

# A healing outdoor experience

## The potential of outdoor environments to enhance psychological healing at Weskoppies psychiatric hospital

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### ABSTRACT

The purpose of this thesis was to explore the potential of a designed physical outdoor environment to improve the social environment and thereby enhance the psychological healing process at Psychiatric institutions. Weskoppies Psychiatric Hospital situated in Pretoria West served as a model for testing the hypothesis.

The physical and social environment at Weskoppies was analyzed through observations, interviews and literature research. Findings from analysis and theoretical research regarding the influences that physical and social outdoor environments have on mental health, were synthesized to establish design guidelines. These informed the design decision making process and assisted in the proposal of an outdoor environment with emotional healing potential. An open space framework and catalytic sketch plan was designed to illustrate the application of the design guidelines.

The author found that an outdoor environment that encourage independence, purpose, consciousness, rest, connectedness and physical activities have the potential to enhance the psychological healing process. The open space framework and sketch plan proved that these guidelines can be accommodated on different scales.

*Hierdie werk word met dankbaarheid opgedra aan  
my hemelse Vader en ondersteunende ouers  
wat hierdie vir my moontlik gemaak het.*

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Figure 9.56: Graph indicting the volume of run-off per month from the catchment area and the required volume of water needed for irrigating 2Ha (Author, 2009).

Figure 9.57: Retention dam 1 plan (Author, 2009).

Figure 9.58: Irrigation control room plan (Author, 2009).

Figure 9.59: Section through pump room (Author, 2009).

Figure 9.60: Retention dam outlets and retaining wall (Author, 2009)

Figure 9.61: Retention dam inlet with bird hide in background (Author, 2009).

Figure 9.62: Section through Retention dam 1 (Author, 2009)



# INTRODUCTION



## 1.1. THE PROBLEM IN CONTEXT

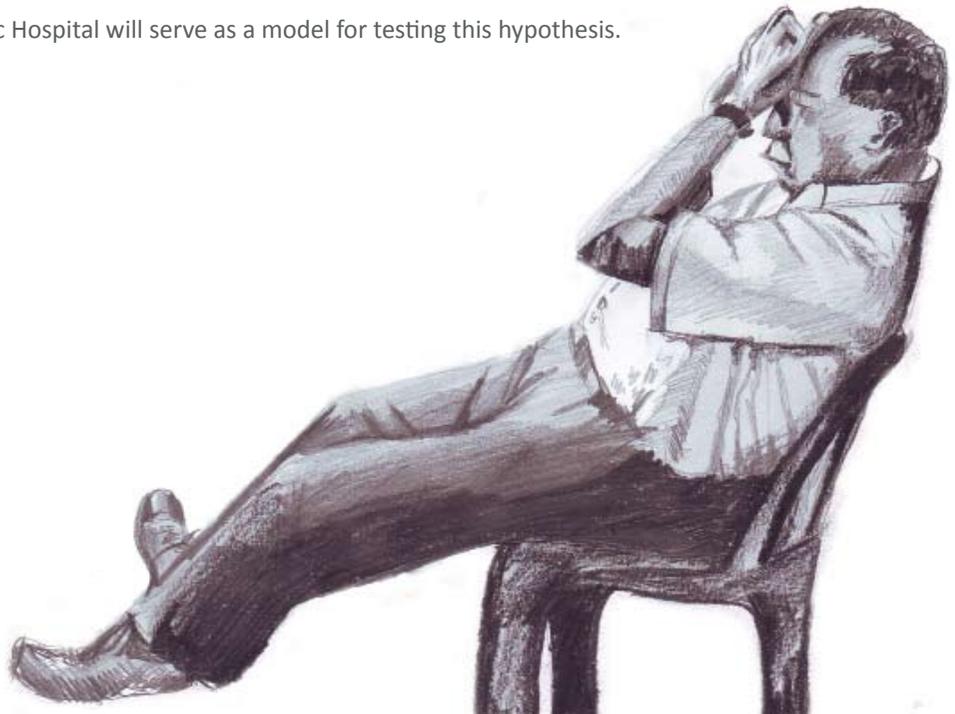
Mental illness is argued to be one of the world's greatest public health epidemics and therefore has an undisputed significance regarding the social and economical health of society. According to Torrey & Miller (2001:IX), the historical occurrence of mental illnesses consistently increased over the past few centuries. Statistics indicate that the number of cases tripled over the course of the 19th century and consistently increased since then. In Accordance, the World Health Organization (WHO) estimates that 450 million people worldwide currently suffer from mental illnesses with South African studies revealing that one in five people suffer from life altering mental disorders locally (Dlamini: 2006).

This manifested rise in occurrence of mental illnesses could arguably be attributed to many contemporary and fluctuating situations. These situations include those evident in the physical environment as well as the social environment, the latter of which alludes to altered perceptions and attitudes regarding mental illnesses and the way they are treated. Environmental psychology can therefore be identified as a field in which it becomes possible to focus on the interplay between people and their surroundings by stressing the profound influences that physical and metaphysical environments have on the mental health of society members.

The confinement of patients to mental institution reflects a stigmatised perception held by society regarding these illnesses, which in turn leads to mulish candidates refraining from seeking appropriate treatment (Dlamini:2006). This stigmatization subsequently has a negative impact on a patient's ability to facilitate the emotional healing process.

In addition to the treatment on offer by these places of healing, a cheerful outdoor environments that facilitate public contact as well as engagement with nature, have the potential to enhance the emotional healing process. Landscape Architecture is therefore identified as a plausible field in which the influences of the physical and social environment on mental health can be explored.

