CONTEXTUALISING THE INFLUENCE OF URBAN REGENERATION IN ARCHITECTURE: A design towards an urban rescue center in the city of Durban.

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DECLARATION

I declare that this dissertation is my own unaided work. All citations, references and adopted ideas have been acknowledged. This document is being submitted to The School of Built Environment and Development Studies, University of KwaZulu Natal, Howard College, in particular fulfilment of the requirements towards the Master of Architecture degree. This dissertation has not been submitted before for any degree or examination at any other university.

Signed 2018

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Nokubonga Njani

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DEDICATION

This dedication is split two ways: to my son Ayabonga Njani. If it was not for your presence, I would not have known the true meaning of hard work. I was compelled to endure in spite of the challenges just so that you will not be disappointed in me. I was constantly aware that you were depending on me to see this task through. In completing this thesis, I know that I have succeeded in making you proud of your mother and pray that someday you will follow in her footsteps in achieving similar academic excellence.

To my Lord and Saviour: all things are possible through the mercy of Christ alone who guides and strengthens us in all our endeavours.

ABSTRACT

For centuries, urban Africans have established lives that are satisfactory in catering to their human needs. Moreover, there has been an ingenious potential of utilizing the ever-growing fields of social relations to make city life feasible. Contemporary African cities represent platforms where Africans' struggles about the present and future ways of living are constantly influenced by the transforming demands of external powers. Even today, an assumption still prevails that Africa is an uncivilized rural continent whereby men co-exist with wild animals. Regardless of the negative connotations that are placed upon the African continent, African cities are still places that portray multiple intensities and layers of social cohesion. It is noted that African cities were once viewed as the core of the innovatory energy and cultural forces of its residents, however, with the need to urbanize as majority of the underprivileged individuals settle in urban environments and establish informal means of surviving in the city, African cities in modern society seem to be drifting into decaying and dangerous places that are a cause of anxiety and resentment.

The intention of this research is to provide an analysis through defining conceptual and theoretical lens as to how the concept of urban regeneration within the city of Durban can play a significant role in architecture. This study is relevant to the city of Durban because of the rate in which the city of Durban is estimated to urbanize in the near future. The intention of this dissertation is focused more in the investigation of the concept of urban regeneration and natures ability to reinforce social life for individuals residing in urban environments, with an attempt of ascertaining how architectural design can act as a driver for influencing a 'break-away space' for individuals to retreat in an urban environment.

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INTRODUCTION

1.1 INTRODUCTION

1.1.1 Background

According to the United Nations World Urbanization Prospects (2014), more than one half of the world's population is currently residing in urban areas, and all countries in the world are experiencing the shift toward being urbanized as more individuals migrate to cities for better economic opportunities. Furthermore, it is estimated that continents such as Asia and Africa which are mostly rural at the moment, will urbanize more rapidly than other regions over the coming decades.

In addition, the United Nations World Urbanization Prospects (2014) predicts that by the year 2050, almost 90 percent of Africa's population will be residing in urban areas. These projected urbanization trends will have a significant impact on the landscape of human settlements, living conditions as well as the environment at large. Turok (2012), further asserts that policies of racial discrimination played a role in shaping the national urbanization, economic as well as social trends in South Africa. In addition, Turok (2012) further argues that South Africa is one of the most densely populated and urbanized country in Africa. Over the past century urbanization in South Africa has been perceived as a source of controversy, which poses problems for successive governance and results in numerous interventions to control the phenomenon of urbanization.

The earliest form of urban migration that can be traced in the city of Durban dates back to a period between the late 19th century and the early 20th century, where the migration during the apartheid era was fueled by the needs of cheap migrant labor to support the rapid industrialization that was taking place during that era. After the Second World War political considerations dominated and controls were implemented to remove the population of African individuals in urban areas, the eviction processes affected the rates of urbanization during that era. However, with the demise of the apartheid era, the racial repressing controls were withdrawn, thus causing a recovery in the rate of urbanization in South Africa. Moreover, CNBC Africa (2015) argues that the influx of people into cities as they migrate from rural areas causes a strain on the existing infrastructure.

1.1.2 Motivation of Study

'*The fact that it is predicted by statistics that 80% of South Africans would be living in 30 out of 278 municipalities is quite astonishing'*. This phenomenon begins to suggest to individuals that the government needs to start restructuring, the government need to start preparing the infrastructure to be able to accommodate the masses of urban dwellers. In addition, there is a pressing need to start considering densification (CNBC Africa, 2015).

As the statistics prove that the rate of urbanization in the South African country is increasing and it is estimated to further increase, thus making South Africa one of the most rapidly urbanizing country. In addition, the Sithole, M. CEO of South African cities stresses that the rate in which the country is urbanizing, as more people migrate to cities, that phenomenon will cause a strain in the existing infrastructure thus affecting the quality of life for urban citizens (CNBC Africa, 2015). The motivation for exploring this type of research is driven by the fact that as there are future plans, to densify the already urbanized city of Durban, there are issues linked to that which includes compromised quality of life.

1.2 DEFINITION OF PROBLEM, AIMS AND OBJECTIVES

1.2.1 Problem Statement

An issue that this research aims to focus on is urbanization. Urbanization can simply be described as an increase in the population in urban areas as individuals migrate to urban areas. The phenomenon of urbanization is a Northern-centric concept which originated and was developed in the North and it was translated from overseas to different contexts throughout the world. An issue that arises with adopting pre-conceptualized Northerly approaches in an African context is the fact that the conceptualization of the Northern cities is not relevant to the Southern-centric cities. Closely related to the concept of urbanization is the phenomenon of densification, in which Hartig (2014) argues that there is a distinct connection with densification and declined standards of living. Hartig (2014) further argues that the concept of densification is explored to accommodate for the influx of individuals settling in cities. Moreover, as more individuals migrate to urban areas, there is a reduction

in contact with nature, therefore, reducing the opportunities that nature provides men for psychological and social well-being.

1.2.2 Aims

The primary aim of this research is to explore the concept of urban regeneration, with aims of discovering how the phenomenon of urban regeneration can be influenced by architectural design.

1.2.3 Objectives

The main objective which guides this research is the conceptualization of urban regeneration and its influence on contemporary social behaviours.

Other objectives that the research will dwell on are:

-To contextualize the northern centric concept of urban regeneration, and make it relevant to an African context

-To explore how the concept of urban regeneration can influence a “break-away” space in a densified urban environment.

-To explore social life in cities and its relationship to urban regeneration and how this can positively impact in architectural design.

-To explore the relationship between urban regeneration and architectural design, with a specific focus on how social life can serve as a catalyst for architectural design.

1.3 SETTING OUT THE SCOPE

1.3.1 Delimitation of Research Problem

The phenomenon of urbanization encompasses more than the increase of the urban population, it is driven by other interrelated processes of change such as economic, demographic, political, cultural, technological as well as social changes. The purpose of this research is to delineate and emphasize the subject of social change in urban areas. Another factor that this research will be limited to, is the exploration of the Northern-centric concept of urbanization which is relevant to Northern cities, with aims of deciphering and contextualizing it to a Southern city. The research will be limited to the concept of urbanization; however, it will also dwell upon the concept of densification since it correlates to the concept of urbanization. Moreover, this research aims to dwell upon exploring methods in which architecture can be used as a tool to respond to the rising issue of urbanization which poses a serious threat on the environment, thus resulting to issues such as environmental degradation.

1.3.2 Definition of Terms

Urban Rescue Centre – A greenery infested building typology which acts as a break-away space and offers recreation activities to urban dwellers whereby they can socialize and escape the busy city life.

Urban Regeneration – It is a form of redevelopment, regrowth and repair of an urban area.

Urbanization – Refers to an urban area population shift as individuals migrate from urban areas to rural areas.

Densification – It is an increased use of space both horizontally and vertically within existing areas.

Deciphering – Convert into understandable language.

Urban fabric –It is the physical forms of towns and cities, like fabric, urban form comes in many different types and weaves.

Breakaway spaces – spaces of retreat characterized by a natural environment.

Contextualizing – Place or study in a context

Northern-centric – Originated in the Northern hemisphere

Environmental degradation – Actions taken by individuals that cause the planet earth or its systems (air, water etc.) to become damaged or harmed in some way

Social change – Refers to any significant alteration over time in behavior patterns and cultural values and norms.

Agglomeration – A mass or collection of things

Urbanite – A resident of a city or urban community

1.3.3 Stating the Assumptions

-Urban regeneration can be explored as a catalyst towards an architectural design

-The rapid urbanization that is anticipated to further take place in the city of Durban can be explored as a medium for influencing an architectural typology which will prioritize in bettering urban living conditions.

- Architectural design can be used as a tool to provide a break away space in an extremely densified urban environment.

1.3.4 Hypothesis

As there are plans to further urbanize and densify the already urbanized city of Durban, urban regeneration should be explored as a tool for influencing more "break-away" spaces of retreat in the densified urban fabric.

1.3.5 Key Questions

Primary Question

How can the notion of urban regeneration act as a medium for influencing a building typology that could shield urban dwellers from the densified urban environment, within the context of an African city?

Secondary Questions

1. How can the phenomenon of regeneration be expressed in built form?

2. How can urban regeneration contribute towards generating a ‘break-away’ space from the highly densified urban fabric?

3. What is the relationship between social life in cities and urban regeneration in cities?

4. How can social behaviours in urbanizing cities positively influence architectural design?

5. How can the anticipated urbanisation of the city of Durban pose as a catalyst for an architectural building typology?

1.4 CONCEPTS AND THEORIES

1.4.1 Introduction

In order to answer the primary question formulated in this research, the following concepts and theories will be explored and applied to comprehend the role in which urban regeneration and human urban social experience contribute towards architectural design.

1.4.2 Theories

1.4.2.1 Organized Complexity

The theory of organized complexity which is reinforced by the theorist Jane Jacobs in writings is a theory used to analyze how cities function. Based on Jacobs (1961: 432) arguments, cities should be viewed as problems of organized complexity which can be simply translated to dealing concurrently with an ample number of factors which are interrelated into an organic whole. Often there is always the assumption that complexity involves processes of entanglement and non-linear situations however Jacobs (1961) is trying to communicate that there is an element of simplicity in the complex structure of cities. Jacobs (1961: 421) further elaborates this argument by suggesting that the city administration needs to be more complex in its ultimate structure so that it can work more simply. Furthermore, the theory of organized complexity seeks to thoroughly understand how cities function rather than stipulating how they are perceived to work, as modern

Northern-centric influenced designers usually do. The theory further argues that a top-down approach is often adopted by influential designers in the designing of cities and its infrastructure without any considerations of the people that will live in and around the designed structures.

1.4.2.2 Urban Sociology

The theory of urban sociology seeks to investigate the social phenomena of individuals residing in urban environments. Furthermore, before one can analyze and understand social structures in cities, it is essential to comprehend what defines cities and how do cities function. Pahl (1968: 3) defines a city as a cross enclosed in a circle whereby '*the cross represents the convergence of routes bringing in men, convergences and ideas and the circle is a moat or wall which physically binds the citizens together; emphasizing their distinctiveness*'. Pahl (1968) further argues that a city is not just a central space which supplies goods and services to the public, a city can be rather viewed as a composition of complex interrelated systems. Swilling (2011) on the other hand describes a city as being more than just a space of fixed physical objects and historical occurrences, nor simply spaces where other things happen. Swilling (2011) describes cities as by-products of complex interactions between overlapping systems of sociopolitical, cultural, technical as well as institutional networks.

Pahl (1968) further argues that cities are outcomes and are shaped by the society which resides in cities. Moreover, cities are social entities and their physical characteristics are highlighted when urbanites recognize their characteristics (Pahl, 1968: 4). Knox (1994: 267) supports this statement by expressing that individuals change and create urban spaces according to their needs, individually and collectively. Furthermore, the city's function system is shaped and constrained by the socio-cultural and physical attributes of particular setting. Other ideas that are emerging from Pahl (1968)'s text relating to the phenomenon of the social character in cities are ideas of cities reinforcing patterns of social change due to the population concentration of town and cities. Knox (1994) further argues that social change can be induced by urbanisation in rapidly urbanising cities. As cities develop, the

physical and socio-economical attributes of the urban character stimulate certain behaviour changes in individuals, such as isolation and social withdrawal.

1.4.3 Concepts

1.4.3.1 Contextualism in Architecture

The concept of contextualism can be described as a global view which suggests the role of social, cultural as well as historical change. The concept of contextualism gained popularity around the 1970s. Schumacher (1971) views the term contextualism as an attempt at combining the words ‘context’ and ‘texture’ where the term texture can be translated into ‘urban texture’. The concept of contextualism in architecture can be described as architecture that creates a relationship with its specific site, its broader physical environment or the visual surrounding environment. Çizgen (2012: 61) argues that during the modernism era the ideas of relating architecture to the urban fabric were abandoned, this resulted in the ‘distortion of the city’s spatial organisation’. In the architectural field the concept of contextualism can be related to the phenomenon of critical regionalism which was first mentioned by architects Tzonis and Lefaivre then later explored by Frampton in his writings. The ideas that Frampton (1987) expands on elaborate more about an architectural building being designed to accommodate the site, available materials and climatic conditions in which the building is situated in.

In this research, the concept of contextualism will be explored in parallel with the phenomenon of urban regeneration. As mentioned in the previous text that the phenomenon of urban regeneration is a concept which was derived from the Northern cities and submerged into other cities throughout the world. The concept of contextualism in this research will be used to relate the Northern phenomenon of urban regeneration and relate it into a Southern African city.

1.4.3.2 Phenomenological Concepts Relating to Place and Meaning

According to Luckerman (1964: 16), the idea of place involves the combination of elements of nature and culture. Whereas Walter (1988) defined a place as a geographic element grounded in 'a portion of space'. This portion of space is not perceived as an empty canvas in which activities and events take place, but instead one that embodies meaning. Parsee et al (2015) describe the concept of place as a composition of human behaviour, concepts and physical characteristics. Furthermore, Parsee et al (2015) view the concept of place as a body which encompasses a combination of memory, sensory experiences and narratives. The concept of place as deciphered by Parsee et al (2015) is not conceived as a subjective and abstract concept, it is rather perceived as a part of space which acquired its identity through factors that make up the space, these factors add meaning and value to the space. Moreover, the concept of place can be viewed as an entity which allows for connection with the world and human life, therefore it encompasses physical reality, meaning and human experience and a place is viewed as the 'centre of sensible value' (Parsee et al, 2015: 3).moreover, places allow for spaces to be created in the scenario of built form in a sense that a constructed place links the surrounding spaces. Parsee et al (2015) further argue that the purpose of architecture in relation to the concept of place is to 'activate the potential content of environment by converting somewhere to a place' (Parsee et al, 2015: 4). Furthermore, it is argued that individuals in modern society have forgotten to 'experience architecture as a meaningful expression to human life in a certain place' (Schulz, 1986: 8). Individuals in modern society have also abandoned the use of the language of architecture as a basis of serving man's need for meaning and belonging.

1.5 RESEARCH METHODS AND MATERIALS

1.5.1 Introduction

This research has been conducted with the aim of exploring how the concept of urban regeneration can influence a 'break-away' space in a densified urban environment, and how this 'break-away' can become a catalyst towards an architectural design. This will then drive the research to investigate contemporary social behaviours of individuals residing in urban environments, with the aim of outlining urban congestion social issues

that will initiate a proposal for a 'break-away' space. As mentioned previously, urban regeneration is a Northern centric concept which was first developed in Northern countries before being applied in various contexts throughout the world, the research has therefore prioritised on firstly understanding what the term urbanism means in African cities and when did African cities start to experience a great deal of urbanism, before exploring urban regeneration as the response to the issue of urbanism in African cities. The following will outline how the data would be gathered for the research.

1.5.2 Secondary Data

In order to gather information for this research, there would be exploration of secondary data collection method whereby the focus would be in exploring, books, journals, past thesis documents as well as articles written about the problem statement of urbanism and urban regeneration with specific reference to how these two phenomena can positively influence on human social behaviours in urban environments. Another form of secondary data that would be explored for this research is precedent studies, whereby there would be an exploration of building typologies that express urban regeneration and offers urban dwellers a 'break-away' space in a densified urban environment.

1.5.3 Primary Data

This type of data will be extracted directly from research sources. Moreover, this form of data will include case studies as well as interview schedules from individuals that are experiencing the phenomenon of urbanism as well as professionals that are designing urban environments.

Qualitative interviews

The method that this research intends to explore is the qualitative data analysis method. The sampling method that is going to be explored in this research is stratified random sampling whereby the population will be classified into smaller groups, such as a group for urban planners and architects and a group for city dwellers which experience the city life. To ensure that the research is not biased, the research population sampling would be 10%

of the total population for each explored stratum. The sample size for professionals that this research aims to interview is 3, mainly because the chosen institution of research has a total of 28 professionals. The sample size for inner city dwellers that this research will interview is limited to 13 individuals, the sample would be extracted from the newly renovated Pixley House building which consists of 128 apartments. The age or race of resident interviewee participants is not limited, but the nationality of the interviewees is limited to permanent city dwellers, not refugees who reside in the city for a certain period of time and then go back to their native land after a certain period of time. The interviews conducted will be face to face interviews that will be structured with closed-ended questions and open-ended questions. As part of the research design, a coding method will be explored for this research in order to group and analyse the collected data. An analysis of the gathered information will contribute towards the design process of creating public spaces and a building typology that consists of nature as an urban regeneration strategy in densified urban spaces and caters for social well-being in individuals suffering from social related urban issues. The research questions will include questions related to the social character of individuals in relation to the city life and finding out what social issues are faced by individuals that are exposed to congestive and busy urban environments as well as the individuals contact with the natural environment.

Case studies

The case studies will be focused on building typologies that are adopting the ideas of urban regeneration and catering for human social wellbeing in contemporary urban environments, and observing how the building typologies respond to the urban context in which the buildings are situated in. The case studies that the research anticipates exploring are buildings that are regenerated by the Propertuity group such as the Pixley House residential building which is situated at the Durban Central Business District as well as other buildings the Propertuity group regenerated in Johannesburg on the Maboneng precinct.

1.5.4 Research Materials

Research materials will include all types of equipment utilised in the scope of the research. The research materials that are going to be utilised for *data collection* is a cellular phone device which will be used for recording during interview schedules as well as a camera device which will be used for photographic documentation. The materials that will be explored for *data storage* are online data storing platforms such as google drive and dropbox.

1.5.5 Conclusion

Through this chapter, the key data collection research sources that this research aims to explore were highlighted. The chapter also provided an in-depths information regarding the motivation behind the selection choice for population sample as well as the population size. Moreover, this chapter expanded upon the relevant building typologies to be explored as case studies, which perfectly execute the phenomenon of urban regeneration across South Africa. Other specific research tools that this chapter elaborated on included data storage materials that this research aims to explore.

CHAPTER TWO

URBANISATION AND URBAN SOCIOLOGY PATTERNS IN AN AFRICAN CITY

2.1 Introduction

'Urbanisation is one of the most important social processes observed and written about over time. From a variety of beginnings, cities have evolved into sites where more and more complex activities take place. Furthermore, the city itself becomes the logical home for multitudes of social and economic activities that are fundamental to the material life of mankind.' (Freund, 2007: vii). The phenomenon of urbanisation can be simply described as the increase of population of people living in towns and cities. According to Wirth (1938) urbanisation occurs because people move from rural areas (countryside) to urban areas. Moreover, the phenomenon of urbanisation does not only expand about the shift from rural to urban areas, it is predominantly accompanied by the catastrophe of social changes. Parnell et al (2011) further argue that natural population growth in African cities is a more important factor in the evolving system of human settlements in Africa. Furthermore, Parnell et al (2011) state that this shift in where people live, both now and in the future, is overlooked by the emphasis on the outcomes of environmentally induced migration. Even without any migration from the countryside, cities present the fastest growing African population.

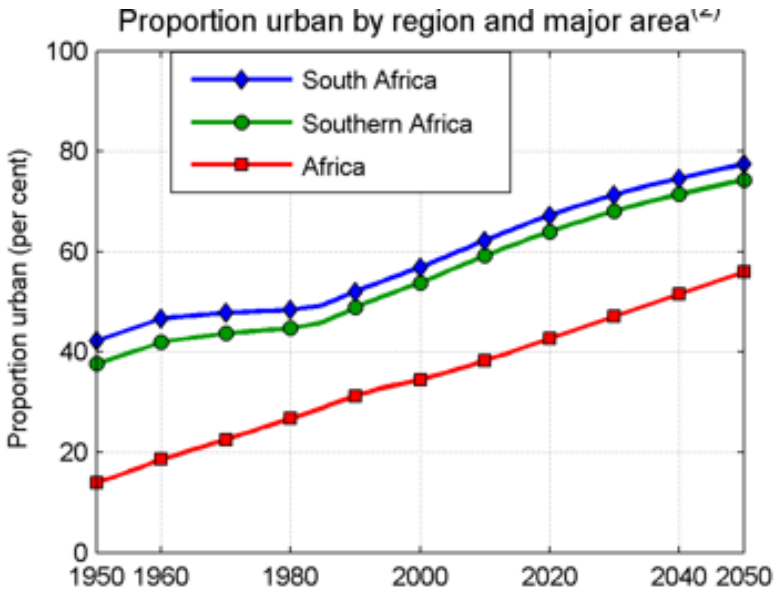


Figure 2.1 - illustrating the United Nations statistics about urbanisation in South Africa (Source: UN-Habitat)

Wirth (1938) asserts that the phenomenon of urbanism is based on three attributes. Those three attributes include an increase in the number of individuals residing in urban spaces, an increase in the physical density of living as well as the increased heterogeneity of populations and a combination of these attributes breeds a different cluster of outcomes. These outcomes are mutually interlinked, thus resulting in a '*web of attitudes, behaviours and social organisations that characterize urbanism*' (Knox, 1994: 270). In the contemporary period, as African societies urbanise, the cities do so in ways that challenge the existing theories about urban geography, sociology and planning. Most urban social studies are conducted on theories that use the United States or European cities as a base universal model for measuring cities. In this chapter, this research aims to focus on the elaboration of the phenomenon of urbanism in an African city, where the focus will be shifted in discovering when the phenomenon of urbanism originated in within the African continent and how does urbanism influence the social life of urban dwellers.

