

**A STUDY OF THE RELATIONSHIPS BETWEEN
ARCHITECTURAL ENVIRONMENTS AND HUMAN
WELLBEING**

By

Lidia Nadia Capellino Breetzke

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**A STUDY OF THE RELATIONSHIPS BETWEEN ARCHITECTURAL ENVIRONMENTS AND
HUMAN WELLBEING**

DECLARATION

Submitted in fulfillment of the requirements for the degree of Master of Architecture, in the Graduate Programme in Architecture, University of Kwa-Zulu Natal, Durban, South Africa

I declare that this dissertation is my own work unaided work. All citations, references and borrowed ideas have been duly acknowledged. I confirm that an external editor was not used. It is being submitted for the degree of Master in Architecture in the faculty of Humanities, Development and Social Science, University of Kwa-Zulu Natal, Durban, South Africa. None of the present work has been submitted previously for any degree or examination in any other University.

LIDIA NADIA CAPELLINO BREETZKE

Date

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To the Lord, I thank you for giving me the strength to keep persevering...

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DEDICATION

To my ever so special mom and dad, for always encouraging me to pursue my dreams, and to never give up despite some challenging times. To always believe in myself and be confident that I will reach my goals.

"If you can imagine it; you can achieve it. If you can dream it; you can become it!"

- William Arthur Ward -

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ABSTRACT

Most city dwellers simply endure the fast paced lifestyle and the stresses of the urban environment, forging coping strategies daily. The effects of stress and related health conditions are evident throughout the global population and South Africa is no exception. South Africans are not immune to the mental and physical effects of a stressful lifestyle. The modern day life is full of various stresses, including *inter alia* environmental factors, family pressures, social relations and career and they can all contribute to an increasing set of life demands. Trying to cope with the effects of daily stress is a common situation for most. It may be argued that these challenges in one's life encourage motivation and innovation. However living under constant pressure increases stress and negative emotions which results in the body being in a state of constant 'emergency mode' (www.helpguide.org). As an individual takes on more negative stress, the need to seek relief from the effects thereof increases. Although one may think that one is coping with the ever increasing levels of stress and negative energy within one's life, one often does not realise that there is a progressive deterioration in ones mental and physical vitality (www.helpguide.org).

This dissertation is aimed at developing an understanding of how architectural environments (from a broad macro-perspective to a micro-specific context) can influence an individual's stress levels, and can play a positive role in supporting human wellbeing or can have a negative impact and work against the wellbeing of city dwellers. In theory by transforming the range of potentially negative impacts (generated by many urban environments and by the buildings that constitute such environments) architects can assist urban residents to better cope with life's challenges. In this way other social ills such as domestic violence, suicide, depression and mental illnesses may be reduced (Ozalp et al: 2003; 26-29).

This dissertation explores issues from the broad macro-perspectives, the meso context, the micro-specific aspect and the interior environment. The macro-perspective component explores genius loci from both negative and positive architectural environments within cities. Some of the negative aspects of cities such as urban sprawl, here reference is made to the Gestalt and Lynchian theories. The meso context addresses the social components and identities of the urban environments, dealing with the issues such as the lack of public space, parks, green spaces and areas for social interaction, and how the Gestalt theory relates to this. The micro-specific context explores the concept of genius loci and the healing properties of water and of landscapes and the increase of sick building syndrome within cities. Lastly an analysis of the interior environment is provided through an exploration of the components of light, colour, texture and materials and their relationship to the Gestalt Theory.

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PART ONE

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

Most city dwellers simply endure the fast paced lifestyle and the stresses of the urban environment, forging coping strategies daily. This dissertation is aimed at developing an understanding of how architectural environments (from a broad macro-perspective to a micro-specific context) can influence an individual's stress levels, and can play a positive role in supporting human wellbeing or can have a negative impact and work against the wellbeing of city dwellers. In theory by transforming the range of potentially negative impacts (generated by many urban environments and by the buildings that constitute such environments) architects can assist urban residents to better cope with life's challenges. In this way other social ills such as domestic violence, suicide, depression and mental illnesses may be reduced (Ozalp et al: 2003; 26-29).

This dissertation is divided into four parts *viz*; the broad macro-perspectives, the meso context, the micro-specific aspect and the interior environment. The macro-perspective component explores genius loci from both negative and positive architectural environments within cities. Some of the negative aspects of cities such as urban sprawl, here reference is made to the Gestalt and Lynchian theories. The meso context addresses the social components and identities of the urban environments, dealing with the issues such as the lack of public space, parks, green spaces and areas for social interaction, and how the Gestalt theory relates to this. The micro-specific context explores the concept of genius loci and the healing properties of water and of landscapes and the increase of sick building syndrome within cities. Lastly an analysis of the interior environment is provided through an exploration of the components of light, colour, texture and materials and their relationship to the Gestalt Theory.

These four parts discussed above will be considered specifically in relation to the theme of stress and will high-light how these environmental circumstances either lessen or heighten an individual's stress and the associated impact on wellbeing. A number of key precedent and case studies are then explored and the final chapter covers personal conclusions drawn from this study.

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1.2 BACKGROUND

The effects of stress and related health conditions are evident throughout the global population and South Africa is no exception. South Africans are not immune to the mental and physical effects of a stressful lifestyle. According to the World Health Organisation's World Mental Health (WMH) Survey, conducted between 2002 to 2004 and compared with 14 other countries, South Africa is ranked as possessing the "second highest prevalence of substance use disorders, sixth highest prevalence of anxiety disorders and the 7th highest prevalence of mood disorders" (Dan: 2007; 1-2). The modern day life is full of various stresses, including *inter alia* environmental factors (noise and air pollution, traffic congestion, the declining quality of tap water and of food etc), family pressures (the demands and financial stresses of child education, family medical care, managing family relationships etc), social relations (single parenting, divorce, maintaining a social network etc) and career (achieving corporate goals and targets, career advancement etc) and they can all contribute to an increasing set of life demands. Trying to cope with the effects of daily stress is a common situation for most. It may be argued that these challenges in one's life encourage motivation and innovation. However living under constant pressure increases stress and negative emotions which results in the body being in a state of constant 'emergency mode' (www.helpguide.org). As an individual takes on more negative stress, the need to seek relief from the effects thereof increases. Although one may think that one is coping with the ever increasing levels of stress and negative energy within one's life, one often does not realise that there is a progressive deterioration in ones mental and physical vitality (www.helpguide.org). This dissertation is aimed at researching various architectural environments (from the macro to the micro context) and its relationship to human wellbeing.

1.3 MOTIVATION/ JUSTIFICATION OF THE STUDY

In addition to what has been mentioned in the above sections, there is a distinct need for individual's to break away from the stresses that the built environment encourages. Philo (2004) and Gesler (2003) believe that it is important for every individual to remove themselves from the hustle and bustle of everyday life and spend time resting, recuperating and allowing time to 'heal' from these stresses and strains (Philo: 2004; 473 and Gesler: 2003; 2). Gesler (2003) adds that there are places that offer environments' that have the ability to achieve 'lasting healing', this can be in the form of spas, pilgrimage locations, retreats or sacred sites for instance (Gesler: 2003; 2). Smith and Kelly (2006) express that there is a 'unprecedented intensification in the pursuit of wellness', this in turn gives rise to individuals that, through these specific architectural environments, not only undergo a journey of 'physical movement' but also a journey towards a 'greater sense of self-awareness and contentment'

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(Smith & Kelly: 2006a; 1-4). Smith (2003) explains that “Western societies have created a form of materialism that does not always nurture the soul adequately”, leaving individual’s without an active sense of ‘self-improvement’ and ‘finding their true selves’ this is due to the constant stress and pressure in today’s society (Smith: 2003; 103-108). In a study undertaken by Smith & Kelly (2006b), it is argued that most modern day places of ‘healing’ tend to give the greatest emphasis to mental improvement rather than both the physical and spiritual improvement of the individual (Smith & Kelly: 2006b; 16)

The above points to a need for architectural interventions that focuses not only on the physical improvement of an individual, but also on spiritual and mental growth. Thus it is important for there to be a holistic architectural intervention that encompasses these aspects and gives some priority to the positive wellbeing of individuals.

1.4 EXPLORING AND DEFINING THE PROBLEM, AIMS AND OBJECTIVES

1.4.1 Exploring and Defining the Research Problem

This dissertation explores the relationships between architectural environments and human wellbeing. It will examine various architectural environments from the broader macro-context down to the intermediate context and finally to the micro-specific context and considers each of these in terms of how they affect human wellbeing, from both a positive and negative point of view. Emphasis will be placed on how a healing environment can be created through architectural interventions and how these environments can benefit humans.

1.4.2 The Aims and Objectives of the Study

The boarder problems and issues revolve around what the requirements are to create a mutual place and space where social cohesion is possible and fits the ‘needs’ and ‘requirements’ of the major groupings within South African society. This dissertation is intended to bridge the ‘gap’ between socio-economic, cultural and religious backgrounds through a holistic intervention where patrons are able to seek self-revitalization regardless of their backgrounds and will explore all aspects of stress from an urban level to the specifics of the interior design.

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General points of thought:

- To create an appropriate response for a 'healing' within a city environment which uses architecture as a healing element rather than a shell housing a function- through the forms, room spaces, light and colour pallet etc.
- What are the main factors which contribute to stress from an architectural point of view, can minimize and reduce the accumulation of stress?
- How can one heal from the effects of stress (from a macro to micro level)?
- How can one restore quality and wellness into one's lifestyle?

1.5 SETTING OUT THE SCOPE OF THE CHOSEN STUDY

1.5.1 Delineating the Research Problem

This dissertation primarily deals with the stressors within the urban environment (urban sprawl, lack of public spaces, parks/ green areas within the urban framework, increase in sick building syndrome, incorrect designing of spaces, colour and material choice etc) and how an individual is affected by these stresses. Therefore the overall idea is to research various architectural environments and interventions that will assist in reducing these stressors and aiding the individual 'at ease' with his/her environment, therefore promoting a healthier wellbeing. The literature will be divided into four major sections (macro, meso, micro and interior context) exploring issues that are both positive and negative to the human wellbeing.

1.5.2 Defining the Terms

Some of the architectural, scientific and general terms that are commonly used in this dissertation have been itemised below and explained for ease of reference.

- *Architectural Environments*- Explores the aggregate of surrounding things, conditions or influences that surround and influence the built form (Dictionary.com).
- *Genius Loci*- Creating a 'sense of place' within the macro, the inter-mediate and the micro- specific context (Norberg-Schulz: 1980; 5).
- *Macro Context*- A large scope or extent of an area (Dictionary.com)

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- *Meso Context*- The middle or intermediate context (Dictionary.com)

- *Micro Context*- Is a smaller scale of focus (Dictionary.com)

- *Sick Building Syndrome (SBS)* - is defined as psychological and or physical distress which is generated specifically in work scenarios and dissipates when the individual leaves his or her working environment (Baker: 1989; 607-624, Bauer et al: 1992; 213-219, & Ryan & Morrow: 1992; 220-224).

- *Stress*- ‘Stress’ as a product of an imbalance between individual resources and various environmental demands (‘stressors’) (McKay et al: 2004; 91-112).

- *Wellbeing*- Can be defined as a good or satisfactory condition of existence; a state characterized by health, happiness, and prosperity; welfare (dictionary.com). It is also closely related to health and the environment (Easthope & White; 2006: 1-2).

1.5.3 The Assumptions

It is assumed that many cities and many buildings are not contributing to the ‘healing of their inhabitants’ due to their poor design.

1.5.4 The Working Hypothesis

Individuals are constantly placed under a multitude of stresses within the urban context. To achieve harmony within oneself, the individual needs to feel ‘at peace’ mentally. If this ‘peace’ can be sustained both the healing and healthy functioning of the physical body is promoted. Harmony within the being has also much to do with the spiritual dimension. Feeling ‘a connection’ with your fellow man and with Nature brings a sense of peace and can dramatically reduce the stress that people feel. It can be assumed that architecture, if correctly executed, can be a catalyst and is able to facilitate and support a move back to holistic wellbeing through positive architectural environments regardless of the diversity of cultures, their respective identities and perceived needs.

1.5.5 Key Questions

This research will address key questions which are pertinent to the search for possible solutions.

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Main Questions:

- What is the 'wellbeing' of individuals?
- Is the city serving the wellbeing of its inhabitants?
- How do architectural environments and human wellbeing relate to one another?
- In general, do buildings benefit their inhabitants?

Subsidiary Questions:

- From the urban context what issues and elements add to the increased level of stress in an individual?
- How does the provision for public spaces and places effect the urban context?
- Which architectural response would best support the achievement of holistic healing and vitality?
- Which architectural components would both support the theories of holistic healing as well as enhance positive energy?

1.6 CONCEPTS AND THEORIES

This dissertation draws on three major theories, *viz*, Lynch's theory, the concept of Genius Loci: a 'sense of place' and the Gestalt theory. The subsidiary principles of the Gestalt theory are those of totality and the principle of psychophysical isomorphism. These theories are discussed in more detail below.

1.6.1 Lynch's Theory: Image of the City

Kevin Lynch explains in 'Image of the City' (1960), how individuals instinctively orientate themselves within the environment. The issues of legibility of form become important issues that need to be taken into consideration by urban planning, since there needs to be a communication of meaning between the inhabitier and the environment. The theory is divided into 5 'markers' (Lynch: 1960; 47-50). Barthese cites Lynch as having "gotten closest to the problems of an urban semantics" (Nesbitt: 1996; 55) which in essence speaks to the need for legibility in urban spaces for the benefit of their inhabitants.

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1.6.2 The Five Markers

Lynch (1960) emphasizes the importance of understanding the public input on the cities and buildings in relation to the area as a whole. By direct interaction with the public, Lynch (1960) gains information on how people subconsciously understand the environment and the aspects an individual regards as useful when navigating through the public environment. Lynch (1960) expresses these understandings by means of visual and physical markers throughout the city (Lynch: 1960; 47-50). These visual and physical markers allow for structure by relating to the greater environment and in turn increase the legibility and clarity of the public area. There are five main markers namely; paths, edges, districts, nodes and landmarks which have been listed and explored below (These markers have been extracted from Lynch: 1960; 47-48).

- 'Paths' explore areas such as roads and pedestrian pathways and are channels along which the observer customarily, occasionally or potentially moves through. These paths can be streets, transit lines, canals, railroad, walkways etc. For the most part 'paths' become prominent element in cities, allowing people to observe a city while moving through it, there is a constant link for person to the city, the environment etc (Figure 1).
- 'Edges' are boundaries or breaks in continuity and are the linear elements that are not used or considered as paths, they create boundaries between two different phases or linear continuity: shores, cuts edges of development, railroads, walls etc. Some 'edges' create barriers (either penetrable, closing areas off from one another or joining them together) (Figure 2)

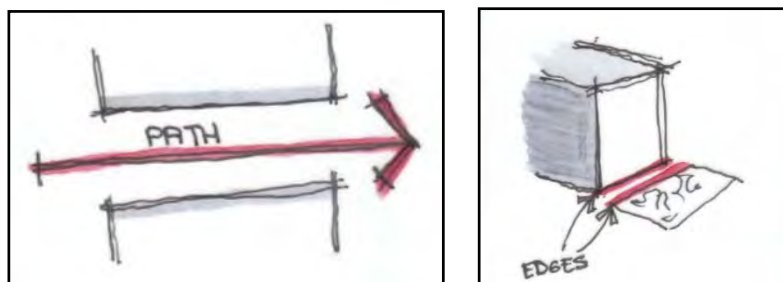


Figure 1: (left): Diagrammatical representation of a direct path with a start and an end, pointing in its direction the path travels (Adapted by the author from Lynch: 1960; 47)

Figure 2: (right): Diagrammatical representation of 'edges'. Each edge is represented by a different colour (Adapted by the author from Lynch: 1960; 47)

- 'Districts' are medium to large sections of the city that are conceived to having two dimensional extents. The viewer mentally enters 'inside' and is able to recognise having some

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common identifying character. Most individuals structure the city in such a way, so that the paths and districts are the dominant elements (Figure 3)

- 'Nodes' are points that have been placed strategically within the city framework. This allows the observer to enter an area generally with an intense focal point, or as an external reference point (Figure 4).
- 'Landmarks' are points of reference which often operate as symbols and can also be seen as monuments or major points of reference, they are usually external markers. They do not necessarily have to be major buildings but landmarks can be signs, a mountain, structural art work, a large store etc (Figure 5)

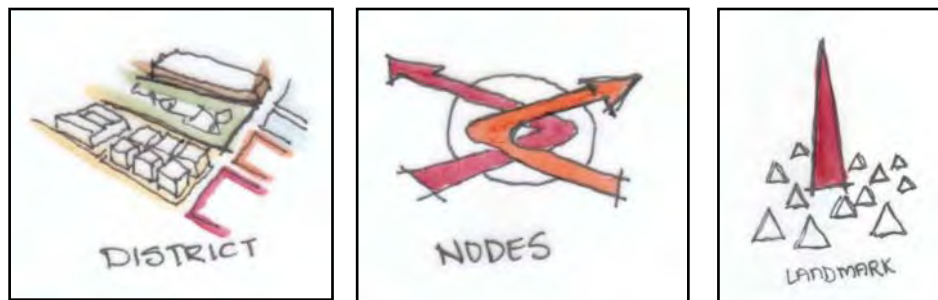


Figure 3 (left): Diagrammatical representation of a district within a city framework. With each colour represents a different district (Adapted by the author from Lynch: 1960; 47).

Figure 4 (centre): Diagrammatical representation of nodes, creating a central focal point (Adapted by the author from Lynch: 1960; 47).

Figure 5: Diagrammatical representation of landmarks. One can clearly see how a landmark is a common focal point and how it towers over the rest of the neighbouring buildings or objects (Adapted by the author from Lynch: 1960; 47).

By using these 'markers' as a guideline, one is able to draw a conclusion on how various architectural characteristics can be used, therefore aesthetics and style is not the only important element in a building. Each human is an individual, and with this individuality comes specific likes and dislikes, these emotions dictates the users' opinion. For example, Gateway and City Hall display two very different architectural styles, however an individual may like both buildings equally, despite their vast differences. This could be the result of the strong influence that the community and or environment play on an individual's opinions.

In connection with Lynch's ideas of a city and buildings layout, Nasar explores a similar approach to architectural elements. Nasar includes other positive aspects like 'openness' and 'naturalness' in

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buildings, historical significance and the general upkeep of buildings (Nasar: 1998; 3). He also expresses the negative impact which a building can have on its user namely; graffiti, dilapidation and sick building syndrome. These emotions create anxiety, fear and general discomfort and the user is therefore less likely to use the building (Nasar: 1998; 3).

The importance of this theory lies in the fact that it reminds built form professionals of the lights the importance of creating 'markers' where inhabitants can instinctively recognize and orientate themselves in their urban environment.

1.6.3 Genius Loci: A 'sense of place'

The Genius Loci (or "spirit of place") concept, is a reality which an individual is faced with on a day to day basis. The individual dwells and feels at peace when they can identify with the place. Therefore one can say that a 'dwelling' is more than simply a 'shelter'. These spaces where life occurs are 'places in the true essence of the word'. In an architectural environment it means to visualize the genius loci and therefore the architect needs to create a meaning to the place where the individual will be placed (Norberg-Schulz: 1980; 5). In the same line of thought as the genius loci, Yi-fu Tuan (1977) explains how individuals relate to an architectural space and how it influences the manner in which an individual will 'experience' and feel. "... Architectural form is an environment for man.... it then influences human feeling and consciousness." Tuan explains that the built environment is similar to language whereby it has the ability to 'refine' and 'define' sensibility. It also can sharpen and enlarge consciousness. "Without architecture feelings about space must remain diffuse and fleeting" (Tuan: 1970; 106-107). This theory will be addressed in more detail in Chapter 4. However the following summarises the author's expression of 'genius loci'.

The concept of 'genius loci' is a complex and multi-layered one that may differ from author to author, some holding similar views while others are conflicting. The overall idea is that the 'genius loci' of a place overall cannot be pin pointed or described in words, it relates a lot to how an individual's emotions and feelings are 'stirred' in a specific environment. At a very practical level many of us can relate to an 'instinctive feeling' or a 'spatial quality'. This is something that does not necessarily evoke words, but rather a 'sense of place' which can be brought through from an individual's 'layer of consciousness' for an area of space, that is given rise from the shape of the buildings, the urban spaces, 'city fabric', and the bare bones of the building blocks making up a place, be it rural or urban.

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This theory emphasizes the importance of identifying with a specific place and therefore becomes in tune with the area in which they are in. It directly links to the various components that constitute the 'sense of the city' and how one feels in it. It also psychologically links to how an individual feels and interprets an environment, space or place; this can be both a negative and positive reaction. This highlights the importance of creating architecture that has a positive impact on those experiencing it as a result of careful and thoughtful design and use of materials.

1.6.4 The Gestalt Theory

"We cannot really be said to perceive the objects which are the source of the stimulation, but only the sensations which are caused by this stimulation." (Hamlyn: 1969; 2)

Gestalt theory is a psychological based theory that relates to each individual's interpretation of a space, the environment, general surroundings, scale of objects etc. The human wellbeing is closely related to a person's physical, mental and spiritual vitality. The gestalt theory becomes an important link to a person's perception and feeling. Hamlyn (1969) explores the gestalt theory as the outcome of investigations in psychology and logic, and affects the form-forming capability of individual's senses. It mostly relates to an individual's visual recognition of figures and whole forms instead of recognizing a collection of simple lines and curves. There is a link between the psychology of perception and art, expressing that an individual perceives things and items in a particular way. One's normal visual perception is a passive process with which he/she understands to be 'the outside world' (Hamlyn: 1969; 11-16) Thus perception is a dynamic process that an individual participates in.

From a more practical sense, as individuals we perceive and understand objects areas, scenery etc in different ways. It is important to understand how this theory is related to the human wellbeing. The size of a building or an area will effect an individual's perception of space and the consequences thereof. For instance if an individual is in a small room, the person could feel tense, uneasy and to some degree claustrophobic as opposed to an open and less stuffy room. The same idea applies with the scale of buildings, for instance a large building with an oversized entrance could be intimidating and may evoke an uneasy feeling amongst those who enter the building as they feel engulfed in this large space. Whereas a building designed on a human scale and more 'life size' would make the person feel more comfortable in this space.

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This theory is important since it explores the mental recognition and interpretation of how one's senses experience and understands 'space' and environments. This becomes important when relating back to the topic where different architectural environments are able to affect an individual in different ways.

1.6.5 Research design

This dissertation will explore two main forms of study; namely empirical study and non-empirical study. The empirical study will explore the use of primary data in the form of case studies, surveys and questionnaires as well as text data. The non-empirical component will deal with the review of relevant literature.

1.7 RESEARCH METHODS AND MATERIALS

1.7.1 Introduction

For this section the various methods of data collection will be explored, defined and finally explained. The gathered data will be used as a sample and form part of the final design assumptions and solutions. The collection combined with the synthesis of this data will be used to answer the previously stated key questions in relation to the development of a design brief.

1.7.2 Research Methods: Generating a Research Plan

This research will contain collaborations between primary and secondary methods. The reasoning for this is listed below:

- Primary data collection allows for the testing of a working hypothesis (explored previously). This testing allows for the means of comparing and evaluating the secondary data collected.
- Through using secondary methods, an establishment of a general understanding around the key research questions and a boarder perspective can be applied to the chosen topic.

For the purpose of this dissertation the focus of this research is to be qualitative rather than quantitative. Although the research is helpful, it does not necessarily give absolute answers to the key questions.

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1.7.3 Research Materials: Primary and Secondary Data

Through the exploration of the literature review, a general understanding and consensus of architectural environments and the human wellbeing, these two relationships will be critically analysed. This will provide an architectural understanding for both the form and facilities required. The secondary data sources will include various published materials namely books, journal articles and internet pages. In addition non-published items, such as other theses, design and construction drawings may also be viewed.

The primary data will consist of a questionnaire sent to various architectural professionals around South Africa. The contents and findings of this questionnaire will be discussed in detail in Chapter 8 under analysis and discussion.

Once the primary and secondary information has been observed, these data sources are then combined and synthesized with the intension of informing the design process.

1.6 CONCLUSION

Through this introductory chapter the author has created a clear structure on the background, motivation/ justification of the study, aims and objectives. As well as stating the assumptions, a hypothesis and key questions for the study and creating a break-down of each of the chapters. Each of these chapter break-downs includes a brief explanation of literature that will be investigated. Finally the various concepts/ theories and research methods have also been defined. In the following section the author explores the literature review that is pertinent to the dissertation topic.

CHAPTER TWO

WHAT CONSTITUTES HUMAN WELLBEING AND HOW IS IT AFFECTED BY ARCHITECTURE

2.1 INTRODUCTION

Some property developers and architects aim to create sustainable environments that allow overall for a positive impact on human wellbeing. To some degree this is a reaction to the decreasing levels of individuals' wellbeing within their urban built environment and is often associated with extensive environmental damage (Local Environment: 2008; 703). In this sense architecture is a macro-level response to the impacts of urbanisation. Architecture also affects wellbeing at the level of the city block or city park which is referred to as the meso or intermediate level and is really the realm of urban design. At the micro scale, we refer to individual buildings and this is perhaps traditionally the area where architects have the greatest impact on humans.

However before one can understand the impact architecture has on the human environment one must first consider the various aspects of human wellbeing, health and healing. This Chapter aims to deal with these issues and the characteristics associated around three areas of wellbeing, health and healing. It also explores whether or not these three aspects are inter-related. The author will attempt to answer questions like; "what does wellbeing and health mean?"; what is meant by the phrase 'the wellbeing of people?' and "what does health have to do with architecture?"

2.1.1 What Is 'Wellbeing'?

Human wellbeing is a large area of study and is extremely complex- as complex as the human being. Humans are multi faceted and have physical, mental and spiritual aspects which coalesce to determine happiness or wellbeing. If one is physically challenged, say missing an arm or a leg or eyesight or hearing - this may very well impact on the wellbeing of that person. However depending on the mental outlook the individual may still be happy and content. The spiritual outlook can further make a significant contribution to the state of wellbeing and many would say that this is the source of wellbeing in that it impacts on the mental and physical aspects.

A person's 'well-being' is closely related to health and the environment (Easthope & White: 2006; 1-2). According to the Australian Institute of Health and Welfare (AIHW), 'health' can be defined by

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various social, behavioural, cultural and emotional factors and encompasses *inter alia* issues of physical and mental health, education, diet and other behaviours (AIHW: 2003; 89-90). The World Health Organization defines 'health' as a "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." (www.who.int). There is a distinction between 'health' and 'wellbeing'. Health is considered to be mostly associated with a specific condition (eg: someone having good or bad health). On the other hand wellbeing is mostly used as an indicator which focuses on the persons health factors and outcomes, this is mainly characterized by health, happiness and prosperity (AIHW: 2003; 89-90).

According to Diener & Eunkook (2000), psychological literature explores the main and most detail-specific issues associated with wellbeing. A person's individual perspective or 'subjective wellbeing' is explained as a representation of one's own 'quality of life'. This includes aspects such as: the quality of relationships, achievements, individual values and beliefs. This 'subjective wellbeing' also relates to the degree to which an individual, in any society, accomplishes values they hold dear (Diener & Eunkook: 2000; 3-12). Headley (1998), Ryff (1989), Sagiv & Schwartz (2000) and Triandis (2000), all share a common thought and explain the 'subjective well-being' as a medium between two dimensions: "cognitive assessments or satisfaction" and "positive effects or feelings of happiness". In addition, it is argued that the structural components of individuals and life events all aid in the impact on the level of subjective wellbeing and this remains reasonably constant over one's lifetime (Cummins: 2000;133-158, Ryff: 1989;1091-1081, Sagiv & Schwartz: 2000; 177-198).

"The very distinction between the mind and body, between mental, physical and social elements of life may be part of the problem, because they mask the real, complex struggles that people have in making a life..." (White & Wyn: 2004; 215)

A holistic perspective, explores additional aspects such as an individual's spiritual and cultural view; as well as ones mental, physical and emotional health, participation and inclusion in activities, social support and financial stability and wellbeing (Eckersley et al: 2006; 10-18). As the above quote implies, the vitality of an individual is closely related to the social elements of life in that people live within society which impacts on them every day. A simple illustration of this would be the negative mental and physical outcomes that some urban environments in South Africa have on their residents. Consider for a moment that all of South Africa's metropolitan areas are affected by urban sprawl with long commuting distances and poor public transport. This impacts on poorer city residents on a daily basis at a physical level (e.g. tiredness, low productivity etc) and at a mental level (e.g. frustration at loss of family time, concern over money spent on transport etc). It is therefore considered appropriate

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that the concept of 'wellbeing' not only explores the issues associated with one's outcomes and emotions at the level of the individual or 'person' i.e. from 'within the person' but also the difficulties which are potentially encountered from 'without' which would include interactions within the social realm.

2.1.2 Understanding 'Stress' and Its Causes

How a person deals with stress can impact heavily on that individual's wellbeing and given that stress is a term used in common parlance some consideration thereof is necessary.

According to McKay et al (2004), 'stress' is a product of an imbalance between individual resources and various environmental demands ('stressors'). These 'stressors', are mainly brought about from environmental demands, and are different from strains which are one's response to demands (McKay: 2004; 91-112). However, the term 'stress' is still under scrutiny from diverse academic perspectives and as it stands there is still no real distinction made between strains and stressors. A study, conducted by Jex, Beehr and Roberts (1992), explores this lack of distinction and aims to define the term 'stress'. According to Jex et al (1992), 'stress' is defined as: "a stimulus from the environment", "as a response to environment" and "as a stimulus-response to relationships" (Jex, Beehr & Roberts: 1992; 623-628). The understanding of 'stress' as a concept, has an increasing link to Western society as being a metaphor for one's misfortune, dissatisfaction, suffering and ill health (Mulhall: 1996; 33). Barley and Knight (1992) see 'stress' as combining various negative environmental factors (air, water and city/ neighbourhood pollution), individuals feelings (social, family and job demands), physical sensations (depression and anxiety) and cognitions (Barley & Knight: 1998; 1-48). Clark (2003) explains a common link that appears in individuals who have a tendency to attribute illness to stress (Clark: 2003; 544-553). Individuals create metaphors when describing stress related symptoms, such as "a heavy weight pressing down", "a state of tension such as a wire that is taut and could suddenly snap"; "A 'speeding up' of physiological processes that leads to physical breakdown" and "a buildup of pressure that needs to be released in some manner" (Pollock: 1988; 381-392). These explanations tend to highlight the fact that stress can be a factor leading to poor physical health. In so far as the work of the architect is concerned care must be taken to create environments that relieve stress or at the very least do not compound it.

According to *stress directions* and *help guide*, there are five sources of major pressure and demand which evoke stress in an individual, including the following; personal stresses, family stresses, job/ financial stresses, social and environmental stresses (www.helpguide.org). For the purpose of

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understanding what influences increase the levels of stress in an individual, a brief explanation of these demands and pressures is given below.

Personal stresses are situations that are closely related to one's personal relationship with oneself. If one is prone to having a strong, positive sense of self it is often easier for these individuals to overcome stress and cope with life. These stresses can come from one's personal success and achievement as well as the more negative aspects of personal setbacks and failures. Family pressures and demands are brought about through one's family life and this can be a major form of stress for an individual. However these sources of stress can be managed effectively, through improving communication skills and listening. Just about every individual is affected by stress in the working environment or as a result of financial demands, with both of these potentially becoming major sources of stress in a person's life. According to the *Stress and Health* journal (2009), the stress and wellbeing of an individual can particularly be related to the current world economic crisis. This crisis brings about both psychological and medical consequences, for instance the stress and worry of unemployment and financial problems sometimes leads to heart attacks and strokes (*Stress and Health*: 2009; 25:207).

There are clearly many potential sources of stress, with the 'mix' of stressors being different for each individual depending on their individual make-up. The severity of the stress and the ability of the individual to cope, means that the health of each individual will be variably impacted.

Albeit only superficially, the foregoing discussion has covered the issues of health, wellbeing and stress and it is clear that this is a complex area and that individuals are variably affected and afflicted. The key question in this dissertation is whether architecture has a role to play in promoting wellbeing. The environment in the broad sense can be both a potent source of stress as well as concern for most individuals. The quality of the environment is an area in which architects do play a role. Environmental stresses can come from the macro- context of the environment, for instance environmental degradation associated with city growth and the often associated pollution (air, water and noise) to the intermediate context of the everyday hustle and bustle of neighbourhoods and city life or the lack of public, social and green spaces within the cities framework and finally to the more micro-specific context of one's home and working environment with the latter manifesting in the form of sick building syndrome (Day: 2002; 187-189).

Taking the macro context in consideration, architects do play a role in the development of cities but this role is limited. This is primarily the realm of city or town and regional planners as well as

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transport planners and infrastructure engineers. At any rate there are so many actors involved in ‘city building’ that the role of any one actor is diluted. The way in which cities unfold is also very much a function of national policy in the areas of; *inter alia*, housing, economics and transport.

The intermediate context is at the level of perhaps a city neighbourhood or a city block and is probably the realm of urban design. There are many architects who steer their careers towards this area perhaps because of the ability to make a real difference or ‘big impact’ on many people which is mostly not achievable through designing a standalone building.

If architecture can as Day (1990) believes, be classified as a ‘healing environment’ and contain ‘healing properties’ (Day: 1990; 138) surely we as both current and future architects, ought to be creating architectural environments to aid in human wellbeing?

2.1.3 Creating Balance: Health and the Architectural Environment

Winston Churchill once stated “... we shape our buildings; and they shape us”
(Alexander: 2002; 372)

It is said that both consciously and sub-consciously places, spaces and environments affect ones wellbeing, but there is often confusion around what the relationship is between individual human health and the environment. According to Day (2002), the term ‘health’ is often defined to the exclusion of issues encompassing life-energy, physical fulfillment and the ‘state-of-the-soul’ dimension (Day: 2002; 181).

Day (2002; 181) defines health as ‘a state of renewal, development and balance relation to the world’ which implies a cyclical renewal; balance of elemental forces (Solid, water, air and warmth) and fertility development. This concept can be carried across to humans, as referring to three aspects;- life vigour, emotional stability and spiritual growth (Day: 2002; 181).

“Buildings can support health physically and spiritually, but they can also make us
ill.” (Day: 2002; 187)

Alexander (2002) expresses that according to an individual’s common sense, the physical environment affects one's life and the shape of a building affects one’s ability to love, ones wellbeing and one’s behaviour. He also believes that the correct influence from the physical environment, with a component of a living structure, will promote and nourish an individual’s freedom of spirit. However,

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in the wrong kind of environment, one that lacks a living structure, an individual's freedom of spirit can become either weak or can even be destroyed (Alexander: 2002; 372).

The actual physical environment, although an element of healing in its own right, is closely linked to the various dimensions of optimal healing environments. According to the Journal of Alternative and Complementary Medicine (2004), certain elements of environmental design can either help or hinder the healing process of individuals. On the other hand, the environment can also generate a large impact on health through the influence of action, behaviours and interactions of the inhabitants (Journal of Alternative and complementary medicine: 2004; S71-S83). Urban environments and buildings need to be designed to encourage a certain level of social connectivity, through social interaction and engagement. By doing so it creates and builds relationships and reduces the stress levels allowing individuals to relax and socialise, taking a 'break' from their fast paced lifestyles (Reynolds: 1990; 101-110).

2.2 CONCLUSION

Members of society are constantly placed under numerous stresses, be it due to the economic crisis, the urban and internal environments individuals place themselves in or even general stresses, like finance, family, social stress etc, this affects the human wellbeing. The field of human well-being and stress has become a significant research theme for both the medical and psychological professions. Institutes throughout the United Kingdom, United States of America and the European union, conduct research on minimising the causes of negative human well-being and stress within communities (Stress and Health: 2009; 1). As this dissertation (continues) unfolds the reader becomes aware of (one will see) the relationship between architectural environments and how a human's wellbeing is affected.

CHAPTER THREE

THE IMPACT OF CITY FORM ON WELLBEING

3.1 INTRODUCTION

Reducing car usage in high-density cities is one of the significant ways of increasing a city's resource efficiency. The presence of a good public transport system enables city inhabitants to reduce their dependency on private cars without sacrificing mobility. Such a move potentially allows for higher living densities without the roads becoming blocked up and mobility suffering. Such cities often exhibit mixed land uses with residence, employment and recreation in close proximity. In turn these cities can offer larger opportunities for sustainability and therefore can create a more positive feeling of wellbeing for inhabitants (Jenks et al: 1996; 1-10). Michelson (1976) expresses that the cities (macro context), neighbourhoods (meso context) and housing (micro context) all make a difference in the manner in which people live their lives and how their wellbeing is affected (Michelson: 1976; 3-4).

The urban typology of sprawl is examined since the city of Durban, which is 'home' to the case study being examined in this document, is a low density city characterised by urban sprawl. The issues, characteristics and consequences of sprawl will be explored as well as how commuting affects human wellbeing negatively. The aim of this section is to highlight the issues that affect humans wellbeing at a broad macro level. However an argument can be made that any major interventions at this scale really fall within the realm of regional planners and infrastructure engineers rather than architects. Though one may have instances where architects are instrumental in introducing higher densities into the built form and in this way play a role in combating urban sprawl, the ability to do this is dependent on other issues such as zoning and the presence of public transport systems which fall outside the realm of architects. In fact overcoming urban sprawl requires a major co-ordinated effort on the part of many built environment professionals supported by changes to national policy such as the subsidised housing programme in South Africa that is one of the major drivers for continued low density development as well as a major shift towards a good quality public transport system. In this context the focus of this architectural dissertation will be on the meso and micro context where the work of the architect really comes into its own.

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3.2 SPRAWL

3.2.1 Introduction

Urban Sprawl is seen as a phenomenon with widespread negative impacts on society (Torrens: 2006; 248-275). Sprawl, according to Kunstler (1993) is a relatively new type of urbanisation and falls somewhere between the Garden City ideas of Ebenezer Howard's¹ (Figure 1) and Le Corbusier notions of "geography of nowhere" (Kunstler: 1993; 35). One of the most prominent symptoms of urban sprawl is the general increase in travel time, high levels of traffic congestion (arising in and around the urban areas) and the stress implications that are heightened with commuting. Through larger amounts of travel time and spending time in traffic, it can potentially increase stress levels and create a negative impact on ones wellbeing (Downs: 1998; 8-12 & Galster et al: 2001; 681-717)



Figure 1: Louis de Soissons, Welwyn Garden City Town Plan (Unit 23: 1975; 41).

Urban Sprawl is conceptualised as a process by which rapid low density population growth occurs in particular areas, outside 'core' urban areas. This type of growth is located on the outskirts or periphery of the urban areas and is generally not continuous with it, therefore it is considered to be sprawl rather than a natural expansion of the core. This growth manifests as "randomly placed population clusters outside the continuously built-up area". The commuting patterns of these cities do not necessarily reflect the common situation that pertains - with length of trip increasing due to the

¹ Garden Cities are planned, self-contained, communities surrounded by greenbelts, containing carefully balanced areas of residences, industry, and agriculture. With the land being publicly owned but private enterprise being able to excel and flourish therein. The city becomes an effective, working community. 'The Garden City is not a suburb but the antithesis of a suburb: not a more rural retreat, but a more integrated foundation for an effective urban life' (Howard: 1965; 34).

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density increases- instead the sprawling environment means the length of commuting begins to reflect the dispersal of both the jobs and homes (Sultana & Weber: 2007; 193-194).

3.2.2 Sprawl- Its Characteristics and the Consequences

According to Torrens (2006) sprawl is a new type of urbanisation with distinct characteristics. It is a rapid process that involves urban growth through suburbanization. Many urban cities- such as Las Vegas, Naples, San Jose California, Durban etc- fall under a sprawl typology (Figure 2). Sprawl is geographically located on the periphery of cities, these areas where usually known as the nonurban areas of the metropolitan fringe. Generally these developments are low-density and are considered to be at a lower density than smart growth, development in central cities or urbanisation in older cities. Sprawl is a "piecemeal form of development" (Torrens: 2006; 249) with a scattered and fragmented urban morphology pattern. Sprawl is characterised by homogeneity of land use, with large areas of residential development devoid of employment and with the commercial areas arranged in a "ribbon sprawl" or "retailscape"- these areas become prime activity places focused around private transport and with little thought given to non vehicular transport (Harvey & Clark: 1965; 1-9, Gordon & Richardson: 1997; 95-106).



Figure 2: Showing the extent of sprawl in San Jose, California. One can clearly see the predominant freeway networks and the grid system planning technique (www.south-bay-notary.com).

"Urban sprawl, roller-painted across the countryside, is often without form, grace, or a sense of community. Planning philosophies aimed to strike down this amorphous creature should only gladden our hearts" (Lessinger's: 1962; 169)

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There are several reasons why sprawl is problematic. These include; a large amount of infrastructure and services is needed to be provided over these low-density areas which serve a small proportion of the overall cities' population. There are also a series of poor "indirect externalities" such as poor air and water quality, increased travel distances and high accessibility costs. However, on a more positive note, sprawl also satisfies residential demands and provides a relatively simple solution to affordable housing if the full life-cycle cost of housing is not considered (Torrens: 2006; 249).

Geographical location is what drives the factors surrounding sprawl, operating on a "space-time dynamic" of the city as well as the behaviour of the cities inhabitants. Sprawl is particularly present in the distinct locations within the metropolitan environment and is not sustainable with regards to the consumption of space- being characterised with specific "spatial patterns and structure".

Some cities are trying to set in place measures to counter sprawl. For instance Green belts² (similar to those in Garden Cities) have been introduced in many European cities, this is to prevent the outward expansion of the suburban growth. Whereas, in the United States, a similar goal is meant to be achieved by geographical means. These include specific areas where development can take place, reinforcing "activity-place incentives and disincentives to influence the urbanisation" (Torrens: 2006; 250). Urban growth boundaries have long been used worldwide as a measure to counter sprawl and Durban is no exception. In its Spatial Development Framework as far back as the year 2000 an 'urban edge' was introduced to put the brakes on the rapid development in Umhlanga Rocks and in Hillcrest.

3.2.3 Commuting and Its Impact on Human Wellbeing

One of the major issues with sprawl is the extensive commuting people have to do to get to and from residence, work and social activities. Daily commuting is an important part of today's society and it not only demands a large amount of time, but according to Stutzer & Frey (2004), it also begins to take its toll on an individual's physical and mental wellbeing; giving rise to various different complaints and problems. Commuting the distance between work and home on a daily basis involves more than distance or time, since it generates financial costs, causes large amounts of stress and it begins to interfere with the relationship individuals can have with their family (Image 3). Statistically, commuting has been proven to generate the least positive activity and has a high negative effect on an individual (Kahneman et al: 2003: 5).

² Green belt: A 'belt' or 'edge' of recreational parks, farmland, or uncultivated land that surrounds a community or urban environment (www.thefreedictionary.com)

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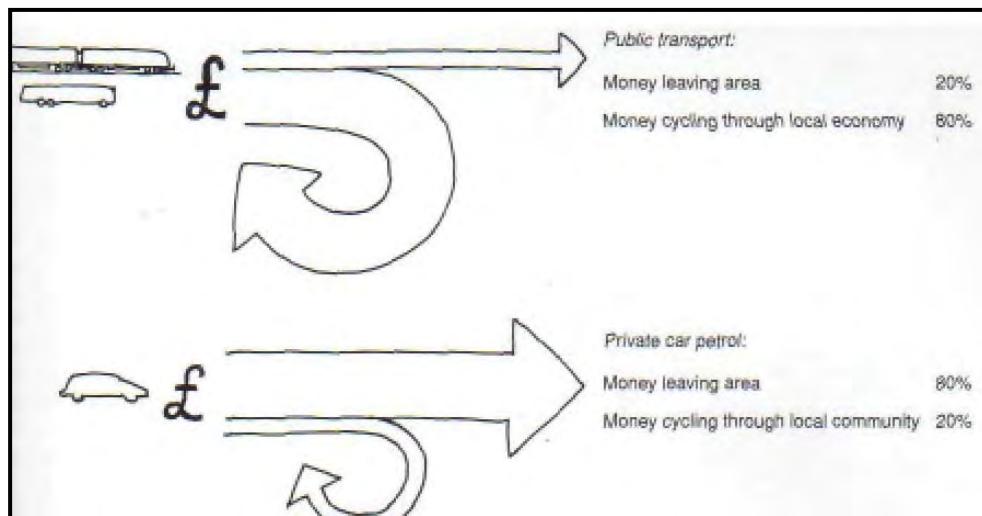


Figure 3: Diagrammatically represents (with percentages) the monetary difference between the use of public transportation and private car usage (Day: 2002; 137).

There are many environmental stressors that come with commuting- noise and air pollution and large crowds- causing negative emotional and physical reactions. These reactions not only depend on the distance and time of the commuting but also other factors that interact with these stressors. There is an increase in stress when the individual is not in control of various factors that happen unexpectedly- for instance traffic jams or when the individual is placed under time constraints and yet has long distances to negotiate- this creates unnecessary strain on the individual increasing the person's blood pressure, tolerance levels, putting the person in a bad mood (Stutzer & Frey: 2004; 4-5).

Lower densities and less compact cities means work places, homes, shopping and most other destinations become further apart, causing a favour towards private modes of transportation instead of public transport, walking or car pooling. The ramifications include, *inter alia*, pollution, congestion, increased time in vehicles³, less family time, and lower productivity due to wasted time on the road each day. Therefore there is an increase in the negative impacts on family life, communities and personal health.

³ From a statistic point of view, the EU's average daily commuting time is approximately 37.5 minutes whereas in the United States the average is 48.8 minutes (Stutzer & Frey: 2004; 4-5).

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3.3 CONCLUSION

Urban sprawl is a complex phenomenon and is a result of *inter alia*, the locational choices of certain sectors of the housing market where the core urban area is not providing the quality of life that people seek, the lack of a good public transport system which leads to the private car being worshipped, mono-functional land use zoning which reduces opportunities for residents to live in quality neighbourhoods with work prospects. The negative implications are patently visible. So, what can architects do about sprawl? Architects can consciously choose to focus on urban design projects and buildings that contribute to revitalising core urban areas, bringing quality spaces back to these built up areas and thereby beginning to compete against suburban locales. Projects that bring the health back to tired urban centres such as precincts supporting public transport, urban parks, healthy buildings and interesting public spaces are all causes worthy of the architect's attention. In essence we ought to aim for cities that truly serve the needs of all residents and at the same time remain financially and environmentally sustainable- a new urbanity.

CHAPTER FOUR

THE IMPACT OF THE MESO CONTEXT ON WELLBEING

4.1 GENIUS LOCI AND ITS RELATIONSHIP TO WELLBEING

4.1.1 Introduction

“... You begin to realise that the important determinant of any culture is after all the spirit of place” (Durrell: 1969; 156)

Norberg-Schulz (1980) explains that the ‘environment influences human beings, and this implies that the purpose of architecture transcends the definition given by early functionalism which in essence states that architecture’s purpose is purely to design buildings that are habitable i.e. buildings that are safe and function correctly. There is a basic relationship between man and the environment (be it architectural or non-architectural). As individuals we are more prone to identifying with certain environments, particularly if they are ‘meaningful’. Therefore a ‘dwelling’ becomes more than just a ‘shelter’ and those spaces within which life occurs are rather ‘places’ in the real essence of the word (Norberg-Schulz: 1980; 5). This section aims at creating an understanding of what is ‘genius loci’, its relationship to both design and planning in modern society and will also consider what it means to have a ‘loss of place’.

4.1.2 Understanding ‘Genius’ and ‘Genius Loci’

‘Genius Loci’ originated from the ancient Roman times and was symbolic for the Romans tutelary spirit that existed and lived outside the human body. The Romans believed that throughout their lives they were accompanied by a ‘genius’. The human’s life would begin when the ‘genius’ joined his/her body and ended when the ‘genius’ left the body. The ‘genius’ could alter the human character, the state of happiness, generate positive or negative happenings and also influence the human’s mode of life. The ‘genius’ was not limited solely to the level of an individual but also existed for families and professional groups, like craftsman or artists, and even existed for societies, states and whole cities. It acted as a preserver, a generator of life and generated the characteristics of the individual or group. As ‘payment’ the ‘genius’ would demand attention from its tutee in the form of a prayer or sacrifice (Jiven & Larkham: 2003; 68-69)

Over the last two centuries, the understanding of the ‘genius’ and the ‘genius loci’ has evolved. In the 18th century, the users of this term developed a new appreciation for landscape aesthetics, particularly

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in garden and rural landscapes, expressing this as ‘genius loci’ (Hunt & Willis: 1988). Poets such as Alexander Pope (1731) wrote about genius loci, exploring an ideal, picturesque classical view, shaped by humans (Mowl: 2000; 93-104). Pope (1731) writes lines such as “consult the genius of place in all that tells the waters to rise and fall, or helps the ambitious hills the heavens to scale ...” (Pope: 1731; lines 57-59), which reflect the use of the term ‘genius loci’ in relation to landscape or ‘place’. Jackson (1994) supports this view and relates ‘genius loci’ to the atmosphere of a place and “the quality of its environment” (Jiven & Larkham: 2003; 68-69).

“... to take all the elements that go, to create the environment: buildings, trees, nature, water, traffic... and to wave them together in such a way that drama is released. For a city is a dramatic event in the environment.” (Cullen: 1961; 9)

Authors like Cullen (1961) above, Conzen: (1966), Sharp (1969), Worskett: (1969), Norberg-Schulz (1980), Steele (1981) and England (1983), discuss the issues of ‘character’ using terms like ‘spirit of place’, ‘genius loci’ and how this relates to the gestalt theory (referring to one’s perception in combination with a specific emotional experience or reaction to a certain place or environment) (Jiven & Larkham: 2003; 68-69). Richards (1994) and Coleman et al (2002), argue that Cullen’s (1961) explanation of genius loci (embodied within the above quote) is too focused on the contemporary concepts of urban design. Gosling & Maitland (1984) are of the view that “Cullen’s investigations of desirable qualities of good urban environments differ considerably from the academic analysis of Lynch (1960) “Cullen’s method introduced a rather synthetic framework for those sometimes elusive qualities...” (Gosling & Maitland: 1984; 48-49). By using the subtle or “elusive qualities” the human experience is more emotional and the individual creates a personal reaction to a place (Jiven & Larkham: 2003; 69). Lowenthal (1979) believes that the past exists as both an individual and collective construct, with some of these experiences and values being important within various cultural and ethnic groups. Group identity is closely linked to the history and form of the place and environment, creating a sense of place or ‘genius loci’ (Lowenthal: 1979; 549-559).

“... the landscape, whether that of a large region like a country or of a small locality like a market town, acquires a specific genius loci, its culture- a history-conditioned character which commonly reflects not only the work and aspirations of the society at present in occupancy but also that of its precursors in the area.” (Conzen: 1966; 56-57)

Walter (1988) expresses the notion of ‘genius loci’ as the ‘expressive intelligibility’ of places; this is a quality that can be perceived holistically through one’s senses and memory, imagination and intellect.

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Tuan (1977) explores space as a combination of the embodiment of images, feelings and thoughts of the individuals who constantly frequent that space by working and living there (Jiven & Larkham: 2003: 69-70).

4.1.3 Norberg-Schultz and ‘genius loci’

Norberg- Schultz (1963) one of the main philosophers on ‘genius loci’, believes that the key to the image of a ‘place’ is seen through the town’s skyline with its silhouette of urban buildings. Through conserving traditional forms within towns and buildings, a deeper symbolic understanding of places and spaces can be achieved (Norberg-Schultz: 1963; 33-35, 48). ‘Genius Loci’ is a conscious and subconscious sense people have of a place, through the understanding of the physical and symbolic values of the human environment and nature. According to Norberg-Schultz (1963) there are four levels that can be recognised in a place described to have ‘genius loci’; “...the topography of the earth’s surface; the cosmological light conditions and the sky as a natural condition; and buildings as symbolic and existential meanings in the cultural landscape” (Norberg-Schulz: 1985; 33-35).

“The single houses, the villages, the towns are works of building which... bring the earth as the inhabited landscape close to man, and the same sky.” (Norberg-Schultz: 1980; 10)

The genius loci within nature can be roughly divided into three aspects; the topographical landscape (with its cosmological and temporal perspective); the natural conditions of a specific place (the changes of light and the vegetation in an annual cycle) and the stability of the physical form (the topographical landscape is contrasted by the characteristic rhythmic fluctuations brought about through changes in light and vegetation through the day and over the seasons) (Norberg-Schulz: 1980; 25-32). According to Norberg-Schulz (1980), there are three basic landscape characteristics: cosmic (‘space like’ and lunar landscape. Figure 1 & 2), classical (‘old world’ feel, buildings with old traditional architecture and often have a rural farming feel. Figure 3 & 4) and romantic (mythical or fantasy feel. Soft and lovely to behold. Figure 5 & 6). These characteristics are considered to be ‘understandable ideal types’ that create a sense of place, symbolic meaning for the settlement and building type (Norberg-Schultz: 1980 & 1985; 48). Norberg-Schultz (1980 & 1985) believed that nature fuels an individual’s interpretations and relation to place, therefore in specific environments objects take on different meanings and individuals’ lives are influenced by the orientation and identity of their environments (Norberg-Schultz: 1980; 203 & 1985; 15-25). Norberg-Schultz (1980 & 1985)

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view of genius loci is heavily influenced by the Gestalt psychological view which elevates the role of human perception and influence.



Figure 1 & 2: Shows the 'lunar' landscape appearance of the 'cosmic landscapes'. The rolling sand dunes and 'craters' it creates immolates the 'crate' image of the moon (www.landsgenre.webs.com)

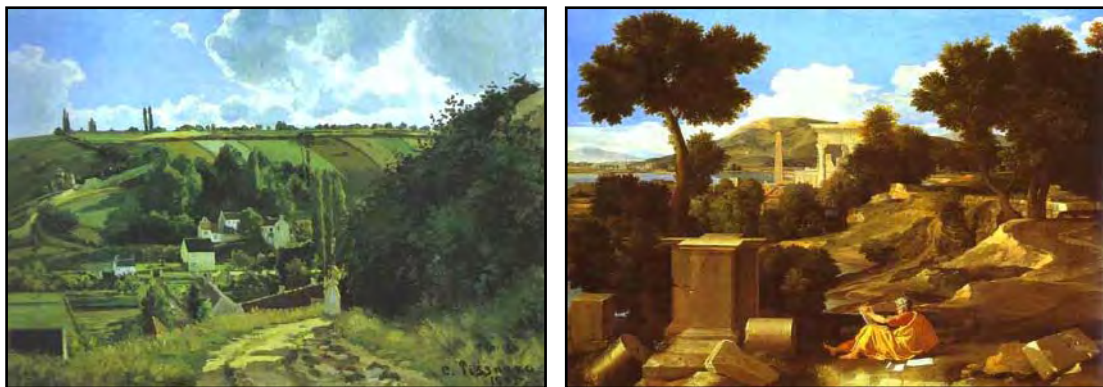


Figure 3 & 4: Shows rural farming spaces that keeps the language of the landscape the same and is sensitive to the 'sense of place' (www.landsgenre.webs.com)



Figure 5 & 6: Shows the fantastical and 'rich' landscapes that entices one to 'frolic' in the landscapes (www.landsgenre.webs.com)

The concept of 'genius loci', be it from Norberg-Schultz' understanding or from other authors, is a complex and multi-layered concept, with many authors holding similar or differing views about its

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meaning. The concept of ‘genius loci’ cannot adequately be described in words because it is a subtle element which one experiences more at the level of feelings or emotions. At a very practical level many of us can relate to ‘feeling at home’ in a particular environment or ‘feeling out of place or at odds with the place’ or one may appreciate the unique or special quality of a place. One may wish to intellectualise such feelings and analyse what causes them to arise, but this often brings incomplete answers since the ‘sense of place’ that exists in any particular area is an amalgam of its history and the ‘layers of consciousness’ of its inhabitants over millennia as they participated in giving of their conscious efforts in the shaping of buildings, urban spaces, works of art, furniture, and literally all the building blocks that make up a place whether it be urban or rural.

4.1.4 Genius Loci, Design and Planning

“The purpose of architecture is to move us.” (Le Corbusier (1923) in Norberg-Schultz: 1980; 6)

The aspects of genius loci are seen in many different settlements both traditional and pre-industrial. For example, Sentosa is based on the cosmological beliefs, traditional measurements and societal structures (explain how these things lead to the traditional Balinese building style) that shape what is understood to be ‘genius loci’ within these Balinese environments (Norberg-Schulz: 2001; 255). The location, planning and conservation of Asian settlements, ranging from the Korean villages (Figure 7) to the Japanese Castle settlements (Figure 8) and Suzhou (Figure 9), are related and based upon similar architectural styles. For instance the double-pitched roofs have a characteristic element of the eaves tapering upwards (Kang: 1999; 236-243 & Satoh: 1998; 217-234). Aspects that are particularly related to the importance of genius loci and the natural environment are represented well in landscape design (Jiven & Larkham: 2003; 71). Examples of Asian gardens are Tea gardens, pond and island gardens, Japanese gardens, courtyard gardens and Zen gardens (will be discussed in more detail in Chapter under the landscapes and garden section) - to a certain degree these gardens mimic nature on a smaller scale through the use of paths, stones and specific types of vegetation and trees (<http://www.landscape-design-advisor.com/japanese-landscape-design.html>). Sharp (1946), was well known for his sympathetic approach to the character of places and his reconstruction of plans. This is seen in smaller towns that had a more medieval origin and informal layout. Sharp (1946) expressed that a ‘good plan is that which fulfils the struggle of the place to be itself, which satisfies what a long time ago used to be called the genius of the place.’ (Jiven & Larkham: 2003; 71). From an architectural and urban design perspective the lesson would be one of awareness of the unique qualities of a place and sensitivity to these qualities so that in new projects involving additions to the

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built environment or re-working of existing areas that one can enhance the sense of place or at the very least, not detract there from.



Figure 7: (Left) An example of a Korean Village, exploring the use of natural materials and the characteristic roof (www.worldproutassembly.org)



Figure 8: (Right) An elaborate example of a Japanese castle, exploring the use of stone on the cladding and the signature upward 'flick' of the eaves (www.travel.com)



Figure 9: (Right) A Suzhou house. Situated a long side water, the building incorporates various decorative properties like the traditional upward 'flick' of the eaves and signature stone cladding and white exterior walls (www.travelpod.com)

"... when form after form is added to the surface of the earth, the whole cultural landscape should be seen as an objectification of the spirit of a society and as the *genius loci*." (Conzen: 1966: 56-78)

'Genius loci', according to Conzen (1966) is characterised into geographical variations within a town, a building pattern or utilization, where the urban landscape works similar to a manuscript of layers that are not erased by their predecessors. This townscape concept is central to Conzen's ideals and

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expresses how these ideals allow for individuals to perceive, make and use various areas of their cities (Conzen: 1966; 56-78). Conzen (1966) requested there to be change to the urban form. This, in relation to the cyclic building development would be transformed, cleared and finally the urban design would follow before the new cyclical transformation. He believed that the 'genius loci' of a place would be amended when the physical townscape was transformed. This belief usually derived from the traditional building form evident in the medieval (Figure 10) and European cities (Figure 11). Although most of the analysis is done in these cities, Khartoum is also analysed. (Norberg-Schultz: 1980).

Comparing figures 4 and 5, one gets a sense that there is a common aesthetic element embodied in the buildings. The similar roof pitch (probably related to the climatic conditions) and the colour of the roof tiles (probably related to the colour of local clay) are two easily identifiable elements that evoke architectural coherence. In the modern era, the development of paints and building finishes have presented a more economical option in many countries, to replace the clay tiles with ones made of cement and subsequently deviate from the traditional colours employed on the external walls of buildings. The question is “what mechanism ensures that cities such as the ones above retain their visual cohesiveness?” Built form controls held in place by the city administration must play a role in retaining city identity. However, one will probably find that the culture instilled within institutions of architectural learning, is one of conservation and sensitivity to the local architectural vernacular. Further, one will probably find that the local populace is a strong supporter of retaining the peculiar but traditional identity of their city and thus rejecting radical deviations.

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Figure 10: (Right). This image depicts a medieval town surrounded by a public square. There are some qualities that evoke 'genius loci'. Nearly all the roofs are double pitched tiles with plastered wall facades. The buildings are predominantly retail on the lower levels and residential units on the upper levels. The vehicles are sectioned to specific areas and the pedestrians take preference. These simple principles are those of medieval designs and ultimately give the area its 'sense of place' (www.transylvaniatravelguide.com)

Figure 11: (Right) Similar to that of the medieval town, the renaissance themed European city holds its own 'character' through the use of similar material types and building typologies. There is a sense of 'order' and 'control' (www.voyager.com)

More recently an increase in the ideals of "New Urbanism" has become evident. The key belief for this period in time was that the characteristics depicted in (Figure 12). The elements that generated a positive contribution to the 'character' of a place can be identified and re-interpreted. Therefore Kim (2000) explains "the use of traditional architectural styles and urban elements like alleys, carriage houses, picket fences and common spaces surrounded by diverse housing types will create a distinctive physical character or sense of place." (Kim: 2000; 48). This may be the case, but there is a lingering question around how 'authentic' such a place may feel. Will it have that mellowed and natural feel of an old European city? For example; Has the place emerged organically and can its history be traced from its streets and buildings? It is no doubt too much to ask for a new urban precinct to have the character of a 500 year old city block but certainly New Urbanism is trying to find answers to some of the modern day city problems and to create environments that work for residents.

However, 'genius loci' and 'character' are effectively created and certainly sustained through the appropriate application of planning measures (through for example building controls) and the individual architects interpretation of how an existing building may be re-modeled in a way that is sensitive to its surroundings or how a new building may resonate with its 'neighbours'. The overall

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community perception, experience and values also comes into the mix since it is often these things that indirectly mould the architectural brief and architectural response by way of ‘setting the envelope’ for what is considered acceptable or sensitive design. If one considers many of the older European cities such as Rome, Paris, Amsterdam etc the urban and architectural forms are valued and conserved as they represent the history of these societies and the distinctive architecture and urban form are pillars of the local tourism industry. Humans travel to other countries generally to enjoy new and novel experiences, to savour the uniqueness that is different from their home town or city. Therefore a certain level of place making and the interpretation of place become increasingly important to all settlements worldwide (Jiven & Larkham: 2003; 74). Urban form and buildings can play a very significant role in making places special and unique as they embody the history of the place and its people and have evolved over centuries to be responsive to the local climate.



Figure 12: Image of a new urbanism public scene with a public square. The ideas of mixed use buildings has been used, the building typologies are different from the more contemporary building to the right compared to the more traditional building in front. Although the ideas of medieval and renaissance thinking, to a certain degree, have been incorporated (like the public space and mixed use building types), a different ‘sense of place’ and ‘character’ is given to the area (www.theurbanbriefcase.com).

4.1.5 Conclusion

It is clear that creating a ‘sense of place’ or ‘genius loci’ impacts on the human psychology and wellbeing. Throughout history, architects visualising solutions to built environment challenges have been confronted with the concept and reality of, ‘genius loci’. It was and still is considered to be a powerful urban intervention and ordering tool within the city (Boyd Whyte: 2003; 40). As an architect the challenge is to be sensitive to the ‘genius loci’ that a place or a site may possess before rushing in,

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pen in hand wanting to imprint one's own ideas on the space. One ought to have an appreciation for the history of a place, the 'feel' of a place and to make efforts to meld this understanding with the technical and financial opportunities and constraints that one faces as an architect.

4.2 PUBLIC SQUARES AND WELLBEING

4.2.1 Introduction

A public square can be expressed as an 'ordering and structuring tool', used by city planners in designing urban centres. Throughout history one is able to see the positive influences a public square can have on a town as well as its inhabitants. There are numerous ways in which one can create unique public gathering spaces. Such 'spaces' can be created from the green belts winding through the city (seen in garden city planning) to the market place facilities (explored in many Islamic and European cities). For a city to be coined as being 'successful', it needs to allow for designated areas for public interaction, both planned and spontaneous spaces, which function separately yet form an interconnected organism functioning together as a whole.

Public Squares, with reference to today's times, represent "microcosms of urban life" (Webb: 1990; 1) and these spaces can be seen as identifiable elements in an urban city. An urban space has the ability to create and offer excitement, house markets and public ceremonies as well as bring people of different races, socio-economic backgrounds and cultures together in a mutual common ground.

4.2.2 The Theoretical Understanding/Background

In order for a square to be successful it needs to be in active use and be an integrated part of the entire town or city's existence. In basic terms, the square needs to be the 'heart of the city'. Vitruvius adds that the square should also be 'proportionate to the number of inhabitants, so that it may not be too small a space to be useful, nor look like a desert waster for lack of population' (Vitruvius: 1960; 132). However in the busy and economic-focused society we live in, the square in many instances seems to have lost its intentional focus and meaning. The reason being, cities have grown bigger and it's more about the economic development of buildings and the economy, rather than the value of spaces and designated public areas. This can be seen through the development of high rise buildings, breaking the sense of scale between the interaction of the people and the building i.e. the buildings are less human scale and more skyscraper style. This can particularly be seen in Durban's CBD, where multiple high-rise buildings tower over Francis Farewell Square.

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Although this is the case in many cities, some, usually older cities still retain the importance of public spaces and the human scale interpretation of spaces. Venice is a city that still retains its heritage and roots. In this city the most popular and well known public square is the Piazza di San Marco (Figure 13). In this public space, one can clearly see the space is defined and enclosed by the walls of the building yet both minor and major views are created through looking towards and away from the water, these views constantly change giving the overall feeling of constriction and relief as one meanders through the city. The spaces are interlinked through a series of elements, each clearly understandable when explored together. This square unifies people from all areas by way of focusing on the local activities and habits of the people that experience and populate it (Bacon: 1967; 85).

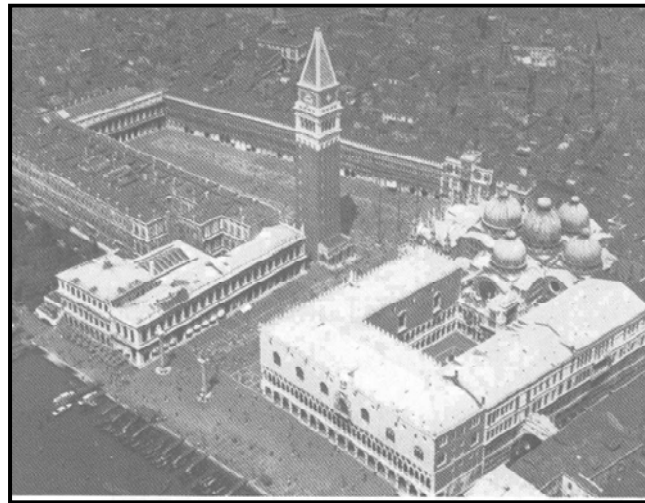


Figure 13: The Piazza Di San Marco is clearest an effective town square. The space is legible and holds a human scale (Roth: 1994; 48)

Such connectivity is often neglected by the modern day architects and planners, where in many instances there is little relationship between spaces with the result that such spaces are isolated, have little depth of meaning and are often poorly utilised. In contrast to the Medieval plazas, which are connected and integrated into their surroundings as well as frequently used by the neighbouring public, many of today's corporate plazas and public spaces are merely impressive foregrounds for the company logo and often don't function well as public or semi-public spaces. In this case, these plazas are often designed and planned without any real thought given to how the people will use the space or what activities will be present in these spaces or how the space can embody a connection with history or with the peculiar 'genius loci' that the site exhibits (Figure 14).

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Prior to the increasing intensity of today's lifestyles and the shifts to accommodate new emerging technologies, the 19th century explored extensive streetscapes which allowed for up to half of the urban area to be allocated to pedestrian walkways. This emphasis given to pedestrian movement has been hugely over-looked when buildings became skyscrapers and vehicular access became prominent. The result, pedestrian areas became smaller and pushed to one side, while the vehicles and buildings became the main focus (Webb: 1990; 64). This emphasis on economic growth and the consequent high rise development encouraged the fragmentation of public space and the loss of meaning in public spaces. This is contrasted with the centuries old focus in many European cities where great importance was placed on an integrated network of spaces as reflected in the figure of Venice below.