Weskoppies Psychiatric Hospital will serve as a model for testing this hypothesis.



## 1.2. INTRODUCTION TO SITE

Weskoppies is a government owned psychiatric institution which offers treatment for a variety of mental illnesses. The hospital is identified as one of the largest mental health facilities in South Africa with approximately 1400 beds, capable of accommodating roughly 5000 annual admissions and 5200 outpatients per annum.

### 1.2.1. HISTORICAL CONTEXT

The inaugural buildings date back to 1892 and are thus identified as having historical significance. As was the norm for that period in time, an Enlightened approach towards mental treatment was followed by the hospital. This approach involved limiting the confinement of patients, while providing work opportunities and various forms of outdoor activities in addition to recreation. The arguable success of this approach was evident in the amount of patients who passed through the institution. However, a lack of resources would later prove to be a limiting factor of the enlightened approach during the Anglo Boer war and subsequently never truly reinstated (Plug & Roos, 1992:219). Situated in the “Old Botanical Garden” of Pretoria, the site provides the ideal setting for a therapeutic outdoor environment while this inherent potential remains largely untapped.

### 1.2.2. PHYSICAL CONTEXT

Weskoppies is situated 2km west of Pretoria railway station, just south of Pilditch Athletic stadium in Pretoria West. The campus is within a 2km radius of several cultural monuments which includes the newly built Freedom Park and the Voortrekker Monument on Skanskop. The railway and industrial zone at the northern edge completely isolates the campus from the city (fig.1.5). The 149-hectare campus contains 274 permanent buildings while vast underutilized open spaces remain. The view of the Langeberge to the South reiterates the natural tranquillity of the immediate natural landscapes.

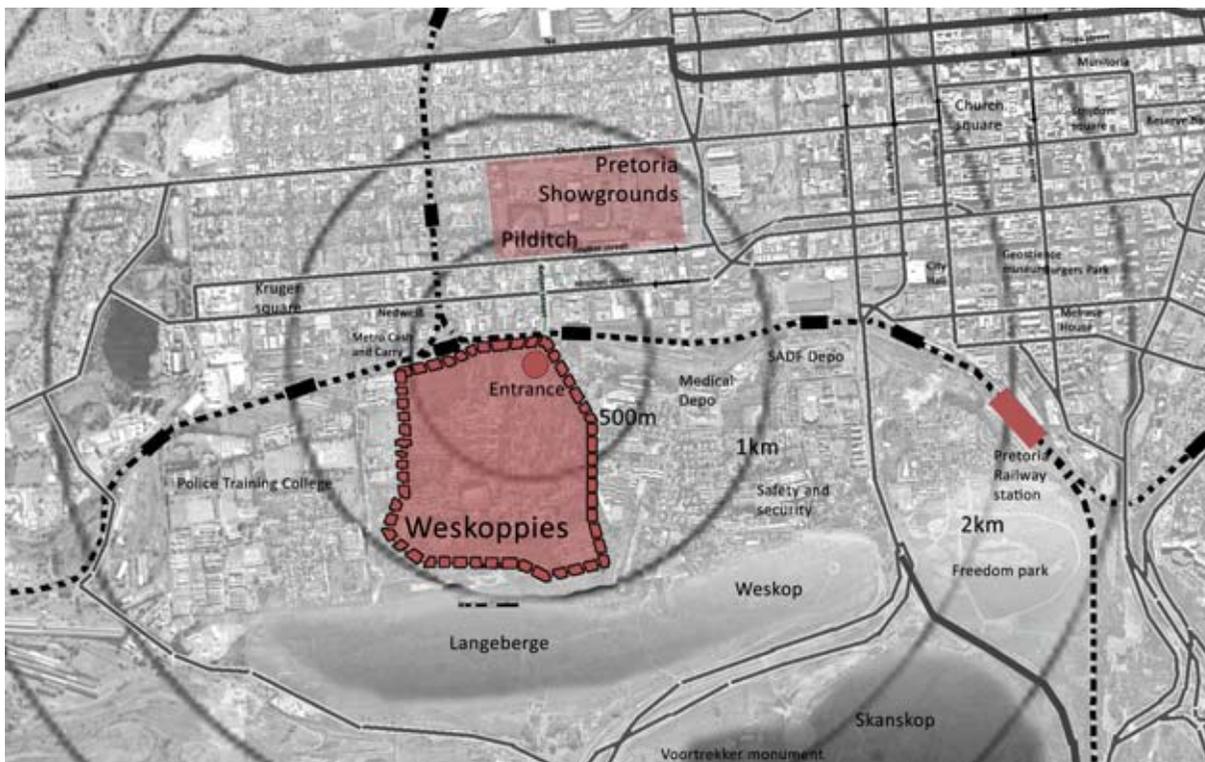


Figure 1.5: Location of Weskoppies with Pretoria show grounds situated within 500mm on the north, Pretoria Railway Station 2km east and the Langeberge on the south. (Author 2009)

### 1.2.3. SOCIAL CONTEXT

Weskoppies is hidden in an industrial area with no exposure to general public and while most residents of Pretoria know what Weskoppies are about, very few can state that they have caught even as much as a glimpse of the actual campus. The surrounding area is characterized by long established industrial businesses which has seen very little or any revival in recent years resulting in the area being relatively "un-personal" and "cold" with none the old charm that characterize many of Pretoria's other older suburbs.