2.2 The History of Urbanisation in Africa

Urbanism in Africa dates back five thousand years ago with the kingdom of Egypt, long before the emergence of the New Kingdom (1540 -1070 BC) (Freund, 2007: 11). Though the process for separation of a private realm life, independent of the sacred was slowing down, urban agglomerations emerged, as the temples became homes for individuals that conducted rituals for the Gods and believed in fulfilling needs of the afterlife (Freund, 2007: 12). By the time the New Kingdom, Memphis, emerged on the site where the Nile parted into multiple channels of the Delta, the New Kingdom had become an essential shipbuilding and commercial center; however, one-third of the urban space was still being occupied by temple enclosures (Freund, 2007: 12). Freund (2007: 12) further asserts that the Egyptian towns portrayed a high degree of planning whereby the urban spaces were carefully and strategically thought through. However, despite all the city developments, Freund (2007) argues that the Egyptian culture did not believe so much in the concept of 'urban' as a way of life, instead the good life was imagined to be in the rural areas.

Figure 2.2 Showing the urban character of the city of Egypt during the New Kingdom era (Source : http://www.mummies2pyramids.info/history-civilization/new-kingdom.htm)

Shortly after the New Kingdom era, urbanisation trends continued to be experienced in other parts of Africa, in the Southern region of Africa, at the western edge of where Bantu-speaking agriculturalists settled in what is today called Botswana. In addition, the area has been catering for large human agglomerations for centuries. Contemporary social scientists who specialised in the study of areas referred to the areas as *'Agro-towns'* and it is believed that these agro-towns have experienced a population of ten to twenty thousand individuals before the colonial era (Freund, 2007: 3). The agro-towns symbolised the power of chiefs in gathering a variety of individuals under their leadership. The structure of the agro-towns mimicked a series of villages based on a descent of an elder or chief (Freund, 2007: 4). Freund (2007) further states that, due to the fact that Tswana chiefs were not that powerful, the defence ended up being a factor that gathered a large number of people. '*The sheer size of the agglomerated population in open country could represent a formidable deterrent to an invading band of some sort'* in the same way population concentration was influenced by ecological preferences such as good water supply (Freund, 2007: 4).

Figure 2.3 Rev John Campbell's painting illustrating the character of Kaditshwene agro-town, whereby there was an estimation of 19000 Hurutshe dwellers. (Source: J. Campbell (1820), *National Library of South Africa* (Available from *http://akkadium.com/tswana-towns-archaeology-marothodi/))*

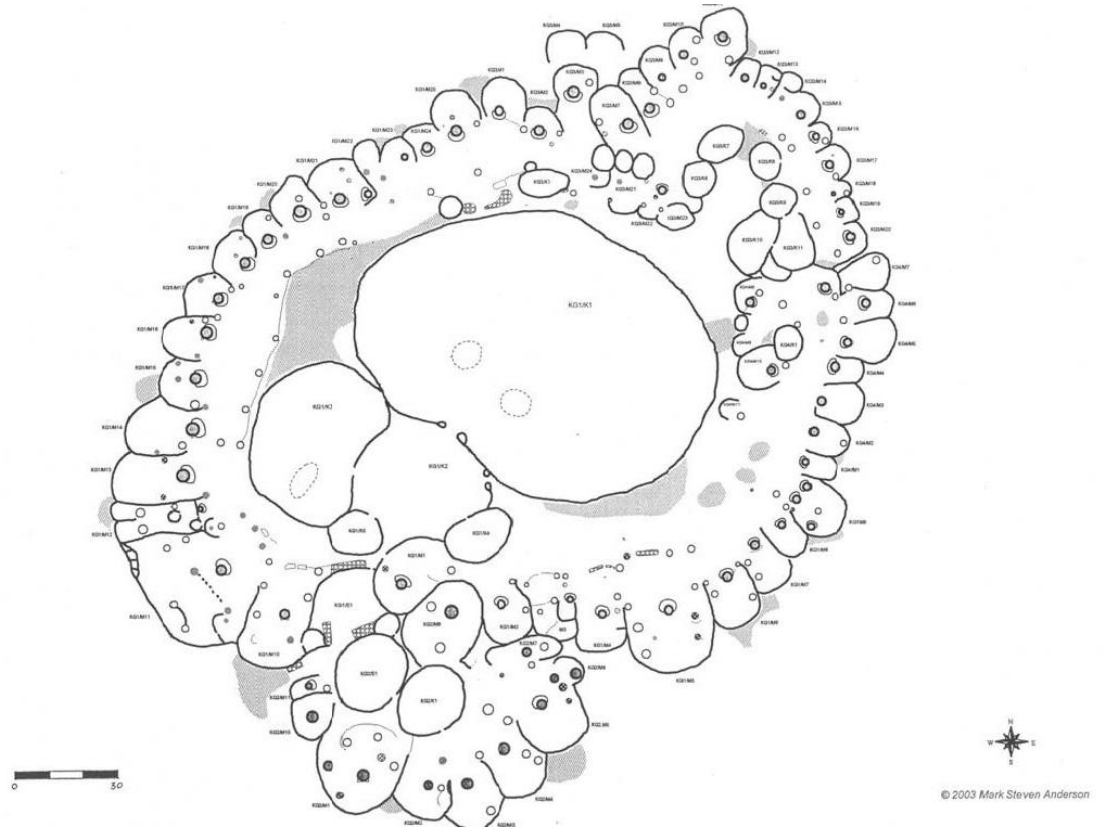


Figure 2.4 Aerial sketch illustrating a typical spatial complexity of one of the Tswana agro-towns (Source: Anderson, M. (2004). Marothodi 2004 field manual)

Colonialism also played a part in the history of urbanisation trends in Africa. After the Berlin Conference of 1887-1888, in which Africa was dissected into the imperial powers of Europe, colonialism was synthesized. In addition, Elleh (2008) further argues that new forms of hierarchical spatial organisations began to form throughout most of Africa's large cities, these forms of spatial organisations prioritised on racial segregation and defined cities as cores which consisted of different zoning categories such as central business district, native townships, civil servant's townships, sporting centres as well as European quarters. Urban dwellers during that era that were categorised as native were individuals who were moved from their ancestral land by the Europeans. Despite the spatial zoning and human experience during that era, individuals still migrated from their villages to reside in the centres (Elleh, 2008).

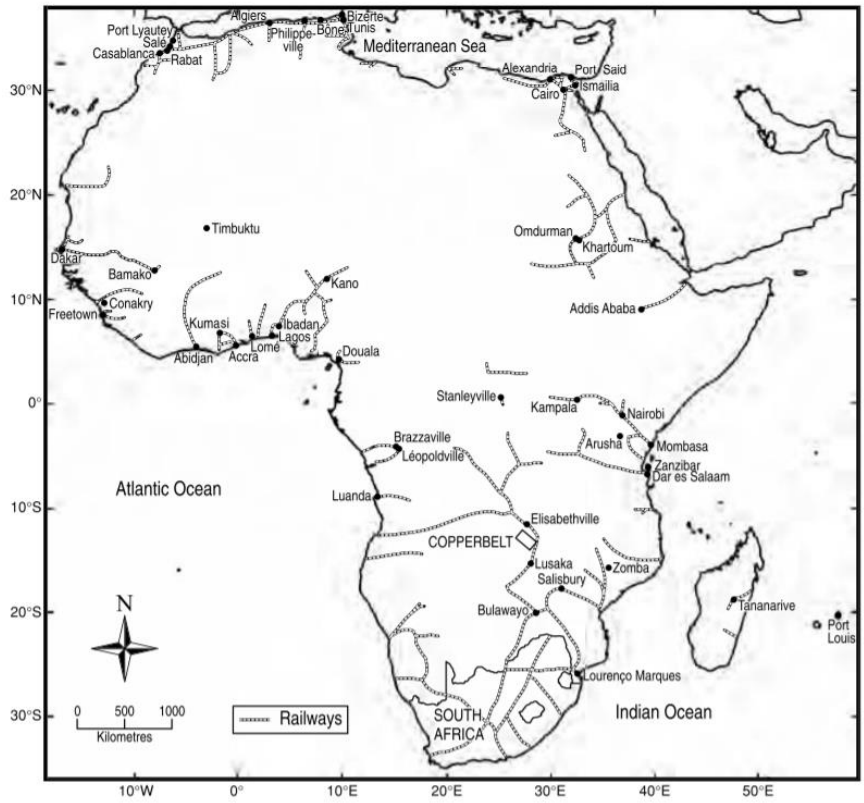


Figure 2.5 illustrating the colonial cities that were established throughout the continent of Africa (Source: Freund, 2007)

2.3 Deciphering Urbanisation in African Cities. (Working in Context)

According to Jenkins (2013), the concept of urbanism is a Northern-centric concept which was developed in the North and it was translated from overseas and applied to different contexts. Jenkins (2013) further argues that the framework of urbanisation helps individuals to further understand how to define cities and the conceptualisation of cities, and how individuals conceive cities are largely based on cities from the North and this preconceived Northern-centric perception of cities is not relevant to cities in the South. Moreover, Jenkins (2013) further elaborates that there should be an exploration of new conceptualisation ways to be embedded which relate to the cities of the South. Furthermore, Africa is perceived as a less urbanised continent however, it is the most rapidly urbanising continent and such cases continue to resonate throughout different parts of Africa.

Due to urbanisation trends in Africa, African cities and towns are characterised by a profound crisis (Pieterse et al, 2011). The evidence of this profound crisis is the infinite scenery of shantytowns and the negative connotations that the shantytowns denote. It is estimated that 62 percent of the population of African urbanites settle in informal, quick-to-assemble shelters (Pieterse et al, 2011: 21). This means that, according to Pieterse et al (2011)'s argument, the shanty city is the '*real African city'* since the majority of the city's built form constitutes informal structures. Furthermore, Pieterse et al (2011) argue that the growth of African cities is estimated to unfold and take the form of slums. This statement is supported by the 2008 State of the World's Cities report, which states that '*between the year of 1990/2000, slums grew at the rate of 4.53% whilst the overall urban growth rates were 4.58%'* (UN-Habitat, 2008: 19). Other characteristics that define African urbanism are;

1. Cumulative dynamics of exclusion
2. Impoverishment
3. Expanding inequality.

To further stress on the idea of the informal city, an article from African Urbanism denotes that, '*informality was borne out of the imposition of formality'*. However, even though informality is common in the majority of the global Southern cities, it is still framed as a

marginal factor. In addition, informal African cities are then a result of a high concentration of the underprivileged urban dwellers' migration and the self-organisation tactics that the individuals carry out in order to survive and establish a place that would cater for their needs within the formal city. Therefore, urban informality can be regarded as a '*new urban infrastructure that is being built with the very bodies and life stories of city residents*.' (Simone and Abouhani, 2005: 3).

2.4 Processes and Outcomes of Urban Densification

Although cities are expected to grow in order to accommodate the ever-expanding human population, the claim is that contemporary cities are experiencing excessive population growth which can be described as a phenomenon of densification. Moreover, Turok (2011) asserts that initiatives to increase urban population densities are growing in several parts of the world. In addition, these efforts are influenced by the assumption that a more compact urban form constitutes of an efficient and intensive use of the urban infrastructure and reduces the carbon impact of car travel (Turok, 2011: 470). In order to vividly unravel the theory of urbanism, it is essential to discern other sub-concepts which are associated with urbanism. Closely related to the phenomenon of urbanism is the concept of densification. '*Densification is a complex, multi-layered notion open to ambiguity and misinterpretation'*. Moreover, different types of density targets breed paradoxical requirements and outcomes (Turok, 2011: 470).

According to the urban dictionary's definition, densification is described as a phenomenon of becoming or making denser. Furthermore, a density strategy should provide a platform to shift the growth trajectory of a city in a more efficient and sustainable direction (Turok, 2011: 471). Hartig et al (2014) argue that as the urban environment densifies, there might be a reduction of contact with nature thereby reducing opportunities that nature provides for psychological restoration. Hartig et al (2014) goes on to stress that with the need for shifting towards densification, as more people settle in city centres, that has a negative implication on man's connection with nature. '*One finds that another person's new home is in another person's view*'. Furthermore, Hartig et al (2014) assert that the concept of

densification may result to individuals losing the sense of amenities they were exposed to, such as openness, views and most importantly break away green spaces. In addition, Hartig et al (2014) stress that there is a connection between urban densification and declining standards of living. Contrary to Hartig et al (2014)'s argument, '*density does not have to mean tall structures and congested streets. It could be communicated less as an end in itself, and more as a means towards wider ends, with benefits of convenience, connectivity and social vitality'* (Turok, 2011: 472). Furthermore, with conscious urban planning and management, there is an expanding precedent of density strategies improving housing choices, amenities, employment and public services (Turok, 2011: 472). Knox (1994: 8) describes the process of urban densification as an entity that results in essential changes in the character of the urban system. In addition, these change patterns are witnessed in the social ecology, land use as well as the built environment. In order to clearly understand urbanization and interdependent processes that are associated with urbanisation, Knox (1994) has developed an urban framework for the study of urban geography in figure 6.

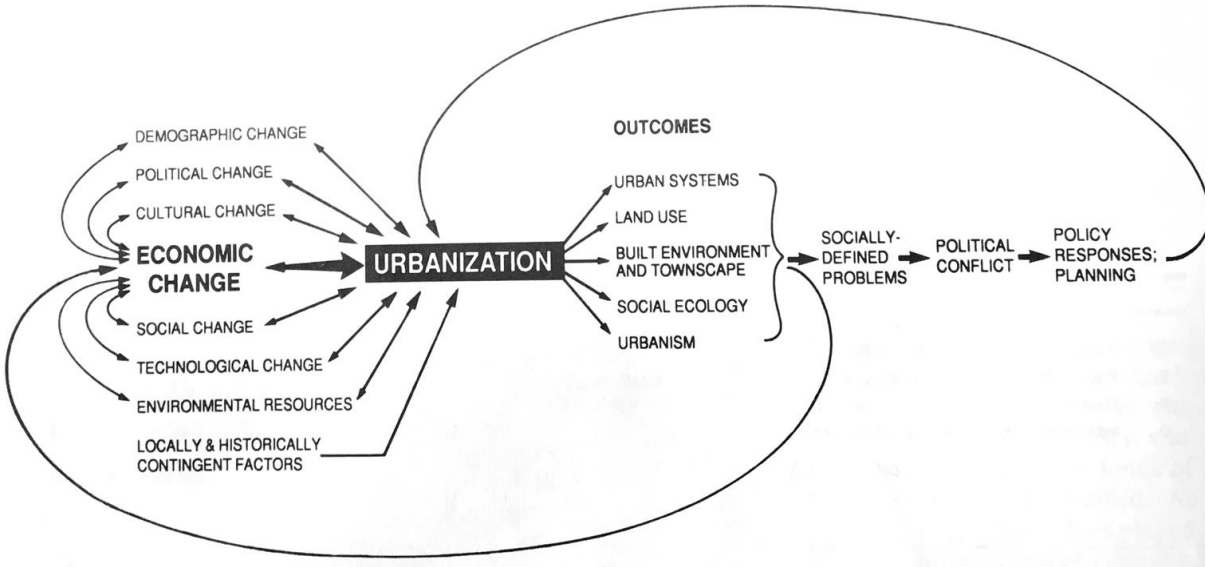


Figure 2.6 Showing a framework for the study of an urban geography (Source: Knox, (1994)

To further explain the urban geography framework, Knox (1994) states that the core process that drives and shapes urbanisation is economic change. In addition, Knox (1994) describes economic change as the evolution of capitalism which descends from the

industrial revolution in the late eighteenth century. There are three forms of capitalism that can be traced in the evolution of urbanisation, there is the competitive capitalism, which was the first type to be introduced in societies from the 1700s till the end of the nineteenth century. Other types of capitalism strategies that emerged after the competitive capitalism was, the organised capitalism as well as the disorganised capitalism. Knox (1994) further asserts that all the three types of capitalism strategies played an essential role in the evolution of urbanisation. Each new phase of capitalism influenced changes in what was produced and the way the items were produced as well as the location of the items that were produced. '*These changes called for new kinds of cities, while existing cities had to be modified*' (Knox, 1994: 10).

Alongside economic change, technology systems were introduced to not only give shape or direction to urbanisation but also to control and pace urbanisation. According to figure 6, Knox (1994) explains the process of demography as being interdependent to urbanisation in a sense that '*cities are a product of their people and the character of urbanisation is shaped to a significant degree by the size, composition and the rate of change of the urban population*'. (Knox, 1994: 14). Conditions that cities present influences the urban population rates, for an example, cities with slums and other unfavourable conditions experience higher death rates whereby cities with good amenities attract a number of immigrants. A crucial aspect of the influence of political change on urbanisation is presented by broad ideological shifts that occur from time to time. Urbanisation also indirectly affects political change through people's perceptions of the problems presented by dimensions of urban character change, since the individual's perceptions inform and shape issues that are contested in the political platforms. Culturally, urbanisation has contributed through the progression of youth subcultures that continuously thrived in urban settings. An example of social change that is induced by urbanisation dates back from 30 years ago, whereby there was a change in people's behaviour towards racial minorities which then affected educational achievements, occupational compositions and urban residential patterns.

2.5 Social life in Cities

'*City spaces are most often depicted as arenas of conflict and incubators of loneliness, isolation and deviance'* (Knox, 1994: 266). However, the relationship between urban space and urban society can be simply defined as a '*continuous socio-spatial dialectic*' in which one occurrence reshapes the other (Knox, 1994: 267). Rural society life is perceived as an entity that is stable and portrays characteristics of cohesiveness amongst neighborhood individuals whereas, in the urban setting, life is portrayed as volatile and individualistic. In addition, rural society is correlated to tradition and familiarity whereas urban settings are associated with novelty and variety. Social differentiation in cities are outcomes of divergences of lifestyles, values and aspirations, thus weakening social harmony and cohesion and threatening to disrupt social order (Knox, 1994: 267).

The city's size and density is a contributing factor to personal and social distress experienced by individuals residing in urban environments. Wirth (1938) elaborates this phenomenon by outlining that the combined influence of increased size, density and heterogeneity of urban populations would affect individual behavior in a sense that due to urbanization, urban residents are constrained to survive with a greater number and exposed to a variety of physical and social stimuli. As a result, individuals tend to become more withdrawn and emotionally buffered to the point whereby they are naturally unresponsive, abrupt and impersonal when dealing with other beings they co-exist with. Moreover, the general loosening of interpersonal bonds tends to leave people unrestrained, thus resulting in the formation of ego-centered and unconventional behaviors. These individuals are also left unsupported in times of crisis, which exposes them to experience neurosis, alcoholism, suicide or other forms of deviant behavior. Urbanism results in a loosening of the social fabric in urban environments, therefore '*allowing the ego-centered and unconventional behavior to flourish and allowing personal crises to escalate to social problems'* (Wirth, 1938).

The Wirthian theory of social change in urban environments highlights the essence of situations and settings where city life or the life of certain individuals in certain parts of the

city breaks the bounds of convention and normality to the disadvantage of the urban society as a whole. This aspect can be dissected in multiple ways: such as the idea of psychological overload, which is an outcome of exposure to complex or uncommon environments, furthermore, this phenomenon has been investigated by environmental psychologists. Toffler (1971) expands on this phenomenon in his writings and refers to it as 'future shock', whereby the term future shock can be directly translated to the needs for individuals in the modern urban environment to '*scoop up and process*' layers of information. Scientific investigations have proven that people's response to overstimulation has shown several different strategies which results in common behavioural response. An example of this is withdrawal from the '*perception of the most unwelcome aspect of reality*' (Toffler, 1971). In a worst-case scenario, it can result in a construction of an imaginary world that becomes a substitute for the real world. While in existence to the mythological world, the eccentric or deviant behaviour may be deemed as '*normal*', while surrounding individuals will easily interpret the person as one of the city's casts of mentally unstable individuals. This scenario is linked to a more frequent strategy of managing several distinct roles or identities simultaneously.

Wirth (1938) supports this statement by stating that this strategy is an outcome of urbanism in a sense that individuals experiencing such, are able to present a geological and functional separation of audiences to which different roles are being portrayed, such as a different role amongst family members, a different role amongst neighbors, colleagues etc. Therefore, individuals are able to present different social behaviors in different social contexts. The anonymity sustained by the ability to switch from one role to another does not only help to relieve strains of urban life, but it also promotes deviant and criminal behavior. In addition, the strain of having to sustain various and contrasting roles over a prolonged span of time may become overwhelming to some individuals, thus leading to mental illness or deviant social behavior (Wirth, 1938).

2.6 Urbanisation and Human Mental Change Trends

Just as the human body fails under strain of environmental overstimulation, the mind and its decision processes conduct itself in an unsteady manner when faced with overload. An example of a phenomenon that is induced by environmental overstimulation is '*confusional breakdown'* as referred to by (Toffler, 1971: 177). In addition, Toffler (1971) asserts that signs of confusional breakdown may lead individuals to resort to drug use and causes mysticism, undirected violence etc. These forms of social irrationality may well represent the depreciation of an individual's decision-making under conditions of environmental overstimulation. Another result of overstimulation is the culture shock, which is described by the psychologist Sven Lundstedt as a '*form of personality maladjustment which is a reaction to temporary unsuccessful attempt to adjust to new surroundings and new people*' (Toffler, 1971: 177).

Environmental overstimulation can occur at three different levels, such as the sensory, the cognitive as well as the decisional. In addition, the easiest to comprehend out of all three types is the sensory level (Toffler, 1971). The sensory phenomenon of overstimulation is referred to as the 'bombardment of senses' (Toffler, 1971: 179). An individual's ability to survive sensory input is dependent upon an individual's physiological structure. Furthermore, the nature of an individual's sense organs and the speed at which the impulses flow through the individual's neurological system set biological bounds on the quantity of sensory data an orgasm can process. In addition, when the speed of signal transmission was examined, results proved that there is a mutual relationship between movement and mutative levels. The limitations of the sense organs and nervous system mean that many environmental events occur at rates that are too rapid for human beings to follow. Moreover, Toffler (1971) argues that when the sensory signals that reach human beings are regular and receptive, the sampling process yields an accurate representation of reality, however, when the signals are highly distorted or when they are unpredictable, the accuracy of an individual's imagination is then reduced therefore resulting to a distorted image of reality. This phenomenon perfectly explains why individuals suffer from confusion, a blurring line between reality and illusion when they experience sensory overstimulation.

Another phenomenon that Toffler (1971: 180) expands on is a reaction stimulated by cognitive overstimulation. This reaction can be referred to as information overload, which tempers with the ability of thinking in human beings. In addition, Toffler (1971) argues that while some human responses to novelty are involuntary, other individuals are confronted by conscious thought and this depends on an individual's ability to manipulate, absorb, evaluate and retain information, meaning that rational behaviour is dependent on a continuous flow of data from the environment. '*sanity hinges on man's ability to predict his immediate personal future based on the information fed by the environment into an individual*' (Toffler, 1971: 180). When an individual is submerged into a fast and irregular changing situation or a context loaded with novelty, an individual is deemed unfit to make reasonably correct assessment on which rational behaviour is dependant, meaning that the more rapidly changing the environment is, the more information an individual need to process in order to make effective or rational decisions.