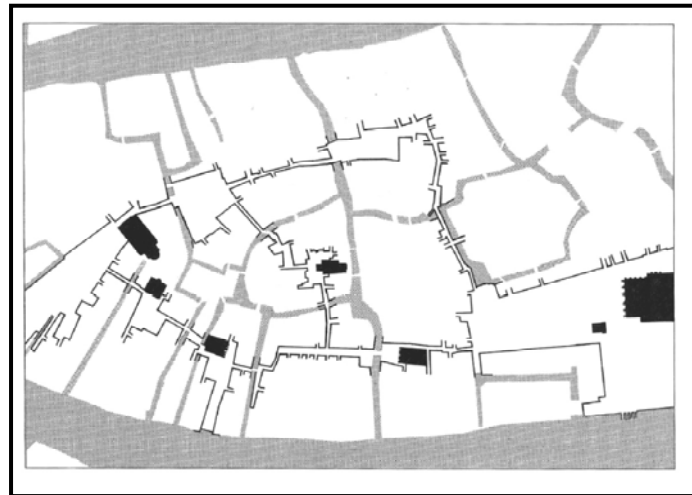


Figure 14: This image shows the network of squares in Venice's framework (Webb: 1990; 64)

For a square to provide the city with a humane experience, it needs to be a focal point and allow the user to withdraw from the fast paced lifestyle. Thus public squares need to be democratic, have purpose and be responsive to the communities that use them. By creating a democratic space, it protects the rights of the user and the various groups which use the space, allowing them to take a form of 'ownership' of the space. By creating a responsive space, the inhabitants are given general comfort, relaxation, active and passive engagement as well as relief from daily stresses. These public spaces also need to be dynamic spaces, providing paths of movement, nodes of communication (see discussion of Lynch's paths and nodes in chapter 1) and a common area in which people are able to interact (Carr: 1992; 215).

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4.2.3 A Square as an Ordering Principle in City Design

A square can be used as an ordering element of the overall design of the city, through a new or restructuring element; it is important to understand the theory behind it. It is, however the relationship between these squares that ultimately defines these public spaces and knits the city together as a whole. Two determining factors namely, the pedestrian treatment of edges and the various activities a square houses, need to be considered in order for a square to be successful. To be successful, a square must be accessible, inviting and in today's modern cities, inundated with traffic. Achieving this can be a challenge. Pedestrianisation of the area immediately surrounding the square can be successful but this is often not possible given that squares are often in the heart of cities. Traffic calming and/or a focus on public transport access around the square are options that are often explored. One must effectively use the range of urban design techniques to treat the edges of public squares in order to make them safely accessible and inviting to the pedestrian. Regarding the activities that are present in a public square, this is a combination of the historical significance of the site or 'genius loci'. The opportunities to respond to the needs of the dominant user groups, the climate and weather conditions, the physical proportions of the site and its relationship to the surrounding districts, involves managing the pedestrian/vehicle interaction.

Towns generally compose of two main elements; the accommodation of the living spaces and the circulation that occurs in and around each district. All buildings are connected to the city centre for various reasons, the most prominent one being the large abundance of amenities around this area. With this large influx and magnetic pull into the city centre, traffic concentration caused by vehicle movement, becomes a large factor in the smooth running of a city. Present day cities need to accommodate vehicular movement (since this supports the city economy) but also manage this traffic and its interface with pedestrians (Carr: 1992; 215).

Planners and designers need to primarily appreciate the qualities which are created in a square, some being; splendour, intimacy and social significance, and an analysis of the particular function of the square within the network of the city streets. The bottom line is that a balance needs to be maintained between the value given to the functioning of the city and improving the circulation at the cost of the public spaces or amenities and visa versa. The linkage of these enclosed spaces is important to create a sense of progression, which is achieved through the separation and sequence of each district, this defines both these enclosed spaces as well as the city as a whole.

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As time has moved on from the medieval times one is able to clearly see the gradual withdrawal of the public from city squares, this could be due to the large amount of traffic as well as the desire for suburban living. This shows through the loss in the importance of a square being a defining factor in the city framework, for instance these areas are sometimes replaced by parking arcades and densely populated buildings. Clearly there is a conflict between the practical and the picturesque where one, nowadays, needs to weight up the pro's and con's of green belts and city squares versus streets which work effectively in moving people in and around the city quickly and effectively. Both of these uses are in reality competing for the same space.

4.2.4 Union Square, San Francisco

Union Square was built and dedicated by San Francisco's first American mayor John Geary in 1850 and is so named for the pro-Union rallies that happened there before and during the Civil War. It's located in the middle of the shopping district of San Francisco, and is a rectangular square that occupies a full city block adjoining the financial district (Figure 15). This square holds a large variety of restaurants, low income residential hotels, bars as well as public transport city access from all four sides of the square. The area houses a series of hard and soft landscaping, which is a product of the symmetrical planning and layout of the square. Public ablutions are present to the east and west sides. The square was redesigned in 1942 to house the first underground garage in the world. This garage has five entry/exit points that punch holes into the perimeter of the square (Marcus and Francis: 1998; 77). The entrances for the pedestrians are marked with palm trees at each corner of the street intersections, with the main passage flanked by a green outer belt of grassed area and enclosed by the central plaza ringed with benches and planters. A monumental statue is situated at the centre along the central axis with the formality of the square reemphasised by the 16 symmetrically placed trees and an equal amount of lamp post situated around the edge of the square (Marcus and Francis: 1998; 77).

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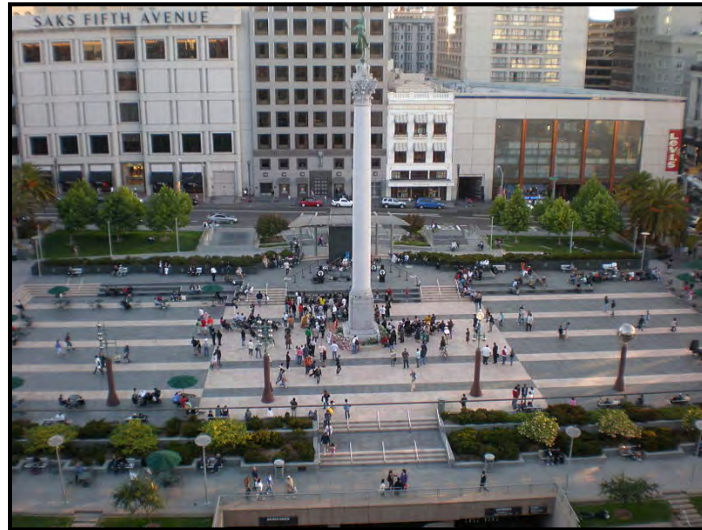


Figure 15: An aerial view of the square, showing the monument in the centre.
(www.wikipedia.org)

The square houses a vast diversity of users reflecting the diversity of the area in which the square is situated. These users include the elderly who live close by, to the vocational visitor who generates income for the neighbouring shops and also the vast variety of tourists who visit the site. This diversity is promoted by several different factors. The square houses numerous activities for all ages and cultural groups. The lawn space is not just ‘eye candy’ but is functional. The square provides seating which is situated centrally in areas of higher activity while seating is also provided in the peripheral areas which contain the more pensive, quieter sub spaces. Since the square slopes off at an angle towards Geary Street, the users have an unobstructed view of the street activities below which aids surveillance, and at the same time creates a distinction between active and passive areas. This level change is effective as it marks a level of transition from the street to the square as well as a movement away from noise and the smell of car traffic to a quieter pedestrian environment. The change in level also gives one the experience of being higher than the street, allowing users the feeling of ‘ownership’ of the space (Marcus and Francis: 1998; 77).

4.2.5 Analysis of the Union Square, San Francisco

Union Square is located centrally within the city of San Francisco and has a human scale which is not often seen in public squares. There are major prominent elements in the Union Square, such as the accessibility and the variety of users, both with formal and informal seating areas which have been specifically designed for. The symmetrical layout and design of the square gives prominence to its

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history. The monument is placed centrally and is prominent and bold, yet this is not the only connection with the history of the site. There is a stage which is used for public gatherings and events housed in the square. In this way, the history of the site and its present use, meet. Although there is formality to the design, there is still a large variety in contrast between the green and hard edges, as well as the small lawns which function as semi-private places which are mainly in sunlight all day.

The Union Square is not 'perfect' and one can question the safety of the pedestrians when crossing the streets to reach the square. Another criticism lies in the lack of definition around the edges, since the square is not defined by the edges of buildings. Of the four sides, only two edges have been defined, leaving the remaining edges un-defined ensuring that the square is seen as being open and more accessible. The garage entry / exit create a break in the continuity of the pedestrian movement around the square which could in turn deter people from entering. The square only allows for paired or single seating, which would potentially limit the interaction of larger groups (Figure 16). All these factors should be taken into consideration when designing a public square and by keeping these issues in mind, one will be able to design a user friendly square that all users will enjoy.



Figure 16: A view of the relationship between the square and the people.
(www.wikipedia.org)

4.2.6 Squares as an integrating tool in the city and the human wellbeing

By creating a square in the urban environment, encourages interaction and contributes to the a sense of place of the city. The interaction of people is one of the keys to creating a successful community. In a public square people may sit on a bench or walk past one another and casually bid a "hello, how are

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you?” By creating a meeting place, it encourages friends to meet as well as creates an opportunity for people to meet new friends and initiates conversations which could potentially lead to the building of the community network. However, on a broader scale, generating these social facilities is important and can easily be done through the use of a central space, like a public Square. A designer can propose smaller ‘squares’ with clusters of units around this ‘square’ (or public space). By doing so this provides a level of surveillance around these clusters as well as clear hierarchy amongst the housing development.

With regards to the psychology behind creating positive spaces, one needs to understand the ‘needs’ of users. It is imperative to create a space which will allow the individual to feel comfortable and ‘welcomed’. The key is to create and maintain a sense of balance. It will not be appropriate to design spaces that are either too large or too small, since this could evoke a feeling of alienation or claustrophobia respectively. Public squares are useful in aiding an individual's wellbeing, because they allow for people to use a public space, sit around in the open air and enjoy its effect on the play of thoughts in one's head- this in itself can be a tremendous reliever of stress since when one is under stress one tends to focus on a particular idea and simply accessing a public space holds the potential to shift these thoughts, thereby offering stress relief. Squares allow for some form of recreation although this may be limited to walking in most instances, but nevertheless this simple opportunity afforded to the city worker or resident has a positive impact on their wellbeing. Activities can be tailored to meet the specific needs of dominant user groups. For example, the youth are often attracted by opportunities to skate board or roller skate. The elderly may prefer opportunities to entertain their grand children (a fish pond or fountain can be source of great enjoyment for children). Public squares may even offer opportunities for outdoor theatre, art exhibitions and recreation classes (Tai Chi etc) to name just a few possible activities.

4.2.7 Conclusion

Whether one is considering the Old World town square or the more modern equivalent of the public or commercial plaza, these public spaces play an important role in our cities. A square is a place for public function, interactions and an opportunity for people to speak. A Square should be the ‘heart’ of any and every city.

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4.3 ACCESS TO GREEN SPACES IN CITIES

4.3.1 Introduction

Living in the heart of a city can offer high levels of accessibility, convenience and opportunity. This is probably why many people across the world choose to live in cities. However many city environments are not pleasant places to live or to raise a family. Many cities suffer from a range of ills *inter alia*, crime, urban blight and slums or squatter settlements, traffic congestion and pollution, high levels of noise and heat, poor provision of social amenities especially green spaces and general environmental degradation. If one has the personal resources one can choose the city neighbourhoods with the highest amenity but for poorer folk there is little choice other than seeking out a space to eke a living.

In general, urban life and its stressors can motivate individuals to seek a better quality of life in the suburbs. Research from Hartig (1993), Kaplan & Kaplan (1989) and van de Berg, Hartig & Staats (2007), indicates that this move involves more than a simple ‘romantic idealisation of nature’, rather it can be seen that contact with natural environments, rather than the harshness of the concrete jungle, can effectively reduce stress and provide restoration from the effects of both stress and mental fatigue as well as contributing towards psychological restoration (Figure 17 & 18). Contact with nature also allows a reduction in the psychological load that people carry and in this way leads to a renewal of one’s ‘capacity to focus’ which is critical for efficacy in the workplace and in relationships. Ironically this move to suburbia exacerbates urban sprawl thereby increasing vehicle usage, and air and noise pollution (van de Berg, Hartig & Staats: 2007; 80). (Refer to appendix 1 for municipality green space survey)

4.3.2 Public parks- what values do they add?

Green spaces in cities can be viewed at a macro and a meso level. At a macro level, green spaces are planned as a network that protects biodiversity and the provision of environmental services⁴. The emphasis in this chapter is placed on the meso level where urban green spaces such as parks and public squares are considered.

⁴ An example of this is found in eThekweni municipality in the form of the Durban Metropolitan Open Space System (D'MOSS). Wetlands, forests, grasslands etc provide ‘free’ environmental goods and services such as storm water attenuation, water quality improvement, habitats for pollinating insects etc (<http://www.durban.gov.za>).

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Green areas within built up cities offer a range of services or amenity to the city dweller. Trees and natural vegetation absorb carbon dioxide and release oxygen. In a city environment with a myriad of sources of air pollution, green areas can make a significant contribution. This is why large urban parks are often referred to as 'green lungs' (van de Berg, Hartig & Staats: 2007; 80). Green spaces provide visual relief from the concrete and asphalt. They offer the opportunity to recreate both passively and actively. Simply being able to go for a walk in a quiet and natural landscape, read a book on a park bench or picnic with friends presents a wonderful opportunity in a bustling city environment (Figure 1). Possibilities for being active in such a space abound. Cycling, running, 'jungle-gyming', hitting a ball or throwing a frisbee offer opportunities for health supporting activity.

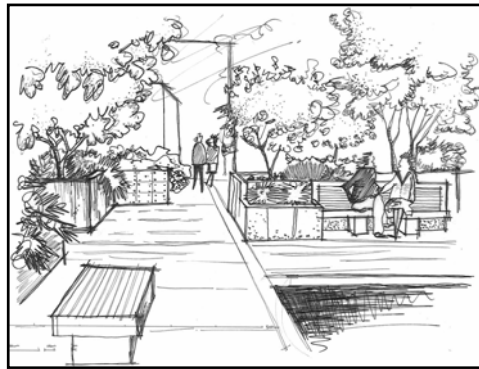


Figure 17 (above): Shows how creating green spaces, with greenery, water features and seating areas can create a retreat where people are able to sit and take a break from the fast 'on the go' city lifestyle (Author 2009)

City parks are perhaps even more important for low income city inhabitants⁵. There is no admission fee and in the absence of resources that may fund alternative opportunities for exercise or for entertaining the kids, public parks offer substantial opportunity and amenity. Just as important are the opportunities for social interaction and networking that these spaces offer. Social capital or the value of social networks is particularly crucial for poor residents who may need to draw on their friends or neighbours in emergencies or times of need.

⁵ A recent survey on park usage conducted by the eThekweni municipality indicates that those residents in 'historically disadvantaged suburbs' that have poorer levels of access to parks tend to use them more than residents in the wealthier and historically advantaged locales (Green & Manfred: 2010). Epidemiological studies in the Netherlands have shown that the positive link between health and green spaces was particularly marked for those who spent most of their time in the residential environment *viz*, housewives, elderly folk and people from lower socio-economic groups (van de Berg, Hartig & Staats: 2007:90).

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Figure 18 (above): Diagrammatically shows how people would be able to sit around and socialise with one another in green spaces, and in so doing create social connections and links. These connections and links all aid in more positive interactions and feelings, thereby potentially contributing to the wellbeing of the individual. (Author 2009)

4.3.3 Central Park: New York City Manhattan

An example of how parks can be important for the city in so far as offering a ‘break’ to the harshness of the concrete jungle is Central Park (Figure 19). It is situated in Manhattan between 59th and 110th street and between Fifth and Eighth Ave (Figure 20). This city park's terrain was bought by the city of New York in 1853, and was originally far away from civilisation, however as the city has grown development has moved closer to the park. This City Park is a good example of how a green space can generate a recreation facility within an urban framework. The main idea, birthed by the parks founder Frederic Law Olmstead, was to "create a place where people could relax and meditate..." and people would see the park as a "...kind of social experiment where people from both upper and lower classes would meet" which at the time was a revolutionary notion (<http://www.aviewoncities.com/nyc/centralpark.htm>).



Figure 19 (above): A view of Central Park in comparison to the concrete jungle that surrounds the park. The oasis within the city (www.wikipedia.org)

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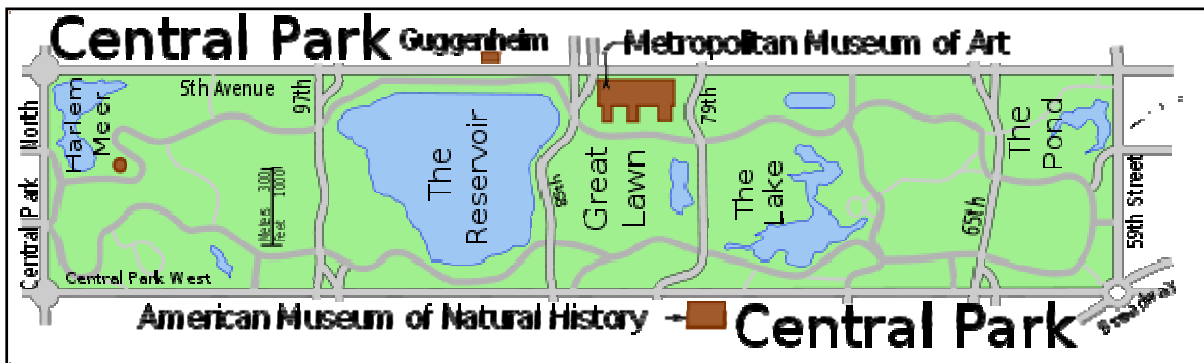


Figure 20 (below): A plan of Central Park in New York City, showing the different lakes and the green spaces. This plan also shows the relationship between the park and the urban framework of streets around the park area (www.wikipedia.org)

This Park creates relief and enjoyment for all its inhabitants, through the activities offered as well as a recreational space where people can walk, run and socialise. Not only is this space a recreational one, it also offers many different activities like ice rinks, fountains, several lakes, baseball fields, playgrounds and many other facilities (Figure 21 & 22). It is not only a city park, but it has also aided creating an eco-friendly environment with several hundred thousand trees planted within this area. The presence of lakes in and around the park, offers a calm and soothing aspect from a psychological level. This park becomes an oasis within the city (<http://www.aviewoncities.com/nyc/centralpark.htm>)



Figure 21 (left): Showing one of the fountains and the social interactions taking place in the park (www.aguyinnewyork.com)



Figure 22 (right): Showing some people relaxing and enjoying the break from the concrete jungle (www.nycvp.com)

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4.3.4 New Urbanism and green spaces

New Urbanism places significant emphasis on the link between urban design and the sense of community and how the latter may be encouraged through social interaction in semi-public and public spaces.

Individuals both want and can benefit from being around nature on a day to day basis. Through the more effective use of resources and transport facilities Compact Cities have become known to be more sustainable than development typologies which promote sprawl. From a psychological point of view the idea of creating high-density cities should not be ignored and abandoned all together. High-density cities can be vibrant, lively and a desirable place to live in. Keeping with this thought, the designs and city frameworks that should be created are those which combine the benefits of compact cities, for its sustainability, but this should be done without compromising the provision of green spaces, since these areas support restoration. Therefore the clever approach would be to create an urban framework that is both sustainable and restorative. These ideals have been adopted by a new type of urbanism called “green urbanism” (van de Berg, Hartig & Staats: 2007; 80).

Green Urbanism works in a similar way to New Urbanism, except that it is “greener”. New Urbanism’s main focus is on creating cities that are greener in a general sense⁶; on the other hand Green Urbanism advocates that cities need to include more nature⁷ and are driven purely by ecological motives. In addition, the ‘quality of life’ and restoration for the urban residents is also considered to be an important function of urban greenery (van den Berg, Hartig & Staats: 2007; 91). Two design solutions used in "Green Urbanism" involve the creation of new urban towns and villages that are in close proximity to the already existing transport nodes, particularly useful in reducing urban sprawl, and the second are 'green infill design options such as tree-lined parking lots, green roofs, green building facades and inner city communal gardens (van den Berg, Hartig & Staats: 2007; 91). "Green infill", creates another solution to ensuring more 'greenness' within the city. In many of the European cities, policies for limiting urban sprawl, are embedded within the "compact extension" concept⁸ whereby cities are developed through extensions to the existing town in the form of high density

⁶ This includes resource-conserving strategies like using less energy and reducing the emissions of carbon dioxide and toxic wastes but also just simply more usable green spaces(van den Berg, Hartig & Staats: 2007; 91).

⁷ This can be through the increase of trees, parks, green rooftops, botanical gardens etc (van de Berg, Hartig & Staats: 2007; 91).

⁸ "compact extension" means that

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pockets Although idealistic in conception, they aren't always most effective. The newly developed neighbourhoods are often situated too far away from the city centre and do not evoke a "vibrant-city feeling", these areas become barren and dense. The planners and designers of the Vinex neighbourhood in the Netherlands have used this concept and evolved it by creating environments just outside the main city, this type of development being termed "rurban"⁹. By creating 'hubs' just outside the city, people are not far removed from city life and thus have the benefits of close proximity to urban opportunities as well as the peace and quiet and more natural landscapes that occur outside of cities. (Van dam, Bijlsma, van Leeuwen & Palsdottir: 2005 out of van den Berg, Hartig & Staats: 2007; 92)

A study by Bonnes, Carrus, Bonaiuto, Fornara & Passafaro (2005) explores the issues of satisfaction and positive perception that the residents of Rome have towards urban green spaces in their town and how this is linked to the quality and availability of green spaces. The conclusion was that residents were more concerned with having 'more' green spaces and 'less' concerned with "higher ecological quality". Similar results were found in a Dutch study, in relation to urban greenery and health. This study concluded that the perceived relationship between health and the amount of green space prevalent in a city was not affected by the "type "of greenery available i.e. green space versus Nature space (van den Berg, Hartig & Staats: 2007; 92)

4.3.5 Green Spaces and the human psyche

Particularly in the more urbanised societies, people believe that contact with nature provides a certain level of restoration from stress and fatigue and improves their wellbeing and health (Figure 23). A survey conducted amongst inhabitants of the Netherlands showed that 95% of the respondents believed that a visit to nature was a useful way of reducing stress (van den Berg, Hartig & Staats: 2007; 79-92). In addition, the residents of nine Swedish towns and cities participated in a similar survey, and when asked what they would recommend to a friend who was stressed and worried, most of the respondents chose 'walking in the forest or green area' as their number one response (van de Berg, Hartig & Staats: 2007; 80). The outdoor recreation activities people partake in are also believed to reduce the levels of stress. This research provides evidence that clearing the head, escaping from civilisation, stress reduction and reflection on what is important in life are among the most dominant motives that drive people to seek out natural green areas since this kind of activity is seen to aid in a

⁹ "Rurban"- is a new land development that is situated between a rural area and the edge of a developed suburban area (www.businessdictionary.com)

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person's wellbeing and bring about psychological restoration (Driver, Nash & Haas: 1987; 294-319 & Knopf: 1987; 783-825).

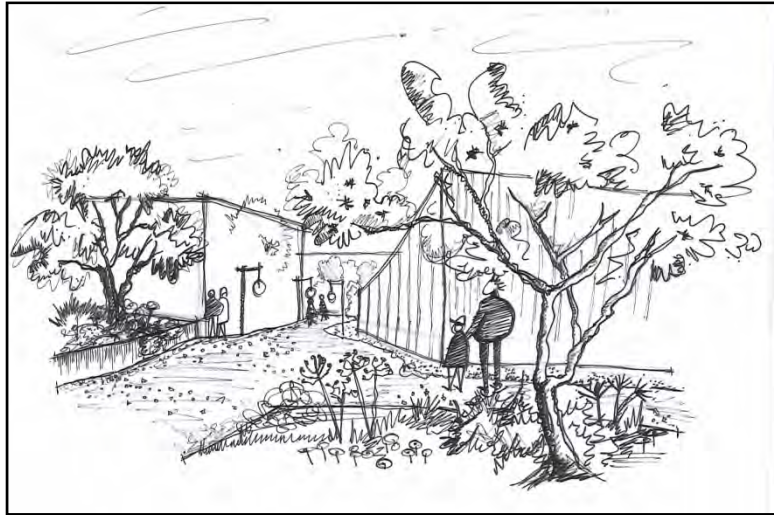


Figure 23 (above): Diagrammatic sketch of people walking around a green area with buildings around them (Author 2009)

Klaplan & Klaplan (1989) and Klaplan (1995), explains that the natural environment provides a good opportunity for psychological restoration. This is due to the 'transactions or exchange' that the person has with the natural environment. Nature gives a person the 'sense of being' away from their daily routines, demands and stresses. It also offers aesthetically pleasing stimuli, distracting the person from his/her stressors and thus the person is able to concentrate on the surroundings¹⁰ (Klaplan & Klaplan: 1989; 115-127 & Klaplan: 1995; 1969; 169-182). Some research proves that, in general, people perceive natural environments as being far more restorative than urban environments'. Berto (2005) asked volunteers to rate the levels of restorative qualities of various slides of both natural and urban environments. The slides that had the highest ratings were the ones of rivers, lakes, gardens, seaside's, hills etc, while on the other hand the slides of the more urban environments, like city streets, housing areas and industrial zones, had a far lower rating (Berto: 2005; 249-259). This research does not state that there are no restorative qualities that urban environments have but that there are different restorative values of both environments and that generally the more naturally orientated one's have higher values and hence are preferred. This thought is explored more in Scopelliti & Giuliani (2004) where the example was given that some natural environments can be perceived as dangerous, for example an abandoned park area, whereas the urban environments could be more supportive of

¹⁰ This process is called "soft fascination" (van den Berg, Hartig & Staats: 2007;84)

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restoration, for instance these areas are more readily accessible and have the additional benefit of being more compatible with many urban people's budgets (Scopelliti & Giuliani: 2004; 423-437).

4.3.6 Johannesburg and the new inner-city park proposals

South Africa is actively trying to increase the numbers of green areas in the city and currently there is a design tender out for a new "inner city park" for Johannesburg. Designers from all professions namely; architects, urban designers, landscape architects and engineers have responded and put forward ideas for the development of this "new inner-city park". Currently there are 5 proposals up for nomination, once the best proposal has been chosen; the idea will be put forward for further development by the city of Johannesburg. At this stage, there is a small chance that the efforts will materialise into a full "large scale green lung for the densely built up centre of Johannesburg". The biggest problem affecting the feasibility of a large scale park is land ownership. The municipality does not own such a vast portion of land. From the five shortlisted proposals, three were situated around the Park Station area- proposing the reclaiming of this land that was lost due to the railway lines. The other two proposals are focused on the south-eastern part of the city centre. This area has multiple land owners that accommodate different support services like the traffic department and the bus stop (www.urbangreen.co.za). However as with most large scale proposal, this one is being hindered by the issues of space. By creating a "major inner city park" like this one, would require a large overhaul of the city development pattern. The Urban Green File believes that a successful park not only depends on its function, aesthetics as well as its ecological design, but also the correct land use and economic development interventions along the parks edges. However the most important part of creating a successful park is that it needs to be supported by a large enough number of inner city dwellers. (www.urbangreen.co.za). For more information on the proposals please refer to the appendix 2.

4.3.7 Conclusion

Green spaces, be it parks or gardens are incredibly important to a person's wellbeing. As humans we react to the visual and if there are 'pretty' and 'attractive' areas within the city the overall morale of the city is heightened. However there are always issues and red tape. A good example of this is the proposals and ideas around creating green areas in the city of Johannesburg. The bottom line is that when an urban area is designed, areas like green spaces, public squares and places all need to be well thought out in advance. The Johannesburg Inner-City Park proposal is a perfect example as to why pre-planned public areas are needed, otherwise the city areas become inundated with tall high-rise

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developments and little space is present for places of relaxation where people can take time out from the stressors in their lives. Green spaces are good for people and should be retained and more should be included within urban areas in advance through vision, foresight and good planning and design.

CHAPTER FIVE

THE IMPACT OF THE MICRO CONTEXT ON WELLBEING

5.1 THE HEALING PROPERTIES OF WATER

5.1.1 Introduction

“Water is the driver of nature... So one might say that it changes into as many natures as are the different places through which it passes. And as the mirror changes with the colour of its objects so this changes with the nature of the place where it passes: health-giving, harmful, laxative, astringent, sulphurous, salt, sanguine, depressed, raging, angry, red, yellow, green, black blue, oily, thick, and thin. Now it brings a conflagration, then it carries away, then it sets down, now it raises up, now it tears down, then it establishes, now it fills up and then it empties, now it rises and then it deepens, now it speeds and then lies still...now it nourishes and then does the contrary, now it is salt and then is without savour...” - Leonardo da Vinci (in Bishop: 1967; 1)

Water is an endlessly appealing, interesting and enchanting substance. As humans, we are mesmerised and absorbed by water, be it through touching the sheets of water which fall over the rim of a fountain, by watching water flowing under a bridge or being transfixed by the soothing sound of waves rolling on the beach or the trickling of a stream. From fancy hotel-lobby fountains to tea garden streams and Feng-Shui water features, both designers and everyday people are drawn to using water in and around their built environment. Water, when used in architecture, allows the architect to explore the treasures that water holds. Water continues to play a major role in cities. Historically the availability of water influenced the very location of settlements and today property developers use river and sea frontages and water features to add value to their developments. The properties of water have since ancient times been used to support human wellbeing and healing

5.1.2 A Brief History of Water

Nowadays water is needed in all urban and rural settlements primarily for the purposes of drinking and sanitation. But historically water had a much larger role. For example empires fought for the dominance of sea trade (Day: 2002; 41) and major cities across the world expanded around ports conveying military and commercial strength (Bishop: 1967; 3). Historical rivers, such as the Yellow River of China, Euphrates, Indus, the Tigris and the Nile, all become central points for historical challenges and for the emergence of large cities. In the early great river settlements like Babylon

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(Figure 1), these civilisations used the river as both a defense mechanism and means of transport. The river became a means to transverse the city and the surroundings via a canal and moat system, and this became a design principle for other later fortified cities, particularly in Western Europe (Beazley & Harverson: 1985; 10). However, not only were rivers and water purely utilitarian for certain cultures. Rather, rivers also developed a large metaphysical significance (Bishop: 1967; 3).



Figure 1: The Babylonian Empire (www.keyway.com)

The temples and public buildings of the Assyrian river city of Assur (Figure 2) were located alongside the river bank. Egyptians believed that the flooding of the Nile represented a divine order, and honoured this by situating the unique and monumental structures and temples along the Nile river banks. The Nile also provided the symbolic route for both the progression of sacred boats as well as a common ground where the citizens could practice their festivals (Bishop: 1967; 3).

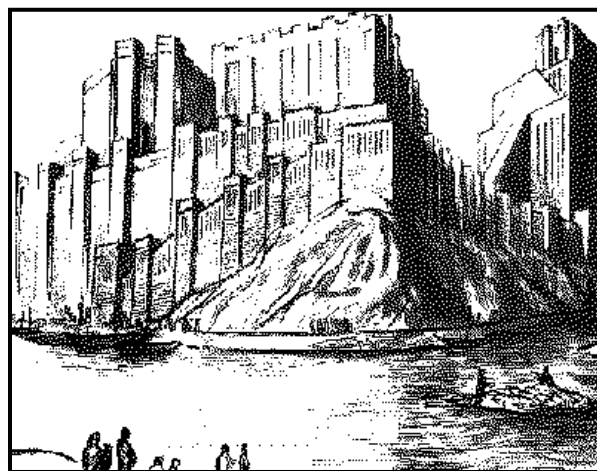


Figure 2: An artist's impression of the Assyrian River City of Assur that was located along side a river (www.bible-history.com)

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To this day the Ganges still hold a religious significance. This was first developed through the people of the Indus Valley who practiced Hinduism and believed the Ganges played a sacred 'cleansing' role. Other major river cities like Hardwar, Allahabad and Benares became centres for sacred festivals and pilgrimages. Both the riverside and the steps or ghats, which led down to the water, provided both a visual and access link to the sacred buildings and the water activities (Bishop: 1967; 3).

Though water has multiple benefits it can also provide many challenges to building. In the communities of Malaya (Figure 3), Cotinhu and the Philippines (Figure 4) houses are situated over water or marshland and therefore need to be constructed accordingly. For instance, the houses are built in an elevated fashion often with a maze of connected decks and bridges. It is interesting that despite the hardships that water can bring to establishing a settlement that there are numerous communities that persevere under these conditions. The abundance of water brings with it economic opportunities, ease of transportation and the opportunity for a green, abundant and beautiful environment.

Landscapes are also determined by water, through the cascades, rivers and seas both turbulent and calm (Bishop: 1967; 3). Bishop (1967) added that through the evolution of cities, the aesthetic qualities that are brought through the natural typography and the water environment, has all added and played a part in enhancing the urban environment. All these aspects have an input in both the landscape and architecture that is associated with water (Bishop: 1967; 3). This can be seen from the water features and the urban waterfront from the water environment of water parks and resorts. Water is a key component of our daily lives, this is not only fit for an individual's life but also it invigorates a human's life-energies and balm the soul (Day: 2000; 42)



Figure 3 (Left) & Figure 4 (right) Typical Malaya and Philippines houses that are built along the river's edge in an elevated fashion. These houses are often connected by decks and bridges, creating links between these houses.

(Figure 3: www.malaysiasite.nl & Figure 4 www.travel-picture-gallery.nl)

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5.1.3 What is water?

Water: “Without it we could not live for more than a few days: with it we can survive, create civilisations, play with it and make works of art to express the joy of living”
(Moore; 2000:15-17)

Water and air are two of the most essential elements for the existence of man and people tend to have an affinity for water. Water is not only important in metaphysical symbols, therapeutic value and aesthetic pleasure, but without water humans and all living enzymes will cease to exist. Day (2002) expresses that “Water is at the heart of life”, not only through living organisms but also in industry, society and economy. ‘Water’ both past and present has been fought over and many civilisations are situated by and around water (Moore; 2000:15-17).

Water is considered to be mobile and it can be found in three different states- solid, liquid and a gas (vapour). As a pure entity water is a tasteless, colourless and odourless substance. Chemically it comprised of two hydrogen and an oxygen atom, and it covers approximately two-thirds of the Earth’s surface. From a macro-context, the atmospheric, surface and groundwater becomes a large factor in the planets water system. For instance, the dew point and humidity maintain the atmosphere, the warm continental temperatures and cool ocean currents cool, and the freeze-thaw cycle releases and locks in the moisture of the soil (Day:2000; 38-39). Water is also the softest substance yet it shapes, wears down and moves objects far greater than its size.

Water is one of the most important elements in life; it gives form as well as ‘dissolved movements’ which are natural to water and bring the quality of wateriness into our surroundings, this is extremely necessary to balance the aridity of the mechanically dominated hard-edged world of manmade forms (Moore: 2000; 15-17).

Water’s more natural phase is liquid; however both solid ice and vaporous steam can also be seen in the natural environment. Since architecture is part of the environment and water is a soothing and tranquil substance, it is never too far from design. The fact remains that water is still the backdrop of most pictorial and scenic views. For instance the silent and thin gazes of the undisturbed lakes that give a heavenly view, the forest streams that magically glide through the dense undergrowth or the forceful and plunging cascades of rainforest waterfalls (Figure 5). Rain creates a buffer for the noisy lifestyle of urban cities, creating a mirage of clean wetness. Although water is dictated through both physics and chemistry, these actions can be seen throughout the world in a vast range of qualities and

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environments (www.whatsonyourplate.msstate.edu). Water shapes the environment in which all living beings live, becoming a place for amazing phenomena's and inspiration for architects and designers.



Figure 5: One of the Venezuelan rainforest waterfalls, the movement of the water flowing down the rock edges creates a tranquil visual effect as well as serene sound (www.pielmedspa.com)

5.1.4 Water and its tranquil qualities

Water can have various soothing and tranquil qualities, like watching the waves moving up and down the shore line as they break and then roll back (Figure 6) or the surface of a pool or the reflections created in water on a calm day (Figure 7). Human fascination with water seems to almost be timeless. Water can be romantic, this 'romance' is able to liberate the imagination as well as relieve the frustrations of life. However these emotions are not just specific to a particular age and can be seen throughout time, from the golden ages of history man reacted to the effects of water in not a dissimilar manner to how individuals perceive it today (Jellicoe: 1971; 10).

“Quietness and action” are the common essences in water design. With each of them having their own philosophy and when combined are the most beautiful. The one stimulates and attracts the eye and the other, the mind. Jellicoe (1967), expression was that of a curious by-product of the mind is created through the effect both symbolism and ones association of ideas or images. Walton (1653) explains that understanding water and its psychological effects boils down to three instances; symbolic nature, image of the environment and the technical information that expresses its purpose (Jellicoe: 1971; 31).

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Figure 6: (Left) The waves breaking on the shore of a beach
(www.rolfgross.dreamhosters.com)



Figure 7: (Right) The reflection in a pool (www.rolfgross.dreamhosters.com)

The idea of ‘movement’ can be seen throughout the ages, particularly in the baroque times, this coincides with various scientific discoveries. At this time, the world was no longer considered to be something constant and static, but instead seen as being in change and movement. Water is movement and therefore there are two main complimentary influences which inspired all forms of art and their inclusion of water. There are many manners in which water can be added and manipulated in landscapes and design. – For example: kinetic and the biological (bio-kinetic) and the second is an abstract interpretations. Examples of water being used in modern landscape ‘art’ can be seen in the fountain by Richar Huws at Liverpool and the fountain by Kenneth Martin (Jellicoe: 1971; 32). Water can be broken up into fragments and then immediately re-created as one; it creates movement, amazement and intrigue. When viewing water in designs one cannot help but stop and stare.

5.1.5 Elements of Life- Feng Shui & Water

According to the ancient Chinese philosophy of Feng Shui, the forces which work in the land and the cosmos may be in harmony at one place and in complete chaos in another. It is believed that when the orientation of the building clashes with the contours of the land, the flow of the river or the direction of the road, if the positioning of the front door to a piece of furniture blocks the flow of ch’i, the life-giving energy, usually the misfortune of chaos will follow (O’Brien: 1991; 1-2). Feng Shui means ‘wind’ and ‘water’. These elements shape the landscape and have the hidden power to affect human fortune. Feng Shui advocates living in harmony with the earth’s environment and its energy lines, so that there is a proper balance between the forces of nature. This practice is concerned with harvesting

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these energies and channeling them a positive manner. These auspicious energy levels travel in a meander in fashion and avoiding the inauspicious energy lines (Lillian: 1996; 10-12). Therefore it is important to not only make places physically fit for life but also to invigorate our life's energies and balm the soul (Day: 2002; 42).

5.1.6 Conclusion

This section explores the importance of water in both a historical sense as well as the healing and calming/ tranquil properties it offers an individual. It is therefore important to include water in design as it generates positive feelings within an individual. One can include water, through water features and designing near or by water. The next section explores the healing properties of landscapes and gardens.

5.2 THE HEALING PROPERTIES OF LANDSCAPES AND GARDENS

5.2.1 Introduction

The relationship between humans and plants can be traced back to ancient times, and this relationship has not diminished in importance. The biblical interpretation shows humans (Adam and Eve) being created in a garden. Scientific research provides proof that ancient civilizations gathered and harvested the bounty of the land and domesticated various plants for medicinal value, for food and for protection. At a very practical level, humans live within the 'environment' termed Earth with which they interact every single day and hence, by necessity there will be a close relationship between humans and Nature including plants and landscapes. The 'natural environment' is both urban and rural and includes various green spaces some of which are part of the natural environment while others have been intentionally created by man in the form of parks and gardens. Although through time and across continents, the functions and morphology of different gardens have evolved and now hold differing functions, gardens are still fundamentally important to individuals (Robbins: 2001; 637-659).

The history of gardens and landscapes is explored and the 'healing' and positive psychological effects on humans and their wellbeing are considered.

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5.2.2 Origins of the ‘Garden’ Concept

According to Brookes (1987), Laurie (1975) and Thacker (1979), the origin of the word ‘garden’ is a combination of two Hebrew words ‘gan’ and ‘oden’ or ‘eden’. ‘Gan’ is a word that describes something which ‘defends’ or ‘protects’. This is formed through the means of an enclosure or fence. ‘Oden’ or ‘Eden’ describes something to be a pleasure or delight. By implication the word ‘garden’ is an enclosure of land for the pleasure and delight of the viewer (Laurie: 1975; 13). Expanding on this, the illustrated oxford dictionary (1998), describes a garden as “a piece of ornamental ground that is laid out for public enjoyment and used as a place for recreation.”

The concept of creating a ‘pleasure garden’ originated in mythology, while the organization and layout derived from ancient cultivation and irrigation practices. Most major religious faiths express gardens (or paradise) being there from both the beginning of time until the end of all existence. This can be seen in a multiple of religions namely; Hindu, Muslim and Christian. In the promised garden of Mohammed, where it is believed that brief earths enjoyments, would last thousands of years, is said to be filled with groves of fountains and trees. According to the Bible (in Genesis I and II), God placed Adam and Eve in the Garden of Eden, which had different kinds of trees, delightful fruits to eat and the tree that yielded the knowledge of both good and evil. These images are clear and persistent even in modern day society. In addition to this thought, early civilisations attached various symbolic meaning to certain types of vegetation, like the olive, thorn, vine and fig trees. This brings about the idea, that through the hardship times of starvation, the longest living ‘thing’ known to man, that is also the representation of fertility and its representation of nourishment, is the tree (Laurie: 1975; 13). Gardens are still part of our every day modern lifestyles, through the link to ones cultural heritage and also to a certain degree the psychological importance it plays in ones attitudes and emotions.

5.2.3 Plant Usage and Wellbeing- Past, Present and Future

The role of the garden as a space that can support healing can be traced back as far as the ancient Greek and Roman cultures. In the ancient Chinese tradition (3000B.C), on silk they wrote “Pen Ts’ao”, which to this day is known as the oldest medicinal herb. Temples were created for the Greek gods, like the temple or the god of healing, Aesclepius. This structure was built in a pastoral setting with an abundance of mineral springs, bathing pools, gymnasiums and healing gardens. Areas were created for worship, for solitude, and for recreation and of course for healing. In the Roman times of the first century A.D, Dioscorides, a well known surgeon in the Roman army, documented the use of “De Materia Medica”, out of 950 ‘curative substances’ it was discovered that 650 of these were in fact

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herbal remedies. These documentations from ancient manuscripts included descriptions, medicinal qualities of the plants, diagrams, methods for preparation and both contraindications as well as warnings (Gerlach-Spriggs et al: 1998; 1-3).

Prior to the 1960s, extensive gardens and landscapes are found in most healthcare and hospital facilities. As a result of economic pressures and competing demands for these undeveloped spaces, this ancient practice has lost ground. However, it is interesting to note that recently, the United States of America's healthcare reform has urged more therapeutic gardens in an attempt to broaden the healing scope and thereby minimise the time spent in public hospitals and healthcare facilities (Beal: 2004; 58-53).

In the mid-1980's, with the rise in interest in the effects that natural environments may have on a human's healing process, wellness and general wellbeing, there was an increased awakening to the role that gardens are able to play in the healing process (Larson & Kreitzer: 2005; 1-2). Roger Ulrich (1984), conducted studies on the post operative condition of surgical patients and his results showed that the patients who had access to a window with a view of nature, needed less pain medication and recovered quicker than those who did not have access to nature (Ulrich: 1984; 420-421). Through this study and others that followed, healthcare and wellness institutions realised the need for exposure to the natural environment (Larson & Kreitzer: 2005; 1-2). According to the Joint Commission for the Accreditation for Hospital Organisation (JCAHO) states "Patients and visitors should have opportunities to connect with nature through outside spaces, plants, indoor atriums and views from windows" (www.jcaho.org).

5.2.4 Principles of Healing Gardens and Therapeutic Landscapes

In so far as gardens are concerned 'landscape architecture' encompasses healing gardens and therapeutic landscape design (Larson & Kreitzer: 2005; 2), which are addressed below.

The term 'healing garden' applies to gardens that are designed to promote the recovery from illness. Although 'healing' is an incredibly broad term, for this context of healthcare it is designed not necessarily to cure a given illness, but rather improve the individual's overall well-being and encompasses both the individual's spiritual and physical aspects (Larson & Kreitzer: 2005; 2). Figure 8 & 9 show pictorial examples of healing gardens. McDowell & Clark-McDowell (1998) believe that healing gardens must honour and celebrate the broader human relationship between nature and our

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spirit, and not just our relationship with plants. The McDowell's have derived six design principles which should be applied to a 'healing garden'. These principles have been listed below:

- 'A special entrance' should invite and embrace the individual into the garden
- The element of water should be used for both its spiritual connections, physical and the psychological affects water has on an individual.
- Creative use of colour and light in the garden (either organic or human designed) is essential to increase the emotion of 'comfort' and 'awe' in the individual
- Natural features (such as rocks, wood, screens, natural fences, trellises, sound, wind etc) become grounding points and have a calming effect.
- Art can also be integrated into the garden to enhance the spirit or mood.
- Garden features used should attract wildlife and provide a certain level of animal diversity.

According to Larson & Kreitzer (2005) the most important aspect of a healing garden is that it must comfort the soul and renew the spirit (Larson & Kreitzer: 2005; 4).

On the other hand, 'Therapeutic landscape design' (Figure 10) is specific and relates to a particular aspect of the disease or healing, by providing a specific affect and outcome. Therefore the garden works in conjunction with the prescription medication. As such this type of landscape is far less focused on healing the spiritual aspects of the individual and is more akin with the disease model of illness (Larson & Kreitzer: 2005; 2). These gardens follow a strict design principle comprising of five ideals namely;

- Variety of space
- A prevalence of green material
- Encouragement of exercise
- Providing positive directions
- Minimising intrusions and ambiguity (Cooper-Marcus & Barnes: 1999).

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Figure 8: (Left) An example of a healing garden with a subtle entrance (wooden arch) and cobbled path, with flowers and greenery around (www.talesoftheearth.com)

Figure 9: (Right) An example of a healing garden with a meditational maze at the top right hand corner. Various areas have been demarcated for specific uses (www.companionsinhope.com)



Figure 10: An example of a therapeutic garden with the use of specific types of plants and a place for contemplation (www.landliving.com)

5.2.5 Conclusion

Through reading this section one is able to understand the importance of landscapes and gardens within a healing environment, as this aid in the overall healing process of an individual. It is important to know the type of 'healing' that the person requires and therefore the garden will be designed accordingly. Gardens have similar properties to the green parks and spaces whereby they encourage a positive psychological experience of the space and therefore aid in the individuals wellbeing.

CHAPTER SIX

THE IMPACT OF THE INTERIOR ENVIRONMENT ON WELLBEING

6.1 ARCHITECTURE AS A TOOL FOR HEALING

6.1.1 Introduction

“When you are in a healing environment, you know it, no analysis required. You somehow feel welcome, balanced and at one with yourself and the world. You are relaxed and stimulated and invited to expand. You feel at home”- (Venolia: 1988; 7)

The world is constantly evolving, and with these changes comes a pull towards respecting our relationship to the earth. In response to these changes particularly in the last 10 or 20 years, some designers have opted to design architectural environments that assist in an individual's positive perception of the building and place as well as sustainable and eco-friendly building methods. Pearson (1994) explores the idea of sustainable ‘healing’ development and expresses that, it is important for architecture to make reference to the Earth’s environmental issues and the wellbeing and health of humans as Earth’s inhabitants. The architecture should relate and be positive to the inhabitants’ body, mind and spirit. This sort of architecture is said to synchronise with the natural forces and evolves with the local ecosystem. This architecture supports health and life and brings regeneration to the body and soul.

6.1.2 Healing In Architecture

"Medical and psychological researchers agree that self-esteem and a positive outlook are potent factors in our body's ability to resist disease." (Venolia: 1988; 11)

According to ancient cultures and many indigenous cultures of today, it is impossible to separate the health and wellbeing of the body from the wellbeing of the spirit. For instance, in traditional oriental medicine it is not about the infection or sickness but rather about the ‘imbalance’ in your life. This underlying philosophy is based on the restoration of balance and harmony within the person as a whole. However this not so with the conventional Western medicine and science, which has diverged from such classical traditions. Philosophers such as Frijof of Capra, Rupert Sheldrake and James Lovelock, explore how the current mechanistic world view and the ‘disconnection with spirit’ in the specialist areas of modern science are considered to be outmoded and destructive (Pearson: 1994; 49). In so far as architecture is concerned there is new awareness in Europe, bringing in an architecture

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that displays “ecological and spiritual sensitivity. In North America, there is a similar shift which has begun to take place driven by the need to combat chemical pollution and toxins associated with modern lifestyles and campaigning for a “non-toxic, natural and earth-wise manner” (Pearson: 1994; 49).

Day (1990) explores the various elements of architecture and what constitutes ‘Place of the Soul’. ‘Architecture’ in this context is explored as ‘architecture with healing-giving intent’. It emphasises that architecture is part of the built environment and the building ought to become integrated with its surroundings. There is a difference between building types- the one type is subtle and sits lightly on the ground, while the other sits forcefully on the ground and becomes dominant in its positioning. These dominant building types are usually accessible by car and are artificially ventilated and lit. These buildings are not site or climate specific and can be sited anywhere in the world. To create a building that ‘heals’ one needs to create a harmonious ‘place’ that brings change through the means of ‘organic’ development that is sensitive to the site and emphasise its naturally occurring qualities. The materials of the building too need to be nourishing to the human being and be designed to minimise pollution (Day: 1990; 18-19).

Pearson (1994) expresses that spatially, similar to a dance, one feels a sense of rest in movement and movement in rest. Low sheltered intimate spaces interplay with the high open communal areas. Warm colour such as red, yellow and orange contrast with those of blue, violets and grays (cool contrasts). Architects with an anthroposophic focus, believe that organic buildings will enable the inhabitants to feel both a sense of wellbeing, new creativity and individuality through the subconscious effects the building has on them. The environment in which the building is situated dictates the type of psychological feeling the building will give off (Pearson: 1994; 51-52). Hence careful consideration must be given to selecting a site with positive qualities as well as carefully placing the building on the site so that it impacts as little as possible on the natural qualities of the site but rather enhances these qualities.

It is important to understand some design principles that assist a person's healing and encourages a more positive human wellbeing rather than being more institutional and harsh. Some of these characteristics have been listed below: (Day: 2002; 231-232)

Designers ought to... (Figure 1 & 2)

- Angle the walls so that almost all of the buildings entries, sitting positions and routes avoid any kind of confronting wall planes

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- Corridors should vary in width, for instance at some areas they should swell to differentiate the stopping places from the routes. In these areas, seating, water features and plants can be placed
- Some doorways should be inset, therefore giving some areas interesting entrances and something special to visually excite the user
- By increasing the connection to the outside and vegetation it increases a person's interest in the paths they are walking along.
- Daylight should be interwoven from various directions, also creating interest in the building
- If there is artificial light used within the building, it should be diffused, varied and softer than normal harsh fluorescent lighting
- Both the interiors and exteriors should be varied in materials. This is especially true for the floors, ceiling heights and the door and window areas.

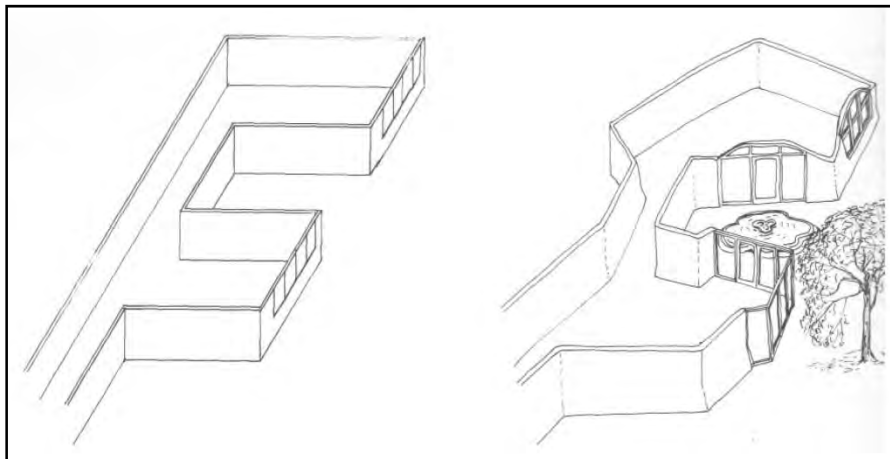


Figure 1: The same shape just expressed with different edges. Image 1 has far harder corners and edges to its form, where as image 2 allows for recesses and areas where people are able to sit and use. It creates a far more interesting environment than the more clinical one to the right (Day: 1993; 232)

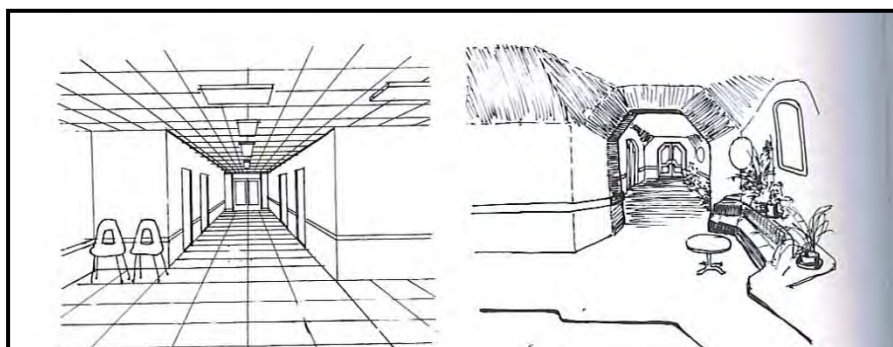


Figure 2: Two very different settings. Figure to the left is of double sided corridors, giving the space a stale feeling. Image on the right explored a more cosy, welcoming and more healing orientated environment (Day: 1993; 232)

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By creating more gentle spaces, the users are left to feel as though they are free to choose and are more welcomed than in the case of spaces that are designed for 'ease of storing objects'

6.1.3 Materials and their relationships to the human wellbeing

"On the whole, people do not look at architecture, nor at materials. They breathe it in. It provides an atmosphere, not a pictorial scene" (Day: 1990; 113)

It is not only the configuration of the space that is important for an individual to experience the space in a positive light but the building materials also play a prominent role. Every building material has its own individual quality (Figure 3, 4 & 5). For instance wood is made from trees and people therefore perceive wood to be warm and have 'life'. Bricks also have a physical appeal to them since it give off texture, a sense of 'touch' and immolates the warmth that is given off by the kiln when the bricks are baked. On the other hand, steel is hard, cold and gives off a feeling of powerful industrial machines. Plastic, is almost 'alien' whereby it has negative molecular technology that makes up plastic and is bound by no structural qualities. A similar view is associated to concrete. These qualities can be put to the visual and 'feeling' test whereby an individual will instinctively feel 'happier' and more 'emotionally' warmer in a room of unpainted wood, in comparison to a hard and cold concrete room. "Materials are raw ingredients of art, but they affect our emotions", so if a non oppressive building design was finished in timber or brick the building would more than likely be perceived in a positive light, in comparison to the same design finished in concrete, where it would feel cold and removed (Day: 1990; 112-113). The materials chosen in a building are therefore important to the manner in which the building is perceived by the person on the street as well as its inhabitants.

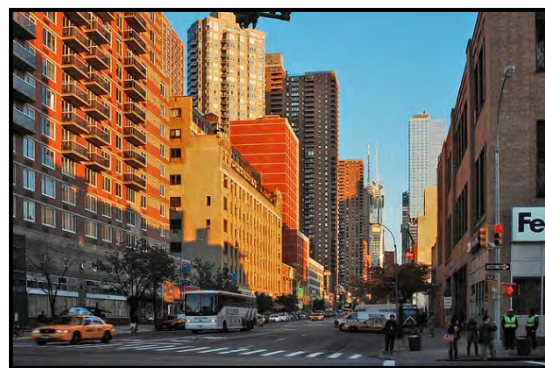


Figure 3 (left): Shows how wood can be used in architecture, to give the building an overall warmer and more inviting 'feeling' (www.worldbuildingsdirectory.com)

Figure 4 (right): Shows how different buildings can use brick, just along the colour gives off a warmer feeling (www.worldbuildingsdirectory.com)

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Figure 5 (above): Shows a building that is far colder, more clinical and less inviting than the previous two buildings (www.trendir.com)

6.1.4 Conclusion

Through this research one can see that there are architectural spaces which are more prone to emulating a more 'positive feeling' than others. As architects, it is important to understand and incorporate these environments into design. It is not only the spaces which are important but the materials and textures of the space as well. Similar to the spaces, the more 'natural the state' of the building material the more positive these environments will appear to an individual.

6.2 SICK BUILDING SYNDROME (SBS)

6.2.1 Introduction

Human beings in general spend a significant amount of time being occupants of buildings and when these buildings exhibit the characteristics of a 'sick' building, then occupants can suffer the effects thereof. The discussion that follows will predominantly deal with the causes and effects of sick building syndrome (SBS) though a small section has been dedicated to the psychological variables of SBS.

In summary, sick building syndrome can be defined as psychological and or physical distress which is generated specifically in work scenarios and dissipates when the individual leaves his or her working environment (Baker: 1989; 607–624, Bauer et al: 1992; 213–219, & Ryan & Morrow: 1992; 220–224). Before the 1950's, most buildings were constructed so that their materials were minimally processed from their natural state. In simple terms this means that the materials used are able to

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decompose back into nature- a process involving rodents, fungal spores etc. For this process to be healthy for the occupants, old buildings need to be constantly monitored and cared for (Day: 2002; 187). Most individuals, at some stage or another, will suffer from sick building syndrome This condition affects every person, including seemingly healthy people as well.

According to the World Health Organization (1986) and authors like McLellan & McCunney (1994) and Woods (1989), up to 30% of newly constructed and or renovated buildings have between 10-30% of its inhabitants suffering from sick building syndrome. Hodgson & Morey (1989) believe that although sick building syndrome was originally associated with newly constructed and or recently renovated buildings that were designed for energy efficiency (and therefore tended to have inadequate mechanical ventilation systems), their research suggests that there are other environmental conditions that aid in the poor air quality which is circulated around buildings. An example of this is the toxic air that is circulated around in the basement parking garages which 'leaks' into the areas designed for human occupation. Also, there is the 'tainted air', released by the computers, printers, photocopiers and other office equipment. (Chisholm & Doyle: 1993; 46-47).

6.2.2 Symptoms of Sick Building Syndrome

According to McLellan & McCunney (1994), they define sick building syndrome as "a constellation of non-specific symptom related to occupation of a specific building environment" (McLellan & McCunney: 1994; 642). There have been multiple terms that describe the symptoms of sick building syndrome. However until recently, these configurations of symptoms have more commonly been referred to as 'tight building syndrome'- this is due to the poor quality of air that is circulated in the ventilation systems (Hodgson & Morey: 1989; 593-605). With the increased research following 'tight building syndrome', which included a larger scope of symptoms relating to not only air ventilation systems but physical and psychological factors, this term became more extensively known as sick building syndrome (Baker: 1989; 607-624, Bauer et al: 1992; 213-219, Norback et al: 1990; 121-128, Ryan & Morrow: 1992; 220-224 & Skov et al: 1989; 286-295). As a subsequent factor of sick building syndrome, this term also became associated with poor health related issues and unsatisfactory environmental conditions.

Ryan & Morrow (1992) defines sick building syndrome 'as one of a spectrum of workplace disorders that are characterized by a variety of non-specific somatic and psychological symptoms' (Ryan & Morrow: 1992; 220). Other authors, such as Finnegan, Pickering and Burge (1984), expressed sick building syndrome to be 'a buildings in which complaints of ill health are more common than might

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reasonably be expected' (Finnegan et al: 1984; 1573). From this research one can conclude that the effects that surround by sick building syndrome are both variable and non-specific and affect the buildings occupants both physically and psychologically (Ryan & Morrow: 1992; 220). Some of the physical symptoms of this condition do vary, however some remain constant, for instance the worker may experience a mucous-membrane irritation that affects the eyes, nose and throat, unpleasant odour and taste perceptions, skin ailments. Neuropsychiatric disturbances include headaches, fatigue, nausea, dizziness, confusion as well as asthma also form some of the common symptoms associated with sick building syndrome (Gibson et al: 1998; 103-115, Hodgson & Morey: 1989: 593-605, Kreiss: 1989; 575-592, Levy: 1997; 69-73, Ooi & Goh: 1997; 1243-1247, Spengler & Sexton: 1983: 9-16, Spurgeon et al: 1997; 43-49 & Stenberg et al: 1994; 1190-1197).

6.2.3 Physical/ Environmental factors vs. the Psychological factors

According to Baker (1989), there is a slight level of skepticism with regards to the impact both the environmental and psychological effects that sick building syndrome has on an inhabitant. Although there is more agreement placed on the causal role that physical factors, (for example ventilating, heating systems and organic volatile compounds) play in comparison to the psychological, organizational and social impacts that sick building syndrome have on the inhabitant (Baker: 1989; 607-624).

6.2.4 The effects of heating and ventilation systems

During the early to mid-1970, there was a massive drive to reduce energy usage within buildings (due to the energy crisis). This led to the bulk of buildings under construction or renovation incorporating the design principle of air-tight environments with a view to reducing energy consumption. This allowed for a massive reduction in costs for both the air-conditioning and heating (Kresis: 1989; 575-592, Spengler & Sexton: 1983; 9-16 & Sterling & Sterling: 1983; 385-392). In addition to this drive to reduce energy costs, the heating ventilation and air-conditioning (HVAC) in these building systems where poorly designed, incorrectly equipped for either proper air exchange or improper maintenance (Morey & Shattuck: 1989; 625-642).

Studies conducted by Burge et al (1987), Robertson (1987), Finnegan et al (1984) and Sterling & Sterling (1983), indicate that 'incorrect' HVAC systems all increase the chances of sick building syndrome. For instance, a building that is mechanically ventilated will generally have more workers with health-related complaints than buildings with natural ventilation. Therefore, there seems to be a

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clear connection between a human's wellbeing, the efficacy of the ventilation system and of equal importance, the extent of naturally ventilated or fresh air circulating through the building (Burge et al: 1987; 409-504, Finnegan et al: 1984; 1573-1575, Sterling & Sterling: 1983; 385-392). Interestingly, studies have shown that the buildings that are mechanically ventilated generally hold a larger absentee rate than those which are naturally ventilated (Sterling & Sterling: 1983; 385-392).

However, there is not always a clear causal link between air-conditioning, heating and ventilation systems (HVAC) and sick building syndrome (SBS) (Hodgson & Morey: 1989; 593-605). These symptoms surrounding sick building syndrome often continue to persist even after the ventilation issues have been remedied (Chrisholm & Doyle: 1993; 47-19). The implication is that there are other factors at play.

6.2.5 Volatile Organic Compounds (VOC's)

Volatile Organic Compounds or VOC's are emitted by different building materials and furnishings; this can also be given off through cleaning products, building occupants, outdoor air and combustion process (Figure 6). If one is exposed to VOC's the symptoms and health effects are similar to those of sick building syndrome which include eye, throat and nose irritations, fatigue, odour perceptions, nausea and concentration difficulties (Girman: 1989; 695-712). If an individual is surrounded by higher quantities of VOC's, then the irritation and symptoms become more intense. For instance, there is a greater amount of mucus build up due to the mucous membrane irritation and neuropsychological dysfunction and headaches also become a frequent symptom (Hodgson & Morey: 1989: 593-605). The reason for understanding VOC's is the fact that, although most of the issues associated with sick building syndrome are closely (and mostly solely) related to the HVAC systems, there are a large amount of new buildings which are heavily affected by VOC's as well. For example, the newer buildings are more likely to be closed up (i.e.: mechanically ventilated), as well as displaying more modern furniture. The result is that the inhabitants are more prone to suffering from sick building syndrome and exhibiting low levels of wellbeing (Ryan & Morrow: 1992; 220-224).

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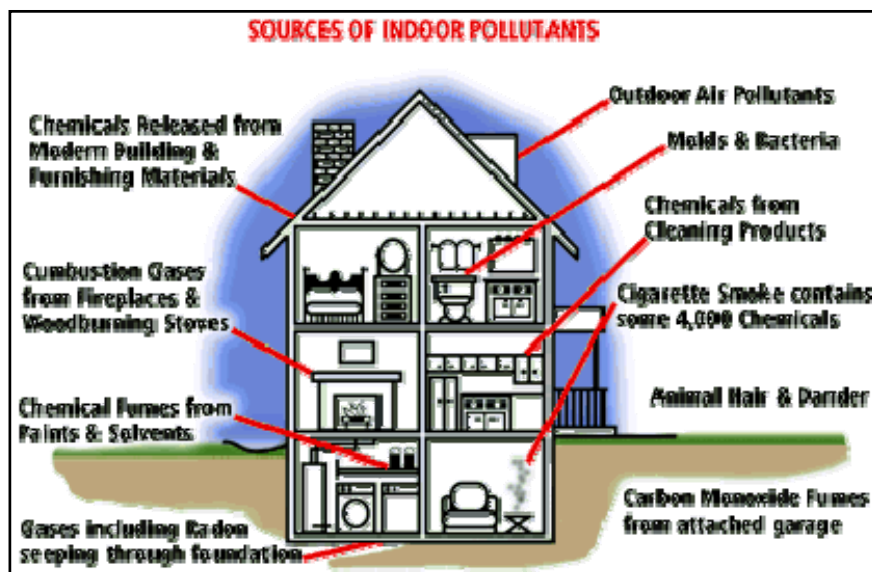


Figure 6 (above): Showing the some of the different pollutants found around the house (www.drkpadmanaban.com)

6.2.6 Psychological Variables

It seems that sick buildings have a debilitating effect on their occupants who over time become more and more 'cranky' and irritable and this mental attitude further exacerbates the physiological decline. If buildings are healthy and pleasant to occupy, employees are more likely to be content but obviously there are so many factors that influence the contentment of staff that one can only make generalized rather than specific statements. (Baker: 1989; 607–624). However, this 'stress' varies according the individual. For instance, women, typically clerical workers, experience a larger amount of stress in their work environments (Ryan & Morrow: 1992; 220–224). Selner and Staudenmayer (1992) believe that these stressors can become both primary and secondary contributors to one's health, in both the work and home environment (Selner & Staudenmayer: 1992; 909–919). According to Baker (1989) and Ryan & Morrow (1992) expresses that sick building syndrome is not only associated with the building in isolation, this high rate of illness can be strongly linked to the individuals negative job satisfaction, productivity and motivation (Baker: 1989; 607-624, Ryan & Morrow: 1992; 220-224). In a few studies created by Bauner et al (1992), Black et al (1993) and Ryan & Morrow (1992) these studies addressed the various organizational and psychological aspects that are associated around sick building syndrome. In these studies the people working in sick building syndrome buildings were reported to have a much higher level of resentment, distrust, defensiveness, anxiety and confusion in comparison to those who worked in non-sick building syndrome buildings (Bauner: 1992; 213-219, Black et al: 1993; 131-138, Ryan & Morrow: 1992; 220-224).

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6.2.7 Building for Health- Sick Building Avoidance

Sick building syndrome can be avoided through design, materials, reducing chemical input, changes in smells. The more modern buildings are less ventilated due to their air-tight nature. Old draughty buildings, for instance, could cope with the damp, whereas in the case of the more modern buildings that are 'draught-proof,' mould is more likely to develop (Day: 2002 187-188). Through the use of 'vapour permeable construction', the building is able to breathe without draughts thus this dissipates the moisture build up and reduces the chemical vapours (Figure 7). 'Life-compatible' materials which are materials that have been borrowed from 'life' such as natural or organic materials are considered more 'human friendly' than 'man-made' products. Many of these 'man-made' materials give off gas toxins, that create a 'cocktail' combination and with the heating systems this accelerates the rate of chemical emission. Some of these products contain bio-cides Wall paper and masonry paint, can commonly include slow-releasing fungicides, some of which are mercury-based. To create a comfortable medium, according to Day (2002) it is best to include both natural and non-toxic materials (Day: 2002; 187-188).