## 1.3. PROJECT MOTIVATION

It is arguable that mental illnesses have a negative impact on the economy of South Africa. Direct expenditures include treatment and rehabilitation costs whilst indirect costs include loss in productivity, safety risks, increased staff turnover and suicide amongst others. A healing outdoor environment can possibly facilitate the decrease of identified problems by improving the amount of patients who pass through the institution while minimizing the chance of relapse after institutionalization.

As is becoming evident, the need for more research on the subject matter is crucial to understanding how current situations may be improved. Within the previously mentioned disciplines of Environmental Psychology and Environmental Design, the focus has historically been mostly on hospital interiors rather than outdoor spaces that could actually facilitate emotional healing more effectively. Few researchers have addressed the possible link between outdoor environments and mental health and the lack of supporting literature further augments the potential (Sachs, 1999:248).

The importance of Weskoppies as a precinct lies in its significance in the context of South Africa. As previously mentioned, the hospital is one of the largest psychiatric hospitals in the country and has played a significant role in South African history and psychology. It was the first psychiatric hospital in South Africa to follow an Enlightened approach to the treatment of mentally ill individuals. An appropriate open space proposal can help to regain what Weskoppies once was: 'a beautiful building, very healthily situated in large gardens and cultivated fields' (Plug & Roos, 1992:219).

According to Kaplan & Kaplan (1989), contact with nature can help people come to terms with their views of themselves and the world. Activities where patients, staff and visitors engage with each other and nature can develop a feeling of responsibility and connectedness to the natural environment, which can result in healthier emotional conditions and ultimately even more responsible behaviour towards natural systems.

## 1.4. PROBLEM IDENTIFICATION

### PROBLEM STATEMENT

How can the outdoor environment enhance and facilitate the psychological healing process?

### HYPOTHESIS

The physical design of the outdoor environment can improve the social environment and thereby enhance the psychological healing process.

## RESEARCH QUESTIONS

- How** can Landscape Architecture assist in improving the social and physical environment of the mentally ill?
- What** effect does the physical outdoor environment have on mental health?
- What** is the effect of the social environment on mental health?
- Why** is contact with nature beneficial to emotional healing?
- How** can the design of outdoor environments enhance the healing properties of nature?
- What** role can a Landscape Architecture have in changing negative perceptions about mental illness?

### 1.4.1 CHALLENGES

A dramatic change in environment could cause stress and be disorientating to the institutionalized individual. If the hospital environment is unsuitable, environmental stress could have negative implications on the patient and possibly lead to deterioration of the mental condition. Listed below are challenges specific but not limited to Weskoppies.

#### STIGMATIZATION

Publicity on Weskoppies is generally limited to isolated incidents inherent to such an institution. The fact that regular mention is made in the press to psychiatric evaluation for legal proceeding further compound this issue which result in a unfair generalization (refer to fig 2.3). For the person experiencing this prejudice it can result in various negative reactions such as; a hesitance to seek the necessary treatment, poor social adjustment, a feeling of hopelessness, low self worth and isolation.

An outdoor environment with a positive identity that accommodates uplifting activities and unique experiences for both the public and Weskoppies patients can result in positive publicity and positive public perceptions about the institution. This could also help to remove stigmatization that exist due to a lack of knowledge and understanding.

#### ISOLATION

Institutionalization often results in the patient losing his/her sense of belonging, purposefulness and connectedness to the bigger picture. All of these are key to maintaining a healthy human spirit. Weskoppies patients are physically isolated from the rest of society due to the railway and industrial zone that cuts Weskoppies off from the city. Interviews with various Weskoppies patients by the author indicated that many institutionalized patients lose track of date and time. Some patients are unaware of how much time has passed since being institutionalized. This can result in an inability for patients to cope with life outside the hospital boundaries due to a lack of support and understanding from the community.

The outdoor environment should be designed to emphasize the time and season. Appropriate integration between patients and the public can restore a sense of belonging, connectedness and purpose.

#### TREATMENT AND MEDICINE

Contemporary treatments of mental illnesses mostly focus on drugs that keep patients stable. The physical and spiritual well being of the patients are often neglected. Dependence on medication could result in a feeling of helplessness and a lost sense of control. Drowsiness is evidently a common side effect of most of these medications, as patients at Weskoppies tend to enjoy sleeping on the lawn during the day.

Comfortable outdoor sleeping areas can provide the medicated patient with the necessary rest without being confined to the building interior. Physical and spiritual wellbeing can be addressed through engagement with nature and activities.

#### UNEMPLOYMENT

Unemployment after institutionalization results in the relapse of many patients after rehabilitation. Job creation at Weskoppies could aid the rehabilitation process and establish a sense of independence, purpose, self worth and responsibility that plays an integral role in the psychological healing process.

**Connectedness** as used by the author refers to a patient's involvement in interpersonal relationships as well as his/her physical surrounding and more specifically nature. Once these two aspects are in balance a person becomes connected and his/her connectedness is measured with reference to the maturity of the respective relationships. It is argued that if a patient is in a state of connectedness it will enhance the recovery process

## 1.4.2 AIMS

To create a therapeutic outdoor environment, Landscape Architecture should propose solutions that facilitate the process of healing (Marcus, 1999:87).

### The open space system will aim to:

- Assist in the de-stigmatization of mental institutions by hosting uplifting activities and unique experiences for visitors and patients alike through a landscape with a positive character.
- Counteract the isolation of Weskoppies by increasing contact between patients and public.
- Create an outdoor environment that assists in restoring a sense of time, belonging, purpose and independence.
- Provide places for rest and contemplation.
- Provide job opportunities for both patients and the surrounding community.