Moreover, Toffler (1971) argues that as much as there are limits on how much sensory input a body can respond to, there are also constraints on the body's ability to process information. G Miller, director of the Mental Health Research Institute at the University of Michigan states that '*glutting a person with more information than that individual can process may lead to disturbance'*. In addition, Miller suggests that information overload may lead to various forms of mental illnesses. Furthermore, Miller suggests that the breakdown of normal human performance under heavy information overloads may be closely related to psychopathology (Toffler, 1971). A combination of the previously mentioned environmental overstimulation phenomena is referred to as future shock. According to Toffler (1971), this occurrence takes place when an individual is forced to operate above his adaptive range.

2.7 Conclusion

In this chapter, it was clearly highlighted that the concept of urbanisation is a multidimensional sphere that is driven by multiple interdependent processes which influence individuals to experience plenty of changes. '*The city's sheer size and density leads to personal and social stress*' (Knox 1994). In modern society there is often the perception that urbanisation trends in African cities were traced after the rise of the colonial era, however, in this chapter, there was a discovery that urbanisation in African cities was recognised long before Africa was dissected into colonial chambers and it can be traced far back to the city of Egypt. Urbanisation in the African context is shaped by urban informality which should be considered as an aspect of an urban context rather than being secluded since it defines the African city. Moreover, in response to the mental change patterns that are discussed in this chapter, in an urban setting there should be an exploration of initiatives that can rescue individuals from congestive urban environments, thus promoting human well-being and healthy urban environments.

CHAPTER THREE

URBAN REGENERATION AS A BASIS FOR CONGESTIVE URBAN ENVIRONMENTS

3.1 Introduction

In the previous chapter it was highlighted how urbanisation is a threat to human well-being and mental health, therefore in this chapter the focus will be shifted into exploring the phenomenon of urban regeneration as a catalyst for rescue from congestive urban environment as well as focusing on the aspect of nature and the properties it provides for health and psychological restoration. The term "nature" in this chapter will be explored through the lens of physical, mental and social well-being, not through the lens of an absence of disease.

Human wellbeing is dependent on the environment in which man resides in, therefore with the predictions of urbanisation trends that Durban is anticipated to experience in the future, it is essential to plan urban environments in a manner that allows for human restoration. '*With urban densification, we may increase environmental demands, however, there is a decrease in opportunities of restoration as green spaces are lost to people*' (Hartig et al, (2014). Without a clear understanding of the impact of the environmental stresses that the human body and mind has to adapt to, the environmental changes that are induced by the rapid rate of urbanisation are compelling individuals to adapt to a new life pace in order to confront and survive uncommon situations and master the situations in shorter time intervals. In addition, individuals are therefore forced to process information at a far more rapid pace than was necessary for slow evolving societies.'*Organic life' has been progressing on the planet for billions of years, however in the contemporary period that man has expanded in sufficient numbers and acquired enough power to become one of the 'potentially most dangerous organisms that the planet has ever hosted*', it became vivid that man's uncontrolled and unconscious misuse of the earth's resources may render the planet uninhabitable (McHale, 1970: 1). In addition, McHale (1970) argues that it is therefore crucial that at this stage in human affairs, man turns into ecology as a guide towards rethinking man's overall relationship with the environment that man co-exist with.

3.2 The Definition and Evolution of Urban Regeneration

Towns and cities are forever evolving over time, and this process of change can be perceived as inescapable and beneficial at the same time. Urban areas are inescapable in a sense that the operations of political, social and economic systems constantly produce new demands and present unprocessed opportunities for civic improvement and economic progress. Moreover, this process of urban change is beneficial in a sense that the existence of the forces of change gives rise to opportunities which improve the condition of the urban environments. '*It is the desire to positively respond to such influences that have caused politicians, landowners, developers, planners and citizens to search for an answer to the question of how to best maintain the conditions of towns and cities*' (Roberts et al, 2000: 11).

According to Roberts et al (2000), urban regeneration can be described as an outcome of the interplay between social, economic and environmental sources of influence and it is also seen as a response to the opportunities and challenges which are presented by urban degeneration in a particular place at a specific moment and time. '*Each urban challenge is likely to require the development and implementation of a specific response*' (Roberts et al, 2000: 9). In addition, the themes expanded upon about the phenomenon of urban regeneration include the relationship between physical conditions and social response and the continued need for the physical replacement of elements of the urban fabric. Furthermore, Roberts et al, (2000) argue that urban regeneration goes beyond the aims, achievements and aspirations of urban renewal, and can be described as a system of necessarily physical change. The urban regeneration practice denotes that any approach to solving issues encountered in urban spheres should be inclusive of longer-term and more strategic initiatives. However, it should be highlighted that urban regeneration is different from urban renewal, urban rehabilitation and urban redevelopment since urban renewal aims to achieve mainly physical change, urban rehabilitation fails to describe the method of actions and urban redevelopment has a general mission and lacks a well-defined purpose. (Roberts et al, 2000).

Figure 3.1 illustrating the before image on the left and after results on the right hand side, of the Bilbao waterfront regeneration (Source: http://www.elmundo.es/elmundo/2012/11/18/paisvasco/1353239932.html)

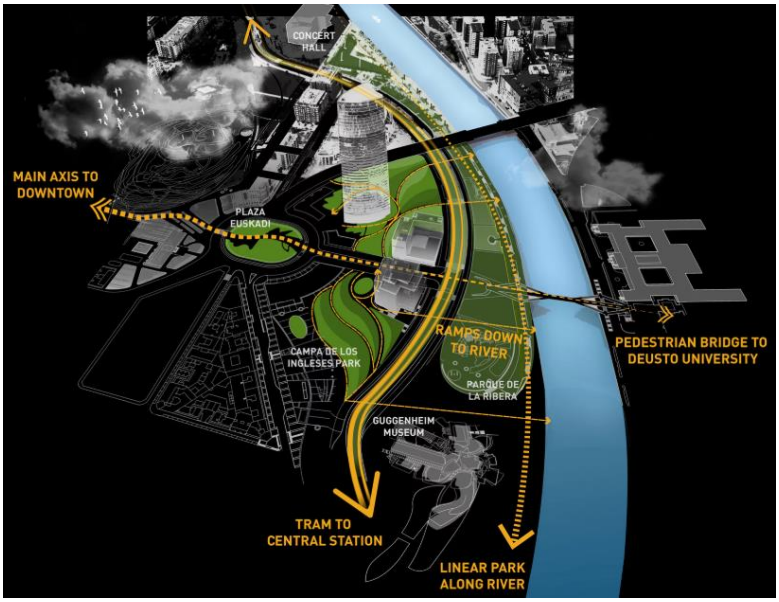


Figure 3.2 showing the Bilbao waterfront regeneration strategy (Source: https://architizer.com/projects/bilbao-waterfront-master-plan-and-urban-design/media/1234691/)

Public health reasons and an ambition to advance the declined urban living conditions led to the exploration of the practice of urban regeneration. The dialogues about urban regeneration started in the 1950s where older areas of towns were reconstructed and extended based on master plans for suburban areas. The focus during this era was shifted into reconstruction, replacement and removal of the physical problems of the past (Roberts et al, 2000). A pilot model of regeneration initiatives previously mentioned was experimented in the city of Baltimore, in Maryland with the Baltimore plan in 1953. Furthermore, the 1960s portrayed a continuation of the 1950s regeneration plans however in the 1960s they were focusing more on the idea of peripheral growth and there was a slight attempt of rehabilitating the existing instead of opting for a complete replacement. During the 1970s as individuals were settling within the inner city, this resulted to an expansion of urban strategies such as attempts to ensure coordination between the disconnected economic, social and physical attributes of the previous era's urban regeneration policy.

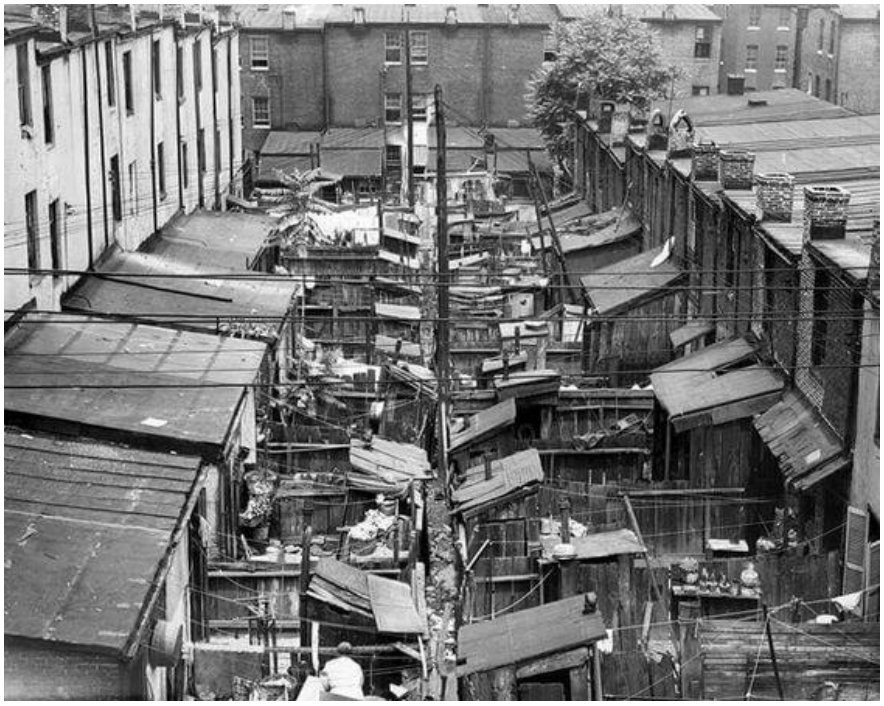


Figure 3.3 Showing the city of Baltimore before regeneration (Source: https://za.pinterest.com/)

Figure 3.4 Showing the city of Baltimore after the Baltimore plan regeneration (Source: https://www.youtube.com/watch?v=-52MmEdIqOU)

Initiatives of the 1970 era policy were transferred to the 1980s, however improvements and additions were introduced. In addition, Roberts et al (2000) argue that during the 1980s there was a drift from the perception that the central state should furnish all the resources required in order to support policy interventions. '*This new policy stance was matched by a greater emphasis on the role of partnership*' (Roberts et al, 2000: 16). Further alterations of form and operation tactics were imposed into the urban regeneration policy around the 1990s since there was a discovery of new issues and challenges. As argued by Roberts et al (2000), the contemporary urban regeneration policy direction is the desire to work in correspondence with the environmental objectives of sustainable development. Although this initiative is not reflected on what Roberts et al, (2000) denote as urban regeneration, this is a vivid demonstration of how '*the inheritance of the past and the challenges of the present have helped to reshape urban regeneration, although the new challenge of environmentally sustainable development has not yet fully imposed its character on the*

overall functioning of urban areas, there is little doubt that it will dominate the theory and practice of urban regeneration and urban management in the future' (Roberts, 2000: 17).

Figure 3.5 denoting the environmentally sustainable development matrix (Source: http://edwardsdesigngroup.com/sustainable-development/)

3.3 Urban Regeneration: A Perspective on Future Change

In continuation to the evolution of urban regeneration, Roberts et al (2000: 10) state that whilst changes in the technical capability, economic opportunity, political awareness has been important issues in shaping the pace and scale of urban regeneration, a series of other individualistic issues have also influenced the function and the form of other urban areas. Furthermore, Roberts et al (2000: 10) argue that dialogues about the urban change from previous eras revolved around six main themes, which are:

1. The relationship between physical urban conditions, and the nature of political and social responsibility towards urban issues
2. The need to cater for housing, health and well-being in urban areas

3. The appeal of connecting social improvement with economic progress
4. The regulation of urban growth and the maintenance of urban shrinkage
5. The wavering purpose and nature of the urban policy
6. and an expanding consciousness of environmental issues.

However, this research will only dwell upon the expansion of the theme of the consciousness of the environmental issues and the need for health and wellbeing in urban areas. Platt et al (1994: 43) stress that the concern for urban health dates back to the nineteenth century through Benjamin Richardson's utopian plan for the healthy city which is entitled '*Hygeia'*. The vision was focused on the perception of cities with elements such as gymnasiums, public baths and swimming pools. Concerning the realisation of environmental issues Roberts et al., (2000: 15) denote that interests of dealing with the deterioration of the urban environment, atmospheric pollution and urban growth and other environmental consequences instigated by urbanisation expanded after the Rio Earth Summit of 1992 and '*urban regeneration has a major key role to play in promoting higher environmental standards and the better management of resources*'.

Principles in which Roberts et al (2000) expand on about urban regeneration highlights that urban regeneration should be based on an in-depth condition of the studied urban area and simultaneously adapted to the urban fabric, economic base, social structure and environmental condition of the urban area. The adaptation to the contextual background factors mentioned above should be achieved through the generation and the implementation of an integrated strategy that dwells upon the resolution of an issue in an organised manner. In addition, the strategies and implemented programmes should run parallel with the aims of sustainable development and the regeneration strategy should have clearly defined operational objectives. Furthermore, Roberts et al (2000) argue that urban regeneration should most importantly acknowledge the importance of catering for long-term management of the area of study. In conclusion, there should be a maximal inclusion of natural, economic, anthropoid activities and other resources including land and existing features of the built environment and should seek to allow for participation and co-

operation of stakeholders interested in the regeneration of the urban area such as local residents.

3.4 Man and the Ecological Environment

The term ecology is derived from the Greek words *oikonos* which can be directly translated to a house, and *logos* which means knowledge. The study of ecological systems can be described as one that involves large-scale regional systems as well as global interactions and relationships. Furthermore, McHale (1970) argues that ecology is about a web of intricate relationships that makes life possible on earth, '*which is why it touches upon and draws together and is affected by the whole spectrum of human activities*' (McHale, 1970: 4). To best describe man's co-existence with nature, a human ecology theory is used, this theory focuses on the overall study of man's relationship with planet earth. From the root of house-knowledge, there can be an assumption of 'the definition of applied human ecology as planetary housekeeping' (McHale, 1970: 1). In addition, McHale (1970) states that ecology generates a comprehensive view of human society, which proves that there are positively progressing implications compared to the socio-political ideas which have confronted traditional political and institutional arrangements. The ecology theory then suggests a conceptual value change from the typical study of plants and animal species to a shift of responsibility for preserving the planet as a living space (McHale, 1970: 2).

Kellert (2005) suggests that interaction with nature is essential for human's wellbeing in terms of physical as well as mental development but this phenomenon has been diminished in the modern society. In addition, Kellert (2005) elaborates that man's desire to connect to the natural surroundings manifests itself in the visual state of man's environment. In modern society, there is often a misled perception of the role played by the natural environment in people's physical and mental lives. While some individuals believe that '*the progress of civilization depends on subjugating and converting, if not conquering, the natural world'* (Kellert, 2005: 8). Other individuals believe that the diversity and health of the natural environment are essentially important to man's physical, mental as well as spiritual wellbeing, in a sense that the natural world is connected to the equality of man's

life. Nature continues to subconsciously dominate the forms, patterns and the language of people in their daily lives, from the materials individuals choose for construction, to the decorations individuals prefer, down to the recreational choices that men favor. Moreover, Kellert (2005) argues that even though it is evident that nature is connected to man, contemporary society still fails to recognize the importance of healthy and diverse natural systems in sustaining the quality of human life in urban areas.

In addition, Kellert (2005) stresses that degrading healthy connections to the natural world exhausts man's material moral capacity, this then leads to far fewer opportunities to experience the delightful contact with nature as an essential component of ordinary life, and through design initiatives, humans may restore the coordinated relationship with nature. Underlying to the concept of man co-existing with nature is the concept of biophilia, which involves man's deep-rooted affinity for the natural environment and this phenomenon is revealed in nine environmental values. '*Developing these nine values can foster physical capacity, material comfort, intellectual development, emotional maturation, creative ability, moral conviction, and spiritual meaning*' (Kellert, 2005: 9). A built environment design approach that Kellert (2005) expands on is the restorative environmental design, which encompasses the avoidance of excessively consuming energy resources, generating tons of waste and pollutants and alienating people from the natural environment. Professionals in the built environment must design the built environment to provide sufficient and satisfying contact between people and nature (Kellert, 2005: 10).

Contact with nature leads through different pathways to health and well-being, those pathways include air quality, physical activity, social connections as well as stress relief. In relation to the air quality, Hartig et al (2014) further explain that the contact with nature can result to air quality in a phenomenon whereby people go and retreat in parks because they associate parks with spaces that supply fresh air. With regards to physical activity, Hartig et al (2014) suggest that in a scenario where there are green spaces closer to residential areas that will automatically attract people in the neighbourhood to become more physically active over time which will then be beneficial to their health. In addition,

Hartig et al. (2014) argue that proximity to green spaces attract people to meet their neighbours, which will help re-enforce social relations, over time this will contribute to health and well-being. Further expanding on nature's ability for reducing stress in an urban environment, Hartig et al (2014) go on to elaborate that natural environments may shield people from stressful conditions they are exposed to in their daily lives and that people come out to natural environments because they value the experience of relaxing.

White et al (2013) state that cross-sectional evidence suggests that living closer to urban green spaces such as parks is correlated to lower mental distress. In addition, the World Health Organisation states that 'unipolar depressive disorders are now the leading cause of disability in middle and high-income countries and evidence shows that this rise may, in part, be associated with increasing urbanisation and detachment from the natural environment (White et al, 2013). This phenomenon is evident in the Netherlands, whereby self-reported mental distress and anxiety and depression rates are greater in areas with lower levels of green spaces such as public parks.

3.5 Greening the City: Urban Ecology

Comfortable and satisfying living conditions in urban environments are induced by the exposure to greenery filled urban areas therefore, '*greenery filled public areas that are near to residences and easy to walk in should be further emphasised in the development and redevelopment of densely populated areas*' (Takano et al, 2002: 913-917). The greening of cities is a global approach and a newly developed concept which is inclusive of regionally distinctive and sometimes conflicting visions of urban form. Biophysically, the term 'green' can be translated to 'the nurturing of the local flora and fauna' (Gordon, 1990). However, the translation of a 'green city' should explore beyond the nurturing of the plants and animal species and include ideologies of how the urban fabric might be ecologically structured. In addition, the concept combines the notions of urbanism and nature. Furthermore, merging urbanism and nature provides beings with an opportunity to produce cities that are healthy, therefore energising and reinforcing places to dwell in (Gordon, 1990).

The green city concept adapts environmental perspectives in an urban setting, moreover, '*the green city embodies the need for environmental ideals that are firmly rooted in pragmatic reality*' (Gordon, 1990: 16). However, the greening of cities cannot only be achieved through urban planning strategies, it suggests an expression of urban functions in a sustainable development approach. In addition, the phenomenon of the greening of cities in a Third world country encompasses a reconstruction process that dwells beyond pollution measures, conservation of green areas and the reforestation of the surrounding urban environment. Furthermore, the phenomenon explores beyond better transportation systems, public services, waste recycling initiatives to better the of consumption resources and energy in the urban environment (Gordon, 1990: 55).

Figure 3.6 illustrating the city of Bengaluru, in India which is an example of a green city. (Source: https://energyinfrapost.com/bengaluru-leads-green-city-survey/)

Furthermore, Gordon (1990) states that urban health has traditionally been perceived as an entity that is linked to urban nature. The earliest form of environmental realisation in cities can be traced to Ebenezer Howard's Garden city concept, '*Howard looked at living conditions of the poor in late-nineteenth-century London, and justifiably did not like what*

he smelled, saw or heard, he hated the city and thought it was an outright evil and an affront to nature' (Jacobs, 1961: 17). In 1898 Howard, therefore, proposed to inhibit the growth of London by repopulating the countryside and developing a new breed of towns called the '*Garden city*'. The vision for the Garden city was for it to comprise of a *belt of agriculture* and also solve problems the city was facing.

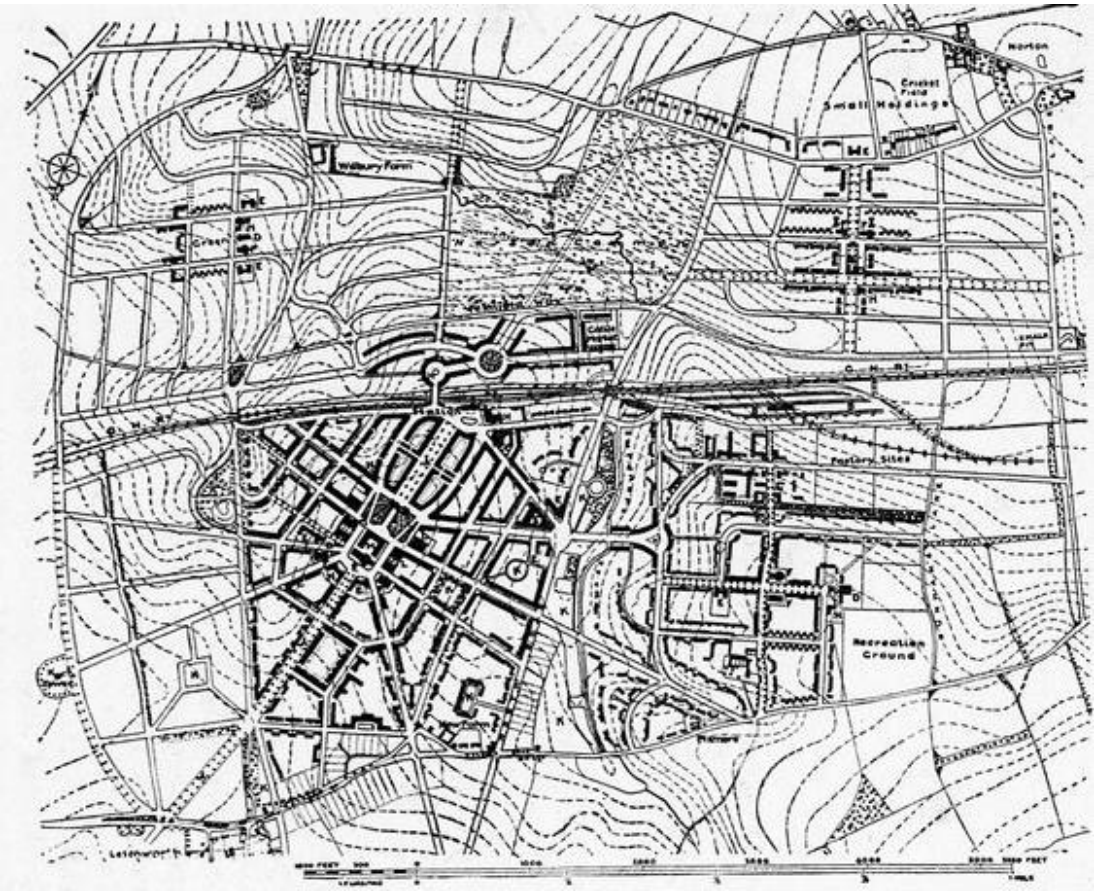


Figure 3.7 illustrating the original plan of the Letchworth Garden City, England submitted by Unwin and Parker in 1904, in the practice of Mr. Ebenezer Howard's garden city concept. (Source: https://stavbaweb.dumabyt.cz/)

Figure 3.8 illustrating the current situation of the Letchworth Garden City. (Source: https://www.cnu.org/publicsquare/2017/01/10/garden-towns-need-some-garden-city-thinking-succeed)

3.6 Interweaving the Town and the Countryside: The Garden City

In continuation to the previous paragraph about the greening of cities, there is a concept of a garden city which is based on a town that is designed to maximise on healthy living and a platform that allows for social activities to take place. Moreover, '*the garden city is a more integrated foundation for an effective urban life'* (Howard et al, 1965: 26-35). Through his findings, Howard was against the idea of overpopulated cities which contested social as well as physical relations. Furthermore, Howard perceived cities as arenas which attracted people. '*Each city may be regarded as a magnet, each person a needle; and so viewed, it is at once seen that nothing short of the discovery method for constructing magnets of yet greater power than cities possess can be effective for redistributing the population in a spontaneous and healthy manner'* (Howard et al, 1965: 44-45). In attempts of maintaining an active town life which embodied the '*beauty and delights of the country',* Howard proposed for a new 'magnet', whereby the town and county were anticipated to be

merged, and *'out of this joyous union will spring a new hope, a new life, a new civilization (*Howard et al, 1965: 48).