Indoor air is the most important determinant to the health of a building. As humans, either awake or asleep, there is a large amount of O² intake and CO² emission; therefore its chemical effects cannot be avoided. Off-gas from materials, micro-organisms, body-odours, dust and breath, all make the internal air of a building up to five times as polluted as the outside air (Hunter: 1989: 5). Most of the time, sick building syndrome is created due to the reduction in ventilation to save heating costs- this is created by exacerbating ducted-air and air-recycling. Heating is also closely related to the buildings 'sickness', this is due to the fact that the air is dried, it increases the level of static-electricity build-up and it also increases the off-gasses and the pollution of negative ions (Day: 2002; 190).

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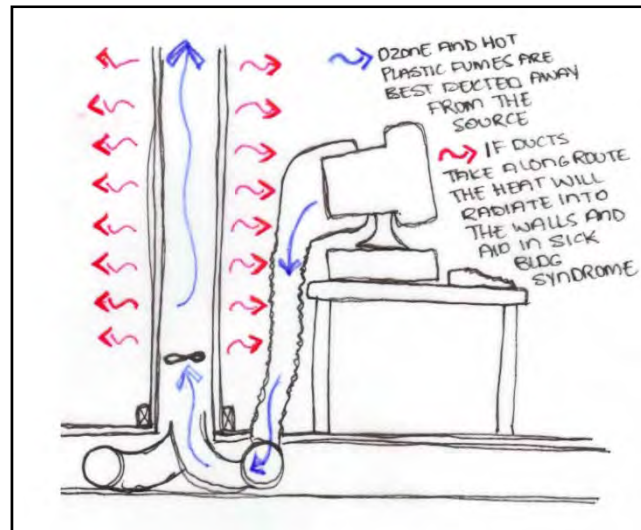


Figure 7 (left): Diagrammatical representation the hot plastic fumes from the computer that need to be directed away from the source. This needs to take place in the shortest amount of time or the heat will radiate into the (Adapted by the author from Day: 2002; 189)

Receiving adequate levels of natural light is essential to human health. A large proportion of people do not receive the prescribed amount of 'correct' light. Being indoors allows for a tenth of the amount of outside light in. Natural lighting is very important for ones daily existence. The natural daylight varies in both light intensity and colour throughout the day. This becomes important for both the whole body as well as the eye. The level of daylight an individual receives affects one's physiological and psychological, physical, chemical and biological factors. It is important for one to take this into consideration for ones human wellbeing (Day: 2002; 193).

6.2.8 Conclusion

The research on sick buildings, has pin pointed the 'causal factors' associated with the bulk of buildings designed and constructed from the 1960's to the 1980's, which led to these buildings generally exhibiting damp, cold and mouldy interiors which negatively affected their occupants. Even though there are still these buildings present today, the biggest polluters are mostly short- lived, therefore an economically painless clean-up is created through the natural replacement cycles(this obviously is dependent on the health of the economy since it economically depressed areas so-called sick buildings may not be replaced with healthier alternatives even though their asset-life is exhausted?). According to Day (2002) for both new and old buildings ensuring a free flow of fresh air and wherever possible using natural materials will deal with most of the indoor air pollution issues (Day: 2002; 200). Through the addition of natural cooling, lighting and more positive material use,

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EMF-avoidance and sensitive heating mechanisms ensure that most buildings are physically healthy for individuals to occupy as well as promoting a positive human wellbeing.

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6.3 THE JOURNEY OF COLOUR IN LIFE

6.3.1 Introduction

It is without question that colour and light are prominent factors in every environment. Both colour and light are inseparable and when designing a human environment, conscious attention needs to be given to the psychological¹¹, visual aesthetic¹² and technical¹³ aspects. By understanding the psychological effects of colour on individuals one is able to use colour in the most appropriate manner to enhance the wellbeing that people experience. In the view of Birren (1969) not only is a proper balance of light important, but the colour of the light, combined with the character of the environment and the stimulation of senses are all vital to a 'normal life' (Birren: 1969; 9).

It would be incorrect to assume that the only significant role of colour and light is to provide the objective benefit of illumination and the subjective benefit of creating a pleasant environment. Research proves that colour and light affect the human organism on both a visual and non-visual level (Mahnke: 1987; x-xi). The visual aspect relates directly to how people view and appreciate light, shadow and colour, and speaks very much to the area of aesthetics. The non-visual aspect explores how colour in particular can be a powerful psychological tool that can influence people's reactions, mood, energy and vitality. Nervousness, lack of concentration, bad moods, visual problems, anxiety, happiness, excitement and joyfulness, for instance are emotions which can be evoked from the colours and environment in which they occur (Mahnke: 1987; x-xi).

In addition, individuals who believe that colour and light cannot be used as a psychological element are misinformed. For instance, in 1981 an annotated bibliography; *Non-Visual Effects of Light and Colour*, the author and investigator Dr. Rikard Kuller commented on the poor application of the known principles surrounding the use of colour:

¹¹ Psychology refers to something that an individual pertains to, is dealing with or what the mind is affected by. This has particular reference to the function of awareness, feeling or motivation (www.dictionary.com)

¹² Visual aesthetics refers to what an individual perceives by the mind with regards to the emotions and feelings in relation to the sense of beauty, the ugly, the sublime etc." (www.dictionary.com)

¹³ Technical refers to how colour and light with certain techniques can influence the individual (www.dictionary.com)

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'During the course of this work it has become evident that there is an enormous amount of facts and results that are almost never considered in practice and education. Thus, one finds a gap between research on the one hand and practice on the other; this is known as the infamous application gap...' (Kuller: 1987; 238 in Mahnke: 1987; x-xi))

6.3.2 Colour psychology and colour symbolism

Colour psychology, in basic terms, deals with the effects of the electro-magnetic radiation of light on a human's moods and behaviours. It can also be explained as a universal, psychophysical reaction, which is not heavily influenced by external issues such as age, culture and gender (<http://www.apartment-ideas.com/psychology-of-colour.html>). Colour symbolism on the other hand refers to the conscious associations that we are conditioned to make in relation to certain colours. Examples of such cultural responses in relation to the colour green include the fact that green is commonly seen as a sacred colour throughout Islam; however in Ireland it is regarded as a lucky colour, while in contrast in England green is considered unlucky. A second example of colour symbolism is the colour purple and its association with royalty (historically purple was an extremely expensive dye which could only be afforded by the wealthy). In the case of the colour red the symbolism and psychology coincide. Red is the colour of blood and has associations with war and pain but red actually can trigger aggressive responses in some individuals (Mahnke: 1987; x-xi).

6.3.3 How does colour psychology work?

From a scientific point of view, colour is the first aspect that an individual will register when assessing any object or environment (Figure 8). A perfect example of this is one's reaction to a fly in one's home. If the fly is black or navy, one would more than likely find it slightly irritating and a nuisance compared to a fly that is visually more noticeable, say perhaps one with a yellow striped abdomen- in which case most individuals display a recoil response (Birren: 1969; 9).

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Figure 8: Explores different natural images which all evoke different emotions. From the left the red and purple flowers evoke a sense of liveliness, happiness and joy compared to the central image which is more peaceful. The image on the right, with its calming blues and grays creates a sense of tranquility and relaxation (www.sensationalcolor.com)

Colour is the most effective tool that Nature uses to signal all living organisms including humans. The colours found in ones environment can affect an individual's behaviour and mood. An example of this can be witnessed when yellow daffodils, bluebells and colourful crocuses appear; one's immediate reaction is to feel livelier and happier (Figure 10). However, on the other hand, when grey skies and rain or snow surround one, the instinct is to draw in and hibernate indoors. (Birren: 1969; 9-11).

It is easy to underestimate the power of primitive instincts that are instinctively experienced through colour psychology, mostly of which are largely subconscious. The colours of the interior environment wherein we live or work affect us in just the same way as those in the natural world and in fact probably have a greater impact since when one is indoors it is a period of continuous 'imprinting' that is occurring whereas a scene in the outdoors mostly tends to be a fleeting view.

6.3.4 The Major Hues

Colour (Table 1) does not only promote mood associations, subjectively and objectively but it also influences the estimation of volume, temperature, time and noise. Through research, common underlying reactions to various colours have been documented and can be seen in the table below, The major hues include the following: red, orange, yellow, green, blue, purple and black and white (Mahnke: 1987; 10-13 and Gillat: 1985; 10-94).

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Table 1

Colour	Hue effect & Symbolism	Impressions/ Associations	Characteristics:
Red	- Effect: Exciting (bright red) Stimulating (red) - Symbolically: Red means fire, life and strength but its aggressive masculine nature is also linked to combat and war.	Positive, Passion, Fervid, Active, Strong, Warm, Negative, Aggressive, Intense	Most dominant and dynamic of all the colours. It's striking and grabs attention and overrules all other hues. The lens of the eye is forced to adjust to focus in red light wavelengths.
Orange	- Effect: Exciting (bright orange) Stimulating (orange) Cheering (light orange)	Positive, Jovial, lively, energetic, extroverted, sociable, negative, intrusive, blustering (if the colour is highly saturated)	Orange is mellower and less primitive than red. It has virtually no negative cultural or emotional associations. Aesthetically wise, de-saturated hues may appear cheap and without vigour
Yellow	- Effect: Cheering - Symbolically: Yellow signifies enlightenment (both medical and spiritual), expansion, sunlight and communication	Positive, sunny, cheerful, radiant, vital, high spirited, negative, egocentric and glaring	In pure form, yellow is the happiest of all the other hues. It radiates warmth, cheerfulness and inspiration. It is comparatively a light colour in comparison to the rest as it loses its lightness, when modified it ceases to be yellow
Green	- Effect: Retiring (light green) Relaxing (green) - Symbolically: Power of nature and life. Colour of mould, decay and sickness of humans	Positive, tranquil, refreshing, quiet, natural, negative, common, tiresome and guilty	Psychologically green represents a withdrawal from stimulus. Since the lens of the eye focuses green light exactly on the retina. It is also the most restful colour on the eye
Blue	- Effect: Retiring (light blue) Relaxing (blue)	Positive, calm, secure, comforting, sober, contemplative, negative, frightening, depressing, melancholy, cold	In all aspects, blue is the antithesis of red. In its appearance, blue is transparent and wet, red is opaque and dry. Psychologically, the cool and relaxing nature of blue is in direct opposition to the warmth and excitement of red. While red seems vulgar at times, blue exhibits a noble character. Blue decreases the blood pressure while red increases it.
Purple	- Effect: Subduing	Positive, dignified, exclusive, negative, lonely, mournful, pompous and conceited	Purple is a blend of red and blue, the two colours that are physically and psychologically most opposed. In its various tones, purple may evoke delicacy and richness or appear unsettling and degenerate. Violet is a lighter shade of purple and a pure spectral hue. Purple is a mixed colour

*Table adapted from Mahnke (1987) and Gillat (1985)

The location of a colour, be it on the top, sides or bottom of a space, create various types of colour stimuli and consequently affect the influence a room will have psychologically on its inhabitants. However one needs to remember that a colour which may compliment and be suitable for a floor may not necessarily be so for a ceiling. The main areas in a room are the ceiling, walls and floor and hence

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one must consider the varying psychological and emotional effect that colours have when used on each of these main surfaces. This is explored in tables 2 & 3 below.

Table 2

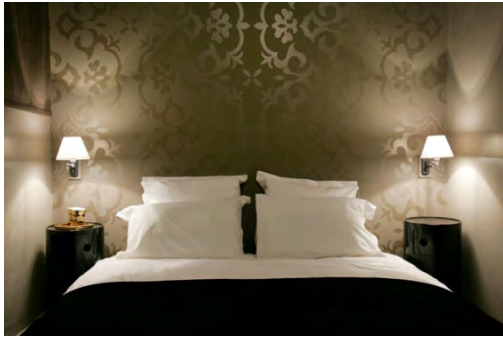

Colour:	Ceiling:	Walls:	Floor:	General:
Red	Intruding, disturbing, heavy	Aggressive, advancing	Conscious, Alert	Generally this colour isn't used often, except as an accent
Pink	Delicate, comforting or too intimate	Aggression, inhibiting, weak, too sweet if not grayed	Perhaps too delicate, unfamiliar in this location	
Brown	Oppressive and heavy	Secure and assuring if wood, much less so if painted	Steady & stable	In certain institutions this colour may provoke faecal associations
Orange	Stimulating, attention-seeking	Warm. luminous	Activating, motion-orientated	More mellow than red and has more liable charm.
Yellow	Light (if in lemon), luminous, stimulating	Warm (if toward orange), exciting to irritable (if highly saturated)	Elevating, diverting	Serves safety purpose due to its highly visible nature, especially in industrial environments
Green	Protective (reflection can be unattractive)	Cool, secure, calm, reliable, passive, irritating if glaring	Natural, soft, relaxing and cold (towards the blue-green)	Good environment for meditation and tasks involving high concentration
Blue	Celestial, cool, less tangibly advancing (light), heavy and oppressive (dark)	Cool and distant (light), encouraging space-deepening (dark)	Inspiring feeling of effortless movement (light), substantial (dark)	Tends to be cold and bleak if applied to large areas or in hallways and corridors.
Grey	Shadowy	Neutral to boring	neutral	Should be used in conjunction with another colour
White	empty	Neutral and empty	Touch-inhibiting	
Black	Hollow to oppressive	ominous	dungeon like	Odd or abstract



*Table adapted from Mahnke (1987) and Gillat (1985)

Table 3



Colour:	Room and Colour:	Colour:	Room and Colour:
Red	 <p>Figure 9: shows a room using a red hue (www.duvetandpillowwarehouse.co.uk)</p>	Pink	 <p>Figure 10: shows a room using a pink hue (www.farm3.static.flickr.com)</p>
Authors comments	This room is quite aggressive and harsh. Red should rather be used in conjunction with other 'softer' colours instead of being used in	Authors comments	This room is soft and somewhat delicate and relaxing. Should a different tone of pink be used, for instance a brighter more


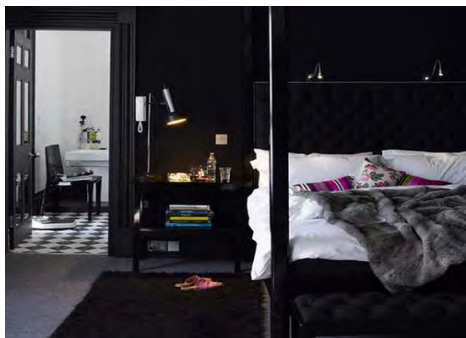
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	a solid wall to wall manner		fuchsia colour, the room would appear to be bold and dominant.
Brown		Orange	
	Figure 11: shows a room using a brown hue (www.emi-rooms.com)		Figure 12: shows a room using a orange hue (www.orangeroom.co.nz)
Authors comments	This rooms is reasonably relaxing, warm and soothing. It is a good choice for a interior environment. It gives off an 'olden day' feel.	Authors comments	By using orange in a room, the individual is psychologically stimulated by the vibrant and 'energetic' colour. This colour should be used in environments where stimulation in work and productivity is needed. In a bedroom environment it appears to be very over powering.

Colour:	Room and Colour:	Colour:	Room and Colour:
Yellow		Green	
	Figure 13: shows a room using a blue hue (www.resene.co.nz)		Figure 14: shows a room using a gray hue (www.elizabethannedesigns.com)
Authors Comment	Similar to the orange hue, yellow is also an 'energetic' colour and it excites the inhabitant. Although a 'happy' and 'cheerful' colour, this tone and hue should rather be used in environments that require stimulation	Authors Comment	Green is in the middle of the colour spectrum, therefore the most 'balanced' colour. It is a soothing and calming colour with is ideal for environments where the individual needs to be relaxed
Colour:	Room and Colour:	Colour:	Room and Colour:

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<p>Blue</p>	 <p>Figure 15: shows a room using a blue hue (www.thepheasants.com)</p>	<p>Grey</p>	 <p>Figure 16: shows a room using a grey hue (www.glcc.org)</p>
<p>Authors Comment</p>	<p>By using blue in a room, the immediate feeling is calming, tranquil and relaxing. This colour is particularly used well in smaller areas instead of larger ones, as these spaces can become quite cold and distant otherwise</p>	<p>Authors Comment</p>	<p>Dark grey is very similar to black, whereby it can become very harsh and make the area seem very dull if used in a large amount of space. However this colour is well used in conjunction with another colour.</p>

<p>Colour: White</p>	<p>Room and Colour:</p>  <p>Figure 17: shows a room using a white hue (www.duvetandpillowwarehouse.co.uk)</p>	<p>Colour: Black</p>	<p>Room and Colour:</p>  <p>Figure 18: shows a room using a black hue (www.duvetandpillowwarehouse.co.uk)</p>
<p>Authors Comment</p>	<p>Although this white room is a little hard on the eye and a little stark, it has a bright and clean feel to it.</p>	<p>Authors Comment</p>	<p>The black room has a rather depressing feel. It is heavy and somber in feeling. Black should rather be used as an accent instead of in a solid wall to wall look</p>

* Table above is the author's interpretation the images have been referenced accordingly

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6.3.5 Colour and Contrast

Hue refers to the 'pure spectrum' of colours where the value of the colour refers to the relative darkness or lightness of the colour. Contrast is very useful and powerful tool for the architect and interior designer, since it allows one to create form and spatial illusions. By creating contrast, objects are separated in space. Gradation suggests mass and contour of an adjoining surface. Figure 12 below the image shows a colour value contrast between the warm brown wood tones of the background and umbrella, with the red blouse of the woman in the foreground. The colour gradation in Figure 13 on the other hand, emphasises shape and form as a whole and particularly the curves of the woman). By creating a grayscale image it is perceived as being more subtle, relaxing and calming. Whereas the image with colour is viewed as being stronger and more dominant, thus gives off a feeling of busyness and constant energy. In summary, if the colour values are close to one another the shapes will seem to be 'flatter', therefore more closely connected to the space. On the other hand if the values contrast, the shapes will appear to be separate in the space and some of the colours will stand out from the rest (Mahnke: 1987; 10-13 and Gillat: 1985; 10-94).



Figure 19 (left): Generates the feelings of passion and energy (www.imagin-photo.com)

Figure 20 (right) is more somber, soft and muted (www.imagin-photo.com)

6.3.6 Conclusion

Selecting the correct colour palette and carefully considering which interior surfaces ought to be 'dressed' in which hue is crucial from the point of view of aesthetic appeal. If a building interior is aesthetically pleasing, this in itself can lead to restfulness, contentment and enjoyment which all contribute to wellbeing. However one cannot choose interior colours without consulting one's client

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and considering the needs of inhabitants. People have associations with certain colours. Some of these reactions to colour have a certain level of commonality while others are entirely based on each individual's history and circumstances. Colour and its psychological aspects are prominent worldwide over all racial, cultural, gender and socio-economic boundaries. The 'effects of colour' must also be taken into consideration especially in the choice of colours for different parts of the building. Since architecture is about creating functional forms and spaces it is important for each designer to clearly understand the constraints and capabilities of each individual colour, thus aiding in positive form and space making.

CHAPTER SEVEN

PRECEDENT AND CASE STUDIES

7.1 PRECEDENT STUDIES INTRODUCTION

The following analysis of these two precedent studies will explore how Healing Centres and Spa's can facilitate a positive human wellbeing through both the facilities offered and the architectural environments created. The analysis will be based on the following criteria:

- Concept (if any) and general layout
- Sense of Place/ Genius loci
- Landscapes, gardens and water
- Materials, textures and colour pallet

These four points were examined and an analysis formed. By doing so the author was able to gain knowledge on how positive architectural environments are capable of 'healing' and creating 'peace' within one's mind, body and spirit.

7.2 MOUNT GRACE COUNTRY HOUSE AND SPA (MAGALIESBURG, PRETORIA)

7.2.1 Introduction

Mount Grace Country House and Spa is located near the town of Magaliesburg in the Magaliesburg Mountains, an hour west of Pretoria. It is surrounded by 10 acres of vegetation and lush gardens, offering a balance between a classic country house hotel and a South African rural living.

7.2.2 'Genius Loci' or 'sense of place'

Although it is difficult to gage a precedent studies 'genius loci' and 'sense of place' from pictures but overall it seems that the Mount Grace Country House and Spa, does generate a positive 'feeling'. The combination of architectural elements, combined with the overall setting of the environment, gives the building a balance between design and nature (Figure 1 & 2).

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Figure 1 (above): Shows the view off one of the decks at the Mount Grace Country House and Spa, there is a balance of nature and building (www.africanpridehotels.com)



Figure 2 (above): An image of the spa from the deck looking down at the grasses and paved areas (www.africanpridehotels.com)

7.2.3 General Layout, gardens, landscapes & water

In the main building, the reception, spa café, lounge and six treatment rooms can be found- one of these treatment rooms contain a ‘wet facility’, housing a spa bath and shower. Both the lounge and café are surrounded by water that adds to the overall mood and tranquility. The large openings, that break the texture of the stone walls, allow for interaction between the individual and the landscaped surroundings. Just below the lounge and café is the pool and tanning deck. The hydrotherapy spa garden is found next to the café. This hydrotherapy spa garden is an open air facility which allows an individual to get in touch with nature while relaxing and enjoying the peacefulness of the scenery. In this area is a heated pool, cold pool, massage table, reflexology path and a fountain. These are closely in touch with the calming and soothing element of water that winds through the landscape of this environment (Figure 3 & 4). The last facility in this area is the covered flotation pool. To ensure a link

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to nature, three branches have been used as hand rails and the flotation pool is surrounded by heavy dry stone walls with a suspended roof that is decorated with clouds and sky (www.grace.co.za).



Figure 3 (above): An image of the spa in the background (from the entrance side) with the water running by and nature around it (www.balloon.co.za)



Figure 4 (above): An image of the spa in the background with the pool and vegetation around (www.africanpridehotels.com)

7.2.4 Materials, textures and colour pallet

The main building (Figure 5) comprises of a combination of stone construction and a thatch roof. The stonework of the walls compliments the interior design of the cane furniture, natural colour pallet and the reed/ stick effect on the ceilings (Figure 6 & 7) (www.grace.co.za).

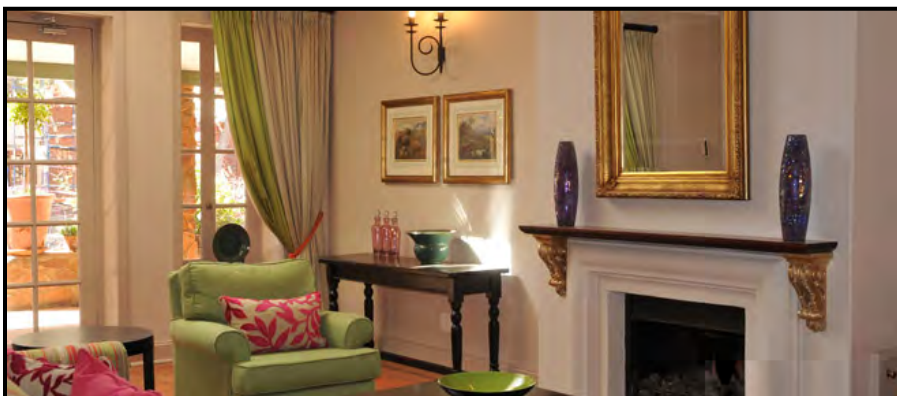
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Figure 5 (above): The Main building (front view), showing the water feature and deck area. The materials and texture choice all blend into the natural surroundings. The use of stone walls is complimented by the stone and rock water feature. The vegetation around the site aids in the overall feeling of being 'one with nature' and the surroundings (www.faceafrica.com)



Figure 6 & 7 (above and below): Explore the interior design of this spa. The colour palette is muted and natural in appearance so that it gives off a more soothing and relaxing feeling. So people will feel at ease in this environment. Figure 4 explores the use of natural materials and how the use of wicker seating is close to the thatch roof (seen in the top part of the image). The balustrade is made out of wood which also shows the link to nature. On the other hand the interior space shown below, although is less rustic than the above image, it shows sophistication and elegance. The muted colour pallet is continued now with some green calming accents splashed around the room (www.africanpridehotels.com)



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7.3 FORDOUN HEALTH SPA, NOTTINGHAM ROAD

7.3.1 Introduction

This land was originally owned by a Byrne settler, who owned this farm and named it after a native parish in Scotland. The current owner, Jon Bates, had always wanted to convert this farm and develop a boutique hotel and health spa (Figure 8). Once the dairy operation had been moved to a more suitable land the farm was left behind, run down with potential for redevelopment. The layout of the vacant buildings stretched out along a farm road and was grouped around a large open space, thus giving the space a rural village feeling. This concept was reinforced in both the planning of the building and the spaces between (KZ-NIA: 2005; 6).



Figure 8 (above): Shows the central courtyard in relation to the other buildings surrounding it. It also shows the different uses of materials around the design. For instance the use of brick in to left hand side building to the plaster finished building in the background to the right, to the paving materials and the contrast of the green grass (www.topplaces.co.za)

7.3.2 The concept and general layout

Positioned centrally is the reception and restaurant, which are entered off a large public courtyard opening out onto a quiet garden and green lawns (Figure 9). The overall concept of this precedent study is the central public space, which seems to immortalize the form of a village street, connecting buildings together. Through the use of low stone walls between the buildings it creates a visual link from the village to the countryside. The other more 'public' building, a conference centre facility, is situated across the courtyard and built into the old tractor shed. There is a large accommodation facility in this spa, with 17 double bedrooms fitting into various old stone sheds, cottages and a newly built building along the site. To provide new en suite bathroom facilities and a veranda on the other side, a lean-to roof was added to the accommodation facilities. These views from the veranda look out onto either the lush green farmland or inwards onto a semi-private courtyard. Framing the way out of

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this spa 'village' is a new turret structure that stands on the south end of the street. This turret allows for a vertical focal point over these low-roofed buildings. The health spa is situated on the opposing end of the walkway. It is situated and fitted against a series of older existing buildings. On the one side of the reception area there are spa facilities and special treatment rooms. On the other side, the larger shed contains the other treatment facilities like the heated pool, gym and aerobics studio. These areas look out onto the views of the fields. The change rooms are found along the south side of the spa, with a juice bar that encloses the north facing central courtyard. The staff service wing is situated in the old farm offices (Figure 10). There is a large 4.0m diameter saline flotation pool which has been built into the already existing structure of the silos of the old farm. (KZ-NIA: 2005; 6)



Figure 9 (above): The central courtyard area of the spa, different paving materials and the relationship the verandah areas have to the outdoors (www.healthspaguru.com)

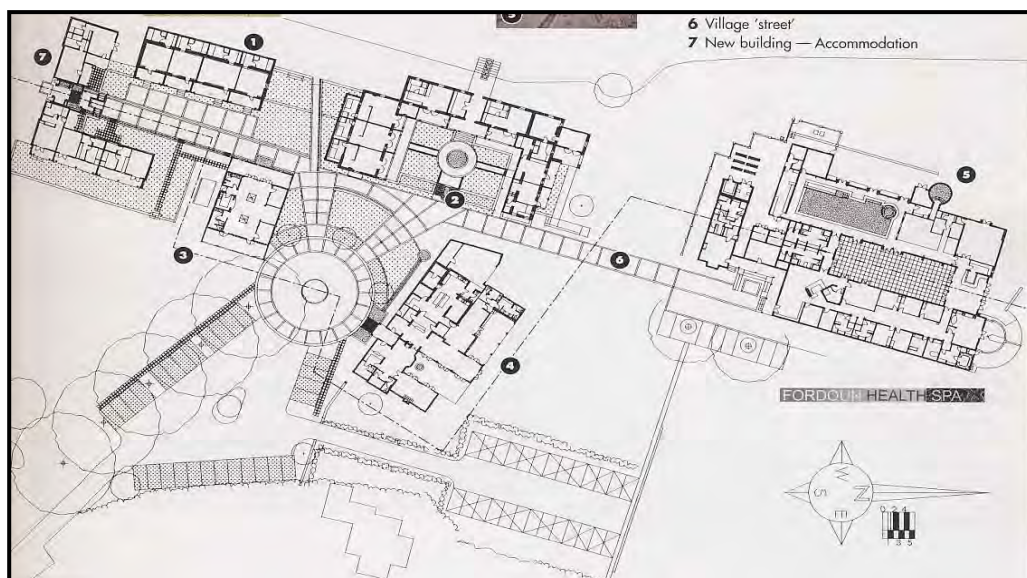


Figure 10 (above): The Plan of Fordoun Health Spa, showing the circular central courtyard area with the buildings around it (KZ-NIA: 2005; 7)

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7.3.3 Genius Loci and the sense of place

Although the feeling of genius loci and sense of place is often a subjective 'feeling' which is experienced only when surrounded by the environment, the images of the spa depict an idyllic and tranquil setting an environment in which one is able to get a sense that the building and surroundings have a 'sense of place' of its own (Figure 11 & 12). Through the use of a central courtyard area, one is able to admire the natural landscaping and scenery, evoking the feeling that this building and site has a 'sense of place'. The setting is inviting, welcoming and a relaxing environment to be it (KZ-NIA: 2005; 6)



Figure 11 (left): The entrance of the Fordoun Health Spa. The entrance immolates a sense of place (www.sa-venues.com)



Figure 12 (right): A night view of the entrance of the Fordoun Health Spa (www.countryroads.co.za)

7.3.4 Materials, Textures and colour palette

Examining the forms and colours used at the spa, the simplicity is most effective and the natural textures are predominant in its design. The original stonework has been restored in such a manner that it expresses its age and history. The original materials used compliment the desired effect of recreating a historical setting. The old timber has been salvaged from some of the demolitions on site and these wooden pieces have been used in the veranda and on the door posts and arches. From an internal point of view, the stonework has not only been restored but also left exposed where possible. Internal brick ledges have been introduced to prevent possible damp problems caused by the stone. The new buildings exterior is built out of brick and plastered over the bagged finished. The new plastering and timberwork are painted with neutral shades and white trimmings. The roofs are simple chromadek sheeting, with most of the timber trussed being retained to enhance the reflection of the original character of the building. The floor is a both a combination of old and new. For instance the

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interiors floors are tiled with large cement flagstones, whereas the more traditional quarry tiles are used on the external verandahs (KZ-NIA: 2005; 7).

7.3.5 Landscapes, Gardens and Water Features

The combination of the design of the building and the enclosed courtyards create semi-private areas for guests to enjoy relaxing in the tranquil setting (Figure 13). There is a close connection between the 'village' and the countryside; this idea is reinforced by the use of water throughout the design. The water is pumped from the dam, to the highest point (the turret), and gravity is used to allow the water to flow from the highest point, through a series of cannels and water features and then finally ending in a splashing pool at the entrance of the hotel. The water features throughout the spa are continuously flowing. The relaxing sounds of soft running water can be heard throughout the whole spa. The site is situated around a large landscaped garden, allowing people to move freely around the site and having a constant connection to nature (KZ-NIA: 2005; 7).



Figure 13 (left): The Fordoun Health Spa in the distance with the green lush gardens around the old dairy farm. Water is a continuous feature around this spa, constantly reinforcing the idea of tranquility and serenity within this site (www.sa-venues.com)

7.4 CONCLUSION

The two precedent studies are good examples of genius loci since those who visit the respective settings are taken by the 'sense of place. Those who are seeking to be 'healed' or be 'de-stressed' are able to relate to the place on a more psychological level (theory and concept of genius loci). By feeling positive about one's surroundings, it encourages one to relax and indulge in the various treatments which include; massages, hydro therapy, spa treatments, walking and exercise. Most spa centres are situated in areas where there is a connection to the natural vegetation and the beauty of

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nature. Water and its healing properties are often incorporated in the treatments as well as the architectural environment. The spaces are designed to incorporate the healing process through relaxation and tranquil surroundings. The combination of the natural textures and materials and the soothing warm colours are welcoming and create a pleasant ambiance for the visitors to relax and replenish their wellbeing.

7.5 CASE STUDIES INTRODUCTION

Exploring and analysing to what extent both local urban precincts and local buildings have successfully promoted and achieved a positive impact on the wellbeing of their inhabitants is a crucial aspect of this research. Visits to local places and buildings within South Africa were undertaken to obtain a more intimate view.

These case studies have been divided into four sections; the meso context- Melrose Arch Precinct (Johannesburg, Gauteng), the micro context- the Buddhist Retreat Centre and Francis Farewell Square (Durban City Centre). These Case Studies have been chosen for the importance they place on human wellbeing. Some of the criteria for this analysis have been listed below:

- Concept (if any)
- Genius Loci/ Sense of Place
- Landscapes, Gardens and Water
- Materials, Textures & Colour
- The accommodation and schedule of facilities provided (if any)

Through using these guidelines the author was able to understand each architectural environment in relation to the human wellbeing.

7.6 MELROSE ARCH (JOHANNESBURG, GAUTENG)

7.6.1 Location & Concept

According to Professor Lone Poulsen from the University of Witwatersrand, Melrose Arch (Figure 14) in short is "... a groundbreaking urban design project, as it challenges the tendency of isolated commercial and residential developments surrounded by large tracts of landscaping, parking and security fencing..." (Bakker: 2009; 169). The Melrose Arch precinct is triangular in shape and is situated in a low-density suburb, the M1 Highway buffered by Sandspruit. This development is easily

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accessible from the two major arterial roads (Corlett Drive and Athol Oaklands). This project was a pension funded development that was designed as a two-phased construction, including a mixed-use component of a medium density- the first phase comprised mainly of offices, retail and a boutique hotel, while the second phase included a greater focus on the residential elements (Bakker et al: 2009: 169).



Figure 14 (above): Aerial image of the construction stage of Melrose Arch (www.arup.com)

The concept for this urban design precinct was based on medieval town planning principles that contain mixed-use and permeability, with a clear definition of public and private domains. The original master plan evolved from the already existing suburbs street pattern- that created areas for connectivity and reintegration- to a perimeter-block typology, consisting of buildings adjoining one another, private areas and public street fronts. Melrose Arch is internally ordered by two main roads and orientated around two public squares. High Street is surrounded by mixed-use buildings that encourage the movement of pedestrians along the retail sides. Melrose Boulevard, the most prominent road, runs along the eastern boundary and is paved on either side and flanked by corporate offices creating connections to the access roads. This 'path' creates a buffer to the M1 highway edge. The Sandspruit Nature trail, originally neglected, has now been given a 'new life' and forms an important part in the overall landscape design strategy. Instead of creating large areas of parking which are both visually intrusive as well as being 'dead zones', street and basement parking is provided. The main objective was to create and encourage pedestrian movement as well as to create an area that promotes activities, public surveillance as well as ownership of this public realm (Bakker et al: 2009; 169-170).

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7.6.2 The Analysis

Upon entering Melrose Arch, one is immediately met with order. Every aspect has been well thought of from the demarcated parking areas (be it under ground or to the sides of the roads) to the building fronts easily accessible to pedestrians. There is clear order on where the residential areas, retail and office parks have been placed (Figure 15 & 16).



Figure 15: (left) Entering the Melrose Arch precinct. Parking to the left and buildings to the right (Author 2010)

Figure 16: (right) Vehicles are not parked in large parking lots but rather integrated into the urban design. Note the textured cobble road, as opposed to the harshness of asphalt (Author 2010)

7.6.3 Genius Loci/ Sense of Place

The Melrose arch precinct- similar to the Gateway (Umhlanga, Durban) precinct- has no real sense of place. Rather the overall focus is on creating functional spaces where people and vehicles are able to successfully co-exist. incorporating contemporary-modern architecture in the process. Even though basic medieval and renaissance principles¹⁴ have been used, like public squares and gathering spaces, the overall aim is functionality rather than creating a 'sense of place'. Melrose Arch is well kept and there is an effort at creating interesting spots where people can sit, relax (Figure 17) and interact, however the idea of 'genius loci' has been overlooked. There is a fair amount of vegetation and pot

¹⁴ The medieval and renaissance periods gave much thought to genius loci and creating well functioning areas and spaces that gave an individual an overall 'sense of place'. Refer to chapter 4 genius loci and public squares

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plants used throughout this precinct; however this does not simply mean that a 'sense of place' has been made because of this greenery (Figure 18). Critics of New Urbanism feel that precincts designed with this philosophy often feel artificial- as if they have been imported.

From a wellbeing point of view the use of greenery softens the harshness of the buildings and street edges, the use of interesting spaces and areas where people are able to interact does create a positive area where people subconsciously feel safe- which in contemporary South Africa is quite an achievement. The public squares and comfortable seating areas reinforce this. One can assume that smaller scaled projects and interventions, are more likely to give a feeling of 'genius loci' as well as site choice is important in creating 'genius loci' or a 'sense of place'.



Figure 17 (left): Shows an example of the comfortable seating areas where people can sit and relax, take funny pictures and subconsciously interact with the precinct, through making memories. It becomes important for these areas to be thought about and included. One can also see the shop fronts and how they open into the walkways (Author 2010)

Figure 18 (right): Shows the use of plants around the site with the variation of materials around the site. eg: the natural stone has been used on the pot plants and the variation of materials in the paving which create a range of textural detail and interest. (Author 2010)

7.6.4 Landscapes, Gardens and Water

Although there are not large areas of landscaping, careful thought has been given to the use of trees to shade the areas particularly where people walk. This not only provides shade for the pedestrians but also breaks the harshness of the urban environment and contributes to a human scale aspect (Figure 19). Many of the aspects above affect one's frame of mind, specifically on a psychological and

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subconscious level, and the overall experience of the precinct was that it encouraged a light hearted and positive attitude. It seems that the designers gave careful consideration to how the individual would feel within the precinct and have aimed at encouraging wellbeing.

Both the corridors and pedestrian walkways are decorated with greenery and have places to sit and relax. This encourages people to take some 'time-out' from the urban stresses and strains. Through this time dedicated to contemplation or simply watching the passersby, individuals can experience some mental relaxation. In terms of the scale of the surrounding buildings, these are a few storey's high but are not over-bearing, while the retail level is at a comfortable human scale. The shop fronts are open and inviting. In the middle of these corridors the hard textures are broken by the use of pot plants, constantly adding a touch of nature throughout the precinct. One gets a sense that people can just simply stroll around and relax.

One of the negative factors in this precinct is that there is no use of water. Water has many tranquil and soothing qualities, and could have been used not only to create an inviting environment but also to buffer the noise of vehicular movement.



Figure 19: Shows the clear distinction from the vehicle movement, the relationship to the dining 'al-fresco' and the atmosphere the trees and greenery create within the precinct (Author 2010)

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7.6.5 Materials, Textures & Colour

Since this precinct has many different materials, textures and colours used throughout, only some important areas have been highlighted. The roads are one of the most noticeable features of this area, they have been paved in brick coloured paving, which contributes to a reduction in heat reflectance associated with asphalt surfaces. For pedestrians this is certainly more appealing. Once again the paving changes for the pedestrianised areas, therefore there is a common theme created, so people are subtly guided as to where it is safe to walk (Figure 20 & 21). These areas are paved in a light grey or a red brick coloured paving. Face brick and stone is often used around this precinct. Some characteristic materials, like brightly coloured mosaic works or bright tile accents have also been included within this precinct, however these are not common and therefore emphasis uniqueness, individuality and character (Figure 22 & 23). Similar to the materials used, the textures throughout the precinct are uniform. This is achieved through the use of a fairly limited palette of materials. This allows for continuity instead of a hodgepodge of materials and textures which, although might look good on their own, do not fit in with the overall theme of the precinct. From a colour point of view, the precinct overall varies, some areas have bright accents (as discussed above with the material choices) others are more muted and give a natural appearance. It all depends on the individual designers and ideas that each individual client gave.



Figure 20: Shows one of the different types of paving materials used within the precinct for the pedestrian areas. Note the more natural colour palette and the intermingling of paving materials that create interest without discontinuity (Author 2010)

Figure 21: Shows the careful balance between building and pavement. The two prominent materials and textures used here are married well together and work in harmony. The pot plants are also in the same colour tones (natural and earthy) therefore also work well with the overall view (Author 2010).

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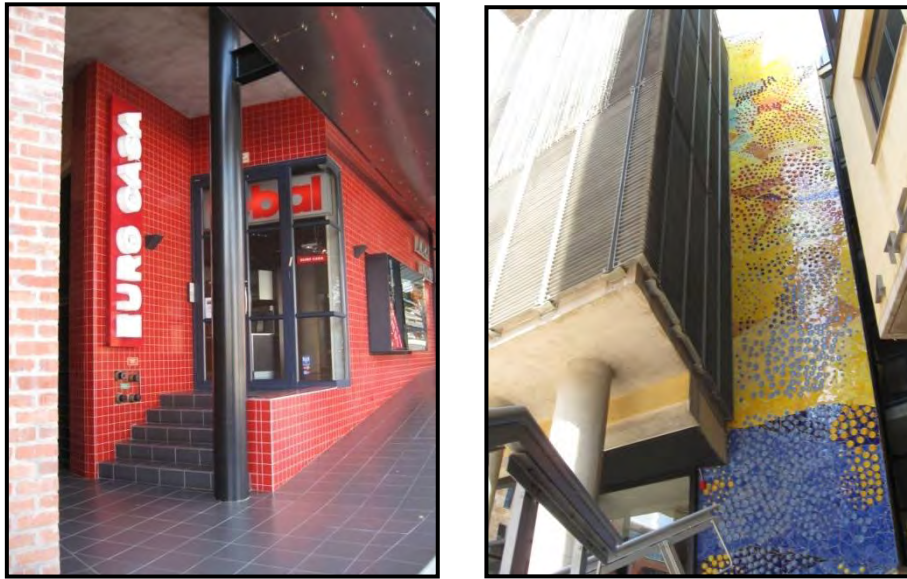


Figure 22: Shows one of the more 'unique' retail areas within the precinct. The use of bright red will instinctively attract a person's eye and therefore create curiosity to explore what is inside. However these bright shop fronts are not commonly used within this precinct, the images shown earlier depict what is more common in this area (Author 2010)

Figure 23: The artistic use of mosaics is most pleasing and adds visual interest (Author 2010)

7.6.6 General

In general, Melrose Arch encourages relaxation and social interaction through *inter alia*, the many seating spots around the precinct, the constant interaction between passersby, people dining at the restaurants that spill out onto the pavements, as well as the public squares. This encourages a positive atmosphere around the precinct. People, from all walks of life, come together and mingle with one another (Figure 24 & 25). Whether one is using the public square for recreation or for personal reflection, this space becomes increasingly important in the overall scope of the urban environment.

Since this urban precinct is situated inland, the designers needed to be clever on how the spaces should be designed. For instance, in Durban and Cape Town there is sometimes the sea which can create the background to the scenery, in this case the scenery needs to be well thought out and dealt with, through including greenery and interesting corridors for people to mingle in. The only downside is that water was not well incorporated into the design; this could have been an opportunity to create a constant link throughout the site and bring even more 'life' to the area.

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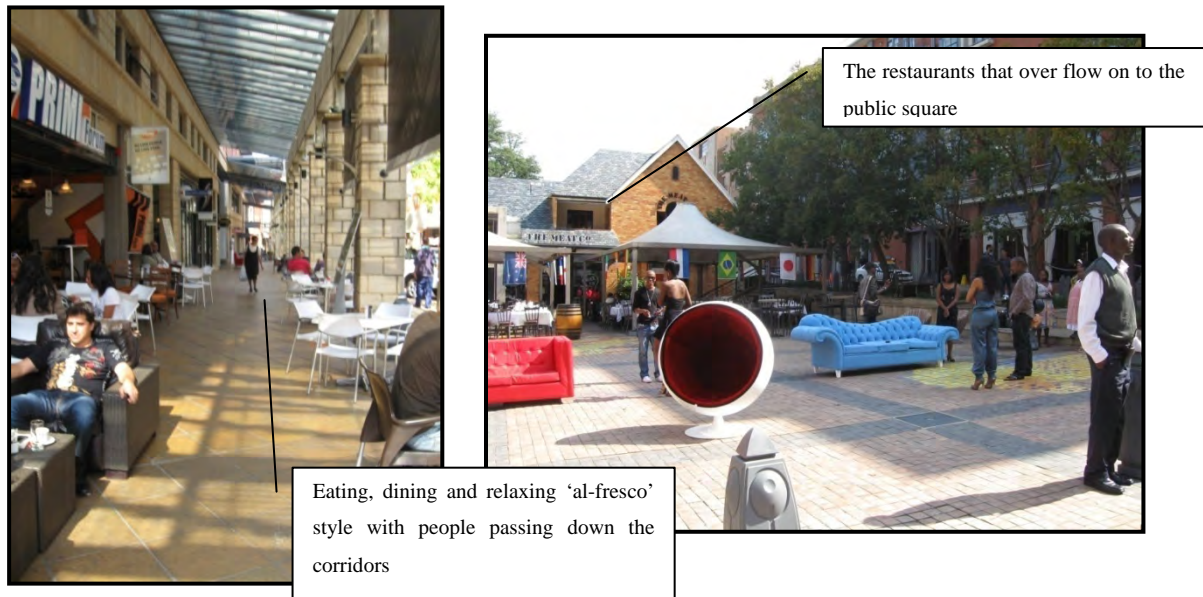


Figure 24: Explores "al-fresco dining" where both the restaurant patrons as well as the pedestrians walking by interact with this common space. (Author 2010)

Figure 25: This shows one of the public squares. In front one can see a restaurant spilling over into the public space and the seating areas being supplied so that an individual (who is not necessarily a patron to the restaurants) is able to also use the space. (Author 2010)

7.6.7 Positive Aspects

- The vehicles are limited to specific areas, be it on the roadside or in underground parking lots
- Different materials have been used to demarcate between the vehicle roads and pedestrian streets. Therefore a subtle yet distinct edge is created
- In the pedestrian corridors seating areas have been allowed for people to sit and take time out from their busy schedules
- Trees, pot plants and greenery has been scattered strategically around the site, so as to create a buffer to the noise pollution and to create a visual softening
- Two public squares have been included as social gathering points
- This is a mixed use precinct, therefore there is constant surveillance
- The overall scheme is at a human scale so people are not intimidated by the numerous storey's that have been given over to the commercial and residential units
- The materials used around the precinct are generally earthy yet there is a preponderance of clean lines which is more of a contemporary design element

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7.6.8 Negative Aspects

- This area can be seen as an 'elitist' environment and therefore could create a division between various income groups
- To access this precinct one would generally rely on one's own personal transport and some people do not have this ability

7.7 BUDDHIST RETREAT CENTRE (IXOPO, DURBAN)

Although this next case study is mainly based around the Buddhist religion, the overall facilities and manner in which they used meditation areas and healing facilities is important to this dissertation.

7.7.1 Location

The Buddhist Retreat Centre is situated on the ridge of the valley overlooking the Umkomaas River, South of Durban, with views of rolling hills and an indigenous valley and forest. For more than twenty years, individuals from all walks of life and across all religious beliefs, have come to the Buddhist Retreat Centre to experience and 'get in touch' with their own inner peace. The Centre is a sympathetic and gentle environment where individuals are able to get in touch with themselves and reflect on the stresses and obstacles that crowd their lives. For instance, one is able to walk and experience the paths that thread over 300 acres of property, with each path bringing with it its own revelations. Finally, integrated into the setting are the buildings which include extended accommodation facilities, a shop, lecture theatre and art studio, a library, dining room and office, and the meditation hall (www.brcixopo.co.za).

7.7.2 Genius Loci/ Sense of Place

The Buddhist Retreat centre has a distinct 'genius loci' and 'sense of place', from the time when you step out of your car you are immediately met by the fresh smells of nature and instantly there is a taste of the peace and tranquility that beckons. As one walks around the site one 'feels' at peace and one begins to relax. The site has a romantic and natural feel. Even in the accommodation, there is always a link to nature and the surroundings so a person is constantly reminded of this 'sense of place'. This link is important in the 'healing' process because people are able to be at ease and at one with their surroundings, through being more relaxed one is even more open to the 'healing' that is on offer.

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7.7.3 Landscapes, Gardens and Water

Upon entering the gates (Figure 26), one notices that the road has been thoughtfully paved with cobble stones and greenery abounds, therefore already emphasising the importance of nature. This starts the 'healing' process almost immediately where the individual is calmed through the sounds of animals and the smell of nature. One is constantly immersed in the landscapes and gardens of the Buddhist Retreat Centre, which further contribute to creating peace of mind, body, and spirit.

When walking through the indigenous gardens (Figure 27) there are a few different activities along the way, for instance there is a maze (for contemplation) and a human scale Zen garden (also used as a form of meditation and relaxation), these two activities are important in calming the mind and encouraging self reflection (Figure 28 & 29). People who visit this centre are encouraged to go on long walks and interact with the nature, as this also helps psychologically with the healing process. Exercise forms part of leading a balanced lifestyle, as does proper nutrition and spiritual development. At the Centre they grow their own organic foods and have a sustainable outlook. One gets a real sense that the centre has adopted a holistic approach in its daily affairs rather than simply prescribing holism to visitors. This gives a great sense of depth and sincerity to the centre and its activities.

One of the more negative aspects is the fact that no water features have been used on this site, only in some small water bowls for the purposes of religious ceremonies. The only major link to water is the large dam which is a 45minute walk away.



Figure 26: Visiting the Buddhist Retreat Centre in Ixopo. (Author 2010)

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Figure 27: This image shows the natural gardens that surround the site. The garden has been landscaped so that an individual is able to know where the paths are (Author 2010)



Figure 28: (Left) This image shows the human scale Zen Garden. The Area allows one to 'doodle' with the rake and take one's mind away from the stresses of life (Author 2010).

Figure 29: (Right) Similar to the Zen Garden, the Maze is also a form of stress release and thinking area (Author 2010)

7.7.4 Materials, Textures & Colour

From an architectural 'healing' point of view, one is encouraged to surround oneself with positive spaces that allow light, fresh air and tranquility into the space. The Centre has been designed with the specific purpose of providing 'healing' and therefore the materials, textures and colour choices are ones that would assist in this. From a material point of view, a lot of natural materials, like woods and thatch have been used. Where wood has been added, it has been left in its natural form; this can be seen in the library as well as the shrine and meditational areas. These materials (as explored in Chapter 6 on healing spaces) all give off a positive and warm feeling within the Centre. The materials that are more tactile and have textures to them are also more visually stimulating in comparison to a smooth finish, this can be seen which the choice in plastering of the interior and exterior walls. By creating textures in the walls there is a sense of 'feeling' and interest. The colour choices are of natural and muted tones, with the encouragement of creams, browns and with accents of warm burnt orange, which can be seen in the library. As explained in Chapter 6 on the colour section, these tones are on the warmer colour spectrum and therefore encourage people to feel at ease in the space (Figure 30 & 31).

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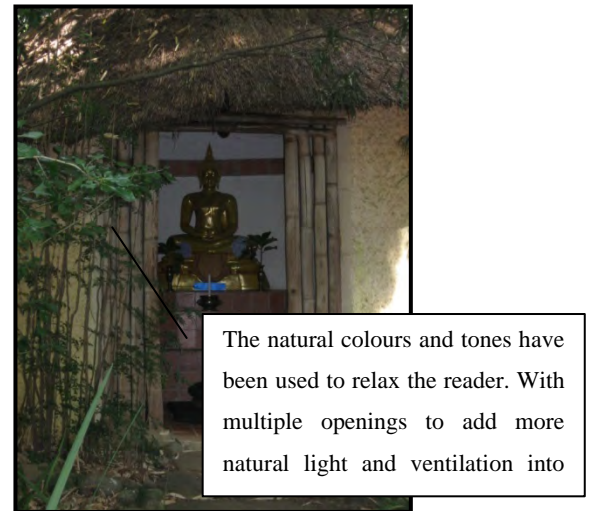


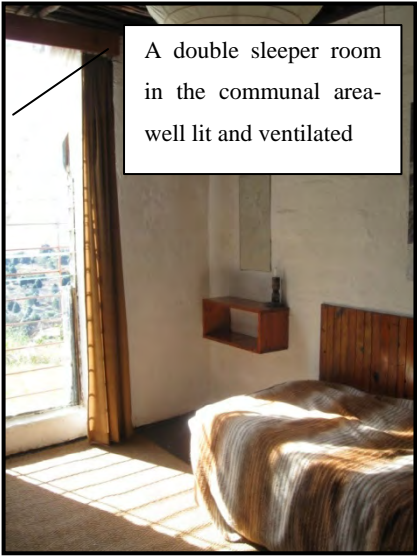
Figure 30 (right): In this image the one part of the library has been shown. This space is very well lit using natural light. and has areas where one can sit and read. This area is circular in shape, avoiding the harsh corners of a rectangular shaped space. In addition to this the choice in wooden materials gives a warmer feeling than if concrete or another material had been used. The colour pallet in these rooms is of natural muted tones with accents of burnt orange (Author 2010)

Figure 31 (left): This is the shrine area and shows the use of natural materials including wood and thatch (Author 2010)

7.7.5 Facilities

Although this facility is specifically orientated toward the Buddhist religion, the centre does not discriminate and encourages all religious beliefs and spiritual believers to come and take a break from the stresses and strains of modern living. When it comes to the accommodation at the Buddhist Retreat Centre, there are various options from communal to more elite accommodation. The communal accommodation comprises of shared areas for both men and women with separate ablution facilities (Figure 32). In this area one is in complete silence, no cellphones or technology is allowed here. In the more elite accommodation it can either be shared or used as single quarters. These lodges have a magnificent view of the valley and surrounding areas. This accommodation is very open and the spaces are well ventilated and lit (Figure 33). The only negative aspect is that the accommodation and activity areas are very disjointed from one another and there is little continuity between them.

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A double sleeper room in the communal area- well lit and ventilated



Natural materials used throughout the architecture of the centre

Figure 32: (Left) The communal accommodation area is well lit and ventilated (Author 2010)

Figure 33: (Right) Use of natural local materials throughout the centre (Author 2010)

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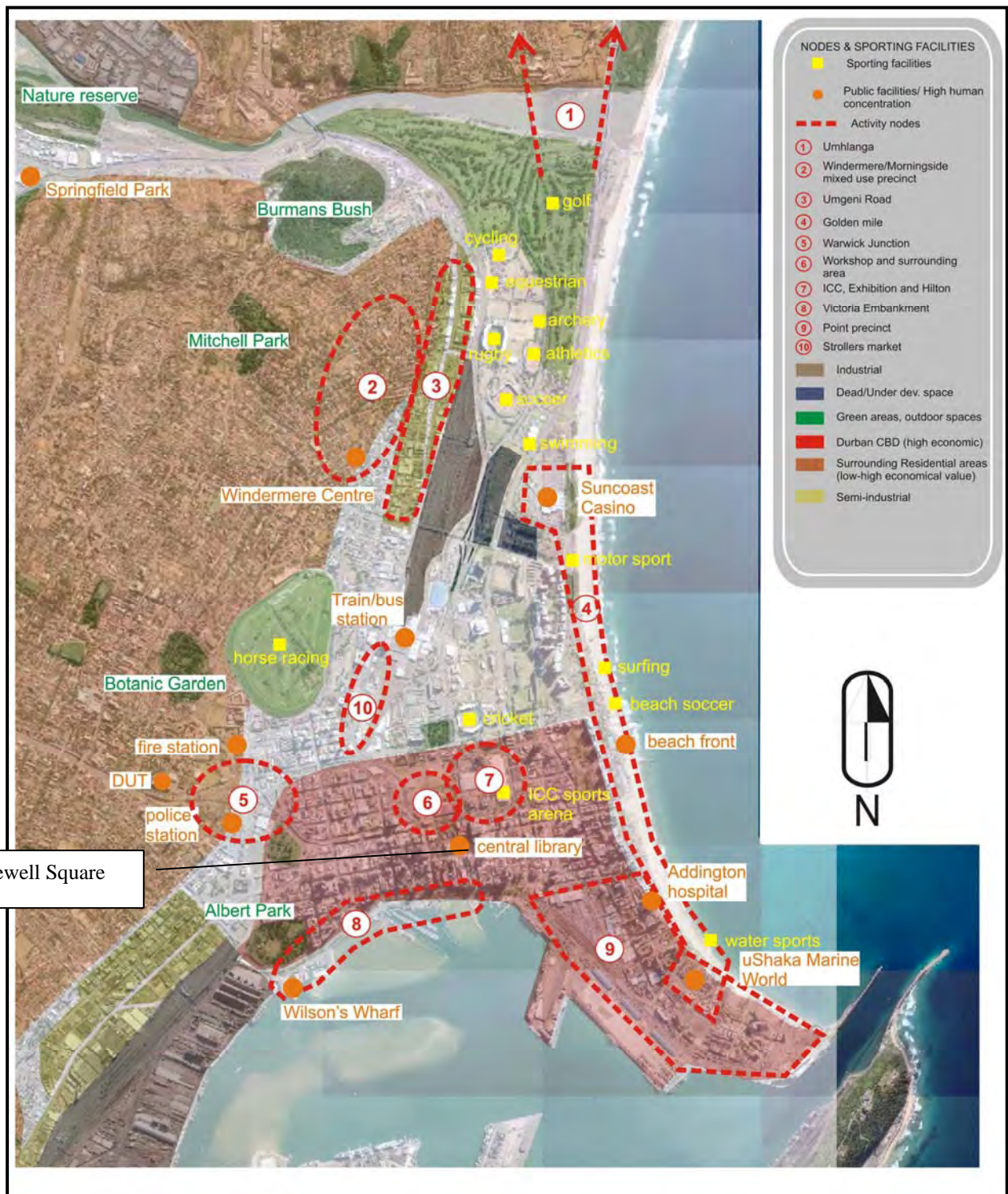


Figure 34: An aerial image of the whole of Durban's CBD as well as a portion of the North and West areas. Just through these highlighted areas one can see the complete disconnection between the green areas and spaces in general (Author 2009)

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7.8 FRANCIS FAREWELL SQUARE, (CITY CENTRE, DURBAN)

Francis Farewell Square is a very different space to the other two case studies. Here the focus was to analyse how this square affects human wellbeing as well as the relationship between the square and the other neighbouring buildings.

7.8.1 Brief Explanation of Francis Farewell Square

Durban's first public square when the city was initially planned and laid out was the Francis Farewell Square. During the time this square was built one can admit that this solitary square was sufficient for the needs of the inhabitants of Durban. However Durban has seen tremendous growth since this time and public spaces have not kept pace with this development. Instead with the gradual expansion over time, the public space has become 'suspended in space' not linking with other surrounding spaces at all and not knitting together with the rest of Durban's Central Business District (CBD). There is no interconnection with the other surrounding spaces but instead these spaces have been left to 'fend for themselves' in amongst the skyscrapers. Although some may argue that today's public squares are only social space and do not generate income for the city and therefore there is little value in keeping these spaces. However, in opposition to this argument, this report aims at proving how important public squares are in the urban context and how squares represent a significant human element that is desperately needed within the cities context of the built up urban area due to the benefits it provides the people that live and work in the city.

Looking at Durban as a whole (Figure 34) one can immediately see the green public spaces on the edge of the CBD with Greyville Race course, the stadiums etc, although when one looks at Durban's CBD, only Francis Farewell exists within the core CBD. Blocks away to the south and east the embankment and waterfront is present- this area provides a different type of experience for pedestrians similar to that of Venice, but there is little relationship to the CDB or to Farewell Square since Margaret Mncadi Avenue is very much a barrier to movement.

One needs to ask, is this space provided by Francis Farewell Square enough to sustain the whole of Durban's CBD? One would prefer not for the city to remain an isolated organism without any 'breathing' space created by squares. One should rather emphasis the reintegration of public spaces into the heart of the city and provides linkages between these spaces which ultimately become pedestrian friendly and promote the knitting together of the city as a complete whole., Proposing that

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the surrounding major roads need to become pedestrianised is probably impractical since they are the arteries of the city that allow for efficient movement. Rather both the pedestrian and vehicle routes need to be integrated and clearly demarcated so as to retain the best of both functions.

Francis Farewell Square looks onto the Durban's monumental City Hall, to the east, and the Post Office, to the north side. The square is elevated by means of two sweeping staircases which move one through the imposing portals and into the space (Brown; 2006: 10-15). The monumental city hall and post office buildings in addition to the museum and library along Smith Street were designed to inspire the general public. Originally, the square was surrounded on all four sides by roads, although since the original design Church Street (which was found in between the square and City Hall) has been closed to vehicular traffic and completely pedestrianised, thereby adding to the space around the square. The Francis Farewell Square is clearly raised off the ground (Figure 35) creating a separation between the street and the sidewalk, with the Memorial Wall being incorporated into the Square.



Figure 35: This photo shows the stairs which elevate the square from the street level
(Author 2009)

The City authorities have since the apartheid era undertaken taken various initiatives to revitalise the inner city area, and in turn have revitalised Francis Farewell Square and the adjacent spaces and buildings, with a view to recreating an overall synergy within the city fabric. The area highlighted area (Figure 36) was promoted as a pedestrian area as it is centered in the hub of Durban, and the area is safe, convenient and pleasant to use. Even today people can still be found relaxing and experiencing

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the space. Francis Farewell Square and the Medwood Gardens were both identified as focal nodes and gathering points within the city, these areas are also being connected and linked to various other parts of the town, with these connections promoting with it a cohesiveness to the inner city (Froise: 2006; 4-5).

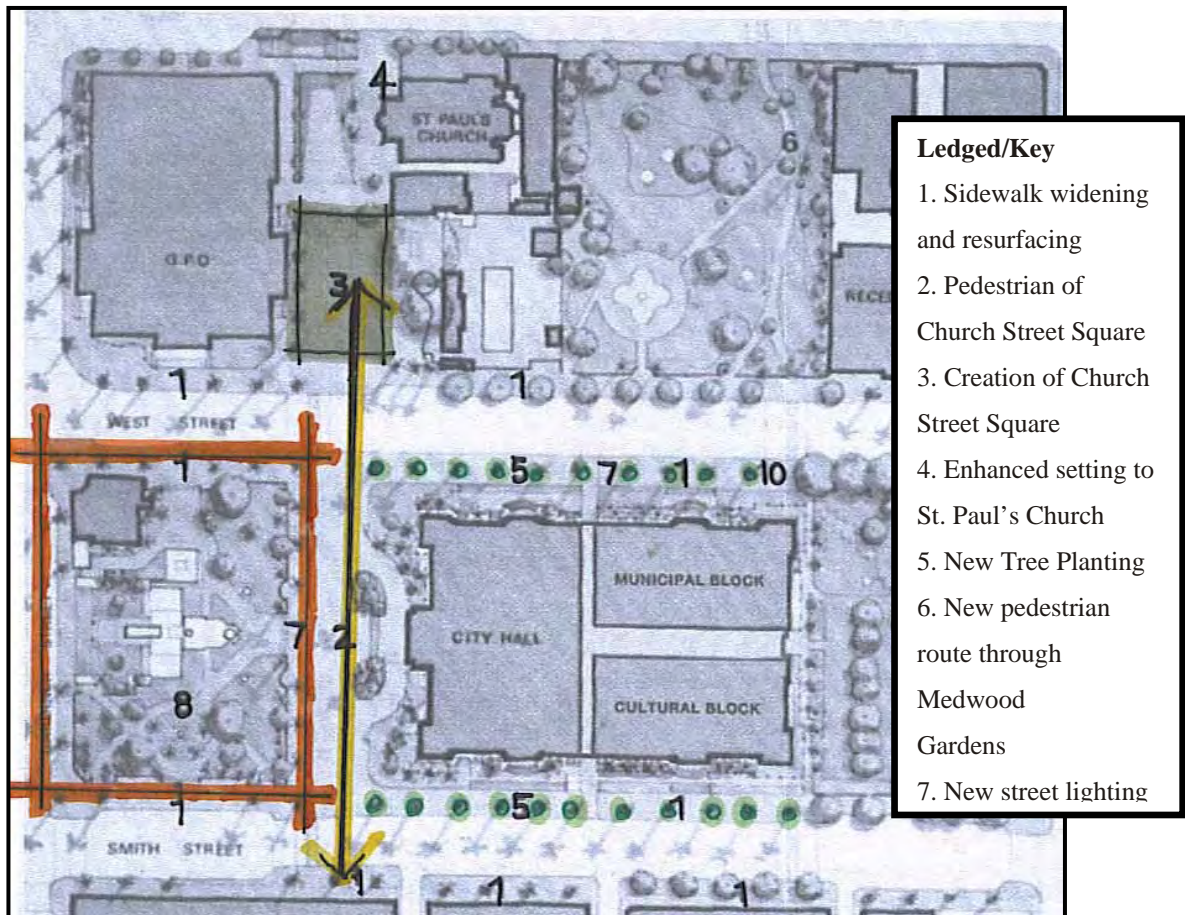


Figure 36: Revel Fox (1985) Proposals to the Public Square area (Brown; 2006:3)

7.8.2 Analysis of the Francis Farewell Square

The Francis Farwell Square, at present, is the only true Public Square in Durban; this space allows people to retreat to an oasis within the core of the city (Figure 37). Since the integration and amalgamation of Church Street, the square is on the alignment of the pedestrian route from the Workshop shopping mall and taxi rank in the north to the Victoria Embankment and yacht mole in the south.

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Figure 37: A view of the square and City Hall (Huizinga; 2006:6)

The edges of the Square are well defined by the surrounding streets and building viz, the City Hall, the Post Office, the New ABSA headquarters as well as other buildings which encircle the perimeter of the square (Figure 38). By creating this building setback the edges are defined without a sense of imposing or overlooking and it gives the extra breathing space for the pedestrians. There is a clear encouragement to walk along through the site on diagonal paths, which play with both hard and soft surfaces.



Figure 38: A freehand sketch of the area in front of City Hall. This sketch is looking towards the Church Street Square (Author 2010)

In recent times the Square has suffered severely from negative elements which have caused the area to become a lifeless environment, particularly at night. This square has become an area for criminals as well as a shelter for the homeless. There is a great need for the city to find ways and means of

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reclaiming ownership of the square in order to gain its use as a public space once again, and to realise its potential for supporting human wellbeing.

This integration not only falls to the city authorities but also to the architects, designers and developers- however in some cases, like the one which will be discussed, people are not always actively conscious of the long run effects of their decision. As Francis Farewell Square is unique to Durban's CBD, preserving the areas around this site for appropriate uses is paramount. Ironically though there is currently a large parking garage which is being constructed over the road from Francis Farewell Square (Figure 39 & 40). This Park garage obscures one of the most valuable sides of the Square (Figure 41 & 42). Surely as designers we need to preserve what is valuable? However in this case, this parking garage building has become the central point of focus eastwards from the site and impacts negatively on the overall views from this Public Square. One would prefer to have a residential building in place of the parking garage so that residents of such a building could have the benefit of overlooking the square and city hall and Medwood Gardens. It would also be more beneficial to have a less austere looking building as well as a building that opens out onto the street at ground level so that the building bears a relationship to the square.

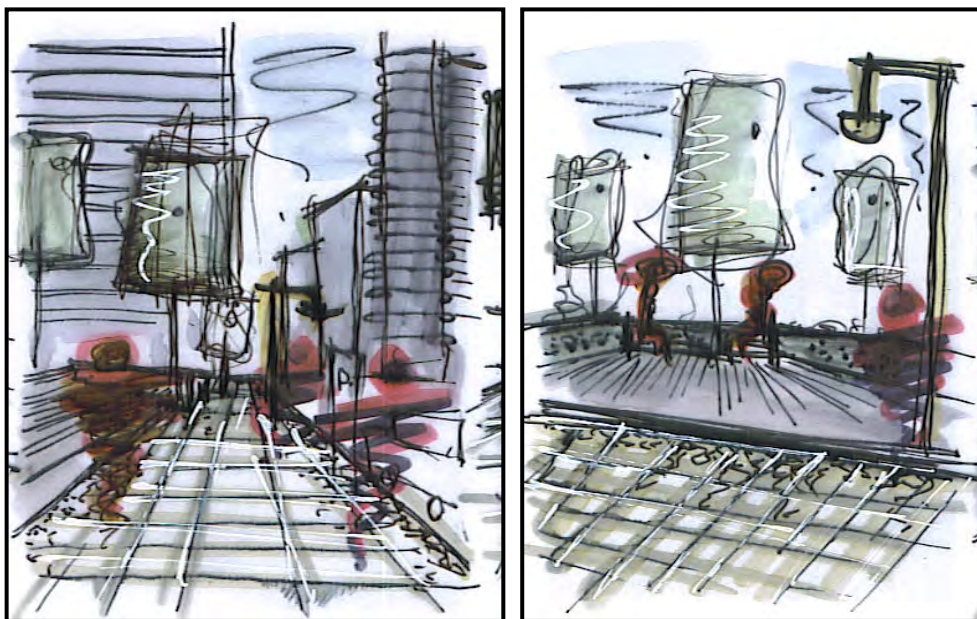


Figure 39 (left): Sketch of the streetscape, showing the skyscraper buildings (ABSA headquarters on the right) which run parallel to Francis Farewell Square (Author 2010)

Figure 40 (right): Sketch of people relaxing on benches and enjoying the greenery (Author 2010)

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The New ABSA headquarters



Park Parkade which is currently under construction

Figure 41 (left): Photo showing the relationships of the neighbouring buildings to the Square (Author 2009)

Figure 42 (right): Photo showing the Square 'walls' in the foreground and the Parking garage, (under construction) in the background (Author 2009)

At present, the actual square itself has become, according to Huizinga (2006), 'a snapshot of the colonial past', this is emphasised through the Squares surrounding walls, limited entrance and elevated layout- these elements aid in 'closing the square off' from public interaction. Currently there are numerous innovative ideas such as the Memorial Wall and inner city rejuvenation, the idea is to renew the Square so that it will work as a magnet for all , socio-economic groups (Huizinga: 2006; 6).