## 1.5. CLIENT

### 1.5.1. SERVICE PROVIDER

#### Facility Management Unit

The Facility Management Unit (FMU) serves as a representative of the Department of Health and the hospital acting as the managing agent of the facility. The FMU is responsible for the repairs, maintenance and improvement of infrastructure, horticultural services and general maintenance of the hospital environment (Weskoppies 2009:4) The design is therefore proposed for the FMU as the client and possible future implementer.

### 1.5.2. USER

A healing environment should result in a positive memorable experience for all stakeholders.

#### Patients

Therapeutic settings can yield measurable improvements in mentally ill patients. These include speed of recovery, anxiety experienced and medication required (Martin 2002:83).

#### Variety of students, staff, public, visitors

The World Health Organization is increasingly recognizing that health should be viewed holistically and the key issue should be maintenance of well being (Stoneham 1997:23). A healing outdoor experience with positive social and physical activities will also serve as a preventative measure for mental illness and change perceptions of Weskoppies and its patients

## 1.6. DESIGN PROCESS

### The hypothesis will be tested utilizing the following process (refer to fig. 1.6):

The theoretical study will aim to answer the research questions stated 1.4.3. Through literature research, observations and interviews, a historic, physical and social context analysis was done for Weskoppies. Design guidelines were generated through a synthesis of the theoretical and contextual research. The aim of these guidelines was to inform the design decision-making process guide the design at every level (Porter, 2004:22). The design guidelines informed the development of an open space framework which serves as a guide for developing the outdoor environment at Weskoppies to have healing potential. It also informed the design of a sketch plan for an appropriate area in the open space framework that will serve as a catalyst for the rest of the site. This will attempt to illustrate a healing outdoor environment on a more intimate scale. The technical resolution will include material choices and technical details for the most prominent structures on the sketch plan design.

## 1.7. LIMITATIONS AND ASSUMPTIONS

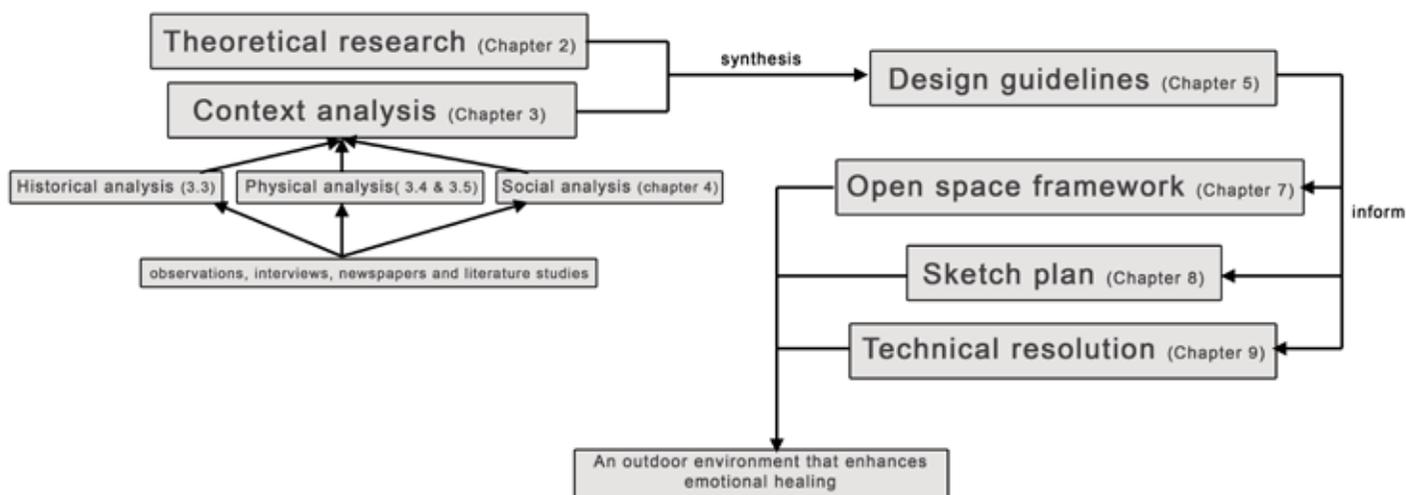
The author is not formally trained or professionally experienced in the fields of psychology or psychiatry. Hence it is considered difficult for a designer to have an in depth understanding into the state of mind of the mental patient as this in itself is the subject of extensive study and education. For this reason the problem was viewed from the study of literature, observations and interviews with psychiatrists, psychologists and nurses to establish the design guidelines which will inform the design decision-making process.

For the purpose of this study it is important to differentiate between 'healing' and 'cure'. The author does not attempt to cure mental illness or replace the role of medication, but attempts to reduce stress and facilitate healing by proposing an outdoor setting that supports and compliments the medicinal treatment and wellbeing of the mentally ill patients.

The study excludes the maximum-security section on the southern hill. Patients at the maximum security section include court ordered patients sent for a 30 day observation period to determine whether they are fit to stand trial. The section also includes patients that are a danger to themselves and society and their conditions range from extreme mental illness, aggression and risk of absconding.

For the safety of all patients it is vitally important to ensure that a fair degree of access control is maintained throughout the precinct. The railway line can be extremely dangerous for patients with suicidal tendencies or lack of judgment.

Figure 1.6: Diagram illustrating the design process as described in 1.6 (Author 2009)



# THEORETICAL RESEARCH



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## 2.1. INTRODUCTION

Due to the increasing pressures on natural resources, sustainable design have become a major concern for Landscape Architects recently. Uzzel & Lewand (1990:34) suggests that in any environmental transaction the attention should be focused on the user as much as on the environment itself. When Landscape Architects alter the outdoor environment they should be aware that design interventions have consequences other than the visual appearance. It also influences human emotions and changes symbolic interpretation.

