing number of tourists
- Business related services such as event management, photographers and advertising offices

This mixed use area allows for the provision of accommodation for people as well as employment opportunities and the convenience of having services and amenities nearby.

Figure 5.29: *Map indicating the various income levels in the Maboneng district within 1sq.km with yellow being highest income areas. Dark grey being medium income and light grey being the low income areas(Source: www.propertuity.co.za/downloads/Maboneng-Developing-a-Neighbourhood-Economy.pdf. Accessed 16 November 2017)*

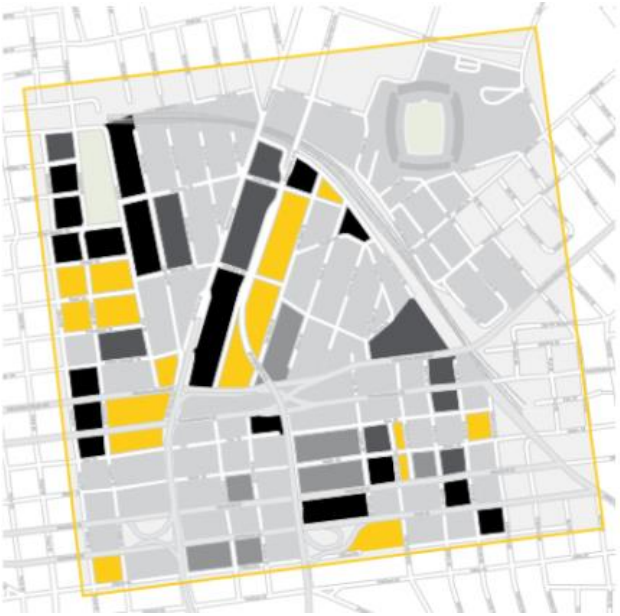


Figure 5.30: *Map indicating residential spaces in the Maboneng district within 1sq.km with yellow being the highest occupied spaces and light grey identifying limited to no residential component. (Source: www.propertuity.co.za/downloads/Maboneng-Developing-a-Neighbourhood-Economy.pdf. Accessed 16 November 2017)*

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Figure 5.31: *Map indicating commercial spaces in the Maboneng district within 1sq.km with yellow being the highest occupied spaces and light grey identifying limited to no commercial component. (Source: www.propertuity.co.za/downloads/Maboneng-Developing-a-Neighbourhood-Economy.pdf. Accessed 16 November 2017)*

5.3.2.6 Urban Regeneration and the Flexibility of Spaces

The regeneration of areas allows for transformation by the use of older buildings and sites that are either derelict or abandoned and not used to their full potential to meet the needs of the functions required at the time or for the intention of the designer relative to the context.

After the conversion of the buildings and spaces in the old industrial area into creative hubs such as studios, the idea of adding the residential component came into play. There was an eventuality to create the live work units in 2012.

The first of many mixed residential buildings to come was a 194 unit building from a 1970 industrial warehouse known as the Main Street Life building with a diversity of units accommodating bachelors units to penthouse units. Whilst there has been more units completed during the course of the years, the demand for the live work play type environment has resulted in continued growth and construction of more of these building types (Gregory, JJ. 2006 :9).

There is a myriad of different types of apartments and residential spaces to suit the occupants with flexible spaces to adapt to the user's needs.

Many of the apartments are open plan to allow for this flexibility of spaces especially uniquely designed studio spaces that allow for a live work space by renting, for example, entire floors which are essentially open plan and can be changed to suit the needs of the occupant (Murtagh,R.2005:56).

This type of flexibility is carried along through to the public spaces as well where places have different functions during the day and night.

Figure 5.32: *indicating residential conversions from an industrial space in the Hallmark House (Source: Murtagh, R.2005:63).*

Figure 5.33: *indicating residential apartment. Open plan flexible spaces (Source: www. propertuity.co.za/ downloads/Maboneng-Developing-a-Neighbourhood-Economy.pdf. Accessed 16 November 2017)*

The sustainability of the area also required other activities such as markets which also showcased the talent of the creative community. An unused warehouse was therefore converted into an area known as the Market on Main where the community hosted weekly markets for the traders. The market was such a success that this encouraged the emergence of more businesses which took up retail and studio

spaces within the precinct as well as drawing a large amount of visitors to the market area every week (Gregory, JJ. 2006 :11).

Interestingly enough there has also been the inclusion of creative ways to use items such as shipping containers, from which people are able to operate micro businesses at more affordable rates. (Gregory, JJ. 2006:12).

Figure 5.34: *indicating Main Street prior to regeneration on the left and development thereafter indicated on the view up Fox Street on the right. (Source: Murtagh, R.2005:58).*

5.3.2.7 Benefits of the Mixed Use building type in the Maboneng Precinct and bringing in principles of New Urbanism

Advantages of the Maboneng Precinct	
Access	Access to required space to operate a creative business. Access to a market.
Group Marketing	Access to group marketing associated with the brand of the precinct. Feature marketing through collaborations.
Diversity	Diversity of people and democratic spaces.
Affordability	Affordable rental rates and property prices compared to suburban areas.
Network	Access to an internal network, which increases collaboration and spill over business.
Safety	Safe and secure working environment.
Creative Milieu	Inspiring and innovative working environment stimulating creative production.

Figure 5.35: *Elements that allow for the success of the Maboneng Precinct (Source: Gregory, JJ. 2006:12).*

The perception of the area is the strong sense of community derived from the target population, being the creative people that inhabit the area.

Although the area has freedom of the type of buildings that have emerged, the process of selection of the target population was based on the choice of the developer and his intentions for the area as mentioned earlier. That is, an area which is revitalised through the arts and creative minds. The result is an interesting fusion to create a trendy area from an old industrial area and bring this to life at all times of the day as the research seeks to achieve.

Figure 5.36: *indicating flow of Elements of Mixed use developments (Source: Murtagh, R.2005:65).*

There is a gradual improvement within the area which will later be developed more toward the railway line area and abandoned buildings and spaces that have potential for improvement. In addition, there is an abundance of abandoned factories and warehouses that can be reused to provide accommodation for people and thus reducing sprawl and travel time to various places.

The merging and integration of spaces to form a live, work, play environment allows for sustainable neighbourhoods to be formed and communities to develop.

There is a variety in heights and sizes of buildings which adds to the diversity within the area, in architectural terms. The heights allow for the density of people which is one of the characteristics of a New Urbanist environment. This also allows for a flexibility of spaces as there is now more to work with than compared to a single storey building.

One important principle in new urbanism and mixed use design is the interaction of the buildings with street edges and the porosity and permeability of edges. This has been achieved in the Maboneng precinct by the use of larger windows for example and the spilling out of restaurant seating onto the pavement resulting in a sidewalk café type ambience.

5.3.2.8 Shortcomings of the Maboneng Precinct

There have been several challenges following the development of the precinct.

- Although the precinct is in close proximity with areas such as the stadium there is a lack of connection with other parts of the city and a distinctive segregation to other areas.
- The area in which the Maboneng precinct lies is extremely neglected so although there has been an influx of people there is a lack of public urban management as the upgrading of the areas is mostly due to private investments and initiatives.
- Although the theme throughout the precinct is that of a creative scope, the developer does not own all of the properties within the area and therefore there is a possibility of other developers acquiring property that does not follow the theme of the intended community.
- The precinct has become a popular area but this has an effect of property sales of the surrounding areas where taxes and rates have now increased causing some of the owners who cannot afford the upkeep to sell.

- There has been numerous violent protests in the area due to the keeping of illegal immigrants within some of the buildings and the protection of these people is as a result of no alternative forms of accommodation available for them.
- Although the area mainly accommodates young and upcoming creatives, the success of the area has caused an increase in rental costs and as a result most of the micro enterprises have failed. The high costs of living in the area have also caused those who cannot afford the rates to look to cheaper accommodation within the city

Whilst there appears to be drawbacks within the Maboneng Precinct in Johannesburg there is a focus on regenerating the area, as the research seeks to achieve in Umgeni Road. The mixed use typology was implemented and successful in bringing density to the area as well as making use of the abandoned area. Lost spaces were now found and given a sense of place within the city. Flexibility was integrated to allow for buildings and spaces to be sustained. These statements relate back to the theoretical and conceptual framework of the research and the importance in noting this when considering the design of the proposed intervention.

5.3.3 INTERNATIONAL: Henning Larsen's Proposed Mixed-Use Urban District

Figure 5.37: *indicating proposed urban regeneration (Source: http://www.archdaily.com. Accessed 02 May 2017)*

Figure 5.38: *indicating proposed urban regeneration (Source: http://www.archdaily.com. Accessed 02 May 2017)*

5.3.3.1 Project Description

Architects:	Henning Larsen Architects
Location:	Gothenburg, Sweden
Project year:	2017
Area:	100 000sq.m

5.3.3.2 Background:

The Swedish City of Gothenburg is proposing a regeneration of old industrial areas into mixed use areas with public participation. This is due to the need to transform wasted spaces into areas of use amidst a backdrop of regeneration to the urban environment that have already being discussed. With the intended completion set in 2025, the plan proposes a diversity of uses as well as people.

Figure 5.39: *indicating proposed urban regeneration (Source: http://www.archdaily.com. Accessed 02 May 2017)*

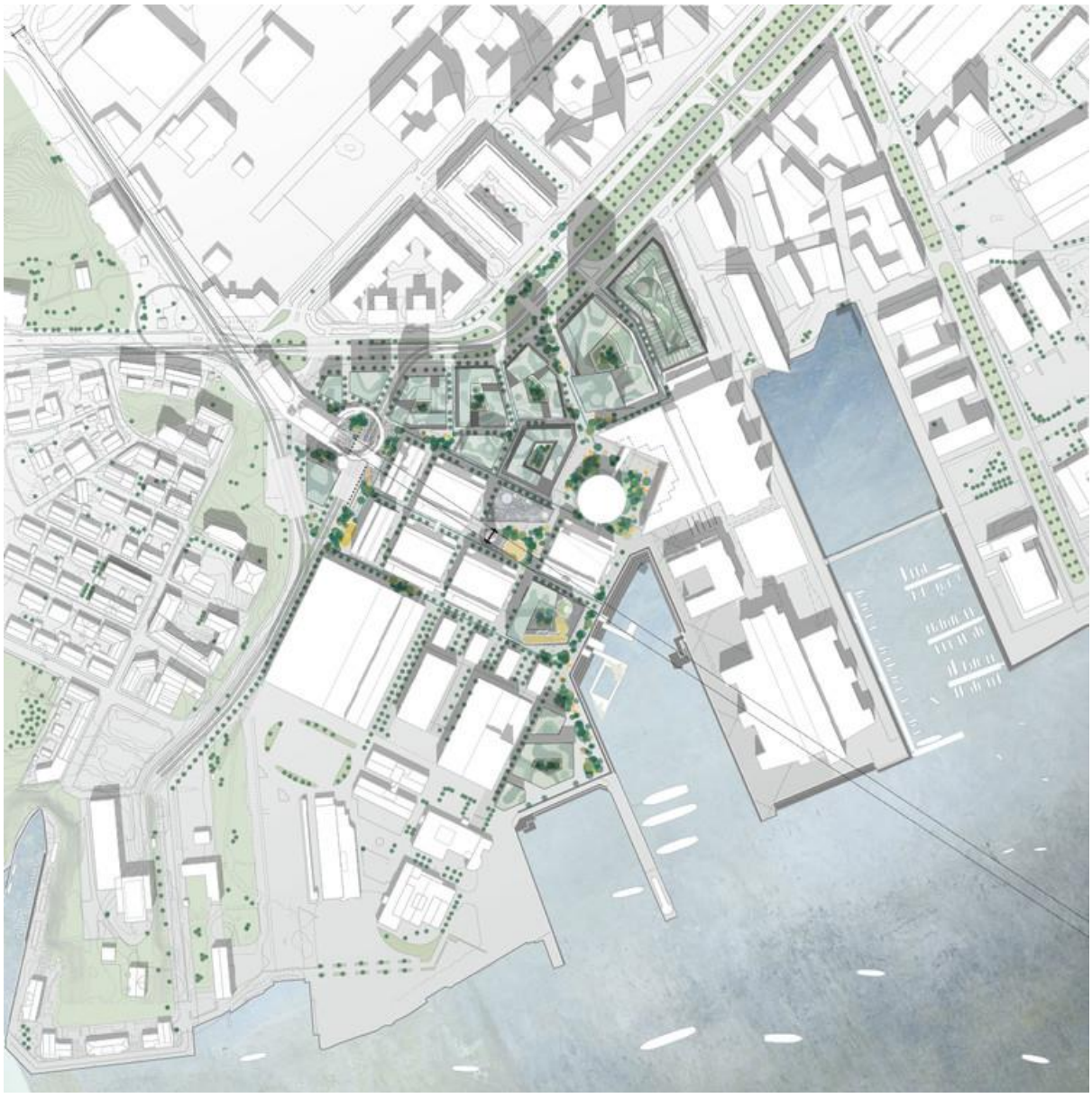

Figure 5.40 *indicating proposed plan of urban regeneration (Source: http://www.archdaily.com.Accessed 02 May 2017)*

5.3.3.3 Design Intentions:

There is a lot of lost and wasted spaces in the area and the proposal aims to identify and activate these spaces by means of providing this with a function. As discussed earlier in Chapter 5 the idea of lost space will be applied and the remedy of either using these spaces as means of movement or transforming into something architectural will be considered.

The principle of landmark or identifiable spaces from New Urbanism is also considered by the use of the Gothia River which is an important asset as it creates a unique and recognisable identity to the area.

Transit principles will also be implemented by the creation of a public transportation hub which will connect trams and bus lines to a cable car that spans the river. This will in turn add to the appeal of the area and allow for connectivity to areas.

Figure 5.41: *indicating a diversity of functions and building uses proposed, ranging from restaurants, retail to a gym and cafes (Source: http://www.cladglobal.com/CLADnews/architecture_design/Henning-Larsen-Architects-designs-landmark-tower-and-mixed-use-plaza-for-Gothenburg. Accessed 02 May 2017)*

5.3.3.4 Design Considerations:

In terms of massing, the buildings will keep to a lower profile near the river's edge as the factors of sunlight, wind and other natural elements have been considered relative to the building design. This will result in a new micro climate being created within new urban spaces together with a unique character and identity.

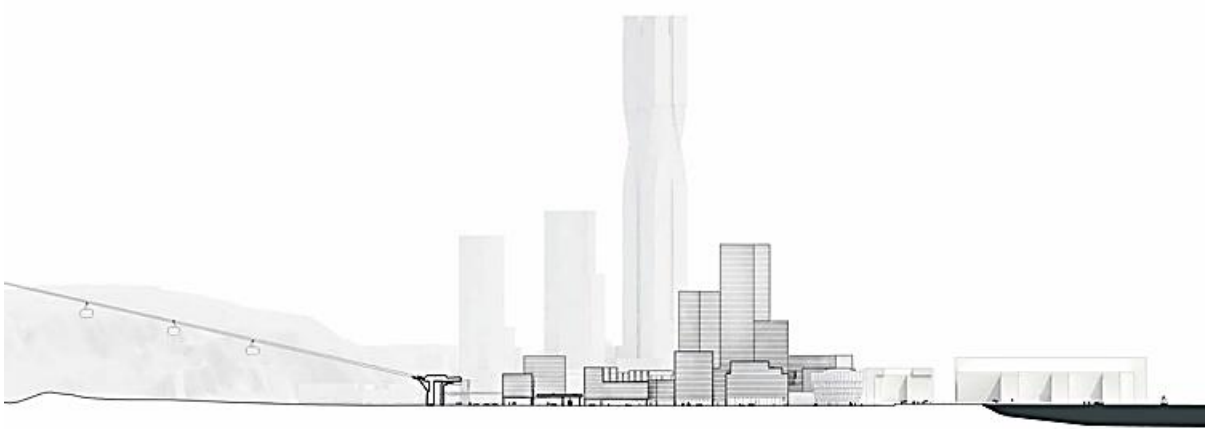

Figure 5.42: *indicating proposed regeneration sketch against city backdrop(Source: http://www.archdaily.com. Accessed 02 May 2017)*

There is an area within the city which has been labelled a future high rise portion. The building within the development that move closer to this area will be treated to tie into this notion by increasing in height.

Within the units as well as the various buildings, there will be a flexibility of spaces. This will allow for an adaptation of the area both economically as well as socially.

Whilst there will be many new proposals, there will also be a regeneration of some structures. This will all in turn allow for a 24 hour area in which existing activities and units merge with the new to create an interesting dialogue of mixed usage around the clock.

Figure 5.43: *indicating proposed urban regeneration massing of area (Source: http://www.archdaily.com. Accessed 02 May 2017)*

5.4 SUSTAIN: Flexible Concepts and Sustainable Methods within Housing

5.4.1 LOCAL: Lufhereng

Figure 5.44: *indicating Lufhereng Social housing (Source: https://www.livinspaces.net/projects/architecture/the-lufhereng-greenfields-housingproject-by-2610-south-architects/. Accessed 02 May 2017)*

5.4.1.1 Project Description

Architects:	Gauteng Department of Human Settlements
Location:	Soweto
Project year:	2012
Area:	sq.m

5.4.1.2 Background and Site Description:

Lufhereng is an integrated urban development project located centrally of Gauteng to the west of Soweto and formed to physically, socially and economically integrate with Soweto.

Lufhereng, derived from Venda and Sotho words, refers to a place where people come together, is a residential area in which all levels of income are catered for and integrated with transportation, urban agricultural and social facilities. The brief attempted to stray from the typical township feel to a more socially and economically sustainable area, departing from the norm of rdp housing with the intention to provide greater variety.

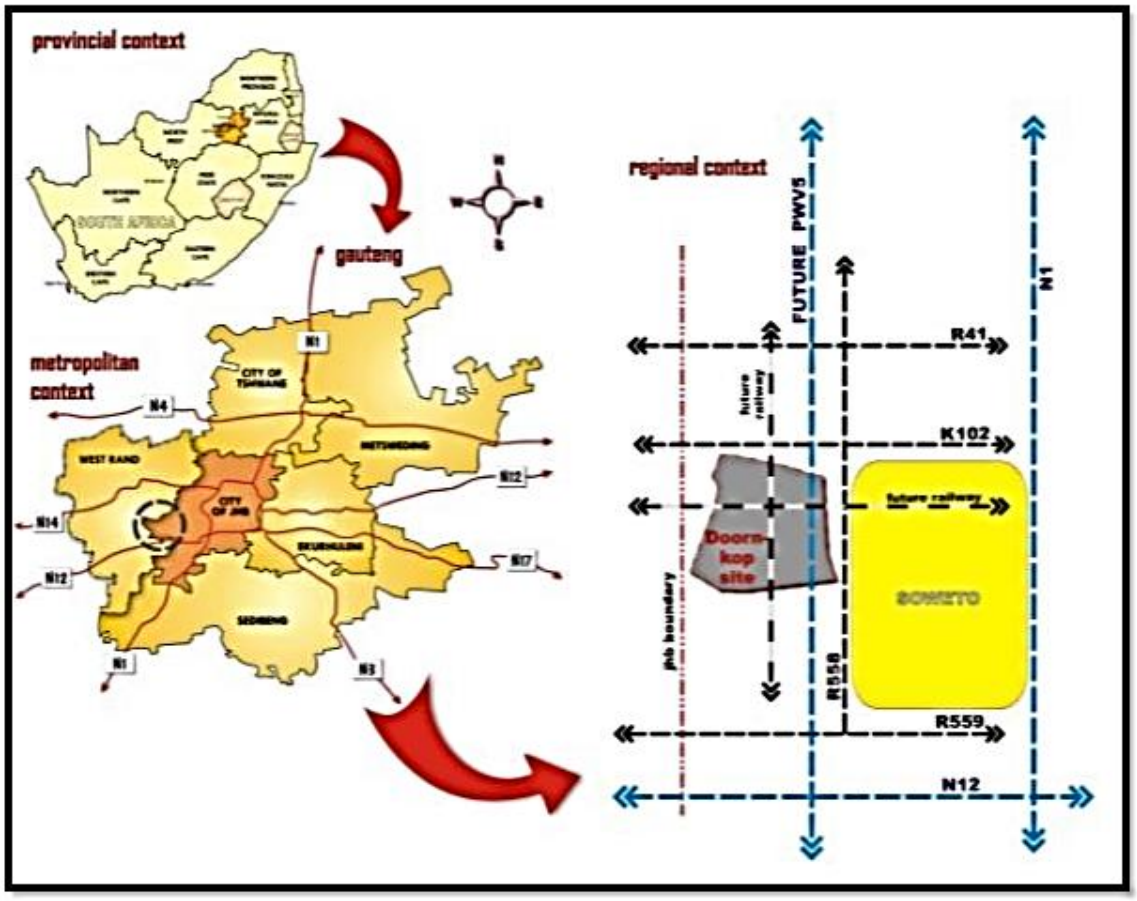

Figure 5.45: *illustrating location of the Lufhereng development on a regional scale (Source: www.lufhereng.co.za. Accessed 02 May 2017)*

5.4.1.3 Components:

The project consists of a mix of tenure options of subsidy, bonded and live/work unit types.