7.8.3 General thoughts

At the centre of Durban's cultural precinct, Francis Farewell Square holds tremendous potential. Although currently this square still lacks the integration as well as the identity required in a public square to make is successful. Some architects, like Revel Fox, have put forward plans to reintegrate the space back into the city. The overall concept would be to create a space which every South African can identify with. The formal market along Church Walk, for instance, enhances the squares value and makes the square accessible and busy during the day. The area surrounding the Square needs to be revitalised and imbued with more activity particularly at night time, in order to counteract the crime in this area.

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In order for Durban to become a more integrated city, it requires a larger amount of public spaces and in turn these public spaces need to be linked via pedestrian routes and possess the necessary opportunities for social interaction. Francis Farewell Square has the potential to become an iconic city park similar to those around the world and to offer all the associated benefits. By creating new-fresh spaces across our CBD, each with its own unique sense of place we have the potential to create a network of destinations that are able to serve city inhabitants and city workers and bring 'life' back into these, currently, dead spaces.

7.9 CONCLUSION

Retaining and promoting 'genius loci' is crucial to every design, no matter how big (Melrose Arch) or how small (Buddhist Retreat Centre) the project is. If one is successful in promoting a sense of place then the building or precinct feels genuine and wholesome and it does not feel contrived. The product of this is that people feel better about using the space, they feel more at home and in tune with the space.

It is important to incorporate green spaces wherever possible, as it creates soft edges and includes colour into the area. Visually it breaks the harshness of buildings and infrastructure and has the added benefit of masking urban noise.

If water is used in designs it can bring cohesion to a precinct. Not only are links important but water in motion generates a tranquil sound.

Materials, textures and colour are also very important in design. depending on what one wants to achieve. One can contrast the example of the 'energetic' red shop-front in Melrose arch to the peaceful ambience of the Buddhist Retreat Centre with its focus on the use of natural materials throughout. One can feel the effect that materials, textures and colours can have on a person from a visual point of view.

The case studies examined all have strong points as well as some weak points. The challenge for an architect is to always reflect on whether one's work is contributing to human wellbeing. In some projects one may have greater scope to achieve this than in others.

CHAPTER EIGHT

ANALYSIS AND DISCUSSION

8.1 INTRODUCTION

For this questionnaire 400 emails were sent to architectural companies in the nine provinces of South Africa. The email addresses were chosen at random from the Architecture Directory 2009. Out of 400 emails sent, in total 38 responses were received from architectural professionals, candidates and technologists. The questionnaires were anonymous and each person had an option of replying via a questionnaire database or emailing the questionnaire via Microsoft Word. The aim of undertaking this questionnaire was to ascertain whether people in the architectural profession believe that architectural environments have an effect on an individual's wellbeing. The full questionnaire and percentages on each question can be found in Appendix 3, however for the purposes of this chapter only the most prominent themes and responses are highlighted.

Similar to the literature review the questionnaire was broken up into 4 different sections- the macro, meso, micro context and interior spaces.

8.2 ANALYSIS OF RESULTS

8.2.1 Section A, the macro context:

Question 1: Does your urban/ metropolitan environment, in an overall sense, generate a feeling of wellbeing? Yes/No. Please list the key contributing factors that give rise to this wellbeing.

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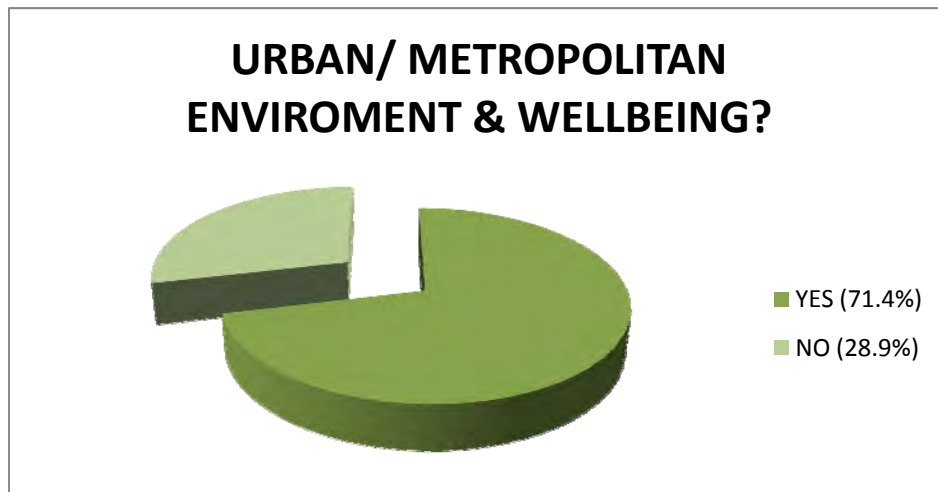


Figure 1: Shows the percentage of respondents that believe the urban/ metropolitan environment is conducive to a positive wellbeing

The results for this section were surprising, with the majority (71.1%) of respondents answering Yes. By reading some of the comments made in this section, one can deduce that these professionals were mainly responding from a personal perspective and not from an analytical architectural point of view. In other words they were responding from the point of view of their own personal experience of the urban/metropolitan area rather than perhaps from how the bulk of society might experience same. Some of the comments were; "Reasonably quiet and safe area, close to amenities and the city centre with no real traffic issues" and "Linkages to environment and the balance between built and natural." These individuals are most likely in the middle to high income group and therefore have disposable income and access to private modes of transport. If these respondents were of a lower socio-economic standing they would be more affected by the lack of quality and reliable public transport systems that do not run on time and are not always reasonably priced. For the respondents these challenges are overcome by the use of private transport and therefore their accessibility is not restricted and hence the opportunities of the metro area are at their disposal.

However, what was interesting to note is that the smaller percentage (28.9%) were more analytical expressing comments like "... the industry is more focused on financial viability and not on good spatial development which should create environments where people have a feeling of well being.", "Lack of spatial organisation and human scale, haphazard planning, creation of "urban vacuums", disjointed paths, egotistical approach to short term financial gain", "Noise, pollution, overcrowding, urban area designed to accommodate the car, instead of the resident" and "Large parking lots / open tarred surfaces / lack of pedestrian routes / lack of public gathering spaces." These comments explore the more prominent issues in urban environments as experienced by the majority of residents. Even

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though the macro level, (as considered in the chapter on urban sprawl) is more the ambit of urban planners rather than architects, there still needs to be thought given to this context. The need for good public transport, the need to overcome the lack of green spaces and public areas needs to be thought about and solutions should be implemented by architects at whatever scale they may be working at.

Question 2: Do you believe that architecture can affect human wellbeing? Yes/ No

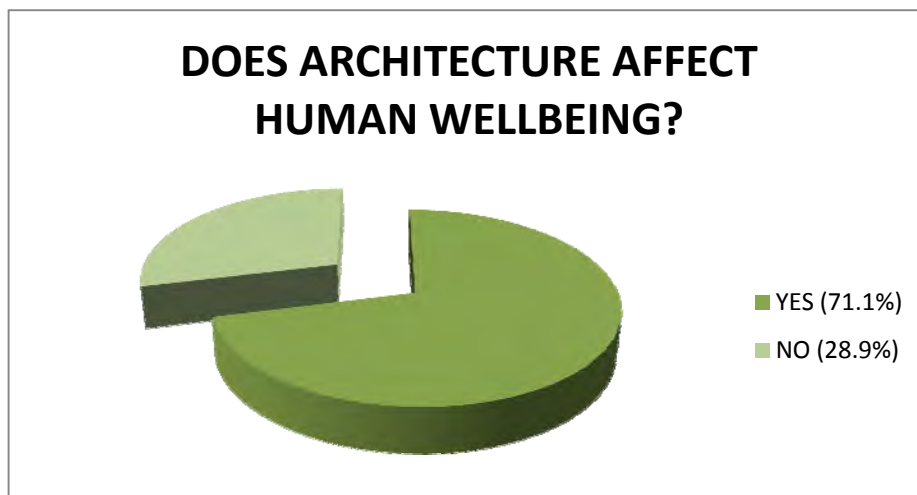


Figure 2: Showing what percentage of respondents believe architecture affects the human wellbeing (Author 2010)

Most of the respondents believed that architecture does affect human wellbeing. Some of the comments were as follows "Well designed public spaces, high density urban spaces with a mixed use component" and " Good architectural design principles considering micro and macro environmental influences on design." The understanding Comprehension of "green design" and its technical implementation (implementing it technically). "Professional integrity and responsibility of design."

Therefore the role of the architect is important to create spaces and environments which are well perceived and experienced by the user. It is important to always design with the end user in mind.

8.2.2 Section B: The Meso Context

Question 1: In urban design, in your experience, which of the following elements contribute to human wellbeing. (Vistas, Paths, Edges, Districts, Nodes, Landmarks, Green Space or areas, Public Parks, Public Spaces and Squares, Water and Water features)

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Overall the responses to this section were as expected, with a high proportion of respondents indicating that these elements contribute to human wellbeing. The highest ranking urban design elements were the Visual connecting points (vistas), Green Spaces and Public Spaces and Squares with 71.1%. Followed by Lynch's 5 elements ranging from 60.5% to 47.4%. One of the more interesting issues highlighted is the low percentage given to public parks (52.6%) which may be an indication of the fact that park usage is currently at a low ebb and therefore the potential to impact on many people is thereby limited. It is interesting to note that currently the Durban municipality is undertaking research to find solutions to overcome the low levels of usage of urban parks. The idea is to create surveillance and bring people back into these parks by reducing the perception of crime (refer to appendix for the report).

8.2.3 Section C: The Micro Context

Question 1: In your experience which of the following elements of building design and interior design affect an individual's wellbeing. (Spaces, Colour, Light, Textures, Sound, Environmentally conscious materials, Natural ventilation in a building, Types of materials (both building and decorative) used, Water & Water features and Landscapes, gardens and greenery)

On a whole this section had the highest percentages, which could be (since) because these issues relate more to the primary realm of the architect i.e. the building itself. The elements that received the highest percentages were; Spaces, Colour, Light, Sound, Natural ventilation, Landscapes and gardens and greenery, with a range from the highest of 94.7% to a low of 71.15% respectively. The other 'less' important elements were textures, types of materials (both building and decorative), and water and water features ranging from 57.6% to 57.9%.

8.2.4 Section D & E: The Architects Input

Question 1: If there is a main philosophy / design principle that motivates your designs? Kindly provide a brief description.

Question 2: In everyday architectural work in an urban environment, do any of the following work against the achievement of human wellbeing? (Budget constraints of the project, Availability of environmentally conscious materials, Cost of environmentally conscious materials, Client preferences, Building regulations, Achievement of a specific aesthetic)

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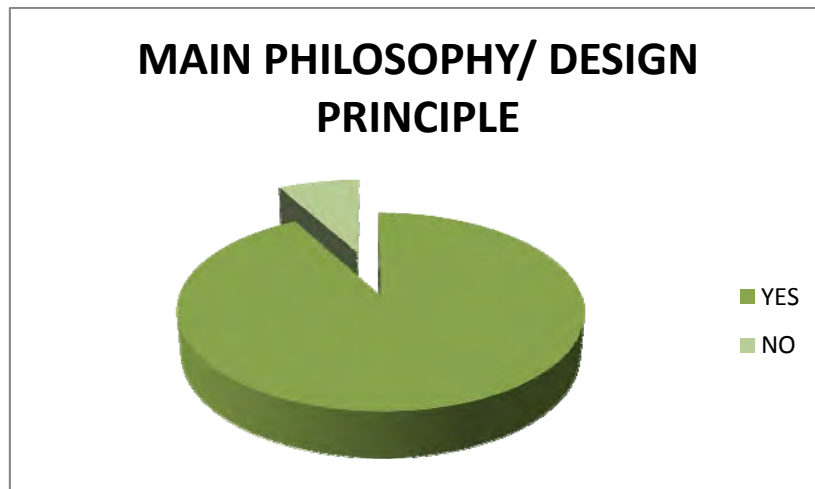


Figure 3: Showing what percentage of respondents have a main philosophy/ design principle (Author 2010)

"Humans can be happy in a tent in the right spot. Regulations are general and don't allow for creativity but rather compliance." (Questionnaire respondent 2010)

Although the majority of the respondents said that there is a main philosophy or design principle in their designs there is still a strong tie to the constraints of (mainly) budget and client preferences. These two points received the highest percentage (52.6% and 68.4% respectively). This is a reality check for architects and designers and clearly shows that in the working world there are constraints to the 'art of the possible'. Architects need to be able to understand what the client wants but as far as possible include the element of human wellbeing in the design process. Designing for human wellbeing is important even if the client feels it is unnecessary. As architects we need to be able to design and 'sell' our ideas so that we not only please the client and design within the budget, but always keep in mind the people who will be inhabiting these places and spaces,- creating buildings and spaces with a recognisable and strong 'genius loci' or 'sense of place'.

8.3 CONCLUSION

At University, students are taught many important 'basics', specific to designing for human wellbeing, where most designs have concepts and theories. In the practicing environment, however, (most of the time) these philosophies are often lost due to the constraints that are given by client, budget and council regulations, creating 'cut backs' in the design execution. As architects we need to remind ourselves on every job or contract that we are designing for people and their wellbeing. Architects ought to have a 'tool box' of techniques that allow for the practical application of important elements that relate to human wellbeing.

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In the final analysis, achieving wellbeing in cities is the product of a host of interventions at numerous scales. In the words of one of the respondents...

"An extremely important factor, I think, to human well-being in cities is to create opportunities for human interaction like public transport systems, street culture, shops & places for cultural, religious, relaxation, nb – public parks with playgrounds for kids, gym opportunities e.g. 'trim parks' (I saw a fully dressed lady doing rowing exercises on a purpose-made (vandal proof) steel exercise machine in a park next to a busy road in Israel). Last thought: people make places. Thus, if there is not enough urban density of population and/or 24-hour opportunities for different activities in places – i.e. lack of choice, no meeting spaces, isolation, and no action – wellbeing suffers." (Questionnaire respondent 2010)

CHAPTER NINE

CONCLUSION (AND RECOMMENDATIONS)

The dissertation investigated the relationships between architectural environments and the human wellbeing, by analysing the factors which contribute to daily stress and examines the links to the architectural environment. The literature takes the reader from the broad macro context, through the meso context and concludes in the micro context where the architect plays a pivotal role.

Architects and urban designers are often subjected to limitations which include budget constraints, the client's demands and municipal regulations to mention just a few. Often the importance of incorporating and considering the wellness aspect of the people inhabiting or working in these buildings is ignored. Subsequently buildings become 'lifeless' voids which add to the stress of modern society. In certain instances, architects are merely 'salesmen' who sell an idea to the client without considering the long term negative impact which the building will have on those who use it. The research highlights prominent aspects that should be incorporated in architecture to alleviate human stress and promote positive wellbeing.

These aspects do not operate in isolation, instead collectively influence the general wellbeing and need to be considered as 'organisms' working together to achieve ultimate success in the architectural realm.

It becomes evident that with the migration of people away from the city centre which often contributes to urban sprawl, it can elevate the levels of stress due to the long commuting distances, traffic congestion, the negative impacts on family life and work productivity. These aspects can damage the wellbeing of individuals. It is ironic that people often move away from the city in search of their 'ideal life of relaxation in the suburbs' and yet they are then confronted with the impacts of long commuting. The lack of good public transport and the provision of better places to live closer to the city need to be addressed in order to curb sprawl. Although city form is more the realm of urban planners, architects do have a role to play in creating higher density, mixed use areas that are vibrant and that truly serve people.

At a meso level creating areas which emit a 'sense of place' or 'genius loci' as well as by providing green spaces and public squares, gives people an opportunity to relax and achieve mental rest which is important in the context of stressful daily routines. These 'spaces' are the stage on which new and old

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encounters occur, networking and temporary distractions are encouraged, and exercising is possible to remove the negative impacts created by stresses like family responsibilities, work commitments and socio-economic problems etc.

Continuing the journey in search of human wellbeing, the micro context is perhaps the realm where the architect is dominant. The architects input should extend to include aspects such as the therapeutic effects of water, landscapes and gardens which collectively evoke peace within people of all ages, soothes the mental realm and has mesmerising psychological effects of cleansing and therapeutic healing properties. Being surrounded by visual beauty incorporating colour, smells, sounds, lighting, materials and textures, brings positive energy and wellness to the being.

The negative effects of 'sick buildings syndrome' should arouse the awareness of architects. Cold, damp interiors and incorrect ventilation systems cause physical and psychological distress. Architects ought to utilise their architectural experience to assist with human wellbeing through the use of open, well lit and ventilated spaces. Buildings should be sensitive to the surroundings and nature. The positive effects of light, in contrast to the negative effects of dark spaces should be foremost in an architect's design. In conjunction with light and dark is the selection of colour and its effects on an individual's psyche. Such effect can either be detrimental to an individual's wellbeing creating irritation and anxiety or evoke emotions of happiness and serenity.

In the precedent and case studies, a general overview was conducted using the aspects namely 'genius loci'/ 'sense of place'; the landscapes, gardens and water; materials, textures and colour. these points were more prevalent in the precedent and case studies of Health Spa's and Buddhist Retreat Centre in comparison to Melrose Arch. Therefore one can conclude that these architectural interventions are easier to implement on a more micro scale than at a meso or even macro scale. However, even though these implementations are more difficult at a meso level, the human wellbeing must not be forgotten at a macro and meso level. This is where public squares and green spaces need to be utilised and encouraged.

The environment has a tremendous impact on a person's wellbeing be it on a conscious or subconscious level. Buildings and the surrounding form an integral part of our existence and affect our ability to cope with everyday stress. Creating an architectural environment that promotes positive energy and feelings will ultimately assist in a person's overall feeling wellbeing. Finding a place of serenity and tranquility both in the body, mind and spirit will create balance, which is essential for overcoming the challenges of life (Refer to Appendix 4 for literature review summary)

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APPENDIX 1

Contents of April 2010- Green file (http://www.urbangreen.co.za/15_1.htm)

ENVIRONMENTAL PLANNING & DESIGN

Inner-city park possible?

Following an extensive design competition, the Johannesburg Development Agency has shortlisted inner-city park proposals from five consortiums. But is it at all possible to turn one of these theoretical concepts into reality?

Urban designers, architects, engineers and landscape architects responded with enthusiasm following the Johannesburg Development Agency (JDA)'s call for proposals for the development of an inner-city park. After an extensive submission process, five proposals were shortlisted and the winning proposal has been recommended as the basis for discussion and further development by the City of Johannesburg. However, at this stage, there is little chance of the efforts resulting in a large-scale green lung for the densely built-up centre of Johannesburg. At the heart of the problem is the feasibility of the park as the municipality simply does not own an appropriate portion of land. The brief for the design competition did not specify a specific site within the city and part of the consortium's proposals included the identification of the most appropriate site. Of the five shortlisted proposals, three chose the area around Park Station; proposing, in various ways, to reclaim the significant piece of land lost to the railway lines. Two others focused on the south-eastern part of the city, adjacent to the M2 Highway, where the municipality owns various properties accommodating support services such as the traffic department and bus depot.

Not easily achievable

Once the shortlisted entries had been closely scrutinised, it became blatantly obvious that the implementation of a large-scale, inner-city park would not be easily achieved. Apart from the dilemma of no specific site available, a successful park would require a total overhaul of inner-city development patterns. The success of a park would not only depend on its functional, aesthetic and ecological design but also on the right land-use and economic development interventions along its edges – most importantly the development of large-scale residential buildings to bring enough “users” to the space. While Urban Green File is excited about the initiative shown by the JDA, it is clear that the dream of an inner-city park would depend on a collective vision by all role players within the municipality. Such a massive intervention in the urban fabric cannot be implemented in isolation by a municipal agency but must form part of a central vision for the city and be supported by all stakeholders, including the city entity responsible for the operation and upkeep of the space – presumably Johannesburg City Parks. At this stage, the JDA does not have a clear road map in

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mind to turn the dream of a park into reality. The proposals discussed in this article must, therefore, be viewed in a purely theoretical manner. However, Urban Green File believes that, by starting to imagine what is possible for Johannesburg's inner city, a long-term plan can be devised for a greener city centre.

Upcoming panel discussion

The proposals presented on the following pages will be the subject of an extensive panel discussion during the Institute for Landscape Architecture in South Africa's 2010 conference at the Wanderers Club in Johannesburg on May 13 and 14. The five shortlisted consortiums, as well as representatives of the JDA and Johannesburg City Parks, will discuss the merits of a large-scale, inner-city park and deliberate the realisation of this vision.

Five proposals shortlisted

The five proposals in this article:

1. "Jo'burg beyond 2010" by Urban Solutions, Arup, studioMAS and African Environmental Design
2. "Urban Tapestry" by MMA Architects, Fiona Garson, Cohen & Judin, Newtown Landscape Architects and Rhizome Management Services
3. "Inner-city parks system" by Co-Arc International Architects, Consultium Project Planning & Management, Landscape Architects Uys & White, MPA Consulting Engineers and BTKM Quantity Surveyors
4. "Central and wetland park" by Albonico Sack Mzumara, Green Inc and Arcus Gibb
5. "History-inspired green network" by Insite Landscape Architects and ADA Urban Designers

In the JDA's own words

The Johannesburg Development Agency's request for proposals read as follows: "The JDA, in collaboration with Johannesburg City Parks and the Department of Planning & Urban Management's Inner City Charter office, is calling for proposals for service providers with urban design, architectural and landscape-design expertise to develop a concept and design for a large-scale, inner-city public urban park. The growing residential densities within the inner city, coupled with the lack of adequate green public open spaces, suggest the need for a large-scale, inner-city public urban park. This assignment calls on professionals to develop a concept for the urban park which is innovative and creative but also realisable in an inner-city context. The vision for this park should be of the nature of Central Park in New York. Upon selection of a concept, the service provider will also require the necessary expertise to undertake a design and then detailed design of the proposed urban park. The proposals for the urban park will be framed within the city's inner-city urban design implementation plan and inner-city charter. The inner-city boundaries for the purpose of this project refer to the existing designated urban development-zone boundary, including the section south of the M2 until the Booyens railway line. The City of Johannesburg has, over the past years, developed an inner-city regeneration charter – a strategic document which outlines how the municipality will address issues of urban regeneration and economic development in the inner city. This process has been extremely significant in highlighting the importance of the inner city with the

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charter, specifically tackling six key issues:

1. Urban management, safety and security
2. Public spaces, arts, culture and heritage
3. Economic development
4. Community development
5. Transportation
6. Residential development

The vision for the inner city is as follows:

- that it is the business heart of Johannesburg as a whole but also accommodates a large increase in residential developments for a diverse range of people;
- that it offers a high-quality urban environment with available social and educational facilities, generous quality open spaces and ample entertainment opportunities;
- that it acts as a key transportation transit point for the Gauteng global city region but also a destination of choice where people want to walk the streets; and
- that it showcases best urban-management practices – clean and safe, with strong by-law enforcement and maintenance of public space. Part of the process of achieving this vision is the creation of high-quality public space. It is within this context that the public urban park is considered a strategic intervention. The inner-city charter makes particular reference to the development of a ‘metro park’.

In broad terms, this public space will endeavour to:

- create a greener inner city;
- create much-needed urban public space;
- support the growth of residential accommodation in the inner city; and
- convey to inner-city residents that the city is intent on creating a safe and healthy urban environment where they can live in dignified circumstances, and to investors that it is a viable investment location where future value returns are not at risk.

The inner-city public urban park will link directly with the JDA’s and City of Johannesburg’s strategic objectives:

- to promote economic growth through the development or promotion of efficient business environments in Johannesburg;
- to regenerate decaying areas of Johannesburg to enhance its ability to contribute to the economic development of the city and the quality of life of its residents; and
- to promote productive partnerships and cooperation between all relevant stakeholders on area-based initiatives.”

PROPOSAL 1

Imagine Jo’burg beyond 2010

A deck across the railway lines will provide a public space to accommodate Johannesburg’s civic life and represent a physical manifestation of the common good.

A park on a deck over the barrier-like railway that divides the inner city of Johannesburg is proposed by the consortium of Urban Solutions, Arup, studioMAS and African Environmental Design.

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The primary area will cover 2 km x 250 m; stretching from Park Station in the east to Page View in the west.

“It is placed at the heart of the city, within its historical beginnings, and feeds off Metro Mall, Park Station and the new Gautrain station,” states Ludwig Hansen of Urban Solutions. “The park is on the threshold of a variety of amenities and activities where most of its citizens live and work. It links and makes sense of the numerous green open spaces dotted around the inner city. We hold the perspective that a city can be defined as a man-made ecosystem which requires much diversity to sustain itself. The diversity inherent in cities has developed organically over time and the varied components are interdependent in complex ways. However, this principal of complexity has been ignored and controlled in Johannesburg by a variety of planning decisions and ideologies. Our city has suffered many great indignities, including the constant encroachment of our public spaces and parks. We have a responsibility to create a greater sense of ‘civicness’ in our city. In our opinion, the public realm has two roles in our city. Firstly, it is the dwelling place of civic life and, secondly, it is the physical manifestation of the common good. When we degrade the public realm, we automatically degrade the quality of our civic life and what our society stands for. We, therefore, believe that we have a responsibility to create common spaces that are worth caring for. We are proposing a bold step to change the urbanscape of the inner city of Johannesburg – an intervention that addresses a variety of challenges and shortfalls which underlie our choice of location.

Project team

Urban design and vision: Urban Solutions

Structural engineering, traffic studies, energy efficiency and feasibility: Arup South Africa

Transit-oriented development and architectural typologies: studioMAS

Landscape architecture: African Environmental Design

Illustrations: Adriette Myburgh Designs

PROPOSAL 2

Urban tapestry

Central railway shunting yards are relocated and/or progressively covered, similar to a tapestry, to make way for a central urban park.

“Braamfontein’s shunting yards represent inefficient use of urban land,” reasons Mphethi Morojele, a director of MMA Architects. “These rail functions could be relocated to more appropriate locations at acceptable costs. The opportunity costs of this land far outweigh the actual costs of relocation although it is accepted that the lines for moving trains should be maintained with allowance for future expansion.”

As the shunting yards form a buffer between the knowledge and business centre of Braamfontein, the CBD, Fordsburg, the Newtown housing district and the Park Station Precinct, this scheme proposes reclamation of a piece of urban blight for a new central open space and park. The proposal is the work of MMA Architects, Fiona Garson, Cohen & Judin, Newtown Landscape Architects and Rhizome Management Services.

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The design concept is based on the notion of the park as an urban tapestry that allows cross-programming across different cultural boundaries. It uses the site desire lines of movement and visibility to stitch together the city grids on either side and creates a patchwork of changing zones of activity and biospheres. The proposed space reinterprets the agricultural landscape found in the rural outskirts of the city and creates a framework for incremental development in response to different socio-economic forces – a process that gradually erases but leaves traces of history and process.

Ultimately, the park provides a strong iconic and representational space that contributes to the

transformation and changing perceptions of the inner city of Johannesburg.

Densification on the edges

In terms of urban-design considerations, the scheme promotes the densification of the park edge by developing sites bordering the park into medium- to high-density housing and different mixed-use environments. It allows for new movement routes connecting previously disconnected parts of the city. These routes cater for occasional vehicular as well as pedestrian, bicycle and other forms of movement.

The park comprises several distinct precincts – each with functions compatible with the surrounding environment. “The aim is to create meaningful spaces rather than mere picturesque settings,” observes Morojele. The concept of a patchwork is intended to ensure that all members of a diverse citizenry find a sense of ownership and, at the same time, belonging in the park.

Sustainable landscape proposed

In terms of landscape design, the park strives to establish a “second nature” which is different to “natural nature” and “artificial nature”. The proposal sets out to create a sustainable landscape which requires restricted use of water, captures and canalises water run-off, employs predominantly regionally indigenous planting and it creates zones of intense landscaping (formal and informal) with intimate spaces, as well as more open event spaces with appropriate functionality, safety and security.

Landscaping is exploited to limit crime and grime with clear lines of site, concentrated movement routes, adequate lighting and public amenities. The park includes controlled spaces for urban agriculture and horticulture, and establishes a framework for “seasonal rotation” as with crops in the field offering the city an ever-changing experience of the park.

Water management plays central role

Water management is a key element in the park’s design. Stormwater run-off is captured and directed along open canals as is the case in farmlands. The main canal cuts through the whole park – metaphorically, the railway line as Jo’burg’s river – and follows the route of the original track. Along this route, various water-related functions are distributed including swimming pools, baths, splash pools and water features.

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Project team

Architects: MMA Architects, Fiona Garson and Cohen & Judin

Landscape architect: Newtown Landscape Architects

Management consultant and research specialist: Rhizome Management Service

PROPOSAL 3

Inner-city parks system

Three new inner-city parks will connect to an extensive network of open space stretching for many kilometres throughout Johannesburg.

A series of three large park precincts is proposed by a consortium comprising Co-Arc International Architects, Consultium Project Planning & Management, Landscape Architects Uys & White, MPA Consulting Engineers and BTKM Quantity Surveyors. These are Doornfontein Park, Faraday Park and Station Precinct.

The proposal reinforces the city's intent to develop world-class station precincts as arrival points in the city and, in the process, establish safe, secure and direct pedestrian access through an open-space network to points of destination.

According to the design consortium, the proposal addresses urban decay and neglect in the areas most affected while it also provides a much-needed open space structure that links primary residential areas with the urban core, as well as new residential areas. "It recognises and builds on the investment in infrastructure and urban design of recent years, such as those in Braamfontein, Doornfontein, the jewellery precinct, Kerk Street and Western Station. It creates a greener inner city with more housing developments and a greater number of safe areas between disparate areas by providing additional pedestrian connections. It provides distinct neighbourhood parks – each with clear and legible edges within a larger open-space network of parks. It connects to existing open-space networks within the areas adjacent to the study area – many extend kilometres into suburbia and thus create the potential for an urban park of enormous extent."

Southern park promoted

The proposed Faraday Park is situated in the south of the city, adjacent to the M2 highway and along the historic Salisbury Claims line. Much of this land belongs to the City of Johannesburg although some portions would need to be expropriated at high cost. Municipal service departments, such as the traffic authority and bus department, would need to move to adjacent land. The new park would include recreation and sports activities, as well as denser development of commercial and residential buildings along its edges.

Detailed park design

Danie Rebel, of Landscape Architects Uys & White, states: "The park comprises a 22 ha core area and is supported by a secondary open space usage zone within which new urban development is proposed. Three urban landmarks are distributed along the central visual line and the core area is framed by a 2,5 km circular recreational route that will be uninterrupted by vehicular traffic. The park edges are

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defined by new urban development consisting of high-rise residential developments, office, retail and hotel developments, as well as an international convention centre and public amenities which will be accommodated in certain retained historic buildings. The transformation of existing underutilised, low-density development or vacant land into public open space creates the core park.”

Five overriding principles inform the design of this park:

1. The park will act as a catalyst for further urban regeneration.
2. The established city grid is extended into the newly-created open space.
3. The open space and recreational needs of all city dwellers are addressed.
4. Sustainability in terms of park usage, maintenance, management, safety and security is achieved.
5. Pedestrian accessibility and connectivity with the surrounding city and public amenities is ensured.

Rebel adds: “The park is spatially defined by a hierarchy of open-space uses – focused on a variety of proposed new urban functions. A public outdoor amphitheatre is proposed for the park adjacent to the convention centre, which flows into a multi-functional exhibition space. Across Eloff Street, the park becomes the portal or pedestrian link between the city and Faraday Station with newly proposed associated retail and refreshment activities. A central social gathering space, capable of accommodating 20 000 people, is proposed and can be used for concerts and public events. Across Von Wielligh Street the park is designed mostly for informal sport, educational stimulation, public play and passive recreation. A 1 ha public lawn with terraced seating is provided for informal sport and ball games. The space flows into a structured and age-specific playground area catering for the recreational needs of children and teenagers. Some buildings of historic value will be preserved, renovated and modified to accommodate public amenities such as galleries, museums, clinic and crèche, a community centre and places of refreshment. An area of passive recreation and quiet respite is provided along the edges of the 0,2 ha irrigation water-storage facility, elaborates Rebel.

Sustainability considered

According to Rebel, sustainability of the park is critically addressed by the minimalist design approach for memorable legibility and ease of maintenance. The park consists mainly of drought-tolerant open lawn areas with structured tree planting and walkways, and will have only strategic placement of accent planting. Stormwater runoff is harvested for irrigation use and wastewater of all new developments will be treated locally in a submerged facility, and also used for park irrigation. Sustainability is further addressed by ensuring pedestrian connectivity with the city, good public surveillance and maximising park potential by providing a flexible variety of recreational and open-space uses.

Project team

Architects and urban designers: Co-Arc International Architects/Consultium Project Planning & Management

Landscape architect: Uys & White

Engineer: MPA

Quantity surveyor: BTKM

PROPOSAL 4

Central and wetland parks combined

Focused on the city's central railway lines, two interlinked parks are proposed – one incorporating Park Station and Joubert Park, and the other a more natural, wetland park.

Two interlinked parks – to be developed as one grand linear parkway or as two independent, phased projects – are proposed by the consortium comprising Albonico Sack Mzumara, Green Inc and Arcus Gibb.

“Our intention is to use the programme of a large inner-city urban park to reclaim and recapture lost and negatively perceived urban spaces,” says Monica Albonico. The proposed scheme is defined by bridging the railway tracks to form an extensive, interconnected, green parkway system running east-west through the heart of the inner city.

A central park of significant size could be achieved in the inner city of Johannesburg as a by-product of the implementation of strategic development projects already identified in the Joburg Inner City Urban Design Implementation Plan, Albonico observes.

Viaducts and aerial parkway form central park

The eastern and central sections of the larger parkway run along the railway cutting and incorporate End Street Park and Joubert Park. Also forming part of this central park are some strategic projects identified in the Joburg Inner City Urban Design Implementation Plan of June 2009. These include the Park Station International Trade & Transit Centre (ITTC), Joubert Park residential regeneration and Doornfontein residential densification.

Construction of a viaduct is proposed to create a series of bridges over the railway cutting. This, in turn, will create a continuous pedestrian environment linking the various parts of the central park.

In developing the new intermodal transport node and ITCC at Park Station, the redesign of the Park Station concourse building is proposed. Apart from three new levels of intermodal interchange between trains, taxis and buses, a new concourse above the station will accommodate the ITCC and other public amenities such as a contemporary art gallery, hotels and tourism facilities. The roof will be designed as an undulating, landscaped aerial parkway linked to the viaduct. Leisure amenities, such as play grounds, skate parks, performance arenas, ball-sports courts, as well as cycling and strolling trails could be placed on this surface which will be lined by private residential or commercial buildings along its perimeter. Apart from the viaduct and aerial parkway, a third aspect of the central park is a street-level parkway which incorporates End Street Park and Joubert Park. Space freed up by the new intermodal node will afford the extension of Joubert Park by reinstating the park to the east of the station as it was before the space was occupied by taxis. This “new” Station Park will be linked to Joubert Park by landscaped and tree-lined streets.

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Lastly, development of a rooftop park above the Jack Mincer Square taxi rank, and a link from this park to the larger system via a bridge over the railway lines, is also proposed. This bridge will lead to the Johannesburg Art Gallery and Joubert Park. At the same time, the rooftop garden will be linked to the aerial parkway by the viaduct.

Ecological wetland park proposed

West of Park Station, a large, shallow body of water is proposed by decking the marshalling yards with an articulated concrete slab. This platform will accommodate a lake surrounded by artificial wetland reeds and waterfront embankments. Harvested stormwater from the surrounding city and greywater from new developments along its edges will feed this wetland. Reed beds will act as a filtering system for the water.

A kilometre-long boat lane will be provided for regattas, dragon-boat events and leisure boating. At the higher eastern end of the wetland, artificial rapids are proposed for kayaking and rubber-tubing activities. “The old, disused Park Station building in Newtown can be used as a boating and leisure clubhouse while the entire 45 ha area will include walkways, sculpture parks, cycle tracks and amenities for clubs and outdoor recreation,” enthuses Anton Comrie of Green Inc.

Project team

Architects and urban designer: Albonico Sack Mzumara Architects & Urban Designers

Landscape architect: Green Inc Landscape Architects

Engineer: Arcus Gibb

PROPOSAL 5

History-inspired ‘green’ network

A series of public spaces, inspired by Johannesburg’s gold-mining history, will be linked to a city-wide “green” network.

“A large-scale urban park is not feasible in the Johannesburg inner-city context as the space required for this development is insufficient,” reasons Fritz Coetzee of Insite Landscape Architects. “If pursued, it will cause large-scale disruption of the urban fabric.” Together with ADA Urban Designers, Insite proposes a park development at one of the southern entrances to the CBD.

“Factors that restrict inner-city park development include land ownership, buildings of historic significance and rerouting of infrastructure – all involving significant costs,” Coetzee points out. “It, therefore, makes more sense to focus on integrated green networks; involving the upgrading of existing public space and the creation of pedestrian-friendly environments. In this way, green corridors can draw connections between various aspects of urban green infrastructure comprising various community parks – each with a unique identity.”

Landmark city entrance proposed

The site proposed by ADA and Insite is situated next to a prominent entrance into the city. It is, therefore, an important landmark space. The area includes various bad

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buildings that can be demolished and transformed into additional green space to increase the size of the park. Mostly council-owned land, the site is a feasible option for public development and large enough to accommodate a new park with numerous possibilities for future development of green space. Municipal-owned facilities, such as the adjacent bus depot, can be relocated for this space to become a green link or corridor. As the population density in this part of the city is less than it is in other areas, a new park could be a catalyst to attract people to this side of town through new residential development. A park in this area would fill a “gap” in an area with a significant lack of green space – a park that is an essential element for creating a green network system in the city.

Historic gold theme proposed

As Johannesburg owes its existence to the 1886 discovery of gold and the main reef runs beneath the site, the proposed park is informed by a mining theme. The area incorporates the three original claims of 1887: Wemmer Mine, Jubilee Mine and Salisbury Claims. As there is no existing gold museum within the inner city, the site provides an opportunity to tell the historic story.

The design will focus on creating much-needed public space with strong pedestrian links to the rest of the city. The urban edges of the park space will be well-defined, selectively retained, enforced or open where deemed necessary while landmarks will welcome visitors to the inner city. Visual links will be provided to nearby green spaces while public art will form an integral part the development as it gives expression and sense of place to a space.

Seven principles applied

The design is informed by the seven principles of an excellent city park system as defined by P Harnick in the book *What makes it great and how to get there: the excellent city park system*:

- a clear expression of purpose;
- ongoing planning and community management;
- sufficient assets in land, staffing and equipment to meet the system’s goals;
- equitable access;
- user satisfaction;
- safety from physical hazards and crime; and
- benefits for the city beyond the boundaries of the parks.

Sustainability prioritised

The implementation of the proposed inner-city park will rely on various sustainability principles:

- celebrate a sense of community ownership;
- encourage economic activity in and around urban parks;
- celebrate local culture by promoting identity through art, music and language;
- improve quality of life for inner-city dwellers by devising a network of public spaces that respond to the social character of the surrounding community;
- provide informative parks where children can learn about natural life cycles

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and ecology;

- create a green network that extends indigenous vegetation and natural habitats to the heart of the city;
 - identify conservation areas and use these for promoting biodiversity;
 - manage stormwater responsibly through retention strategies such as permeable surfaces and ponds;
 - promote the use of renewable energy (for example, solar-powered lights);
- and
- stimulate future public and private development by strategically planning new public spaces.

Project team

Urban designer and architect: ADA

Landscape architect: Insite

The way forward?

With so much effort spent on the five proposals, what is the next step in turning the city's park dream to reality?

The JDA's competition was adjudicated by Lone Poulsen of the Wits School of Architecture & Planning and Piet Vosloo of the University of Pretoria's school of landscape architecture within the department of architecture. Although no firm has yet been appointed to take the project to implementation, the preferred proposal was the urban tapestry submitted by MMA Architects, Fiona Garson, Cohen & Judin, Newtown Landscape Architects and Rhizome Management Services. Urban Green File has asked Poulsen to comment on the concept of a large-scale, inner-city park for Johannesburg. "A lot of merit exists for a park of this nature," she states. "With the city's character increasingly changing from commercial to dense residential, the existing green 'breathing' spaces are insufficient and the idea of a big park for the city is relevant." However, Poulsen believes that the brief for the call for proposals was too open-ended. "It was a fantastic ideas competition to determine what is, ultimately, possible in the city but, without a specific site available, it would have been unrealistic to expect this competition to result in the construction of a park. How can a consortium estimate the project cost without knowing the precise conditions related to a site?"

More research required

To turn the dream of an inner-city park into reality, the city council and its agencies, such as the JDA, have to conduct much more research in order to determine the exact needs and scope for a park project. The city will need to decide whether or not it is willing to remove or cover the railway lines and this will involve tough negotiations with Transnet. It will also have to decide whether or not it is willing to sacrifice some of its own buildings in the southern section of the inner city.

Flexibility preferred

"I preferred the urban-tapestry proposal because of its flexibility," says Poulsen. "It can be implemented over a long period of time and can be adapted to accommodate whatever the results of land negotiations are. The other proposals, I felt, were more

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rigid in that they assumed the land they chose would become available. Before the design of an actual park is commissioned, though, a much bigger debate needs to be undertaken and this should involve as many stakeholders as possible. One would have to weigh up the concept of a string of parks versus one single, large park. The usefulness and appropriateness of the park in a specific location, and not only the cost of the land, should also be in the equation. It is essential that a park development fits into the various development frameworks of the city. In this regard, one needs to ask whether or not the city council has a coherent view as it sometimes seems as if the city is not communicating internally between its various agencies and departments.

Urban place-making required

Poulsen believes the biggest environmental issue within Johannesburg's inner city entails public place-making. "Although the city has changed significantly in the past decade, the public domain and interface has not yet been adapted. The development of an urban park could make a prominent contribution to place-making. However, the concept should be applied to all development within the city and not only to a park." She cites the implementation of the bus rapid transit (BRT) network as a lost opportunity. "The BRT is an engineering-driven transport intervention but it fails to improve public spaces surrounding the transport infrastructure. This is a real opportunity lost!"

Wider vision needed

Poulsen adds: "Perhaps the city is trying to do too much too quickly. While this boldness should be commended, one is concerned that it is not always correctly informed and a wider vision is lacking." He believes the next step should be to establish a forum, possibly including all the shortlisted consultants in the second stage of the competition, and city officials and community stakeholders, to exchange ideas and debate the best path to achieve the city's park dream.

But is a large park appropriate?

Comment by Gerald Garner

While Urban Green File is delighted about the JDA's initiative and vision, the appropriateness of a single, large park solution needs to be questioned.

Undoubtedly, the Johannesburg inner city is in need of more and better-quality park space. Also obvious is the negative impact of the railway marshalling yards at the centre of the inner city where the core of Johannesburg is divided in two. The potential for a park to bridge this space is obvious and the value it can add to surrounding land could possibly help offset the cost of the actual decking infrastructure.

While Urban Green File wants to encourage the City of Johannesburg and the various consortiums to keep working on the concept, and to pursue the dream of a large-scale park in the long term, it must be stated that a short-term plan is also needed. This plan, though, must be linked to a long-term vision.

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Perhaps a start should be made by studying the history and geography of Johannesburg more closely? Three aspects in this regard are of major importance, Urban Green File believes. Firstly, the inner city's very small city blocks have been posing traffic-flow problems for, at least, the past 60 years. Secondly, a lot of "lost" space exists within the city. And, thirdly, the city's location on the continental watershed – where springs well up to feed the rivers that eventually reach the Indian and Atlantic oceans – should be considered.

With regard to the size of city blocks, Urban Green File believes that a start could be made by removing some vehicular streets from the city grid. Perhaps the arterials that carry the new BRT system should be pedestrianised with significant tree planting and the development of pocket parks? This space belongs to the municipality and it is easier to redevelop than land owned by third parties. But this shows that public-space development cannot take place in isolation because it must connect to the development of public transport, for example.

With regard to lost space, Urban Green File wants to point out that many pockets of open land exist along the periphery of the inner city – most notably along the edges of the M1 and M2 highways. This land could be developed into continual parkland that could serve many different nodes within the city. Imagine the introduction of cycling and jogging tracks along this route; encircling the city!

Considering the continental watershed, Urban Green File believes that any park development should set out to restore the city's original fountains and wetlands, and the opportunity should be used to restore habitat and promote biodiversity. There is tremendous potential to turn the entire inner city into a green precinct where water harvesting and recycling could be pursued en masse!

APPENDIX 2

Survey of Park Usage and Residents' Perceptions of Park Space in eThekweni

March 2010

INTRODUCTION

eThekweni Municipality has for some years now made use of GIS-based accessibility analysis tools to quantify and spatially reference social facility and open space backlogs (CSIR 2006/2008). The ultimate aim is to develop quality multi-dimensional residential environments for all residents of the metropolitan area.

During the process, the need for a documented set of social facility and open space standards – that can be used to quantify and track backlog eradication – was identified, and a set of standards was subsequently developed. In many instances the standards needed to be debated within each line department or reconstructed from local area plans. The resulting standards schedule summary (CSIR 2010) is intended to be applied specifically to new development applications or wherever appropriate in eThekweni, **and** also to retro-fitting of currently underprovided settlements and/or upgrading projects.

During both the accessibility mapping and the standards development, it emerged that there was a limited precedent with regard to the provision of park space in African cities and, specifically, a huge backlog with regard to the provision of park space within eThekweni in terms of the standards. The dilemma was both the non-availability of suitable land within residential townships where parks are assumed to be needed and the cost of acquiring the necessary land. In order to further inform the development of standards and policy, a survey (of 898 respondents) was undertaken in eThekweni in 2009 to gauge the current usage of parks and identify any critical issues with regard to the provision of parks.

METHODOLOGY

1.1 Background to stratification of sample

Provision standards for parks specifically, within the open space category, can generally be broken down into the two main categories of regional parks and local parks. Local parks within urban areas range from hard urban squares to play parks, flower gardens, picnic spots and kick parks, among others. Currently, the acceptable provision standard for parks in eThekweni per 1 000 people is 0,2 ha in terms of regional park space and 0,5 ha for local park space, i.e. a total provision of 0,7 ha per 1 000 people.

In the first round of analysis undertaken in 2006 (CSIR 2006), all parks and playlots were captured in GIS and submitted to a very basic analysis. A 1 km buffer was placed around all parks and playlots and people within this area were considered to be adequately served. No mitigation factors or other natural areas were considered to fulfil the role of parks and no differentiation of park types and levels was undertaken. A global assessment of park land backlog – based on 0,5 ha per 1 000 people – indicated a backlog of 1 419 ha for the City as a whole. A more complete and detailed analysis, as discussed below, was undertaken in 2008 (CSIR 2008).

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The accessibility analysis of parks undertaken in 2008 was based on the following analysis criteria:

Table 1: Analysis criteria for parks (2008)	
Facilities analysed	All local and regional parks (Local parks < 2 ha and regional parks ≥ 2 ha). [Beaches and nature reserves were included in the analysis as secondary layers.]
Demand	Entire City's population based on 2006 population figures
Supply	Park availability was tested based on four variables: - Local parks restricted to a capacity of 0,5 ha for every 1 000 people - Regional parks restricted to a capacity of 0,2 ha for every 1 000 people [And as mitigation factors, consideration was given to: - Nature reserves – having an unlimited capacity - Beaches – having an unlimited capacity.]
Travel mode and access time	Two travel modes (walking and public transport) were used for the analysis , with a different mode and acceptable access time applicable to different kinds of facilities: - Local parks – 20 min walking distance - Regional parks – 15 min travel time by public transport - Nature reserves – 15 min travel time by public transport - Beaches – 20 min walking distance.
Analysis undertaken	Catchment area analysis for: - Local parks – constrained capacity (see “Supply” above) - Regional parks – constrained capacity (see “Supply” above) - Nature reserves – unconstrained capacity - Beaches – unconstrained capacity Exclusion mapping was undertaken for the different layers and combination of layers to develop park need categories.

The analysis for parks was customised to account for the fact that, although there are standards for the provision of park space, it is deemed reasonable to relax these provision standards if residents have access to free open spaces (no entrance or user fees charged).

Through discussion it was decided to, for the 2009 analysis, to concentrate only on usable open space for which no fee, or only a minimal entrance fee, is charged. Although landscaped road reserves, detention ponds, steep areas and the like may often provide visual relief and improve the general environment, they cannot be considered compensation for a lack of space in which to walk, run, play or picnic.

The outcome of combining the various analysis result layers is shown on the composite map that follows (Figure 1).

As can be seen from Figure 1, there is a need for local parks in large areas. (This was to some extent borne out by the reported low level of satisfaction of residents with this service in eThekweni's Quality of Life Surveys, relative to the greater satisfaction expressed with regard to access to regional park facilities.)

The priority intervention areas, defined below, are reflected as priority areas in Figure 1. These priorities and the number of residents living in each area largely determined the stratification of the sample. (No priority was assigned to rural areas.) The priorities for non-rural areas were defined as follows in terms of access to park space:

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- No access to public open space (local and regional) and having a population density of **±175 people per ha**
- No access to public open space (local and regional) and having a population density of **±75 people per ha**
- No access to public open space (local and regional) and having a population density of **±25 people per ha**
- No access to local public open space
- Access to both local and regional parks – no intervention required.

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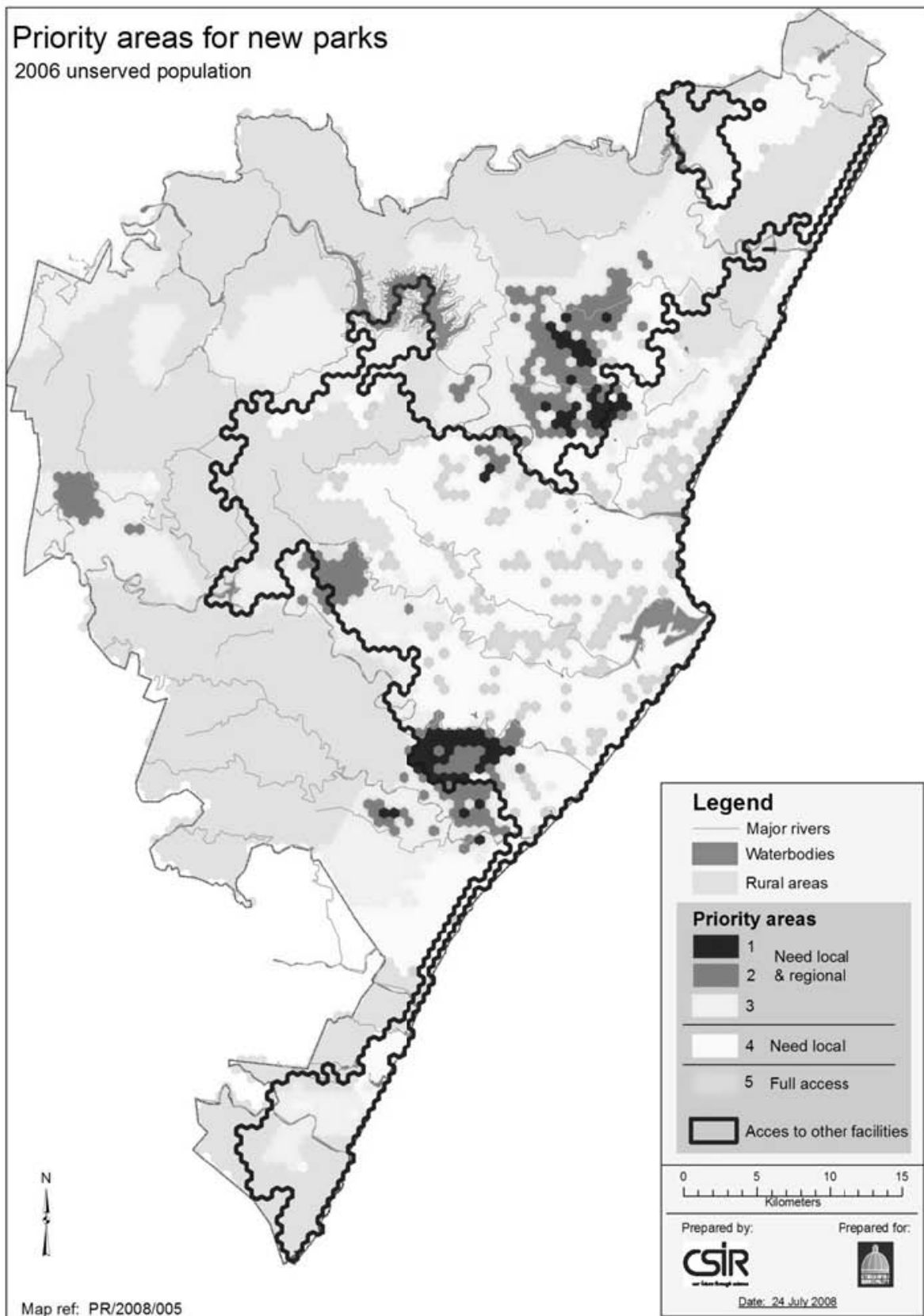
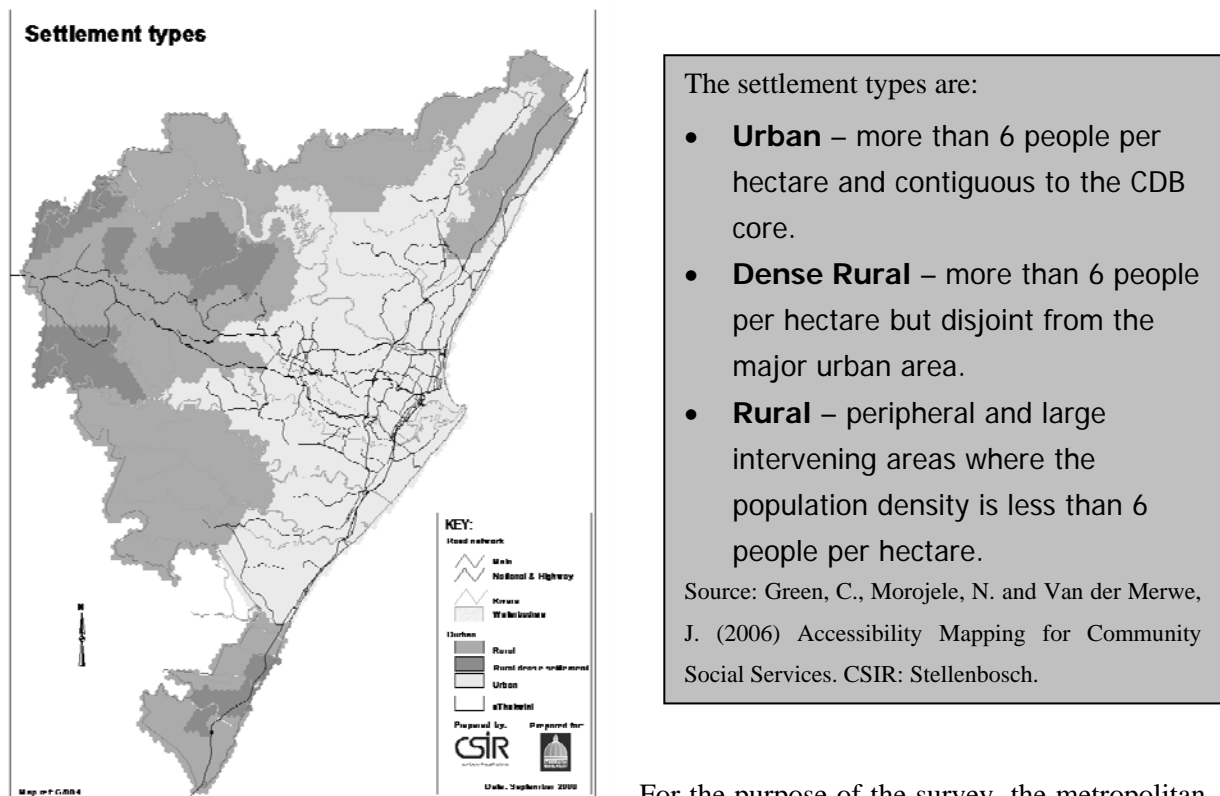


Figure 1: Priority areas for new park space investment (2008/9)

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As a further consideration, all areas within the dark (blue) line have access to other open spaces; either to nature reserves or to beaches within a walking distance of 20 minutes. The areas within the line that have the same ranking as an area outside the line, could be considered to be of lower priority/urgency in terms of need as they have access to other open spaces.

Figure 2: Settlement types in eThekweni



Rural areas) and truly Rural domains (see the box above for definitions of settlement types). Within the urban areas the survey was stratified between areas that had a shortfall of one or both types of parks (local and regional) and areas that were suitably provided with full access to both categories of parks, as defined by categories 1–5 in Figure 1.

1.2 Questionnaire design

A questionnaire was designed to gauge the general usage of parks by both adults and children in the urban areas of eThekweni. The survey solicited responses with regard to where people preferred to spend their outdoor recreational time and then in more detail looked at their frequency of park use, travel time and mode used to visit parks, reasons inhibiting park use and suggested improvements. A separate, less detailed questionnaire was designed for distribution in the rural areas (as opposed to dense rural areas) where provision of park space is seen as less of a priority. Questionnaires were provided in both English and Zulu. (A copy of the English Urban and Dense Rural survey questionnaire is attached as Appendix A. Appendix B contains the English Rural survey questionnaire.)

1.3 Distribution of questionnaires

It was decided to distribute the questionnaires through high schools in each of the identified priority needs areas. Permission was obtained both from the Provincial Department of Education and the relevant head teachers. Pupils were asked to take the questionnaire home with instructions that it be

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completed jointly by the adults and the children in the house. A courier service was used to distribute the questionnaires to the schools and collect the completed questionnaires. Many schools did not have reliable postal, fax or e-mail services and communication was fraught with difficulties, especially in the more remote areas of the metro. In total, 1 000 questionnaires were sent out and 898 were returned, thus providing a 90% return rate. This report is based on the results of the 898 completed questionnaires received by the CSIR.

The stratification of the survey sample was based on the different service provision levels as categorised in the priority intervention areas and their population numbers. Table 2 gives a breakdown of the survey sample by priority area.

Parks priority need areas	No. of questionnaires	Percentage of total questionnaires
Rural areas	96	11%
Need local and regional: Dense Rural Category 2 and 3	23	3%
Need local and regional: Urban Category 1, 2 and 3	395	44%
Need local: Urban Category 4	329	36%
Full access: Urban Category 5	55	6%
Total	898	100%

For some categories the number of completed questionnaires was very small and these results should thus be treated with caution.

2. DISCUSSION OF RESULTS

2.1 Outdoor recreational activities

A knowledge of people's general outdoor recreational activities can be of assistance to determine the importance of parks for outdoor activities in eThekweni.

As can be seen in the graphs that follow, children's outdoor recreational time is focused largely on their school (30%) and their homes (25%) (Figure 3). On average, parks are the third most likely location for spending time outdoors (12%), followed by sports grounds (8%). Adults, on the other hand, spend more of their recreational time at home (42%), followed by parks and the beach, each averaging 12% (Figure 4).

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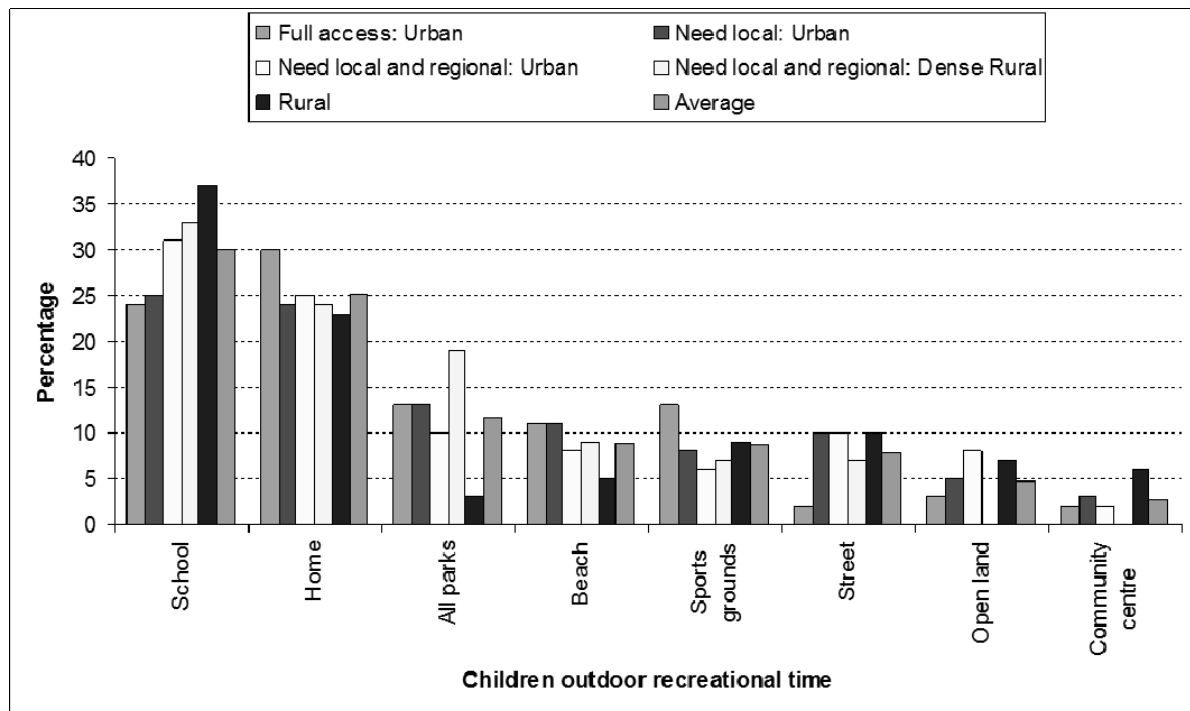


Figure 3: Outdoor recreational time (Children)

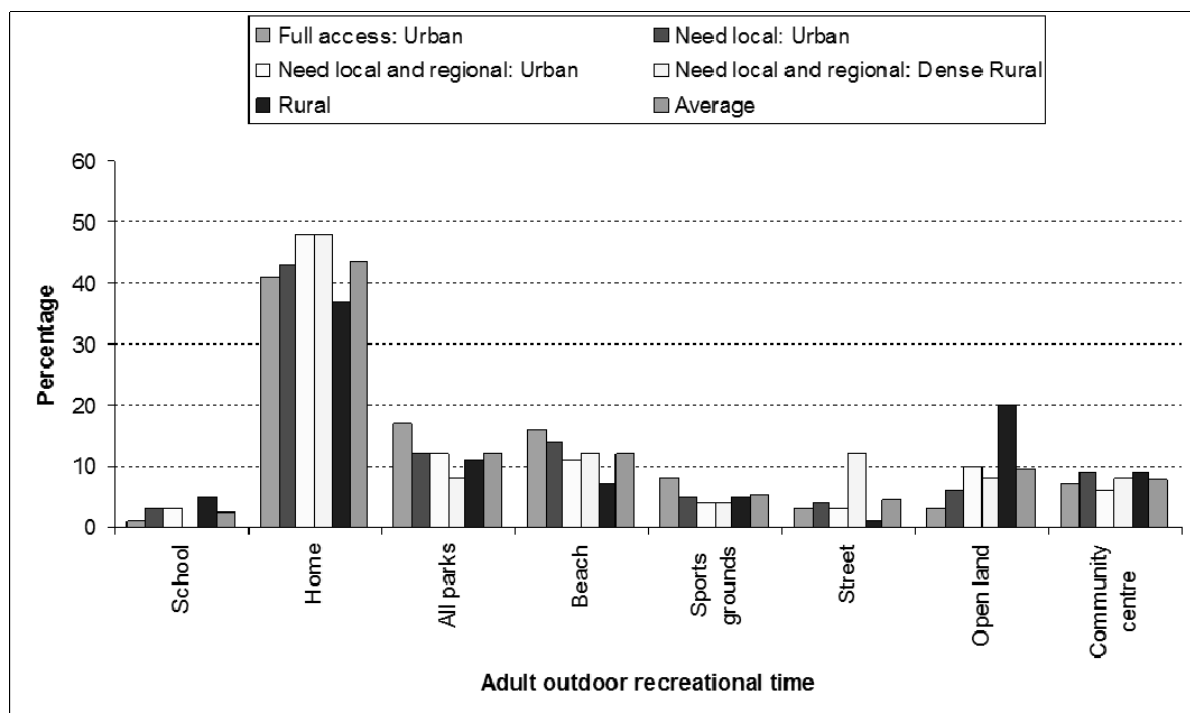


Figure 4: Outdoor recreational time (Adults)

Parks appear to be the third most likely recreational space for children and joint second for adults. This is an indication of the importance of park space in the contemporary urban and rural milieu. Local parks are the most likely to be used by both adults and children rather than any other parks

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types, including large public and private parks and nature reserves (e.g. the Botanical Gardens and Umgeni Bird Park).

Note: The rural respondents were not asked to respond too many of the following aspects as their need for park space is considerably different compared to the other respondents. See Section 3.9 for more information on the rural results

2.2 Distance to parks

As illustrated in Figure 5, 41% of respondents indicated that they had to walk for more than 15 minutes to get to their closest park. This means that almost 60% of respondents are within 15 minutes' walking distance of a park, while 26% indicated that they would walk for less than 6 minutes to the closest park.

A total of 66% in the 'Need local and regional: Dense Rural' category (small sample size) were within 15 minutes' walking distance of a park. Approximately 58% of respondents in the 'Need local: Urban' category and 55% in the 'Need local and regional: Urban' category, were within 15 minutes' walking distance of a park. This would indicate that, although there was a need for local parks, the facilities available were considered to be within 15 minutes' reach for more than half of these two groups that together make up 80% of the sample.

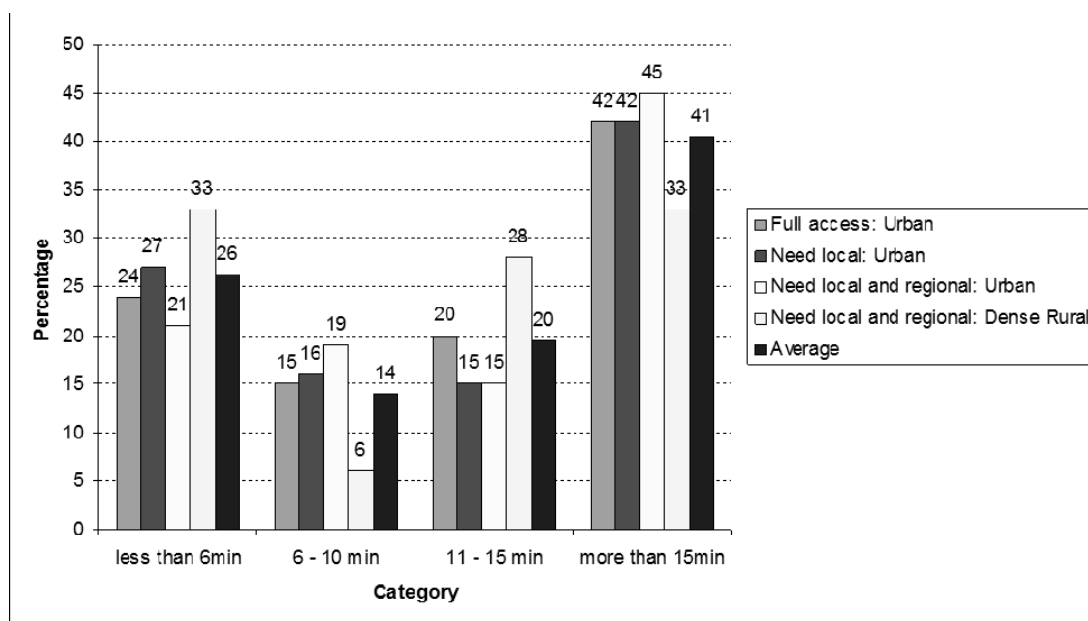


Figure 5: Walking time to parks

2.3 Travel to parks

An analysis of the travel modes of park users indicates that most people said that they access parks on foot, but a sizeable number of respondents use private vehicles (Figure 6). About 40 to 45% of respondents walked to parks, while approximately 30% of respondents used private vehicles. Private vehicle use is far higher in the urban areas. Children tend to walk more to parks than adults; the latter favouring private vehicle transport. Around 10% of respondents use taxis as a mode of transport to parks, but this mode is used far more often in the Dense Rural areas.