Environmental psychology is focused on the interplay between humans and their surroundings and stresses the profound impact the physical and social environment can have on human behavior and mental health. A study of Environmental psychology is helpful to understand the effect Landscape Architecture can have on human behavior and mental health by changing the environment through design interventions.

The thesis is focused on the potential of outdoor environments to assist in improving mental health. For this reason it is important to study human perceptions, emotions and reactions towards the physical and social outdoor setting. Investigating the impact of the physical outdoor environment on mental health can equip the designer with guidelines for designing a space that fosters healing. Research on the effect of the social environment on mental health can guide the designer in creating a physical environment that enhances healing. The theoretical research will involve a historical overview of outdoor environments at psychiatric hospitals and research about the influence of the physical and social environment on mental health.

## 2.2. HISTORICAL OVERVIEW OF PSYCHIATRIC HOSPITALS

### 2.2.1. THE OUTDOOR ENVIRONMENT AT PSYCHIATRIC HOSPITALS

Throughout history the importance placed on the outdoor environment as a therapeutic component in the treatment of psychiatric patients varied. However as early as the 15th century, the outdoors was utilised as a therapeutic component in general health care and although the natural and designed environment's ability to improve physical, mental and spiritual well being is well documented it was not commonly utilised as part of psychiatric care (Sachs, 1999:236). The time period in which a psychiatric institution was established is usually reflected in the structure and characteristics of the outdoor space while the way it is used or has been used is representative of social and medicinal trends in psychiatric care (Sachs, 1999:235).

In Europe, the mentally ill was classified as prisoners and was subject to beating and confinement during the 1400's with one exception being the Hospital at Zaragoza, Spain which followed a different approach by allowing patients to work in vegetable gardens, on farms and in vineyards still setting an example for designers many years later (Sachs, 1999:237). Similar to Europe in the 1400's, seventeenth century colonial America regarded and treated the mentally ill as demoniacally possessed individuals and kept them in workhouses or prisons. The proverbial scars that this treatment instilled on the perceptions of mentally ill people is still visible in the 21st century. The author, through this thesis, strive to put forward a socially sustainable and systematic approach through which the natural environment, in conjunction with design intervention thereof, will not only become more humane but be transform into a "natural medicine" in the true sense of the word.

The European Romantic movement in the 18th and 19th century can be seen as a turning point in psychiatric care and sought to unite human emotions with morality and nature. The outdoors was highly valued for its ability to improve the mental health of psychiatric patients (Sachs, 1999: 237). By this time nature was viewed as physically and spiritually restorative and hospitals were designed to allow patients contact with nature through decorative gardens, vegetable gardens, farming programs and views of nature from the building interior. Philippe Pinel (1745-1826) a French psychiatrist played a significant role during this time and changed psychiatric institutions from prisons to hospitals.

He advocated what he referred to as “moral treatment” in which the social and physical environments at mental institutions were viewed as resources in the healing process. He believed that the physical setting should be restful and accommodate activities that aim to “re socialise” the patient. These included farming, gardening and daily walks outside (Sachs, 1999: 239). The Schleswig Asylum (1792-1820) in Germany and The Retreat in York, England (1796-present) are examples of asylums inspired by these views (Fig.2.2).



*Figure 2.2. Aerial photo of The Retreat, York, U.K (c. 1960) showing the buildings and extensive grounds. Over the 200 year history of the facility patients were encouraged to go outdoors in various ways. Seen here are a farm area, bowling green, cricket pitch and tennis courts as well as several smaller more protected courtyards (Sachs 1999:238)*

During the same time in America Dorothea Linde Dix and Horace Mann’s writings about the philosophy of public welfare gained popular acceptance and led to establishment of many Mental Hospitals across America. These hospitals were clearly inspired by the European model for mental institutions which included farming and other outdoor activities as part of the site design while characterised by rolling hills, groves of trees, paths and more intimate gardens close to the buildings (Sachs 1999:241-242).

By 1880 the mental hospitals became larger, highly populated and more hastily constructed due to a significant increase in demand for mental hospital beds. Once again access to the outdoors became limited resulting in the increased use of physical and chemical restraints.

### **2.2.2. OCCUPATIONAL THERAPY & HORTICULTURAL THERAPY**

Occupational therapy in the form of farming and gardening had long been used in mental hospitals in Europe and America. After World War 1 occupational therapy and horticultural therapy became increasingly used in mental and general care hospitals with the intent that veterans would turn their thoughts from their experiences of destruction toward acts of creation (Sachs, 1999:244). By World War 2 all aspects of the patient’s surroundings came to be considered as therapeutic. This approach was referred to as milieu therapy.

Scientific advances in health care as well as socio cultural and economical forces 1950 led to a shift from the emphasis on the physical and outdoor environment to technology and medication for the treatment of mental illnesses (Sachs 1999:246). In the late 1950’s and early 1960’s the new academic discipline Environmental Psychology emerged. Closely related to the earlier milieu therapy, environmental psychology was mostly focused on small quantifiable factors like colour, sound and room size. Although the focus was mostly on indoor environments, it laid the foundation for the growing interest in outdoor environments as part of the therapeutic environment (Sachs 1999:247).

### 2.2.3. ENVIRONMENTAL PSYCHOLOGY

The nature of the environment influences the way people feel towards it and how it is perceived, this in turn affect the way it is used (Cave, 1998:5). A positive change in the environment can therefore result in a positive change in the way humans use their environment and are influenced by it. Perception can be described as the process of interpreting and making sense of the information presented to us in an environment and adding meaning to it. This is then used to make a decision about how to behave and feel in it (Cave 1998:18). Problems that relate to the influence of the environment on human behaviour can be solved in a creative manner when a designer understands the public's perception of their surroundings.