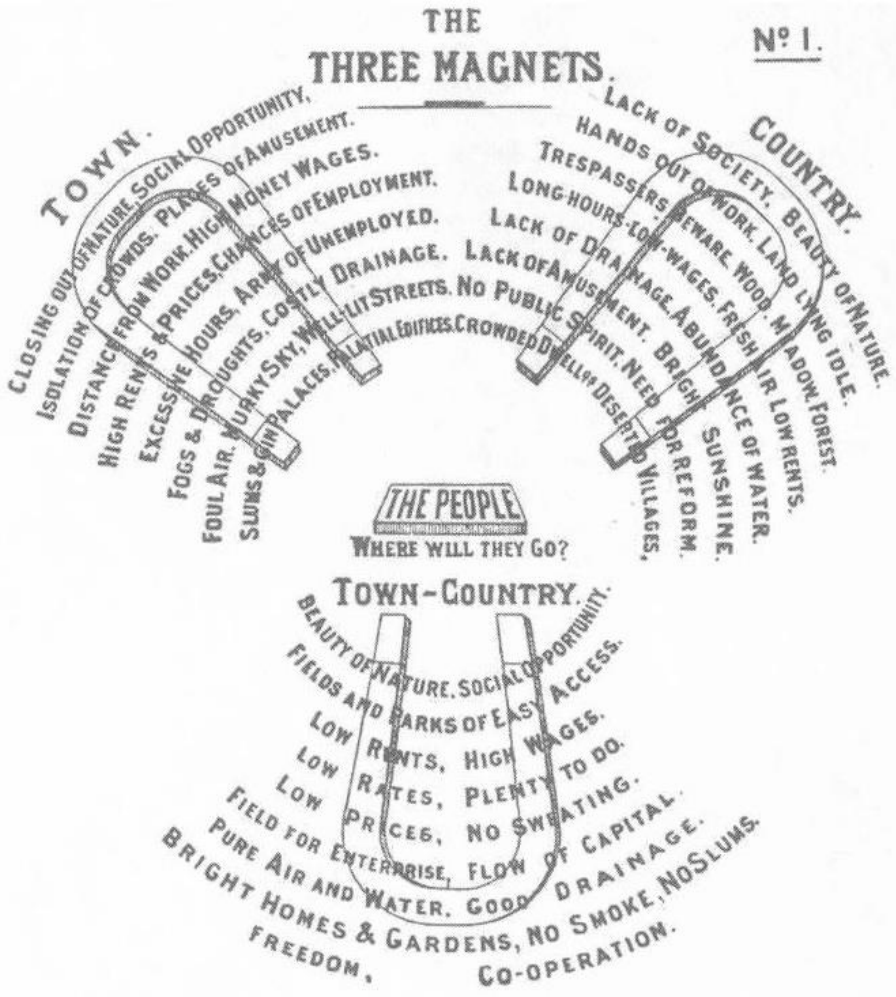


Figure 3.9 illustrating the three different magnets that Howard claims attract people (Source: Howard et al, 1965: 46)

To further stress on the idea of a town-country which was anticipated to better the social relations of urban dwellers than conditions experienced in an overcrowded urban setting and also favour dwellers with direct contact with nature, Howard proposed a garden city. The proposal of the garden city was anticipated '*to be built near the centre of the 2428 hectares, covers an area of 405 hectares, or a sixth part of the 2428 hectares, and might be of circular form, 1,240 yards (or nearly three-quarters of a mile) from centre to circumference'* (Howard et al, 1965: 51).

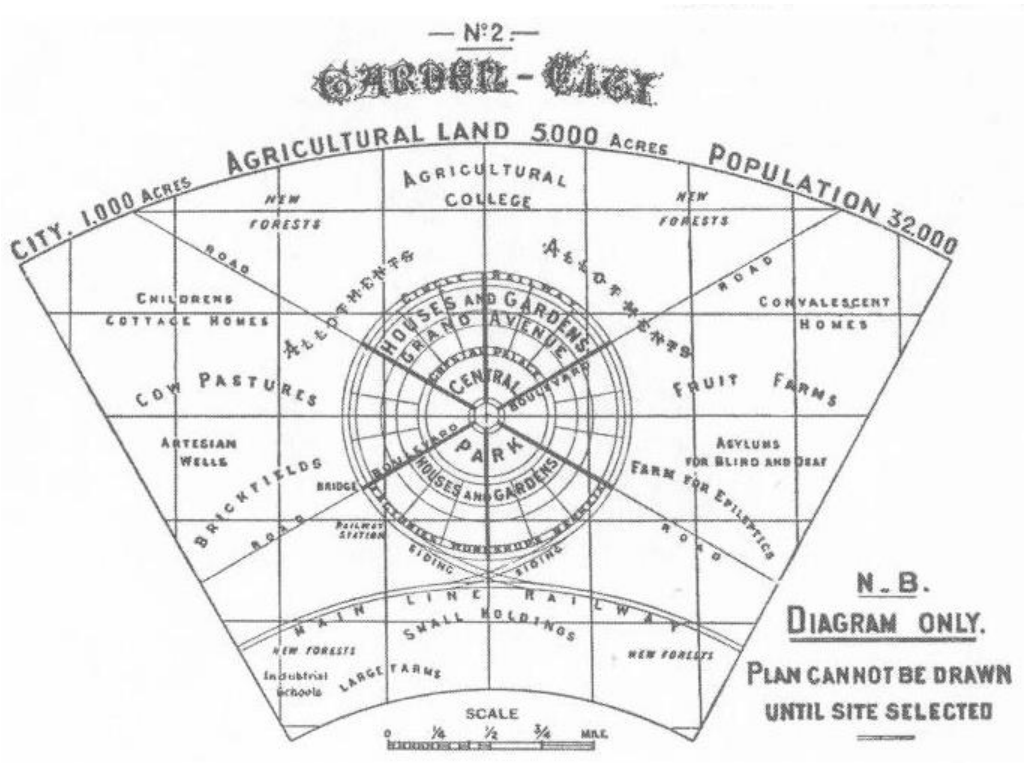


Figure 3.10 denoting a first conceptual diagram of a garden city (Source: Howard et al, 1965: 52)

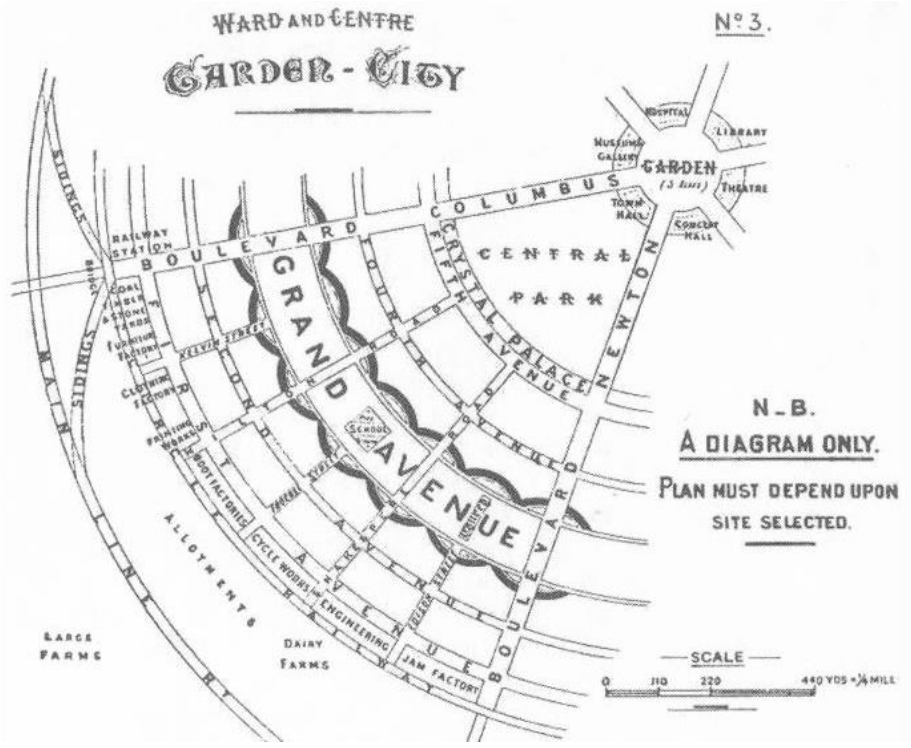


Figure 3.11 illustrating a section or ward of the town. (Source: Howard et al, 1965: 523)

Shortly after the successful launch of the town of Letchworth Garden, the garden city concept was restated in 1918 and the second garden city of Welwyn was established a year later. The estate comprised of 971 hectares of land. The dominant subjects that the second garden city of Welwyn desired to tackle were still over-crowding, human contact with nature as well as reinforcing social relations (Howard et al, 1965). A distinctive feature of the town plan is the central park-way which connects the town centre with an adjacent village. The parkway is located parallel to two roads on either side and it will dwell upon the concept of urban nature, which will be communicated through vegetation, laid down tennis court, bowling playgrounds etc (Reiss, 1920: 181).

Figure 3.12 illustrating the park-way at Welwyn garden city (Source: http://www.whtimes.co.uk/)

Figure 3.13 denoting the housing layout of the Welwyn garden city which has the backyards of the dwelling facing each other to reinforce social relations (Source: http://stock.jasonhawkes.com/)

3.7 Conclusion

'*Many people experience nature as an environment where they can rest and recover from daily stress. In the hectic society in which we live in, there is a growing need for nature as a source of relaxation and recreation, but the enjoyment of nature is not obvious anymore. Urban areas have recently experienced a decline in the quality and quantity of their green space*' (Mass et al 2006: 587). This chapter sums up, how the phenomenon of urbanization discussed in chapter one should take place in parallel with ecological imperatives in order to maintain favourable urban environments which are beneficial to the human health. In addition, through this chapter, it was highlighted that exposure to healthy urban natural environments (green spaces specifically) leads to human health. Moreover, Mass et al (2006: 587) support this statement by stating that, '*notions of the beneficial effects of nearby green space have persisted throughout history*'. Another essential ideology that is highlighted through this chapter is that the phenomenon of urban regeneration encompasses a principle of an investigation of issues that are specific to a particular setting instead of adopting preconceived urban ideas that originate and are well suited for Northern counties, in unfitting African settings.

CHAPTER FOUR

THE HUMAN-RESPONSIVE ARCHITECTURE AND ECOLOGICAL IMPERATIVES

4.1 Introduction

Recapitulating on the previously mentioned issues that are instigated by urban existence, it was highlighted that as individuals migrate from rural spaces to urban areas, the migration trails a higher degree of negative connotations. This, therefore, suggests that the phenomenon of urbanism should be indefinitely explored in parallel with ecological imperatives. Furthermore, since men's expanding and that of the planet is a challenging and prime issue, '*architecture will have to be viewed from an entirely new perspective, consistent with ecologic and societal values and equity*' (Crowther, 1992: 4). In addition, through conscious architectural design, the connection between man and ecology can be repaired and restored (Kellert, 2005: 1). The relationship between architecture and society has been constantly transforming since the beginning of the twentieth century. During ancient times, architecture was regulated by ecological forces which men perceived as being crucial to their survival. However, this relationship was disconnected during the technocratic era when architecture embodied societies captivation of the era of industry and technology. However, in the contemporary period, there is a need to alter design development to complement the contemporary era of technology and ecology (Wines et al, 2000: 8). This chapter aims to focus on further pinning down the symbiotic relationship between man, ecology and the built environment and it will also highlight factors that influence the human responsive architecture.

4.2 Ecological Influence Within the Built Environment

'*Architecture and ecology have developed conceptual disciplinary frameworks that reflect separate evolutions and therefore present multiple opportunities for substantive integration. Moreover, while both ecology and architecture provide distinct conceptual frameworks for the city, one for nature and one for culture, these frameworks need to be intersected to further an actionable ecology for cities and within architecture*'(McGrath, (2018: 148). Furthermore, the connection between the ecology and architecture within the city suggests a shift from professionals designing isolated buildings to a broader structural approach which considers the complex systems of cities. In addition, the concept of introducing ecology into built form parallels debates in a design approach that eliminates

the top-down practices of designing for people, to a rather inclusive bottom-up approach (McGrath, (2018: 148-150). The symbiosis between ecology and architecture influenced a design approach which can be referred to as eco-design.

Eco-design can be simply understood as a process whereby the human purpose is deliberately integrated with the greater patterns, flows and processes and physical depositions of the natural world. Moreover, the essential principle in ecological design is the integration between the built environment and the natural environment. Furthermore, in the present era, the criteria by which to judge successful design schemes '*have to be how seamlessly, benignly and inclusively the built environment integrates with the natural environment*' (Yeang, 2008: 22-25).

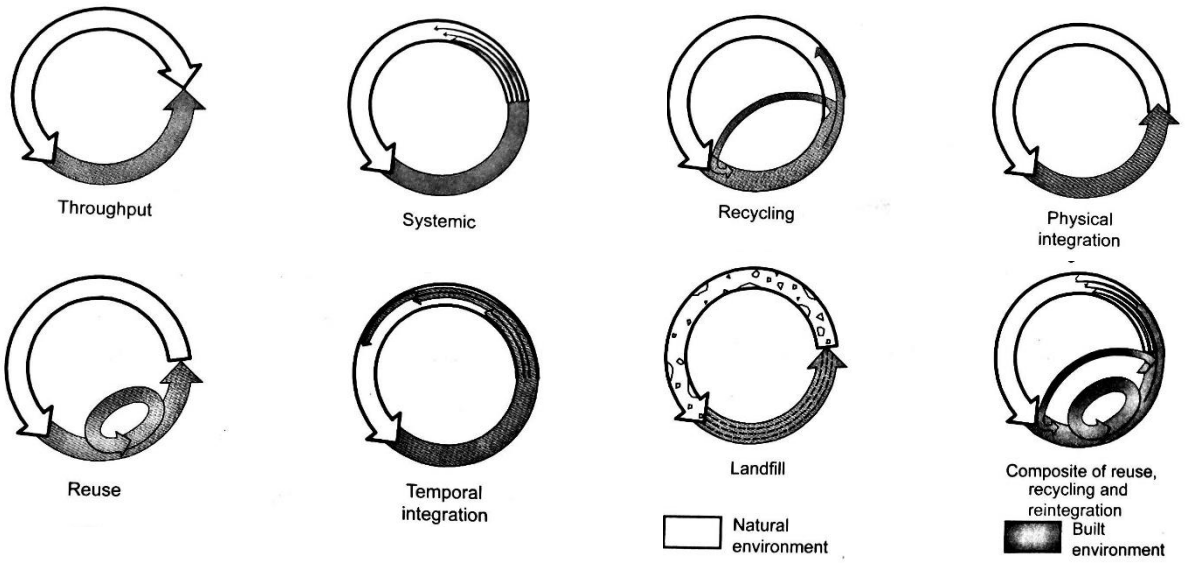


Figure 4.1 denoting the relationship between built form and the natural environment within eco-design processes. (Source: Yeang, 2008: 25)

Given the fact that in order to execute ecological integration, the designer should consider the primary production of materials, urban infrastructure, the flow and transportation of the city dwellers, the spatial implications of the built form as well as the consequences of the built system's emissions and end products of their reuse or recycling. This, therefore,

suggests that eco-design is a complex system which encompasses multiple linkages as well as multiple levels of effect that are interdependent (Yeang, 2008: 27). Moreover, Pickett et al (2008: 9) et al support Yeang (2008)'s statement by denoting that vegetation, buildings and surfaces are prime components of the urban structure. '*Plants contribute to the spatial structure of urban systems not only through their presence in parks and reserves but also throughout the entire urban mosaic'*. Therefore, there is a rising opportunity for designers to integrate the growing knowledge of the character of vegetation in cities. In addition, the integration of ecology into built form yields other benefits, other than the location of parks or urban greenery. Instead, it educates the greater public and policymakers about the ecological processes which are beneficial to settlements (Pickett et al, 2008: 11).

With the need of urbanising as people migrated to urban centers for better opportunities, the previously mentioned garden city approach seemed unfeasible in urban centers since it was focused more on catering for smaller densities. In addition, it is argued the concept of Howard's garden city eliminated the planner's social schemes. *'Understandably, architects have abandoned the flawed urban visions of the past century to focus on the new technologies of production and other more immediate issues'*. Moreover, this then influenced a new building typology of a vertical garden city to be explored. The success of the vertical garden city depends on an '*expansion of the public realm above ground into hitherto wholly private territory'*. The vertical garden building archetype is anticipated to encompass great sky gardens and towering atria. (Abel, 2010: 20).

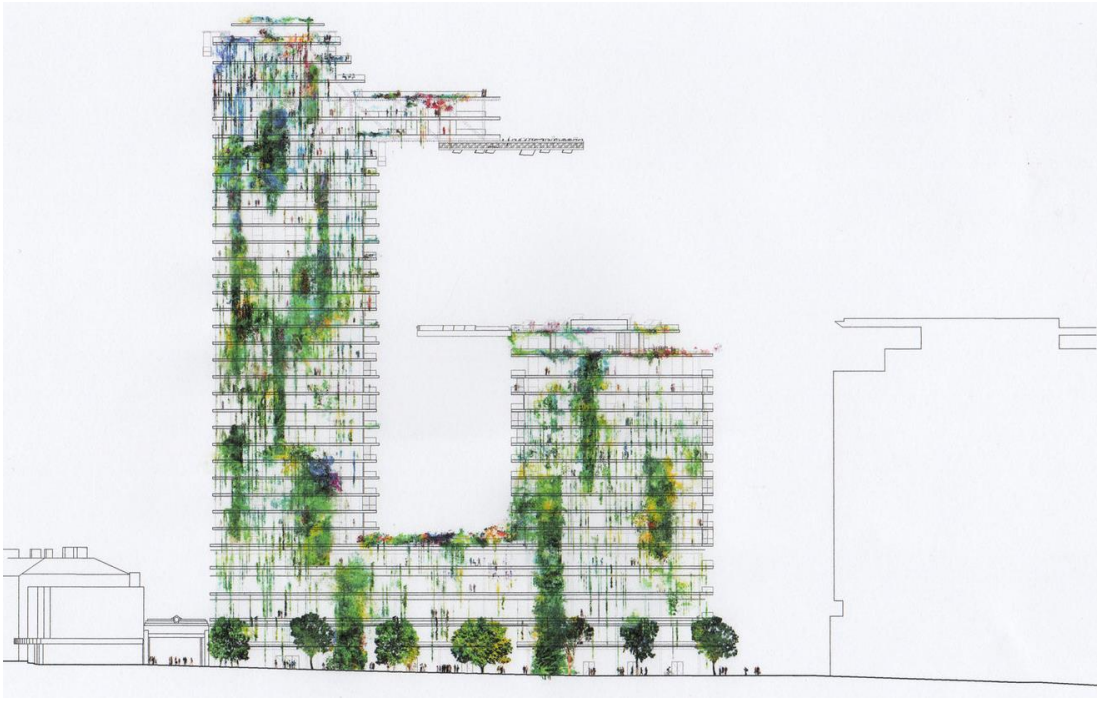


Figure 4.2 Elevation of the One central park building (Source: https://www.verticalgardenpatrickblanc.com)

Figure 4.3 illustrating the One Central Park in Sydney building which is an example of a vertical garden building. (Source: http://www.eco-business.com/)

Contrarily, Fazlic (2010: 38) denotes that even though the garden city approach is perceived as an influential architectural response in tackling urbanism-related issues. However, it trails negative connotations of social life exclusion amongst its residents. Furthermore, in the public domain, the connotations associated with the residential skyscraper are those of '*social breakdown and dystopia*'. In addition, within the context of Nottingham, the best vertical garden architectural schemes are the ones that acknowledge the local cultural inclinations. The city's central issue of food has proven to become social as well as environmental. Therefore, access to nature through farming has contrived the typical environmental planning to become a socially significant one as well. Moreover, interaction, cooperation and community now make a contribution towards the built form and the presumption that the skyscraper can grant positive social visions within the architectural sphere. Therefore, the vertical garden city approach becomes more than just an environmental concept, it is also a conspicuous model for an urban social agenda. (Fazlic, 2010: 38).