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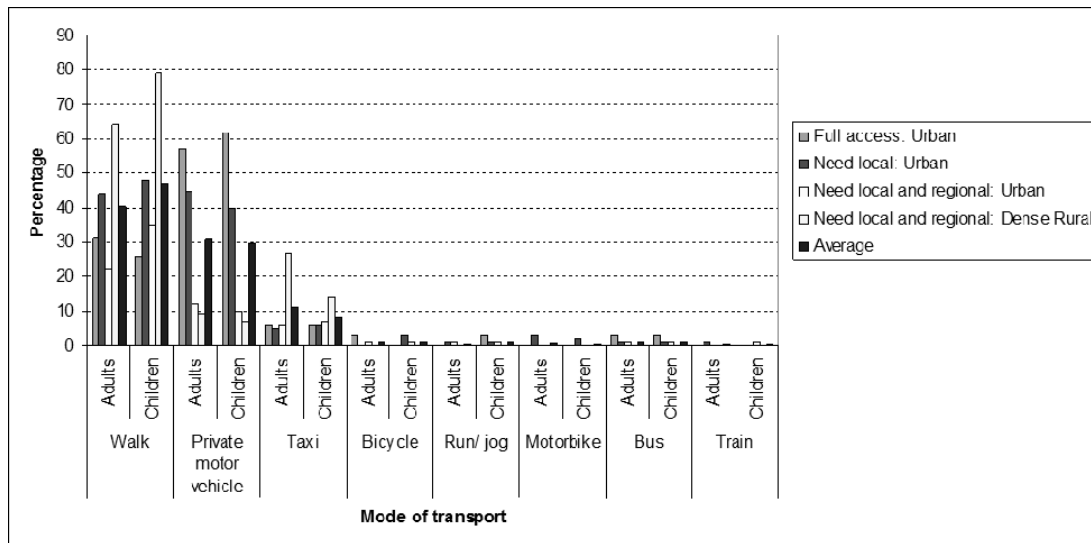


Figure 6: Transport to parks

2.4 Frequency of park usage

Respondents were requested to indicate the frequency of their park visits. Table 6 classifies the frequency of park visits into six frequency-specific subcategories which were then collapsed into two designations, namely frequent (visiting a park once or more often a week) and infrequent (less than once a week).

Table 3: Park usage categories	
Frequency	Designated park usage category
Never	Infrequent
Less than once a week	
Once a week	Frequent
2–3 days per week	
4–6 days per week	
Everyday	

Figures 7 and 8 indicate the frequency of park visits by respondents, for those within 15 minutes' walking distance of a park and for those more than 15 minutes' walk from a park respectively. There appears to be a resistance to using parks among a large proportion of the population, no matter how close they live to a park.

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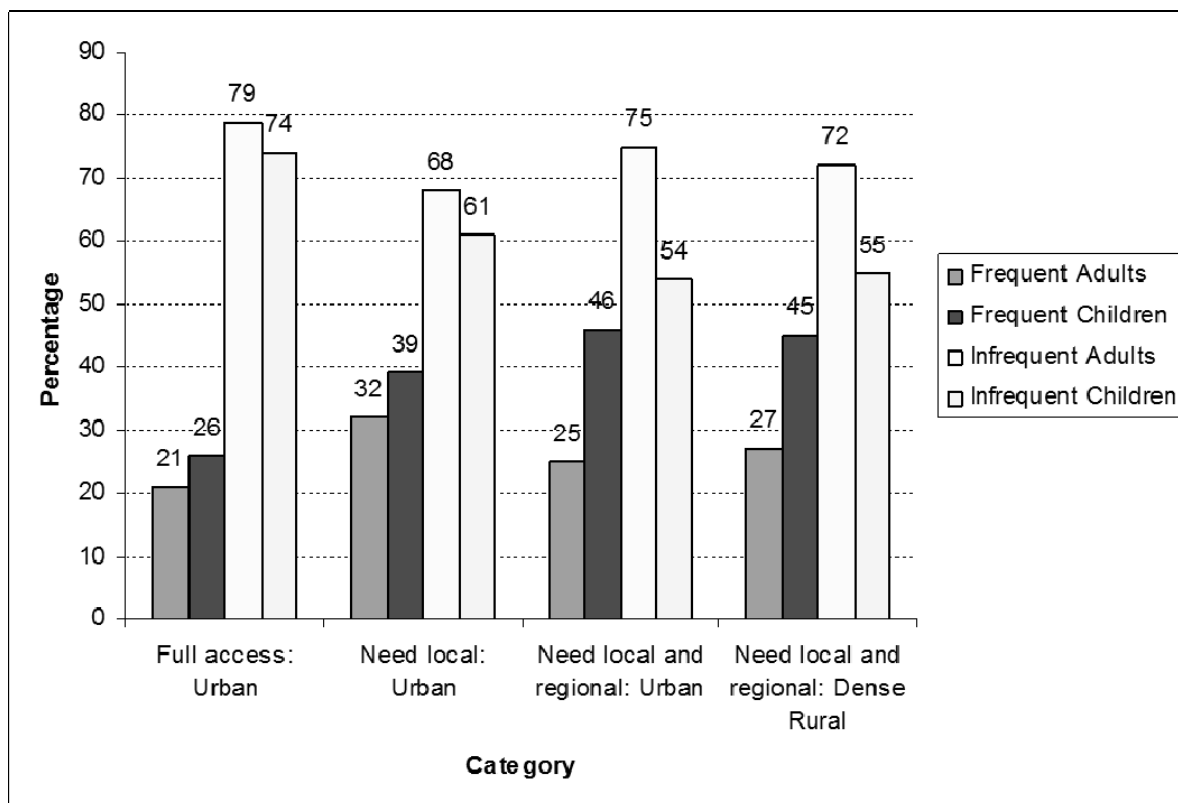


Figure 7: Frequency of park use by respondents within 15 minutes' walk from a park

For respondents within 15 minutes' walking distance of a park, 68 to 79% of adults and 54 to 74% of children indicated infrequent park use for most park categories (Figure 7). Park use by adults lie in the band of 21 to 32% of the adult population, while the percentage park use by children ranges from 26 to 46%.

Park usage rates are lowest among those respondents in the 'Full access: Urban' category who are within 15 minutes' walk of a park. Those 'Full access' respondents who were more than 15 minutes' walk from a park also returned low usage figures compared to other park categories (Figure 8). Closer inspection of the respondents in this category reveals that 60% of them have private gardens which may be used as a recreation space. Furthermore, 67% of them have private vehicles which increase their mobility regarding the range and types of recreational spaces available. The high park use for those more than 15 minutes' walk from a park in the 'Dense Rural' category could perhaps be attributed to the small sample size (six respondents).

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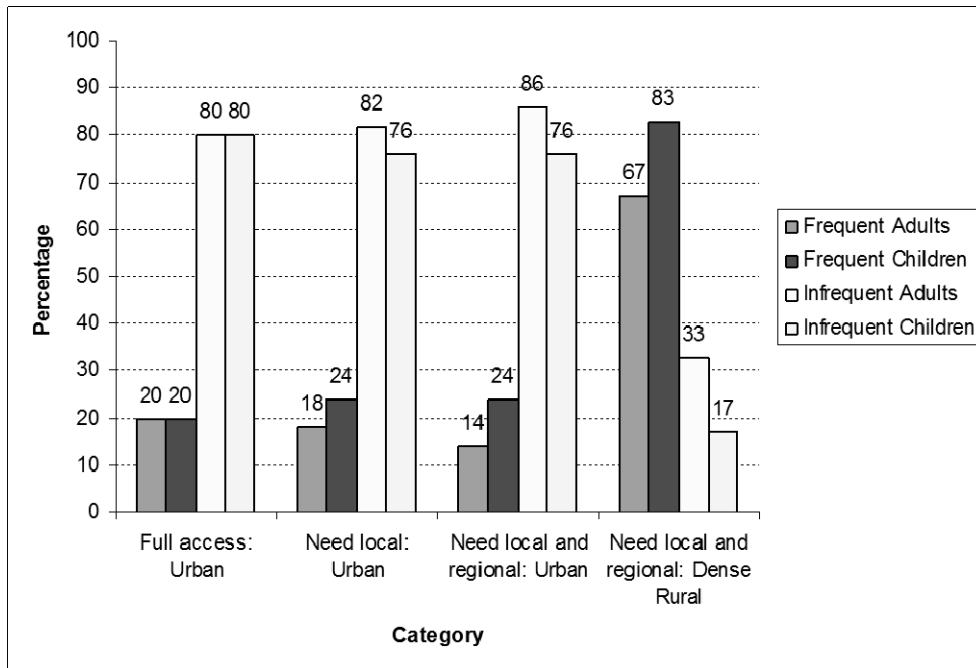


Figure 8: Frequency of park use by respondents more than 15 minutes' walk from a park

Notwithstanding the fact that a large percentage of the population did not use park spaces, they did make suggestions regarding improvements to parks (Figure 11).

2.5 Length of time spent in parks

On average, most park visitors generally spend more than an hour in a park. Considerable numbers of respondents also indicated that they spend 30 to 60 minutes at a time in a park. Thus many park users (Figure 9) tend to spend more than 30 minutes in a park, rather than shorter periods of time. The requests (Section 3.7) for more park furniture, security, bins and ablution facilities (see Figure 9) could be associated with the length of time spent in parks and the need for these utilities.

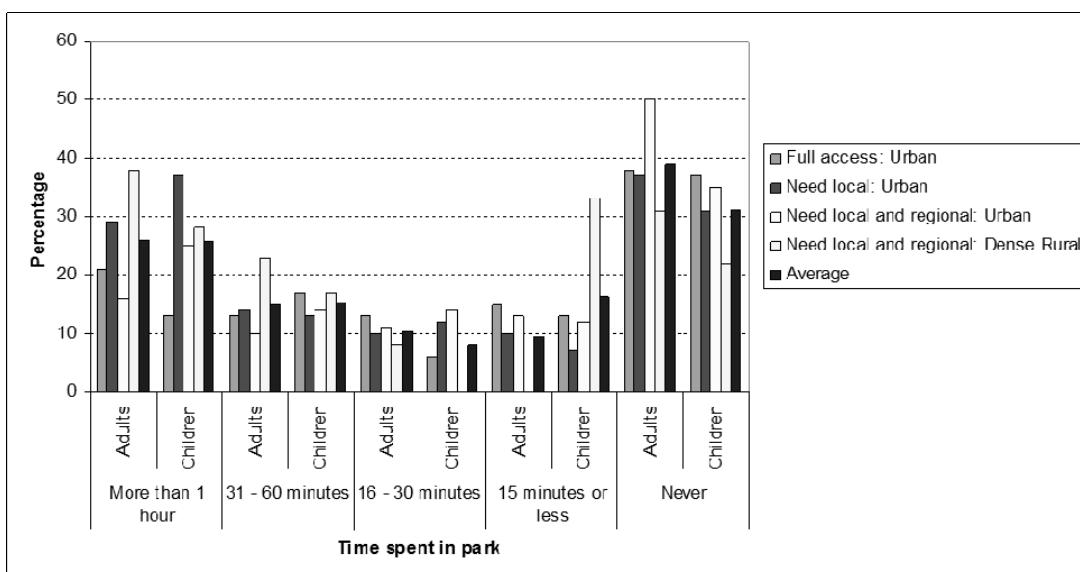


Figure 9: Time spent in parks

2.6 Park activities

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On average, the most common park activities are informal exercising, children’s play, relaxing, playing ball games and braaing/picnicking. There are variations between park priority areas and in particular braaing/picnicking featured strongly in all categories except the ‘Dense Rural’ group.

It would seem that parks are seen as spaces for socialising since many activities listed in Figure 10 are not solo activities. A large percentage of activities involve children. The percentage of respondents that braai/picnic, play ball games and do informal exercise probably gives rise to requests for more braai areas in parks, as well as the amalgamation of sport and park recreational space use (Section 3.7).

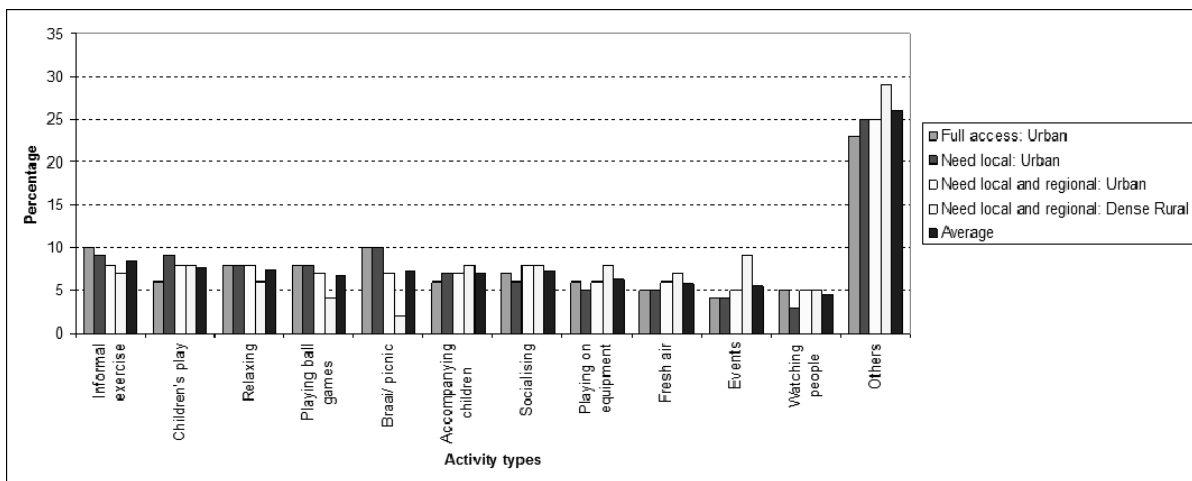


Figure 10: Park activities

2.7 Recommendations for additional park facilities

Figure 11 presents a snapshot of what respondents think are still needed in parks. This list could be interpreted as a possible upgrade strategy for existing parks to meet the needs of current park users or as a strategy to entice more residents to utilise the park spaces.

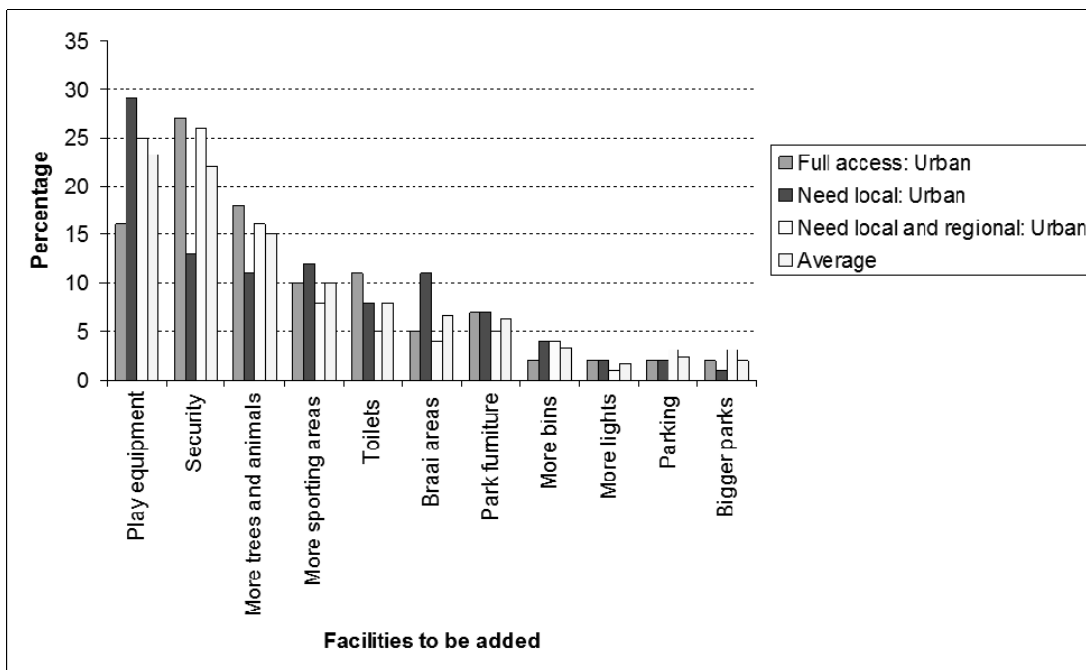


Figure 11: Recommendations for additional park facilities

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Play equipment, security and more fauna and flora were the top three suggestions for the enhancement of park spaces. More sporting areas and the amalgamation of parks and sports fields were mentioned by 10% of respondents. This dual use of space could lead to savings in space-intensive land uses and a more optimal use of that space. Many of the other responses were related to activities that would promote socialising, security and comfort: these included more park furniture, braai areas, better lighting and parking space. Only 2% of respondents felt that there was a need for bigger parks.

There was a focus on the upgrading of existing parks while simultaneously providing a wider range of park uses. Areas that ‘Need local’ parks (36% of the sample) tended to request more play equipment and braai areas while areas that had ‘Full access’ (6% of the sample) were more likely to request better security and improvements to park quality (toilets, fauna and flora, etc). Generally, the respondents in the different priority area categories held similar views on additional facilities. These views are reflected in their reasons for not using parks.

2.8 Reasons for not using parks

Reasons for respondents not using parks, or not using them as often as they would like, are presented in Figure 12. Most respondents viewed parks as unsafe spaces that are litter-strewn and vandalised. In addition, respondents felt that there were not enough facilities and that maintenance was poor within parks, which raises the issue of park upgrades and/or maintenance. Approximately 7% of respondents indicated that they did not have enough time to visit parks.

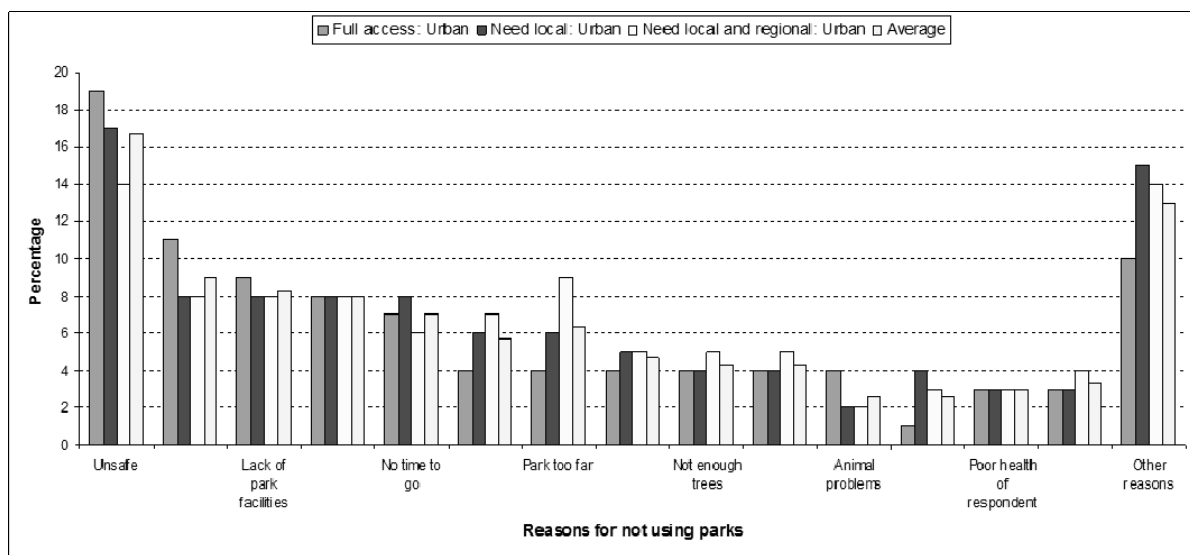


Figure 12: Reasons for not using parks

Interestingly, 9% of respondents in the ‘Need local and regional: Urban’ category felt that the park was too far away (45% of these respondents had to walk more than 15 minutes to a park). The size of parks was only mentioned by almost 5% of respondents across all categories who felt that parks needed to be larger.

2.9 Suggestions for improving parks

Suggestions for improving parks (Figure 13) mirror the reasons why respondents do not use them. The main issues are related to security, cleaning and maintenance as well as requests for more park space

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Suggestions for improved security were made most often by the respondents in the ‘Full access: Urban’ category, which is also the category that makes the least use of parks. However, this category is only a small proportion of the sample and by implication a small percentage of the City’s residents. They are, however, those with the best provision of park space. It could be inferred that improved security will get respondents to utilise park space in future.

The call for cleaning and maintenance is most pronounced in the ‘Need local: Urban’ category that comprised 36% of the sample. It could be that the bigger parks that this group frequents have cleaning and maintenance challenges due to their popularity and pressures of high use.

The request for more parks comes from all park categories, but not surprisingly the ‘Need local and regional: Urban’ category is the most vociferous in this request. It should also be noted that 2% of respondents requested dual-use parks and sports fields.

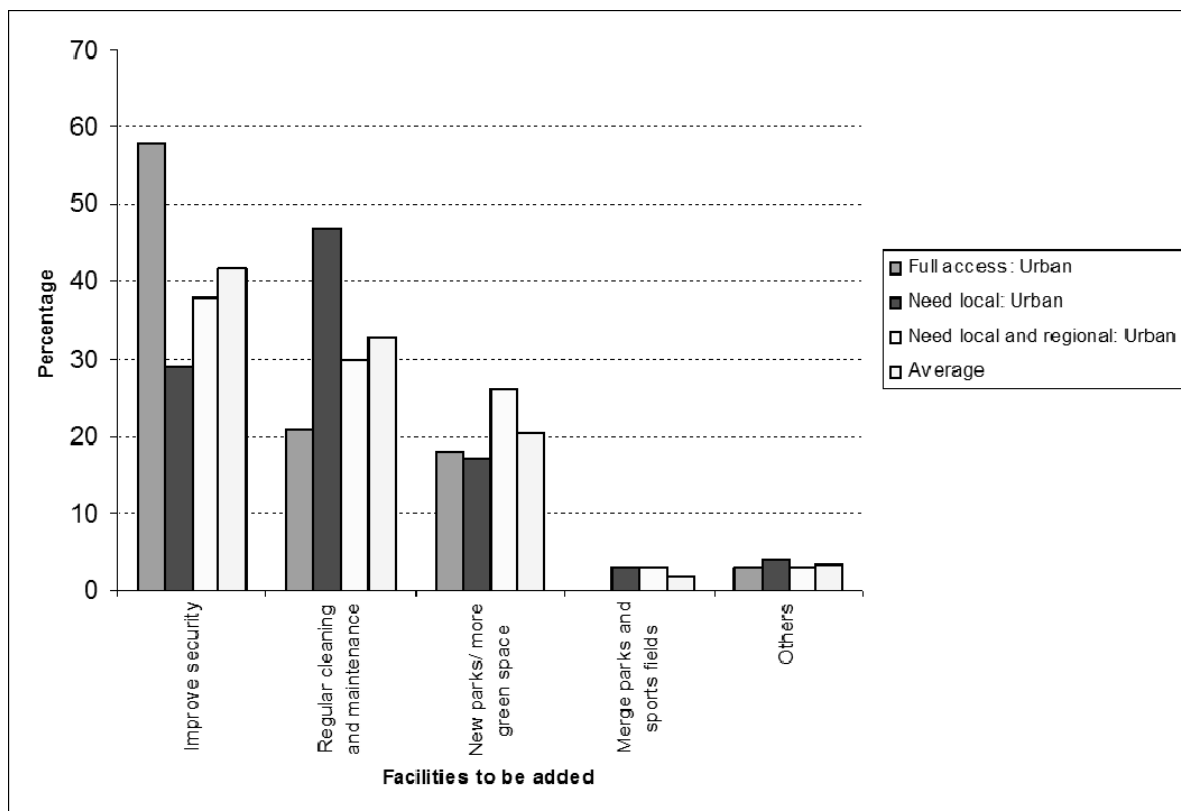


Figure 13: Suggestions for park space improvement

2.10 Results for rural areas

As mentioned previously, a different questionnaire was administered in the rural areas owing to the particular needs of these areas. This comprised 11% of the sample. Respondents were requested to indicate where they thought the best place would be to locate play equipment (Figure 14). More than 50% of respondents thought that schools would be the most suitable site. This response links with the results discussed in Section 3.1 where it was reported that children spend most of their recreational time at school.

Approximately 20% of respondents felt that sports grounds would be the most suitable location. Ten per cent of the non-rural respondents held a similar point of view. This would suggest that a dual-use park / sports ground would be viable and accepted by communities.

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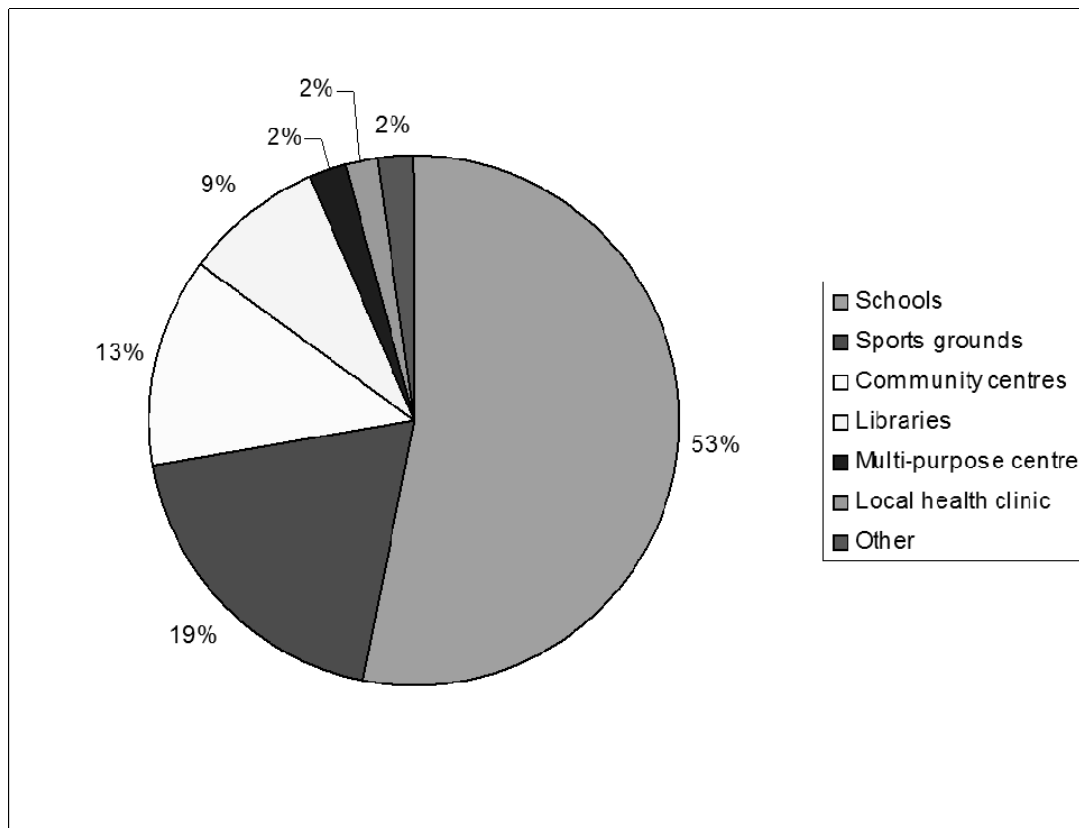


Figure 14: Positioning of play equipment

3. CONCLUSION

A number of important points were evident from the results of the park usage survey:

- Parks were the third most important location for outdoor recreational time for children and the second most important location for outdoor recreational time for adults.
- 60% of respondents felt that they were within 15 minutes' walking distance from a park.
- 40–45% of respondents walked to parks, with around 30% using private vehicles.
- Children would more readily walk to a park than adults would.
- On average, 27% of adults and 36% of children used parks.
- Most park visitors spend more than one hour in the park.
- Parks are seen as socialisation spaces and a large percentage of park activities involve children.
- More play equipment and security were the foremost additional park facilities that were requested.
- Many respondents viewed parks as unsafe and litter-strewn places.
- Park upgrades and maintenance were viewed as important in improving parks.

Although the results point to the need to provide more parks in the areas identified by the accessibility analysis, the infrequent or non-use by those living in areas which have a good provision of parks (i.e. within the specified standards) could indicate that some adjustment / lowering of the park provision standard needs further consideration. It is clear from the analysis that those with poorer access to park space in the 'Need local: Urban' and 'Need local and regional: Urban' categories make use of those park facilities provided to them at a higher rate than others. The question is: should these findings be

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interpreted as a measure of sufficiency of supply which can be used to reduce the supply standard? Or should the City be making an all-out effort to provide more parks in the areas of high need and high use? What is clear, however, is that the quality and maintenance of parks need improvement across the spectrum to enable the residents of eThekweni to better enjoy their parks.

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**A STUDY OF THE RELATIONSHIPS BETWEEN ARCHITECTURAL ENVIRONMENTS AND THE
HUMAN WELLBEING**

APPENDIX 3

08 July 2010

To whom it may concern,

I am currently writing my dissertation for my Masters in Architecture at the University of Kwa-Zulu Natal and part of my study requires a questionnaire based on my studies. I understand that everyone is very busy, but I kindly ask if you can spare a few minutes of your time to answer a few questions. Your assistance will help me immensely in my research and I will be able to complete my final conclusions. Here below is a brief explanation of my dissertation.

My topic is:

THE RELATIONSHIPS BETWEEN ARCHITECTURAL ENVIRONMENTS AND HUMAN WELLBEING: A Proposed Healing Retreat in Durban.

My dissertation explores the factors that contribute to the multitude of stresses experienced by urban societies. The focus of my dissertation is to create an architectural intervention that can assist 'healing' and create a place where an individual is able to take time out and simply find inner 'peace'. For your convenience I have included an internet link should you prefer to complete the questionnaire on line. Alternatively, please find attached the questionnaire for your kind completion. Please note that the questionnaire is completely anonymous.

Should you have any queries, please do not hesitate to email me on lidia.breetzke@gmail.com.

To assist me in meeting my research deadlines kindly forward your response by 22 July 2010.

I thank you in advance for your kind assistance and I remain most appreciative.

Kind regards

Lidia Breetzke

Please follow the link bellow to complete the questionnaire.

<http://surveygoldplus.com/s/4337571A121142EF/27.htm>

**A STUDY OF THE RELATIONSHIPS BETWEEN ARCHITECTURAL ENVIRONMENTS AND THE
HUMAN WELLBEING**

Proposed Survey Questionnaire

This questionnaire is anonymous.

The aim is to gain various opinions from the professional industry and therefore understand the thought process behind their designs and ideas.

General: (Please circle your appropriate answer)

A. Gender?

1. Male
2. Female

B. Race?

1. Black
2. White
3. Indian
4. Coloured
5. Other

C i. Profession?

1. Architect
2. Town Planner
3. Urban Designer
4. Engineer

C ii.

1. Registered Professional
2. Candidate Professional
3. Professional Technologist

E. How many years working experience?

1. 1-5
2. 6-10
3. 11-15
4. 16-20
5. 20+

F. In which sector are you employed?

1. Private
2. Public
3. Civic

G. Is your company predominantly involved in

1. ... Urban design schemes

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2. ... Residential/ Single dwelling developments

3. ... Mixed use/ Commercial buildings

4. ... Other

Architecture and Human Wellbeing: (Please circle your answer)

A. Does your urban/ metropolitan environment, in an overall sense, generate a feeling of wellbeing? If yes please list the key contributing factors that give rise to this wellbeing?

YES

NO

.....

B. Do you believe that architecture can affect human wellbeing?

YES

NO

B. In urban design, in your experience, which of the following elements contribute to human wellbeing:

1. Vistas

2. Paths (the streets, trails, sidewalks etc people travel)

3. Edges (perceived as boundaries such as buildings, walls or shorelines)

4. Districts (relatively large sections of the city, distinguished by a character/ identity)

5. Nodes (focal points, loci or intersections)

6. Landmarks (easily identifiable objects that serve as external reference points)

7. Green Space or areas

8. Public Parks

9. Public Spaces and Squares

10. Water and water features

C. In your experience which of the following elements of building design and interior design affect an individual's wellbeing:

1. Spaces

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2. Colour
3. Light
4. Textures
5. Sound
6. Environmentally conscious materials
7. Natural ventilation in a building
8. Types of materials (both building and decorative) used
9. Water & Water features
10. Landscapes, gardens and greenery

D. If there is a main philosophy/ design principle that motivates your designs? Kindly provide a brief description.

YES

NO

.....

.....

E. In everyday architectural work in an urban environment do any of the following work against the achievement of human wellbeing?

1. Budget constraints of the project
2. Availability of environmentally conscious materials
3. Cost of environmentally conscious materials
4. Client preferences
5. Building regulations
6. Achievement of a specific aesthetic
7. Other

Thank you for your contribution to my dissertation! 😊

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RESULTS:

Gender	Male: 68.4% Female: 31.6%
Race	White: 89.5% Indian: 5.3% Black: 5.3%
Profession	Architects: 100%
Qualification- Reg. Prof	Registered Professional: 92.1% Registered Candidate: 5.3% Registered technologist: 2.6%
working exp. 1-5 yrs	7.9%
6 to 10	7.9%
11 to 15	21.1%
16 to 20	18.4%
20+	44.7%
Sector: Private	92.1%
Public	7.9%
Residential/ single dwelling dev.	36.8%
Mixed use/ commercial	50%
urban design schemes	10.5%
Other	34.2%
urban environment (A) YES	71.1%
urban environment (B)NO	28.9%
The key contributing factors that give rise to this wellbeing	
Urban Design- Vistas	71.1%
Paths	57.9%
Edges	60.5%
Districts	36.8%
Nodes	50%

**A STUDY OF THE RELATIONSHIPS BETWEEN ARCHITECTURAL ENVIRONMENTS AND THE
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Landmarks	47.4%
Green Space or areas	71.1%
Public Parks	52.6%
Public Spaces and Squares	73.7%
Water and water features	63.2%
Other	
building & int. design - Spaces	94.7%
Colour	73.7%
Light	94.7%
Textures	57.9%
Sound	71.15
Environmentally Conscious Materials	36.8%
Natural ventilation in a building	81.6%
Types of materials (both building and decorative) used	57.6%
Water & Water features	57.9%
Landscapes, gardens and greenery	73.7%
Other	
main philosophy/ design principle- YES	92.1%
NO	7.9%
Kindly Give Brief Description	
Everyday archi work- Budget constraints of the project	52.6%
Availability of environmentally conscious materials	15.8%
Cost of environmentally conscious materials	36.8%
Client preferences	68.4%
Building regulations	31.6%
Achievement of a specific aesthetic	26.3%
Other	
General comments	

A STUDY OF THE RELATIONSHIPS BETWEEN ARCHITECTURAL ENVIRONMENTS AND THE HUMAN WELLBEING

APPENDIX 4

Lessons learnt: (literature review)

Chapter 3: (Urban design)

Sprawl

- Sprawl affects Durban
- Long commuting times places stress on people
- People spend a lot of money on having to travel from home to work every day
- Road rage is on the increase
- Due to the high passed lifestyles people do not have time to take 'time-outs'
- Genius loci, dev with mixed use. Homes

Chapter 4: (intermediate)

Genius Loci

- Creating a 'sense of place'
- Asking oneself what exactly the environment 'requires', being site specific
- Looking back on the older towns and cities where lots of thought was given in how people were moved around. How each area had its own characteristic and style. Is there a theme or constant thread?
- How can being site specific and preserving heritage be effective?
- How can a positive wellbeing be preserved?

Green Spaces

- allowing for areas of relaxation, self reflection, allowing people to take in the fresh air
- people are able to take a 'time- out'
- also its visually pleasing, breaks the harshness of buildings and roads
- allows for social gathering places where both adults and children can interact with each other and network
- Children can come and play; adults can read or walk around. Encouraging exercise
- Increases animal population levels, like birds and insects. Helping from an ecological point of view
- Since green spaces, nowadays, often have bad stigmas there should be some level of surveillance and control with them- keep the 'bad' activities from coming in. studying the flood of people. Chase criminals out. Crime and vagrants in dingy places. Light and open spaces, the bad goes out

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Public Spaces

- coupled closely with the green spaces, public squares and spaces can help with the interaction of people, both young and old
- Creates areas for surveillance. For instance if there is a mixed use development the public space will have people moving in and around on a regular basis
- allows for a 'free' space for people to relax
- it also creates multiple design opportunities for buildings to be design and molded around a central point
- it's an ordering principle
- Can also be used as a monumental statement. For instance be dedicated to someone create. Historical interest point. Monuments or public art
- Used in old times, throughout the medieval and renaissance times. Aids with also creating a sense of genius loci- 'space and place'- within an area
- There aren't enough public spaces in Durban and therefore more should be introduced. Aids with legibility.
- Good public space very appealing.
- New urbanism there is good examples. Eg gateway
- Beach front. Remolded recently

Chapter 5 (micro-specific context)

Water

- It is a tranquil substance that can evoke peace within people of all ages. Adults like watching and hearing the water move, children enjoy playing in and around the water
- it soothes the mind and thoughts
- it has a mesmerizing psychological effect on people
- used in ancient Chinese philosophies like Feng Shui
- it cleanses
- visually appealing

Landscapes and Gardens

- ancient history with gardens, from the biblical times and it still plays a role in lives today
- different types of plants can aid in the healing of individuals, the plants used and manner in which the garden is arranged
- Gardens are also very therapeutic. they allow a visual stimulus for people who are ill

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- It increases the level of Oxygen in a person's body. Helping with the healing process
- people enjoy the animals and 'life' that comes from sitting in gardens
- it's a beauty for people to look at

Chapter 6 (the interior environment)

Architecture and healing

- architecture is able to assist with human wellbeing, through the use of open, intimate, well light and ventilated spaces
- The building should be sensitive to its surroundings and nature. Sit lightly on the land
- Also dictated to by the colours of the space.
- The building will give off the same energy that goes into it. So if people put 'love' and 'care' into the building than it will give off a positive energy
- Light is important within a building, it makes a space feel comfortable and welcoming. In comparison to dark and dingy spaces.

Sick building syndrome

- Mainly happened from 1960 to 1980, when buildings had cold, wet and damp interiors from incorrect ventilation systems.
- It's the physical and psychological distress that a person goes through when they are in a poorly ventilated environment. This feeling disappears once the person leaves that space and goes outside or somewhere else
- to was ignited due to the need to reduce mechanical ventilation or heating costs
- materials-paints, appliances, manmade materials are impregnated with glues and other chemicals which ignite vapours that are toxic to humans- used also can encourage sick building syndrome
- areas should, preferably, be naturally ventilated
- If areas cannot be naturally ventilated then they should be correctly ventilated in the most efficient way. With this energy consumption being offset in some other areas of the buildings to reduce the overall environmental impact
- Building is reliant on mechanically ventilate building, increase in energy consumption. Solar panels to reduced energy to heat water
- nowadays there are more advanced ventilation systems that can reduced and avoid sick building syndrome
- reduce toxic materials

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Colour

- colour is important
- it affects the psychology of people and can generate different emotions and moods
- Different colours can affect how people feel. For example lots of yellow and orange flowers will evoke a happier feeling than dark purple or blue flowers
- How a room is coloured also brings about different feelings. Like a blue room will evoke calming and peaceful feelings whereas a bright red room will make the person anxious and irritable
- there are also different shades of colours, for instance bright red can agitate a person if used in a room whereas a warmer earthier tone is more welcoming
- also the amount of colour used in a room can also affect the psychology of a person, a whole room painted red gives off a different feeling than if red is used as an accent
- Browns give off a more natural and wholesome feeling.
- Light yellows give off a calming feeling in the environment

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PART TWO

DESIGN REPORT

INTRODUCTION

The effects of stress and related health conditions are evident throughout the global population and South Africa is no exception. South Africans are not immune to the mental and physical effects of a stressful lifestyle. Trying to cope with the effects of daily stress is a common situation for most. It may be argued that these challenges in one's life encourage motivation and innovation. However living under constant pressure increases stress and negative emotions which results in the body being in a state of constant 'emergency mode' (<http://www.helpguide.org>). As an individual takes on more negative stress, the need to seek relief from the effects thereof increases. Although one may think that one is coping with the ever increasing levels of stress and negative energy within one's life, one often does not realise that there is a progressive deterioration in ones mental and physical vitality (www.helpguide.org).

"It is more important to know what sort of person has a disease than to know what sort of disease a person has" Hippocrates (www.docgeorge.com)

With the above thought in mind, at some stage in our lives everyone seeks medical assistance from a medical practitioner, often these methods are not preventative but rather a 'quick-fix' solution to the problem. The above quote highlights what is often forgotten when practicing modern medicine. Instead of understanding the person's character and ascertaining why the patient is experiencing those particular symptoms and making a correct diagnosis, a medical practitioner often prescribes 'quick fix' medications to alleviate the discomfort which does not necessarily cure the illness. By not curing the deep routed cause of the illness, patients continue to experience the same pain and discomfort and often return to the medical practioners to seek further help.

This Healing Centre not only seeks to heal those who have illnesses but also prevents individuals from becoming ill due to the effects of living in a stressful modern society. In this Centre, the emphasis is placed on the body and mind and spirit, offering people an "A" to "Z" of complementary therapies from Aromatherapy to Zen meditation. The overall concept is to create a centre where people- from all walks of life- are able to seek help and maintain a sense of wellness and vitality, through interventions in their overall lifestyle and health.

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THE BACKGROUND

1 'STRESS' AND ITS CAUSES

How a person deals with stress can impact heavily on that individual's wellbeing and given that stress is a term used in common parlance some consideration thereof is necessary.

'Stress' is a product of an imbalance between individual resources and various environmental demands ('stressors'). These 'stressors', are mainly brought about from environmental demands, and are different from strains which are one's response to demands (McKay: 2004; 91-112). According to *Stress Directions & Help Guide*, there are five sources of major pressure and demand which evoke stress in an individual, including the following; personal stresses, family stresses, job/ financial stresses, social and environmental stresses (www.helpguide.org). There are many potential sources of stress, with the 'mix' of stressors being different for each individual depending on their individual make-up. The severity of the stress and the ability of the individual to cope, means that the health of each individual will be variably impacted upon.

2 MOTIVATION AND ARGUMENT FOR THE PROPOSAL

Most city dwellers simply endure the fast paced lifestyle and the stresses of the urban environment, forging coping strategies daily. There is a distinct need for individual's to break away from the stresses that the built environment exacerbates. It is important for every individual to remove themselves from the hustle and bustle of everyday life and spend time resting, recuperating and allowing time to 'heal' from these stresses and strains (Philo: 2004; 473 and Gesler: 2003; 2). Gesler (2003) adds that there are places that offer environments' that have the ability to achieve 'lasting healing', this can be in the form of spas, pilgrimage locations, retreats or sacred sites (Gesler: 2003; 2). Over the last few years there has been an 'unprecedented intensification in the pursuit of wellness'. Some architectural environments, allow individuals to not only undergo a journey of 'physical movement' but also a journey towards a 'greater sense of self-awareness and contentment' (Smith & Kelly: 2006a; 1-4). Smith (2003) explains that "Western societies have created a form of materialism that does not always nurture the soul adequately", leaving individual's without an active sense of 'self-improvement' and 'finding their true selves'. This is due to the constant stress and pressure in today's society (Smith: 2003: 103-108).

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There is a distinct need for an architectural intervention that focus not only on the physical health of people but also on spiritual and mental growth. Thus it is important for there to be a holistic architectural intervention that encompasses these aspects and gives some priority to the positive wellbeing of individuals. The proposed Health and Healing centre is not aimed at a specific demographic section of our society but rather would offer this opportunity to people from different socio-economic groupings and therefore has been integrated into the CBD precinct. This Healing Centre will predominately be based on public accessibility, connectivity to the social nodes and transport hubs, the links to public greens spaces and creating a sense of place, and most importantly generating relationships between architectural environments and the human wellbeing.

3 THE WORKING HYPOTHESIS

Individuals are constantly placed under a multitude of stresses within the urban context. To achieve harmony within oneself, the individual needs to feel ‘at peace’ mentally. If this ‘peace’ can be sustained both the healthy functioning and healing of the physical body is promoted. Harmony within the being has also much to do with the spiritual dimension. Feeling ‘a connection’ with your fellow man and with Nature brings a sense of peace and can dramatically reduce the stress that people feel. Architecture, if correctly executed, is able to facilitate and support a move back to holistic wellbeing through architectural environments that are focused on health and healing. The benefits thereof are universal regardless of the diversity of culture, or the respective identities and perceived needs of people that may visit such a centre.

4 LESSONS LEARNT

It is important to highlight what lessons have been learnt from the dissertation document in order to create a clear link from the theory to the actual building design. Below a breakdown of each section explored in the design report has been explored

SECTION	LESSONS LEARNT
URBAN DESIGN	SPRAWL <ul style="list-style-type: none">- SPRAWL AFFECTS DURBAN- LONG COMMUTING TIMES PLACES STRESS ON PEOPLE- PEOPLE SPEND A LOT OF MONEY ON HAVING TO TRAVEL FROM HOME TO WORK EVERY DAY- ROAD RAGE IS ON THE INCREASE- DUE TO HIGH PACED LIFESTYLES MANY PEOPLE HAVE LITTLE RELAXATION TIME TO REJUVENATE

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<p>MESO CONTEXT</p>	<p>GENIUS LOCI</p> <ul style="list-style-type: none"> - CREATING A 'SENSE OF PLACE' - ASKING ONESELF WHAT EXACTLY THE ENVIRONMENT 'REQUIRES', HOW DOES THE SITE 'SPEAK TO YOU' AS AN ARCHITECT AND HOW THIS INFLUENCES BUILDING DESIGN, CHOICE OF MATERIALS ETC. - LOOKING BACK ON THE OLDER TOWNS AND CITIES WHERE LOTS OF THOUGHT WAS GIVEN TO HOW PEOPLE EXPERIENCED THE TOWN AND HOW EACH AREA HAD ITS OWN CHARACTER AND STYLE- IS THERE A THEME OR CONSTANT THREAD THAT CREATES A PARTICULAR FEEL OR OVERALL STYLE? - HOW CAN BEING SITE SPECIFIC AND PRESERVING HERITAGE BE EFFECTIVE? - HOW CAN A POSITIVE WELLBEING BE PRESERVED?
	<p>GREEN SPACES</p> <ul style="list-style-type: none"> - ALLOWING FOR AREAS OF RELAXATION, SELF REFLECTION, ALLOWING PEOPLE TO TAKE IN THE FRESH AIR - PEOPLE ARE ABLE TO TAKE A 'TIME- OUT' - ALSO ITS VISUALLY PLEASING, BREAKS THE HARSHNESS OF BUILDINGS AND ROADS - ALLOWS FOR SOCIAL GATHERING PLACES WHERE BOTH ADULTS AND CHILDREN CAN INTERACT WITH EACH OTHER AND SOCIALISE WITH OTHER MEMBERS OF THE COMMUNITY - CHILDREN CAN COME AND PLAY; ADULTS CAN READ OR WALK AROUND. GREEN SPACES ENCOURAGE EXERCISE - HELPING FROM AN ECOLOGICAL POINT OF VIEW SINCE THERE IS AN INCREASE IN ANIMAL POPULATION LEVELS, LIKE BIRDS & INSECTS. - SINCE GREEN SPACES, NOWADAYS, OFTEN HAVE BAD STIGMAS THERE MUST BE A HIGH LEVEL OF SURVEILLANCE AND THE DESIGN OF SPACES MUST AIM TO DEAL WITH THIS ISSUE AS WELL. SPACES MUST BE WELL LIT AND OPEN TO ALLOW EASY VISIBILITY
	<p>PUBLIC SPACES</p> <ul style="list-style-type: none"> - COUPLED CLOSELY WITH THE GREEN SPACES, PUBLIC SQUARES AND SPACES CAN HELP WITH THE INTERACTION OF PEOPLE, BOTH YOUNG AND OLD - CREATE AREAS WITH SURVEILLANCE. FOR INSTANCE IF THERE IS A MIXED USE DEVELOPMENT THE PUBLIC SPACE WILL HAVE PEOPLE MOVING IN AND AROUND ON A REGULAR BASIS AS WELL AS OVER-LOOKING OF THE SPACE FROM THE RESIDENTIAL ABOVE - ALLOWS FOR 'FREE' RECREATION/RELAXATION SPACE - IT ALSO CREATES MULTIPLE DESIGN OPPORTUNITIES FOR BUILDINGS TO BE DESIGNED AND MOULDED AROUND A CENTRAL POINT - IT'S AN ORDERING PRINCIPLE - THERE ARE NOT ENOUGH PUBLIC SPACES IN DURBAN AND THEREFORE MORE SHOULD BE INTRODUCED. AIDS WITH LEGIBILITY. - GOOD PUBLIC SPACE VERY APPEALING.

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	<ul style="list-style-type: none"> - THERE ARE GOOD EXAMPLES OF NEW URBANISM. EG GATEWAY, - BEACHFRONT. THAT HAVE BEEN RECENTLY RE-MOULDED
MICRO-SPECIFIC CONTEXT	<p>WATER</p> <ul style="list-style-type: none"> - WATER IS A TRANQUIL SUBSTANCE THAT CAN EVOKE PEACE WITHIN PEOPLE OF ALL AGES. ADULTS LIKE WATCHING AND HEARING THE WATER, CHILDREN ENJOY PLAYING IN AND AROUND THE WATER - IT SOOTHES THE MIND AND THOUGHTS - IT HAS A MESMERIZING PSYCHOLOGICAL EFFECT ON PEOPLE - VISUALLY APPEALING
	<p>LANDSCAPES AND GARDENS</p> <ul style="list-style-type: none"> - DIFFERENT TYPES OF PLANTS CAN AID IN THE HEALING OF INDIVIDUALS, THE PLANTS USED AND MANNER IN WHICH THE GARDEN IS ARRANGED - GARDENS ARE ALSO VERY THERAPEUTIC. THEY ALLOW A VISUAL STIMULUS FOR PEOPLE WHO ARE ILL-PERCEIVING BEAUTY AIDS THE HEALING PROCESS - IT INCREASES THE LEVEL OF OXYGEN IN A PERSON'S BODY. HELPING WITH THE HEALING PROCESS - PEOPLE ENJOY THE ANIMALS AND 'LIFE' THAT COMES FROM SITTING IN GARDENS -
THE INTERIOR ENVIRONMENT	<p>ARCHITECTURE AND HEALING</p> <ul style="list-style-type: none"> - ARCHITECTURE IS ABLE TO ASSIST WITH HUMAN WELLBEING, THROUGH THE USE OF OPEN, INTIMATE, WELL LIT AND VENTILATED SPACES - THE BUILDING SHOULD BE SENSITIVE TO ITS SURROUNDINGS AND NATURE. IT SHOULD SIT 'LIGHTLY' ON THE LAND - ALSO DICTATED TO BY THE COLOURS OF THE SPACE. - THE BUILDING WILL GIVE OFF THE SAME ENERGY THAT GOES INTO IT. SO IF PEOPLE PUT 'LOVE' AND 'CARE' INTO THE BUILDING THEN IT WILL GIVE OFF A POSITIVE ENERGY ONCE BUILT - LIGHT IS IMPORTANT WITHIN A BUILDING, IT MAKES A SPACE FEEL COMFORTABLE AND WELCOMING. IN COMPARISON TO DARK AND DINGY SPACES THAT ARE UNINVITING.
	<p>SICK BUILDING SYNDROME</p> <ul style="list-style-type: none"> - IT'S THE PHYSICAL AND PSYCHOLOGICAL DISTRESS A PERSON GOES THROUGH WHEN THEY ARE IN A POORLY VENTILATED ENVIRONMENT. THIS FEELING DISAPPEARS ONCE THE PERSON LEAVES THAT SPACE - AREAS SHOULD, PREFERABLY, BE NATURALLY VENTILATED - IF AREAS CANNOT BE NATURALLY VENTILATED THEN THEY SHOULD BE MECHANICALLY VENTILATED IN THE MOST EFFICIENT WAY WITH THIS ENERGY CONSUMPTION BEING OFFSET IN SOME OTHER AREAS OF THE BUILDINGS TO REDUCE THE OVERALL ENVIRONMENTAL IMPACT
	<p>COLOUR</p> <ul style="list-style-type: none"> - COLOUR IS IMPORTANT

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	<ul style="list-style-type: none">- DIFFERENT COLOURS CAN AFFECT HOW PEOPLE FEEL.- HOW A ROOM IS COLOURED ALSO BRINGS ABOUT DIFFERENT FEELINGS. LIKE A BLUE ROOM WILL EVOKE CALMING AND PEACEFUL FEELINGS WHEREAS A BRIGHT RED ROOM WILL MAKE THE PERSON ANXIOUS AND IRRITABLE- THERE ARE ALSO DIFFERENT SHADES OF COLOUR, FOR INSTANCE BRIGHT RED CAN AGITATE A PERSON IF USED IN A ROOM WHEREAS A WARMER EARTHIER RED IS MORE WELCOMING- ALSO THE AMOUNT OF COLOUR USED IN A ROOM CAN ALSO AFFECT THE PSYCHOLOGY OF A PERSON, A WHOLE ROOM PAINTED RED GIVES OFF A DIFFERENT FEELING THAN IF RED IS USED AS AN ACCENT- BROWNS GIVE OFF A MORE NATURAL AND WHOLESOME FEELING.- LIGHT YELLOWS GIVE OFF A CALMING FEELING IN THE ENVIRONMENT
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5 KEY QUESTION

What is the role of the architect in promoting human wellbeing?

THE ARCHITECT

1 THE ROLE OF THE ARCHITECT

The key question is whether architecture has a role to play in promoting wellbeing. The environment in the broad sense can be both a potent source of stress as well as concern for most individuals. The quality of the environment is an area in which architects do play a role. Environmental stresses can come from three levels. Firstly, the macro- context of the environment, for instance environmental degradation associated with city growth and the often associated pollution (air, water and noise). Secondly the intermediate context of the everyday hustle and bustle of neighbourhoods and city life or the lack of public, social and green spaces within the cities framework and thirdly, at the micro-specific context of one's home and working environment with the latter manifesting in the form of sick building syndrome (Day: 2002; 187-189).

Taking the macro context in consideration, architects do play a role in the development of cities but this role is limited. This is primarily the realm of city or town and regional planners as well as transport planners and infrastructure engineers. At any rate there are so many actors involved in 'city building' that the role of any one actor is diluted. The way in which cities unfold is also very much a function of national policy in the areas of; *inter alia*, housing, economics and transport.

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The intermediate context is at the level of perhaps a city neighbourhood or a city block and is probably the realm of urban design. There are many architects who steer their careers towards this area perhaps because of the ability to make a real difference or ‘big impact’ on many people which is mostly not achievable through designing a standalone building.

If architecture can as Day (1990) believes, be classified as a ‘healing art’ and contains ‘healing properties’ (Day: 1990; 138) surely we as both current and future architects, ought to be creating architectural environments to aid in human wellbeing?

2 UNDERSTANDING THE INTENTION

- Design settlements that do not contribute to urban sprawl.
- Design sustainable settlements that have higher densities, that support public transport and address easy access to employment and social facilities.
- Design in a manner that responds to the unique sense of place of the site.
- Design spaces for social interaction through good urban design.
- Design green spaces that soften harsh urban spaces and reduce heat buildup.
- Design recreation spaces that offer opportunities for active and passive exercise.
- Design water features that introduce tranquility.
- Design healthy buildings with natural ventilation and lighting.
- Design interior spaces that support healing and human wellbeing.

3 THE VISION

The overall vision is to create a Health and Healing Centre for Durban that is accessible to a cross-section of society and that provides a range of therapy options all housed within the building and surrounding gardens. The building design and choice of materials will all be focused on maximizing human wellbeing. In addition this Health and Healing Centre will be sited within a ‘green public transport belt’ to provide easy access to recreation opportunities and public transport.

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THE CLIENT

1 THE FUNDING AND REVENUE GENERATORS

The client for this Healing Centre is the City Health Department in conjunction with the St. Paul Anglican Church (next door to the site). The Provincial Department of Health (contributing 60%) and the City Health Department (contributing 40%) run a number of Primary Health Care services within the Durban metropolitan area; some of these include various hospitals, community health care centres and clinics. However there would be an interest for both these department's to contribute to this proposed healing centre facility, whereby it encourages 'prevention' of illness and promotes healthy living (www.kznhealth.gov.za). The St. Paul Anglican Church offers a host of community drives like soup kitchens and helping the less fortunate. Since they are already well documented around this area and already aid in assisting with the community's needs, this church would encourage healthy living and lifestyles.

THE CONTEXT AND SITE

1 GENERAL

The overall intent regarding site selection was to have a site that would be well utilized and would serve a cross section of society. The site must be one that is easily accessible from public transport, not only to ensure a long term viability but also to ensure that the site is not merely accessible by the higher income sections of society. Through this accessibility both non-paying and paying clientele are accommodated.

This site is a central location that is potentially accessible to the whole metropolitan population, from the main road networks and public transport- hence it is well connected into the urban movement systems. The site forms part of the heart of Durban's CBD with a large residential population and business component. The proposed Healing Centre is situated on the old municipal pool site on West Street alongside the informal market and St. Paul's Anglican church.

2 SCHEDULE OF ACCOMMODATION, FINISHES AND AREAS

The vision is to design a public building, namely a Healing Centre. This Healing Centre must not only respond to Durban's hot and humid climate but must be responsive to the immediate surroundings of

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the site as well as to the precinct as a whole. This schedule of accommodation was derived from considering relevant precedent studies and case studies as well as personal thoughts and additions.

TABLE 1: Schedule of Accommodation, Finishes And Areas

The schedule of accommodation was determined mainly by the analysis of precedent and case studies.

EXTERIOR OF THE BUILDING (GENERAL)

FUNCTION:	FINISH:	AREA:
ROOF	KLIPOK (OR APPROVED EQUIVALENT) ROOF SHEETING FASTENED ON 65MM GALVANIZED MILD STEEL PURLINS WITH SUITABLE INSULATION TO UNDERSIDE OF ROOF SHEETING. GALVANIZED MILD STEEL TIES, FASTENED AND ATTACHED TO THE STAINLESS STEEL EYELETS	2165M ²
TIMBER PERGOLA	TREATED LAMINATED TIMBER.	1197M ²
TIMBER LOUVERED SLATS	TREATED TIMBER LOUVERS FIXED TO GMS ROD	N/A
PRINTED CANVAS PANELS	PERFORATED SCREEN PRINTED CANVAS (UV RESISTANT) AND CUSTOM DESIGNED, ATTACHED TO GMS FRAME. HOT DIP GALVANIZED MILD STEEL C-SECTION, BOLTED AS PER ENGINEER'S DETAIL.	N/A
ALL WINDOWS	ALUMINUM FRAMED WINDOWS BY SPECIALIST. COLOUR "WHITE ANODISED" WITH GLASS INFILL (TO COMPLY WITH THE SABS 0400). NOTE: ALL WINDOW SIZES ARE TO BE FABRICATED AS DETAILED ON DRAWINGS.	N/A
ALL BALUSTRADES	STAINLESS STEEL ROUND PIN MOUNTED HANDRAIL WITH STAINLESS STEEL ROUND POSTS WITH STAINLESS STEEL WIRES.	N/A

INTERIOR OF THE BUILDING

FUNCTION:	FLOOR FINISH:	WALL FINISH:	CEILING:	AREA:
ADMINISTRATION	HARDWEARING CARPET	FACE BRICK	SUSPENDED	69M ²
INFORMATION & FOYER	PORCELAIN TILES	PLASTERED AND SUITABLE PVA PAINT. ONE WALL (ACCENT	SUSPENDED	53M ²

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		WALL) TO BE FINISHED WITH STONE CLADDING.		
FOYER STORE	SCREED	PLASTERED AND SUITABLE PVA PAINT.	RHINO BOARD	11M ²
BEAUTY ROOMS (x 4)	T & G TREATED TIMBER FLOOR BOARDS.	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	38M ²
WAITING AREAS (x 4)	TREATED CONCRETE	FACE BRICK ENTRANCE WALL: TREATED TIMBER.	SLAB ABOVE	178M ²
SHOPS (x 9)	PORCELAIN TILES.	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	173M ²
PSYCHOLOGY ROOMS (x 2)	T & G TREATED TIMBER FLOOR BOARDS.	PLASTERED AND SUITABLE PVA PAINT. ONE WALL (ACCENT WALL) TO BE FINISHED WITH SLATE.	SUSPENDED	52M ²
PSYCHOLOGY ROOMS STORE (x 2)	SCREED	PLASTERED AND SUITABLE PVA PAINT.	RHINO BOARD	4M ²
MASSAGE ROOMS (x 2)	T & G TREATED TIMBER FLOOR BOARDS.	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	22M ²
RESTAURANT	PORCELAIN TILES.	PLASTERED AND SUITABLE PVA PAINT. ONE WALL (ACCENT WALL) TO BE FINISHED WITH STONE CLADDING.	SUSPENDED	108M ²
RESTAURANT KITCHEN	NON-SLIP TILES	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	53M ²
CAFÉ	PORCELAIN	PLASTERED	SUSPENDED	64M ²

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	TILES.	AND SUITABLE PVA PAINT.		
CAFÉ KITCHEN	NON-SLIP TILES	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	21M ²
HYDROTHERAPY ROOMS	TREATED CONCRETE	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	72M ²
MULTIPURPOSE HALL (x 2)	T & G TREATED TIMBER FLOOR BOARDS.	PLASTERED AND SUITABLE PVA PAINT. ONE WALL (ACCENT WALL) TO BE FINISHED WITH STONE CLADDING.	NO CEILING (BABRIC DRAPPED MOBILES)	196M ²
BATHROOMS	PORCELAIN TILES	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	218M ²
PHYSIOTHERAPIST (x 2)	CARPET (MEDIUM WEARING)	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	46M ²
CHIROPRACTOR (x 1)	CARPET (MEDIUM WEARING)	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	33M ²
ALTERNATIVE HEALER CONSULTATION	CARPET (MEDIUM WEARING)	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	17M ²
ALTERNATIVE HEALER THERAPY ROOM	SCREED	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	17M ²
HOMEOPATHY	T & G TREATED TIMBER FLOOR BOARDS.	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	68M ²
READING ROOM	CARPET (MEDIUM WEARING)	PLASTERED AND SUITABLE PVA PAINT. ONE WALL (ACCENT WALL) TO BE FINISHED WITH STONE CLADDING.	SUSPENDED	108M ²
OUTSIDE GARDEN (READING ROOM)	T & G TREATED TIMBER FLOOR	GLASS	N/A	57M ²

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	BOARDS. TIMBER PERGOLA ABOVE (NB)			
PRIVATE GYM (WORKOUT AREA)	CARPET (MEDIUM WEARING)	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	322M ²
PRIVATE GYM (STUDIOS) (x 2)	T & G TREATED TIMBER FLOOR BOARDS.	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	26M ²
PRIVATE GYM (CONSULTATION AND ENTRANCE)	PORCELAIN TILES	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	62M ²
CONFERENCE & WORKSHOP ROOMS	PORCELAIN TILES	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	274M ²
COFFEE AREA KITCHEN	PORCELAIN TILES	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	13M ²
COFFEE AREA STORE	SCREED	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	6M ²
MUSIC & RECORDING ROOMS	CARPET (MEDIUM WEARING)	PLASTERED AND SUITABLE PVA PAINT.	SUSPENDED	174M ²
CIRCULATION CORES	SCREED	PLASTERED AND SUITABLE PVA PAINT.	NO CEILING	60M ²
SERVITUDES / SERVICES AND GENERAL STORE	SCREED	PLASTERED AND SUITABLE PVA PAINT.	RHINO BOARD	95M ²
			GRAND TOTAL	2761M²

* Since this project promotes public transport usage there is no parking on site. All cars (accessed by Pine Street) are to use the Workshop parking.

3 SITE SELECTION

3.1 GENERAL

As mentioned earlier this Centre must be easily accessible by poor and wealthy alike. Hence, the decision to site the Centre within Durban's CBD which is the hub for public.

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Figure 1: Shows the three sites in relation to one another (Google Earth 2010)

The following criteria were found to be vital when selecting a site which was best suited for a Health and Healing Centre around the Durban area (Figure 1). The criteria are listed below:

3.1.1 Sense Of Place

- An area with a character and identity of its own
- Subtle elements that respond to an individual on an emotional & mental level

3.1.2 Green Area

- The site should be either near or adjacent to a green area
- Creating an awareness of the site and what it possesses

3.1.3 Accessibility

- How easily accessible is the site to its target market?
- Close proximity to public transport facilities
- Literal geographic location of the site

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3.1.4 Connectivity

- site must be well connected into the urban system rather than being isolated
- The level of legibility of the space and surroundings

3.2 THE WORKSHOP SITE



Figures: Images of the Workshop site (Author 2010)

3.1.1 Sense Of Place

This site has a 'sense of place', there is a feeling of openness and tranquility. There are minimal city noises and overall it is a pleasant and aesthetically pleasing environment. The site has its own character and fits in well with the cityscape in the background.

3.1.2 Green Area

This site is situated right near a public green space. It is frequently used by people from all walks of life. One can see people relaxing, walking around the site or sitting on the grassed areas. There is even a central area where people are able to come and 'express' themselves through public speeches, drama and dance etc.

3.1.3 Accessibility

Public transport and parking is readily available on this site. There is parking underground by the workshop. People are constantly moving in and out of the site from surrounding streets and transport areas. This is in walking distance to many main facilities and social nodes.

3.1.4 Connectivity

Similar to that of accessibility, this site possesses good connectivity as well. Other public buildings are close by and the site is not isolated or difficult to get to (Figure 2)

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Figure 2: Images Connectivity of the workshop site (Author 2010)

3.1.5 General Notes

From a more general point of view, there are many pleasant views around the site. However the site is large and therefore one can feel lost in it. In addition to this, the parking underground can cause a problem for the design creativity (structure). However overall there is a feeling of 'place' and it is a fair site option.

3.2 THE MEDWOOD GARDENS AND POOL SITE



Figures: Images of the Medwood Gardens and Pool site (Author 2010)

3.2.1 Sense Of Place

This site has a character of its own, there is an informal market which runs next to the old pool site and the Medwood Gardens site is right next-door to the Pool. There is a 'special' atmosphere this site gives off. It is peaceful and tranquil. It feels like a green oasis within the city. It is an open area

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flooded with light and natural air movement. The noise pollution around the site is almost nonexistent. The noise is drowned by both the fountain and buffered by the plants and vegetation.

3.1.2 Green Area

Medwood Gardens site is a peaceful green space with a large water feature and activities situated inside. It is one of the few green sites found within Durban's CBD. The old pool site was closed down and is not in use anymore, this has led to the site becoming disused and dilapidated. Therefore this allows for a good opportunity to change the site and create a building which is useful.

3.1.3 Accessibility

Similar to the Workshop site, the Medwood Gardens and Pool site is readily accessible to the people around the area. There is a bus drop off zone right across the way from the site with taxi's and other modes of transport regularly frequent this area. In addition, this site is walking distance to the main shopping and commercial heart of the CBD.