Environmental psychologists have done detailed studies over the last few decades to identify and explain the relationship between people and the landscape. Their studies indicated that contact with nature can reduce tension, produce a calmer state of mind and help encourage positive behavioural change (Stoneham, 2000:23-24). When assessing humans relationship with landscape there is 2 approaches for research that should be taken into account. The first one is quantitative research that includes people's perception, assessment and preferences for particular landscapes. The other approach is qualitative and involves the meaning and value nature and the landscape holds for humans (Uzzell & Lewand, 1990:34).

## 2.3. THE ROLE OF THE PHYSICAL ENVIRONMENT

### 2.3.1. PERCEPTIONS OF NATURE

The notion that contact with nature can be beneficial to physical, emotional and intellectual well being is not new. In Britain, Victorian city planners established the public parks system on the basis of these beliefs (Stoneham, 2000:23). The Tshwane Open Space Framework (2006:26) states that the natural environment or open spaces increase self-esteem and reduce stress. In addition, nature has therapeutic potential and accommodates contemplation, solitude, privacy, intimacy and restoration of the soul. Frederick Law Olmsted emphasized the need for city dwellers to escape from the city to natural settings to sustain mental and physical health. This theory has been profoundly influential in the planning of open spaces in cities worldwide. An example of this can be seen in Central Park, New York.

Humans have physiological responses to stress which includes: high blood pressure, increased heart rate, increased muscle tension, change in brainwave functioning and mental concentration. One of Ulrich's studies involved exposing patients to a defined stressor. He compared and measured the physical responses of groups that were shown tapes with colour and sounds of natural settings versus urban settings. He found that the people exposed to natural settings recovered physiologically remarkably faster and felt better than the group that was shown the urban scenes. This fast response to nature indicate that the part of the nervous system that is not under conscious control is also influenced by the therapeutic effect of nature (Gerlach-Spriggs et al, 1998:37).

Cultural preferences are learned and different cultures respond in different ways to nature and prefer different garden styles. As part of their traditions and culture, people appreciate nature in different ways and forms. However, Mankind has an overall positive response to nature which seems to be universal and not merely a cultural or learned one. This intense preference for nature indicates that a need for nature originates in mankind's deeply rooted collective unconscious (Gerlach-Spriggs et al, 1998:36). The designed outdoor environment should satisfy this basic human need for contact with nature.

*"People often say that they like nature; yet they often fail to recognize that they need it... Nature is not merely 'nice.' It is not just a matter of improving one's mood; rather it is a vital ingredient in healthy human functioning". (South Africa 2006:26)*

### 2.3.2. EVOLUTIONARY PREFERENCES

Through evolution and 'survival of the fittest' humans have become genetically programmed to prefer certain types of environments based on their resources and survival value. Is it possible that these evolutionary remains in human sub consciousness are exactly what make nature so important and soothing?

Gerlach-Spriggs et al (1998:41) state that gardens seem to be preselected habitats, where nature is tamed and brought home to a human scale. To experience the healing effects of the garden requires no special preparation; we are all evolutionary prepared for its benefits. Even if we have never seen a garden the belief in nature's healing power seems almost genetic (Gerlach-Spriggs et al 1998:40).

Preference studies have been done by environmental psychologists to determine what kinds of environments are more attractive to humans than others. Slides were shown to a variety of different people and they were asked to choose their favourite scene. The studies indicated that outdoor settings were clearly more important to people while scenes showing human influence were the lowest in preference. Small structures in natural settings were also popular. Neither extreme openness nor dense blocked views were popular while open forests and parklands scored highly. Waterscapes were also highly preferred. In general scenes where it is the easiest to extract information needed to function properly was preferred. These include scenes that direct the attention to important areas through contrast, natural borders or lines that focus the attention on a particular point (Cave 1998:120). It is thus important that the healing landscape should be legible and easily understandable to the patient to reduce stress levels and increase comfort. Biophobia can be described as the predisposition to dislike environments in which we cannot function well. To reduce stress the psychiatric patient must be presented with an outdoor environment that allows independent functioning.

### 2.3.3. THE RESTORATIVE VALUE OF NATURE

Medical treatment is nowadays mostly scientifically based, and due to scientific advances, Health Professionals generally avoid the mystery associated with alternative healing. Most tests techniques and medications of contemporary medicine are quantifiable and therefore easier to budget for. Although there is no hard scientific proof that nature has therapeutic value, an increasing amount of evidence has build up to suggesting that nature and gardens play a vital role in the healing and recovery of patients (Gerlach-Spriggs et al, 1998:35).

A large number of studies confirm that wilderness experiences have therapeutic benefits. One example is a study on psychiatric patients taken on a 5 day hiking trail. The patients showed improvements in less dependency and fewer feelings of helplessness (Cave 1998:129). A study by Roger Ulrich with very good control and numerous variables, have also showed that patients with a view of nature had reduced delusions and depression and recovered more quickly and easily (Gerlach-Spriggs et al, 1998:35).

In order to survive in any society concentration is required. This can result in physical and mental exhaustion. Modern society is burdened by ever increasing stress, the requirements and blandishments of technological society forces us into directed attention. This attention, concentration and effort results in stress and fatigue. Directed attention can be relieved through restorative environments where effortless, automatic attention is allowed to facilitate recovery from fatigue. Contact with nature, whether visual or physical seems to be the most effective restorative experience (Gerlach-Spriggs et al 1998:36).