The site is near several amenities such as schools, community facilities, taxi drop off, crèches, open spaces and places of worship making the position convenient for the idea of housing.

The subsidised housing is also aimed at those who were relocated from the Protea South informal settlements during 1996. The poorest of the community are catered for by fully subsidised housing, with affordable housing for the other low income earning households and for the general market a middle and high income bonded housing. Affordable housing has the option of either rental or freehold stock.

There is a variety of housing units ranging from free standing to row housing indicating flexibility and diversity within the development.

Figure 5.46: *indicating housing unit variations (Source: www.lufhereng.co.za. Accessed 02 May 2017)*

Figure 5.47: *indicating housing unit variations (Source: www.lufhereng.co.za. Accessed 02 May 2017)*

Figure 5.48: *illustrating various street elevations reflecting diversity ad housing variation. Source: www.lufhereng.co.za._Accessed 02 May 2017)*

5.4.1.4 Design Consideration and Conceptualising flexibility and sustainability:

Breaking free from the standards of normal rdp housing, there are verandahs which provide not only an aesthetic quality but natural surveillance of the area.

Streets are designed as public spaces with live work units allowing for an interaction at ground level and the idea of a flexible unit that has potential for future expansion has been applied to the design.

Figure 5.49: *indicating housing. (Source: www.lufhereng.co.za._Accessed 02 May 2017)*

There have also been design guidelines drawn up when future expansion of the area is decided upon. These principles and rules have the intention of allowing for economic growth of the area and a development of more mixed uses in addition to the live work aspect provided.

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Figure 5.50: *illustrating street interface (Source: www.lufhereng.co.za. Accessed 02 May 2017)*

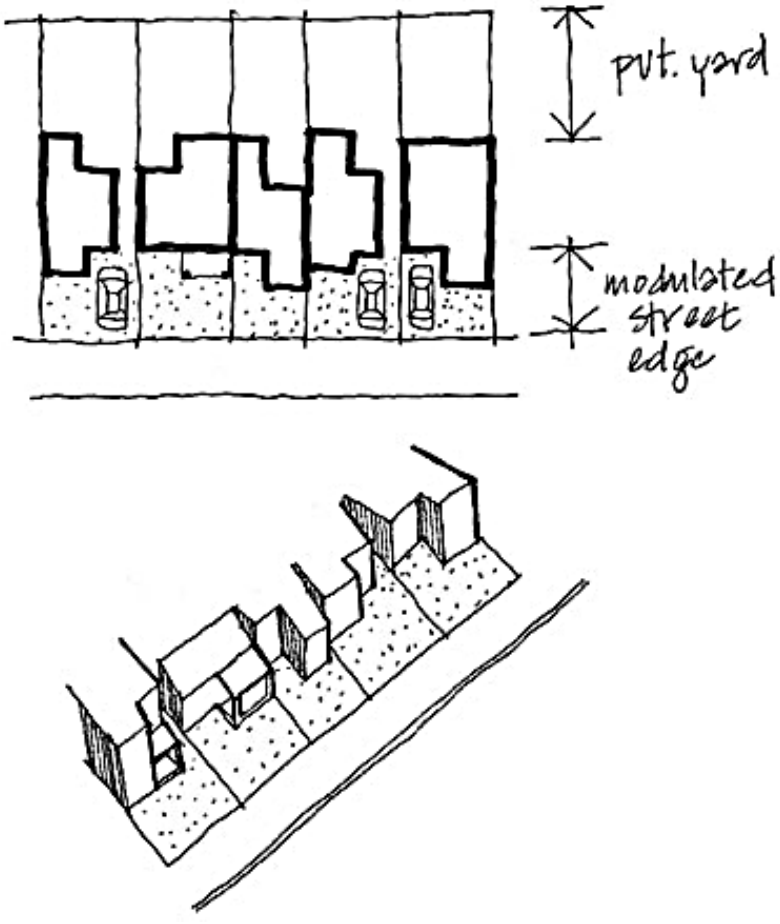


Figure 5.51: *illustrating units in plan and the protrusions as well as a perspective view. Description of public and private spaces indicated. (Source: www.lufhereng.co.za. Accessed 02 May 2017)*

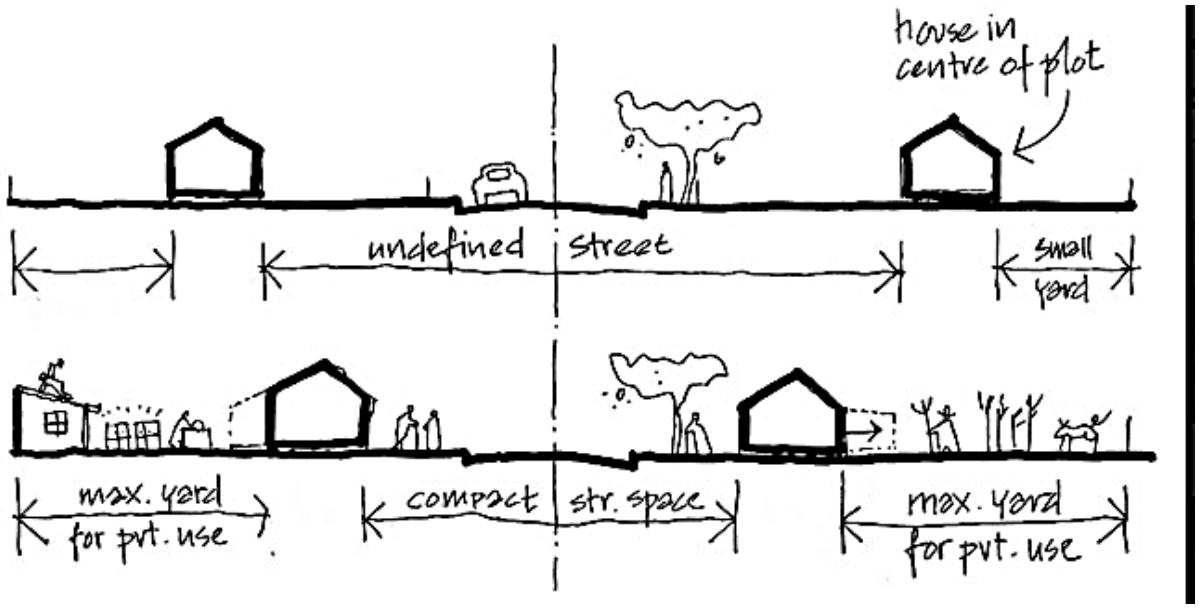


Figure 5.52: *illustrating housing interacting with street edge. (Source: www.lufhereng.co.za._Accessed 02 May 2017)*

Figure 5.53: *indicating housing interaction with edge (Source: www.lufhereng.co.za._Accessed 02 May 2017)*

5.4.2 INTERNATIONAL: Villa Verde Social Housing, Constitiucion

Figure 5.54: *indicating Villa Verde housing: half a house concept (Source: www. http://www.archdaily.com/447381/villa-verde-housing-elemental/528051ade8e44e5830000099-villa-verde-housing-elemental-photo. Accessed 23 August 2017)*

5.4.2.1 Project Description

Architects:	Alejandro Aravena, Elemental
Location:	Sold Pedro Prado, Iquique, Tarapacá, Chile
Project year:	2003
Area:	5 000sq.m

5.4.2.2 Background:

In Chile a low income family is limited in space relative to what they can afford. The housing they can afford is less than half the area to that of a middle income family. They are often left with smaller homes as a result.

The concept of half a house was conceived in the 1970s by a professor named John Turner and was based on the notion that a house should be part of an ongoing process. This developed further into incremental housing by architect George Gattoni who attempted to solve the problem of urban migration.

Thereafter, architect Alejandro Aravena of Elemental evolved the idea as a response to an earthquake which hit Chile and resulted in killing over 500 people as well as destroying almost 80 percent of the buildings within the city. Aravena was employed to draw up a new plan for Constitucion in Chile.

Although the site on which the housing was built was illegally occupied and unsafe, the residents were adamant about remaining there. The government decided to seek help from Elemental, an architectural firm, to provide permanent residence to the occupants rather than displace them. However, this came with an extremely low budget.

5.4.2.3 Design of Units and Flexibility:

The aim was to create housing that would increase in value over time within the small site and with a small budget. Elemental came up with the idea to create units which were half built around common spaces. The idea was to have half of a good unit and half which could be developed more over time by the user, to suit their needs rather than have a complete unit which was insufficient or lacked components.

Elemental provided the people with units which just met the low income housing requirements and thereafter allowing the user to expand the rest. These units, for the lower income population, were therefore densified over time through self-build.

By providing an allotted space in which the user could express their unique identity, the building form was kept consistent for an organised result.

5.4.2.4 Materials and layout:

Although the housing differed visually in different parts of Constitucion, the concept was carried through. That being the two and a half storey houses with one half being identical throughout the site whilst the other half being empty and awaiting a unique character to be created by the user.

Figure 5.55: *indicating before and after of a unit, given identity by the user. Basic items were provided initially and users were allowed to add on (Source: http://www.pritzkerprize.com/2016/works. Accessed 23 September 2017)*

Figure 5.56: *indicating another housing development with the same principle of half a good house (Source: www. http://www.archdaily.com/447381/villa-verde-housing-elemental/528051ade8e44e5830000099-villa-verde-housing-elemental-photo. Accessed 23 August 2017)*

The first floor of the finished half consists of unfinished concrete floors whilst the second is covered with unfinished plywood. Although there are no appliances and just one sink in the kitchen area, the house is practical, cheap and well insulated.

Items such as foundations, plumbing and electricity – which families require assistance in building - are finished for them prior to moving in. The residents need only provide their time and labour as well as any extra materials to create the other half of their house as the government fortunately pays for drainage, sewage, roads and other necessary infrastructure which allows for a good community to be built.

In terms of constructing individual half houses, the residents have been offered building workshops by Elemental as well as provided with a manual explaining ways to expand the house and other useful tips.

Figure 5.57: *indicating living unit with users touch (Source: www. http://www.archdaily.com/447381/villa-verde-housing-elemental/528051ade8e44e5830000099-villa-verde-housing-elemental-photo. Accessed 23 August 2017)*

5.5 CHAPTER SUMMARY

Creating a building in which the people of the area are able to be accommodated to suit their needs is important in the success of the structure as this relates to the sustaining of the building , not only in terms of responding to the context by means of sustainable means but by the use of flexible concepts within the building. By being flexible, amidst the ever changing context, the building is allowed to adapt and sustain itself.

An area such as the Maboneng Precinct can be seen as a success but only due to the selective process by which the developer sought to regenerate the area. By utilising the creative industry as a tool to uplift the area, regeneration of the precinct was achieved through the transformation of abandoned and old buildings and factory spaces into spaces for residential and commercial uses as well as the obvious artistic functions. This resulted in sustaining the area not only in terms of reusing spaces that were already there but by bringing in people and building functions so that the area was ''alive'' during the course of the day and night as well. The research seeks to revitalise an area within an industrial part of the city and cater to the needs of those who work there and draws from the intentions of the precedents in this respect.

The building should serve as a tool to indicate changes of perception within areas that have previously been deemed unsafe, derelict and abandoned.

Whilst it is vital to provide an architectural intervention which meets the needs of the users within the context, the resultant outcome should simultaneously reap the benefits of acting as a catalyst for an area that is in dire need of regeneration.

The above precedents were chosen to illustrate such.

CHAPTER 6: CASE STUDY

6.1 INTRODUCTION

This chapter provides an outline of inner city environments that respond to the life of the people within the context by means of a Case study. The Case study examines The Strollers Overnight Facility in Mansel Road, Durban and specifically looks at the responsive needs of the working commuters and their integration into the city.

The case study will be critically analysed to discover the successes and shortfalls of the building and how the building relate to the context in which it is placed. The research will look at the case study's contribution to the area in which it is located. The research will also depict how the study affects the user for which the architectural building or space is intended.

The analysis will in turn determine whether this is a suitable example for the research intervention and if not, what the research can draw from the study so that any unsuccessful outcome can be avoided.

6.2 CASE STUDY: RESPONSE TO THE NEEDS OF THE WORKING COMMUTER WITHIN DURBAN: THE STROLLERS OVERNIGHT FACILITY

Figure 6.1: *indicating the Stollers temporary accommodation (Source: Author)*

6.2.1. Introduction

The Strollers Overnight Facility in Mansel Road, Durban currently attempts to meet the needs of those who work within the area and have to travel long distances to reach home each day. The case study will investigate the architecture and spatial configuration of the facility in relation to those that stay overnight and how well the architecture responds to their needs or what is lacking. The research also looks into how the building responds to the context in which it is placed. This placement is vital as the success is determined by the way in which the building functions and the number of inhabitants occupying the space. The case study indicates the role of social cohesion and its importance relative to the economic factors within the area and that of the people. This case study is an important component which will assist in the conceptualisation of the Mixed-use building typology.

6.2.2 Project Background

The Mansel Road scheme which was initially designed by Rodney Harbour, and thereafter having Elphick Proome Architects design the Strollers building on 55 Mansel Road, lies on a sliver of land between the extent of the railway lines and Umgeni Road. The scheme was part of an urban planning initiative which included a bath house, the live work units a response to the informal settlement Block AK and boot markets. (Glass, L.E.X. 2013: 81)

The origins of Block AK informal settlement traders started in the 1980s, being a vacant site of forced removals. These innovative women, who travelled by bus to Durban from afar to shop and trade, transformed pavement trade areas (in Newmarket Street where they relocated after the removals) into shelters by use of black plastic sheeting and the drums they sold. The blue drums were collected from factories in Durban, washed and sold by the women wholesalers to rural traders who travelled into town. In addition, passengers were taken for tours by opportunistic drivers throughout the city, and also made use of washing facilities in the beachfront areas. The traders as well would trade out of their car boots in some instances. These activities caused various problems for the city such as messy ablution facilities, illegal trade, improper trading facilities and so forth. The bus station on Mansel road sought to turn these issues into a solution proposing a niche where the traders could function.

Figure 6.2: *indicating Shelters in Block AK made of black bags and drums (Source: Kitchin, F etal. Ovens, W. 2008: 8)*

Figure 6.3: *Live work units of the Mansel Road market traders (Source: Author)*

As part of the Mansel Road scheme, this informal market was thus upgraded in 1998 with each of the traders being given units from which they were able to live and trade. This Urban design scheme was an integration of live and work units.

There was a development of parking for buses alongside stalls ablution facilities and social spaces, including a crèche. These drum sellers were now provided with their own unit which entailed a shop and living quarters where their trading hatch faces the trading street and the living area at the back of the unit. The site also caters for approximately 180 covered stalls from which traders are able to sell their goods.

The market was a success as the intention was constructed to provide skills and the concept made the municipality see the need for the Strollers facility. This was also due to the fact that these women were from rural areas and returned home every so often. However, a cyclical migration is formed so that there is a continuous replacement whereby when one woman leaves to go home, another takes her place (usually a family member). A strong link was created between the urban and rural areas.

(Glass, L.E.X. 2013: 81)

6.2.3 The brief

The Strollers facility is essentially a four storey mixed use building with small commercial spaces on the ground level and the three remaining levels being used particularly for those who come into town to trade at the market and require temporary overnight residential accommodation. The community within the area is thus catered for in terms of their needs and the initiative of the city to respond to these needs.

Relative to the concept of transient people and the architecture thereof, the Strollers project plays an important role as been the first transitional housing within South Africa, as the need for housing was so evident considering the circumstances of the people that required it.

There is currently 320 beds and 162 rooms provided in the facility, set up by the Metro Housing and reporting to a board of directors; therefore making it a section 21 company. The management of the facility is contracted out on a day to day basis. The feeling of the facility is seen as more of a business transaction than a place to seek refuge as occupants are obliged to vacate the facility each morning, with the room fees funding the operating costs.

Many of the traders cannot afford the fee of the facility and sleep on the pavements during the night whist others do not sleep at all but rather make use of the night market and are ready to leave in the morning (Glass,L.E.X. 2013 : 82).

6.2.4 The Site

In the broader context of the site, the Strollers facility is located on a site that has mixed use facilities. The land uses are both commercial and residential. Commercial being the trading within the Mansel Road Market area and residential being the Strollers accommodation.

Figure 6.4: *indicating the context of the Strollers Accommodation (Source Glass, L.E.X. 2013: 83)*

The Strollers facility is located within an area which is easily accessible to public transport and near the Durban Train Station as well as near various amenities for convenience such as the bath house, retail and so forth. This responds to the needs of the traders. However this broader context is overshadowed by the actual location of the facility. There is not much visibility of the Strollers facility due to its poor position at the end of the road. There is not much pedestrian flow to this side of the road as the focus is more on the markets and near the entrance where the main markets are.

Relative to New Urbanism, although the context in which the facility is placed is responsive to the needs of the people who occupy the area, there is no interaction with retail and street edges. In addition, there is a lack of pedestrian friendly spaces as the area is rife with derelict buildings, which makes the environment an unpleasant space.

Figure 6.5: *Bins placed near the entrance of the Accommodation (Source Author)*

There is no thought placed in the role of the person who temporarily resides within the facility as they are required to leave each morning. We can see the lack of consideration for the occupant especially with the location of a large waste dump so close to the entrance of the facility.

6.2.5 Design Considerations

The building is linked to the design of the market by the use of curved roofs showing a positive integration of areas. External work spaces are covered by low lying roofs which provide a feeling of human scale to an otherwise large building. By doing this one is not overwhelmed by the scale of the building. Despite this attempt, the internal spaces within the courtyard are overshadowed by the mere volume of the large four storey structure.

Figure 6.6: *showing the railway station next to the accommodation (Source: Author)*

The concept of the facility, echoed by the railway line alongside it, was to be like the coaches of a train, with parallel wings of living quarters and ablutions over the three floors for male and female occupants.

Figure 6.7: *Strollers Accommodation on the left echoing the roof shape of the Market on Mansel on the right (Source Glass, L.E.X. 2013: 85)*

Figure 6.8: *showing the bedroom areas. Not much thought has been placed on human comfort and privacy of spaces but rather getting as many beds in as possible (Source Glass, L.E.X. 2013: 86)*

6.2.6 Spatial Organisation

Spatially, the bedrooms are quite small with a single window for ventilation and light, expelling the feel of a homely atmosphere. In addition, bathrooms are shared between residents. Rooms are linked together by long corridors that lack any natural light whilst areas in which fire equipment is placed has been favoured with larger areas that leave options open for these areas to be breeding grounds for crime and assault.

Figures 6.9: *showing workspaces accessed via garage doors indicating no other opening for light/ventilation (Source: Author)*

The work spaces which are accessed via garage type doors have no windows. The sole means of light, ventilation and access is through these doors.