3.1.4 Connectivity

This site connects to many different activity nodes that are important to Durban's heritage (Eg: City Hall, Post office, Francis Farewell Square etc) (Figure 3)



Figure 3: Images Connectivity of the workshop site (Author 2010)

3.1.5 General Notes

- The site overall offers different opportunities

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- Subtle energy from the church next door
- There is nature and wildlife in the site- birds and insects
- Frequently used public space of Medwood gardens is a great back drop for the main site option
- Site is small enough to gain real interaction with the neighbouring buildings as well as the inside outside connections

SITE 3: THE VICTORIA EMBANKMENT



Figures: Images of the Victoria Embankment Site (Author 2010)

3.3.1 Sense Of Place

The Victoria Embankment lacks a 'sense of place', the land feels isolated from the rest of the CBD. It is very much a dead green space. This space has become a haven for homeless people. Overall there is a negative feeling about this site which is perhaps associated with the perception of crime and the lack of safety but it feels like a very neglected area.

3.3.2 Green Area

As a green space it is readily available to the people, however because of the barriers it has (the road and railway) people are cut off from this site and therefore will not normally go out of their way to use this space. Overall the area is run down and dirty.

3.3.3 Connectivity

There is a lot of on-street parking immediately adjacent to the site and the site is located on a main collector road which aids accessibility to this site for private car users, however there is no defined public transport linkages which exacerbates its lack of use from the perspective of those that rely on public transportation. From a pedestrian point of view, this site is not easy to access since there are no designated pedestrian routes that cross the dual carriageway and bring people to the site.

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3.3.4 Connectivity

There is limited connectivity to this site since the road and train tracks become a divider of this site (Figure 4)



Figure 4: Image of the Victoria Embankment site and its connectivity (Author 2010)

3.3.5 General Notes

From a general point of view, the noise levels are very high around this site. There is no 'sense of place' even though there is some nature.

Table 2: The Sites Ratings

Rating	Connectivity	Accessibility		Green Space	Sense of Place	Over all Wellbeing	TOTAL
		Vehicular	Pedestrian				
Site 1	3	4	3	4	3	4	21
Site 2	4	4	3	5	5	4	25
Site 3	3	3	2	2	2	1	15

3.5 FINAL SITE CHOICE: SITE 3 MEDWOOD GARDENS / POOL SITE

The overall idea on site choice was to choose a site that would be well utilized and serve both the 'poorer' and middle class sector of the population. The site had to be one which is easily and readily

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accessible by public transport, to ensure high usage levels which affect the long term financial viability of the Centre but also to allow the poorer sectors of society to have access. Through this accessibility both non paying and paying cliental are accommodated.

This site is centrally located and well connected into the movement systems which gives it accessibility to the whole metropolitan area. The site becomes part of the heart of Durban's CBD with a large residential population and business component.

The Medwood Gardens site stands out as the best site for the proposed Healing Centre

THE DESIGN BACKGROUND

1 THEORIES

This design is based on three major theories, *viz.*, Lynch's theory, the concept of Genius Loci: a 'sense of place' and the Gestalt theory. These theories are discussed in more detail below.

1.1 Lynch's Theory: Image of the City

Kevin Lynch explains in 'Image of the City' (1960), how individuals instinctively orientate themselves within the environment. The issues of legibility of form become important issues that need to be taken into consideration by urban planning, since there needs to be a communication of meaning between the inhabitant and the environment. The theory is divided into 5 'markers' (Lynch: 1960; 47-50).

Lynch (1960) emphasizes the importance of understanding the public input on the cities and buildings in relation to the area as a whole. By direct interaction with the public, Lynch (1960) gains information on how people subconsciously understand the environment and the aspects an individual regards as useful when navigating through the public environment. Lynch (1960) expresses these understandings by means of visual and physical markers throughout the city (Lynch: 1960; 47-50). These visual and physical markers allow for structure by relating to the greater environment and in turn increase the legibility and clarity of the public area. There are five main markers namely; paths, edges, districts, nodes and landmarks which have been listed and explored below.

By using these 'markers' as a guideline, one is able to draw a conclusion on how various architectural characteristics can be used, therefore aesthetics and style is not the only important element in a

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building. Each human is an individual, and with this individuality comes specific likes and dislikes, these emotions dictates the users' opinion. For example, Gateway and City Hall display two very different architectural styles, however an individual may like both buildings equally, despite their vast differences. This could be the result of the strong influence that the community and or environment play on an individual's opinions.

1.2 Genius Loci: A 'sense of place'

The Genius Loci (or "spirit of place") concept, is a reality which an individual is faced with on a day to day basis. The individual feels at peace when they can identify with the place. The concept of 'genius loci' is a complex and multi-layered one that may differ from author to author, some holding similar views while others are conflicting. The concept of 'genius loci' is not an easy one to describe in words as it relates in many ways to how an individual's emotions and feelings are 'stirred' in a specific environment. At a very practical level many of us can relate to an 'instinctive feeling' or a 'special quality' that arises from the buildings, the urban spaces, 'city fabric', and the bare bones of the building blocks making up a place, be it rural or urban (Norberg-Schulz: 1980; 5).

This theory emphasizes the importance of identifying with a specific place and getting in tune with the area.. It directly links to the various components that constitute the 'sense of the city' and how one feels therein. It also psychologically links to how an individual feels and interprets an environment, space or place; this can be both a negative and positive reaction. This highlights the importance of creating architecture that has a positive impact on those experiencing it This is possible through careful and thoughtful design and use of materials (Norberg-Schulz: 1980; 5).

1.3 The Gestalt Theory

"We cannot really be said to perceive the objects which are the source of the stimulation, but only the sensations which are caused by this stimulation." (Hamlyn: 1969; 2)

Gestalt theory is a psychologically based theory that relates to each individual's interpretation of a space, the environment, general surroundings, scale of objects etc. The human wellbeing is closely related to a person's physical, mental and spiritual vitality. The gestalt theory becomes an important link to a person's perception and feeling. From a more practical sense, as individuals we perceive and understand objects and areas, scenery etc in different ways. It is important to understand how this

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theory relates to human wellbeing. The size of a building or an area will effect an individual's perception of space and the consequences thereof. For instance if an individual is in a small room, the person could feel tense, uneasy and to some degree claustrophobic as opposed to an open and less stuffy room. The same idea applies with the scale of buildings, for instance a large building with an oversized entrance could be intimidating and may evoke an uneasy feeling amongst those who enter the building as they feel engulfed in this large space. Whereas a building designed on a human scale and is more 'life size' could make the person feel more comfortable (Hamlyn: 1969; 11-16).

In conjunction with the dissertation and above mentioned theories, concepts developed. These concepts will be explored below.

2 CONCEPTS

2.1 Movement

-Pedestrian/ People moving through the public spaces and through the building itself (Figure 5)



Figure 5: Sketch movement from one point to the next (Author 2010)

The concept of movement is present from the macro to meso and micro scale, ending with the movement at building level. The macro level explores the vehicular movements across the metropolitan area of Durban (emphasising the issues of urban sprawl). At the meso and micro level the vehicular movement includes the park and ride facilities and the people movers. Finally ending with the movement in and around the building, of how people move in and around the spaces.

2.2 Green Space

- An Urban Park extending from Grey Street to the Beach front (Figure 6)

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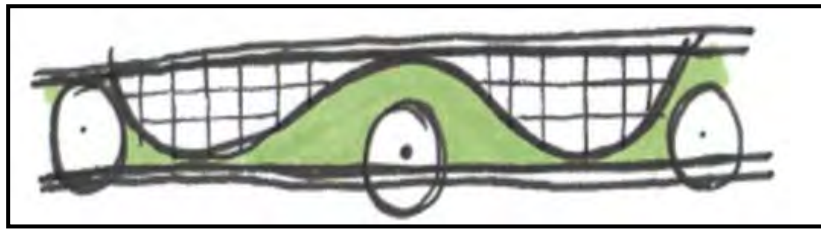


Figure 6: Sketch diagrammatically representing the Urban Green Space (Author 2010)

The concept of the urban green park is one of the most prominent concepts for this design. This Urban Green Park runs from Grey Street past the Medwood Gardens site to the Beach front. West street becomes a purely pedestrian and people mover orientated street with private motor vehicles being excluded.

2.3 Linkages

- Green linkages; people & building (Figure 7)



Figure 7: Sketch diagrammatically representing linkages (Author 2010)

This concept encourages the linkage between the proposed green areas as well as how people will use these linkages. There is a major West-East link (Grey Street to beach front) and a subsidiary North-South link (The Workshop to the Victoria Embankment)

2.4 Interaction

- Between public spaces & people; people & people; people & buildings (Figure 8)

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Figure 8: Sketch diagrammatically representing interaction (Author 2010)

This concept explores the interactions between various elements of the project. For instance the one interaction is people and the public space, how a public space brings people together, allows them to interact with each other, socialise and create networks. Another interaction is between people and the building, how people use the building and find it user friendly, how they connect to the building on a subconscious level with the main aim being for people to feel at ease in this building.

3 THE SUBSIDIARY CONCEPTS

3.1 Functionality and Comfort

This concept highlights the idea of creating a building within which an individual will feel at ease yet never compromising the functions of the building

3.2 Function Specific

- Colours, sizes and design are appropriate to the specific functions of each of the spaces

3.3 Constriction and Release

- Through the use of courtyards (Figure 9)

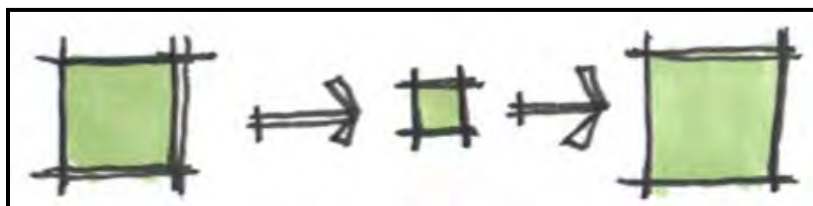


Figure 9: Sketch of constriction and release (Author 2010)

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The vision was to create courtyards that vary in size and shape and to design the building around these courtyards. Courtyards create marker points that improve the legibility of the building. The courtyards also provide relief from the constriction of the buildings corridors and enclosed areas.

3.4 Materials

- Interior and exterior materials are tactile and display a natural choice of materials (Figure 10)



Figure 10: Diagrammatic representation of materials (Author 2010)

This concept explores the idea of which materials should be chosen over other ones. In this project the choice to use more tactile and natural materials was the preference.

PRECEDENT STUDIES

In this section a brief explanation of the main precedent studies will be explored.

1. CENTRAL PARK: NEW YORK CITY MANHATTAN, NEW YORK



Figures: Figures of Central Park (www.aviewoncities.com)

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1.1 What was learnt

- Explores how parks can be important for the city by offering a 'break' to the harshness of the concrete jungle
- How a green space can generate a recreation facility within an urban framework.
- The idea, was to "create a place where people could relax and meditate..." and people would see the park as a "...kind of social experiment where people from both upper and lower classes would meet (www.aviewoncities.co).

2. FORDOUN HEALTH SPA: NOTTINGHAM ROAD, KWA-ZULU NATAL



Figures: Images of Fordoun Health Spa- the building and courtyard (KZ-NIA: 2005; 7).

2.1 What was learnt

- Positioned centrally is the reception and restaurant, which are entered off a large public courtyard out onto a quiet garden and green lawns .
- Concept is the central public space, which seems to emulate the form of a village street, connecting buildings together. Through the use of low stone walls between the buildings it creates a visual link from the village to the countryside (KZ-NIA: 2005; 7).

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3. MELROSE ARCH: JOHANNESBURG, GAUTENG



Figures: Images of Melrose Arch, the pedestrian and vehicle areas and the different paving used (Author: 2010).

3.1 What was learnt

- The concept for this urban design precinct was based on medieval town planning principles that contain mixed-use and permeability, with a clear definition of public and private domains.
- Melrose Arch is internally ordered by two main roads and orientated around two public squares. High Street is surrounded by mixed-use buildings that encourage the movement of pedestrians along the retail sides.
- The main objective was to create and encourage pedestrian movement as well as to create an area that promotes activities, public surveillance as well as ownership of this public space.

DESIGN DECISIONS (MACRO- MESO- MICRO- BUILDING)

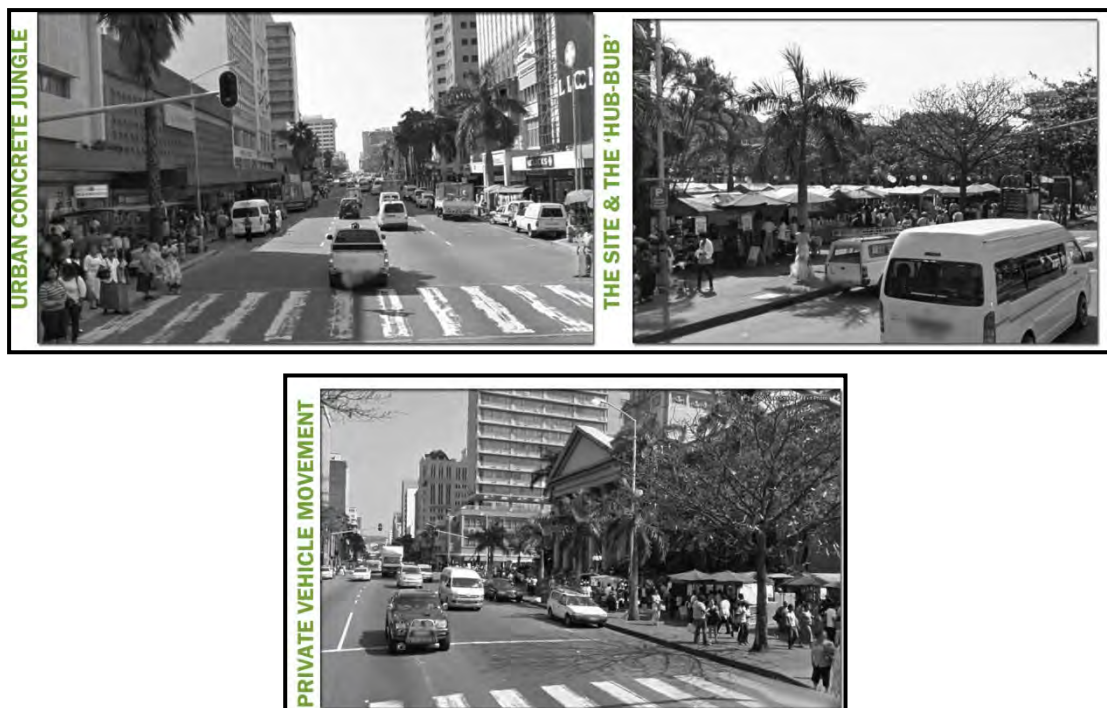
1 URBAN SPRAWL (MACRO)

Reducing car usage in high-density cities is one of the significant ways of increasing a city's resource efficiency. The presence of a good public transport system enables city inhabitants to reduce their dependency on private cars without sacrificing mobility. Such a move potentially allows for higher living densities without the roads becoming blocked up and mobility suffering. Such cities often exhibit mixed land uses with residence, employment and recreation in close proximity. In turn these cities can offer larger opportunities for sustainability and therefore can create a more positive feeling of wellbeing for inhabitants (Jenks et al: 1996; 1-10). Michelson (1976) expresses that the cities (macro context), neighbourhoods (meso context) and housing (micro context) all make a difference in

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the manner in which people live their lives and how their wellbeing is affected (Michelson: 1976; 3-4).

The urban typology of sprawl is examined since the city of Durban, which is 'home' to the case study being examined in this document, is a low density city characterised by urban sprawl. The issues, characteristics and consequences of sprawl will be explored as well as how commuting affects human wellbeing negatively. However an argument can be made that any major interventions at this scale really fall within the realm of regional planners and infrastructure engineers rather than architects. Though one may have instances where architects are instrumental in introducing higher densities into the built form and in this way play a role in combating urban sprawl, the ability to do this is dependent on other issues such as zoning and the presence of public transport systems which fall outside the realm of architects. In fact overcoming urban sprawl requires a major co-ordinated effort on the part of many built environment professionals supported by changes to national policy such as the subsidised housing programme in South Africa which is one of the major drivers for continued low density development as well as a major shift towards a good quality public transport system (Figures 11, 12 & 13).



Figures 11, 12 & 13: Images of Durban's CBD (Author: 2010).

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1.1 A Brief History of Durban's Public Transport System

- Durban's first form of public transport was a coach service between Durban and Pietermaritzburg and ran for the first time on 15th March 1860 (Figure 14)
- The Dale brothers started a horse coach service in the town in the CBD (circa 1870)
- 25th March 1880, horse-drawn double-decker trams were introduced by Ramsay Collins.
- 1 August 1899, the Durban Municipality bought out the private Durban Borough Tramways Company.



Figure 14, 15 & 16: Images of Durban's CBD and transport systems.

1.1.1 Truck Busses

- Indian entrepreneurs of truck busses which were trucks converted to carry passengers (July 1919).
- Truck busses were the forerunners of the more than 250 bus lines and more than 450 busses which, in 2003, are still providing a valuable service to the community. (Image 15)

1.1.2 Buses

- Durban Transport first three single-decker Thornycroft petrol-engined buses (15 June 1925) with the last diesel double-decker bus ran on 30 April 1967 (Image 16).

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1.2 MACRO CONTEXT (DESIGN DECISIONS)

- Revitalisation of the inner city rather than development on the periphery that perpetuates urban sprawl.
- Focus on movement by public transport. Thus reducing carbon emissions and noise pollution by reducing the use of private transport.
- Provision of park and ride facilities provide support for public transport usage through eliminating the cost of inner city parking triggered by private car usage.

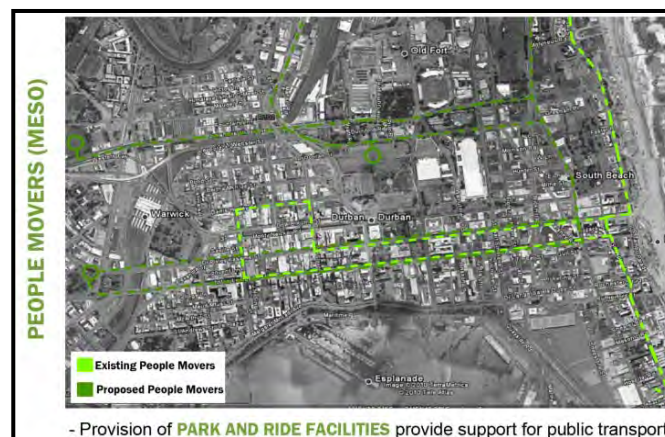


Figure 17, 18 & 19: The vehicle movement, park and ride and people movers (Author: 2010).

2 MESO

2.1 Urban Green Spaces and What They Offer

Living in the heart of a city can offer high levels of accessibility, convenience and opportunity. This is probably why many people across the world choose to live in cities. However many city environments are not pleasant places to live or to raise a family. Many cities suffer from a range of ills inter alia,

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crime, urban blight and slums or squatter settlements, traffic congestion and pollution, high levels of noise and heat, poor provision of social amenities especially green spaces and general environmental degradation. If one has the personal resources one can choose the city neighbourhoods with the highest amenity but for poorer folk there is little choice other than seeking out a space to eke a living.

In general, urban life and its stressors can motivate individuals to seek a better quality of life in the suburbs. Research from Hartig (1993), Kaplan & Kaplan (1989) and van de Berg, Hartig & Staats (2007), indicates that this move involves more than a simple 'romantic idealisation of nature', rather it can be seen that contact with natural environments, rather than the harshness of the concrete jungle, can effectively reduce stress and provide restoration from the effects of both stress and mental fatigue as well as contributing towards psychological restoration (Figure 19 & 20). Contact with nature also allows a reduction in the psychological load that people carry and in this way leads to a renewal of one's 'capacity to focus' which is critical for efficacy in the workplace and in relationships. Ironically this move to suburbia exacerbates urban sprawl thereby increasing vehicle usage, and air and noise pollution (van de Berg, Hartig & Staats: 2007; 80

Green spaces in cities can be viewed at a macro and a meso level. At a macro level, green spaces are planned as a network that protects biodiversity and the provision of environmental services. The emphasis in this chapter is placed on the meso level where urban green spaces such as parks and public squares are considered.

Green areas within built up cities offer a range of services or amenity to the city dweller. Trees and natural vegetation absorb carbon dioxide and release oxygen. In a city environment with a myriad of sources of air pollution, green areas can make a significant contribution. This is why large urban parks are often referred to as 'green lungs' (www.wordpress.com). Green spaces provide visual relief from the concrete and asphalt. They offer the opportunity to recreate both passively and actively. Simply being able to go for a walk in a quiet and natural landscape, read a book on a park bench or picnic with friends presents a wonderful opportunity in a bustling city environment (Figure 1). Possibilities for being active in such a space abound. Cycling, running, 'jungle-gyming', hitting a ball or throwing a frisbee offer opportunities for health supporting activity.

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Figure 19: Shows how creating green spaces, with greenery, water features and seating areas can create a retreat where people are able to sit and take a break from the fast 'on the go' city lifestyle (Author 2009)

City parks are perhaps even more important for low income city inhabitants. There is no admission fee and in the absence of resources that may fund alternative opportunities for exercise or for entertaining the kids, public parks offer substantial opportunity and amenity. Just as important are the opportunities for social interaction and networking that these spaces offer. Social capital or the value of social networks is particularly crucial for poor residents who may need to draw on their friends or neighbours in emergencies or times of need.



Figure 20: Diagrammatically shows how people would be able to sit around and socialise with one another in green spaces, and in so doing create social connections and links. These connections and links all aid in more positive interactions and feelings, thereby potentially contributing to the wellbeing of the individual. (Author 2009)

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2.2 MESO CONTEXT (DESIGN DECISIONS)

- Encourage as much pedestrian movement past the site as possible through the introduction of a major public transport/urban park/pedestrian movement spine from the commercial core of Durban's CBD to the Beachfront (Figure 21, 22 & 23)
- Ease of movement through the city from one activity node to another through the green space and mixed use areas as a result of pedestrian-friendly interventions and good urban design.
- Introduce green spaces and parks from Grey Street to the Beach Front.
- Green space- promotes recreation and social interaction (Figure 24 & 25)
- Green linkages both east-west (Grey Street to the Beach front) and north-south (links from the Workshop to the Victoria Embankment)

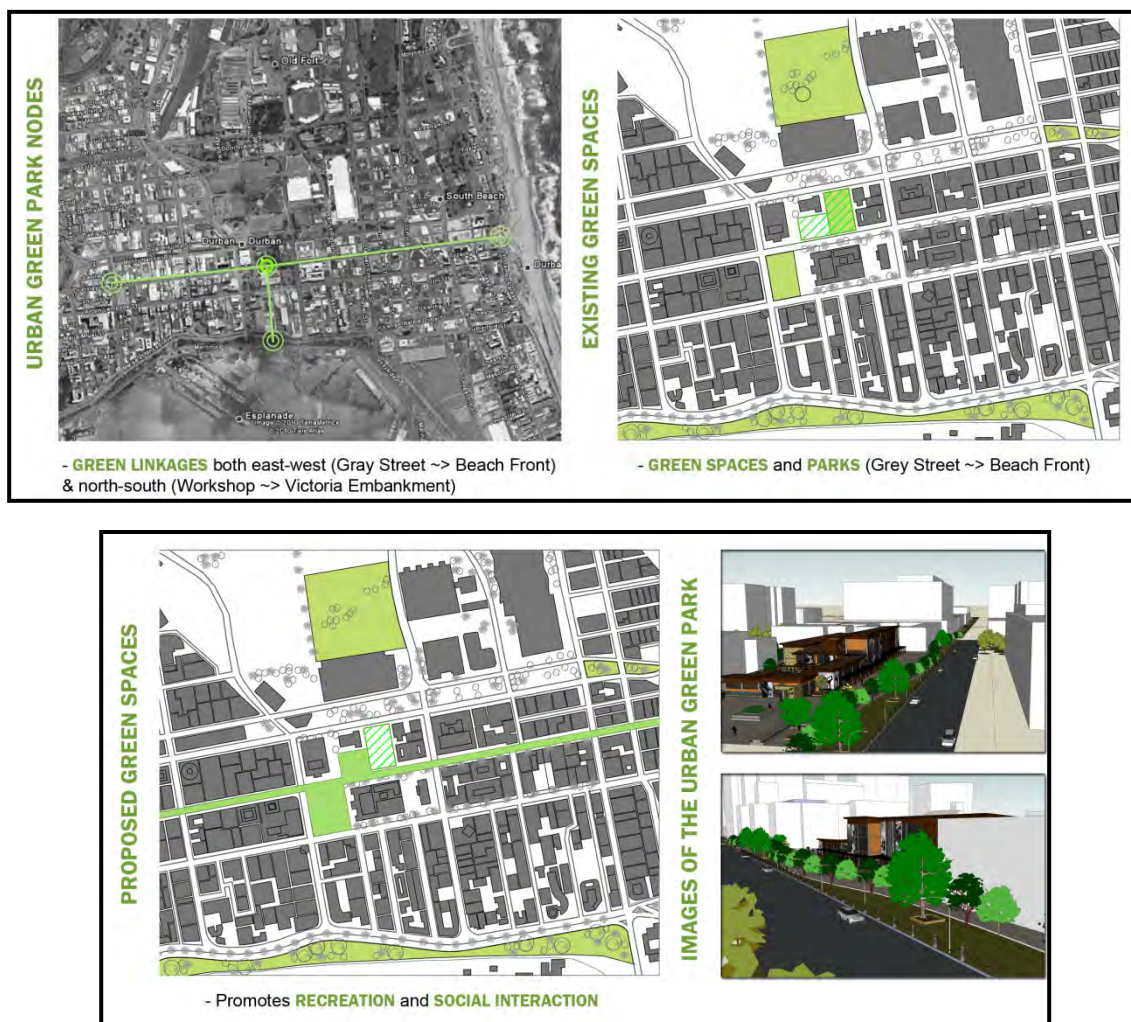


Figure 21-25: The Urban Green Park (Author: 2010).

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3 MICRO (DESIGN DECISIONS)

- Public Spaces provided at entrance to building as a gathering point which will ‘advertise’ the Healing Centre to pedestrians. On the West Street side there are shops and a restaurant and cafe that link the building to the street and are ‘people attractors’ (Figure 26, 27, 28, 29 & 30)
- Interaction between the people in the public spaces through the provision of urban furniture and resting areas. Through these spaces people are able to sit on the seating areas and interact with different people (Figure 31)

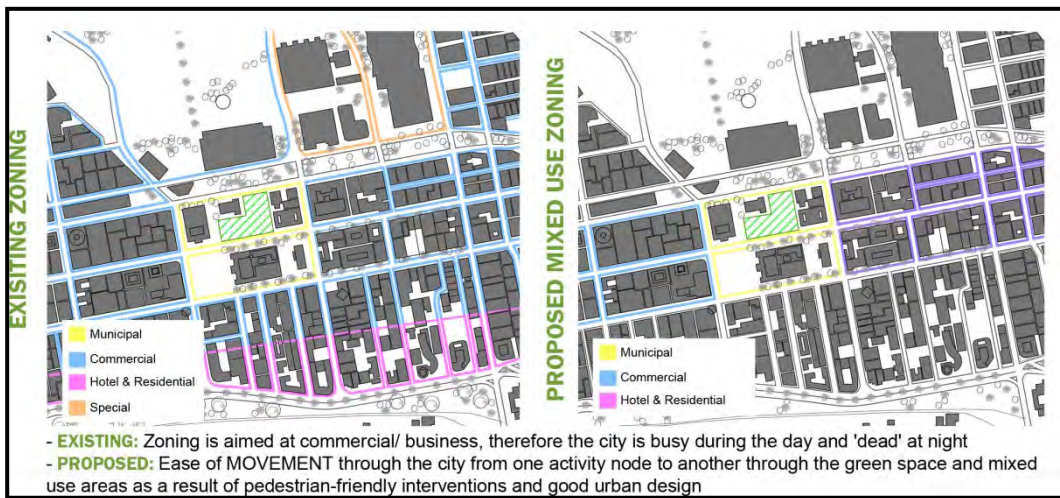


Figure 26 & 27: The existing and proposed zoning (Author: 2010).

Figure 28, 29 & 30: Below shows the mixed use intervention. Revamping and refurbishing existing buildings and converting them into mixed use developments



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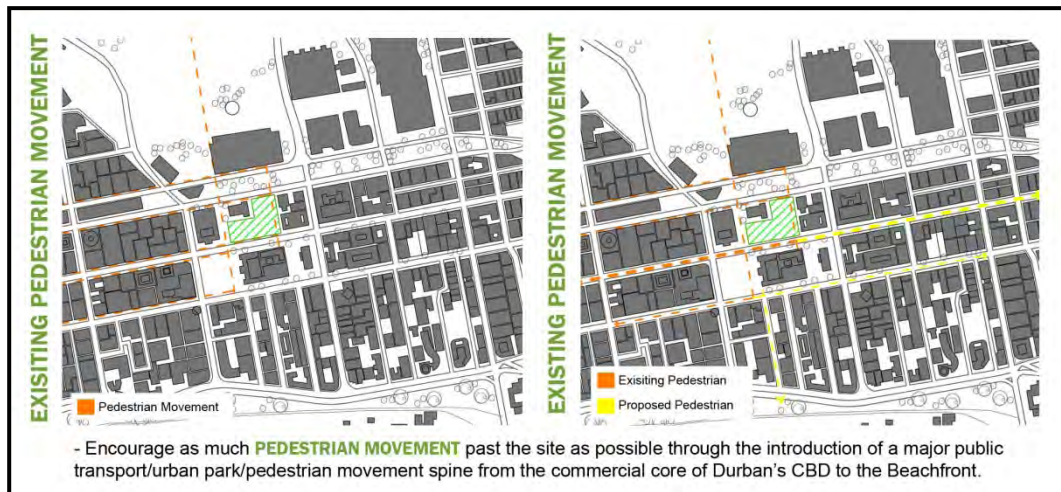


Figure 31: The existing and proposed pedestrian (Author: 2010).

4 ARCHITECTURE

4.1 How Architecture Can Generate a Positive Wellbeing

“When you are in a healing environment, you know it, no analysis required. You somehow feel welcome, balanced and at one with yourself and the world. You are relaxed and stimulated and invited to expand. You feel at home”- (Venolia: 1988; 7)

The world is constantly evolving, and with these changes comes a pull towards respecting our relationship to the earth. In response to these changes particularly in the last 10 or 20 years, some designers have opted to design architectural environments that assist in an individual's positive perception of the building and place as well as sustainable and eco-friendly building methods. Pearson (1994) explores the idea of sustainable ‘healing’ type development and expresses that, it is important for architecture to make reference to the Earth’s environmental issues and the wellbeing and health of humans as Earth’s inhabitants. The architecture should relate and be positive to the inhabitants’ body, mind and spirit. This sort of architecture is said to synchronise with the natural forces and evolves with the local ecosystem. This architecture supports health and life and brings regeneration to the body and soul.

"Medical and psychological researchers agree that self-esteem and a positive outlook are potent factors in our body's ability to resist disease." (Venolia: 1988; 11)

According to cultural paradigms of ancient cultures and many indigenous cultures of today, it is impossible to separate the health and wellbeing of the body from the wellbeing of the spirit. For instance, in traditional oriental medicine it is not about the infection or sickness but rather about the

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'imbalance' in your life. This underlying philosophy is based on the restoration of balance and harmony within the person as a whole. However this not so with the conventional Western medicine and science, which has diverged from such classical traditions. Philosophers such as Frijof of Capra, Rupert Sheldrake and James Lovelock, explore how the current mechanistic world view and the 'disconnection with spirit' in the specialist areas of modern science are considered to be outmoded and destructive (Pearson: 1994; 49).

Day (1990) explores the various elements of architecture and what constitutes 'Place of the Soul Architecture' which is considered as 'architecture with health-giving intent'. It emphasises that architecture is part of the built environment and the building ought to become integrated with its surroundings. There is a difference between building types- the one type is subtle and sits lightly on the ground, while the other sits forcefully on the ground and becomes dominant in its positioning. These dominant building types are usually accessible by car and are artificially ventilated and lit. These buildings are neither site nor climate specific and can be sited anywhere in the world. To create a building that 'heals' one needs to create a harmonious 'place' that brings change through the means of 'organic' development that is sensitive to the site and emphasise its naturally occurring qualities. The materials of the building too need to be nourishing to the human being and be designed to minimise pollution (Day: 1990; 18-19).

4.2 The Choice in Materials

"On the whole, people do not look at architecture, nor at materials. They breathe it in. It provides an atmosphere, not a pictorial scene" (Day: 1990; 113)

It is not only the configuration of the space that is important for an individual to experience the space in a positive light but the building materials also play a prominent role. Every building material has its own individual quality. For instance wood is made from trees and people therefore perceive wood to be warm and have 'life'. Bricks also have a physical appeal to them since it gives off texture, a sense of 'touch' and emulates the warmth that is given off by the kiln when the bricks are baked. On the other hand, steel is hard, cold and gives off a feeling of powerful industrial machines. Plastic, is almost 'alien' whereby it has negative molecular technology that makes up the plastic and is bound by no structural qualities. A similar view is associated to concrete. These qualities can be put to the visual and 'feeling' test whereby an individual will instinctively feel 'happier' and more 'emotionally' warmer in a room of unpainted wood, in comparison to a hard and cold concrete room. "Materials are raw ingredients of art, but they affect our emotions", so if a non oppressive building design was

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finished in timber or brick the building would more than likely be perceived in a positive light, in comparison to the same design finished in concrete, where it would feel cold and removed (Day: 1990; 112-113). The materials chosen in a building are therefore important to the manner in which the building is perceived by the person on the street as well as its inhabitants.

5. THE BUILDING (DESIGN DECISIONS)

- The design is very much focused on functionality and the comfort of the building's inhabitants rather than on iconic architecture going all out to make some sort of public statement.
- Human-scaled entrance with building height graded up towards the Public Works building side.
- Constriction and release through the use of courtyards.
- People drawn through the building organically by the 'staging' of spaces.
- Provision of nature in the form of gardens and water features.
- Natural lighting and ventilation.
- Interior and exterior materials, tactile and natural material choice (Figures 32-35)



Figure 32, 33, 34 & 35: The exterior images of the materials used on the building.

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Figures: Images of the building (Author 2011)

6. THE INTERIOR SPACES (DESIGN DECISIONS)

- Designed on a small floor plate concept, thus encouraging natural ventilation and lighting
- The materials are also tactile and natural
- Colours, sizes and design are appropriate to the individual function of each space
- Overall the design is of a 'simple' nature that people are able to feel comfortable, on both conscious and subconscious levels (Figures 36 & 37)

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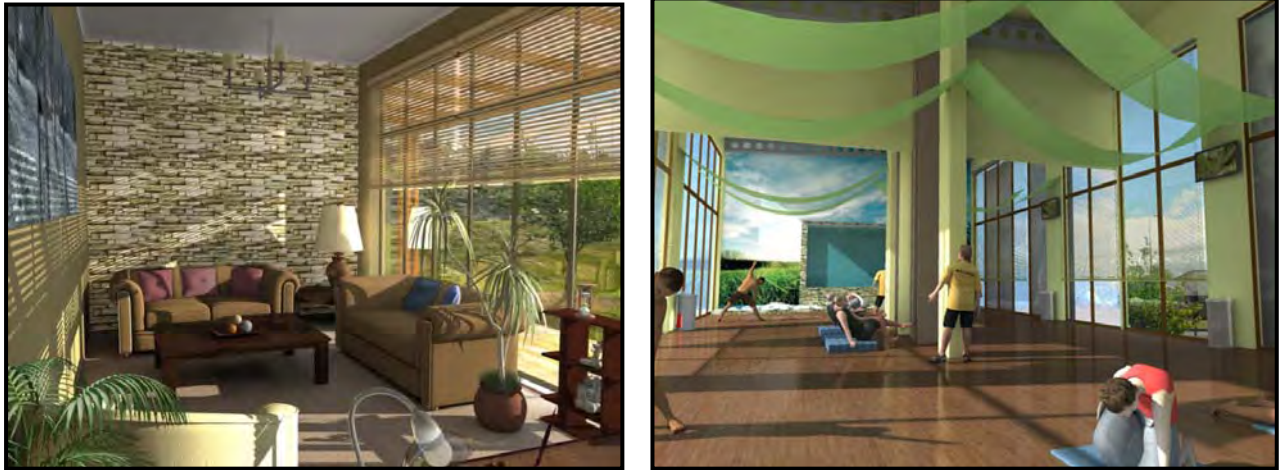


Figure 36: The psychology room (author 2011)

Figure 37: The multipurpose space (author 2011)

ENVIRONMENTAL RESPONSE STRATEGIES

1 THE DESIGN ELEMENTS

- Short and long floor plates
- Wooden screens and louvered windows
- Perforated printed canvas panels
- Use of solar panels

1.1 The Purpose

The vision for the building included optimising the use of natural heating, ventilation and lighting. The building was designed on the short span and adjacent opening concept, therefore optimising the cross ventilation and natural lighting. The glazing within the building was designed around the proportions of the room size as well as maximising the use of the north orientation by placing the more habitable functions in these areas- such as the physiotherapists, chiropractors, alternative healers, workshop and nutrition spaces and the gym facilities. On the opposite i.e southern side of the building the facilities housed here are the shops and restaurants which have the benefit of overlooking the green recreational space along West Street (Figure 38 and 39).

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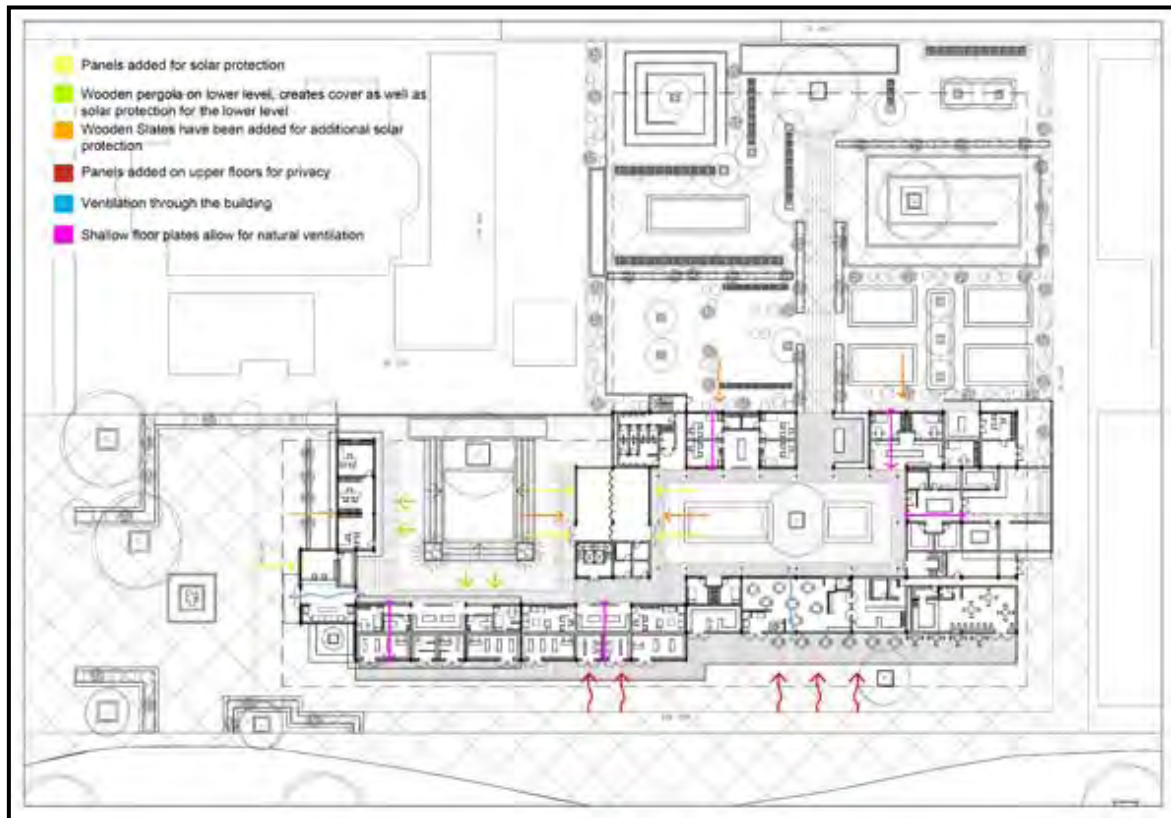


Figure 38: The Environmental Plan (Author 2011)

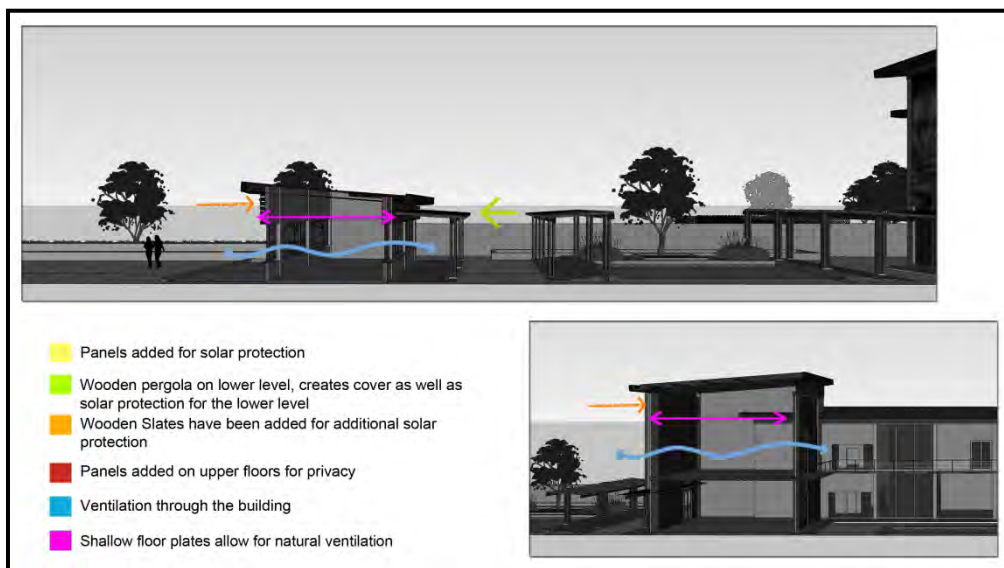


Figure 39: The Environmental and solar solutions (Author 2011)

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To reduce glare and discomfort within the building, solar control was an important aspect to address (particularly true in the multi-purpose hall). Since direct light causes glare, two main uses of solar control were included, the first was the use of wooden slatted screens and louvers. Throughout the building timber screens have been included to provide solar control and shading. This solar protection has also been used because it does not block the natural ventilation. Secondly perforated canvas screens have been draped across window areas where solar control is needed. These canvas panels not only allow for solar protection but also create a "playful" and "unique" manner to advertise 'health and healing', thereby creating a link to the facilities housed within the building (Figure 40).

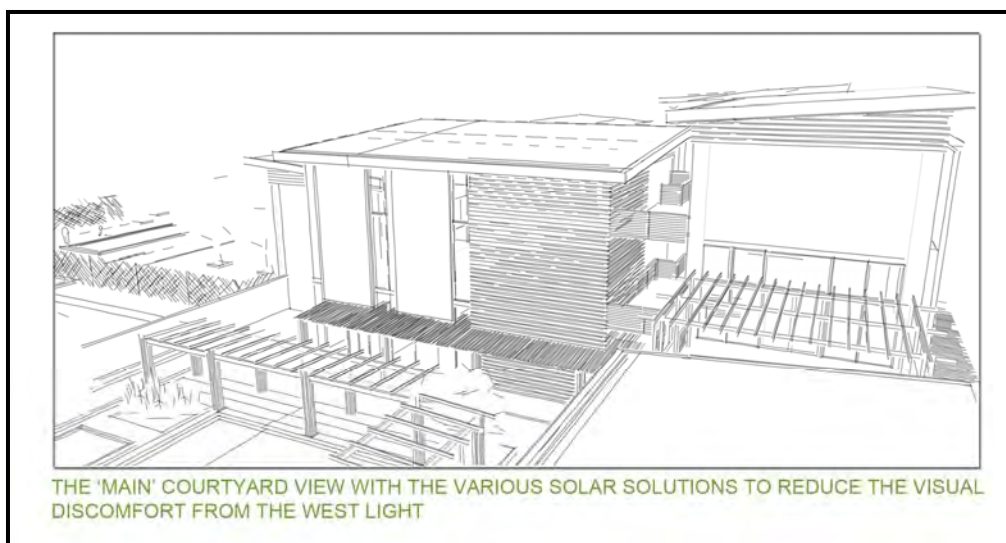


Figure 40: Figure showing the canvas panels and wooden slats (Author 2011)

The Centre cannot proclaim to promote Health and Healing if it is not minimising its carbon footprint and thereby contributing to the health of the planet. The Centre uses solar panels to heat its hot water which will reduce its consumption of electricity thereby achieving a reduction in its operating costs and make a contribution to reducing carbon emissions. In addition green cement and concrete is used to reduce the overall carbon footprint of the building

TECHNICAL RESOLUTION

1 THE ROOF

Corrugated sheeting on chromadek (terracotta colour) with castellated mild steel purlins on galvanized mild steel girders (to engineers specification). A more prominent fascia has been

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added to the roof thus making it appear "thicker" and therefore more sympathetic to the neighbouring buildings (like City Hall and the Post Office)

2 THE CEILING

Acoustic ceiling tiles are suspended off the purlins at 600mm intervals

3 THE WALLS AND COLUMNS

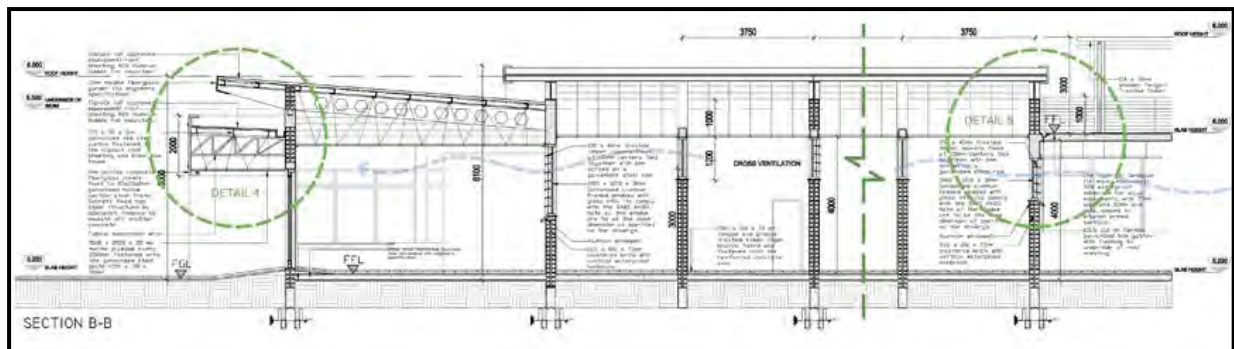
Overall the building construction method is concrete columns and reinforced slabs with brick infill. The bricks are facebrick with no plaster, to keep with the 'natural' aesthetic of the building.

4 THE MATERIALS

The building displays a variety of different materials and surfaces that aid in creating a positive wellbeing for the individual on a subconscious level. The materials are more tactile and textured. For instance, some of the walls are clad in slate (the slate being recycled from the existing low walls around the site), the brickwork is facebrick, treated wooden slats and the sunscreen panels are made up of a UV resistant canvas material.

5 THE FOUNDATIONS

Piling and raft foundations/ ground beams have been used. Green cement and concrete is used to reduce the overall carbon footprint of the building



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Figure: Longitudinal Section of the Building (Author 2011)

CONCLUSION

At University 'we' the students are taught many important 'basics', specific to designing for human wellbeing, our lecturers encourage all designs to have concepts and theories. In the practicing environment, however, (most of the time) these philosophies are often lost due to the constraints that are given by client, budget and council regulations, creating 'cut backs' in the design execution. As architects one need to remind oneself on every job or contract that we are designing for people and their wellbeing. Architects ought to have a 'tool box' of techniques that allow for the practical application of important elements that relate to human wellbeing.

In the final analysis, achieving wellbeing in cities is the product of a host of interventions at numerous scales. In the words of one of the questionnaire respondents in the dissertation...

"An extremely important factor, I think, to human well-being in cities is to create opportunities for human interaction like public transport systems, street culture, shops & places for cultural, religious, relaxation, nb – public parks with playgrounds for kids, gym opportunities e.g. 'trim parks' (I saw a fully dressed lady doing rowing exercises on a purpose-made (vandal proof) steel exercise machine in a park next to a busy road in Israel). Last thought: people make places. Thus, if there is not enough urban density of population and/or 24-hour opportunities for different activities in places – i.e. lack of choice, no meeting spaces, isolation, and no action – wellbeing suffers." (Questionnaire respondent 2010)

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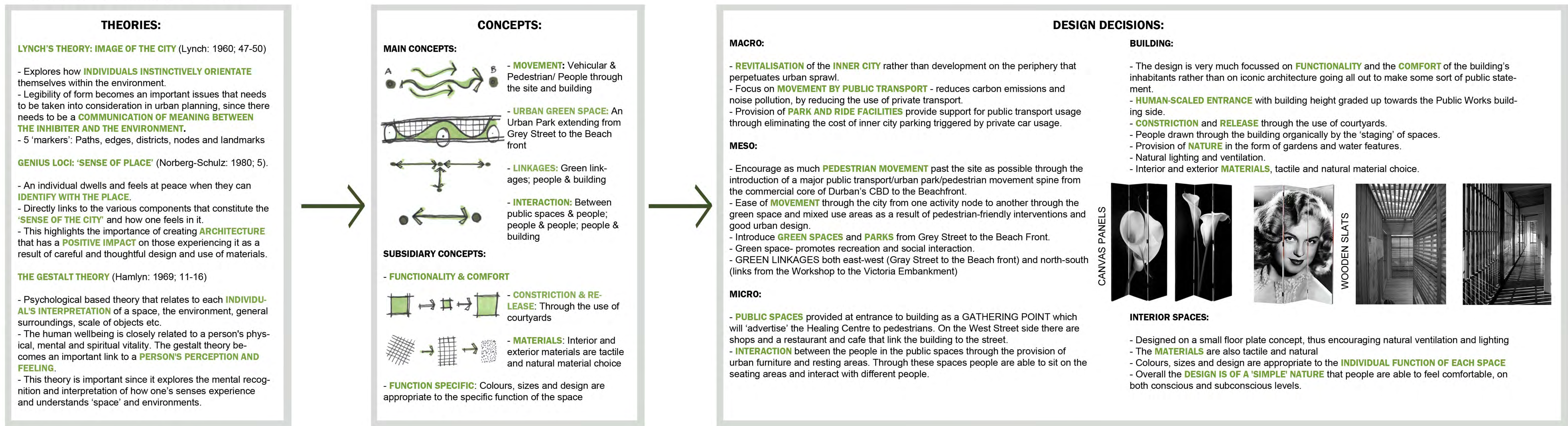
APPENDIX 1: THE DESIGN



- Background -



- Theories, Concepts & Ideas -



- Main Precedent Studies

CENTRAL PARK: NEW YORK CITY MANHATTAN, NEW YORK

- Explores how parks can be important for the city by offering a 'BREAK' TO THE HARSHNESS OF THE CONCRETE JUNGLE.
- How a green space can generate a RECREATION facility within an URBAN FRAMEWORK.
- The idea, was to "CREATE A PLACE WHERE PEOPLE COULD RELAX AND MEDITATE..." and people would see the park as a "...kind of social experiment where people from both UPPER and LOWER classes would meet (<http://www.aviewoncities.com/nyc/centralpark.htm>).

MELROSE ARCH (JOHANNESBURG, GAUTENG)

- The concept for this urban design precinct was based on medieval town planning principles that contain mixed-use and permeability, with a CLEAR DEFINITION OF PUBLIC and PRIVATE DOMAINS.
- Melrose Arch is internally ordered by two main roads and orientated around two PUBLIC SQUARES. High Street is surrounded by mixed-use buildings that encourage the movement of pedestrians along the retail sides.
- The main objective was to create and ENCOURAGE PEDESTRIAN MOVEMENT as well as to create an area that promotes activities, public surveillance as well as ownership of this public.

FORDOUN HEALTH SPA: NOTTINGHAM ROAD, KWAZULU NATAL

- Positioned centrally is the reception and restaurant, which are entered off a large PUBLIC COURTYARD OPENING out onto a quiet GARDEN and green lawns .
- Concept is the CENTRAL PUBLIC SPACE, which seems to imitate the form of a village street, connecting buildings together. Through the use of low stone walls between the buildings it creates a VISUAL LINK from the village to the countryside.

Precedent Images

- Locality Plan [macro - site]-



- The Urban Precinct

DURBAN'S CBD SHOWING VARIOUS IMPORTANT BUILDINGS AROUND THE CITY [[FIGUREGROUND & IMAGES]]



- Urban Intervention: Park & Ride [Macro] -

HISTORY OF DURBAN'S PUBLIC TRANSPORT SYSTEM:

Beginnings

- Durban's first form of public transport was a coach service between Durban and Pietermaritzburg and ran for the first time on 15th March 1860.
- The Dale brothers started a horse coach service in the town in the CBD 1870
- 25th March 1880, horse-drawn double-decker trams were introduced by Ramsay Collins.
- 1 August 1899, the Durban Municipality bought out the private Durban Borough Tramways Company.

Truck Busses

- Indian entrepreneurs of truck busses which were trucks converted to carry passengers (July 1919).
- Truck busses were the forerunners of the more than 250 bus lines and more than 450 busses which, in 2003, are still providing a valuable service to the community. (Image above)

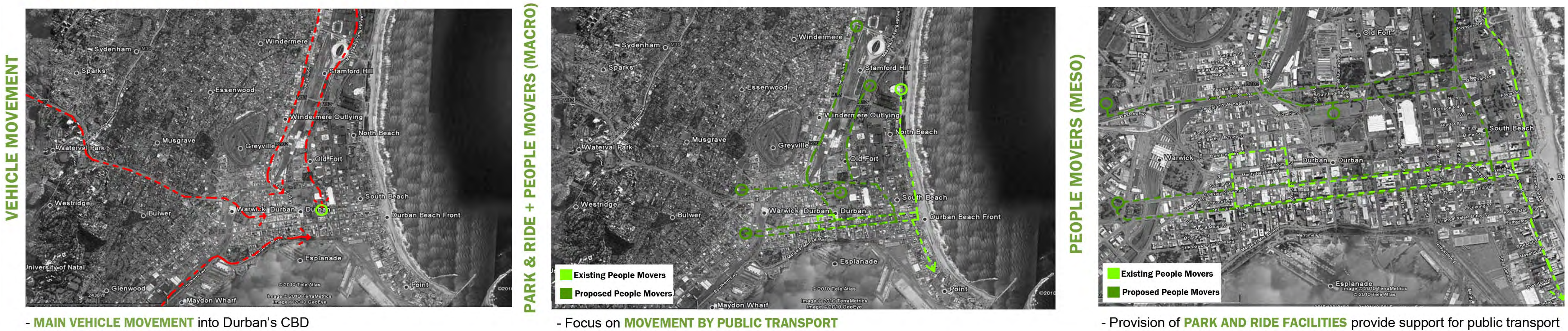
Busses

- Durban Transport first three single-decker Thornycroft petrol-engined busses (15 June 1925) with the last diesel double-decker bus ran on 30 April 1967. (Image above)

URBAN SPRAWL: (Jenks et al: 1996; 1-10).

- Reducing car usage in high-density cities is one of the significant ways of increasing a city's resource efficiency.
- **Good public transport system** enables city inhabitants to reduce their dependency on private cars without sacrificing mobility.
- Such a move potentially allows for higher living densities without the roads becoming blocked up and mobility suffering.
- Such cities often exhibit **mixed land uses** with residence, employment and recreation in close proximity.
- These cities can **OFFER LARGER OPPORTUNITIES FOR SUSTAINABILITY AND CAN CREATE A MORE POSITIVE FEELING OF WELLBEING FOR INHABITANTS**

SOLUTION= PARK & RIDE FACILITIES & PEOPLE MOVERS (PUBLIC TRANSPORT)



- MAIN VEHICLE MOVEMENT into Durban's CBD - Focus on MOVEMENT BY PUBLIC TRANSPORT - Provision of PARK AND RIDE FACILITIES provide support for public transport



- Urban Intervention: Urban Green Park, Mixed Use & Pedestrian Movement [Meso] -



URBAN GREEN PARK NODES
- GREEN LINKAGES both east-west (Gray Street -> Beach Front) & north-south (Workshop -> Victoria Embankment)



EXISTING GREEN SPACES
- GREEN SPACES and PARKS (Grey Street -> Beach Front)



PROPOSED GREEN SPACES
- Promotes RECREATION and SOCIAL INTERACTION



IMAGES OF THE URBAN GREEN PARK



EXISTING ZONING
- EXISTING: Zoning is aimed at commercial/ business, therefore the city is busy during the day and 'dead' at night
- PROPOSED: Ease of MOVEMENT through the city from one activity node to another through the green space and mixed use areas as a result of pedestrian-friendly interventions and good urban design



PROPOSED MIXED USE ZONING

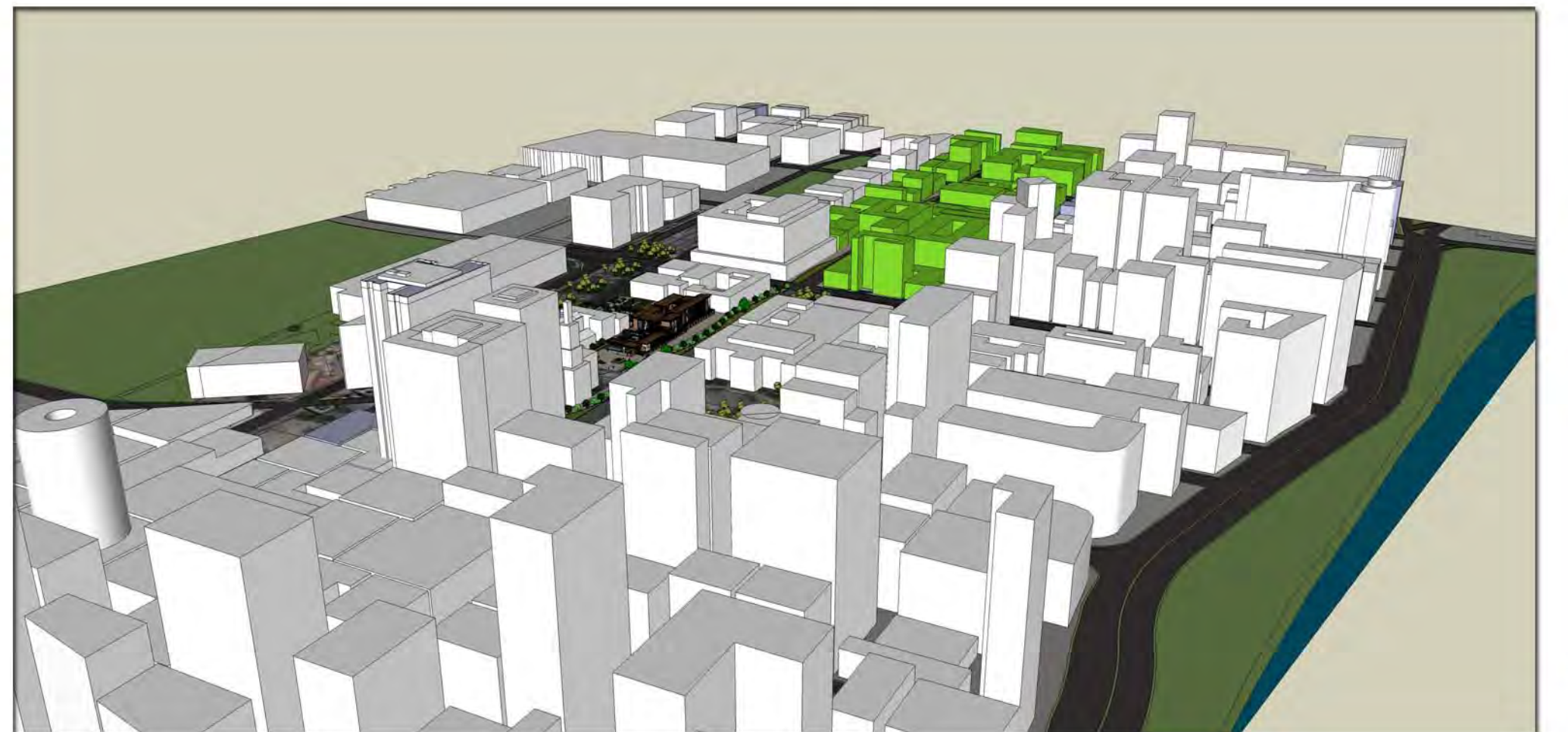


EXISTING PEDESTRIAN MOVEMENT



EXISTING PEDESTRIAN MOVEMENT
- Encourage as much PEDESTRIAN MOVEMENT past the site as possible through the introduction of a major public transport/urban park/pedestrian movement spine from the commercial core of Durban's CBD to the Beachfront.