According to Kaplan & Kaplan (1989: 175-201) nature satisfies the requirements for restorative experiences, these include:

- Being away from the source of stress and the setting that requires concentration by changing venue.
- Extensive environments that promote the feeling that the individual and the place is connected to a larger but comprehensible whole.
- Fascinating environments that provide spiritual relief through involuntary effortless attention.
- Environments that satisfies other individual needs.

*According to Wilson's Biophilia (1984) our ties to nature are biologically based and part of our evolutionary heritage. The survival of Homo sapiens like other species depended on their ability to read the landscape and to detect clues that would enhance survival. Our present response to landscape originates from our need to choose habitats that provides the key elements needed for survival: prospect and refuge and the ability for sustenance.*

*Wilson's savannah gestalt (1984) suggests that whenever people can, they choose to be in savannah like places. The most famous parks and gardens from western and eastern cultures contain archetypal savannah-like features. Because we evolved in the savannah it attracts and soothes us (Gerlach-Spriggs et al 1998:39). This innate attraction is not accidental but linked with the human skill for survival. The savannah landscape contained all the key elements needed for survival. It is therefore not a surprise that mankind originated and developed as conscious species in the African savannah characterized by grassy plains, scattered trees and groves of vegetation with denser woods near rivers and lakes. (Gerlach-Spriggs et al 1998:39).*

Gerlach-Spriggs, et al (1998:2) state that restorative landscapes evoke rhythms that energize the body and inform the spirit and ultimately enhance the recuperative powers inherent in an infirm body and mind. Where recovery is not possible, intimate contact with the cycle and flow of nature can still calm the spirit.

#### 2.3.4. TIME AND CHANGE

Information presented to the user of an environment can be constant or subject to change (daily, seasonal or longer periods of time). When the information presented in the environment stays constant, adaptation will take place and the individual will respond less and less to it (Cave, 1998: 26). This can be cleverly used by the designer as a tool to make a conscious decision about what information needs to be constant and what information should be subject to change. The regular user of the environment will then feel familiar and comfortable while the element of surprise and change can still excite and intrigue him. As a symptom of institutionalization the psychiatric patient often completely lose track of time, and have difficulty to determine how much time have passed since first admitted. It is therefore essential for the outdoor environment of a psychiatric hospital to communicate time and change.

## 2.4. THE ROLE OF THE SOCIAL ENVIRONMENT

### 2.4.1. ISOLATION

*During her stay in a psychiatric hospital, journalist Norah Vincent expressed the intense need for emotional connection.*

*“Be a person with me, will you? I’m not a petri dish.’ I wanted to relate to them, to connect as a human being, but I also wanted to get a reaction that wasn’t preprogrammed.” (Vincent 2009:33)*

Being institutionalized is dislocating, and the patient is overwhelmed by the distortion of perception, sapping of identity and loss of connectedness to the external world. Due to this the recovery process in hospital settings is often slow. Research has indicated that design can enhance the therapeutic process and improve the recovery rate of patients in hospitals (Uzzell & Lewand 1990:34).

Due to Heavy medication and a lack of understanding, psychiatric patients are often further emotionally distanced from the people around them. Outdoor environments that encourage both formal and informal social interaction between patients, staff and the public can assist in creating a sense of belonging and familiarity.

Exposure to outdoor environments in the earlier stages of institutionalization could enhance healing and recovery process (Gerlach-Spriggs et al, 1998:3). A sense of connectedness to the physical environment could also be encouraged when a Landscape Architect allows interaction between humans and natural systems. By doing this patients can become more aware of their integral role as part of a complex whole .

### 2.4.2. BEHAVIOUR

*“Did the people make the place, or did the place make the people? Did we turn the place into a zoo, or did the zoo turn the people into animals? You become your environment, and you become what you are expected to be. The lower the standard the lower the result. The ruder the treatment, the cruder, the more animal, the man.”(Vincent 2009:27)*

Hagedorn (1990:21) argues that being outdoors is a normal human experience which many people are denied. Furthermore he states that certain behaviours that are unacceptable in indoor environments are acceptable outside. Social expectations are different outside and there is a sense of freedom because it is acceptable to shout, run about and sit on the ground while indoors these behaviours are generally unacceptable.

‘Environmental press’ is a concept used for creating therapeutic environments. This concept argues that the environment is composed out of socio cultural significance, objects and tasks. In a therapeutic environment these are combined to press the user to behave in a certain way to produce a level of arousal which may, if sufficient, be pleasurable and likely to promote exploration and a positive interaction with the environment. When an environment is boring no arousal will occur and there will be no reaction, where over arousal can cause stress, anxiety or aggressive behaviour (Hagedorn 1990:21).

A landscape that accommodates a variety of outdoor experiences and activities can counteract boredom and intrigue the user to explore and engage with the environment in a positive manner.

### 2.4.3. MENTAL ILLNESS STIGMA

“To set the sick apart sustains the fantasy that we are whole “(Scheffer 2003:3). Stigma is characterized by suspicion, stereotyping, fear, embarrassment, anger and avoidance. The negative effects of stigma include amongst others low self worth, isolation, hopelessness and poor social adjustment. It also affects families and friends through “stigma by association” (Scheffer 2003:4). Public views about the dangerous nature of mentally ill persons are exaggerated. 80-90% of people with mental illnesses never commit violent crimes and are more likely to have acts of violent crimes committed against them (Scheffer 2003:6).