Occupants have taken to hanging washing over fences and walls as there is no provision of drying yard areas.

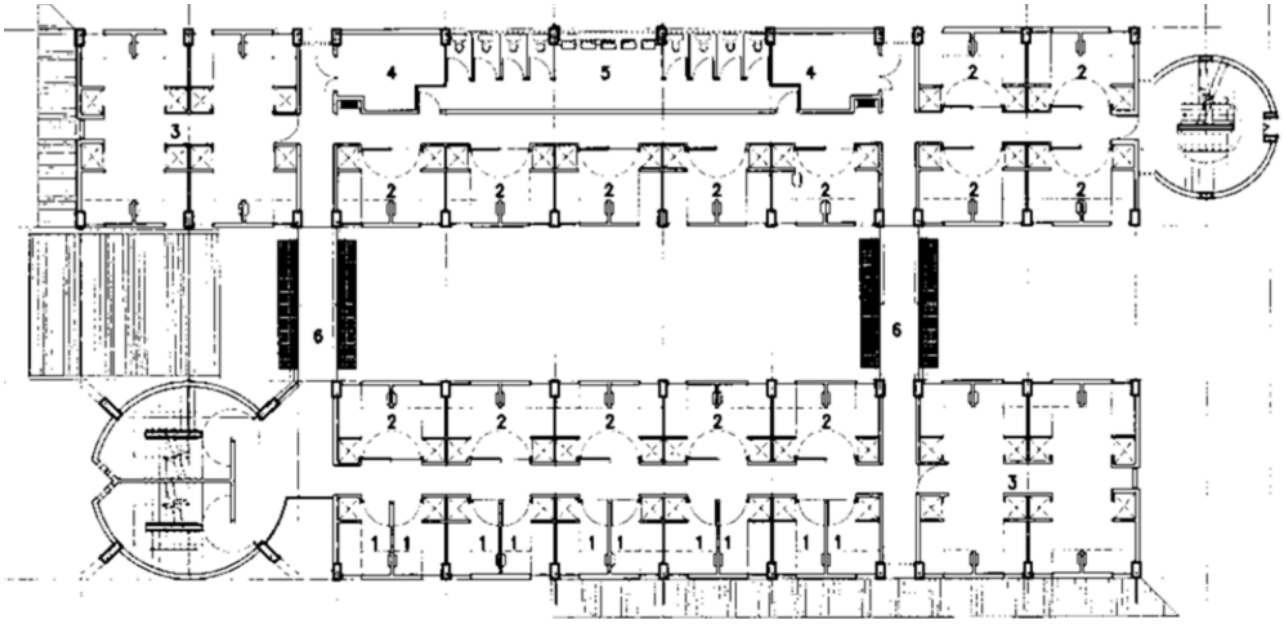
Figures 6.10: *Clothing being hung over fences despite the provision of lines which are inadequate (Source: Author)*

Figures 6.11: *Tuckshop facility within the Strollers accommodation. Lower roof heights which considers human scale. (Source: Author)*

The Strollers market delves more into economic opportunity than comfort by provision of small shops and services such as pay public toilets, pay showers and pay laundry facilities(Glass,L.E.X. 2013 : 86). Although the intention of the Strollers facility is to provide shelter and a place of work, the building lacks the compassionate feeling required within a building of its function.

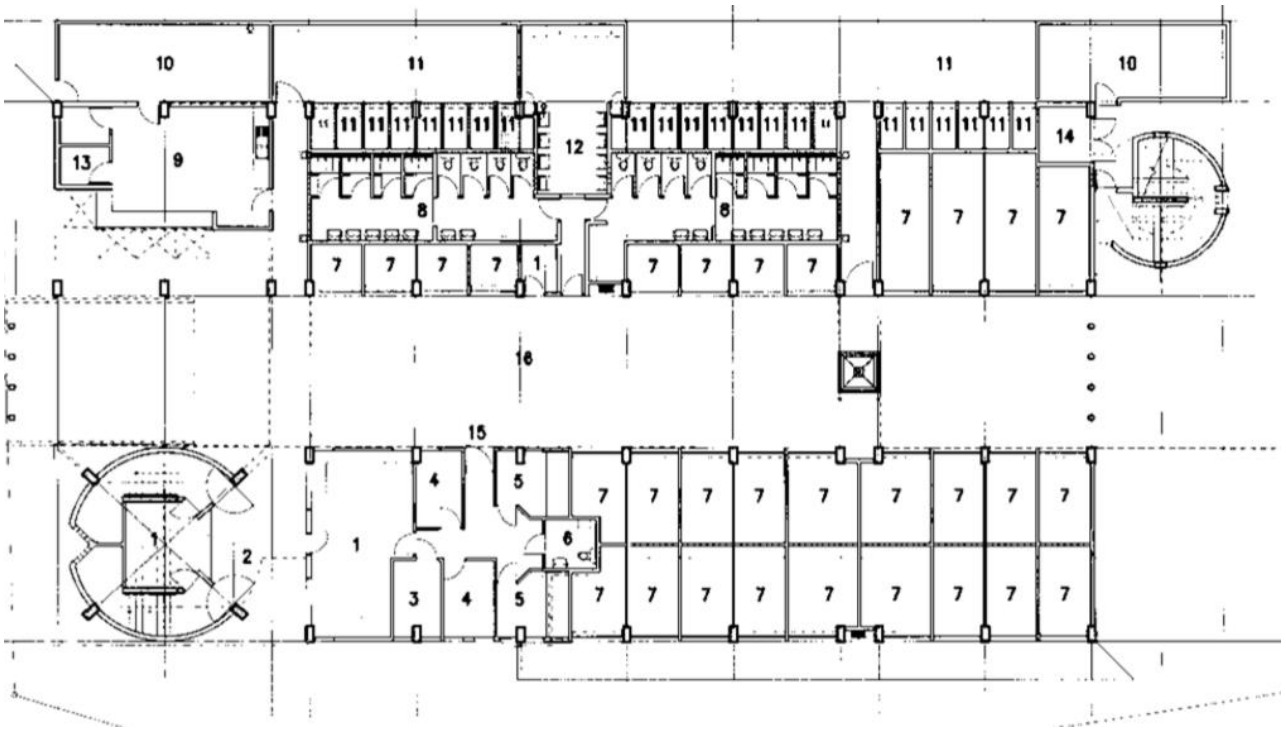
Example, the darkness of the corridors exhibits a dreary cold place with the small rooms giving the feeling of restriction and a lack of any flexibility (Glass, L.E.X. 2013: 87).

Going back to the concept of transient people, the Strollers was built for this but the spaces do not allow one to adapt successfully. There is more restriction than a freedom when inhabiting the facility and what heightens this is the time frame one has to occupy and vacate the room.



FIRST FLOOR PLAN [SCALE NTS]
KEY - 1 : 2 bed , 2 : 4 bed , 3 : 16 bed , 4 : Store , 5 : Ablutions , 6 : Bridge

Figure 6.12: *indicating spaces within the Strollers Facility with the two wings and a central courtyard area (Source: KZ-NIA Journal 2004:13)*



GROUND FLOOR PLAN [SCALE NTS]
KEY - 1 : Office 2: ,Entrance 1, 3: Sleep, 4: Disabled Room, 5 : Paraplegic Room, 6: Paraplegic Bathroom, 7 : Trading, 8: Ablutions, 9 : Kitchen, 10 : Refuse Area, 11 : Storage, 12 : Laundry, 13 : Wet Store, 14 : Meter Room, 15 : Entrance 2 ,16 : Courtyard, 17 : Road

Figure 6.13: *indicating spaces within the Strollers Facility with the two wings and a central courtyard area (Source: KZ-NIA Journal 2004:13)*

6.2.7 New Urbanism Design Principles

The following principles of New Urbanism are looked at it relation to the Strollers Facility and the surrounding context and the researcher will discuss how they were considered or not thought of when designing the facility.

- A NOTICEABLE CENTRE: The station is a main transit stop within the area whilst Umgeni Road is a main and well known road to the site. There are many well-known buildings such as the Cambridge so that people are able to identify the areas close by to the Facility.
- WALKABILITY: The Strollers is on a mixed use site therefore everything is in close proximity. There is a large road space as well as pavement walking areas. Due to the main road being Umgeni and the concentration of taxis and buses at the parking allocated for them, there is

minimal congestion or traffic through Mansel road. The area could use more green spaces for a pleasant atmosphere.

Figures 6.14: *Wider road spaces in need of more pleasant green spaces (Source: Author)*

- CONNECTIVITY: The principle is a success due to linking the Road to the main road and creating narrower roads so that less traffic surrounds the area. As mentioned above, the area could use more framed views by means of trees and social spaces.
- DENSITY AND DIVERSITY: The various functions located within the building and surrounding site meets the needs of a diverse context. However, the people are specifically the buyers and traders who come from the rural areas into this niche. The income bracket which reside and work in this area and the Stollers is specific as well and there could be more variety by means of the types of buildings.

  There is a density to the area and the Strollers due to the four storey building. Despite the market area having one storey high structures, there is a natural surveillance created as people

are always within the area. There could be potential for more people in Strollers during the day as well as night which is dependent on their socio economic situation.

- SMART TRANSIT: This perfectly meets the criteria as the building is near bus and taxi ranks as well as the train station. There is not much congestion within the site but the area could be made more pedestrian friendly visually.
- SUSTAINABILITY: The Strollers itself is not sustainable to the people who accommodate it. However, the working units further down to the market are. In this way there is no consistency of the accommodation to be able to sustain itself in the long run. The building is successful in taking up space within land that would otherwise have been wasted but it can be questioned how useful this really is as opposed to a building that adds more meaning to the area.

6.2.8 Current shortcomings within the building / design

Even though the facility has good intentions, the building does not entirely meet the needs of the people who are seeking comfortable and suitable accommodation.

In addition to the shortcomings of the spatial configurations mentioned above, the shelter and work spaces are too expensive for the target market that needs to utilise them. This is evident by the traders who wish to trade at night and then return home in the morning rather than pay for overnight facilities in which to sleep. To some, the cost implications are those traders reverting back to how their situations were prior to the construction of the facility, seeking refuge under shelters as they cannot afford the fee. The main and discerning aim from the management's side was the need to maintain the building being clean and make sure that the rent was paid on time. Providing services which assisted the users was not mentioned. (Glass, L.E.X. 2013: 87).

This is why the feedback of the user is so vital when designing and understanding the needs of those who reside and work in the specific area.

Figure 6.15: *indicating narrow corridors and poorly lit areas in the Stroller accommodation (Source: Glass, L.E.X. 2013: 86)*

6.2.9 Conclusion

Although the overall site with the Mansel road market is regarded as a success, providing a place for those who travel long distances to trade and buy within the city as well as providing living and storage facilities for a number of people, the Strollers does not seem to sustain the demographic that exists given the current costs they are charged to stay and the time frame they are given.

The pavement dwellers situation indicates the importance of the socio economic conditions that prevail and how the architecture needs to be sympathetic to this.

Humanity was not as important as merely providing a building of bricks. Ultimately it seems that the rural traders needs have not been met by the facility.

6.4 CHAPTER SUMMARY

Looking at the Strollers context on a macro level, we see the benefits of the area in terms of everything being close by and the regeneration of the area. However, there are no draw factors for a more diverse group of people.

The problem is the socio economic issues that are so evident where the accommodation is too costly relative to the money earned. Although the areas has made use of spaces and buildings that would otherwise have been left abandoned and wasted, the areas which are in the poorer sections of the city still have spaces which need to be revamped and paid attention to. The upside is the regeneration of these area has been sustainable to an extent apart from the issue of cost which needs to be addressed.

One thing which has proved to be successful is the natural surveillance of the area, bringing the area to life during the day and night.

Pedestrians have been accommodated for by means of the large pavement areas. However, natural elements and some street furniture would benefit the Mansel road area as well as more green spaces and park areas.

Attention has been made to people on street level and human scale has been considered as the Strollers building is relatively high.

The environment has picked up elements of New Urbanism however, more attention needs to be paid to this so that the areas exhibit the principles more clearly.

The example has looked at the architecture and environment on both a macro and micro level with the study looking at the surrounding context then focusing in on the building itself. By comparing the positive and negative attributes of the design, the research will be assisted in creating an architecture which assists and conveniences the user relative to their context and issues.

The mixed use typology is a smart move considering the benefits. However, the implementation process is important as this determines the success of the area, especially the outcome of how sustainable the area and buildings are.

CHAPTER 7: PRESENTATION OF DATA AND ANALYSIS

7.1 INTRODUCTION

This chapter intends to explore and synthesise the review of literature, theories, concepts, precedents, case studies and findings done via the use of questionnaires, observations and an online/web based survey.

The questionnaires are vital in that they provide insight into the perceptions of the working commuter, a few of the residents of Umgeni Road and employees of shops located in or around Umgeni Road.

This chapter also explores discussions with eThekwini officials, one of which is involved in housing within the Umgeni Road precinct and has background knowledge on the intentions of the area in the near future.

The on-site observations done were the perception of the researcher. Although the researcher has background into the area this will determine how the public, who do not necessarily venture into the area often, view the area.

These perceptions have in turn led to a better understanding of the type of design intervention that could be implemented relative to the social, economic and political environment. An environment that will encourage social interaction whilst simultaneously catering to the needs of the user.

7.2 ANALYSIS OF RESEARCH FINDINGS

All research findings which involve interviews and questionnaires are extracted from the experiences and the perceptions of the people within the area of Umgeni Road and those with knowledge on the area. Information obtained via discussions in the form of questionnaires and interviews with members of the public and eThekwini officials were all done in confidence and based on the research objectives as well as the research questions.

7.2.1 Review Of Literature

The literature review, Chapter 3, looked to scholarly articles, published books, online publications and journals in order to investigate the history of the mixed use typology relative to the problem statement. In doing so, the reasons as to the sudden decline of the mixed typology were revealed as well as the impact of this decline. The research saw the negative effects which came about from the idea of singular planning and zoning which relates back to the problem the research seeks to solve of the workers commuting woes. Following from this, the research looks to the present city image which also relates back to the research problem. An analysis of the study area of Durban saw the conditions of the city and the history behind why most people live further away from places of work, mainly due to Post-Apartheid planning. This planning exhibits segregation of people. The evident need for revitalisation within the city and integration of people back into the city is clear and the government is now looking to strategies which will aid urban regeneration. What is important to note is that although the mixed use typology is beneficial, the socio economic factors which are prevalent within the area play an important role. These factors will inform the typology and the needs of the proposed interventions user.

The literature concludes the notion of a mixed use typology benefiting the user by means of accommodating their needs through a diversity of functions that the user requires. The typology benefits neglected areas within an industrial portion of the city by providing a mixed use building to act as a catalyst for urban regeneration of the area whilst simultaneously allowing for an area, which was otherwise dead at night, to be transformed into a 24 hour area. This is further discussed with the idea of sustainability in mind. The research showed how the amount of people within the area determines the success of the area. In order to create a successful space, there needs to be a density of people and in order to achieve this there needs to be a diversity of functions and those functions need to be sustainable, therefore sustaining the people and adapting to change and to the people's needs.

7.2.2 Theoretical And Conceptual Framework

The theoretical and conceptual framework formed by the theories and concepts discussed in the dissertation, which are outlined in Chapter 4, sought to guide the research methods used.

Trancik,R (1986) describes the lost spaces within the city which have potential to be revitalised in order to make an impact on the city fabric. This is relevant in the research's context of study where the researcher found areas within the city of Durban that have been isolated or not used to make any impact to the city or the population. Trancik,R (1986) discussed three urban design theories (Figure Ground Theory, Linkage theory and Place theory) which will reintegrate these spaces into the city.

By site observation within Umgeni Road, the figure ground theory of how solids and voids relate to each other indicates wasted spaces in contrast to the suburbs dense areas. More connections and flows into areas are vital to create permeable and accessible spaces.

The railroad on the Umgeni Road site forms a barrier which defies the purpose of linking areas, as well as large roads without proper or sufficient crossings. Linkage theory looks to connecting these portions of the city, these physical links that connect spaces and allow for activity rather than providing a block to areas (Trancik,R. 1986).

There is a blurred intention within Umgeni Road which can be perceived with more clarity by defining building and space functions according to the needs of the area and the people in the area.

A place picks up on the surroundings elements and the people who occupy it (Trancik,R. 1986).

Umgeni Road lacks character of the people who occupy the spaces and their identity is not exhibited in the architecture of the area. By doing so, the spaces create places and accommodate the needs of the users (Trancik,R. 1986). The theory of place-making reinforces this notion of accommodation by responding to the needs of the people and the context amidst the placeless city and in turn creates a sense of community and regeneration in the area.

The state of the Umgeni Road area (areas not used to their full potential, areas only used during the day and not looking to the needs of the people) indicates the impact of zoning, and now the attempt at reintroducing the mixed use typology to bring the area back to life. However, this has not provided any major impact on the areas fabric as the notion of wasted spaces and a dead area at night still prevails. By revitalising the area through principles of New Urbanism , such as creating a diverse neighbourhood dense with people and functions and encouraging walkability, regeneration of the area is now informed (Gibson, GL. 1997:114).

New Urban principles are suitable for the area as they don't just focus on a specific building but the area as a whole. This is important as the people who reside within the area determine the success of the area and therefore the area needs to be perceived in a positive light in order for their decision to live or visit the area (Solomon, D. 1992:46).

Accommodating the user's needs, regenerating of an area and the proposed intervention will need to be sustained. Not only in the sense of sustainable methods of building practice and design but that of flexible and adaptable spaces which allows the spaces to change according to the needs of the user and the environment. This will in turn create a sense of belonging to the user as the spaces will reflect their identity and that of the context. Creating flexible spaces keeps in mind future changes so that the space is thus sustained (Acharya, L. 2013).

7.2.3 Case And Precedent Studies

The Case study discussed in Chapter 6, examines the macro and micro scales of an area and how urban regeneration has been applied to transform the area and treat the effects of sprawl, derelict and lost spaces as well as how the principles of New Urbanism allow for revitalisation.

The Case study is a response to the needs of the working commuters within the city and how this can be applied to the design. The study also looks at the theories and concepts discussed in chapter 5

relative to the context in which the building is placed, notably how important it is to make place for the occupant.

The Case study also looks at any shortcomings of the studies so that this can be avoided in the research design.

The Strollers Accommodation in Mansel Road, Durban has been critically analysed with the result being an unsuitable place for the majority of the working commuters, stressing the importance of how the building does not take into consideration the socio economic needs of the user. Although the materials used within the building is durable and the building has been placed within an area populated with working commuters, design consideration has not been taken into account in terms of providing pleasant spaces and places in which people feel welcome. The structure is simply a form if accommodation for those who can afford it. The intention of providing accommodation is good however, the execution of the proposed intervention needs to respond to the context as well as the needs of the working commuter so that the space becomes one which is used in a meaningful way, emphasising the importance of place making.

In summary, there needs to be more thought placed on provision of cost effective spaces to those who occupy the area.

The Precedent Studies discussed in Chapter 5 are chosen according to three components, both locally and internationally, picking up on important aspects that can be applied to the design.

Firstly, looking at how mixed use social housing accommodates the needs of the user, especially through the theory of place and using lost spaces.

Secondly, how the principles of New Urbanism are used to regenerate an area that requires attention.

Thirdly, to sustain the building and area through flexible concepts used within the structure and area as well sustainable methods employed, both to allow for the area and building to be able to adapt to the ever changing context without becoming lost or derelict spaces.

The case and precedent studies indicate how the context of an area has a strong influence to the impact of the architectural form and vice versa. The approach to designing the spaces needs to take into consideration the relationship of architecture within the context and the importance of integrating the proposed intervention into the city fabric to form a sense of place and fill in gaps with meaningful and thoughtful spaces sympathetic to the existing population and the future changes.

7.2.4 On Site Observation

The site chosen will be discussed in more detail in Chapter Nine. The general area within Durban that will be looked at for the research is Umgeni Road.