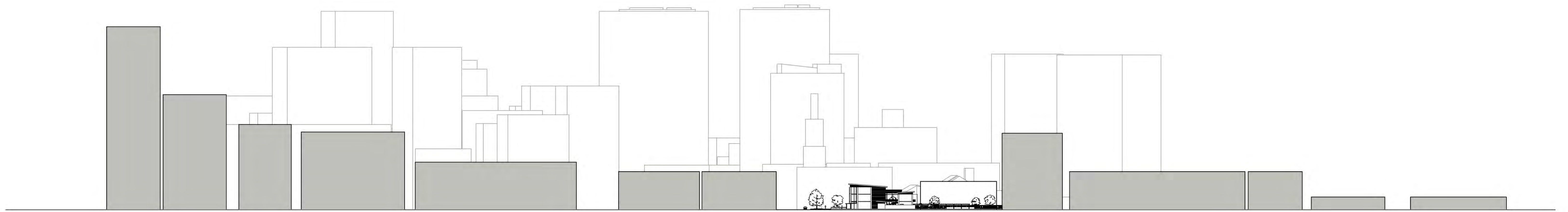
IMAGES OF THE URBAN INTERVENTION- ADDITION OF MORE MIXED USE BUILDINGS TO REPLACE THE EXISTING CAR SHOW ROOM BUILDINGS AND RUN DOWN BUILDINGS



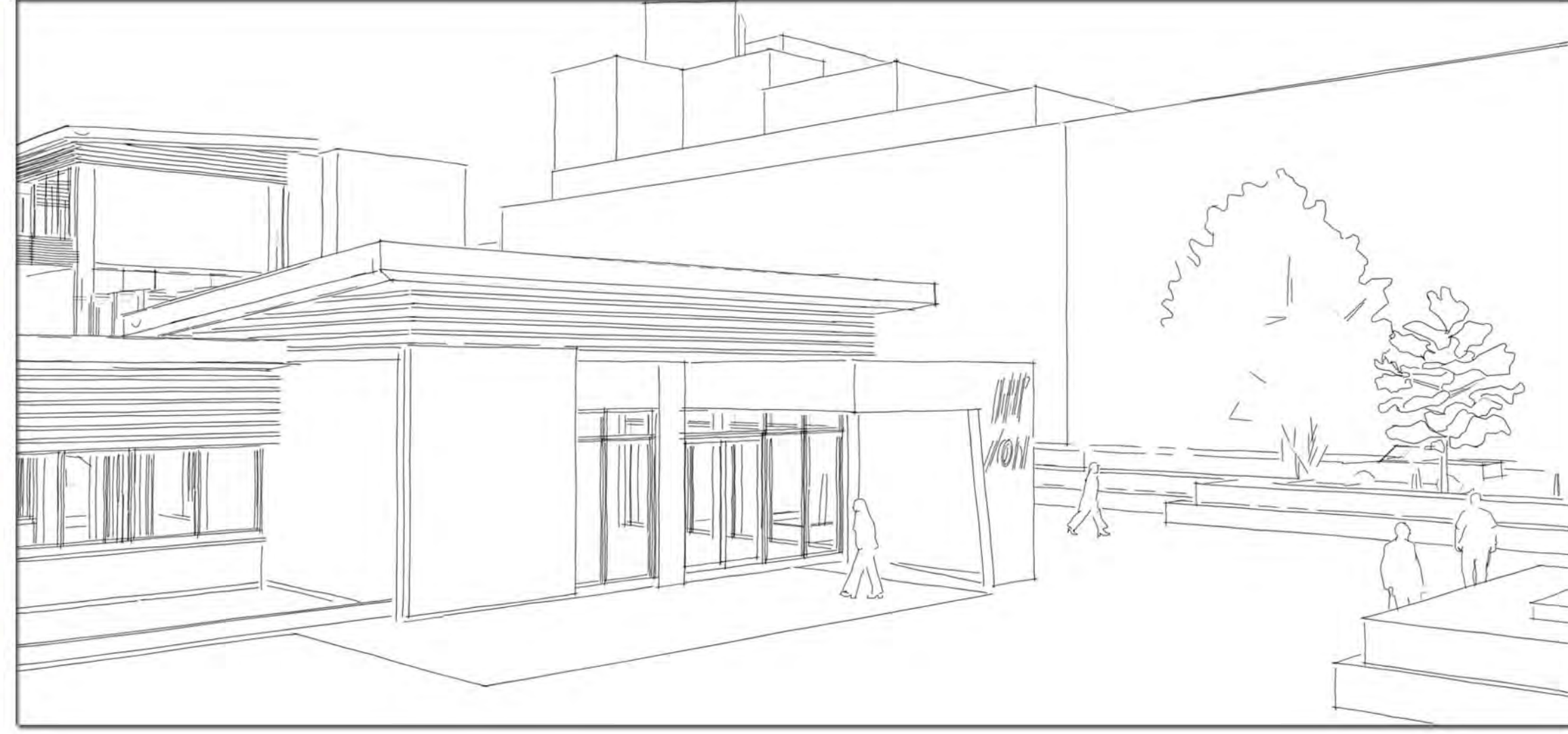
- Site Section A-A -
[scale: 1-1000]



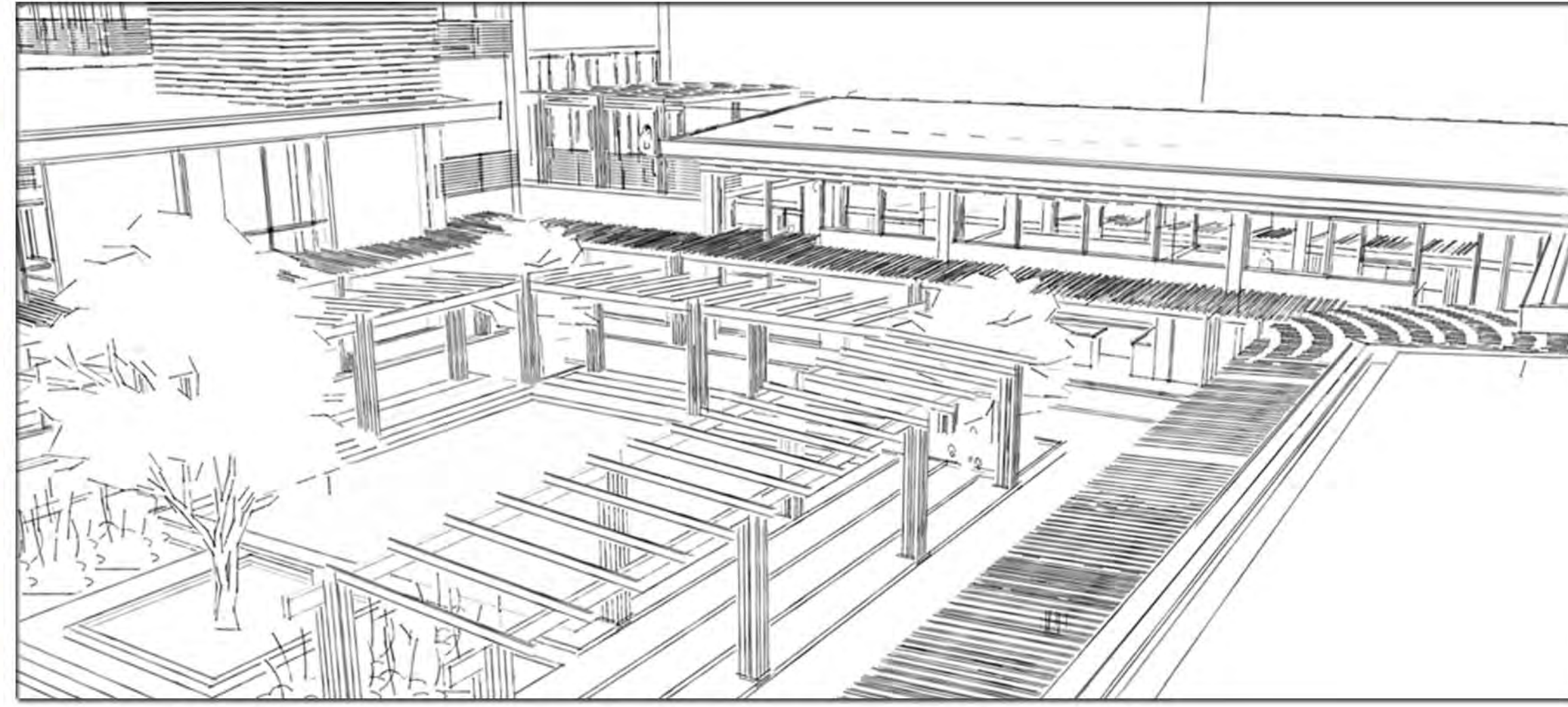
- Site Section B-B -
[scale: 1-1000]



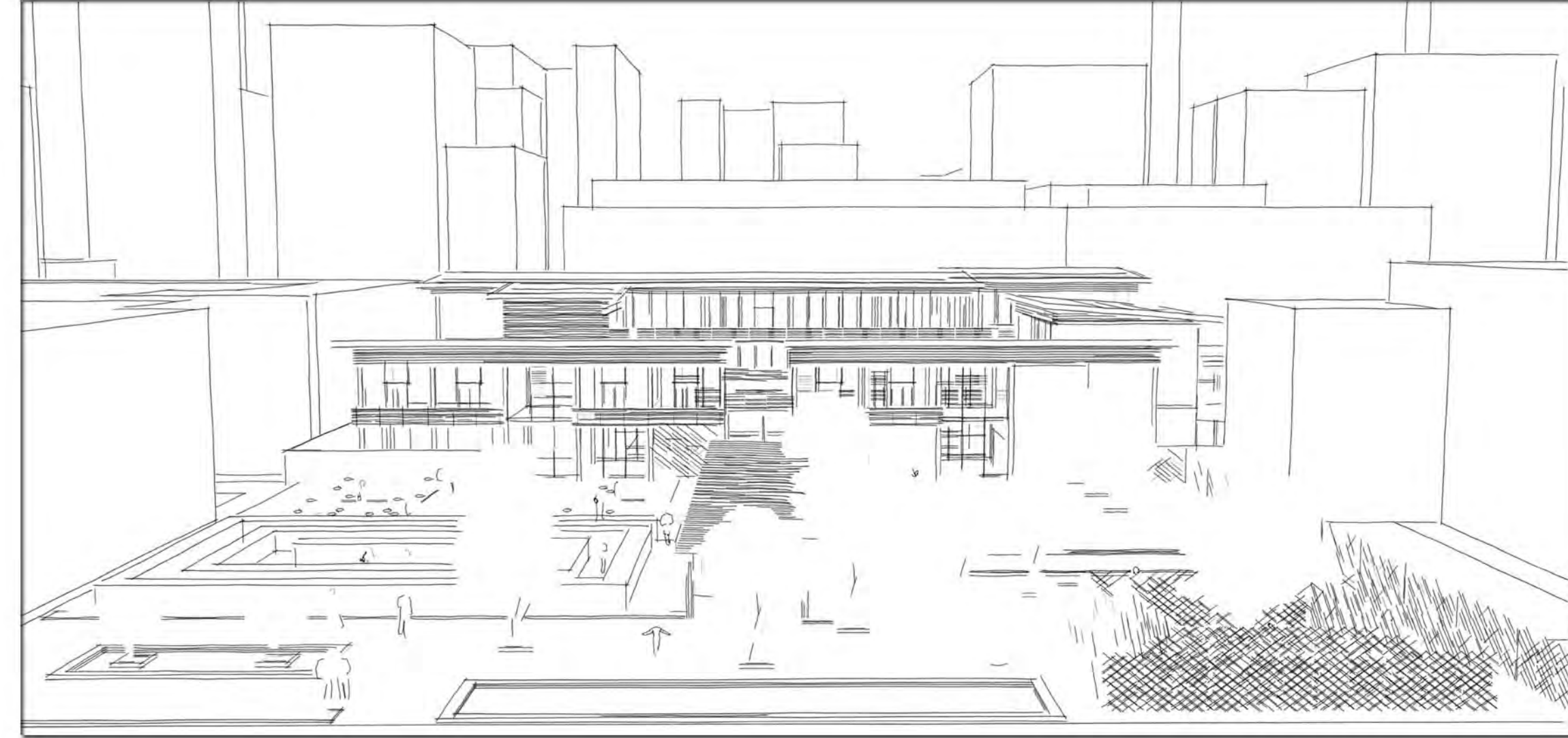
BUILDING & CITY HALL



COURTYARD VIEW 1



GARDEN & CITY VIEW



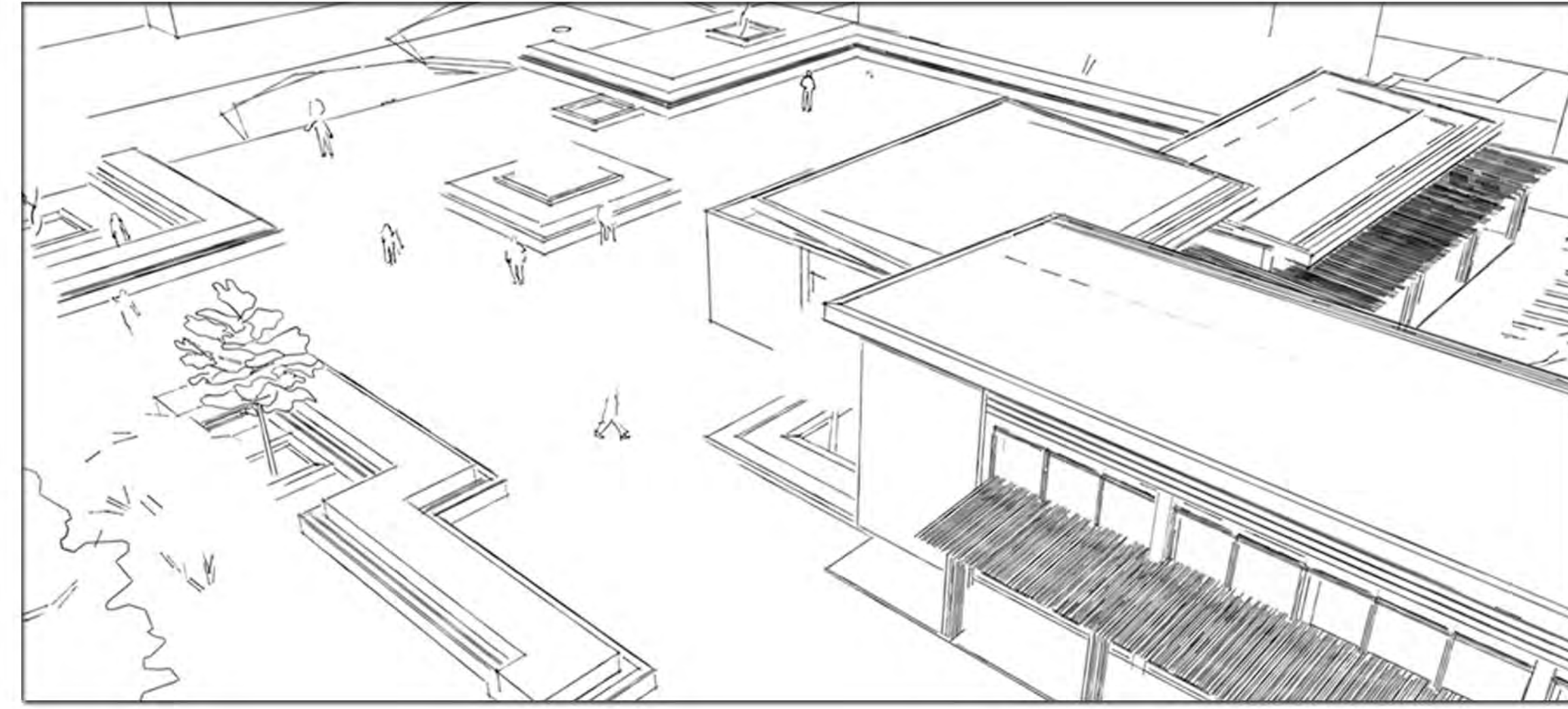
COURTYARD VIEW 2



THE GARDEN

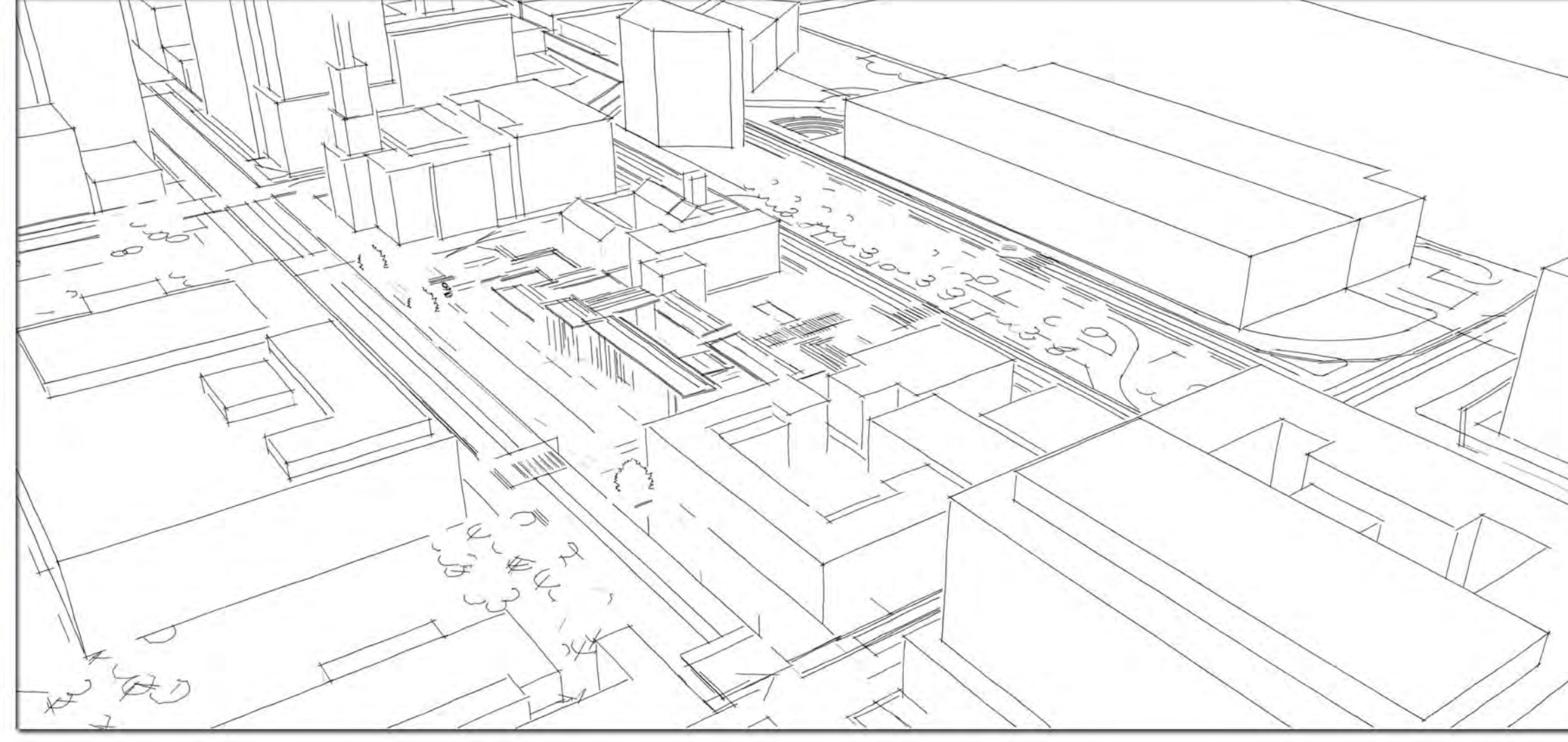


PUBLIC SPACE



... Sketch Perspectives

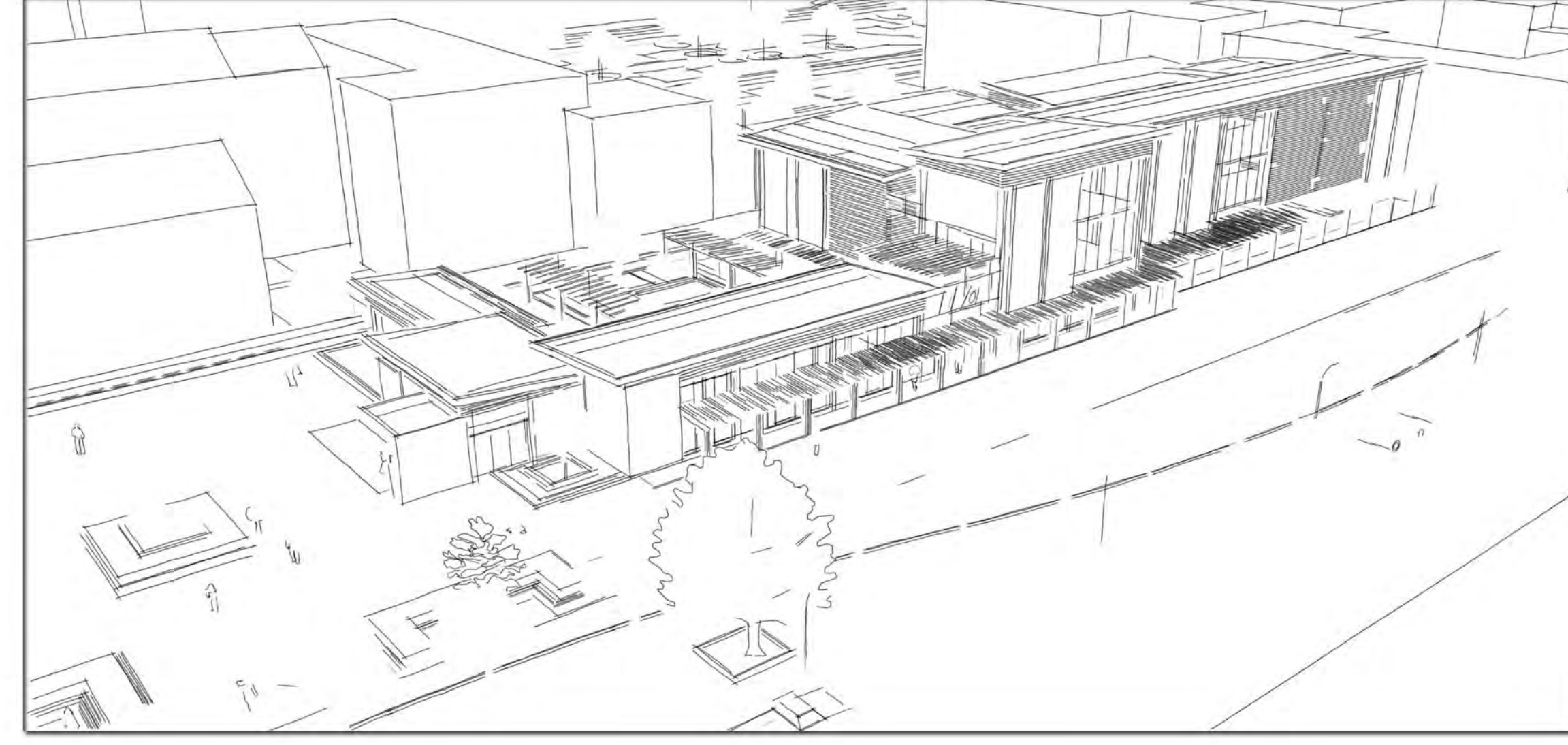
BUILDING & CONTEXT



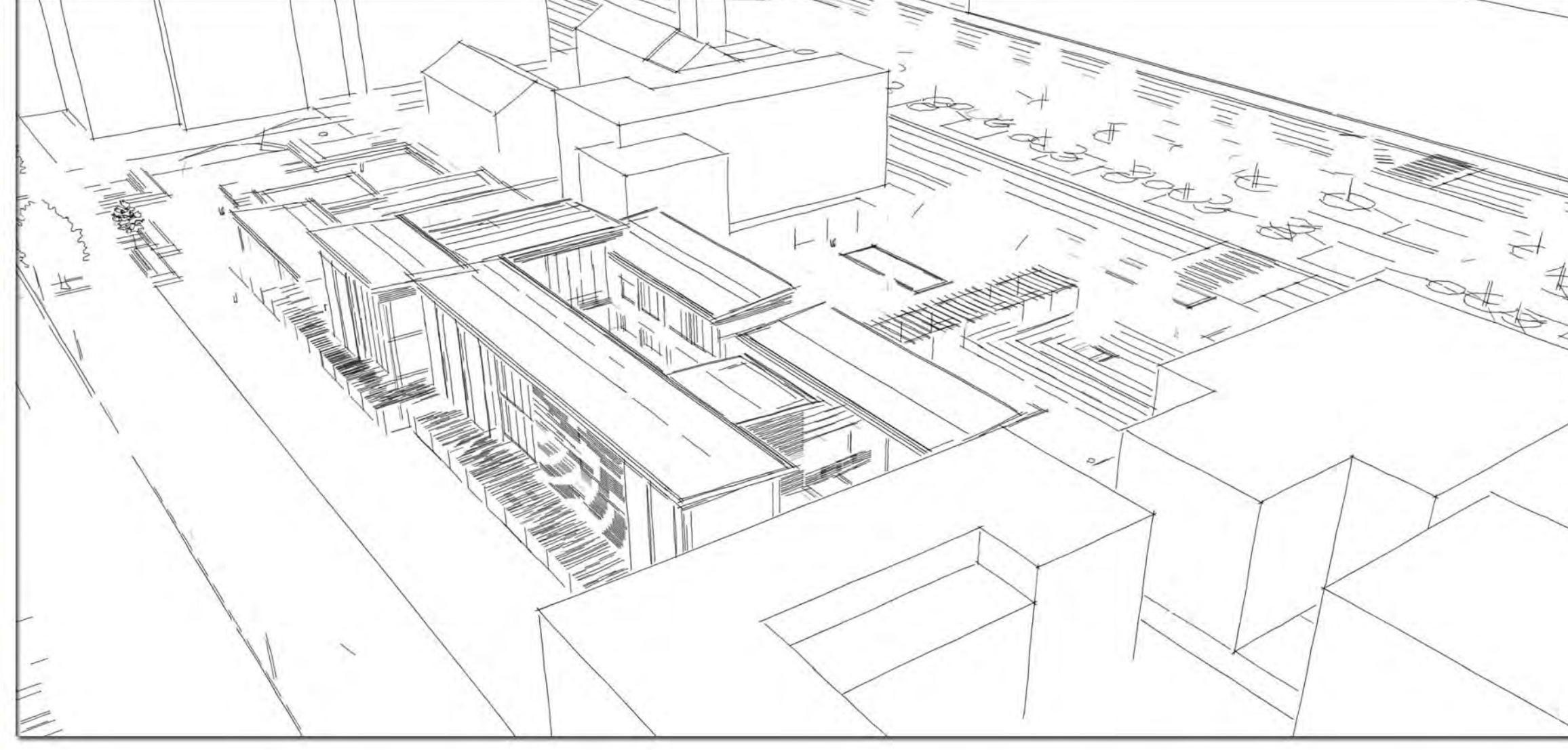
BLDG & GARDEN



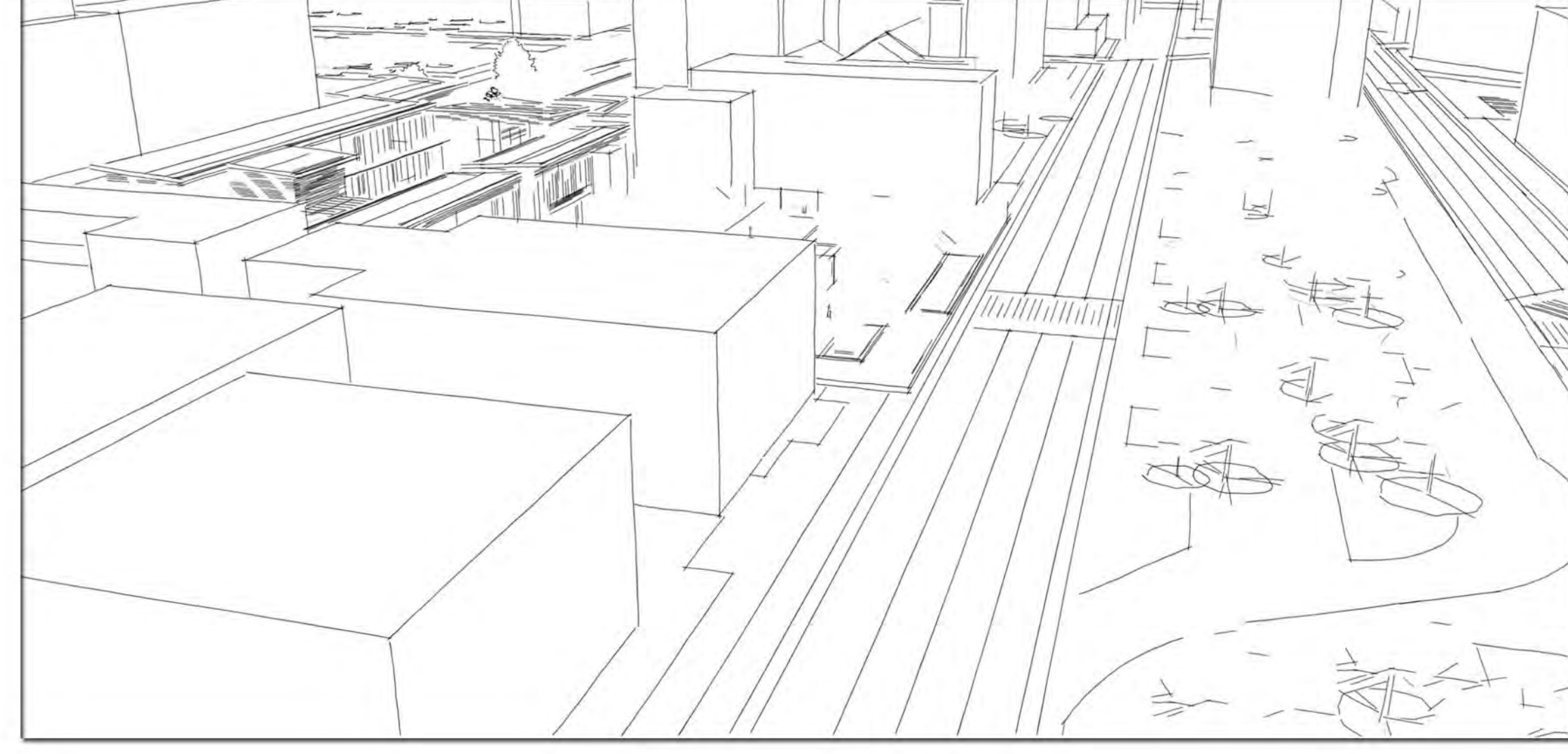
AERIAL VIEW [WEST ST]



BLDG & PUBLIC WORKS



VIEW DOWN PINE ST.

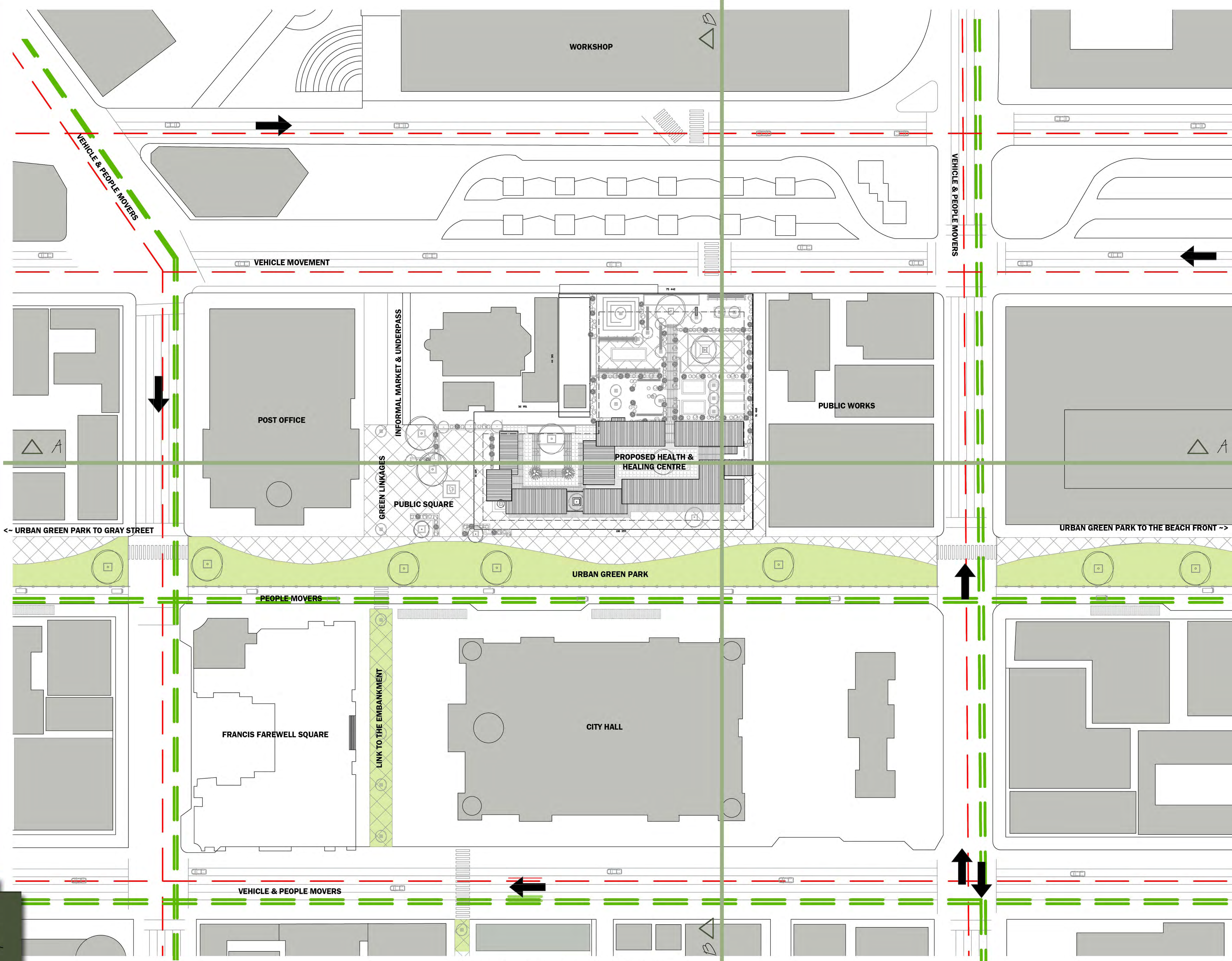


BLDG & CONTEXT



... Sketch Perspectives

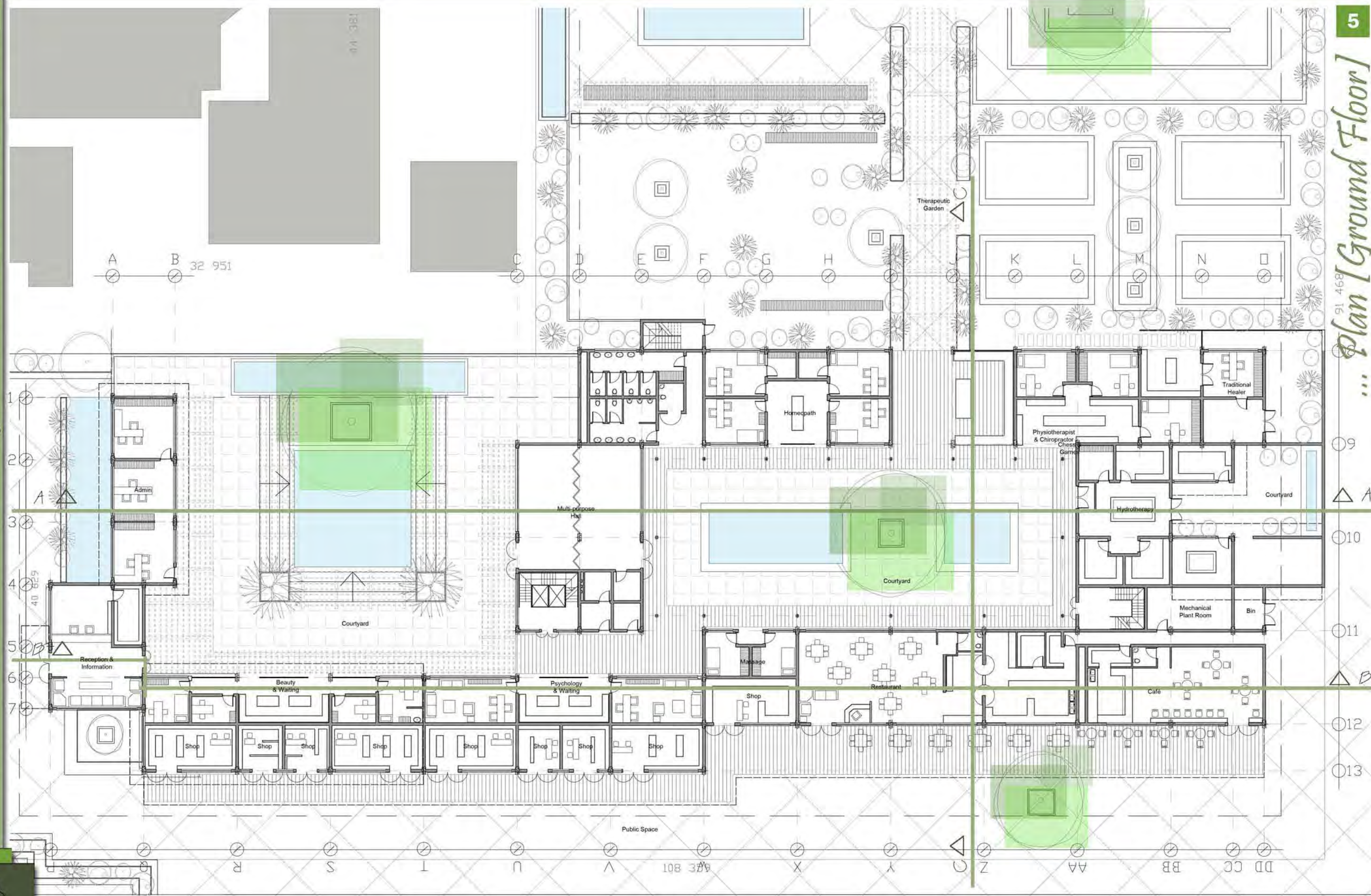
- A Health & Healing Centre for Durban -



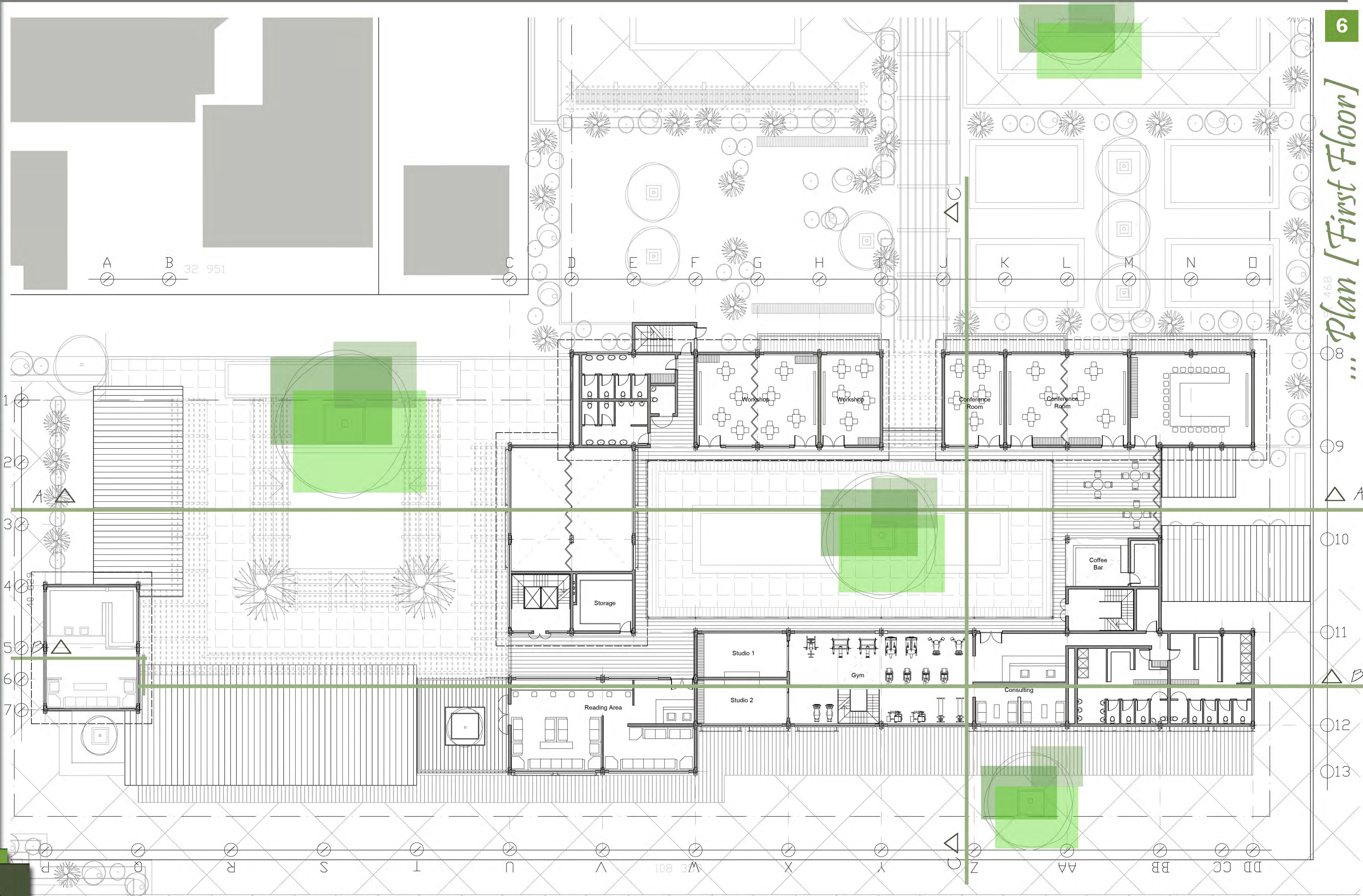
- Urban Context - [Scale 1:500] -



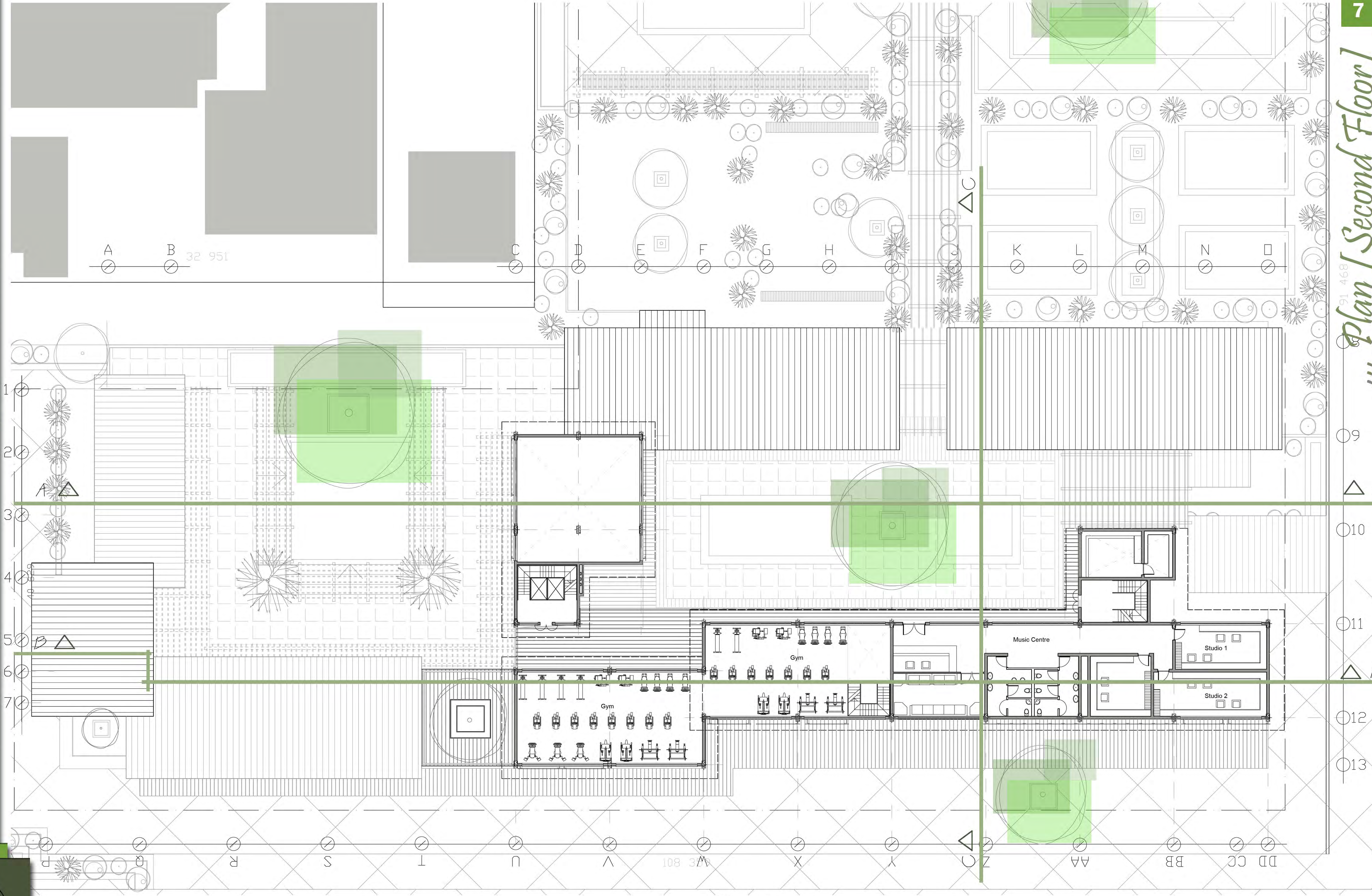
- A Health & Healing Centre for Durban -



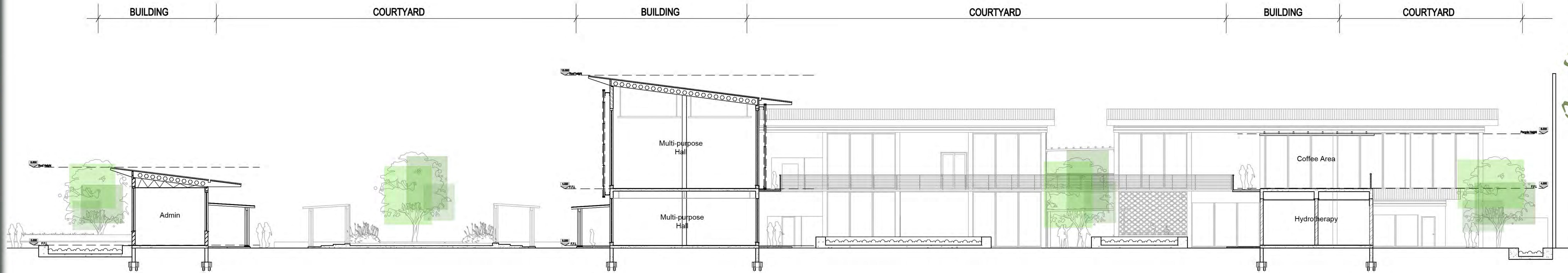
- Ground Floor Plan -
[scale 1:100]



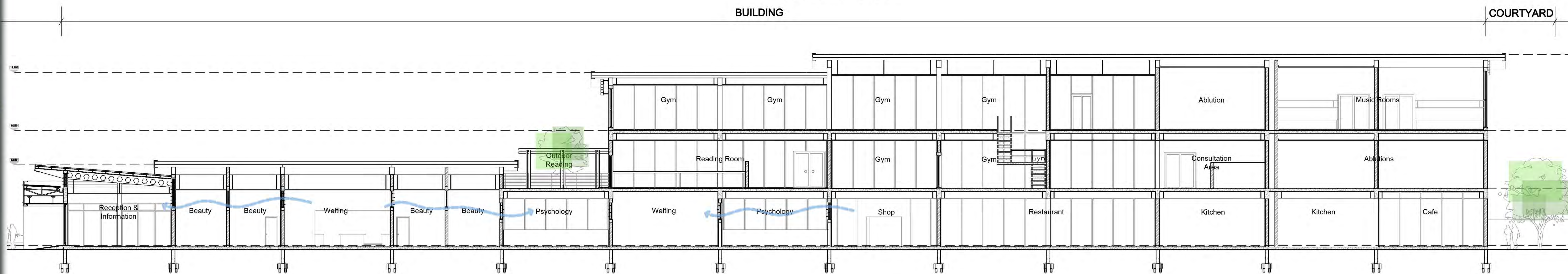
- First Floor Plan -
[scale 1:100]



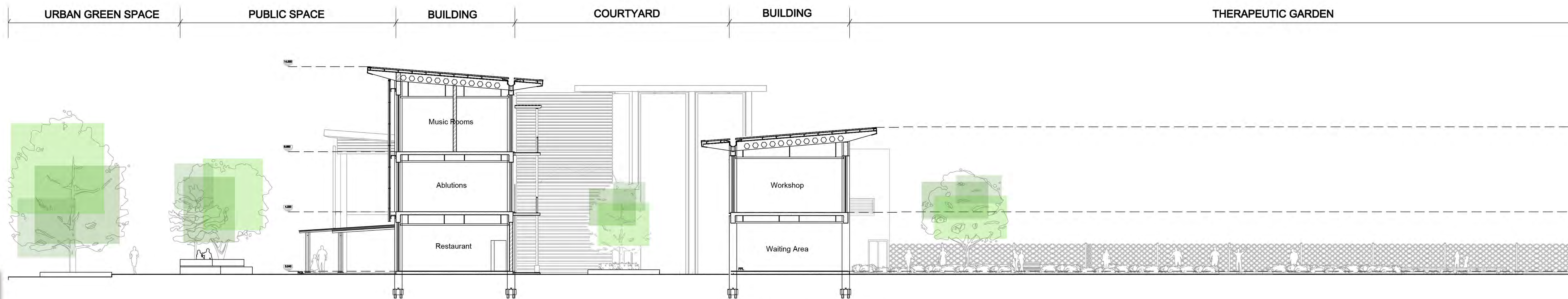
- Second Floor Plan -
[scale 1:100]



- Section A-A -
[scale 1:100]



- Section B-B -
[scale 1:100]



- Section C-C -
[scale 1:100]

THE GARDEN PRINCIPLES

- Plant material and water ways were incorporated to create **HEALTHIER ENVIRONMENTS** as they **REDUCE** the effect of **NOISE** and **AIR POLLUTION** and **REFLECTED HEAT** from buildings and hard surfaces.

- Plants were selected to provide **YEAR ROUND** colour, aroma and texture as well as bird and animal life

- A variety of **"SAFE PARK-LIKE SPACES"** were created to accommodate various personality types with the **AIM TO ENRICH** the body, mind and soul, therefore areas to **socialise, walk, meditate** or simply enjoying nature including birds and butterflies etc have been included.

CATERING FOR EVERONE'S 'NEEDS'

- Some individual's preference is for 'order' and so they feel most comfortable in a formal garden layout while other folk prefer less structure. To cater for the latter group, areas of unstructured indigenous planting has been provided

A- TREE

1) POMPON TREE (Dais Cottonifolia)
Colour, Flower (nectar), birds and butterflies



2) CAPE CHESTNUT (Calodendrum Cepense)
Colour, flowers (nectar), birds and butterflies



3) TREE FUCHSIA (Halleria Lucida)
Colour, flowers (nectar), birds and butterflies



B- SHRUBS

4) PORKBUSH STANDARD (Portulacaria Afra)
Absorbs carbon dioxide, provides colour and the flowers (nectar) attract birds and butterflies



C- HEDGE

5) DURANTA (Sheelaghs Gold)
Foliage colour and butterflies



D- CLIMBERS

6) PORT ST JOHN'S CREEPER (Podranea Ricasoliana)
Colours, flowers, birds and butterflies



7) JASMIN (Jasminum Partitum)
Colour, flowers, birds and butterflies



E- GROUNDCOVER

8) BLUE FESCUE
Texture, colour and butterflies



9) AGAPANTHUS
Texture, flowers, colour, birds and butterflies



10) CLIVIA
Fragrance, flower and colour, birds and butterflies

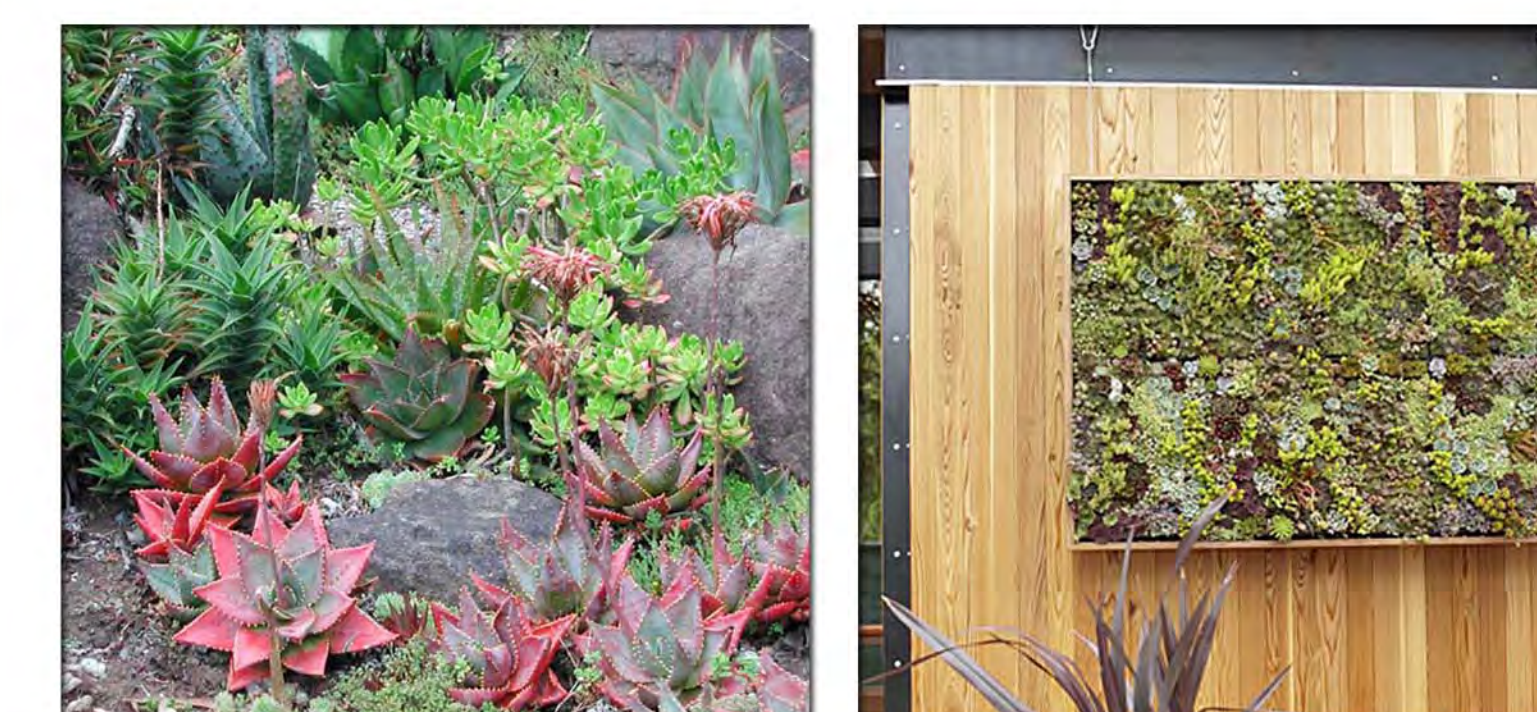


11) PLECTRANTHUS AND MARGINATA (Spurflower)
Foliage colour and textures, fragrance, flower and butterflies



F- GREEN WALL

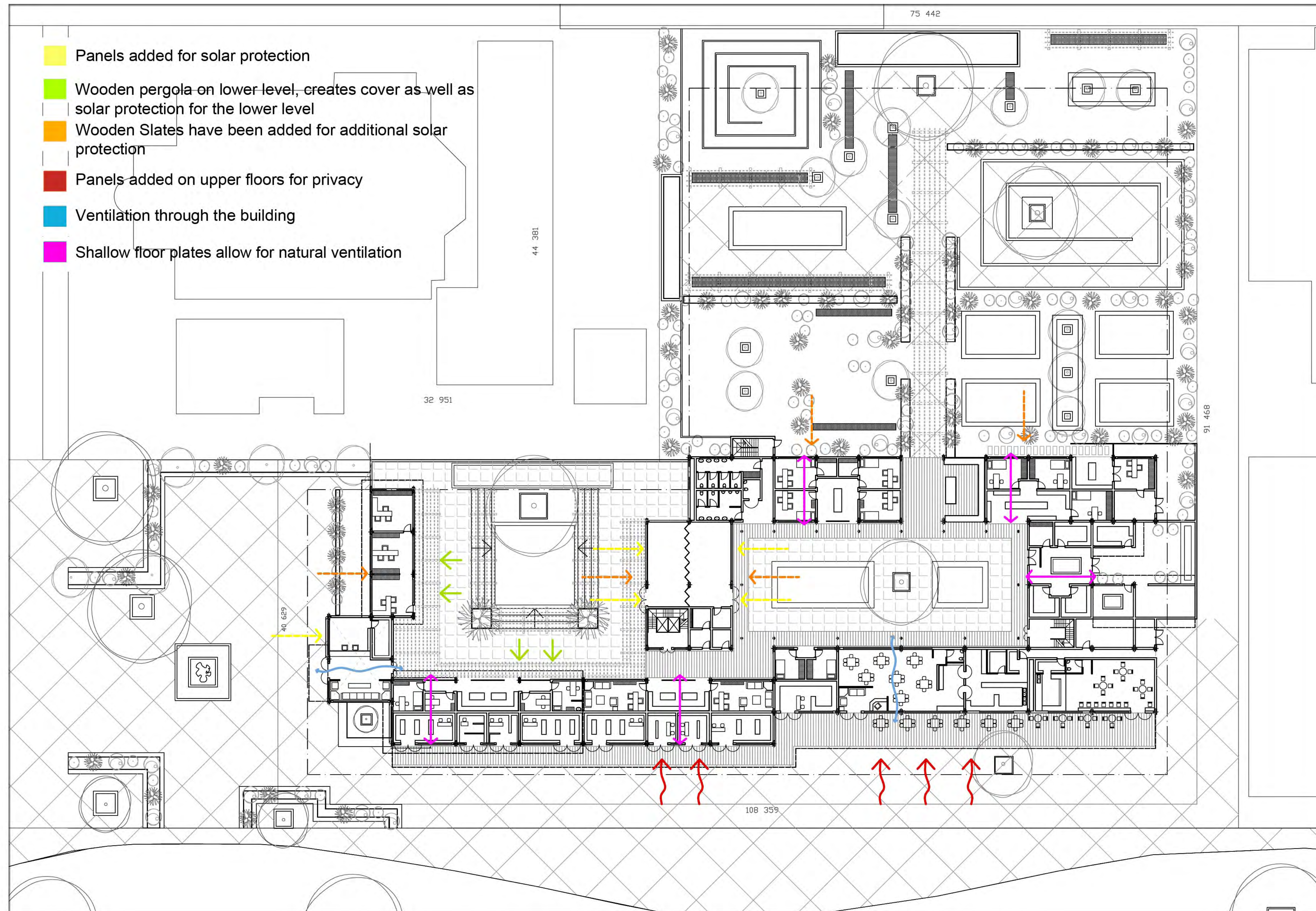
12) VARIETY OF SUCCULENTS
Foliage colour, texture, insignificant flowers and butterflies



- Garden & Landscape Plan - scale 1:250 -

PRINCIPLES OF A "HEALING GARDEN"

- 'A special entrance' should invite and embrace the individual into the garden
 - The element of water should be used for both its spiritual, physical and the psychological affects that it has on an individual.
 - Creative use of **colour and light** in the garden (either organic or human designed) is essential to increase the emotion of 'comfort' and 'awe' in the individual
 - **Natural features** (such as rocks, wood, screens, natural fences, trellises, sound, wind etc) become grounding points and have a calming effect.
 - Art can also be integrated into the garden to enhance the spirit or mood.
 - Garden features used should **attract wildlife** and provide a certain level of **animal diversity**.
- (Larson & Kreitzer: 2005; 2)



ENVIRONMENTAL SOLUTIONS:

DESIGN ELEMENTS:

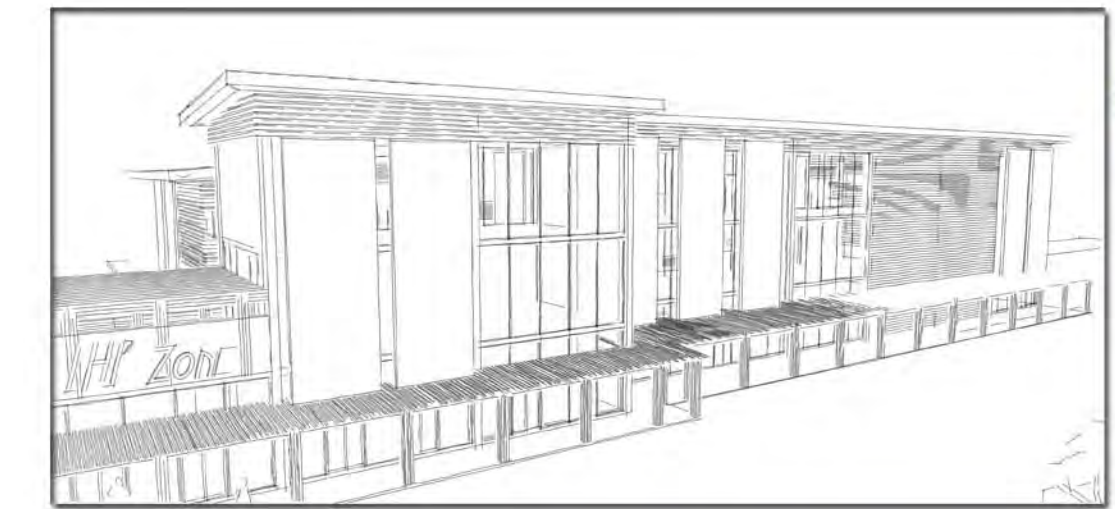
- SHORT AND LONG FLOOR PLATES
- WOODEN SCREENS AND LOUVERED WINDOWS
- PERFORATED PRINTED CANVAS PANELS
- USE OF SOLAR PANELS

PURPOSE:

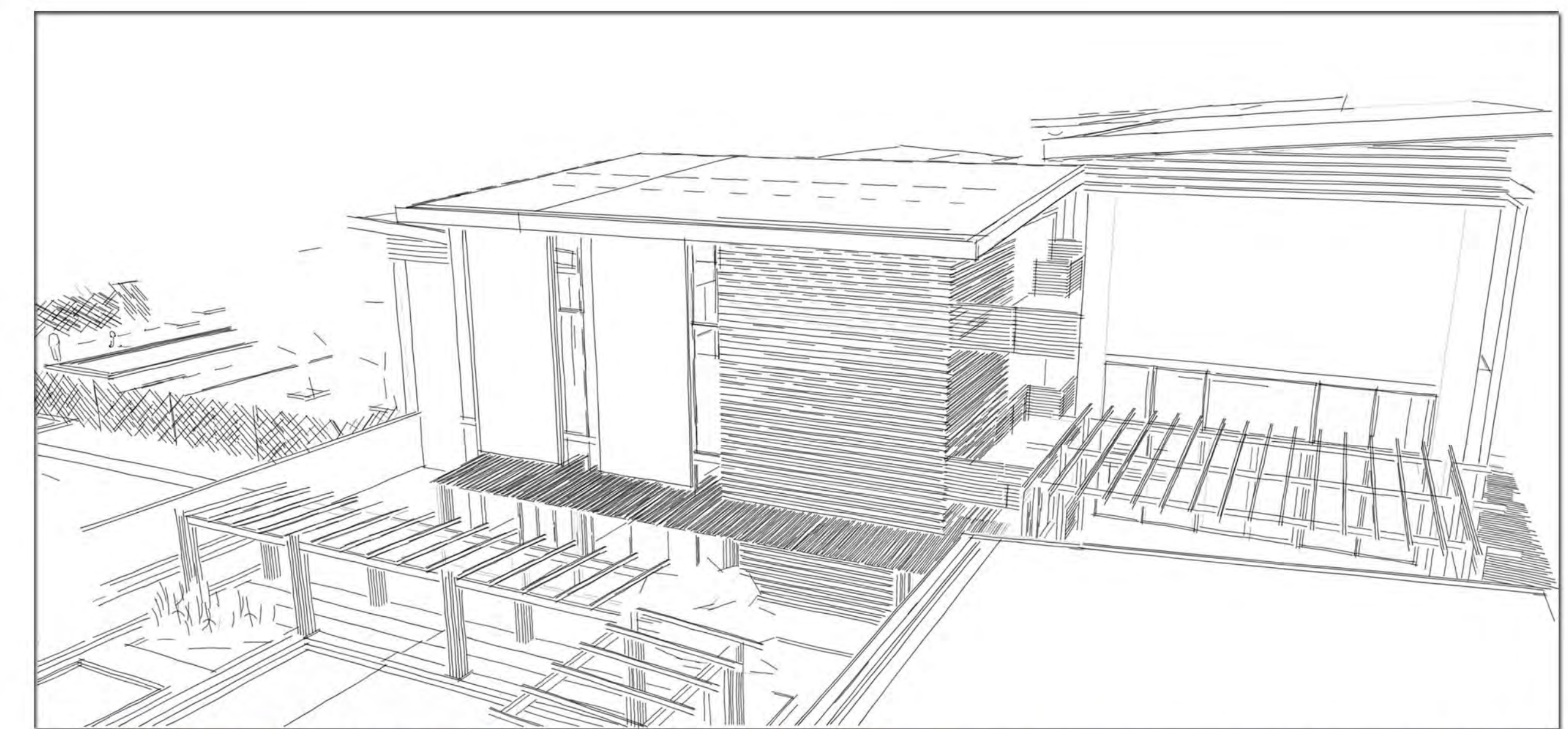
- Optimising the use of **NATURAL HEATING, VENTILATION AND LIGHTING**.
- The building was designed on the **SHORT SPAN AND ADJACENT OPENING CONCEPT**, therefore optimising the **CROSS VENTILATION AND NATURAL LIGHTING**. - **WOODEN SLATTED SCREENS AND LOUVERS**.
- Throughout the building timber screens have been included to provide solar control and shading. This solar protection has also been used because it does not block the natural ventilation.
- **PERFORATED CANVAS SCREENS** have been draped across window areas where solar control is needed. These canvas panels not only allow for solar protection but also create a "playful" and "unique" manner to advertise 'health and healing', thereby creating a link to the facilities housed within the building.
- The Centre cannot proclaim to promote Health and Healing if it is not **MINIMISING ITS CARBON FOOTPRINT** and thereby contributing to the health of the planet.
- **SOLAR PANELS** to heat its hot water which will reduce its consumption of electricity thereby achieving a reduction in its operating costs and make a contribution to reducing carbon emissions.