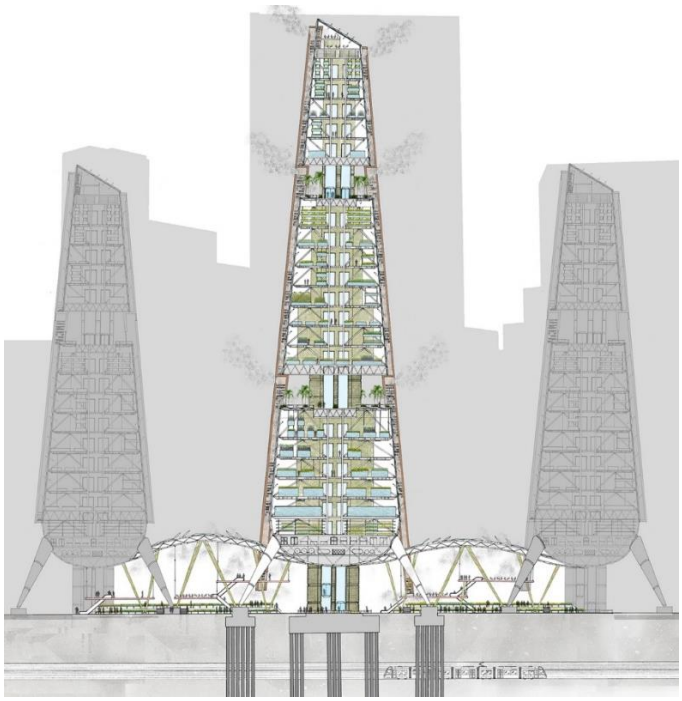


Figure 4.4 Building's section denoting an example of a conceptual scheme of a vertical garden building in Nottingham, encompassing a symbiosis of environmental and social planning approach. (Source: https://phys.org/)

Furthermore, the vertical garden city concept can be comprehended as an approach for maintaining the city's urban population. The garden city concept is ideal in maintaining urbanisation since in most scenarios majority of the city's land is used up. This concept, therefore, opens up prevailing space in urban environments by utilising the vertical space, both into the sky and underneath natural ground level. Therefore, substituting innumerable low-rise structures with fewer high-rise structures *'concentrates diverse urban functions for residences, work, commerce, education, leisure, culture, human interaction, and more'.* Moreover, building vertically allows for the execution of compact cities where residents reap the benefits of enhanced mobility and accessibility (Mori, 2015: 54).

4.3 Bosco Verticale: The First Application of the Vertical Garden Concept

4.3.1 Introduction and Background

The first example of a vertical garden building was launched in Milan as part of a wider renovation project which was led by Hines Italia. Milan's vertical garden building consists of two towers of 80 and 112 meters. The building design accommodates small, medium size and large plant species which are equivalent to an urban surface of up to 20 thousand square meters of forest (archdaily.com). The vertical forest concept in this scenario is a model for sustainable residential building. The aim of the project was to promote metropolitan reforestation which tends to positively contribute to the regeneration of the environment without limiting the expansion of the city. Furthermore, the vertical forest concept produces humidity, absorbs carbon dioxide and releases oxygen. The concept explores an innovative way of repopulating the city's urban environment (https://www.stefanoboeriarchitetti.net). '*The creation of a number of vertical forests in the city will be able to create a network of environmental corridors which will give life to the main parks in the city, bringing the green space of avenues and gardens and connecting various spaces of spontaneous vegetation growth' (*www.dezeen.com*)*. This precedent was carefully chosen to denote how the city of Italy, which is currently urbanised is tackling the issue of urbanisation and densification.

The Bosco verticale is located in Italy, Milan, in the new Porta Nuova Isola area which is an extended regeneration of a neglected area in Milan. Before the towers were constructed, the area was occupied by a partially utilised amusement park. In 2004 an urbanisation strategy was approved, this strategy led to the new Porta Nuova development to be dissected into three neighbourhoods, such as the Isola when the Bosco Verticale building is located, Porta Garibaldi as well as the Varesine (Giacomello, 2015: 13). The Porta Nuova district redevelopment is perceived as entity which will evolve the conditions of the existing neighbourhood to improve the quality of the public realm, pedestrian paths and the Porta Nuova gardens (https://divisare.com). The site is openly accessible to pedestrians since it is located in close proximity with the city centre (Giacomello, 2015).

Figure 4.5 illustrating the Porta Nuova district development (Source: https://divisare.com)

4.3.2 Design Processes, Technical and Structural Implications

The architect, Stefano Boeri denotes that the building design was anticipated to reflect a different idea of sustainability which aimed at introducing a new level of biodiversity into the city of Milan. To emphasise more on the concept of hybridizing nature with built form and the inclusivity of a variety of plant species, the execution of the concept included the building to be perceived as '*a medium for a new ecosystem to be realized through an*

exceptional variety of more than 90 plant species'. In achieving this, the idea was for the greenery to not only act as an aesthetic component to the building as expressed in Figure 37, but rather as a multifunctional composition of a variety of plant species. This was done to deliberately recreate a rich biodiversity within an artificial concrete structure. The shrubs, trees, herbs, flowers and berries that are introduced into the building design attract small insects which introduces a high concentration of natural life into the city of Milan (Giacomello, 2015: 14).

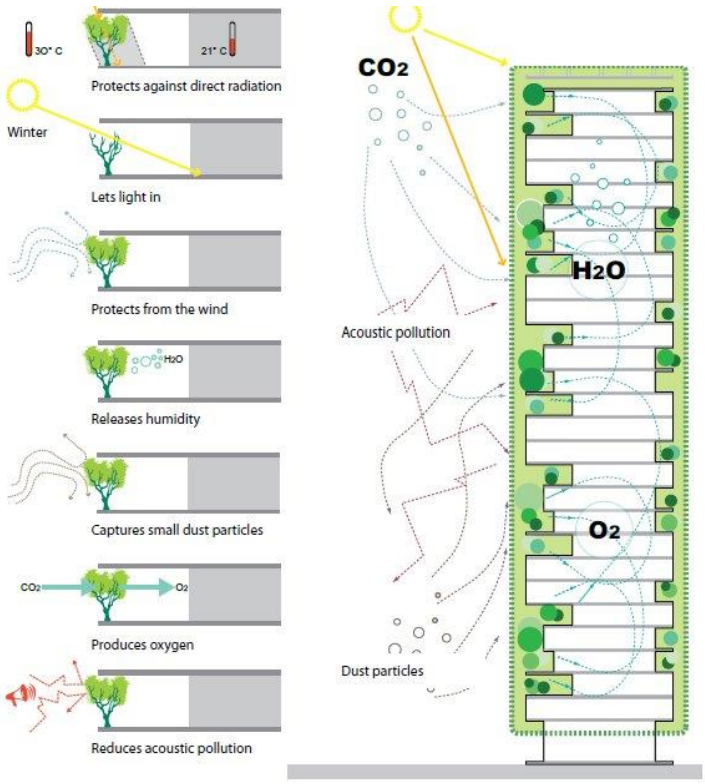


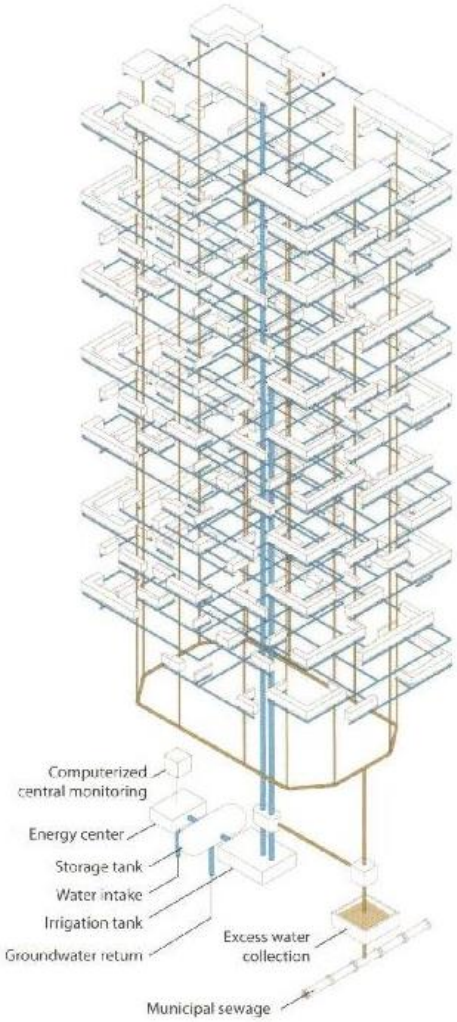
Figure 4.6 illustrating the multifunctional aspects that are provided by the plant species. (source: Giacomello, 2015: 14).

'*At Bosco Verticale, the implementation of biodiversity through the use of plants installed on a tower envelope is an innovative operation of a technical complexity that has never been attempted so far at such a scale'*. To ensure that the vertical forest concept was feasible there were complex technical solutions that were implemented into the design

process. The building is structurally constructed from concrete, the column members are constructed out of reinforced concrete whilst the floors are constructed out of post-tensioned concrete. The choice of concrete as a construction material was chosen to accommodate the gravity loads of the soil, trees and the dynamic loads of winds and its effect on the tree's stability as well as accommodating the cantilevering balconies of the building. In addition, beyond the structural integrity of the building, the scale and dimensions of the plants such as their maximum degree of elongation had to be considered. Moreover, the botanical tests that were run on the plant species included the height of the trunk, the surface area and the centre of gravity of the canopy as well as the selected species' air permeability. Furthermore, these tests were essential in ensuring a balance between the architectural and botanical requirements. In addition to the structural design was the restraining system which was incorporated into the design to prevent the trees from falling. This restraining system included a basic blind and a redundant blind. The basic blind was used to firmly secure grown trees from falling, whereas the redundant blind is a steel cage that is used to secure trees that are located on the windier side of the building (Giacomello, 2015: 15).

Figure 4.7 illustrating a section through the cantilevering balcony spaces (Source: https://www.archdaily.com)

Figure 4.8 illustrating the restraining system. On the left is the basic blind restraining system and on the right is the redundant blind system (Source: Giacomello, 2015)



Another technical component that is included in the building design that maintains and nourishes the plant species is an irrigation system. The irrigation system comprises of four main elements such as the principal network which sources water from underground water storage tanks, the second element is an electrically operated control group in the plant containers which receives water from the main supply source and regulates the water flow inside the plant container. The third is the humidity control system which comprises of a programmed mechanism which senses the humidity level to ensure that the programmed irrigation system is working effectively. The forth is a widespread distribution element in the plant container which is a drip line which distributes water on the surface of the entire plant (Giacomello, 2015: 17).

Figure 4.9 illustrating the irrigation system at Bosco verticale (Source: Giacomello, 2015)

4.3.3 Conclusion

It is vivid that in order for the vertical forest concept to be feasible, a lot of technical and structural resolution has to be considered and implemented into the building design. In conclusion critiques denote that Bosco verticale is '*the most intensive integration of plants ever applied to a tall buildings and today stands as a reference model for the next generation of living façades on tall buildings'*(Giacomello, 2015: 18).

4.4 Towards a Human Responsive Architecture

Living in an era where 'man as a species has a particularly acute need for stimuli from his surroundings and this biologically determined need has been one of the most important preconditions for the development of those features which man think of as artistically human (Mikellides, 1980: 101). In the discussion of human engagement in the execution of the built environment, four human-related elements should be considered, those elements include theory, practice, knowledge and experience (Yeang et al, 2011). There has been a prevailing approach within the architectural discipline of recording changes in the building design over different generations and in various climatic, geographical as well as socio-cultural contexts. In addition, Yeang et al (2011) further assert that such changes broadly focus on arts and human aspects. Mikellides (1980: 102) further stresses that in contemporary society men are unfortunately presented with circumstances where an affluence of living amongst compact, low and flexible arranged homes has been replaced by emptiness and small dimensions have conformed to huge, inhumane ratios. The opportunities of social contact have become scarce and social life has, therefore, become a '*watered-down experience*' (Mikellides, 1980: 102). In addition, these sterile environments encourage passiveness, which then deprives beings with chances of meeting new people. Moreover, Mikellides (1980: 102) denotes that being exposed to society is an integral part of stimulating human social development since it informs men about society and its members as well as neighbouring individuals.

Unité d'habitation Marseilles designed by Le Corbusier is a perfect example of an inhumane building. Le Corbusier opposed the horizontal garden city approach which

threatened to solve urban challenges by dismantling urbanity. Le Corbusier therefore, proposed a vertical approach as a solution for 'decongesting the city center while augmenting its density, to improve accessibility and mobility, and to increase the provision of parks and open spaces' (Marmot, 1981: 82). Le Corbusier perceived the skyscraper as an entity which was 'young, strong, virile and reflected the spirit of the times'. Comparable to the lofty cathedrals of the past which acknowledged faith in God and the power of the church. Le Corbusier nominated that a 'prismatic skyscraper of steel, concrete and glass could be a suitable product of the machine civilization, affirming faith in large-scale civilization' (Marmot, 1981: 83). However, due to the building's scale and brutal architecture nature, critiques labelled the machine of living as a building which manifested coldness, anonymity and poorly maximisation on daylight penetration in spaces and '*does not take into account the growth in everyday reality of different patterns of life*' (Dunnett, 1994: 101-102).

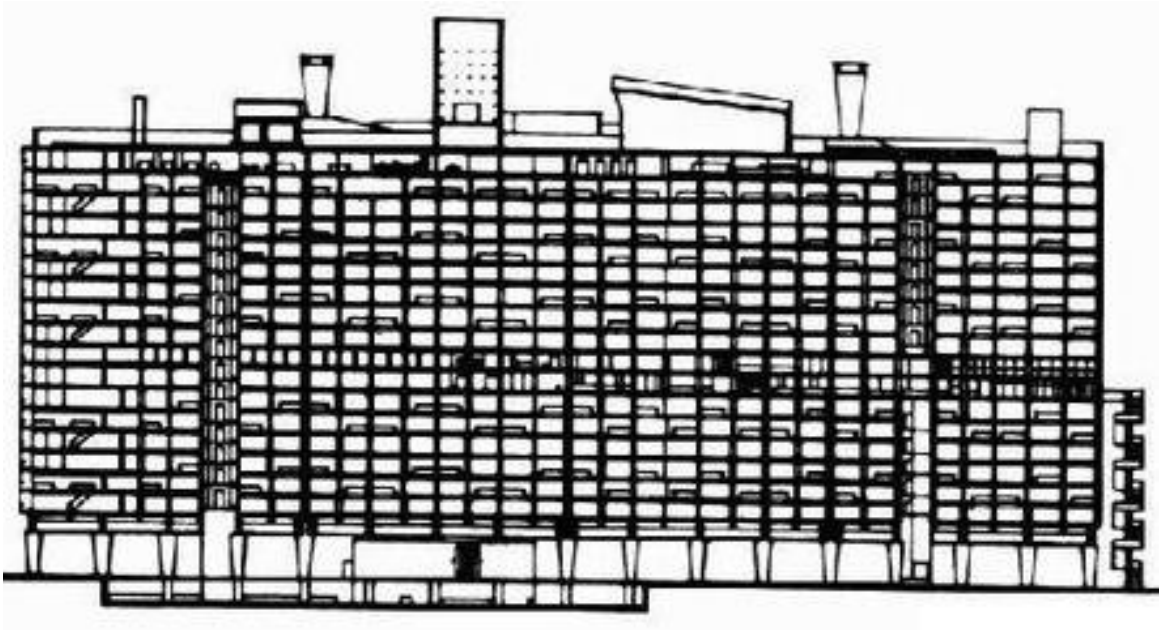


Figure 4.10 illustrating the section of the Unité d'habitation Marseilles (Source: http://www.greatbuildings.com)

Figure 4.11 illustrating the inhumane Unité d'habitation Marseilles designed by Le Corbusier (Source: http://nerei.org/the-ruins-of-the-future/)

Meagher (2015) denotes that in the subject of responsive architecture, every building has an ambiguous interpretation in a sense that it can be perceived through the lens of being static and passive and at the same time the very same building can be perceived as an entity that is a flexible, changeable body whose porousness and appearance are capable of unexpected mutation in response to the environment and its inhabitants. The static aspects of a building, in this case, include the location as well as the structure. Moreover, '*Architecture by necessity contains elements that are static and fixed and human survival depends on maintaining a constant core body temperature and human survival behaviour includes the construction of shelters that maintain a stable interior environment*'. One of a responsive building's function is to successfully maintain a balance between the static conditions (Meagher, 2015: 160).

Furthermore, in the event of human responsive architecture, the language of architecture can be translated as an analogy that bears a message. This can be allied to the field of semiotics. It is argued that there is a great difference between a symbol and a sign. A sign

can be perceived as a signal, whereas a symbol can be comprehended directly. '*It is the capacity to use symbols which separates man from other living beings*'. The conversion of experiences into symbols is therefore, an essential process of the human mind (Mikellides, 1980: 105). Goodman (1981: 46) asserts that for human responsive architecture to be viable, the buildings need to administer environments that, '*by engineering calculations, would be optimally suited to satisfy human needs as understood by the culture of utility'.* The buildings are anticipated to encompass*, 'the air of just the right temperature, the right amount of humidity, light without glare and of the right intensity, acoustical perfumes, soothing colours, soft music'.*

4.5 Colonial vs Post-Colonial Architecture in an African City

To fully comprehend the history of urbanism in Africa that was discussed on Chapter two as well as the subject of contextualising urban regeneration, it is fundamental to remark on the subject of colonialism and how it has played a role in shaping the architectural style within an African city. The rise of urbanism and colonial architecture in Africa was introduced by European colonization of Africa (Demissie, 2012: 2). In the subject of colonial architecture, Demissie (2012: 1) asserts that '*throughout the colonial frontiers, architecture was mobilised to create a cultural movement to create the grandeur of the empire, to police social and racial borders and preserve the identity of the European settler population*'. Moreover, as much as the traits of colonial architecture were focused on preserving the identity of European settlers, some architects did accentuate the necessity to incorporate native aesthetic elements in the design process of public buildings to subdue local resistance (Demissie, 2012: 1). A vivid example of this is expressed in the Castle of Good Hope whereby to express the architectural character of the natives, local stone was used as a building material for some components of the building.

Figure 4.12 denoting the Castle of Good Hope in Cape Town which was built between 1666 to 1679 under the Dutch colony, (Source: https://theculturetrip.com)

Whilst several historians perceive colonial architecture as the 'racial self-delusion of the empire', others have disregarded colonial architecture as 'stones of imperial memory obsessed with fantasy, grandeur and arrogance. In addition, fundamental questions that Africans need to ask themselves to comprehend the complexity between African urbanism and colonialism are, 'is colonial architecture and urbanism a forgotten convention and an absurd nostalgia planted in Africa?' As well as, 'in what ways did colonial African subjects negotiate, contested and rework the imposition of a particular culturally defined architectural and spatial order?' (Demissie, 2012). In addition, three instances are central to understanding the trajectory of urbanism and colonial architecture in Africa:

1. Long before colonial supremacies were in complete control of their territories, they inaugurated forces in several parts of the continent as strategic colonies to carry out wars against the Africans. In many scenarios, these forces later became towns for

commerce, defence and civic life. The architectural character of these forces comprised of the use of geometric lines (gridirons) and public great public squares.

Figure 4.13 illustrating the Durban city hall and the public square situated parallel the building (Source: http://marketplace.infrastructurephotos.com)

Within these colonial towns, colonial authorities utilised architectural techniques of incarceration to diminish the geographic mobility of Africans.

2. The colonial authorities controlled how architecture and planning technologies were arranged with some variations to fuel the forced labour for development in businesses. In addition, the role of architecture and planning was subordinated to serve the wider interest of racial domination.
3. From its initiation, colonialism pervaded all aspects of built form. For an example, the expansion of commerce influenced the growth of slums, the spread of disease, poverty and racial and social segregation. Colonial administrators, architects and doctors responded to the expansion of these cities by striving to shape the built environment in ways that could minimize diseases, overpopulation and resistance to the colonial sovereignty. This then influenced a system of boundaries (cordon sanitaire) and its

supporting architecture to be developed to distinguish the colonial towns from the native towns. Therefore walls, buffer zones and defensive architecture were explored in the planning of colonial cities to ensure control and surveillance over the African populations (Demissie, 2012: 2-3). An example of this phenomenon is expressed in the walled city of Tripoli, in Libia.

Figure 4.14 denoting the old colonial walled city of Tripoli (Source: http://www1.udel.edu)

On the subject of post-colonial architecture in African cities, it is argued that there are challenges of '*African identities focusing on contemporary African cities caught in the contradictory logistics of an imperial past and post-colonial predicaments*' (Demissie, 2007: 1). Moreover, African cities have transformed into platforms in which urbanites are reshaping urban environments which portray their own forms of urbanity derived from their historical circumstances. It is in these contemporary dense urban environments which embody colonial contradictions that urban Africans are introducing their local identities and connecting independent communities which were made fragile by the colonial regime (Demissie, 2007). After the demise of the colonial regime, there was a strong enlightenment on the relationship culture and architecture. Between the early 18th and 19th century architecture was perceived as an instrument for the production of cultural change. In the evolution of the post-colonial architectural discourses, shortly after the ruins of the

European empires architecture was viewed through the lens of socio-cultural products. Later during the 1980s, there was another shift, when theorists and architects began to perceive culture and architecture as an interconnected pair, whereby one positively affected the other (Djiar, 2009).

'An important question, therefore, emerges in the post-apartheid era as to how African identities and narratives should gain expression in architecture' (Noble, 2008: 74). Furthermore, in the subject of African urbanites in the contemporary post-colonial era residing in a context which still embodies the colonial architectural approach, a discourse of hybridity was explored by Noble in his writings. Noble (2008) asserts that the discourse of hybridity is a continuous process which was introduced shortly after colonialism and is anticipated to continue after it. In addition, Postcolonial hybridity can be simply described as the process in which the 'other denied knowledge' enter upon a dominant discourse and alienate the basis of its authority (Noble, 2008: 75). After the post-apartheid era, there were attempts to engage architectural design with the native cultural narratives and expressions. This is executed in the Mpumalanga Legislature Complex design whereby the main concept of the design was based on historical patterns of African governance and the local African identity. The leading architect of the building argued that the surrounding natural landscape choice, as well as the inclusion of the large dome which spans across the legislature assembly, resembles the African local identity.