The onsite observations are made up of a number of different factors. The first being looking at the movement patterns of people at different parts of the day and night. The notion of diurnal space is evoked due to the area having a completely different feel at night in comparison to the day.

One can deduce that the area is generally dead at night, with little or no pedestrian activity. During the day, the area is alive with workers and commuters both by foot and vehicles, as well as people passing by the area to get to parts of the city via vehicles.

Vehicular traffic is very dominant on the busy Umgeni Road during the mornings and evenings and moderate during the afternoon with foot traffic being high to moderate throughout the day. Bear in mind this would be during the weekdays, with the weekends also having a considerable amount of traffic.

This relates back to the research problem, specifically the issue of the misuse of the industrial area within the city and the peak times at which people are coming into and leaving the city. The observations reinforce the notion that there is a large amount of people travelling into the city for work, especially through public transit.

Activity on the Pavements:

Figure 7.1: *indicating informing trading on the pavement. (Source: Author)*

Informal trading is evident on the pavements, some being open areas with just a stool and others having umbrella shelters. Further down, toward Mansel Road, the Umgeni road traders take shelter under the Durban station building.

Pedestrians can be seen interacting to some extent with the traders but there are no cars which stop to interact. This is understandable given the lack of parking space as well as access to malls and other services being in close proximity via car. Therefore there's no need for the driver to stop.

Figure 7.2: *indicating no interactive shop edges. Some shops being ''caged'' (Source: Author)*

The formal shops along Umgeni Road are also very closed off. Although most are open to the pavement, there is no continuity or interaction to the road or pavement edges.

The implementation of New Urbanism principles to create a more pleasant environment will be beneficial in this regard as well as creating a more formal setting for the traders on the pavements and so forth by making place.

Activities at intersections:

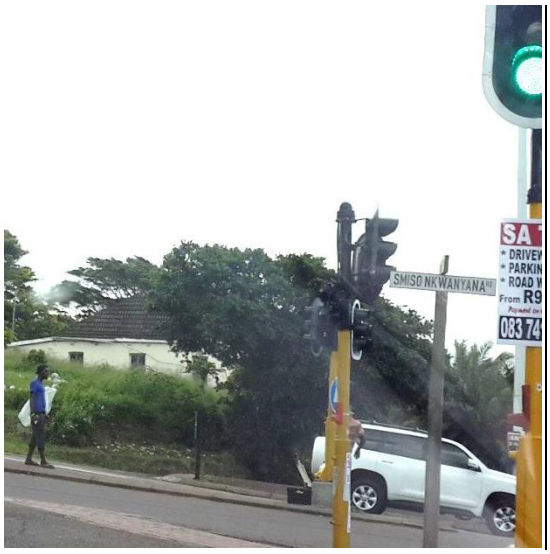


Figure 7.3: *(left) indicating a person begging at the intersection (Source : Author) whilst* ***Figure 7.4:*** *(right) indicates a person selling fruit at the road intersection (Source : Author).*

At the major intersections such as near the stadium and the Goble road intersection, there are a number of people selling items such as car chargers or fruit as well as people performing with sticks, using musical instruments or mimes, as an attempt to earn a living.

There are, however, a number of people begging at the robot intersections as well.

There is minimal response from the drivers of the vehicles in supporting the hawkers.

The perception, due to the lingering of people begging at the intersections, is to not open ones window nor to interact. Many drivers choose not to acknowledge the activity or engage with them mainly due to

reasons of safety and the notion that interaction is unsafe. There are however other views of this avoidance, such as not encouraging begging. This in turn has a negative impact on the people who are trying to make a living by selling items to the passing vehicles.

Social Interaction:

Figure 7.5: *indicating a portion of the Station Drive precinct which promotes Urban renewal (Source : Author).*

There is a lack of spaces which encourage social interaction on Umgeni Road. Apart from some small takeaways and hidden coffee shops, the social scene is more dominant on a Saturday night in the clubs on Umgeni Road or on specific nights at Station drive where there is a market area and people come together in a social setting. Whilst the Station Drive precinct promotes creativity within Durban as well as urban renewal, there aren't many other areas which take any initiative. There are no park areas within the immediate setting of Umgeni Road or places in which the worker can go on break apart from that probably catered for within the place of employment such as a staff room.

Building types:

Figure 7.6: *indicating variety of building heights and functions (Source : Author).*

There is a variety and diversity to the building types along Umgeni Road. There is not much consistency apart from the heights, which attempt to remain to less than 5 storeys in most cases.

The functions are diverse, ranging from clothing shops to car dealerships with some areas notably requiring attention and some sites being vacant, or not used to the full potential such as that behind the Moses Mahbida stadium which is used as a concrete storage area.

There is noticeable residential spaces above shops and takeaway, however the pure residential blocks are located more toward the edges of Umgeni Road.

There are not any buildings that have been revitalised as such. Apart from the revamp of the Lion Match factory, there aren't many buildings which have being revitalised to accommodate the needs of the user or any spaces that have been used to provide any comfort or social interaction to the existing community.

There is a lack of consideration for sustainability within the buildings.

Transport:

Umgeni Road is a vehicle dominated road and extremely busy during peak hours as well as moderately busy during the afternoon. The main modes are buses, taxis and personal motor vehicles with there being an absence of any cyclist due to the busy road. Whilst taxi ranks and bus stops are evident, there is no proper stopping points where one can safely wait and neither are there a lot of spaces where one can park their personal motor vehicles apart from some buildings catering for this.

The lack of street furniture and the narrow island separating lanes emphasises the starkness of Umgeni Road, being merely a place for business with a lack of social space or consideration to the user and their needs.

In summary the Umgeni Road precinct, whilst there is an evident vibrancy to the area at certain times, to the motor vehicle user the road is just a link to get to other areas with the occasional stop to venture into the shops or places of worship. There is no specific draw into the precinct to socialise and the large amount of pedestrian traffic is due to those people working within the area.

The gaps within the area remain as voids or spaces in which one function exists, with no linkage or flow into areas. There is no continuity of form and the importance of place is not evident. Most of the buildings exist for the sake of the function and are not sympathetic to the context and the population's needs. The proposed intervention must consider the surrounding and contribute positively to the area by accommodating the needs of the people and the area.

7.2.5 Online Survey To Architectural And Related Fields Professionals

Professionals view on what is lacking within the city and what determines the success of the urban intervention

The online survey was sent to over 80 professionals in the architectural field and associated fields. From those, only 23 of these professionals responded, with the majority being Architects, Senior

Architectural technicians following suit with over 10 years of experience within the field and the rest ranging from 2-5 years of experience.

The intention of the survey was to look to professionals within the design field and their views of Umgeni Road and notions of the proposed intervention, whether this correlates with the needs of the commuters as well.

Ninety percent of the respondents felt there was no proper or affordable housing provided within the city area with a general consensus that a live-work-play scenario within the city would be helpful and the need for Umgeni Road to be revitalised.

Whilst ten percent of the respondents did not feel that a flexible architectural form would benefit the needs of the working commuters, the other ninety percent backed this idea.

The majority felt that the intervention would allow for people of different economic backgrounds to co -exist and socialise within the Umgeni Road precinct, however through various buildings and functions.

The factors which the respondents felt would aid Urban Regeneration most was pedestrian friendly environments, mixed use facilities, social and green spaces and good public transport.

The factor which was least desired was the need for wider roads.

The responses all in turn allowed for clarity and confirmation of the needs of the area from a professional point of view.

7.2.6 Questionnaires:

The Working Commuter's Perception of Umgeni Road

Twenty workers of the Umgeni Road precinct were interviewed with most of the questions in a choice format and a few more in depth.

The research looked to age group, gender and marital status to name a few things, as means of discovering if there was any diversity within the group of participants. These participants were chosen from the shop employees, which the research also looked to for insight .Other participants were as traders and random people working in the area.

The information provided below clearly indicates the diverse group which has participated.

The group consists of males and female, most of which are either married or single with two being divorced and an age group ranging from 21- 40 years old to those between the ages of 51-60.

The majority of the group has secondary school education with a few having a University / Technikon qualification and a few having no formal schooling at all.

A majority of the participants have been working in the area for over 5 years, some working as much as 22 years within the area.

Travel time to work and back home for most is over an hour which is a substantial amount in terms of time and many feel that they are paying too much for travel and not earning enough to get through each month. Therefore the cost of travel imposes an extra burden especially since 15 of the 20 participants have dependants who rely on the workers in terms of monetary support.

The occupations range from mechanics to administration staff to informal traders, some of which just get by the month with the little they earn.

Nine of the twenty participants have been victims of crime around the area and although this is not the majority, the number is still high and the idea of security and community surveillance is now reinforced.

There was a definite negative opinion to travelling long distances to home and back, with the following feedback extracted from interviews.

''Most definitely negative. We could do so much more at home with the travelling money, 'said a worker.

''Yes, too expensive and long. No time for family.'' said one of the workers.

Despite the negative effects of the travel, only two of the workers have stayed overnight within the city to ease the burden of travel.

The rest will not, due to the lack of affordable and proper facilities to stay in.

It was noted that there is access to ablutions, shelter, food and employment to most. However, there was a consensus that there was a lack of social spaces within the area.

The majority of the workers would not stay within the precinct if housing was considered due to the lack of a proper infrastructure and the general lack of cleanliness within the precinct. Some declined this due to the fact that they would not want to be associated with low income housing and the visual lack of appeal, adding that the houses in which they stayed had been more comfortable and aesthetically better.

Those who did consider the idea of affordable housing would prefer to live there on a monthly basis unless the rent or bond cost was affordable. One of the traders was happy to have the housing provided this could be subsidised by the government due to being an elderly lady who was on the verge of receiving pension.

When asked what type of retail would be preferred within the precinct, many mentioned the need for food outlets, clothing stores and a supermarket.

One of the workers stated, ‘’A big supermarket to supply food to workers because they have to go into town to access the big supermarkets’’

Also discussed was the notion of going a further distance away rather than having food and retail outlets within walking distance. The convenience of having outlets close by would eliminate the worry of having to get back to work on time after a break or catching the taxi on time after a long day at work and shopping. The research has observed a few clothing outlets and takeaways within the vicinity. However, when brought up to the participants, the response was the lack of better outlets that appealed to the workers and commuters.

None of the workers mentioned what type of social spaces they would enjoy within the precinct but some did mention that the only existing facilities they assumed would be social spaces were the Moses Mahbida stadium area and People's Park as well as the beach. Some thought having spaces closer to Umgeni Road would be helpful for those possibly using the trains or other public transport forms.

When asked what other buildings would be beneficial to the precinct, some mentioned the need for police presence as well as supermarkets, as mentioned above.

From these the research can deduce the idea to employ more social spaces within the immediate area and create an area and building which dispels the notion of the typical low income housing being bland and lacking identity and in turn assisting in regenerating the area. There is also importance in creating a place in which spaces are given meaning for the user and the functions are directly linked to the user's needs rather than just being a typical building with general functions. The building needs to reflect the identity of the user's needs.

The Working Commuters as the Employee …The Employer's Understanding

Three employers who work within Umgeni Road and surrounding areas were interviewed.

Their general view of the area is the decline of the overall area, with one of the shop owners stating that the place was not a good area in which to reside, mainly due to the degradation of the surroundings.

Two out of the three stated that there were negative connotations relative to their workers living in the outlying areas, coming late being the most prominent factor.

The employees live near the place of work and therefore the need to travel a long distance to work and home does not have the impact it does on the employees. Therefore, as with all employees within a place of business, the need to arrive at work on time is vital as it sets the tone for the business.

None of the employees are informed or know of any plans of regeneration within the area and this is of a concern as it has not come to a stage where the occupants who have invested their time and money into the area are part of the process of upgrade, if any.

To the shop employees, there is a lack of security, police presence or security surveillance buildings in place. Apart from the people themselves, the area is not very safe, especially to the employee closing his store in the evening when traffic has died down. This will be considered within the intervention as precedent and research earlier spoke of the natural surveillance of the occupant, as well as the need for possible formal security measures.

In addition, the area is extremely dirty and hence there needs to be more action from the municipality in terms of waste removal and cleaning of the streets more often.

Getting the community involved in this process would be helpful, although one should also be wary to how many people within the community would be willing to keep the area clean and those who feel it is the duty of the municipality.

In terms of an Urban regeneration of the area, there were mixed views, all of which when combined produce a positive outcome. The notion of affordable housing was mentioned, the need for a building where informal traders could function from and lastly the need for a cleaner area.

These points assist in the idea of a mixed use architectural typology which is also assisted by principles of New Urbanism.

There was a positive view that people should live closer to their places of work and two in agreement with the idea of a mixed use precinct. However, one of the employers did state that some of his employees preferred living in the outlying areas. This is why the idea of catering for the transient person is mentioned in the research, as there would be those who are still accustomed to the idea of their homes being further away. This can be solved by possibly living within the precinct during work days and travelling back home on weekends or holidays. The outcome is still similar to that of a person living and working in the area throughout the year as the intention is to lessen the negative impact of travel.

In closing, the employers feel the area needs to be better managed as there is decay occurring within the area due to the lack of better security as well as the need for a better traffic management system.

The idea of taxis dominating the busy road is not desired and there needs to be a way in which the public transport system is a benefit rather than a burden.

Insight from the Residents of Umgeni Road

The three residents of Umgeni Road were in the age bracket of 21-40 with one being married. All of the interview participants have a matric level of education but further study has not been possible due to financial constraints. The interview was mainly in the form of multiple choice questions. However, discussion around the questions was also done.

The participants have all been residing within the precinct for over 2 years now. One of the residents travels to wok by foot whilst the other two travel by taxi. The two who travel by taxi work in other areas away from the precinct and therefore it takes a little longer to arrive at work whilst the resident who travels by foot works within the area and therefore the convenience of having to live and work within the same area allows for minimal time spent getting to work and back home.

To reinforce the idea of security within the area, two of the residents have been victims of crime within the area, occurring at night whilst people were few and security was lacking.

There was a mutual view that the rent within the area was too high, despite the lack of any maintenance to the area. All three agreed the area needs to be cleaned, so the upkeep of the area is obviously lacking and requires attention.

All felt the introduction of green and public spaces would help the area in terms of upliftment. However, they also noted this would only work if these areas were maintained as well.

Oddly enough, the notion for a building to have both live and work spaces was declined, with the researcher assuming this was due to living near the places of work. It was later explained that the decline for this type of place was due to a fear of paying more in terms of rental and not the convenience of it.

In closing, the residents do not feel as though they are getting their money's worth in terms of the places in which they reside. While they are central to amenities, the area itself is in a state of disre pair and the high rental figure does not assist in easing there burdens.

7.2.7 Conversations With Municipality Officials

Perception of Transport provisions within the area:

The first interview was with eThekwini Official Mr Logan Moodley, who assisted in providing background into the transport realm. In terms of his view on the existing infrastructure, there is a significant amount of spare capacity in terms of the existing infrastructure of bulk services and transport (Moodley,L 2017).

Although he could not provide any statistics of people commuting to and from the Umgeni Precinct, he did however mention the future plans of the existing rail. The main rail line operating in the Umgeni corridor is currently being upgraded. This, together with the stations and rolling stock, will inject a huge boost to improving mobility and accessibility to the corridor, with as much as 1 billion said to be invested in achieving this (Moodley,L 2017).

Mr Moodley is not aware of any buildings within the precinct using sustainable methods but feels there is a lack of security and urban management.

In his opinion, continuous urban management and urban design would help in catalysing Urban Regeneration of the precinct.

He fully supports the idea of a mixed use environment in the precinct in order to reduce travel time and feels this is helpful in reducing the cost of travel and in turn makes public transport operations more sustainable.

He does not feel that the existing public transport at the moment is sufficient nor proper and the solution would be improvement in the rail service as well as improved feeder networks.

In summary, the lack of proper public transport and supporting infrastructure adds to the difficulty of travel and by considering improvements, the public needs are considered (Moodley,L 2017).

Discussions over Social Housing considerations within the Umgeni Road Precinct:

Mr. Ismail Vawda, one of the planners dealing with Affordable Social housing in the Human Settlements department, was the next participant in the research interview.

In his opinion the existing infrastructure within the area is quiet capable of potentially being revitalised. There is approximately 70 000 people at the moment residing within the inner city. This spans from the Suncoast area all the way down to Albert park and down toward Windermere and Umgeni roads. Experts state that for approximately 450 000 people to reside here, a number which the city is capable of holding, there needs to be proper urban planning. The infrastructure thus needs to be updated, areas cleared or resolved in terms of uses and so forth. There needs to be an order but this could be problematic as this is dependable on the sections being upgraded . The provision of future plans relating to the precinct are underway. However, approval is not granted as yet for public view and therefore the research cannot obtain these as yet (Vawda,I. 2017).

As with Mr Moodley, Mr Vawda agrees that there are no buildings which use any sustainable methods in the Umgeni Road precinct.

However, the proposals always look to low maintenance materials and fixtures and more environmentally inclined items such as solar geysers, low flush cisterns and so forth. This sounds good on paper, however occupations such as plumbers need to be knowledgeable on the installation of these items. If not, there is more cost bared in having to fix, re install or maintain as a response to damage done or improper installation (Vawda,I. 2017).

Mr Vawda feels that urban management, in terms of social housing, is lacking within the area. The exterior needs to be improved and be maintained such as street furniture, greenery/ trees, etc. The architecture can be good and aesthetically pleasing. However, the area needs to work as well. The architecture acting as a catalyst for urban regeneration needs to work in hand with the exterior context.

In his opinion, mixed use is generally a good idea. However, this is tricky in just one building. There needs to be more of a development rather than one building that caters for all income brackets residentially.

On speaking of potential site areas, as well as housing in general, the following was discussed.

There are a few sites within the Umgeni Road district, which have social housing schemes in mind, in a mixed use setting.

The first site, of the Storage roads department, has a portion being used for the storage of concrete. There has been a lot of discussion over the site especially since one side is occupied by bowling greens which is frequently used. This is ultimately a work in progress but the idea is to essentially look to a mixed use development with the inclusion of minor roads. This site area looks at accommodating approximately 1500 units of social housing with more separate mixed use. The gap housing that is proposed is solely for a specific income and separated from other areas and buildings such as the commercial buildings. Roads will also need to be introduced to counteract the large site area.

The second site is owned by Telkom, and houses the Capitec building with vacant land behind used as informal parking.

The 3rd area spoken off but been dealt with by Prasa, Block AK, is more dense than the first.

The fourth site is 2 Epsom road which has been in discussion due to the derelict condition. Was informed that trees and roots have been growing through within the building as well. However one needs to look at the pros and cons of such a site. The one negative aspect is road frontages on all

sides.This site would perfectly suit occupants and tenants who do not have cars and rely on public transport as the realistic point of view is the site would be difficult to provide access entry to parking spaces due to the position and surrounding context.150 units could be proposed in this area (Vawda,I. 2017).

There are now more than half a dozen social housing offices where one can visit to apply for housing. The city will package and tender these areas and inform one of where these are.

Although a mixed use typology is a good concept, some developers are against this idea, as the single function buildings are easier to handle in terms of example, rentals or cumbersome evictions. What is more possible is sub divisions and mixed use developments rather, in their opinion. This is also due to many people not being able to afford the rental in such areas, especially the traders. A better idea in this regard would be more government controlled low cost housing as there is never a good return on affordable housing.

In terms of reusing sites and buildings, buildings are first inspected and examined to see if reuse can be done. One needs to consider if the building is worth preserving and the cost effectiveness of this. The trend by some companies is to reuse bigger buildings and convert them into other functions. The city of Joburg has good examples of this, such as those mentioned in the research case studies.

If refurbishing is not feasible, the better option would be to knock down the building / buildings and start over.

For most areas the feasible amount for affordable housing is a minimum of 300 units whilst a figure of 53 units is more for a private developer to consider rather than for social housing (Vawda,I. 2017).