THE NORTHERN FACADE EXPRESSING THE USE OF WOODEN SCREENS. THIS FRONT HAS BEEN OPTIMISED WHEREAS THE EASTERN FACADE HOUSES



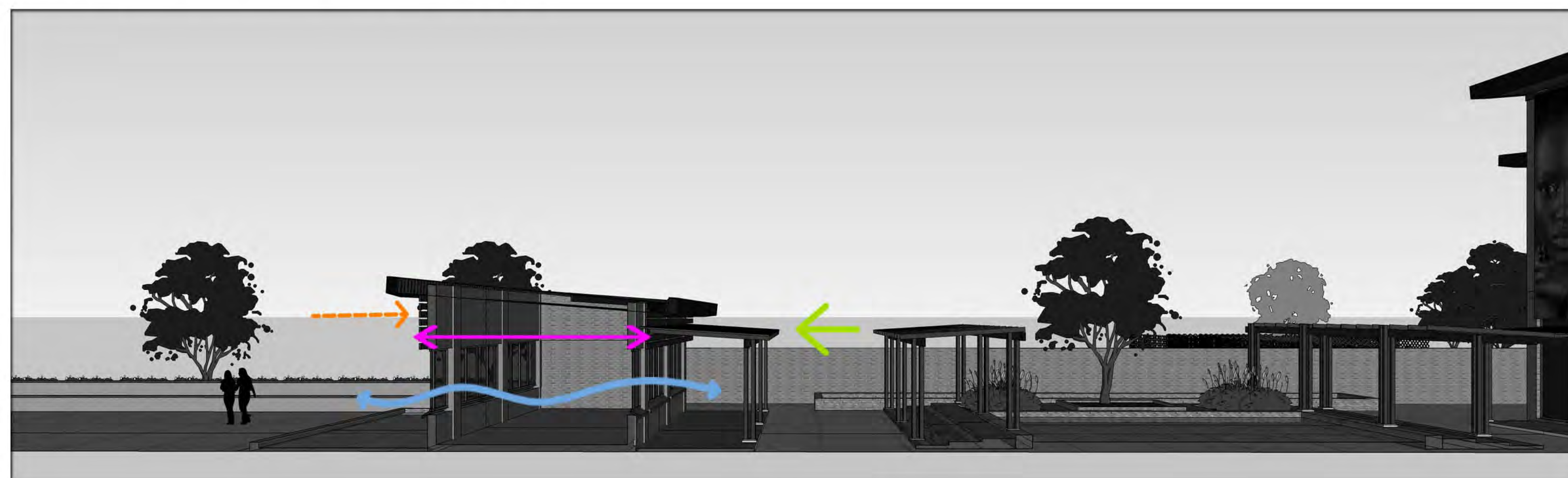
THE WOODEN SCREENS AND PERFORATED PRINTED CANVAS PANELS



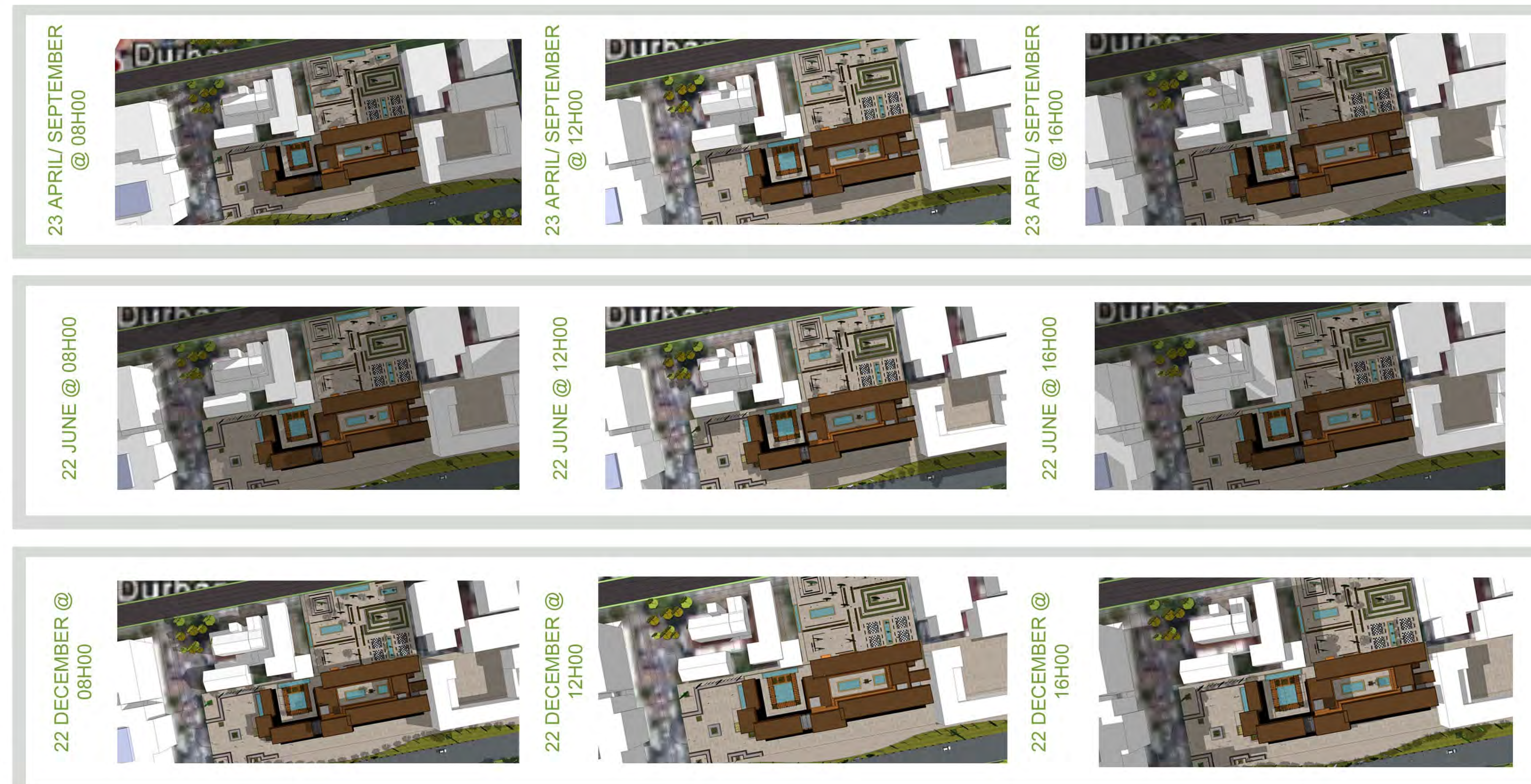
THE 'MAIN' COURTYARD VIEW WITH THE VARIOUS SOLAR SOLUTIONS TO REDUCE THE VISUAL DISCOMFORT FROM THE WEST LIGHT

- Environmental Plan -
[scale 1:250]

- Ventilation & Solar Control -



- Yellow: Panels added for solar protection
- Green: Wooden pergola on lower level, creates cover as well as solar protection for the lower level
- Orange: Wooden Slates have been added for additional solar protection
- Red: Panels added on upper floors for privacy
- Blue: Ventilation through the building
- Pink: Shallow floor plates allow for natural ventilation





WEST STREET PERSPECTIVE: THE URBAN GREEN PARK & PUBLIC SQUARE



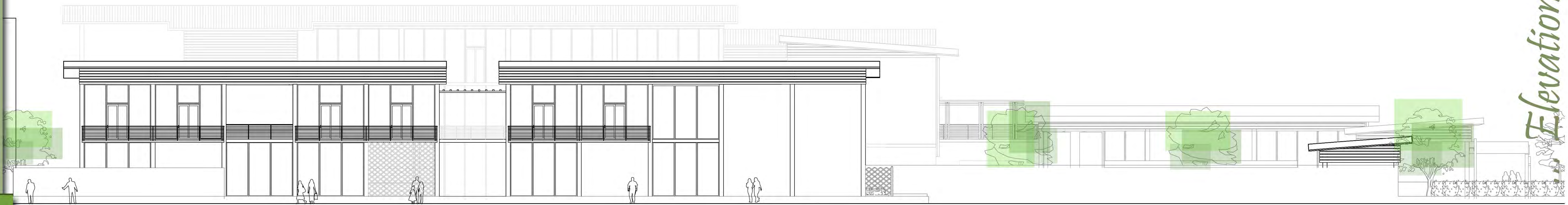
INFORMAL MARKET PERSPECTIVE: THE ENTRANCE & PUBLIC SPACE



COURTYARD PERSPECTIVE: EXPRESSING THE VARIOUS MATERIALS



GARDEN PERSPECTIVE: THE BUILDING & GARDEN



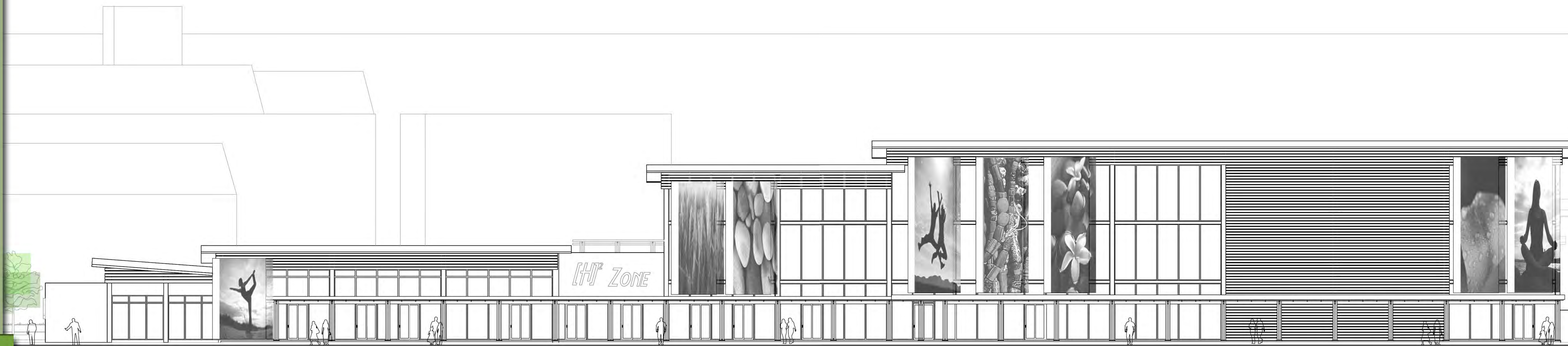
- North Elevation [Garden]-
[scale 1:100]

Elevation [Garden]



- East Elevation [Public Works]-
[scale 1:100]

... Elevation [Public Works]



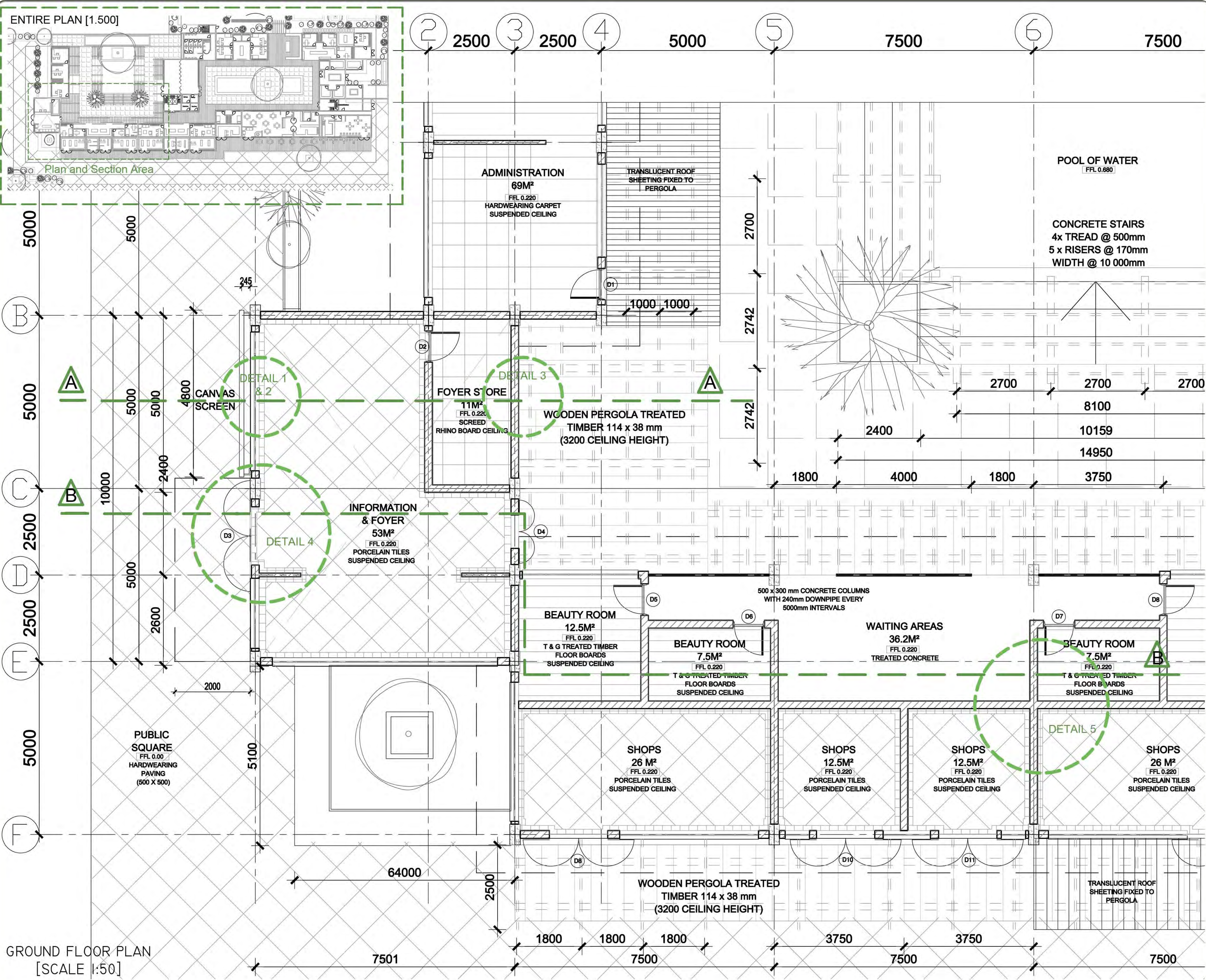
- South Elevation [West Street]-
[Scale 1:100]

... Elevation [West Street]



- West Elevation [Informal Market]-
[Scale 1:100]

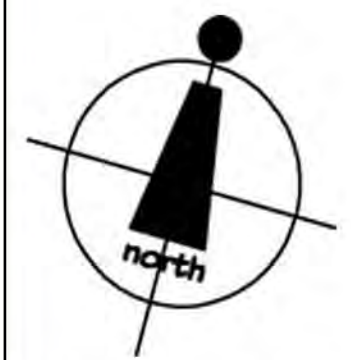
... Elevation [Formal Market]



GROUND FLOOR PLAN
[SCALE 1:50]

ENTIRE PLAN [1.500]

Plan and Section Area



LB ARCHITECTS & DESIGNERS
 101 Penzance Road
 Glenwood
 Durban 4001
 Phone : 202 5879
 Fax : 202 5880

WORKING DRAWINGS: PLAN

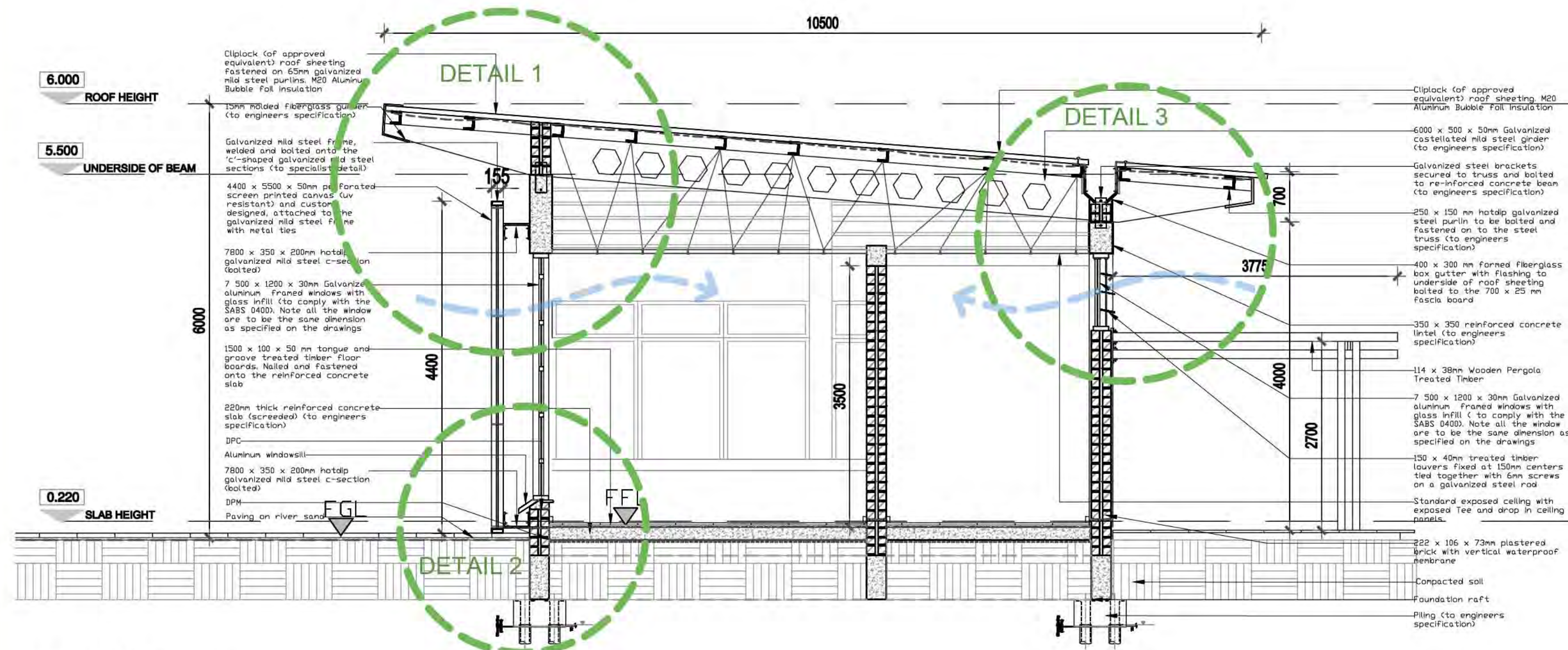
No.	Revision/Issue	Date

Project Name
PROPOSED NEW HEALTH & HEALING CENTRE FOR DURBAN

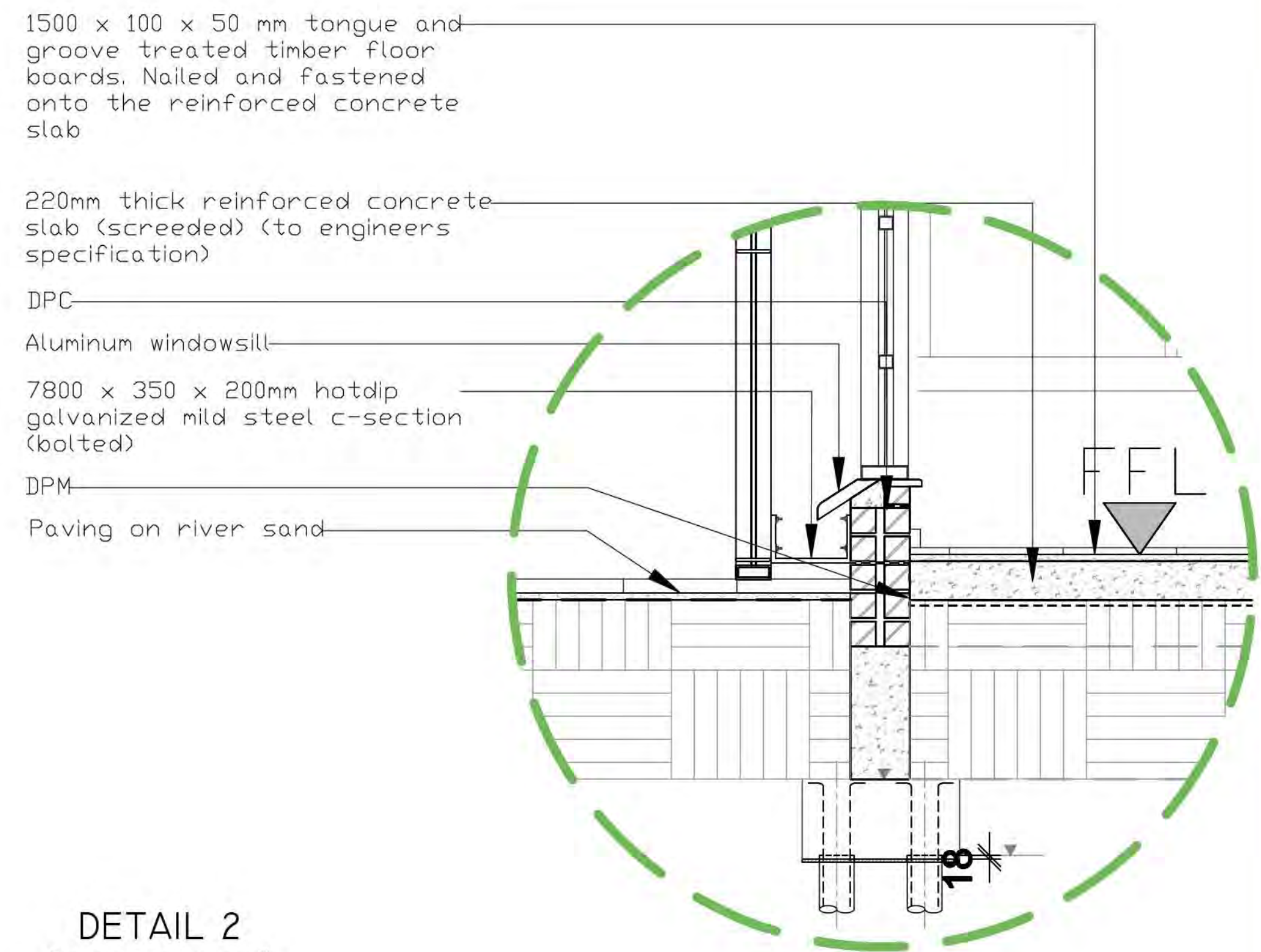
P.O. Box 658294
 Durban
 Tel : (031) 311 8790

Project Address
 AT: MEDWOOD GARDENS & POOL SITE, TOWN LANDS OF DURBAN NO. 1737

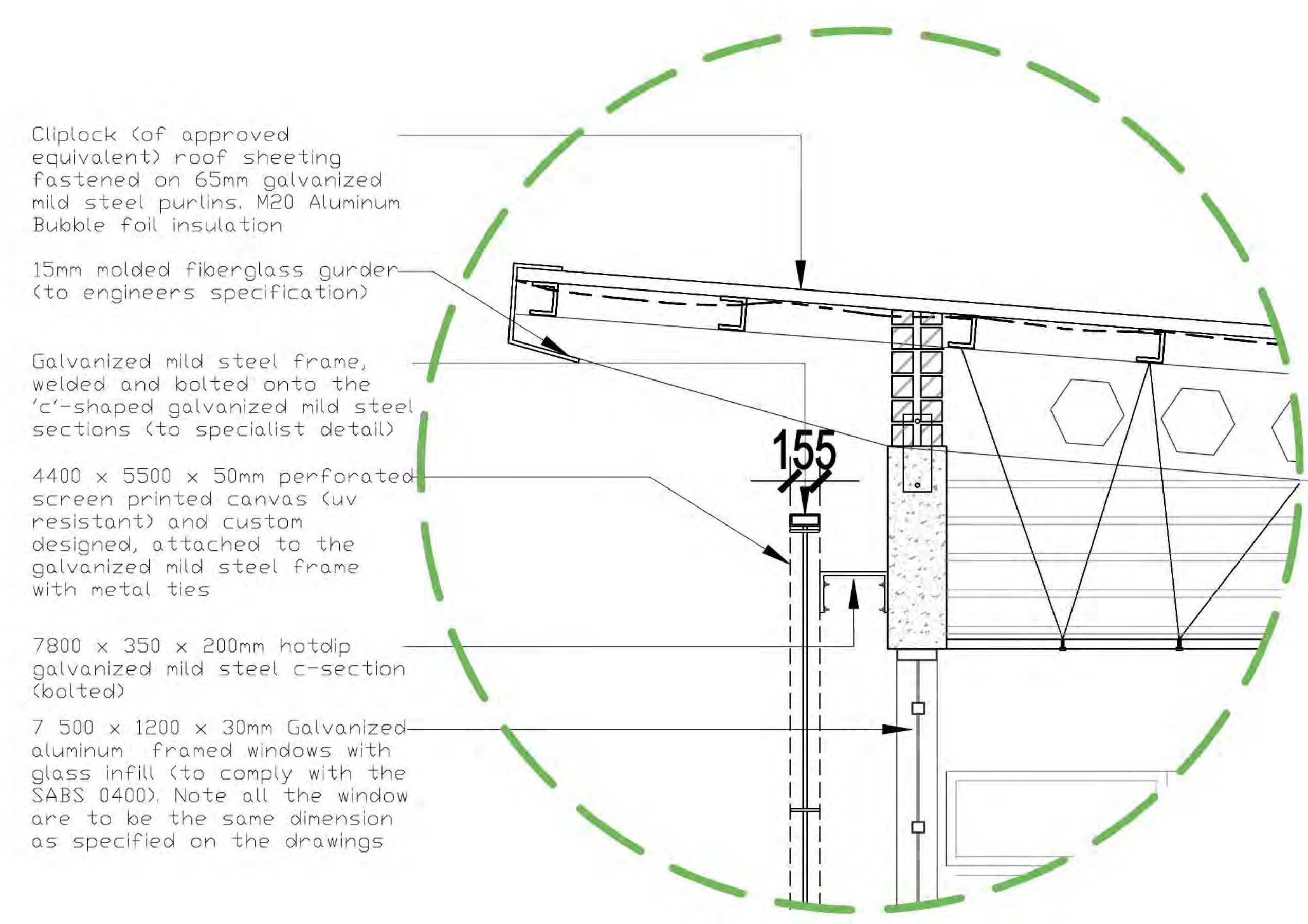
Project	Sheet
Date FEBRUARY 2011	1/3
Scale 1:50	



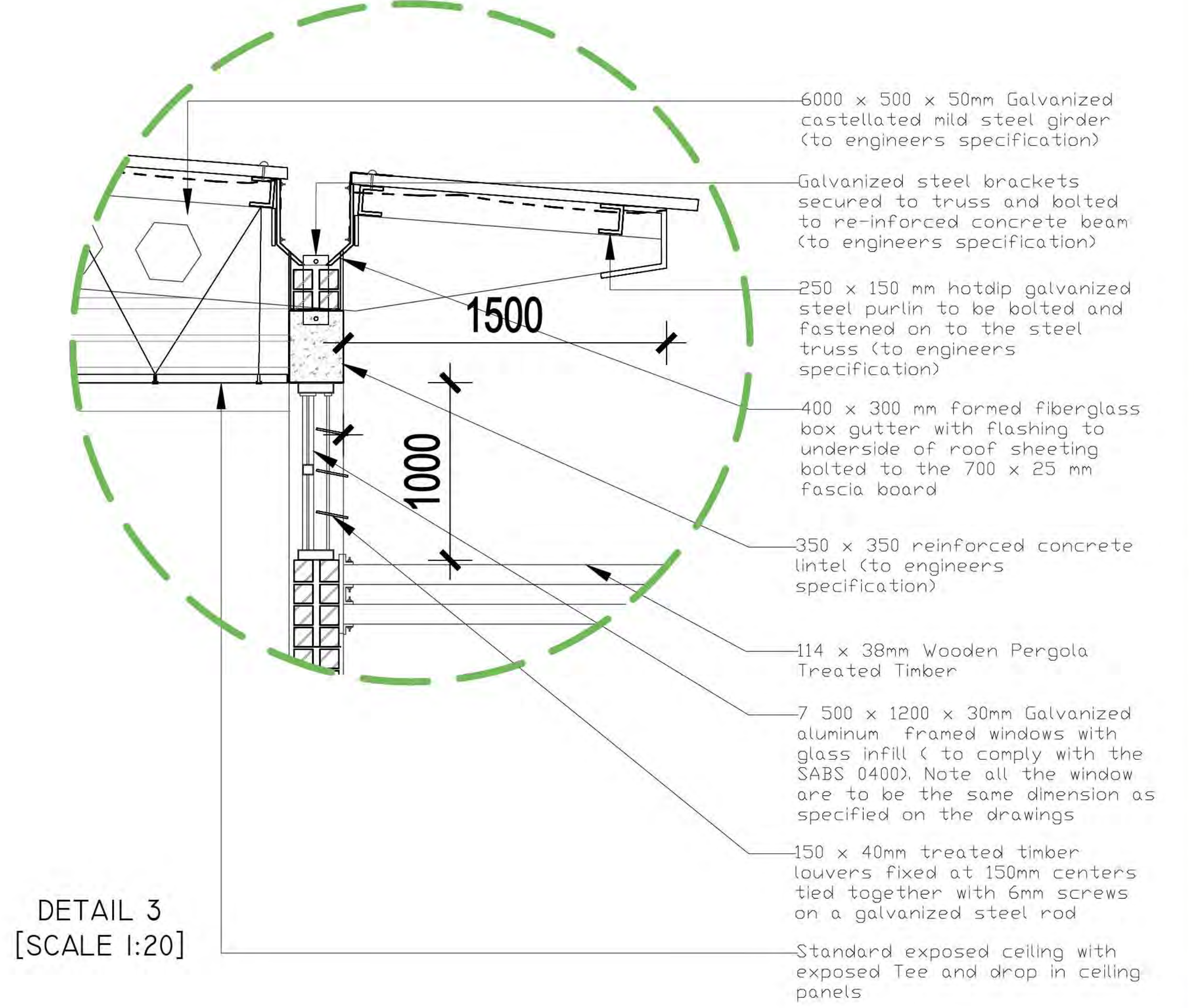
SECTION A-A
[SCALE 1:50]



DETAIL 2
[SCALE 1:20]



DETAIL 1
[SCALE 1:20]



DETAIL 3
[SCALE 1:20]

LB ARCHITECTS & DESIGNERS
101 Penzance Road
Glenwood
Durban 4001
Phone : 202 5879
Fax : 202 5880

WORKING DRAWINGS: SECTIONS

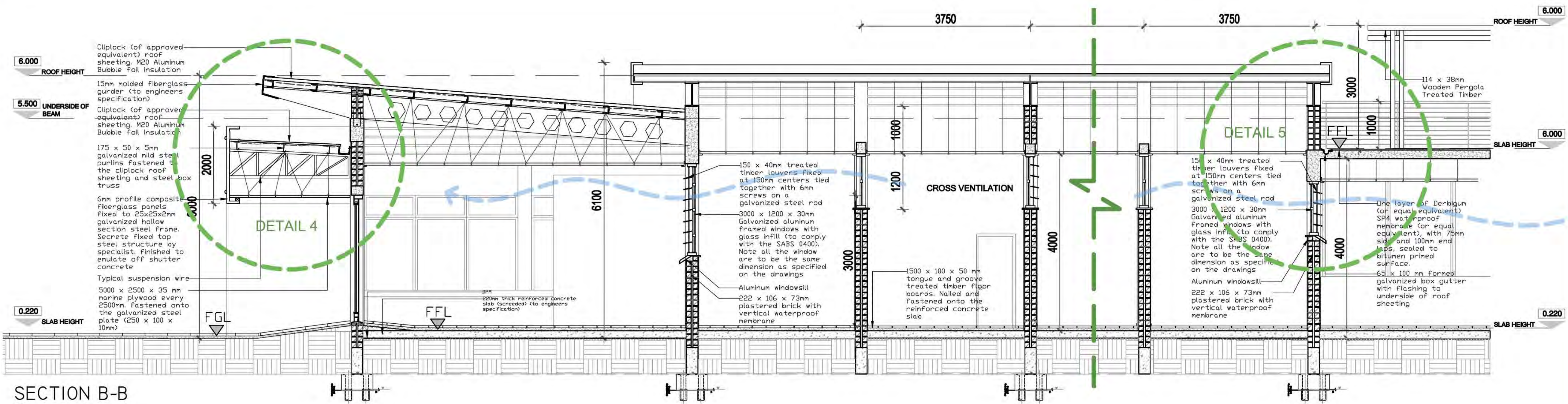
No.	Revision/Issue	Date

Project Name
PROPOSED NEW HEALTH & HEALING CENTRE FOR DURBAN

P.O. Box 658294
Durban
Tel : (031) 311 8790

Project Address
AT: MEDWOOD GARDENS & POOL SITE, TOWN LANDS OF DURBAN NO. 1737

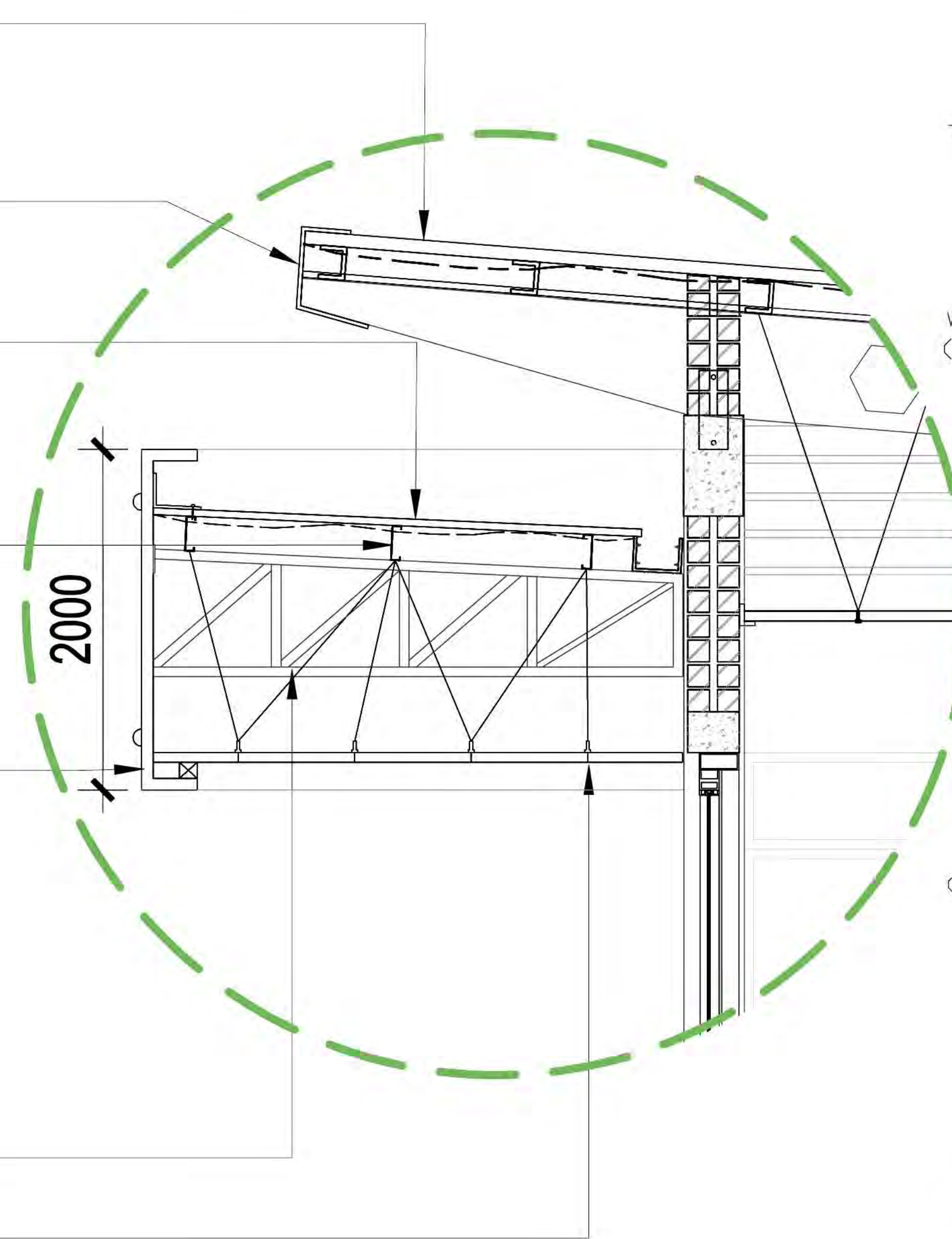
Project	Date	Scale	Sheet
	FEBRUARY 2011	VARIES	2/3



SECTION B-B
[SCALE 1:50]

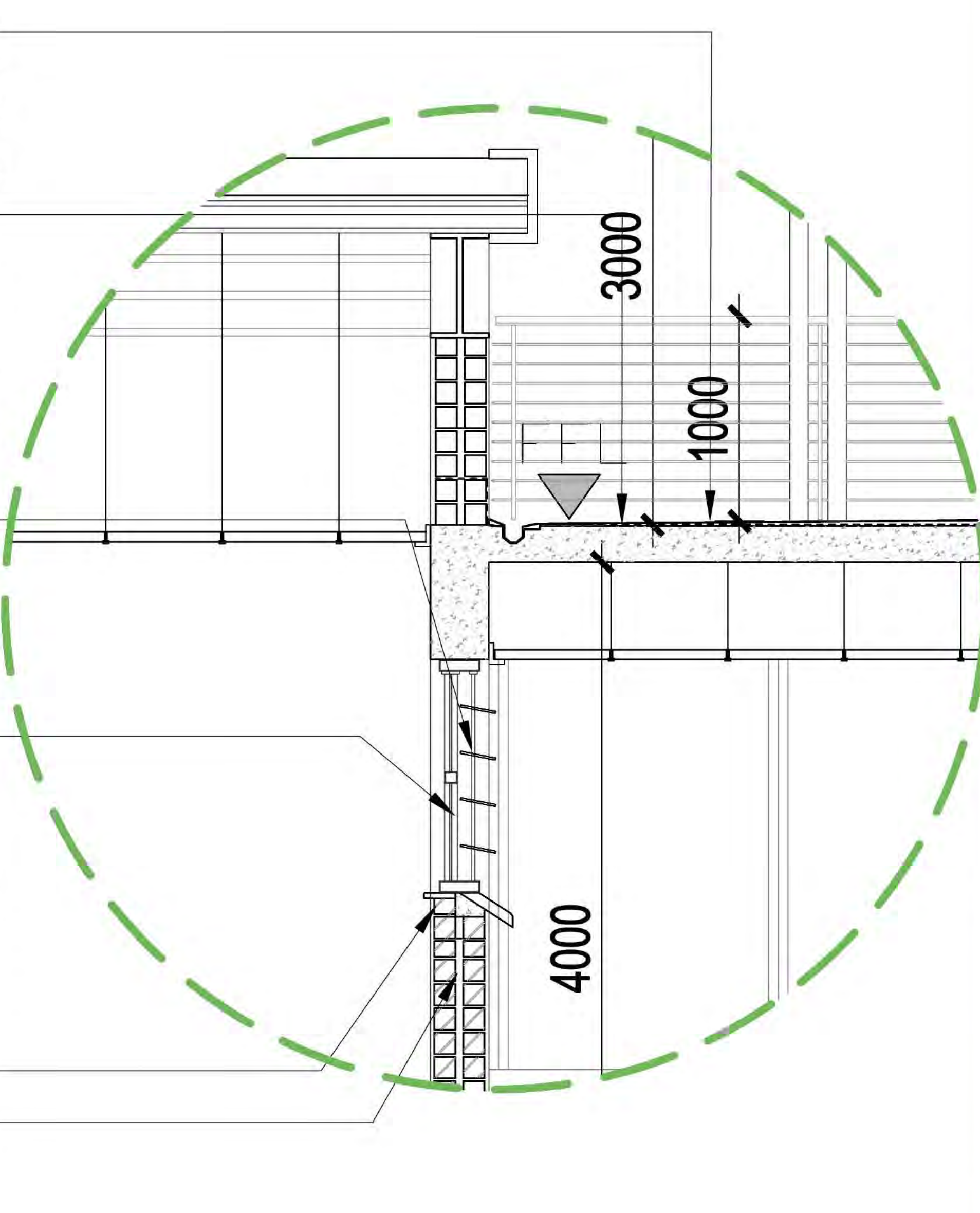
- Cliplock (of approved equivalent) roof sheeting, M20 Aluminum Bubble foil insulation
- 15mm molded fiberglass gurdy (to engineers specification)
- Cliplock (of approved equivalent) roof sheeting, M20 Aluminum Bubble foil insulation
- 175 x 50 x 5mm galvanized mild steel purlins fastened to the cliplock roof sheeting and steel box truss
- 6mm profile composite fiberglass panels fixed to 25x25x2mm galvanized hollow section steel frame. Secrete fixed top steel structure by specialist, finished to emulate off shutter concrete
- Typical suspension wire
- 5000 x 2500 x 35 mm marine plywood every 2500mm, fastened onto the galvanized steel plate (250 x 100 x 10mm)

DETAIL 4
[SCALE 1:20]



- 65 x 100 mm formed galvanized box gutter with flashing to underside of roof sheeting
- One layer of Derbigum (or equal equivalent) SP4 waterproof membrane (or equal equivalent), with 75mm side and 100mm end laps, sealed to bitumen primed surface.
- 150 x 40mm treated timber louvers fixed at 150mm centers tied together with 6mm screws on a galvanized steel rod
- 3000 x 1200 x 30mm Galvanized aluminum framed windows with glass infill (to comply with the SABS 0400). Note all the window are to be the same dimension as specified on the drawings
- Aluminum windowsill
- 222 x 106 x 73mm plastered brick with vertical waterproof membrane

DETAIL 5
[SCALE 1:20]



LB ARCHITECTS & DESIGNERS
 101 Penzance Road
 Glenwood
 Durban 4001
 Phone : 202 5879
 Fax : 202 5880

WORKING DRAWINGS: SECTIONS

No.	Revision/Issue	Date

Project Name
PROPOSED NEW HEALTH & HEALING CENTRE FOR DURBAN

P.O. Box 658294
 Durban
 Tel : (031) 311 8790

Project Address
AT: MEDWOOD GARDENS & POOL SITE, TOWN LANDS OF DURBAN NO. 1737

Project	Date	Scale	Sheet
	FEBRUARY 2011	VARIES	3/3

"On the whole, people do not look at architecture, nor at materials. They breathe it in-- It provides an atmosphere; not a pictorial scene" (Day: 1990; 113)

- The Ideas -

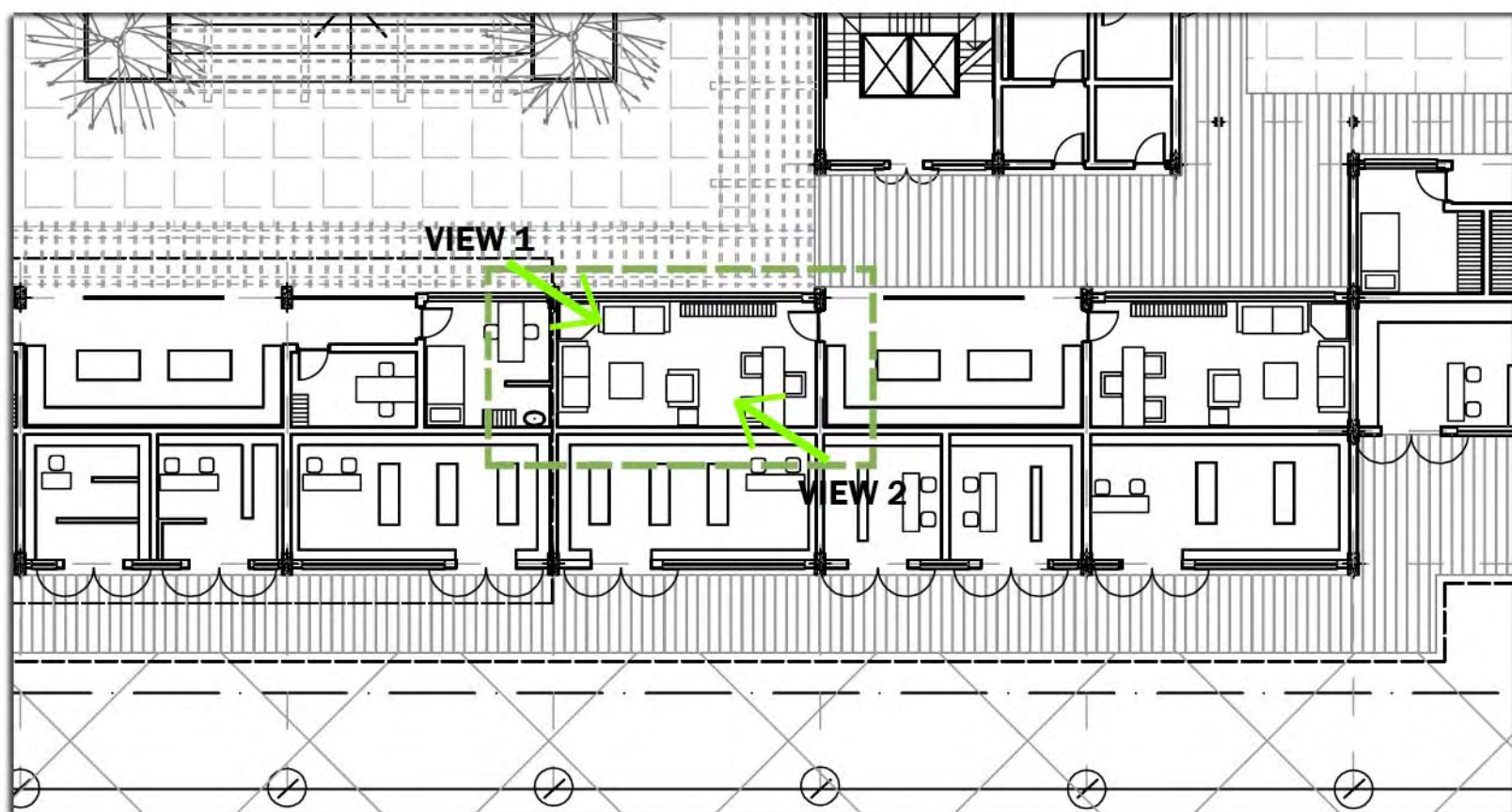
VISION:

To create a room which is calming, homely and soothing for the patients. The intention is to use natural and neutral colours and materials which encourage the individual to feel at ease in the space

- Precedents -



- The Plan (scale 1:200) -

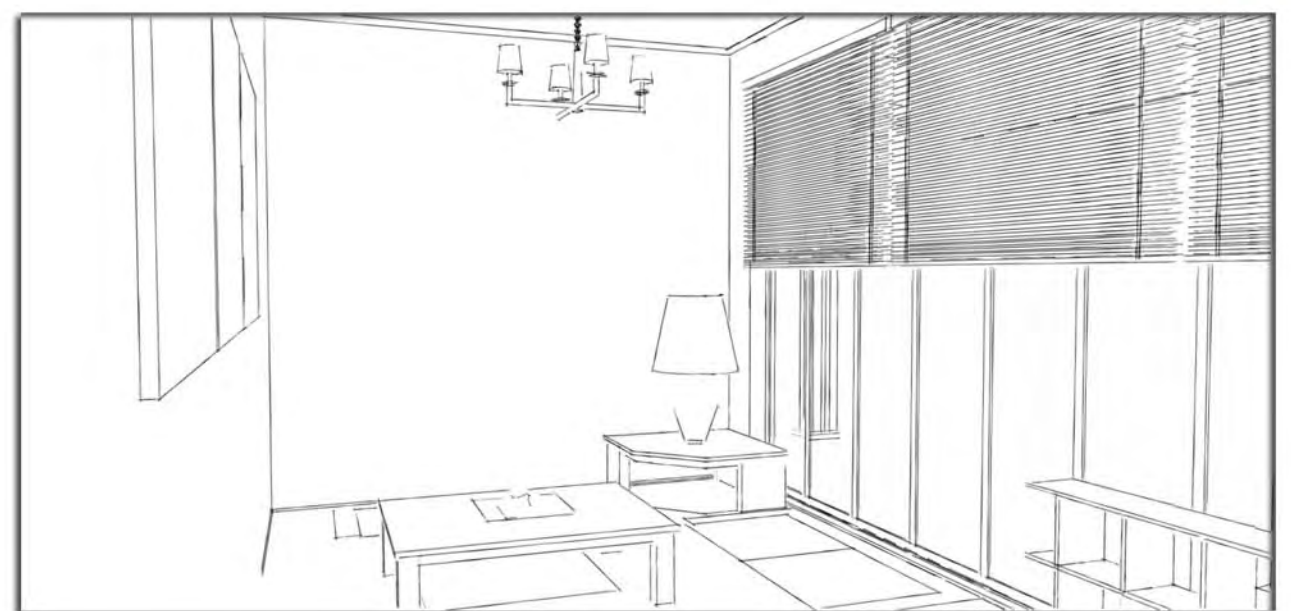
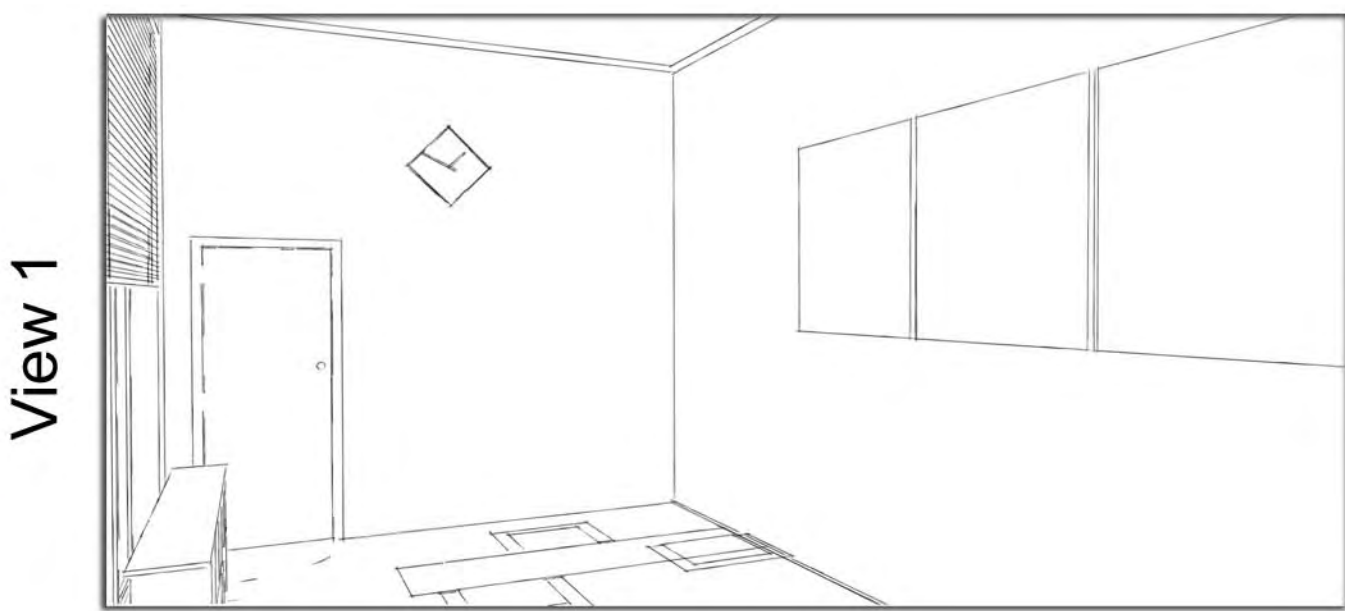


- Interior: Applications & Accessories -

WALL AND PAINT FINISHES
(COLOUR SWATCH & CARPET)



COUCH AND CUSHIONS



BLINDS (MATERIAL)



LAMP



WOODEN SHELF

- Renders -



View 1: The "office"



View 2: The "therapy area"

Interior Design [Psychology Room]

- The Ideas -

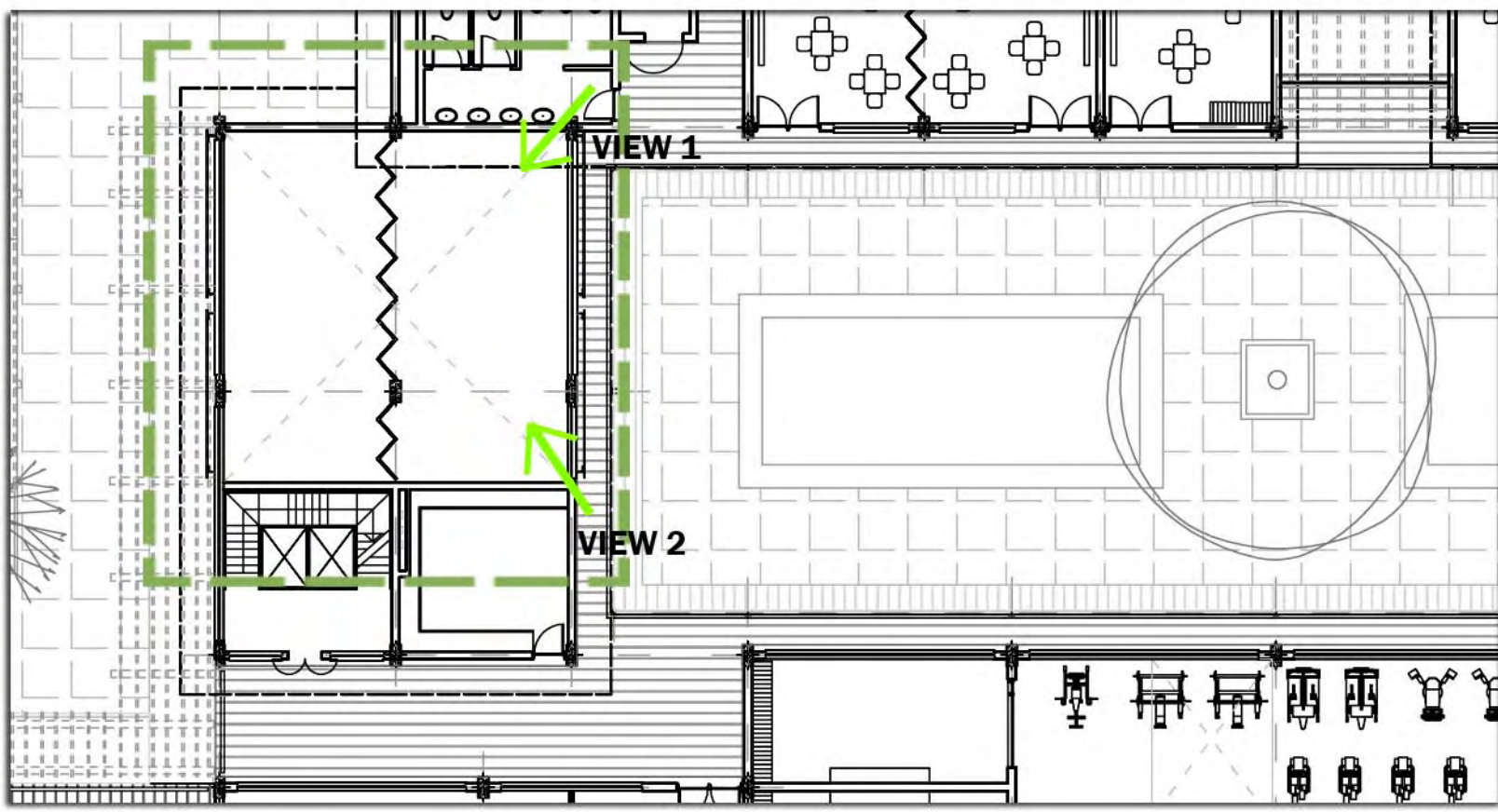
VISION:

This area is a multipurpose yoga, meditation and breathing room. The aim is to create an interior environment that is aesthetically pleasing, which leads to restfulness, contentment and enjoyment.

- Precedents -



- The Plan (scale 1:200) -



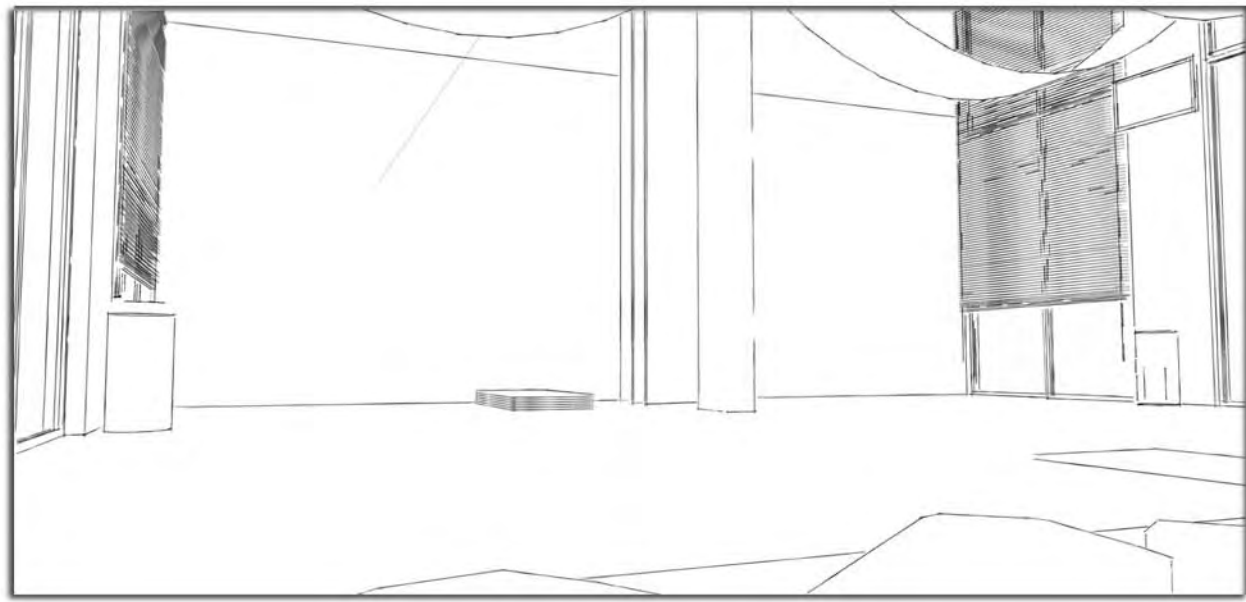
- Interior: Applications & Accessories -

PAINT AND FLOOR FINISH
 (COLOUR SWATCH & WOODEN FLOOR)

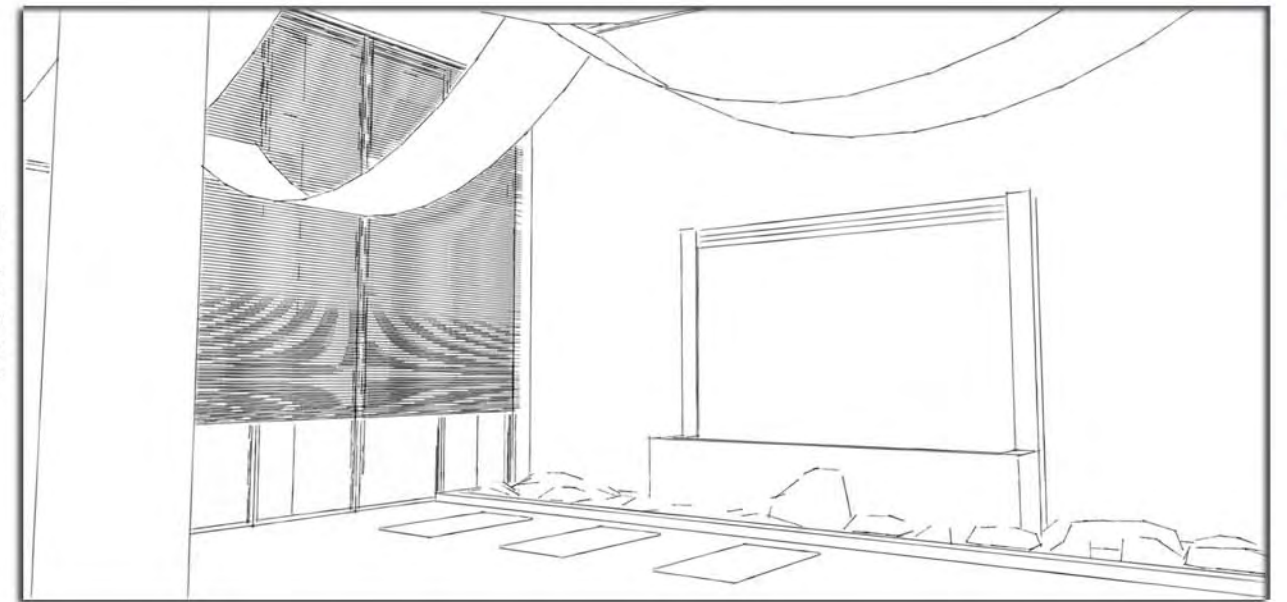
CEILING DECOR



View 1



View 2



ACCESSORIES



WATER FEATURE



STONE BOULDERS



- R



View 1: The Multipurpose Hall



View 2: A "Quiet Sanctuary"

Interior Design [Multipurpose Hall] ...

"When you are in a healing environment, you know it, no analysis required. You somehow feel welcome, balanced and at one with yourself and the world. You are relaxed and stimulated and invited to expand. You feel at home"- (Venolia: 1988; 7)

- The Ideas -

VISION:

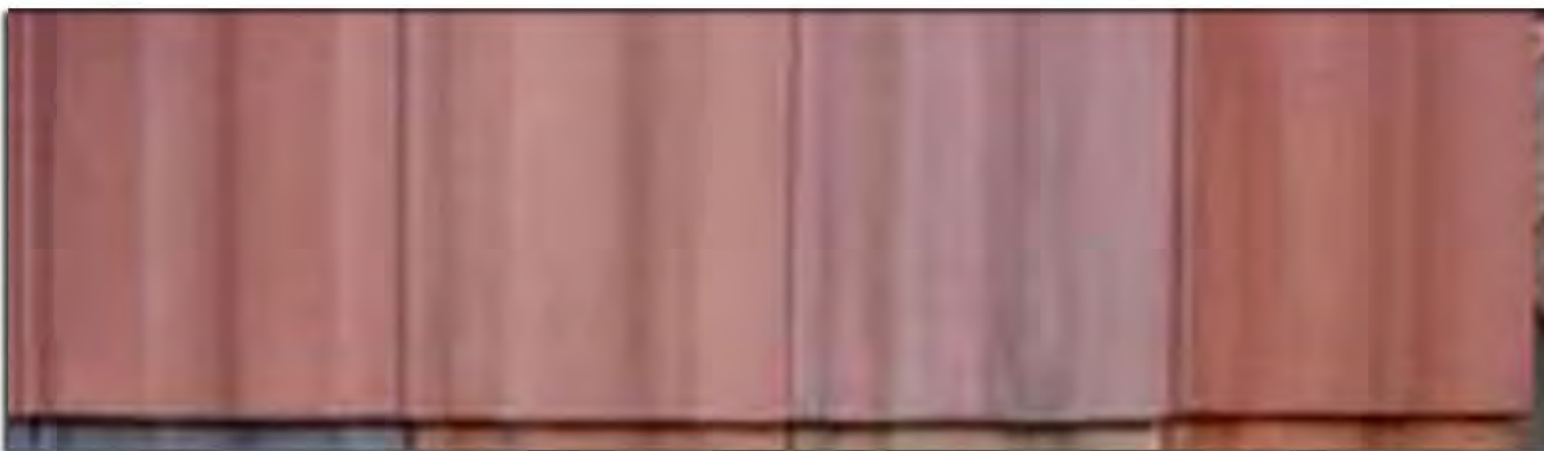
The material choice is of a natural and tactile nature. Emphasis has been placed on selecting materials that have a 'raw' or natural form- hence the use of timber window frames and doors, and window screens and decking planks as well as facebricks made of clay. The sunscreen canvas' made of UV resistant material further diversify the building's texture and add an additional dimension of depth to surfaces. The colour pallet is warm, inviting and subdued. Overall the aim is to optimise and encourage calmness and relaxation as this enhances 'human wellbeing'

- Precedents -



- Exterior: Applications & Accessories -

ROOFING, FACEBRICK AND SLATE

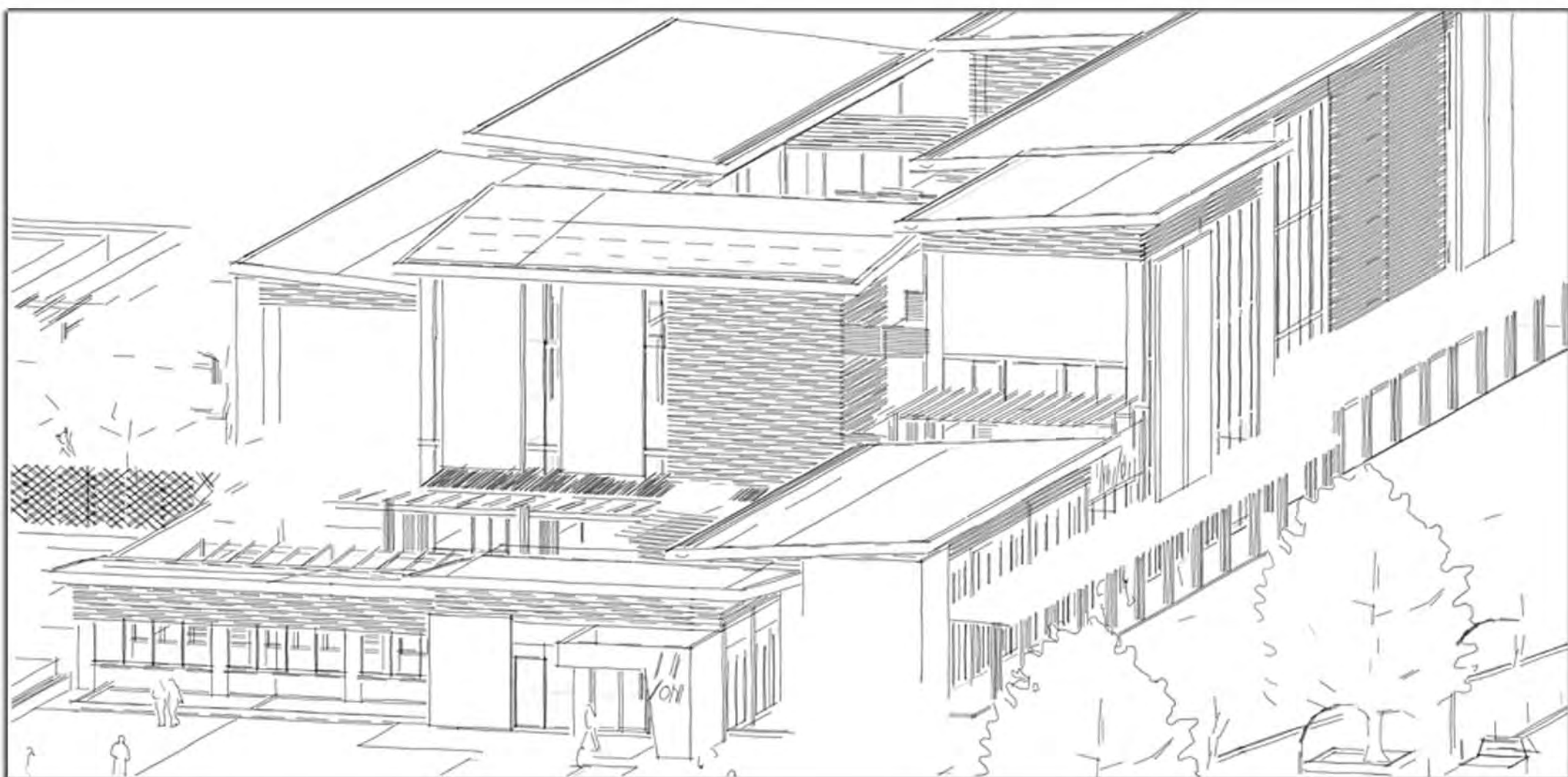


PAVING

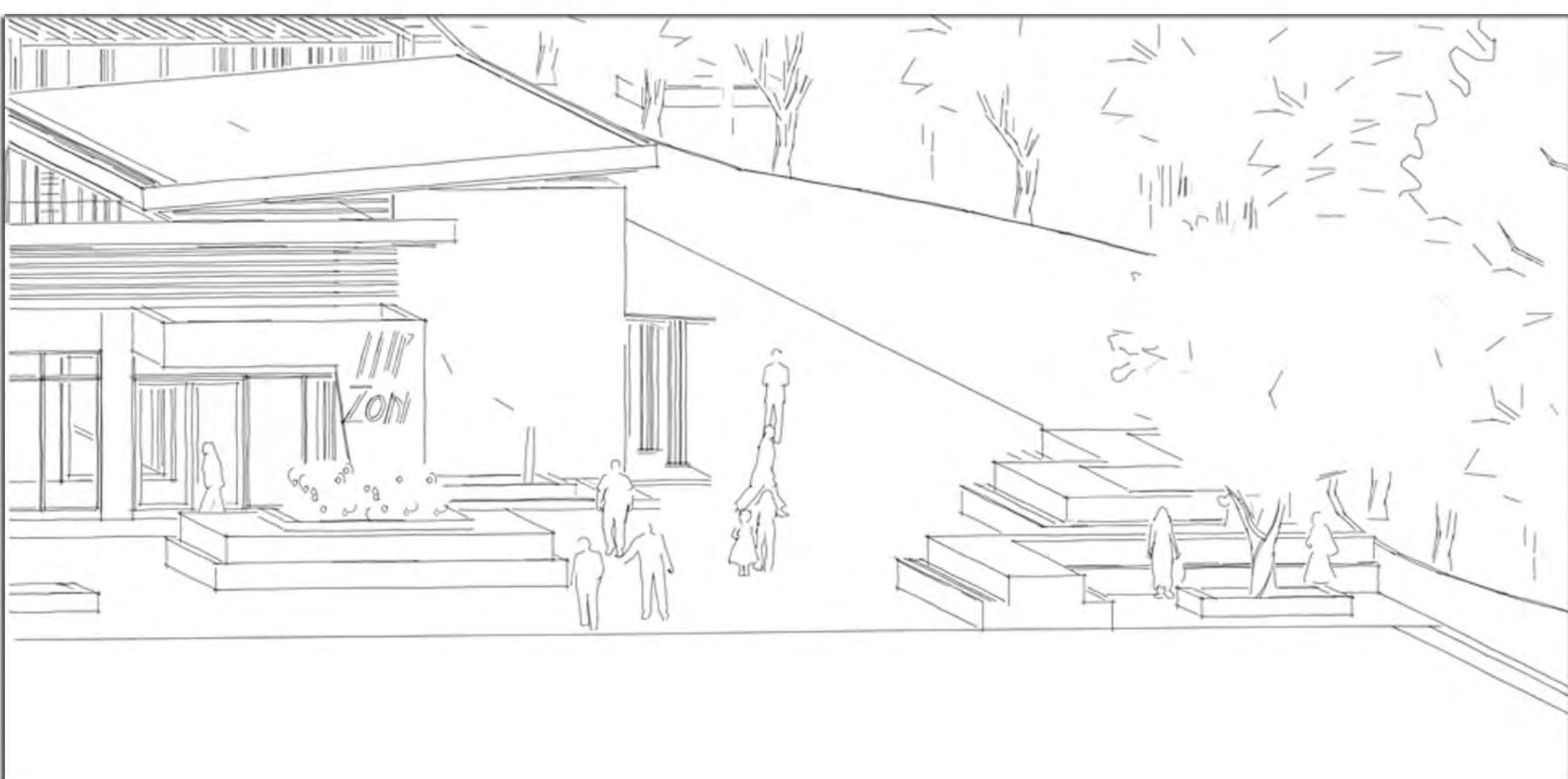
CANVAS PANELS, WOODEN SLATS AND FLOOR FINISHES



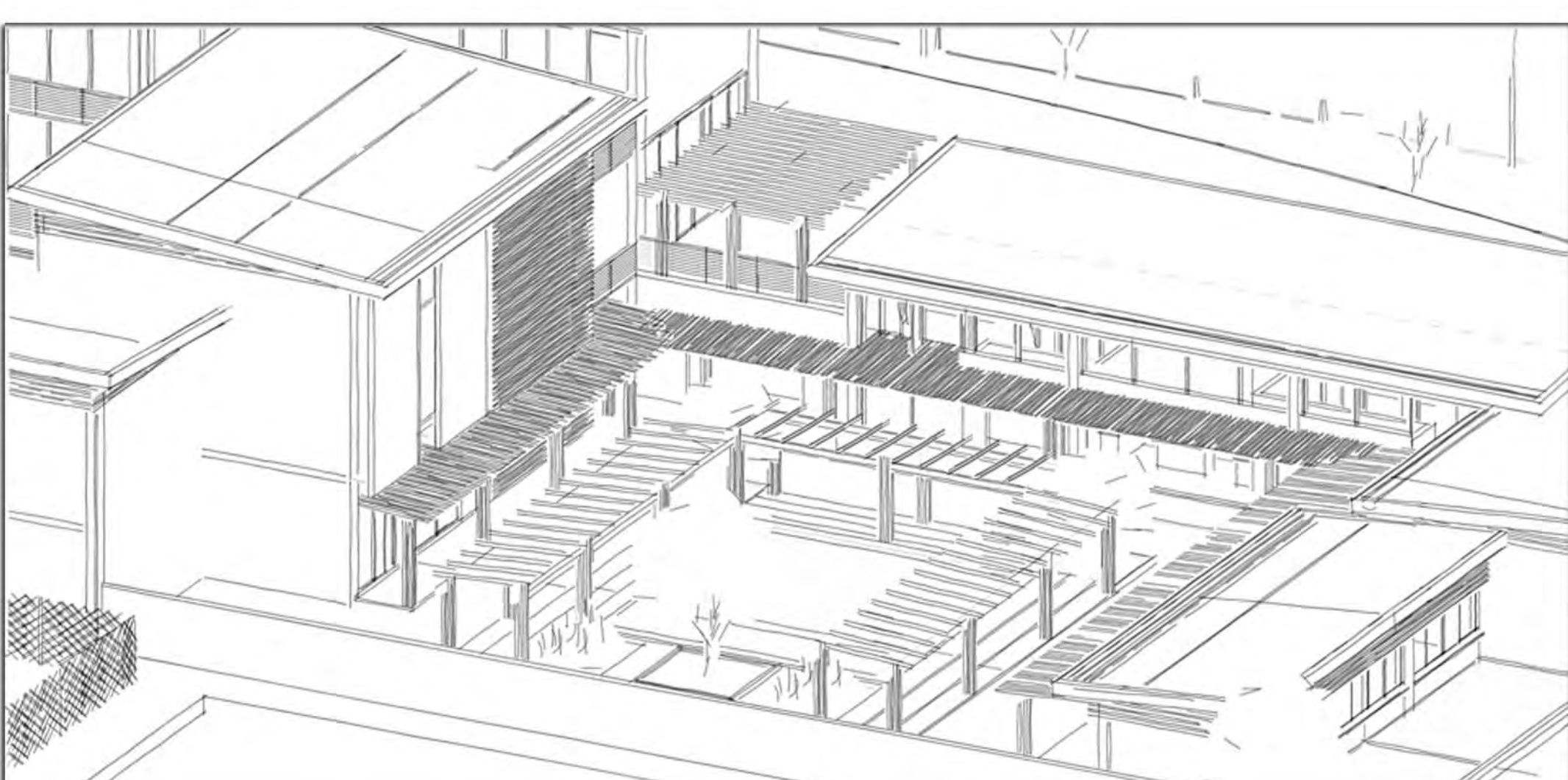
The Exterior [Materials & Finishes] ...



View 1: The Entire Building & Roofs



View 2: The Public Space & Paving Areas



View 3: Natural Treated Wooden Canopy & Pergola

- A Health & Healing Centre for Durban -

A STUDY OF THE RELATIONSHIPS BETWEEN ARCHITECTURAL ENVIRONMENTS AND THE HUMAN WELLBEING: A Proposed Health and Healing Centre for Durban

APPENDIX 2: THE PHYSICAL MODEL AND INTERIOR MOOD BOARDS



A STUDY OF THE RELATIONSHIPS BETWEEN ARCHITECTURAL ENVIRONMENTS AND THE HUMAN WELLBEING: A Proposed Health and Healing Centre for Durban