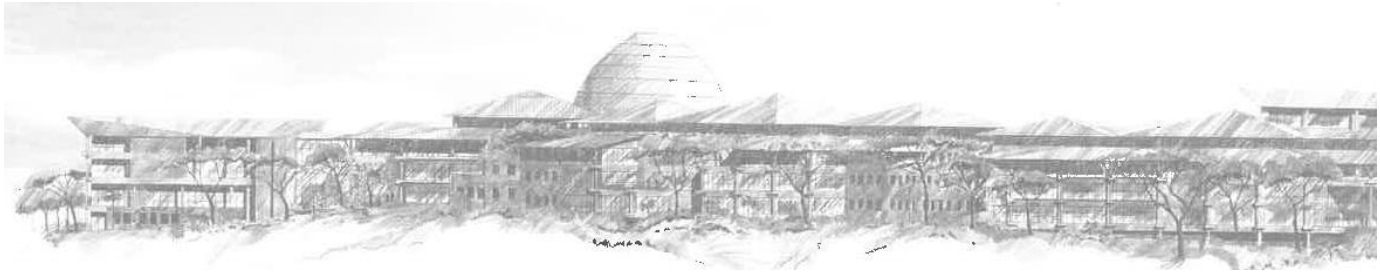


Figure 4.15 illustrating the elevation of the Mpumalanga Legislative Complex (Source: Malan et al, (2001). The Making of an African Building)

Figure 4.16 illustrating the Mpumalanga Legislature Complex (Source: https://www.alamy.com)

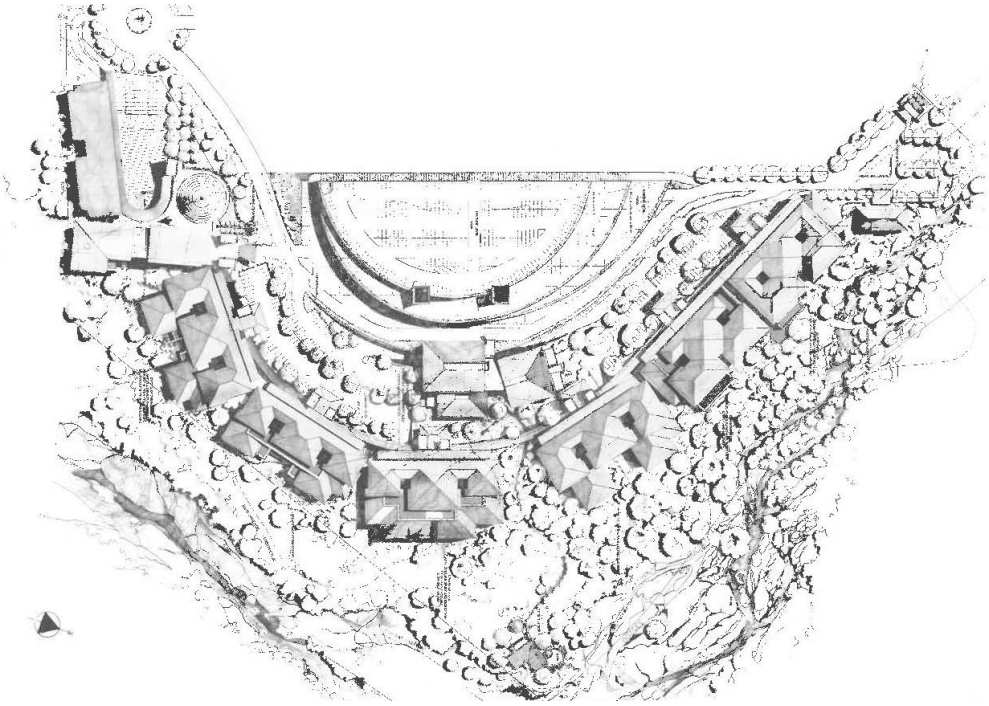


Figure 4.17 illustrating the site plan of the Mpumalanga Legislative Complex (Source: Malan et al, (2001). The Making of an African Building)

4.6 Adaptive Re-use in Architecture: An Urban Regeneration Strategy

In the contemporary era, regenerating and restoring existing buildings for continuous use has become an inventive and attractive occurrence within the architectural field. This phenomenon of repurposing existing buildings is referred to as adaptive re-use. The adaptive re-use phenomenon is executed in such a way that allows for the building to be the primary change with considerations of other secondary alterations such as orientation, circulation routes and spatial planning, should there be a need to alter such. Additions and alterations may be accommodated in the building design. Moreover, the altering of existing buildings to suit new functions is not a recent trend, it dates back from Renaissance period whereby classical monuments that were structurally stable have been salvaged to satisfy the demands of the new functions. This movement was passed on up until the French Revolution era whereby religious buildings were transformed for military functions (Brebbia, 2011: 155).

The adaptive reuse approach was established during the 19th century when the French architect, Eugène Emmanuel Viollet-le-Duc adopted the phenomenon of adaptive reuse as a strategy for preserving historical monuments. Furthermore, Viollet-le-Duc denoted that '*the best way to preserve a building is to find a use for it, and then to satisfy so well the needs dictated by that use that there will never be any further need to make any further changes in the building*'. Contrary to Viollet-le-Duc's argument, John Ruskin and his student William Morris believed that as it is impossible to bring the dead to life, it also seems unfeasible to restore anything that has ever been deemed as great in architecture. In addition, to support his argument, William Morris asserted that instead of restoring the building design, designers tend to prioritise on maintenance to ensure the preservation of historic buildings (Brebbia, 2011: 156).

On the other hand, Ingalls et al (2001) assert that the adaptive re-use movement shares similar goals with the historic preservation of old buildings. Both these occurrences present platforms which bridge the past, contemporary and future landscapes. Moreover, the desire to preserve historically valuable buildings or sites because of its connection to significant

events or the example of a period in the architectural discipline that it displays enriches the built environment with the sense of permanence and heritage. Spatially, the adaptive re-use of old buildings considers the geographical and structural challenges as well as alterations to the land use within a community's economy. In cases where the stereotypical industrial buildings are abandoned, they provide regeneration opportunities that are geographically uncommon to the industrially zoned sites. However, rather than adopting industrial building regeneration that a majority of cities are exploring, some cities are exploring the restoration and preservation of local historical, cultural and environmental resources as their design drivers (Ingalls et al, 2001: 74).

Successful restoration of old buildings depends on the revenue of the city that includes public policy and private sector initiatives, tax incentives and market demands (Ingalls et al, 2001: 75). Furthermore, the movement of adaptive re-use gained its popularity during the post-war era when architects aspired to create new buildings which were a complete opposite of typical traditional buildings. However, to minimize the rate of demolitions and new constructions that were taking place, there was an interest in the conservation of ancient buildings. Moreover, in the 20th century, architects started to consider regenerating historical buildings as a necessity and a compelling challenge (Brebbia, 2011: 156-157). This approach was adopted by Herzog and de Meuron in the old Madrid power train station. The building was transformed to an art museum and the interior spaces and the roof plane completely demolished, leaving only the exterior shell of the building for the architects to work with.

Figure 4.18 illustrating the before image of the old Madrid power station as well as the after-regeneration image designed by Herzog and de Meuron. (Source: http://viajesarquitectura.blogspot.com and http://ivoryescapes.com)

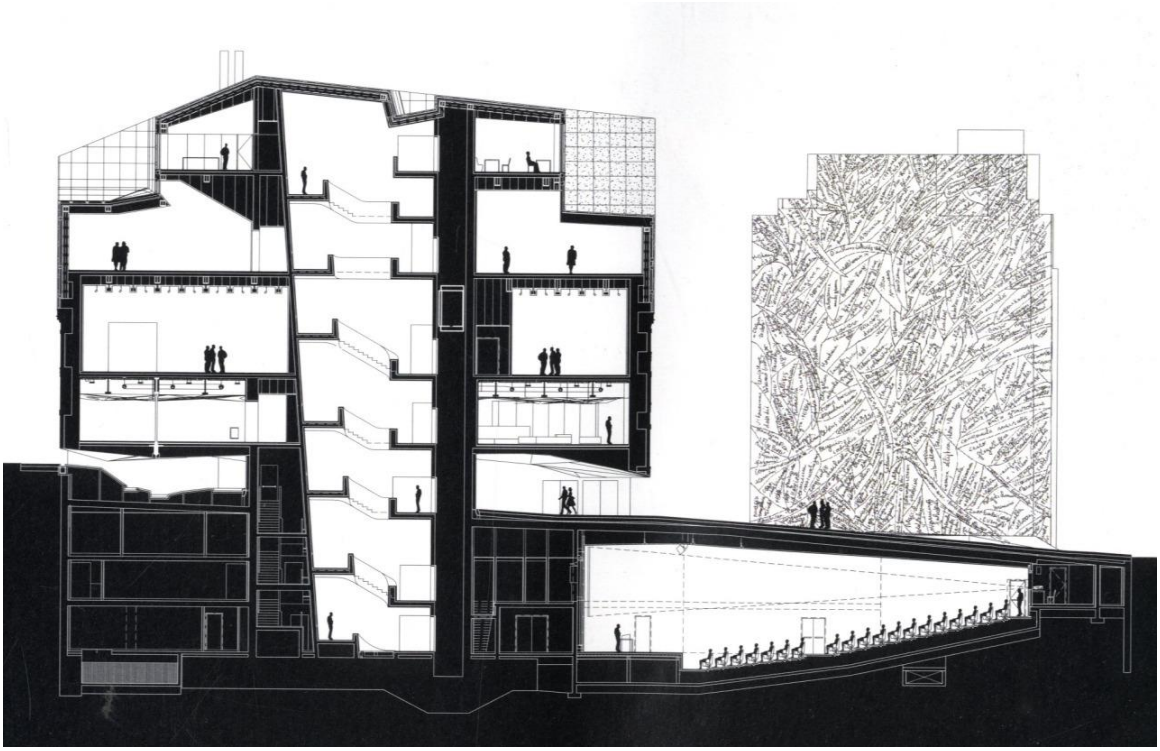


Figure 4.19 Illustrating a section through the newly developed building(Source: http://fabriciomora.tumblr.com)

4.7 Conclusion

'*Architecture at its best always remain an intuition of the spirit. It is the most fixed element of the dynamic equation. It should be coherent to nature's ecologic processes and our own biologic well-being*' (Crowther, 1992: 5). In this chapter, it was clearly highlighted how in an era where there are conversations of urbanising and densifying cities, architecture should be viewed in a perspective of introducing nature into built form. On the subject of urbanisation and aspiring to living in compact vertical cities, this chapter also elaborated on the idea of achieving human responsive architecture. In addition, the chapter also elaborated on colonial versus post-colonial architecture whereby the focus was shifted on how in the event of contextualising urban regeneration, the post-colonial architecture can somehow acknowledge the colonial architectural style that dominates an African city. This chapter also dwelled on the concept of adaptive reuse in architecture with is a widely expressed concept in most urban regeneration architectural projects.

CHAPTER FIVE

THE ADAPTATION OF URBAN REGENERATION INTO AN AFRICAN CITY

5.1 Introduction

To further comprehend the ideas that are mentioned on the previous chapters and contextualise the previously mentioned concepts to an African context, this chapter aims to explore African building typologies that best articulate the principles and theories mentioned on the previous chapters. In addition, in this chapter, two precedent studies will be explored. Furthermore, because the document aims to contextualise urban regeneration and make it relevant to an African city, the selection criteria of the two precedents was influenced by the fact that they are located within an African context. Moreover, the first precedent study will explore how the architect has articulated the phenomenon of adaptive in architecture whilst the second precedent will explore the newly adopted concept of a garden city applied within an African context.

5.2 Towards Adaptive reuse imperatives: Transforming the old into new: Zeitz Museum of Contemporary African Art and Silo hotel

Architect	: Heatherwick Studio
Location	: Cape Town, South Africa
Year of Construction	: 1924
Year of Regeneration	: 2017

5.2.1 Introduction and Background

After three years of construction, the Grain Silo was commissioned as the tallest building in the region of Sub-Sahara Africa with 57 meters when it was first opened in August 1924. The building was later decommissioned in August 2001, after operating for 80 years as South Africa's industry and agricultural development hub. The Silo played a crucial role in facilitating for international trade as an export facility, however, the building also provided South Africa's regional agricultural economies with a meaningful built form that supported local farmers whilst also positively influencing the economic activities along the harbour of Table Bay.

5.2.2 Location and Building History

The Silo is located in the heart of the city of Cape Town along the Table Bay harbour. Originally, the Silo's layout consisted of several buildings scattered across the site with two main cores which were vertically dominating the site. The first vertical component which is the Silo (Storage Annex) is located adjacent to the Elevator Tower. The Silo was utilised as storage space and the building consists of 42 individual, cylindrically shaped concrete silos. The second elongated building core, (Elevator Tower) was originally a mechanical component which was utilised for handling grain and it was also known as a working house which facilitated multiple functions. It received grain via rail from the track shed, the grain was then elevated to the top of the building where the grain was weighed, cleaned and distributed (Whitehead, 2017: 40).

Figure 5.1 illustrating the location of the Silo building (Source: https://www.google.co.za/)

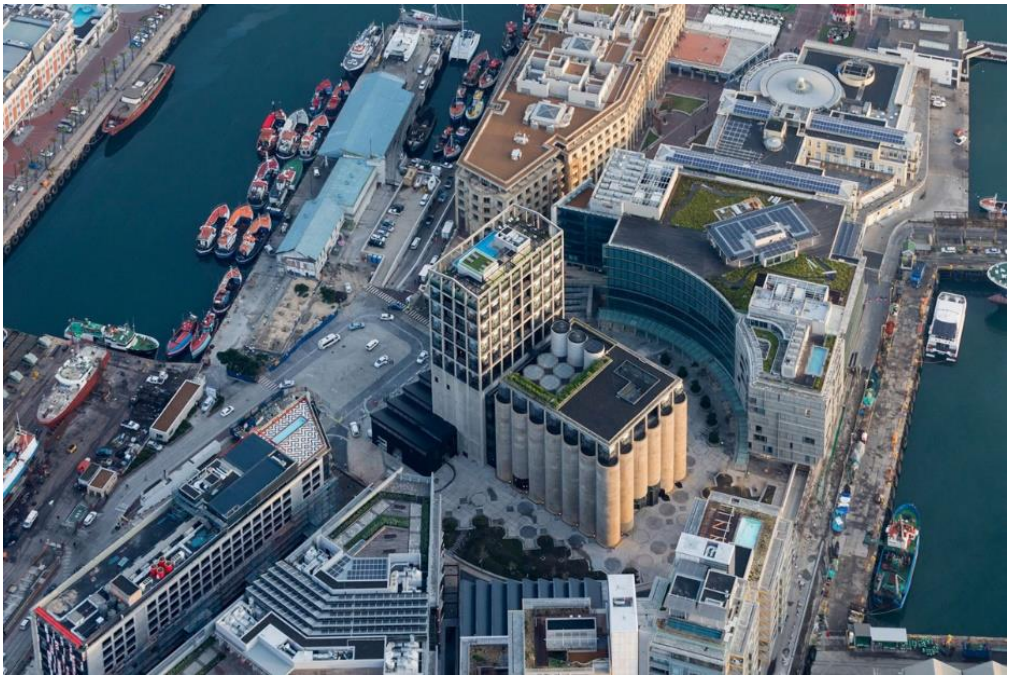


Figure 5.2 illustrating the regenerated aerial site layout of the Grain Silo (Source: https://www.google.co.za)

5.2.3 Adopted Urban Regeneration Principles

Even though the Waterfront already attracted numerous pedestrians, it lacked a cultural institution around the site. To respond to the mentioned local issue of the lack of cultural development within the Table Bay harbour as well as the lack of art museums that promote African artists within African cities, the architect proposed a building which was anticipated to include a major cultural institution at the Silo which celebrated contemporary African art. To cater for the cultural and social activities within the area, the final regenerated design of the Silo includes a ten thousand square meter art museum which has an exhibition space that can accommodate up to 80 art galleries which are dedicated to celebrating contemporary African art. The building also has a roof top sculpture garden, education centre, book shops, conservation labs, a restaurant, a bar as well as a Silo Hotel (Whitehead, 2017: 42).

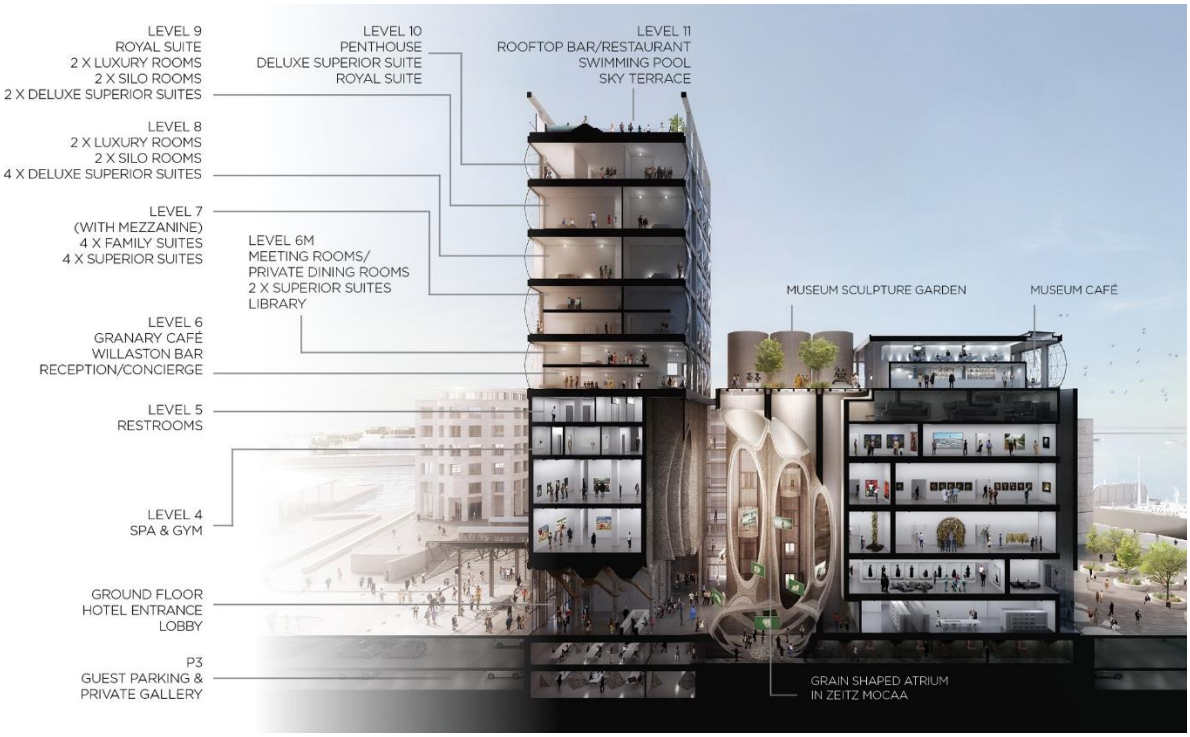


Figure 5.3 illustrating the section through the regenerated Silo building (Source: https://www.theroyalportfolio.com)

5.2.4 Adopted Adaptive Reuse Principles and Design Processes

The adaptive reuse strategy for this building included converting tightly packed concrete tubes into spaces suitable for displaying arts whilst still maintaining the building's industrial heritage. Rather than completely demolishing the historical building which would have resulted to the destruction of the character of the building, Heatherwick Studio proposed to make the building captivating from the interior by carving out an atrium which resembles the vaulted cathedral. That space was automatically labelled as the heart of the museum and a main circulation core which also acts as a social space that '*reveals the original intersecting structural geometries in an unexpected way*'. Existing underground tunnels surrounding the atrium space have been reserved as spaces for artists to create site-specific work. The new museum accommodates 80 gallery spaces which are strategically placed around the central atrium space. The gallery spaces are articulated as white boxes which are juxtaposed within the retained concrete façade. The galleries occupy six stories of the building and are accessed through cylindrical lifts and spiral staircases that were

crane lifted into the tubes. The towering building situated adjacent to the Silo building was reconceived as an ‘illuminated beacon which now houses the Silo Hotel’. During the night, the building lights up to serve as a lantern for the harbour and the city in general (Whitehead, 2017: 43-45).

Figure 5.4 illustrating the atrium space on the museum. The left image clearly shows the spiral staircase and the cylindrical lifts which are lodges into the silo. The image on the right indicates the underground chambers which are next to the atrium (Source: https://www.dezeen.com)

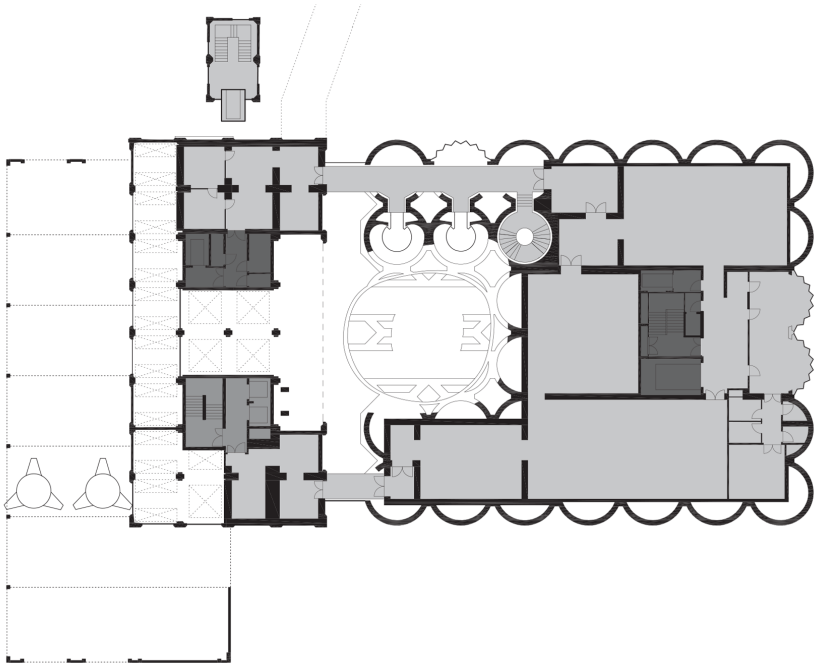


Figure 5.5 illustrating the ground floor plan of the museum building (Source: https://www.dezeen.com)

5.2.5 Adopted Adaptive Reuse Principles and Façade Treatment

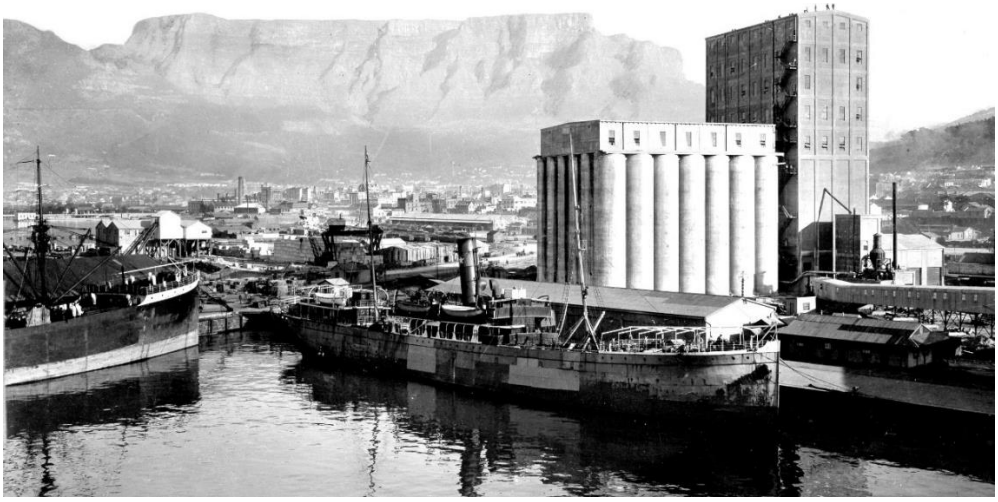


Figure 5.6 illustrating the original Silo complex (Source: https://www.google.co.za)

A portion of the exterior of the building was altered with 2 main changes. The first change included the stripping down of the original magnolia paint to show the true nature of the original concrete silos with all the flaws of discolouration which was creating by the building's weathering over the years as well as maintenances. The second alteration included the removal of original windows which were replaced by 'pillowed' multifaceted windows on top of the silos (Whitehead, 2017: 45-46).