7.3 CHAPTER SUMMARY

The data collection proved to be fruitful in determining the concerns and needs of the working commuter as well as the employers within Umgeni Road. The experiences discussed provided insight into the area and the need for an intervention. This information, along with site observations and one on one interviews, is vital in understanding the concepts and theories discussed in the dissertation.

It is clear the way forward is through the provision of a mixed use housing scheme in the Umgeni Road Precinct. The purpose of providing this building typology would be to help reduce the negative effects of travelling long distances to work and back home as well as minimise the urban sprawl that has occurred. Through a mixed use development the needs of those who work and live within the district can be catered for. A sense of security will be achieved from the natural surveillance of a 24 hour site in which all walks of people are welcomed. The site and intervention will allow for the creation of green spaces which are lacking within the precinct. These elements will dispel the perception of the area being unsafe and abandoned at certain times.

Through analysis of the social and economic situation within the context of Umgeni Road, one is able to assist the needs of the area and people through the built form which in turn serves as a catalyst to influence a better quality of life for those who function there.

CHAPTER 8: CONCLUSION AND RECOMMENDATIONS

8.1. INTRODUCTION

The research began with the problem of people having to travel long distances to work and back and the negative connotations linked to this, as a result of the lack of affordable housing within the city as well as the zoning of areas which remained post-apartheid. Relative to this is the misuse of an old industrial area within the city. The research therefore questioned how a mixed use architectural typology would benefit the working commuters by addressing their needs and thereafter influencing urban regeneration within an old semi industrial area in the Umgeni Road precinct of the city.
The intention of the dissertation was therefore to explore the idea of a mixed use typology within an area in an old industrial portion of the city which had potential to be turned into a 24 hour area through addressing the needs of the commuters who worked within the area and a regeneration of the area through the intervention, as well as principles used in New Urbanism. The way in which the area is perceived to the public is important in allowing for the area to grow to its full potential as the success of an area is highly dependent on the amount of people who occupy it.

In revisiting the research hypothesis below, conclusions can be drawn.
'The primary assumption is that the architecture of an area impacts the perception of the area and can be a positive or negative influence to an area. In other words, the importance of the correct architecture relative to the context and the needs of the target population is vital for its success. Regenerating areas and creating flexible spaces is a sustainable way, in which areas can be transformed into spaces where human needs are addressed within an ever changing context, is vital'

The information collected for this dissertation has provided significant insight into understanding the socio economic issues relative to the problem of people having to travel long distances to work and back home, as well as the state of the Umgeni Road precinct.
The research, which explores the needs of the working commuter in Umgeni Road, is significant in moving forward toward a resolution. The catalyst will be defined by the context and the perception of the area will be defined by the state of the context. The state of the context is therefore vital in the success of the area and building.

The key theories and concepts within the research support the reasoning behind making places in which people can function, places according to their needs and that which responds to the context. These places are created from the way in which people inhabit a space, an interactive architecture which is not just a form but a building that makes an impact.
More so, the incorporation of an architecture which is flexible and adapts to the needs of the context is sustained in itself.

Architectural structures are not just stagnant forms but an instrument used in the pursuit of building interactive and sustainable communities, and assisting in transforming areas so that they are used to their full potential.

8.2. RECOMMENDATIONS

The primary and secondary data collected via the literature, theories, concepts, interviews, discussions, precedents, case studies, survey and site observation have all directed the research toward a mixed use architectural typology where the needs of the public, as well as the working commuter is catered for by easing the negative relation to travel as well as simultaneously paving a way for a better run area through the architectural catalyst.

By understanding the theory of place relative to the social and economic issues, it is evident that the creation of a place through defining a certain space has impact on the way in which the area and buildings function and the success thereof.

The dissertation therefore is looking toward the design of a mixed use housing development to create a work-play-live environment within an industrial city context. This will ideally set the tone for the area to be revitalised and conform to an architecture of relevance that addresses the needs of the people
In order for the proposed intervention to make impact on the existing fabric the research needs to acquire principles by which the design can adhere to.
The following considerations are recommended.

8.2.1 Accommodating the people to reduce sprawl and travelling long distances

The design should consider the socio economic effects of those who populate the area and those who wish to live, work and play within the precinct. In other words there should be a variety of building types and functions as well as spaces, all of which cater for a diversity of individual and bring about an integration of people.

This integration and diversity allows for amenities to be close by thereby reducing sprawl and negative effects of travel.

By focusing on public transport rather than the use of cars, private car use is reduced. This will also be achieved through placing live work environments in close proximity and creating parking in areas where private vehicles will be parked off as there will be no need for their use. This has a positive knock off effect of reducing noise pollution and reducing carbon emissions.

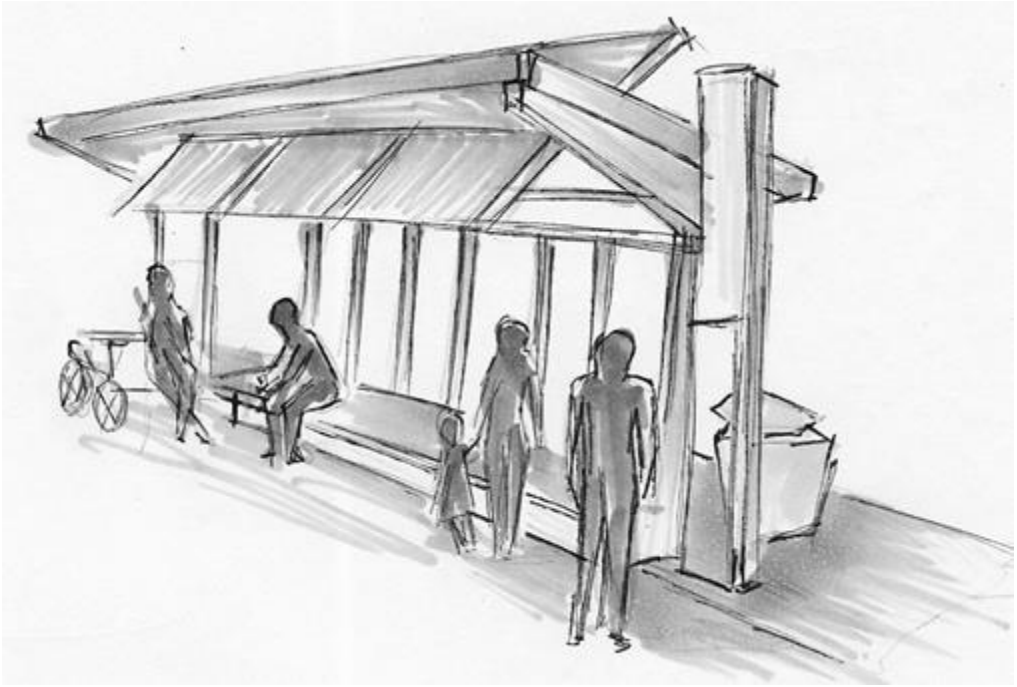


Figure 8.1: *indicating the use of public transport rather than personal motor vehicles (Source : Author).*

The proposed intervention should adopt principles of New Urbanism which will not only regenerate the area but combat urban sprawl

8.2.2 Regenerating an old industrial portion of the city through New Urbanism Principles

The following principles of New Urbanism are recommended in the design for the creation of walkable, compact mixed use facilities and the creation of social green spaces for a positive perception of the area and a revitalisation of the precinct.

- The creation of pedestrian friendly and walkable environments to avoid the use of personal motor vehicles and encourage social interaction
- The creation of green spaces as a centre point in which people gather.
- The design should implement connectivity of spaces accessible by both vehicle and foot. The linkages should provide points of interest, especially to the pedestrian, as this not only encourages walkability but dispels the notion of walking through the area being unsafe.
- As mentioned in point 8.2.1, the need for density and diversity is important in mixed use building typologies. By creating diverse and dense neighbourhoods , not only is there an integration of people but the idea of diversity which leads to density of people allows for the area to therefore have a natural surveillance by people being present all the time. This means a safer area in which people are comfortable to live in as well and the effect is a place that is used to its potential.
- The design requires a sustainability of the proposed intervention so that not only the carbon footprint is reduced but the sustaining of the building itself over time. Therefore each function relying on the other to work as an integrated whole, as the theory dictates.

Figure 8.2: *creating walkable and more friendly environments (Source : Author).*

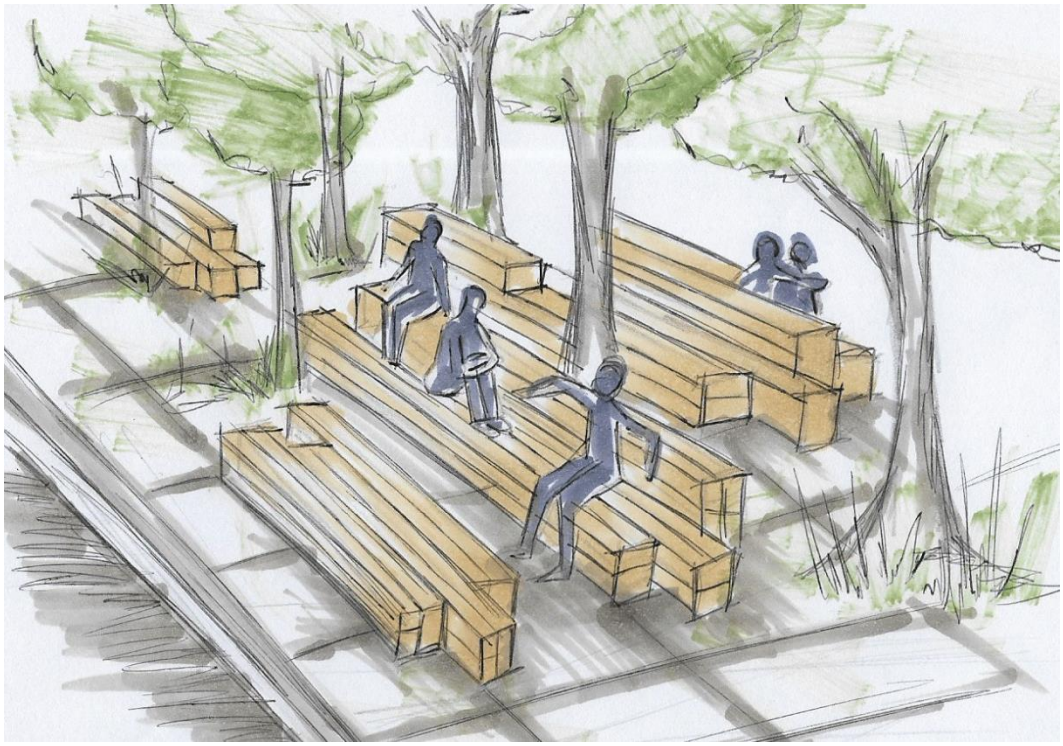


Figure 8.3: *creating intermediate green spaces and seating areas which soften the pavement interfaces and allow for social interaction (Source : Author).*

8.2.3 Sustaining the proposed intervention and the people

From the above, the research is made aware of the importance of sustaining the proposed intervention as well as the people who occupy the spaces. This leads the research to the concept of flexibility. Therefore it is recommended that the spaces be flexible in order to adapt when the context changes and to be flexible to the user so that the building reflects the identity of the users.

The proposed intervention should consider adopting sustainable strategies which reduce the carbon footprint as well. A place in which the user is aware of the sustainable methods employed and the beneficial role these methods play such as the following, which also respond to the context of the area and the orientation of the building and the spaces.

- The design needs to consider the harsh effects of the sun on the east and west facades and therefore use these facades for the services or adopting the use of vertical screens and recessed balconies rather.
- There should be careful thought in the placement of solar shading and in which areas light can be captured or blocked to the benefit of the space.
- By considering these aspects, the use of artificial light can be reduced and also the use of air-conditioning due to solar heat gain.
- The play of light using solar shading not only provides an aesthetic appeal to the building but expresses interesting shadows and patterns to the facades and spaces.
- Horizontal louvers should be used on the north façade for effective shade during the summer months and heat gain during the winter months whilst vertical louvers are encouraged to be used on the east, west and south facades. It is to be noted that this applies to the Southern Hemisphere.
- Natural ventilation is important when creating buildings as well. This can be achieved through large window openings and balcony areas which are correctly orientated and cater for

openable sections to let cool air into the building and warm air out. It is recommended that the building forms also be narrow in order for natural ventilation to occur effectively.

- Solar powered wind turbines as well as solar panels assist in generating electricity at a relatively lower cost.

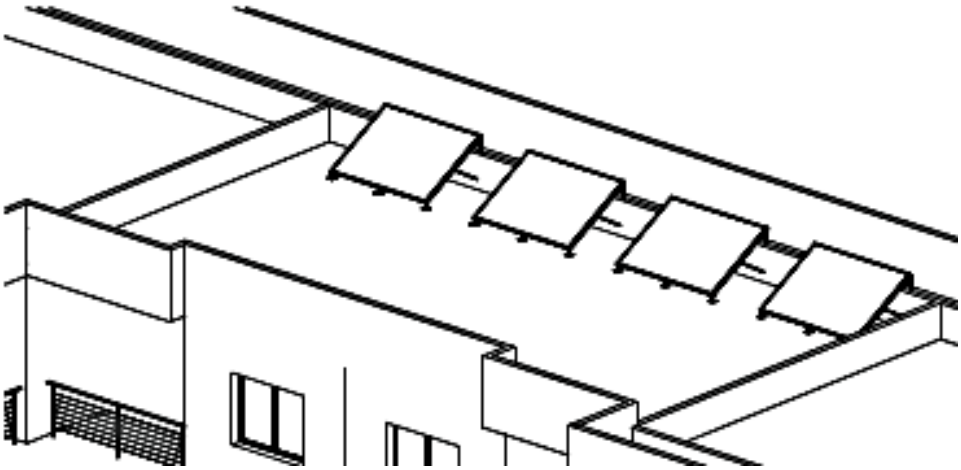


Figure 8.4: *use of solar panels on roof (Source : Author).*

- Water collection tanks are highly recommended as the design will provide large areas of green spaces which will require the use of water. Noting the current water shortages which prevail in society, the idea of rain water collection is suitable in order to be used for watering of green spaces as well as use in water closet flush systems.
- Planting by means of green spaces both inside and outside of the building is effective in achieving sustainable goals such as absorbing toxins, filtering dust in the air, improving interior climate, acting as barriers to noise and sun and providing the user with a feeling of being connected to nature. Thus creating a pleasant environment in which one can live, work and play.
- This will be achieved through the use of green roofs, vertical gardens, planting, park and courtyard spaces as well as urban farming. Green roofs not only provide a pleasant outdoor

space but have a lower surface temperature in comparison to normal roofs and therefore reduce heat effects.

- Building materials should be selected carefully as they affect the user experience and the perception of the area. Therefore the materials need to be locally manufactured, have a reduced impact on the environment and should not contain a large amount of harmful toxins or compounds which could cause illness or pollute the air. This would affect the area and space negatively if not considered as human comfort would be compromised.

8.2.4 Recommendations for the proposed typology

The building typology has been noted as a mixed use housing scheme. In order to achieve this, the following characteristics and suggestions are to be considered.

- The building should provide a twenty four hour function which therefore encourages natural surveillance. This will be achieved through the use of not only retail and commercial buildings but residential components.
- Mixed use functions should be encouraged by means of the diversity of people in terms of age, race and gender which will therefore lead to a dense space desired. The functions of the building will cater for not only the users of the immediate context but draw others into the precinct by provision of recreational facilities, for example, which can be used by all.
- The building should accommodate the various socio economic classes from the diverse users the space attempts to bring in. The building will not be limited to a certain income bracket. The structure provides a variety of residential units as well as spaces in which all classes can benefit, such as retail, office spaces and so forth.
- The building needs to be flexible in order to adapt to the changing context as well as the user. This will be achieved by open plan spaces without the restriction of a definite

function / characteristic that defines the building on its own. By having open plan spaces and a variety of different unit sizes to choose from, as well as flexible office spaces, the occupant is allowed to reflect their identity onto the space.

- There needs to be a respect of private versus public spaces. The public realm co-exists with that of the private through intermediate spaces that act as natural barriers to areas. Most of the private spaces will have controlled entry points by means of lobbies and recreational areas which flow into spaces.

Through the recommendations the facility will consist of residential, retail and commercial components as well as interactive green spaces.

8.3.CONCLUSION

The research looked at the issues prevailing in society, the problems and effects surrounding people living further away from amenities and places of work. Particularly those who cannot afford luxury personal motor vehicles or areas nearer to work places within the city. Parallel to this is the issue of areas within the city not being used continuously during the day and night and the effects of this.

The dissertation investigated the issues on both a macro and micro level in order to create awareness on the importance of creating places with meaning and function.

This was done through analysing a theoretical ad conceptual framework which entailed the use of Place making, the principles of New Urbanism as well as concepts of flexibility and sustainability. These in turn allow for the creation of a catalyst to accommodate the needs of the user within a context that can simultaneously be regenerated.

The intention of the design portion of the project will be to synthesis the needs of the working commuter, through a schedule of accommodation. The project needs to offer the user a sustainable environment in which social interaction and adaptability is encouraged.

CHAPTER 9: DESIGN FRAMEWORK AND APPROACH

9.1. SITE LOCATION

The site is located on Umgeni Road, behind the Sports precinct. The area, which was previously classified as light industrial now has a mix of functions (social, civic, commercial, retail, etc.).

The Umgeni Road corridor serves as a link between the CBD to the northern suburbs as well as the Springfield industrial park.

Umgeni road provides a mobility function for both pedestrian and vehicle access (although the area does not provide quality pedestrianized environments, the amount of people who come into the area still remains high).

The present state of the area is perceived as busy and congested during the day and quiet at night, with no life at all apart from weekend nights.

There are many spaces which have been abandoned as well and some areas with poor building conditions. The area has great potential to be turned into a 24 hour functioning road.

With the addition of a smart catalyst that addresses the needs of the people, the road could be transformed into something more, with a sustained revitalization.

9.2. SPECIFIC SITE CHOICE

Through the process of interviews with the commuting workers, the employees as well as officials and professionals related to the architectural field, a suggested area within the precinct was noted as being prominent enough to make an impact and be recognised. Along with this, the following is a set of preferred site criteria:

- The site needs to be located near public transport stops and stations. This allows for the commuter to have access to public transport as pedestrian friendly environments is one of the intentions.
- The site must be within an area of the city, preferably industrial, which requires some form of revitalisation. In addition, the site needs to be in an area that is only used at certain times of the day, in order to provide a 24 hour environment.
- The site needs to be within a dense area, where there is substantial movement of people.

The figure below indicates a chosen site which was identified near transport links as well as within a dense area of Umgeni Road. The site has no interaction with the street at all and requires attention as it is merely a concrete storage yard at the moment and the edges need to be activated as well.

Figure 9.1: *indicating Aerial view of site highlighted in orange (Source: www.google maps.co.za edited by Author. Accessed 16 November 2017)*

Figure 9.2: *indicating site barriers (Source: by Author)*

9.3. PROPOSED CLIENT

The proposed client will be a conjunction between iTrump and the eThekwini Human Settlements division.

ITrump is focused on the regeneration of the Inner city and in turn sustaining the areas within the city. One of the districts within the city which iTrump is focusing on is the Umgeni Road corridor and the regeneration.

By aiming to regenerate the inner city, iTrump looks to reduce poverty and social isolation, increase economic activity, allow for sustainable urban management; improve safety in the target areas as well as making the city a more feasible place.

The eThekwini Human Settlements division is also involved within the Umgeni road precinct. The focus within the department is on the creation of affordable housing, especially for the lower income population. They develop new housing stock by use of the National housing subsidy.

The department assist in the development of integrated and sustainable human settlements by providing housing to those who qualify thereby allowing for quality living environments for those in need.

With the housing shortage and the demand for proper yet affordable housing, this Client will be helpful and accessible within the heart of Umgeni Road to assist those in need as well as those surrounding areas in the city that have the potential to provide affordable mixed use housing schemes and accommodation.

The Client choice focuses firstly on the micro scale intervention (eThekwini Human Settlements division) and secondly the macro intervention (iTrump) to regenerate the area.

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(Source: www. propertuity.co.za/downloads/Maboneng-Developing-a-Neighbourhood-Economy.pdf. Accessed 16 November 2017)

Figure 5.31: Map indicating commercial spaces in the Maboneng district within 1sq.km with yellow being the highest occupied spaces and light grey identifying limited to no commercial component. (Source: www. propertuity.co.za/downloads/Maboneng-Developing-a-Neighbourhood-Economy.pdf. Accessed 16 November 2017)

Figure 5.32: indicating residential conversions from an industrial space in the Hallmark House (Source: Murtagh, R.2005:63).

Figure 5.33: indicating residential apartment. Open plan flexible spaces (Source: www. propertuity.co.za/ downloads/Maboneng-Developing-a-Neighbourhood-Economy.pdf. Accessed 16 November 2017)

Figure 5.34: indicating Main Street prior to regeneration on the left and development thereafter indicated on the view up Fox Street on the right. (Source: Murtagh, R.2005:58).

Figure 5.35: Elements that allow for the success of the Maboneng Precinct (Source: Gregory, JJ. 2006:12).

Figure 5.36: indicating flow of Elements of Mixed use developments (Source: Murtagh, R.2005:65).

Figure 5.37: indicating proposed urban regeneration (Source: http://www.archdaily.com. Accessed 02 May 2017)

Figure 5.38: indicating proposed urban regeneration

(Source: http://www.archdaily.com. Accessed 02 May 2017)

Figure 5.39: indicating proposed urban regeneration (Source: http://www.archdaily.com. Accessed 02 May 2017)

Figure 5.40: indicating proposed plan of urban regeneration (Source: http://www.archdaily.com.Accessed 02 May 2017)

Figure 5.41: indicating a diversity of functions and building uses proposed, ranging from restaurants, retail to a gym and cafes (Source: http://www.cladglobal.com/CLADnews/architecture_design/Henning-Larsen-Architects-designs-landmark-tower-and-mixed-use-plaza-for-Gothenburg. Accessed 02 May 2017)

Figure 5.42: indicating proposed regeneration sketch against city backdrop (Source: http://www.archdaily.com. Accessed 02 May 2017)

Figure 5.43: indicating proposed urban regeneration massing of area (Source: http://www.archdaily.com. Accessed 02 May 2017)

Figure 5.44: indicating Lufhereng Social housing (Source: https://www.livinspaces.net/projects/architecture/the-lufhereng-greenfields-housingproject-by-2610-south-architects/. Accessed 02 May 2017)

Figure 5.45: illustrating location of the Lufhereng development on a regional scale (Source: www.lufhereng.co.za. Accessed 02 May 2017)

Figure 5.46: indicating housing unit variations (Source: www.lufhereng.co.za. Accessed 02 May 2017)

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CHAPTER 6

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CHAPTER 7

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LIST OF APPENDICES:

Appendix 1: Informed Consent Form

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

INFORMED CONSENT FORM

TO BE SIGNED BY THE PARTICIPANT AT THE START OF EACH INTERVIEW

One copy of the form to be left with the respondent; one copy to be signed by the respondent and kept by the researcher.

My name is Pashini Naidoo. (Student Number 203501832). I am currently doing research on a project entitled:
'Urbanity and Architecture: Towards a Sustainable Concept for Urban Dwelling in the Umgeni Road Precinct, Durban.'

This project is currently being supervised by Dr. Yashaen Luckan at the School of the Built Environment and Development Studies, University of KwaZulu-Natal.

· **Student Contact Details:** Pashini Naidoo. School of the Built Environment and Development Studies. University of KwaZulu-Natal, Durban. **Cell:** 076 788 3838; **Email:** pashini05@gmail.com
· **Supervisor Contact Details:** Dr. Yashaen Luckan. School of the Built Environment and Development Studies. University of KwaZulu-Natal, Durban. **Tel:** 0820444324; **Email:** yashaen.ylarch.luckan@gmail.com

Firstly, I would like to thank you for agreeing to take part in the project, and I would like to emphasize that:
· your participation is entirely voluntary and you are free to withdraw at any time.
· your participation in the research is limited to this interview only, and there are no other expectations of you.
· you may be contacted for any possible follow-up queries, or to verify any interview transcripts.
· you are free to refuse to answer any question; or refuse to discuss a topic, without judgment or prejudice.
· you will be given access to all interview notes for verification, and all findings will be made available to you.

Please note:

· The interview will be kept strictly confidential and will be available only to members of the research team. However, excerpts from the interview may be made part of the final research report.
· To facilitate the interviewer's job, the interview might be audio recorded. However, the recording will be destroyed as soon as it has been transcribed.
· All interview data will be handled so as to protect the confidentiality of any participants involved - no names will be mentioned or included in the research transcripts, analysis or coding.
· All data will be destroyed at the end of the project.

Do you give your consent for the following: (please tick and initial the options below)

To have your role within the organisation mentioned in the research:	
To have this interview audio-recorded:	
To be contacted for any possible follow-up queries:	

I ---------- (full name) hereby declare that I have read this
Informed Consent Form, and both understand and agree with the parameters of the research interview.

Participants' signature: ---------- (signed) ---------- (date) ---------- (print name).

Interviewer's signature: ---------- (signed) ---------- (date) ---------- (print name).

Appendix 2: Questionnaire for the Working Commuters of Umgeni Road

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

SURVEY QUESTIONNAIRE for the WORKERS AND COMMUTERS

Pashini Naidoo (203501832)

'Urbanity and Architecture :
Towards a Sustainable Concept for Urban Dwelling in the Umgeni Road Precinct, Durban.'

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COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

SURVEY QUESTIONS – COMMUTERS / WORKERS

Pashini Naidoo (203501832)

My name is Pashini Naidoo.I am currently studying Masters in Architecture at UKZN, and am conducting research around the topic: Urban Regeneration and Affordable Housing through Architecture -exploring the needs of the workers and commuters of Umgeni Road.
Ultimately this is to inform the design of a Mixed-Use Building for the Workers of Umgeni Road, as a model for Sustainable Urban Regeneration.
I would like to thank you for agreeing to this interview - your time and insight in this area is invaluable.

Outline of Interview Questions:

1. Note gender by observation?

   a. Male
   b. Female

2. Single, Married, Divorced?

   a. Single
   b. Married
   c. Divorced

3. What is your age?

   a. Under 20
   b. 21-30 years old
   c. 31-40 years old
   d. 41-50 years old
   e. 51-60 years old
   f. Over 60 years old

4. What is your educational background?

   a. No formal schooling
   b. Primary school only
   c. Primary and Secondary school
   d. University/ Technicon
   e. Other (specify)

5. How long have you been working or commuting within this precinct?

   a. Less than a year
   b. 2-3 years
   c. 4- 5 years
   d. Over 5 years (specify)

6. Approximately how long does it take to travel from home to the area and back per day?

   a. Less than 15 minutes
   b. 30 minutes
   c. 60 minutes
   d. Over 60 minutes (specify)
   e. Other (specify)

7. What type of work do you do to generate an income?

   _____

8. Do you feel you are paying too much for travelling each month?

   ---

9. Do you have any dependants?
   a. Yes
   b. No

10. What is your income? Or do you think you earn enough to make it through each month?

    ---

11. Have you been a victim of crime around the area?
    c. Yes
    d. No

12. Does the travelling have a negative or positive effect on your income, family life, household responsibilities and time? Please elaborate further if possible?

    ---

13. Have you ever stayed overnight to ease the burden of going back home. If yes, where have you stayed?

    ---

14. During your time here, do you have access to any of the following ? (Circle)
    a. Ablutions
    b. Shelter
    c. Food and Water
    d. Education

e. Skills training
f. Employment
g. Social spaces
h. Other (specify)

15. If affordable housing was provided in the Umgeni Precinct , would you consider living here ?
    a. Yes
    b. No

16. If yes to the above, on what basis would you reside in terms of time?
    a. Weekly
    b. Monthly
    c. Permanent
    d. Other (specify)

17. If yes to question 14, what type of housing would you want in the Umgeni precinct?

    ---

18. What sort of retail areas would you prefer within the precinct?

    ---

19. What type of recreational / public spaces would you enjoy within the precinct?

    ---

20. What other spaces or buildings do you feel the precinct needs (example job employment offices)?

Appendix 3: Questionnaire for the Shop Employers of Umgeni Road

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

SURVEY QUESTIONNAIRE for the EMPLOYERS –SHOP OWNERS OF THE UMGENI ROAD AREA

Pashini Naidoo (203501832)

'Urbanity and Architecture :
Towards a Sustainable Concept for Urban Dwelling in the Umgeni Road Precinct, Durban.'

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COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

INTERVIEW QUESTIONS – EMPLOYERS –SHOP OWNERS OF THE UMGENI ROAD AREA

Pashini Naidoo (203501832)

My name is Pashini Naidoo.I am currently studying Masters in Architecture at UKZN, and am conducting research around the topic: Urban Regeneration and Affordable Housing through Architecture -exploring the needs of the workers and commuters of Umgeni Road.
Ultimately this is to inform the design of a Mixed-Use Building for the Workers of Umgeni Road, as a model for Sustainable Urban Regeneration.
I would like to thank you for agreeing to this interview - your time and insight in this area is invaluable.

Outline of Interview Questions:

1. How are you involved within the Umgeni Road precinct and what is your view on the area?

   ---

2. What is your opinion on the existing infrastructure within the area?

   ---

3. Are any of your employees travelling from outer lying areas? If yes, please explain any negative impact this has had (example not arriving on time or days when they are unable to come in due to transport strikes etc)

   ---

4. Do you live near the area or do you also have to travel a distance to get to the area? And how long does it take to get to work each day?

   ---

5. Are you informed of any future plans of regeneration for the Umgeni Road area? Please elaborate, if yes.

   ---

6. What do you think is lacking within the area ?

   ---

7. In your opinion what sustainable improvements could better the area and catalyse Urban Regeneration?

   ---

8. What are your thoughts on a mixed use building development within precinct, whereby people are able to live closer to their place of work and central to amenities?

   ---

9. Any other thoughts, comments or information on the precinct? (Optional)

Appendix 3: Questionnaire for the Residents of Umgeni Road

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

SURVEY QUESTIONNAIRE for the NEARBY RESIDENTS

Pashini Naidoo (203501832)

'Urbanity and Architecture :
Towards a Sustainable Concept for Urban Dwelling in the Umgeni Road Precinct, Durban.'

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COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

SURVEY QUESTIONS – NEARBY RESIDENTS

Pashini Naidoo (203501832)

My name is Pashini Naidoo.I am currently studying Masters in Architecture at UKZN, and am conducting research around the topic: Urban Regeneration and Affordable Housing through Architecture -exploring the needs of the workers and commuters of Umgeni Road.
Ultimately this is to inform the design of a Mixed-Use Building for the Workers of Umgeni Road, as a model for Sustainable Urban Regeneration.
I would like to thank you for agreeing to this interview - your time and insight in this area is invaluable.

Outline of Interview Questions:

21. Note gender by observation?

    f. Male
    g. Female

22. Single, Married, Divorced?

    d. Single
    e. Married
    f. Divorced

23. What is your age?

    g. Under 20
    h. 21-30 years old
    i. 31-40 years old
    j. 41-50 years old
    k. 51-60 years old
    l. Over 60 years old

24. What is your educational background?

    f. No formal schooling
    g. Primary school only
    h. Primary and Secondary school
    i. University/ Technicon
    j. Other (specify)

25. How long have you been living within this precinct?

    e. Less than a year
    f. 2-3 years
    g. 4- 5 years
    h. Over 5 years (specify)

26. Approximately how long does it take to travel from home to the area and back per day?

c. Less than 15 minutes
d. 30 minutes
h. 60 minutes
i. Over 60 minutes (specify)
j. Other (specify)

27. What is your mode of transport?

a. Car
b. Bus
c. Taxi
d. By foot
e. Other (specify)

28. Are you working? If yes, how far in time terms is work from your place of residence?

---

29. Have you been a victim of crime around the area?
e. Yes
f. No

30. How do you find the area in general?

---

31. What do you feel is lacking within the precinct?

---

32. What would you change within the precinct, if you had the opportunity?

---

33. Would more green and public spaces benefit and uplift the area? If yes, what spaces would you enjoy?

---

34. Do you prefer a building that has both work and live spaces in it or do you want things to remain as they are?

Appendix 4: Questionnaire for the eThekwini Officials

COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

SURVEY QUESTIONNAIRE for the ETHEKWENI OFFICIALS

Pashini Naidoo (203501832)

'Urbanity and Architecture :
Towards a Sustainable Concept for Urban Dwelling in the Umgeni Road Precinct, Durban.'

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COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

INTERVIEW QUESTIONS – NGO's /SPECIALISTS KNOWLEDGEABLE OF THE UMGENI ROAD AREA

Pashini Naidoo (203501832)

My name is Pashini Naidoo.I am currently studying Masters in Architecture at UKZN, and am conducting research around the topic: Urban Regeneration and Affordable Housing through Architecture -exploring the needs of the workers and commuters of Umgeni Road.

Ultimately this is to inform the design of a Mixed-Use Building for the Workers of Umgeni Road, as a model for Sustainable Urban Regeneration.

I would like to thank you for agreeing to this interview - your time and insight in this area is invaluable.

Outline of Interview Questions:

1. How are you involved within the Umgeni Road precinct and what is your view on the area?

   ---

2. What is your opinion on the existing infrastructure within the area and if possible, could you mention the buildings which require attention?

   ---

3. Do you feel that there is sufficient or proper accommodation, in the Umgeni precinct, provided to those commuters living in the outer lying / rural areas?

   ---

4. Is there any information that you could provide regarding future plans for the Umgeni Road area, relating to your department / field of expertise?

   ---

5. To your knowledge, are there any buildings which use sustainable methods, in the Umgeni Road area?

---

6. What do you think is lacking within the area?

---

7. In your opinion what sustainable improvements could better the area and catalyse Urban Regeneration?

---

8. Can you provide any information on the proposed mixed use buildings with transitional accommodation, focusing on the vision and concept behind this type of building and how these would function generally?

---

9. What are your thoughts on a mixed use building development within precinct, whereby people are able to live closer to their place of work and central to amenities? This would ultimately serve as a model for a regeneration to create a live-work situation in the partially industrial area.

---

10. Any other thoughts, comments or information on the precinct? (Optional)

Appendix 5: Online/ We based survey

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

SURVEY QUESTIONNAIRE for the Architecture and Construction related Professions

Pashini Naidoo (203501832)

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Towards a Sustainable Concept for Urban Dwelling in the Umgeni Road Precinct, Durban.'

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EMAILED IN A SURVEY FORMAT VIA AN ONLIE SURVEY PROGRAMME TO VARIOUS ARCHITECTURE / RELATED FIELDS – DIRECTED AT THE OWNERS OF THE COMPANIES

SURVEY QUESTIONS – Architecture and Construction related Professions

Pashini Naidoo (203501832)

My name is Pashini Naidoo.I am currently studying Masters in Architecture at UKZN, and am conducting research around the topic: Urban Regeneration and Affordable Housing through Architecture -exploring the needs of the workers and commuters of Umgeni Road.

Ultimately this is to inform the design of a Mixed-Use Building for the Workers of Umgeni Road, as a model for Sustainable Urban Regeneration.

I understand how busy you are, but I kindly ask if you could spare a few minutes of your time to answer these quick questions.I am conducting an online survey to gain further insight for research purposes.

I would like to thank you for agreeing to this survey- your time and insight in this area is invaluable.

Outline of Survey Questions:

1. Profession ?
   - Architect
   - Senior Architectural Technician
   - Architectural Technician
   - Draughtsperson
   - Town Planner
   - Urban Designer
   - Real Estate Agent
   - Construction Manager
   - Other (please specify)

2. Experience
   - 0-1 year
   - 2-5 years
   - 5-10 years
   - over 10 years

3. Do you feel there is proper and affordable housing provided for the workers and commuters within the city?
   - Yes
   - No

4. Do you feel that Mixed Use buildings (which incorporate a live, work, play scenario) can be helpful within the city?
   - Yes
   - No

5. Do you feel Umgeni Road needs to be revitalised?
   - Yes
   - No

6. Do you think old industrial areas such as Umgeni Road have the potential to provide quality spaces occupied day and night?
   - Yes
   - No

7. Do you feel that a flexible architectural form will be beneficial and sustain the building in terms of accommodating the needs of the user (in this case transient migrant workers)?
   - Yes
   - No

8. Do you think a proposed mixed use building within the Umgeni Precinct will attract different economic backgrounds to co-exist ?
   - Yes it will
   - No, it should be a specific income bracket
   - This idea could work in the area in general, but through various buildings and functions.

10. Which of these elements do you feel is required to aid Urban regeneration of derelict areas within the city?

- Pedestrian friendly environments
- Mixed use facilities
- Good public transport
- Interactive edges
- Sustainable buildings
- Green spaces
- Social spaces
- Community feel

URBANITY AND ARCHITECTURE: TOWARD A SUSTAINABLE URBAN DWELLING IN THE UMGENI ROAD PRECINCT, DURBAN

NAME : PASHINI NAIDOO

[STUDENT NUMBER : 203501832]

MASTER OF ARCHITECTURE DEGREE - [JANUARY 2018]

DESIGN DRAWINGS

URBANITY AND ARCHITECTURE :

TOWARDS A SUSTAINABLE CONCEPT FOR URBAN DWELLING IN THE UMGENI ROAD PRECINCT, DURBAN

[PROBLEM STATEMENT]
There is a large number of people who are negatively affected from travelling long distances to work as a result of the lack of proper and affordable housing within the city and apartheid zoning, as well as the misuse of an industrial area within the city.

[RESEARCH QUESTION]
How can the architecture of a mixed use building type address the needs of the working commuter whilst simultaneously influencing Urban regeneration within a semi-industrial area in the Umgeni Road precinct of the city ?

WHO ? [USERS]
Residential and retail component : Commuters who work within Umgeni Road primarily those living in areas further from the city.
Commerical component: The Commuters as well as the Client

WHAT ? [WILL THE BUILDING DO]
The building will be a catalyst for change within an old industrial area and address the commuters needs as well

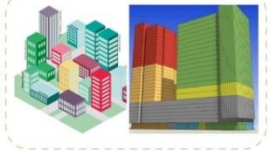
WHY ? [IS THERE A NEED FOR THIS TYPE OF BUILDING]
The area is forgotten at night and spaces are being wasted and neglected whilst commuters Travel long distances to work . Lack of sustainable , proper and affordable housing within the city.
This model for regeneration proposes to bring the area back to life by means of a '24/7' scheme-
LIVE WORK PLAY

[CLIENT]
Human Settlements department at ethekwini in conjunction with iTRUMP

human settlements
Department:
Human Settlements
REPUBLIC OF SOUTH AFRICA

REGENERATION & URBAN MANAGEMENT PROGRAMME
INNER THEKWINI iTRUMP

[TYPOLOGY]
MIXED USE SOCIAL HOUSING SCHEME



RESIDENTIAL USERS:

BACHELOR UNIT :
Vishaan is a 28 year old from Tongaat,working at an auto gear shop in umgeni Road. He is currently looking for a new place as the cost of travel hinders his financial savings for his upcoming engagement.

1 BEDROOM UNIT :
Michelle is a 24 year old single mother from the Amanzintoti, working as a shop assistant in Umgeni Road. Her job is at stake as she is constantly late to work due to traffic and inconsistency of public transport.

2 BEDROOM UNIT:
Joseph is a 38 year old married carpenter who works in a factory in Umgeni Road. His high travel cost from Umlazi to work and back each day does not allow for him to save any money for his expanding family.