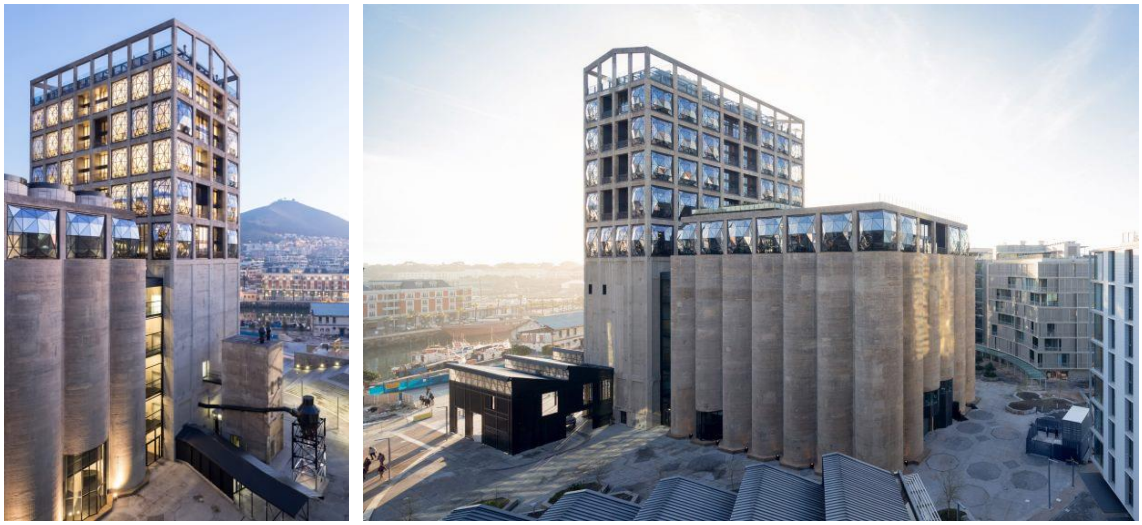


Figure 5.7 illustrating the regenerated Silo complex (Source: https://www.dezeen.com)

5.2.6 Conclusion

This building successfully adopted the adaptive reuse concept through the way in which the new design alterations blended seamlessly with the original structure. Moreover, the building also managed to contextualise urban regeneration through the celebration of local African artists and also through the museum's power to preserve the African cultural legacy.

5.3 The cohesion of Afrocentric architecture and ecological influence: Hallmark House

Architect	: David Adjaye
Location	: Johannesburg, South Africa
Year of Construction	: 1970
Year of Regeneration	: 2017

5.3.1 Introduction and Background

Renowned for representing a new chapter in the narratives of African architecture, the Hallmark House is another building example where the previously mentioned phenomenon of adaptive reuse was applied. The original building which was designed in the 1970s for a diamond polishing company by Greg Cohen was regenerated in 2015 by David Adjaye into a modern mixed-use residential and hotel development to set a new standard for urban living (Brown, 2017). Moreover, the designer states that the approach in which he adopted into the building was taking an existing building and regeneration it to transform it into an urban community to accommodate urbanism whilst still catering for the changing nature of city life (Brown, 2017).

5.3.2 Location and Background

Situated in South Africa's hub of urban regeneration, Johannesburg, Maboneng, the Hallmark House's designer David Adjaye asserts that he envisioned the project as an opportunity to transform the urban environment and move it beyond the dividing barriers which characterises the city (Brown, 2017). Furthermore, Adjaye's vision for the project

was to express the African aesthetics and hybridise it with a contemporary design approach. The building's vision was to also cater for the shifting lifestyles (Brown, 2017).

Figure 5.8 illustrating the Hallmark House's location (Source: https://www.google.co.za)

5.3.3 Hybridising the Vertical garden City Concept with the Afrocentric Approach

The 66 meters high building is listed as Johannesburg's industrial heritage building. To celebrate the structure of the building, Adjaye's concept was to deliberately expose the building's structure, this then influenced the building's finishes to be sandblasted, cleaned and exposed as a predominant feature throughout the building's façade (Brown, 2017). Representing an inception of African architecture and catering for urbanisation, the concept for the building design is layers of elevation with an accommodation schedule of studio apartments, one-bedroom, two-bedroom units, penthouses and a boutique hotel plus living spaces to compliment the residential component. The living spaces include spaces such as small to medium businesses to cultivate the cultural identity of the city of Johannesburg, a splash pool and gym, coffee shop, as well as a roof top restaurant and a jazz bar (http://propertuity.co.za/).

Figure 5.9 illustrating a section through the regenerated building and the spatial zoning of the Hallmark House (Source: http://propertuity.co.za)

To emphasise idea of a vertical garden, the building design encompasses planter boxes along the perimeter of the building, over time the incorporated planter boxes will form a green cascading vertical garden, therefore, adding to the needs of greenery in urban environments (Brown, 2017). Furthermore, with the incorporation of greenery in the building façade, Adjaye denotes that the aim was to communicate that even an urban space such as the inner city is capable of furnishing its residents with the greenery that is associated with the countryside. Another concept which is best translated with the vertical garden city approach is how the spaces have been designed with a high ration of inside to outside spaces to echo the patterns of outdoor life in an urban environment (Wood, 2017)

Moreover, another function that the planter box spaces serve is the connection amongst the building's residents. This is achieved through timber gates in between the private balcony spaces which can be opened to encourage interaction amongst the neighbours (Brown,

2017). The building also houses spaces reserved for private terraces to focus on the 'life outside' which most high-rise buildings in the city of Johannesburg fail to accommodate.

Figure 5.10 illustrating the old building on the left and a render of the new building on the right (Source: https://www.skyscrapercity.com)

5.3.4 Conclusion

Located in an area which is characterised by a great deal of division, the Hallmark House is a true example of a building that breaks the negative exclusion connotations. Adjaye achieved manifesting the spirit of gathering through a series of communal spaces within the building. The building also contextualises urban regeneration by celebrating the African aesthetic whilst still taking precedent from the northern-centric concepts.

5.4 Conclusion

The fundamental common pointer to the noted in both the building precedents is how the designers of both the buildings glorified the existing structures by complimenting them and not altering the original aesthetics of the buildings.

CHAPTER SIX

WORKING IN CONTEXT (CASE STUDIES)

6.1 Introduction

As Yin (2009) denotes that a case study is an experimental analysis which investigates a contemporary occurrence within its realistic setting. This chapter will focus on deriving information from completed buildings to enforce and dissect the previously mentioned concepts of urbanisation. The analysis for the selected case studies will focus on analysing how the case studies relate to their context since the study aims to relate urban regeneration to the African context as well as analysing how the phenomenon of urban regeneration has been translated into the chosen case studies. The study will only be limited to only two buildings. The first building to be analysed will be sourced from the Maboneng Precinct, in Johannesburg, mainly because the Maboneng precinct is the epicentre of urban regeneration. The second building to be analysed is situated in the city Durban. The location for the second case study is influenced by the fact that the study site is in the same city, this will help inform the research on which lens was the concept of urban regeneration tacked in the context of Durban. The difference in the context selection was done deliberately to compare how urban regeneration principles are applied in both contexts. In addition, even though the selected structures are situated in completely different contexts, this chapter aims to investigate if there are any similarities in methods of approaching urban regeneration principles within these structures.

6.2 The Traits of Coexisting with Nature: The Main Change: Living Room

Architect	: Enrico Daffoncio
Location	: Johannesburg, South Africa
Year of Construction	: 1970
Year of Regeneration	: 2012

6.2.1 Introduction

The 1970s light industrial building originally entitled President House was regenerated into a mixed-use building. The main change building's spatial planning constitutes of primarily office spaces which cater for start-up entrepreneurs. The building's accommodation

schedule also includes a rooftop café and bar as well as retail shops in the ground floor (http://www.daffonchio.co.za).

6.2.2 Location and Historical Context

Figure 6.1 illustrating the Main Change's location (Source: https://www.google.co.za)

The building is situated in Johannesburg, within the Maboneng precinct. Maboneng, translated to the place of light, is a mixed-use urban neighbourhood situated in Jeppestown, in the East side of the Johannesburg Central Business District. The precinct accommodates start-up retail shops, restaurants, entertainment venues as well as residential apartments, hotels, museums and creative factory spaces, all connected within the urban environment. The Maboneng precinct is well-known as the greatest and most successful regeneration project within the African continent (Digest of South African Architecture, 2014: 132).

With the slogan, ‘Cities expose the layers of society and are a platform from which people can connect with each other to explore better ways of living, working and producing’, the developer Jonathan Liebmann’s vision about the precinct was to renovate the entire neighbourhood which was economically and racially fragmented before. The main aim for the transformation was to introduce iconic properties and innovative strategies which will

influence an uplifted and integrated urban environment. The architectural language that is carried throughout the neighbourhood design involves a deliberate connection between the buildings and the streetscape which then presents the users with a connection between the private and public realm (Digest of South African Architecture, 2014: 132).

Figure 6.2 illustrating the character of the neighbourhood (Source: Author)

6.2.3 Applied Urban Regeneration Principles

The regeneration principles that were explored for the building's design included the exploration of the previously mentioned concept of adaptive re-use where by an existing building was refurbished and there were minor additions to the façade of the original structure. Moreover, in response to the compelling needs for responding to the epidemic climate change, the designer, Daffonchio, also explored sustainable design solutions. This was achieved through the architectural additional façade treatment features which made passive solar design and ventilation feasible: such as new folding stack aluminium shutters to shade the glazing when closed, the aluminium shutters can also be opened to allow the sunlight to filter through the internal spaces and also provide space occupants with city views. Furthermore, the existing building's chimney was used as an extraction for

ventilation and also serves as a platform for signage of the building (http://www.daffonchio.co.za).

Figure 6.3 illustrating the building before regeneration on the left, on the right is the building after regeneration (Source: Daffonchio Architects)

In the event that the designer was presented with an already existing structure, the façade treatment included a five-storey high wrapped mosaic which is entitled the Change Agent, the mosaic artwork which was crafted by a local artist Hannelie Coetzee resembles a photo mosaic which is crafted out of unmarked mining core pieces which are cut into disks and overlooks the mine dump site which is situated on the South of the Johannesburg Central Business District. The concept behind the stippling technique which is used within the art piece symbolised the potential of the building to be utilised as a medium to network, reinforce new relations and connect the dots (http://www.daffonchio.co.za).

6.2.4 Characteristics of Coexisting with Nature: The Living Room

The living room is a roof top restaurant which is situated on the fifth floor of the Main Change building and it is an example of a space which is characterised by expressing the notion of the hybridisation of built form and ecology. According to Gauteng.net, the restaurant is renowned as an oasis of greenery situated amongst the City of Johannesburg's concrete and glass structure. Furthermore Gauteng.net asserts that, with its tranquil atmosphere, the space offers space occupants an escape from the city's urbanism through the concept of an urban-eco café and rooftop restaurant which acknowledges plant artworks and local designs and also have a scenic view of the city of Johannesburg. The concept of

coexisting with nature in this space was attained through the inclusion of vertical garden screen walls, pot plants as well as wall hung and ceiling mounted art pieces.

Figure 6.4 illustrating the ecology permeated spatial character of the Living Room (Source: http://www.gautengfilm.org.za)

Figure 6.5 illustrating the ecological art pieces on the left as well as the vertical garden screen on the right (Source: Author)

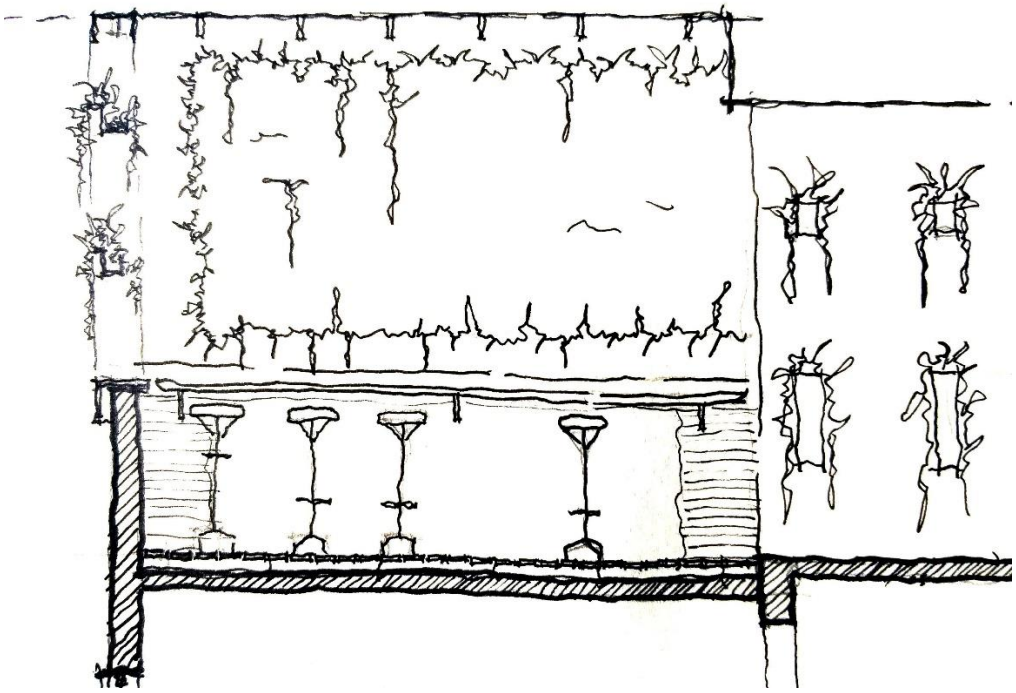


Figure 6.6 illustrating a sketch of a typical section through the Living Room Restaurant (Source: Author)

6.2.5 Conclusion and Observations

Situated in a city which is notorious for being racially divided and economically fragmented. The Main Change building is one of many beacons of hope structures which have transformed the city of Johannesburg's skyline by exploring new dimensions in architecture of introducing nature into habitable spaces. This then yields the greater results of providing space occupants with the atmosphere of breaking away from the busy city life whilst still experiencing the panoramic views that the city's skyline has to offer. Moreover, a crucial observation which was witnessed in terms of the designer's application of the concept of maintaining a balance between architecture and nature, is that the concept was well expressed in the interior space of the roof top restaurant. The application of the concept was expressed in a macro and micro scale approach. The macro-scale approach of the concept was executed through the use of vertical garden screens which can be seen in Source: 6.5 as well as a series of pot plant which are strategically placed along the restaurant and plant creepers which clutch into the interior columns and ceilings of the building, as it is vividly expressed in Source: 6.4 . The micro scale approach to the concept included the use of natural finishes in the interior spaces such as timber flooring and furniture pieces, down to using nature infested art works to decorate the interior space as this can be visualised in Source: 6.5.

6.3 Giving New Meaning to Old Structures: Pixley House

Architect	: Designworkshop:sa
Location	: Durban, South Africa
Year of Construction	: 1938
Year of Regeneration	: 2016

6.3.1 Introduction

The Pixley House is another example of an old building which was regenerated and repurposed to serve a new function. The building was originally built to accommodate the function of the Payne brother's department store and the architectural language which characterises the building is an Art Deco style which was trending during the time of

construction. The building was later renamed as Prefcor House and during that time, the building served as a head office for the Game department store. During the regeneration phase, the building was renamed to Pixley House. In addition, the building's new name was inspired by the founder and president of the South African Native National Congress, Doctor Pixley Seme, in 1912, which is today known as the South African National Congress (http://www.propertuity.co.za)

6.3.2 Location and Background Context

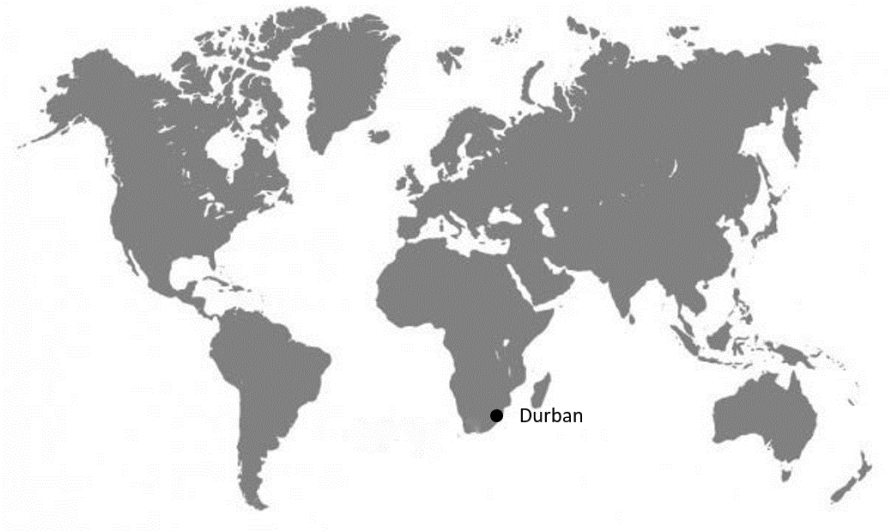


Figure 6.7 illustrating The Pixley House's location (Source: https://www.google.co.za)

The Pixley House is situated in the heart of the Durban Central Business District, along Dr Pixley Kaseme Street which was formerly known as West Street. It is argued that there is a predicament of excess office spaces within the inner urban environment of South African cities. Furthermore, in response to the predicament, the developer proposed to convert the excessive 4600 sqm office units into 96 residential apartments. The concept behind the modification of the existing structure was to reinforce the benefits of working, living and recreation and gaining access to the full spectrum of social services that the inner city has to offer. Another concept which was adopted into the building design was the exploration of urban nature whereby the pressing idea was to render the inner city as a vibrant interchange of ecology (Digest 21, 2016: 170).

6.3.3 The Modification of the Existing Structure

The modification of the existing structure entailed a variation of one-bedroom units, two-bedroom units as well as three-bedroom units. The units are accessed via a light-charged atrium space which also harnesses the spirit of physical as well as visual connection amongst the residents (Digest 21, 2016: 170). The articulation of interior spaces expressed the idea of compact living. In order to cater for the reasonable-housing rental market, there was a minimalist approach that was adopted for the treatment of interior spaces. The soffit finish was left in its raw concrete state, interior walls were finished in white paint, custom made kitchen fittings and free-standing breeze-block screens as space dividers in some of the units. The tenants that occupy the units on the third floor have the privilege of experiencing private gardens on the roof platform marked as number 5 on Figure 6.8. In addition, the inclusion of garden spaces on other upper floors was articulated into the corner spaces of the building where there are apartments that celebrate and opens up to the corner garden spaces. These corner garden spaces also provide the tenants with the views to one of Durban's grand core street (Digest 21, 2016: 170) (Refer to Figure 6.9).