1 BEDROOM LIVE WORK UNIT :
Ma Khumalo is 62 year old who sells sweets and chips to the public from an informal spot just off Umgeni Road. She also sells braai meat on the weekends on the roadside. The travel to Marianhill takes its toll and she stays overnight at the Strollers in Mansel Road if she makes enough for the day.

Senzo is 24 year old who buys and sells licence holders and phone chargers to passers by. He is trying to make a living but there is great difficulty in making ends meet. He comes from Empangeni but the cost of travel only allows him to go there every two weeks or so. On other days he will stay with a friend or at a shelter.

SITE CHOICE AND AREA [GIVE BRIEF DESCRIPTION]
SITE LOCATION : Umgeni Road precinct.
SITE CHOICE [WHY] :the state of the area and the amount of people who come into the area for work on a daily basis. Many abandoned, misused and neglected areas.
SITE ADDRESS :787 Umgeni Road

SITE [INFO]
782 Umgeni Road
SITE AREA : 11 084sq.m
Coverage : 33%
PAR 1.0
Max population : 807

SITE [HISTORY]
Umgeni Road and railway was establihed as a major link from the CBD to brickyards.The residential development along ridge - are colonial victorian and edwardian residential type architecture with the industrial development along Umgeni Road of 2-3 storey brick buildings with sawtooth roofing, steel window frames as well as multi story apartment buildings

PRIMARY PRECINCT USE
Mixed

SITE [FEATURES]
- Near major transit stops
- Cycle lanes allowed for
- Street parking and enough space for onsite parking
- Housing will activate the public spaces around the area as well such as the MMS park
- Brownfield site relative to adaptive use theory discussed in research
- Industrial area which is busy during the day and dead at night
- Area is developed slightly but this could be an advantage as this will be a continuation
- There isn't a lot of diversity in terms of the population - building will bring this into play
- Large area for adequate housing to be constructed
- Good vistas to the stadium and beach area at a higher level

TRANSPORT /INFRASTRUCTURE
bus stop : yes
train station : yes
mini bus, taxi stop : yes
street parking : no
cycle lane : no

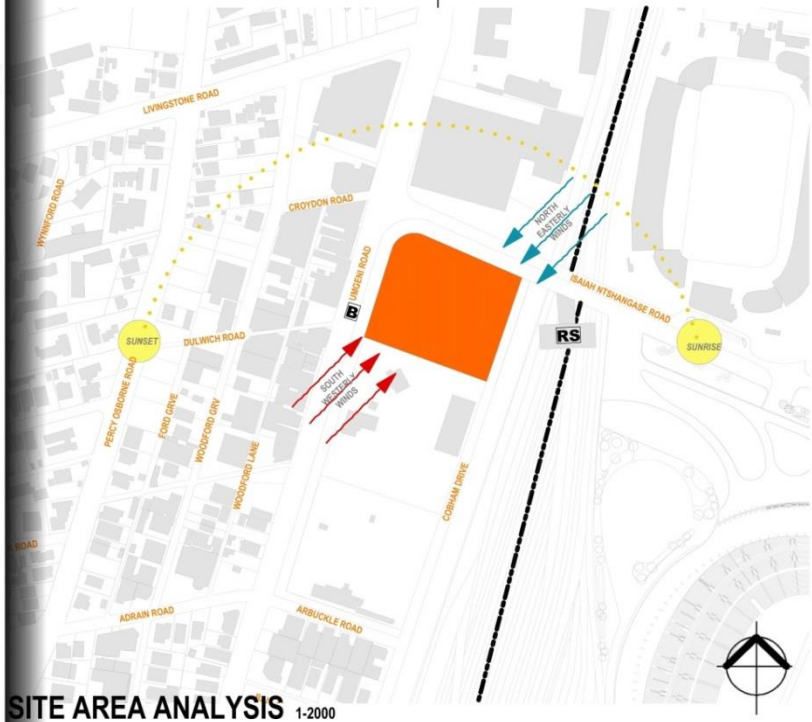
SOCIAL FACILITIES [IN SITE AREA]
1 library
13 schools
5 sportsfields
2 swimming pools
21 parks
21 playlots

RETAIL FACILITIES [IN SITE AREA]
malls within 500m : yes
entertainment within 500m : yes

WHATS LACKING
no community halls
no health facilities
no police stations

[MICRO CONTEXT] ZONING
1-5000

[MICRO CONTEXT] BUILT FORMS
1-5000



SITE AREA ANALYSIS 1-2000

A. Toward Station Drive, Church building, Blue Lagoon , Stables

B. Toward Umgeni Road Temple, Azar and Cosa Nostra Nightclubs, Game city Mansel Road Bus and Train Station

C. Toward Sports stadia, Tiger tiger nightclub, Suncoast

THEORETICAL AND CONCEPTUAL FRAMEWORK + PRINCIPLES

COMPONENT

1 : ACCOMODATE
(THE NEEDS OF THE PEOPLE)

FINDING LOST SPACE & PLACEMAKING *(THEORY)*
(ROGER TRANCIK)

EXTERIOR SPACES | SOCIAL INTERACTION | LIVE-WORK-PLAY

DIFFERENT BUILDING USAGE

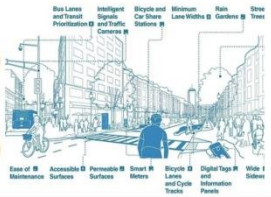
DIFFERENT PEOPLE

2: REGENERATE
(THE AREA)

NEW URBANISM *(PRINCIPLES)*

HIGHER QUALITY OF LIFE

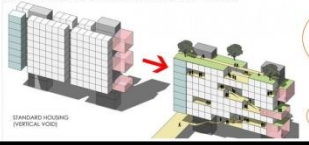
WELL BEING



3: SUSTAIN
(THE AREA,BUILDING AND PEOPLE)

FLEXIBLITY & SUSTAINABILITY *(CONCEPTS)*

'Buildings no longer symbolise a static hierarchical order: instead, they have become flexible containers for use by a dynamic society.'' Richard Rogers, Cities for a small Planet, 1997, p.163
Flexibility is the main idea which governs the buildings spaces in terms of open plan , adaptable spaces relative to the needs of the transient worker and the changes within society.



ADAPTIVE + SUSTAINED SPACES

ECO FRIENDLY

PRECEDENT STUDIES

LOCAL PRECEDENTS

MIXED USE SOCIAL HOUSING :
BRICKFIELDS SOCIAL AND RENTAL UNITS.JOBURG

RETAIL AND HOUSING,COURTYARDS,BLOCKS BROKEN BYCIRCULATION STAIRCASES AND DRYING YARDS

PRINCIPLES OF NEW URBANISM :
MELROSE ARCH,.JOBURG

FIRST DEVELOPMENT POST APARTHEID TO APPLY NEW URBAN IN SA

FLEXIBLE AND SUSTAINABLE HOUSING:
LUFHERENG.JOBURG

STRAY AWAY FROM TYPICAL RDP FOR A SUSTAINABLE IDEA.LIVE WORK UNITS INTERACT WITH ROAD EDGE

INTERNATIONAL

MIXED USE SOCIAL HOUSING :
LA VALENTINA STATION ,CALIFORNIA

RETAIL ON GROUND. MIX OF UNITS :STUDIO,1BED,2BED. SUSTAINABLE

URBAN REGENERATION:
Proposed Mixed Use District, Sweden

URBA REGENRATION AND USE OF WASTED SPACES. USING NEW URBANISM PRINCIPLES AS WELL

FLEXIBLE HOUSING:
CONSTITUCION , CHILE

PROVISION OF HALF A GOOD HOUSE AND THE OTHER HALF TO BE CHANGED BY THE USER AND THEIR NEEDS

MACRO PRECEDENT STUDY

AN APPROACH TO URBAN REGENERATION OF A PRECINCT : THE MABONENG PRECINCT IN JOHANNESBURG

Overall the area can be seen as a success but only due to the selective process by which the developer sought to regenerate the area. By utilising the creative industry as a tool to uplift the area, regeneration of the precinct was achieved through the transformation of abandoned and old buildings and factory spaces into spaces for residential and commercial uses as well as the obvious artistic functions. This resulted in sustaining the area not only in terms of adaptively reusing the buildings that were already there but by bringing in people and building functions so that the area was ''alive'' during the course of the day and night as well. The research seeks to revitalise an area within an industrial part of the city and cater to the needs of those who work there and draws from the intentions of the case study in this respect.
Despite the increase in rates of the buildings, the area serves as a tool to indicate changes of perception within areas that have previously been deemed unsafe, derelict and abandoned.

CASE STUDY

RESPONSE TO THE NEEDS OF THE WORKING COMMUTER WITHIN DURBAN THE STROLLERS OVERNIGHT FACILITY : MANSEL ROAD, DURBAN

Although the overall site with the Mansel road market is regarded as a success, providing a place for those who travel long distances to trade and buy within the city as well as providing living and storage facilities for a number of people, the Strollers does not seem to sustain the demographic that exists given the current costs they are charged to stay and the time frame they are given.
The pavement dwellers situation indicates the importance of the socio economic conditions that prevail and how the architecture needs to be sympathetic to this.
Humanity was not as important as merely providing a building of bricks. Ultimately it seems that the rural traders needs have not been met by the facility.

PEDESTRIAN AND VEHICULAR MOVEMENT

PUBLIC VS PRIVATE
EXTROVERTED VS INTROVERTED

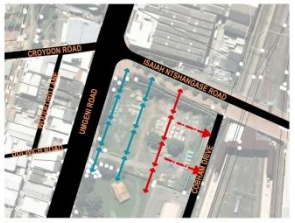
NOISE AND TRADE

DRAW POINT TO SITE

NEGLECTED AREAS

ACCESS TO SITE
PUBLIC ACCESS
PRIVATE ACCESS

MACRO ANALYSIS 1-7500



LINKAGE
PUBLIC LINKAGE
PRIVATE LINKAGE

SCHEDULE OF ACCOMODATION :

RETAIL AND COMMERCIAL COMPONENT:.
MAIN LOBBY : 180 SQ.M
COMMERCIAL LOBBY :150 X 5 :750 SQ.M

PHARMACY : 300 SQ.M
RETAIL :100 SQ.M
FOOD OUTLET : 75 SQ.M
FOOD OUTLET :100 SQ.M
SUPERMARKET : 600 SQ.M
HEALTH BAR AND SHOP : 650 SQ.M
LINE SHOPS X 5 : 211 SQ.M
COMMUNITY TRADE X 5 : 220 SQ.M
DAYCARE : 500 SQ.M
COMMUNITY HALL :350
SPORTS BAR 230 SQ.M

HEALTH CARE FACILITY 1050 SQ.M
ITRUMP OFFICES : 1050 SQ.M
ETHEKWINI HUMAN SETTLEMENTS OFFICES 1050 SQ.M

PUBLIC TOILETS :40 SQ.M
REFUSE (RES AND RETAIL) :100 SQ.M
LOADING BAY : 20 SQ.M
METER AND GEN ROOM :30 SQ.M

UNDERCOVER PARKING: 2089 SQ.M - 5 DISABLED 3000 X 5000, 31 2500X5000
OPEN PARKING : 1000 SQ.M- 8 DISABLED 3000 X 5000, 20 2500X5000
RESTAURANT : 560 SQ.M
LAUNDROMAT : 230 SQ.M

RESIDENTIAL COMPONENT:

RESIDENTIAL LOBBY 1 : 130 X 7 = 90 SQ.M
RESIDENTIAL LOBBY 2 :50 X 5 =250 SQ.M

LIVE WORK UNIT - 2 LEVELS 55SQ.M: X 2
LIVE WORK UNIT - DISABLED / 1 LEVEL 40SQ.M X 2
1 BED UNITS 40SQ.M X 26
2 BED UNITS 70SQ.M X 44
4 BED UNITS : 86SQ.M X 7
BACHELOR UNITS : 30SQ.M X 11

TOTAL NUMBER OF UNITS : 92
TOTAL SQ.M OF UNITS : 5240SQ.M

TOTAL COVERAGE : 7700SQ.M
TOTAL FAR : 13640 SQ.M

BUILDING ORIENTATION

SITE AND DESIGN CONSIDERATIONS 1-3000

DWELLINGS LINKAGE REGENERATION SUSTAINABILTY COMMUNITY URBANITY 24/7 WALKABILITY

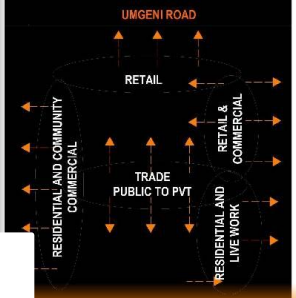
PROVISION OF SAFE ROAD CROSSINGS, STREET PARKING

PROVISION OF QUALITY WALKABLE SPACES

PROVISION OF PROPER STREET FURNITURE

PROVISION OF PROPER PUBLIC TRANSPORT FACILITIES

DESIGN DEVELOPMENT
RELATIONSHIP OF SPACES



PROJECT BRIEF [INTENTION AND COMPONENTS OF BUILDING]

The main objective is to create a mixed use social housing scheme within an industrial area of the city.

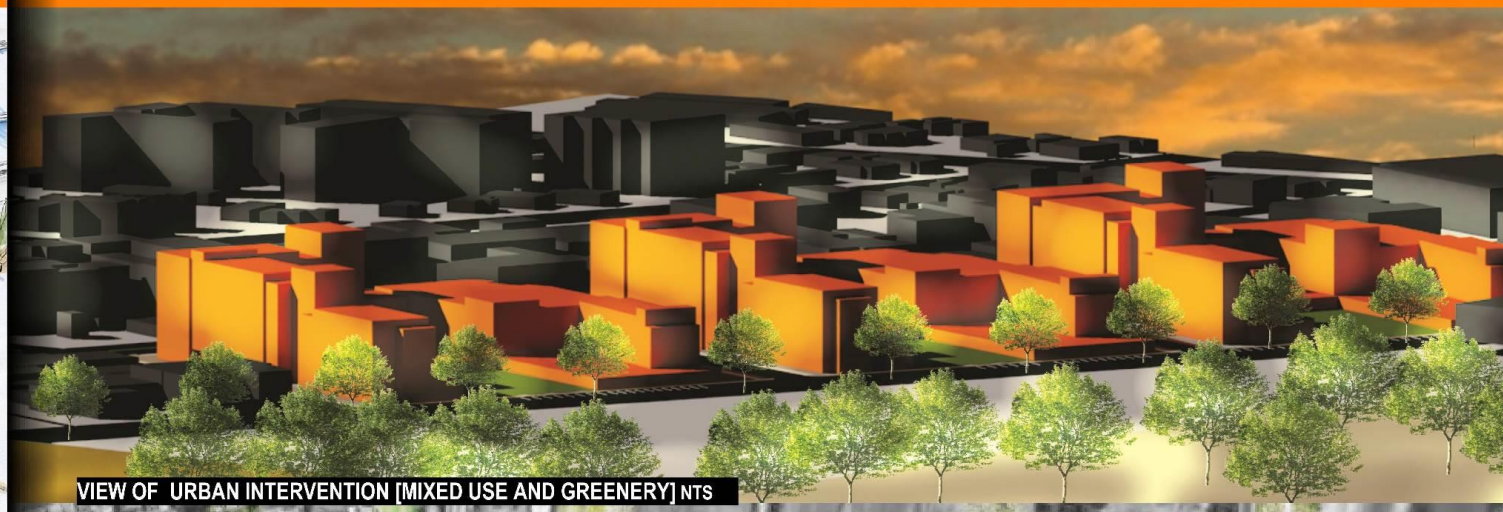
There will be **4 main components** to the building :

1. Retail : What the area and commuters require relevant to the findings food outlets, clothing stores, public ablutions.

2. Commercial : The offices will accommodate the clients employees to provide insight and development into the area and thereafter surrounding areas. The offices will also be let out to pilot architectural firms to provide some creative insight to the area as well

3. Residential : the residential spaces will be rented to those working commuters who require accommodation whilst there will also be live/work units subsidised to the street hawkers and vendors.

4. Green spaces : These spaces encourage social interaction and solitude as well.



VIEW OF URBAN INTERVENTION [MIXED USE AND GREENERY] NTS

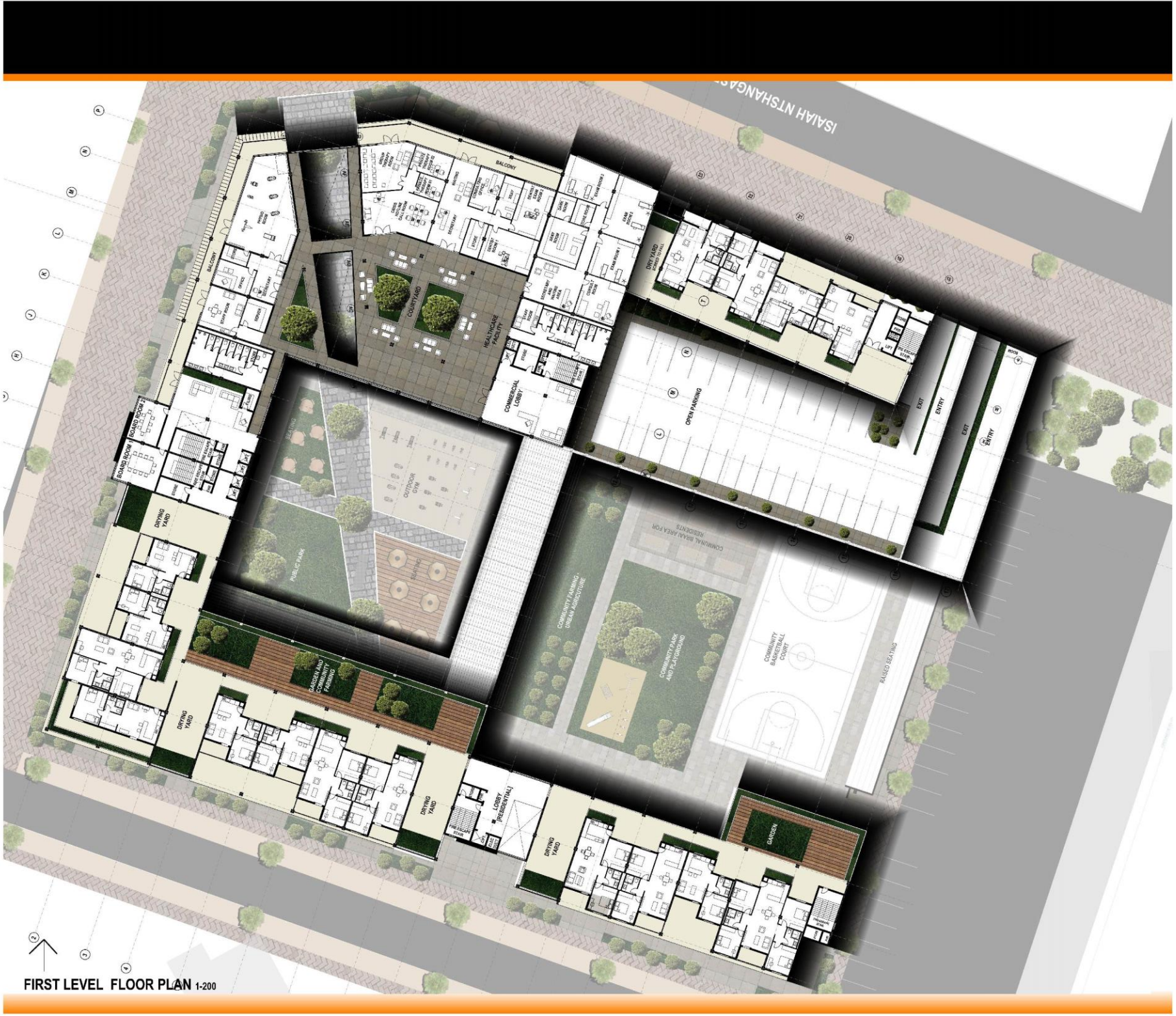
MASTER PLAN : URBAN INTERVENTION 1-3000

PASHINI NAIDOO [203501832

SITE PLAN 1:350


UMGENI ROAD
PHARMACY
RETAIL
MAIN LOBBY (COMMERCIAL)
MAIN LOBBY (RESIDENTIAL)
FOOD OUTLET
FOOD OUTLET
FOOD OUTLET
SEATING
PUBLIC PARK
SEATING
OUTDOOR GYM
LINE SHOP 01
LINE SHOP 02
LINE SHOP 03
LINE SHOP 04
LINE SHOP 05
HEALTH BAR
HEALTH SHOP
COMMERCIAL LOBBY
UNDERCOVER PARKING
WATER STORAGE TANK
REFUSE
EXIT
ENTRY
TRADE
TRADE
TRADE
TRADE
TRADE
COMMUNAL BRAAI AREA FOR RESIDENTS
COMMUNITY FARMING: URBAN AGRICULTURE
COMMUNITY PARK AND PLAYGROUND
COMMUNITY BASKETBALL COURT
RAISED SEATING
SUPERMARKET
SERVICE YARD LOADING OFF LOADING
RESTAURANT
RESTAURANT KITCHEN
LOBBY RESIDENTIAL
DAYCARE
COMMUNITY HALL
GROUND LEVEL 1 FLOOR PLAN ON UMGENI ROAD 1:200