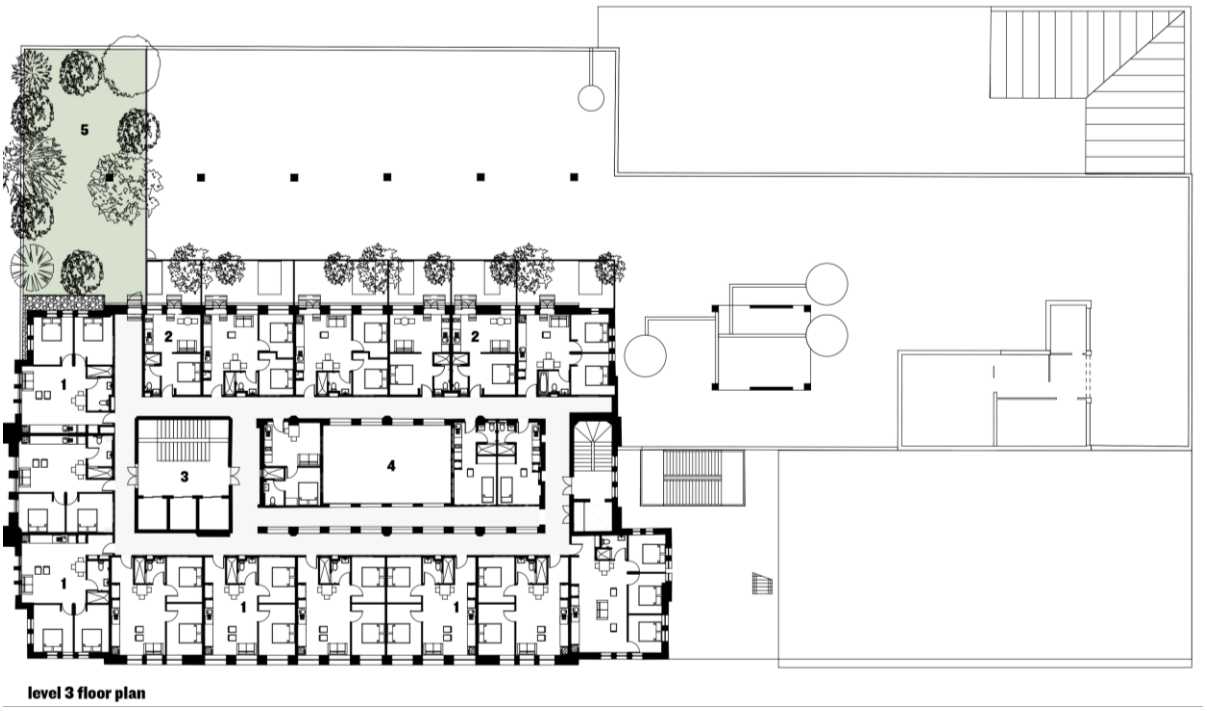


Figure 6.8 illustrating The Third Floor Plan of the Pixley House's location (Source: https://www.google.co.za)

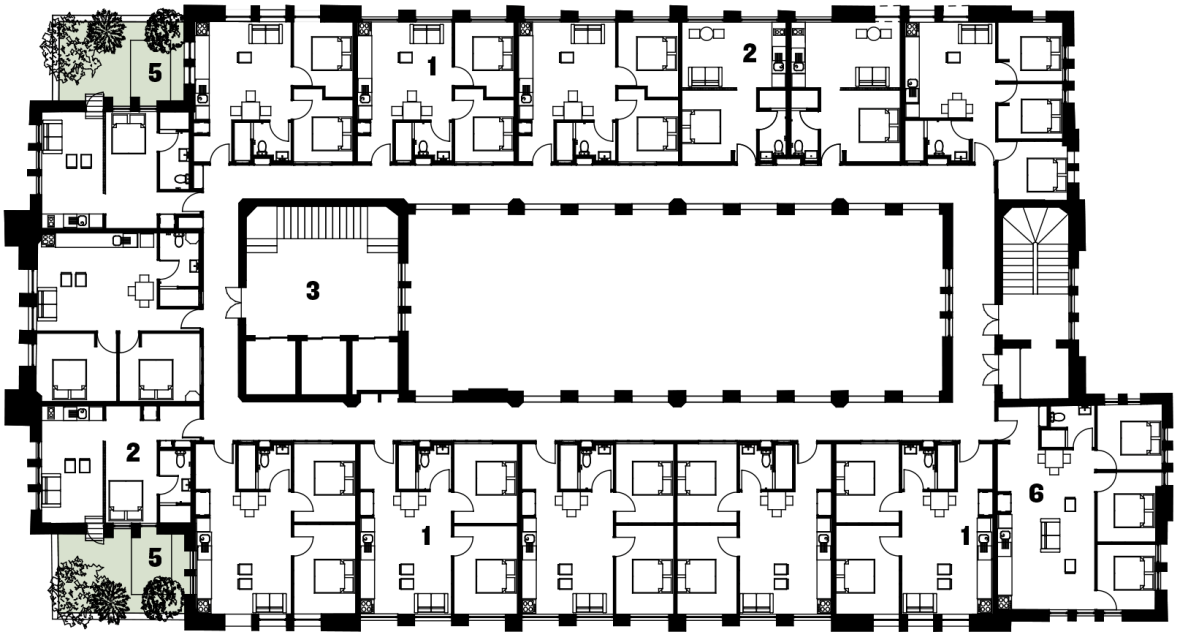


Figure 6.9 illustrating The Seventh Floor Plan of the Pixley House's location (Source: https://www.google.co.za)

The building is characterised as a grand solid form with vertical projection which steps back as it ascends. The exterior form of the building was preserved in its natural state however, the exterior finish of the building was modified to uplift the physical look of the structure. The original Art Deco colours of the structure were substituted with a palette of subtropical colours such as a dark green-black that is contrasted with a shimmering gold highlight (Digest 21, 2016: 170)

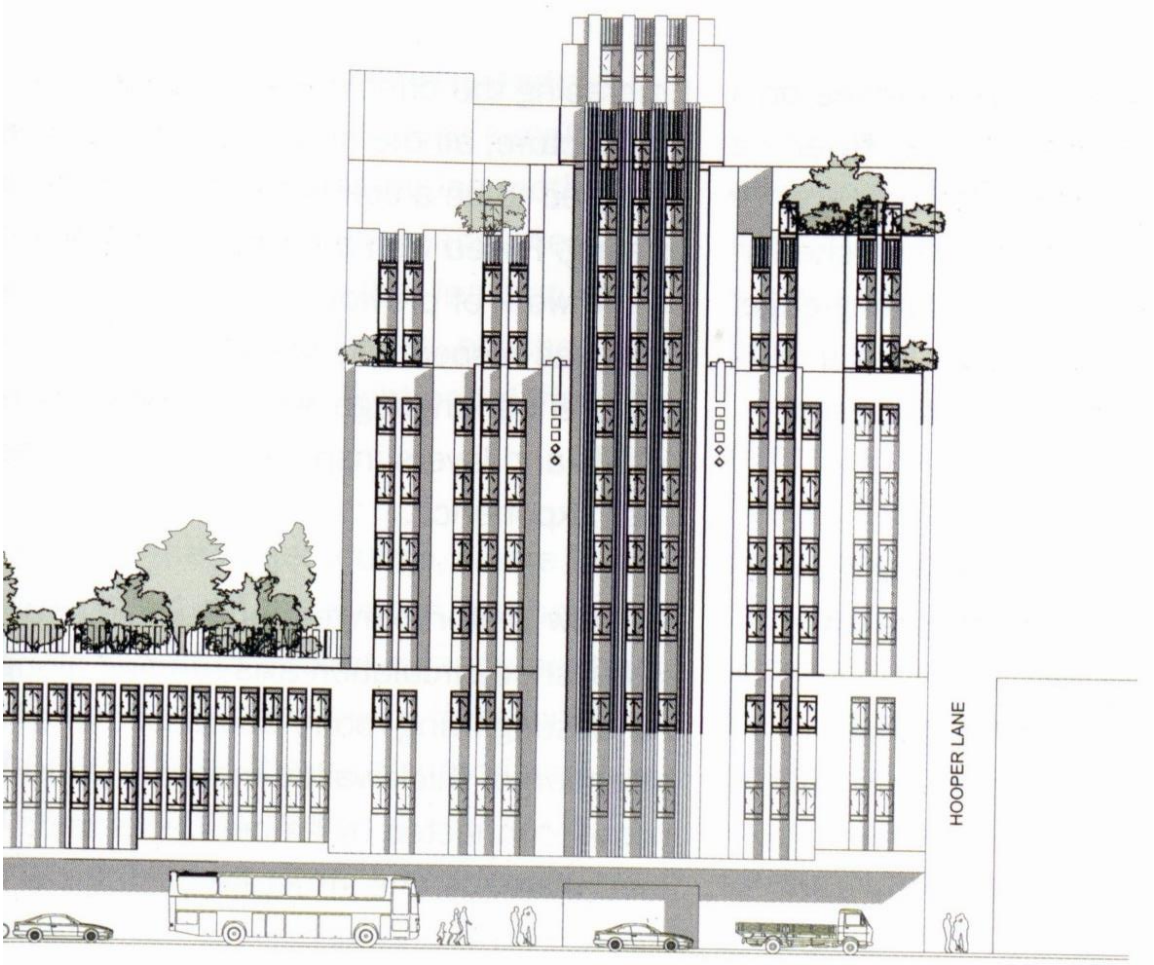


Figure 6.10 illustrating The Northern Elevation of the Pixley House's location (Source: Digest 21)

6.3.4 Conclusion and Observations

A conclusion which can be drawn from this chapter is that, urban regeneration is gaining prominence in the contemporary era. Furthermore, in this chapter it was highlighted that, even in an event of being presented with the regeneration and renewal of an existing structure, designers are slowly starting to explore the phenomenon of hybridising nature with built form for the benefit of urban dwellers. Furthermore, an observation that was made from an onsite visit is that the refurbishment of this building adopted contemporary customs of tackling urbanism within an African context. One of the contemporary customs of tackling urbanism in an African context included the previously mentioned concept of introducing nature into urban environments as well as hybridising nature and built form. Moreover, given the fact that the building is situated in the midst of concrete surroundings,

the designer specifically incorporated a series roof garden spaces, this was done in order to introduce nature in an urban setting and provide the occupants of the building with ‘break-away’ spaces. In addition, another concept responding to urbanism which was explored in the refurbishment of the building is the idea of compact and minimalistic living. The concept was greatly expressed in the spatial configuration of the units, to ensure that there is no wasted space and the building can have a greater number of occupants.

CHAPTER SEVEN

ANALYSIS AND DISCUSSION

7.1 Introduction

In attempts to further comprehend the dimensions associated with urbanisation and social behaviours that are triggered due to urbanism, the research explored interview schedules in order to ascertain the thought processes of designers who plan urban spaces and spatial arrangements of urban structures. The interview schedules that the research explored are split two way, the first schedule of the interview was an interview conducted with an architect, Mr Enrico Daffonchio, who is responsible for the greater urban scheme of the Maboneng Precinct in Johannesburg. Mr Daffonchio was also involved in the refurbishment of several buildings in Maboneng Precinct, one being The Main Change building which was discussed in the previous chapter. Furthermore, the second interview schedule was conducted with an urban dweller which resides in the newly renovated Pixley House building.

7.2 Interviewees' Demographics

Within the first interview schedule, which was aimed at designers who have a significant influence on the end product of the spaces in which urbanites dwell in, the questions asked focused on ascertaining the designer's understanding about urban regeneration, since different individuals would have different interpretations, the questions also focused on underpinning the key concepts of urban regeneration to consider in order to design meaningful spaces for urbanites. The final key questions that the interview schedule focused on, which were very crucial in the development of the research were questions pertaining the relationship between urban nature and architecture as well as measures in which designers adopt in order to contextualise the Northern-centric concept of urban regeneration. In response to the above-mentioned questions Enrico Daffonchio believes that urban regeneration is quite a broad concept however, it can be understood as the refurbishment of dilapidated buildings. Mr Daffonchio further made reference to triggers which influence regeneration, sometimes regeneration takes place because of the depreciation in retail value of the run-down buildings which will later on yield greater investment results once regeneration has taken place. Mr Daffonchio further asserted that sometimes regeneration takes place due to lack of vacant spaces in the city to cater for the

expanding urban population. Enrico Daffonchio further elaborated the key pointers which are essential to consider when dealing with regeneration. The pointers includes components such as the context surrounding the building, as to how the building synchronizes with its surroundings, as well as micro-scale details of the building such as parking and safety. Moreover, Daffonchio also mentioned that since in his scope of work he dealt with a lot of historical buildings, an aspect which was critical to consider was the historical content of the building which then informed the theme of the building. Mr Enrico Daffonchio also stressed that he personally feels that there is a connection between urban nature and architecture since that relationship results to a number of benefits, such as improving the quality of air, improving the look and feel of the spaces as making the spaces inviting. Mr Daffonchio also expressed that in all the building that he was commissioned to regenerate within the Maboneng Precinct, he did incorporate urban nature principles in the designs of the buildings. In addition, Mr Enrico Daffonchio felt that the question about contextualising the northern-centric concept of urban regeneration was an interesting one since in most cases the buildings he deals with were built during the colonial era, therefore, he stated it is essential to introduce the culture of the natives into the colonial ancient structures. Furthermore, Mr Enrico Daffonchio stressed that contextualism was achieved through the introduction of African restaurants, African Art pieces as well as activities which are relevant to the contemporary time and setting.

The second interview schedule was conducted with a female young adult by the name of Nosipho Ndlovu who resides in the newly renovated Pixley House. The interview schedule asked questions which related to the urbanites' experience of urban living and the importance of nature in urban environments. Miss Nosipho Ndlovu stated that she is not a permanent inner-city dweller since she has her parental home which is situated in the outskirts of Durban. Miss Nosipho Ndlovu has been living in the inner city for eight months, she also expressed that what motivated her to move from her parental home was the fact that it is located far from the inner city which resulted in her commuting with two taxis to get to work, therefore residing in the inner city was convenient for her. Furthermore, Miss Nosipho Ndlovu did confirm that she feels that it is overwhelming to

reside in an urban environment due to the number of things that individuals get exposed to in an urban setting to the point where individuals 'genuinely don't know what to do'. In response to questions which pertained exposure to green urban spaces (urban nature), Miss Nosipho Ndlovu stressed that she does come into contact with urban nature since she is fortunate to reside in a building that has greenery incorporated into rooftop garden spaces. The exposure to greenery was achieved through the use of trees and faux grass. Furthermore, Miss Nosipho Ndlovu asserted that she feels that it is essential to have greenery-filled spaces within the urban context and that she feels calmer and more relaxed in natural spaces compared to the congested city environment. In the final question which asked if the interviewee feels that the ratio of natural spaces (urban parks) is enough to service the urban population, Miss Nosipho Ndlovu answered No.

7.3 Interpretation of Data

The findings which can be concluded from the data above is that the information that the interviewees provided does match the information that was presented by the literature discussed in the document. Firstly, with the second interview schedule which related more to underpinning the problem statement of urbanism, it was highlighted that individuals migrate to the inner city for job related conveniences. Furthermore, the interview schedule expressed that individuals do find inner city dwelling overwhelming due to the number of things that one gets exposed to. Lastly, it was confirmed that an inner dweller feels more relaxed in a natural environment compared to being exposed to the congested inner city. In addition, it was noted that the inner-city dweller feels that existing parks are not enough to service the entire urban population, therefore with the anticipated urbanisation, the concept of hybridizing urban nature and built form is appropriate. From the first interview schedule it was confirmed that the historical content and the surrounding environment of the building to be regenerated are important aspects to consider when dealing with urban regeneration. Furthermore, the interview schedule confirmed that the hybridisation of nature and built form is a concept in which contemporary designers are adopting in urban settings due to the benefits that nature provides for men. In closing, it was expressed that the notion of contextualising the Northern-centric concept of urban regeneration is a crucial one in an

African city, in order to relate the historical architecture which was constructed during the Colonial era to the current setting and therefore expressing the African texture.

7.4 Conclusion

The purpose of this Chapter was to support or dispute the statements that were presented by the literature above. The findings which were concluded from the research confirmed that there is a need for exploring a design typology of an urban rescue centre, due to the fact that urban dwellers find inner city dwelling overwhelming and also the fact that urban dwellers feel like the ratio of existing urban nature landmarks are not sufficient to service the entire urban population. Therefore, it is fitting for the scope of an urban rescue centre to consider the concept of hybridising nature and built form.

CHAPTER EIGHT

CONCLUSION AND RECOMMENDATIONS

8.1 Introduction

From the previous chapter, the research expanded on primary and secondary data, in attempts to respond to the topic of contextualising urban regeneration in architecture. In addition, in this chapter, the data that the research presented will now be analysed to respond to the questions which were posed by the research and conclude the findings which will then influence a design of an architectural building.

8.2 Conclusion and Recommendations

The intention of the research was to investigate the phenomenon of urban regeneration with an aim of ascertaining how the phenomenon of urban regeneration can become a catalyst for improving urban living conditions, since the urban population is estimated to further increase. Furthermore, since the research expanded on the application of the Northern-centric concept of urban regeneration into an African city, it became pressing for the research to first decipher and comprehend the phenomenon of urban regeneration in order to relate it into an African city. Moreover, as human survival tactics forces the urban population to expand rapidly in the coming years, the research intended to investigate the feasibility of creating break-away spaces of retreat within the urban environment whereby urban dwellers can escape the busy city life. The main question that the research posed in order to respond to the mentioned statements is how the notion of urban regeneration act as can a medium for influencing a building typology that could shield urban dwellers from the densified urban environment, within the context of an African city.

To answer the primary question, the research firstly expanded on the history of urbanisation in Africa. This was done to deliberately comprehend the evolution of urbanisation and the underlying factors that influences the origin and the pace of urban migration in Africa, before the research can attempt to contextualise and the make the phenomenon of urban regeneration relevant to an African city. In addition, the findings suggested that urban migration within the African continent dates back from five thousand years ago, however, research proved that the factors which influenced urban migration during the period of the Kingdom of Egypt were totally different from the factors that influence migration in the

contemporary era. Equivalent to understanding the origins of urban migration within an African city, the research needed to find out, in what manner has the migration been shaped, given the fact that in contemporary society there is an issue of dealing with land scarcity within the urban fabric. The research then suggested that the urbanisation which took place centuries ago was progressing in a horizontal form since the demands of the society which existed then are different from the contemporary society.

In the event of dealing with densified urban environments, the research further expanded on the processes and outcomes of urban densification. Through the research it was outlined that even though cities are expected to expand in order to accommodate the multiplying human population, research proved that in the contemporary era cities do so excessively. In addition, research stated that, in order to manage the excessive urban population growth, designers need to consider the concept of a more compact urban form. This means that the urban densities should be catered for in a vertical form instead of a horizontal manner. Furthermore, another pressing issue in which the research highlighted in the processes and outcomes of urban densification is the fact that there is a distinct connection between urbanisation and a declined contact with nature since in some case scenarios land which was reserved for natural landmarks such as urban parks ends up being utilised as space for catering for urban developments to accommodate the ever-growing urban population. The research further outlined that the city's size and density is one of the factors which contribute to personal and social distress.

A secondary question in which the research asked is how urban regeneration can contribute towards generating a 'break-away' space from the highly densified urban fabric. In attempts to answer this question, the third chapter of the research expanded on the definition and evolution of urban regeneration. From the third chapter it was outlined that urban regeneration can be associated with the need for the physical replacement of elements of the urban fabric. In addition, it was highlighted that urban regeneration can be described as a mechanism of necessary physical change. In order to maintain essential change in the urban fabric, taking in consideration the statistics of the anticipated

densification, the research further expanded on the phenomenon of nature being essential for man's psychological restoration. Therefore, exhausting the healthy connection to the natural world leads to fewer opportunities to experience the contact with nature. In order to maintain the previously stated human psychological restoration which is given-off by nature, the research further expanded on the concept of the greening of urban environments. The research further denoted that the concept of greening of cities elaborated on pleasing urban environments which are filled with plant life.

Another secondary question which the research aimed to answer is what the relationship between social life in cities and urban regeneration in cities is. In attempts to answer that question, in the previous stanzas it was established what urban regeneration is. Moreover, in attempts to achieve the necessary physical change on the urban fabric, whilst still maintaining the character of social life in cities, the research explored the concept of intertwining the town with the countryside, in order to maintain better social relations for urban dwellers. Moreover, how can the phenomenon of regeneration be expressed in built form, is another secondary question in which the research aimed at responding to. To answer the question the research expanded on adaptive re-use which is a commonly used concept in most urban regeneration developments. Furthermore, research outlined that the re-use of ancient buildings for historical preservation is now a popular trend in contemporary society.

The research then went to explore precedent studies which are examples of the application of the adaptive re-use concept. From the Zeitz Museum of Contemporary African Art and Silo hotel a conclusion which was derived from the research was the fact that the success of the regeneration or revival of the old building depended on a perfect harmony between the old and the new development. The research also explored another local, urban, adaptive re-use example building which is situated in Maboneng, from the building's analysis, the research concluded that achieving the phenomenon of contextualism is a mission, given the fact that designers are provided with an already existing structure.

A final secondary question in which the research aimed to respond to is, how can the anticipated urbanisation of the city of Durban pose as a catalyst for an architectural building typology. This question was answered through the exploration of the case study of the Pixley House. Moreover, from the case study, there was evidence of the use of roof gardens in order to re-enforce social relations whilst still catering for the densities vertically.

In conclusion, to respond to all the questions mentioned above, especially the main question, research suggests that in the event of urban regeneration being a catalyst for influencing a break away space in an urban setting it can be recommended that the regeneration should be explored along the lens of bringing-in urban nature in urban settings.

8.3 Conclusion

The statements discussed in this chapter are meant to influence designers in addressing the urban crisis of rapid urbanisation and densification in order to maintain satisfactory conditions for human comfort. Furthermore, the research findings that were derived from this research will be used in the proposal of an Urban Rescue Center.

CHAPTER NINE

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APPENDICES

INTERVIEW SCHEDULE 1

BACKGROUND

Name of person: Enrico Daffonchio

Position Held: Director at Daffonchio Architects

QUESTIONS

URBAN REGENERATION, AN ENVIRONMENTAL RESPONSE.

1. What is your understanding about urban regeneration?

That is quite a broad question, however urban regeneration can be understood as a process that takes place when an area is dilapidated due to conditions presented by urban dwellers. In the contemporary society, city governing officials are favouring interventions from private enterprises, they even go as far as offering tax incentives. Sometimes regeneration happens because the area is cheap and sometimes urban regeneration takes place because there is no more space in the rest of the city.

2. When designing buildings that adopt the concept of urban regeneration, what are the key pointers to consider?

Being an individual that deals with historic areas, the first thing we consider is the historical content of the building which then informs the theme of the building. Another thing we also consider the surrounding area, like in Maboneng, there is quite a big scope to deal with, we look at how the building interacts with other areas around it. Other aspects we consider include the minor details like parking, security, we basically try to fill in the gaps.

3. According to your view, is there a relationship between urban nature and the concept of urban relationship, if yes please elaborate?

Of course, introducing nature into building is quite good for a couple of reasons because it improves the quality of the air, it improves the look and feel and it makes spaces more friendly. There is an aesthetic reason, there is a health reason as well. To achieve this in

our designs we try to not only introduce this at street level but also at the balconies and rooftops.

4. Have you ever adopted urban nature principles in any of the building designs that explored the concept of urban regeneration? If yes, please explain how.
Yes, all of them. We achieved that by having every space we have that does need to be practically used for something, we plant something, even if it means hanging planters from the ceiling, even if it is a wall, you grow something on the wall. You have got to look at a rational opportunity and plant something in it.

5. Since urban regeneration is a Norther-centric concept, how have you articulated the building design, in order to contextualise urban regeneration and make it relevant to an African context in any of the buildings you designed?
That is a best question because what we deal with is starting with an infrastructure which was built in colonial times which has absolutely nothing that's African and you cannot demolish it because you would be wasting a huge value of building, so the key is to bring content, whatever you layer on top of the existing structure will give it more texture. The focus is also to bring people in a more inclusive way, the shops and activities that are more relevant to the time and place and the use of art to bring in African culture, African people and African restaurants to populate the colonial infrastructure with current African people and activities.

INTERVIEW SCHEDULE 2

INTRODUCTION
Name of person: Nosipho Ndlovu

Position Held: Urban Dweller (Living in the Pixley Kaseme Building)

QUESTIONS

Back Ground Questions

1. Are you a permanent inner-city resident?

No

2. How long have you been living in the inner city?

I have been living in the inner city for 8 months now.

3. What influenced your decision to prefer living in the inner city?

I used to stay in Phoenix and would take 2 taxis to work, but since living in the city it has made commuting to work easier and quicker.

Social life in Cities Questions

4. Do you sometimes feel like the city life is socially overwhelming, if the answer is yes please elaborate?

Yes, due to the number of things that one gets exposed to in town. For some it could be that they are spoilt for choice as in they get to have all that they want in a matter of minutes and for some it can be overwhelming to the point where they genuinely don't know what to do.

Values of nature in Public spaces Questions

5. How often do you come into contact with urban spaces filled with nature (urban greenery)?

I would say not very often but luckily where I stay, they have tried to incorporate greenery through the use pot plants to grow trees as well as Astro turf (artificial grass).

6. Do you think it is essential to have greenery-packed public spaces in inner city spaces?
Yes

7. Do you feel more calm and relaxed when you are in a natural space compared to when you are in a congested city environment, if the answer is no, please elaborate?
Yes

8. Considering the ratio of individuals residing in the inner city, do you think the existing parks (urban nature) are enough to service the population of city dwellers?
No