GROUND LEVEL 2 FLOOR PLAN ON ISIAH NTSHANGASE ROAD 1:200



FIRST LEVEL FLOOR PLAN 1-200

SECOND LEVEL FLOOR PLAN 1-200

THIRD LEVEL FLOOR PLAN 1-200

FOURTH LEVEL FLOOR PLAN 1:200

FIFTH LEVEL FLOOR PLAN 1-200

SIXTH LEVEL FLOOR PLAN 1-200

SEVENTH LEVEL FLOOR PLAN 1-200

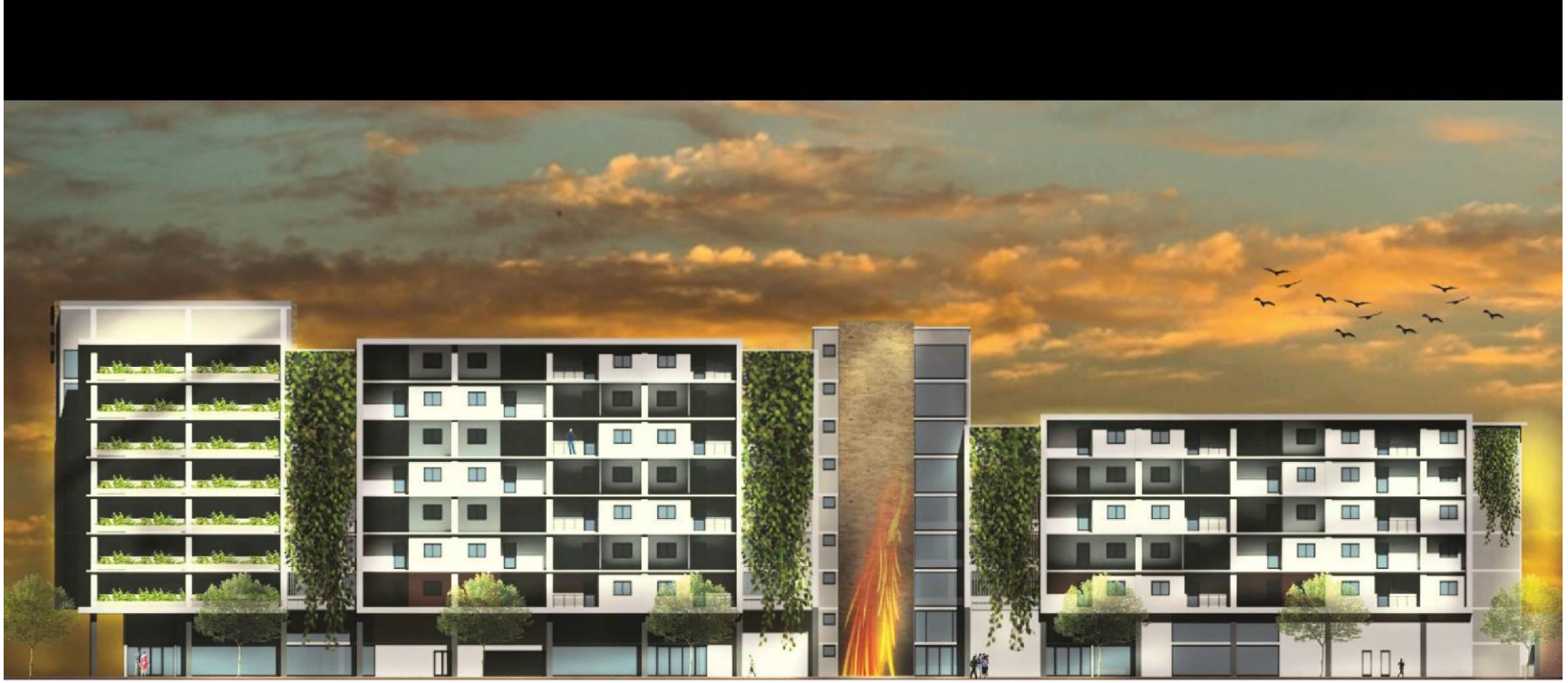

NEW PROPOSED ROAD
STREET PARKING LINE
PAVEMENT LINE
BOUNDARY LINE
RESIDENTIAL UNIT
PASSAGE
DAYCARE
COMMUNITY PARK AND PLAYGROUND
COMMUNAL BRAAI AREA FOR RESIDENTS
OPEN PARKING
BALCONY
LIVE/WORK UNIT
LIVE PORTION
WORK PORTION
UNDERCOVER PARKING
BOUNDARY LINE
PAVEMENT LINE
STREET PARKING LINE
ISAIAH NTSHANGASE ROAD

B-B 1-100


BOUNDARY LINE
FIRE ESCAPE STAIR
STORE
ELEC DUCT
WATER STORAGE TANK AREA
OPEN PARKING
UNDERCOVER PARKING
SPORTS BAR
TOILETS
BAR
HEALTH BAR KITCHEN
HEALTHCARE FACILITY COURTYARD
SECRETARY
OFFICE
BALCONY
PHARMACY - Mezzanine Level
PHARMACY
BOUNDARY LINE
PAVEMENT LINE
STREET PARKING LINE
UMGENI ROAD

UMGENI ROAD ELEVATION 1-200

ISIAH NTSHANGASE ROAD ELEVATION 1-200



PROPOSED NEW ROAD ELEVATION 1-200

BACK ROAD ELEVATION 1-200

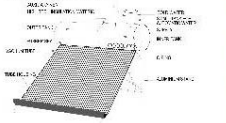
VIEW OF WALKWAY LINK FROM
COMMERCIAL LOBBY TO RESTAURANT

DOOR SCHEDULE NTS

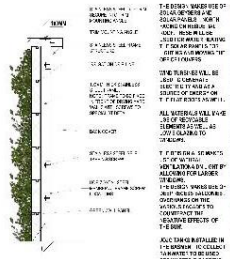
WINDOW SCHEDULE NTS

SUSTAINABILITY AND ZERO CARBON EMISSION STRATEGIES

LOW E GLAZING DETAIL 1:10

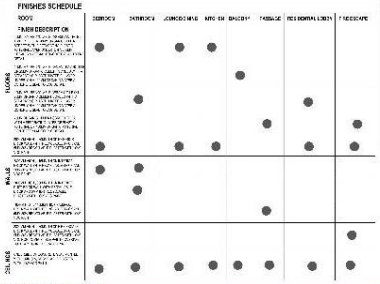


SOLAR PANELS WITH SOLAR GEYSERS [TO ROOF] 1:10

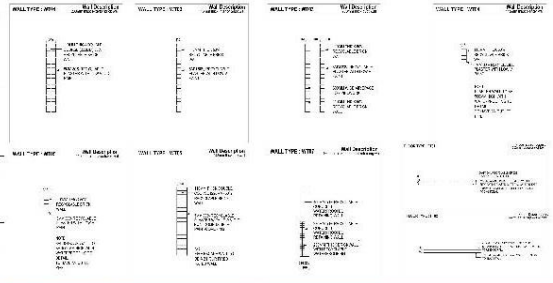


GREEN MESH WALL [USED AT DRYING YARDS] DETAIL 1:10

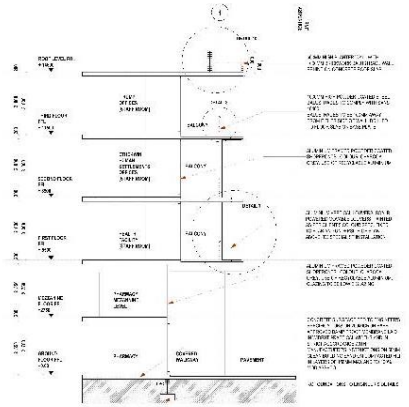
FINISHES SCHEDULE



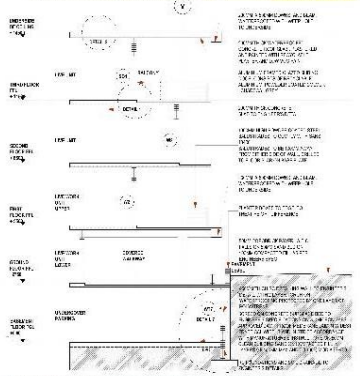
FINISHES SCHEDULE NTS



WALL AND FLOOR TYPES NTS

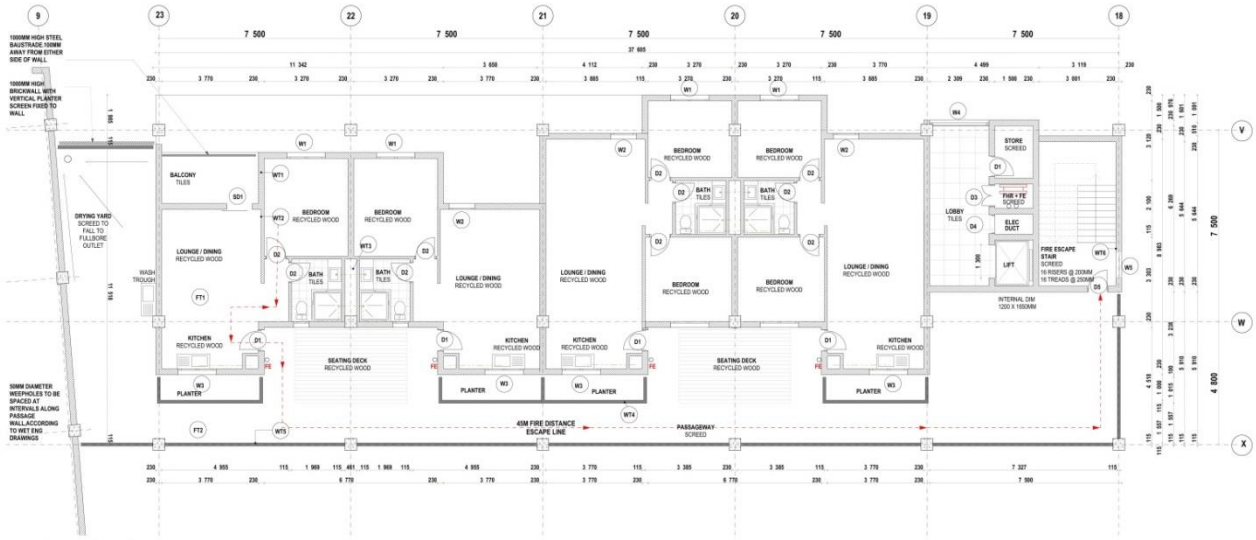


PART SECTION AA THROUGH RETAIL AND COMMERCIAL FACING UMGENI ROAD 1:50

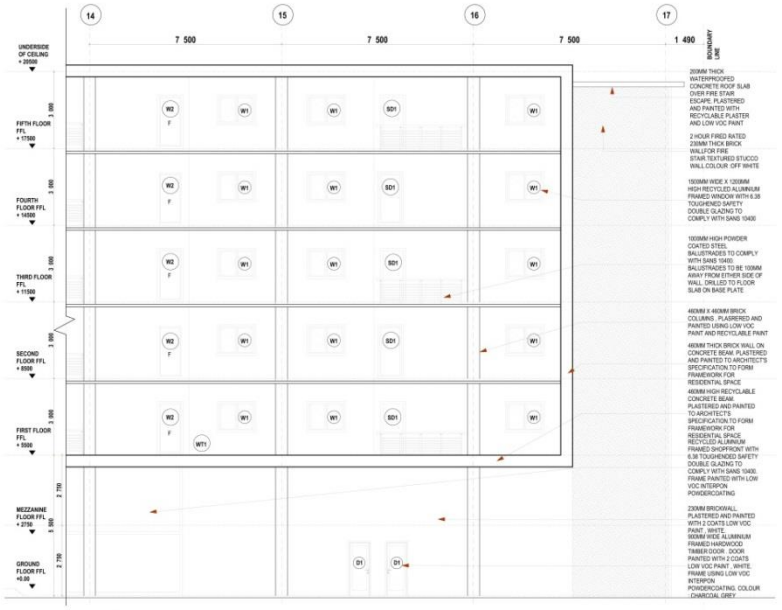


PART SECTION BB THROUGH LIVE WORK AND RESIDENTIAL UNITS FACING ISIAH NTSHANGASE ROAD 1:50

TECHNOLOGY



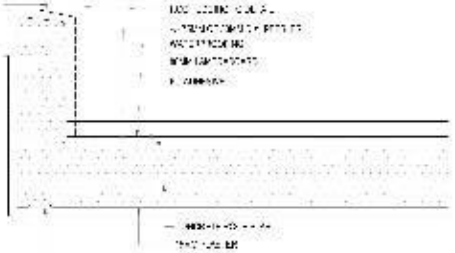
PART PLAN OF RESIDENTIAL UNITS ON ISIAH NTSHANGASE ROAD 1:50



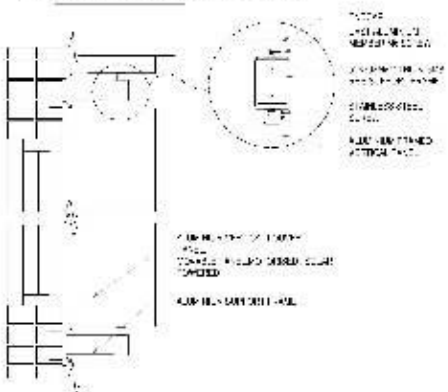
PART ELEVATION THROUGH RESIDENTIAL UNITS FACING PROPSED NEW ROAD 1:50

DETAILS

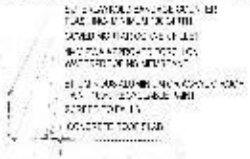
THRESHOLD DETAIL 1 AT ALUMINIUM SLIDING DOORS 1:10



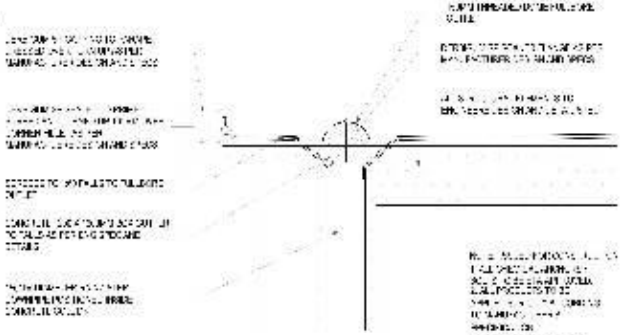
CONCRETE ROOF SLAB DETAIL 2 1:10



MOVABLE VERTICAL LOUVER DETAIL 3 1:10

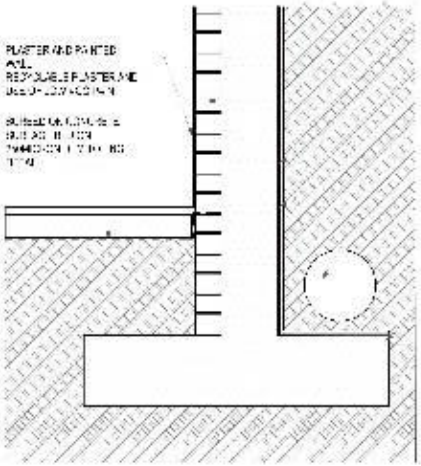


TYPICAL ROOF SLAB WATERPROOFING DETAIL 4 1:10

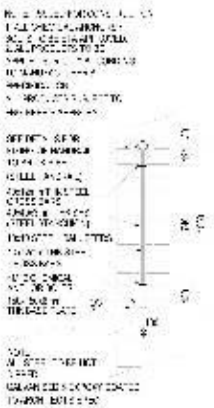


FULLBORE OUTLET DETAIL 5 ON FLAT CONCRETE ROOF 1:10

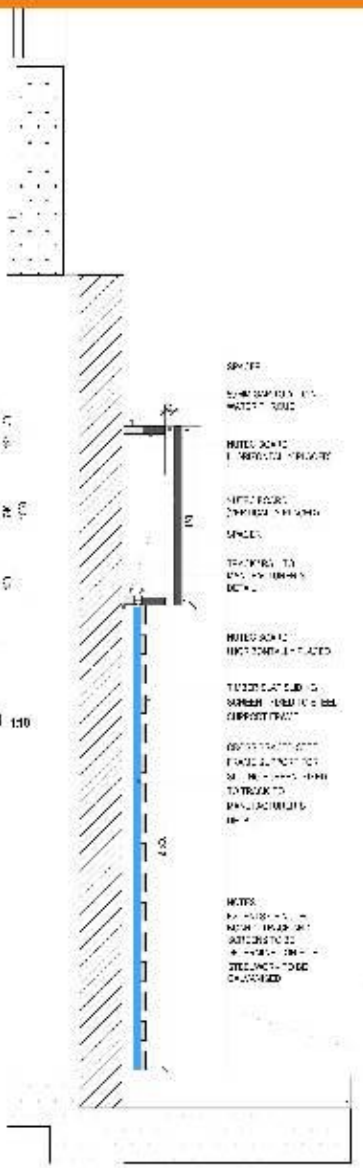
TYPICAL SILL DETAIL 6 1:10



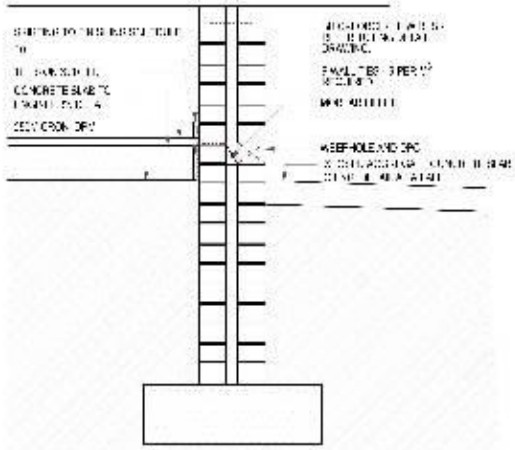
RETAINING WALL TO BASEMENT PARKING DETAIL 7 1:10



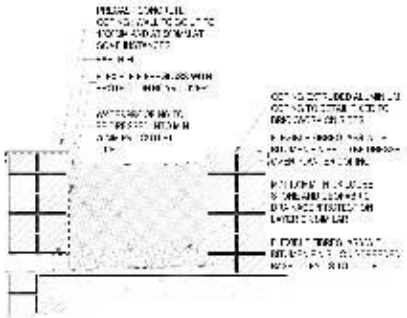
BALLUSTRADE DETAIL 8 1:10



TIMBER SLIDING SCREEN DETAIL 9 [TO LOADING BAY YARD] 1:10



TYPICAL SURFACE BED / FOUNDATION DETAIL 11 1:10



PLANTER DETAIL 10 1:10

PASHINI NAIDOO [203501832]


UMGENI
PARK