Scheffer (2003:5) states that mental illnesses and psychiatric hospitals are greatly stigmatized due to the following factors:

- Label of mental illness
- Appearance
- Illness related behaviour
- Characteristics of treatment
- Socio-economic status
- Media depiction

Stigma negatively affects mentally ill patients while they are ill, in treatment and in the process of healing. Once the stigmatization has occurred it invades the identity of the one who experience it even after recovery (Scheffer 2003:3). Estimates indicate that two-thirds of people with mental health problems don’t seek help due to stigma associated with mental illness, its treatments and a lack of knowledge about the symptoms (Scheffer 2003:3).

Stigmas have a profound effect on the way organizations, employers, health care providers and schools respond to mentally ill persons. It also prevents mentally ill persons from seeking the necessary treatment and changes the way those that do seek treatment perceive themselves and are perceived by others.

### 2.4.4. CHANGING STIGMA

Changing stigma is a difficult and complex process because it involves changing people’s attitudes and understanding about mental illness. The gay and lesbian community as well as disability, AIDS, cancer and feminist groups serve as examples and proof that social stigma can be minimized by creating awareness through social marketing. Scheffer (2003:3) states that people cannot be supportive of the mentally ill if they fail to recognize and acknowledge their own mental health problems, and those of their family, friends and employees. According to Scheffer ( 2003:7) the most promising strategy to change negative perceptions about mental illnesses is increasing contact between the public and persons with mental illness. Attitudes can be positively changed by increasing contact with mentally ill persons who fulfil “normal social” roles.

Media cultivates public attitudes and perceptions and therefore news about mental illnesses and related crimes should be kept factual. Negative media about mental illness is a major contributor to stigma and gives a distorted impression about what is unknown (fig 2.3 next page). Positive activities and unique experiences at Weskoppies can lead to more positive publicity (fig 2.4 next page).

If it is true that humans become what their environment is, an outdoor environment with a cheerful positive identity have the potential to significantly improve people’s perception of themselves and how they are perceived by others.

# Weskoppies, ysterhek en depressie

was in 1907 geïmpeleer te  
nine years' imprisonment  
for his part in the death of

# Weskoppies 'sal g'n 'n 'Malstok'-fees kry

gevoel van algehele-depressie.

onaardse geluide wanneer hulle "nuwelinge" sien.

Die plek lyk vuil, ruik ook nie lekker nie en die toilette is nie...

Lawaai en 'n byna **dierlike geskree** is aan die orde van die dag in dié saal. Selfs van die personeellede lyk nie heeltemal op hul gemak nie.

Weskoppies T-shirts insensitive

**"I'm nuts about Weskoppies"**

**Nagmerrie-nag**



Van Rooyen ontsnap uit Weskoppies

vir man in Weskoppies

Death twice for brutal murder of psychiatrists

Beskuldigde se IK 55, hof stuur hom vir 18 dae na Weskoppies

ent to murder his  
id benefacto  
rs, Dr Leona  
nd Dr Rodi  
ivier at their  
swhouses in l  
Verwoerdbu  
August 11, 1993.  
Dr Rech was first blud-  
geoned with a pick-axe

He said it v  
again on th  
murder.  
... with a severely ag-

Fig 2.3 (previous page). Collage of articles from various newspapers in South Africa from 1985-present, depicting the negative media concerning Weskoppies that results in the stigmatization of psychiatric hospitals (Author 2009)

Fig 2.4 (below). Collage of articles from various newspapers in South Africa from 1985-present, depicting the positive more factual media concerning Weskoppies and leading to a more accurate perception of the hospital. (Author 2009)

**Bester wil 'Malstok' by Weskoppies hou**

**Geriewe vir alle soorte siekes**

**Weskoppies se groot rugbyvelde**

**Weskoppies se ontspannings- of ander geriewe te verbeter, meen hy.**

**Pasiënte aangemoedig om te werk**

**Weskoppies 'clean and tidy'**

**Werk by Weskoppies is 'wonderlik'**

**Die Einddoel is rehabilitasie**

For the almost leisurely atmosphere of the institution and ordinary appearance of inmates differs vastly from the Gothic image of howling lunatics confined in dungeon rooms

giedes wat hulle hulle geestesleedheid gevind dat lede van die publiek bevrees was om die hospitaal-terrein te betree. Later reageer die mense met groot verbasing op die ligte wat hulle

dink baie mense. Die werklikheid verskil egter hemelsbreed van die en ander opvattinge wat by Jan en Alleman bestaan. Marie Liebenberg doen verslag. 'n Talentkompetisie vir pasiënte is tydens Weskoppies se eeufeesviering

Weskoppies Hospital, which turns 100 this week, has a colourful history.

have gone all out to make it a pleasant environment, which is positive for healing patients.

Daar bestaan verskeie tinge oor die psigiatriese hospitaal en die pasiënte wat daar gehuisves word.

Die meerderheid pasiënte beweeg vryelik rond en 'n rustige, landelike atmosfeer heers op die terrein.

Oud en jonk – en misdadigers – versorg in rustige omgewing in Pretoria

geld kan gebruik word om

“The management, teamwork and love of looking after patients contributed towards the cleanliness of the hospital,” she said.

en suspended pending a disciplinary hearing. Ramokgopa said the department was interacting with the Department of Public Works to start the renovation programme.

THE Gauteng MEC for Health, Gwen Ramokgopa, was impressed with the cleanliness and tidiness of the Weskoppies Hospital during her surprise visit to the facility in

She said the hospital had a few touches of paint on some walls and was packed by smoke

one of the wards three months ago.

the hospital

how the staff

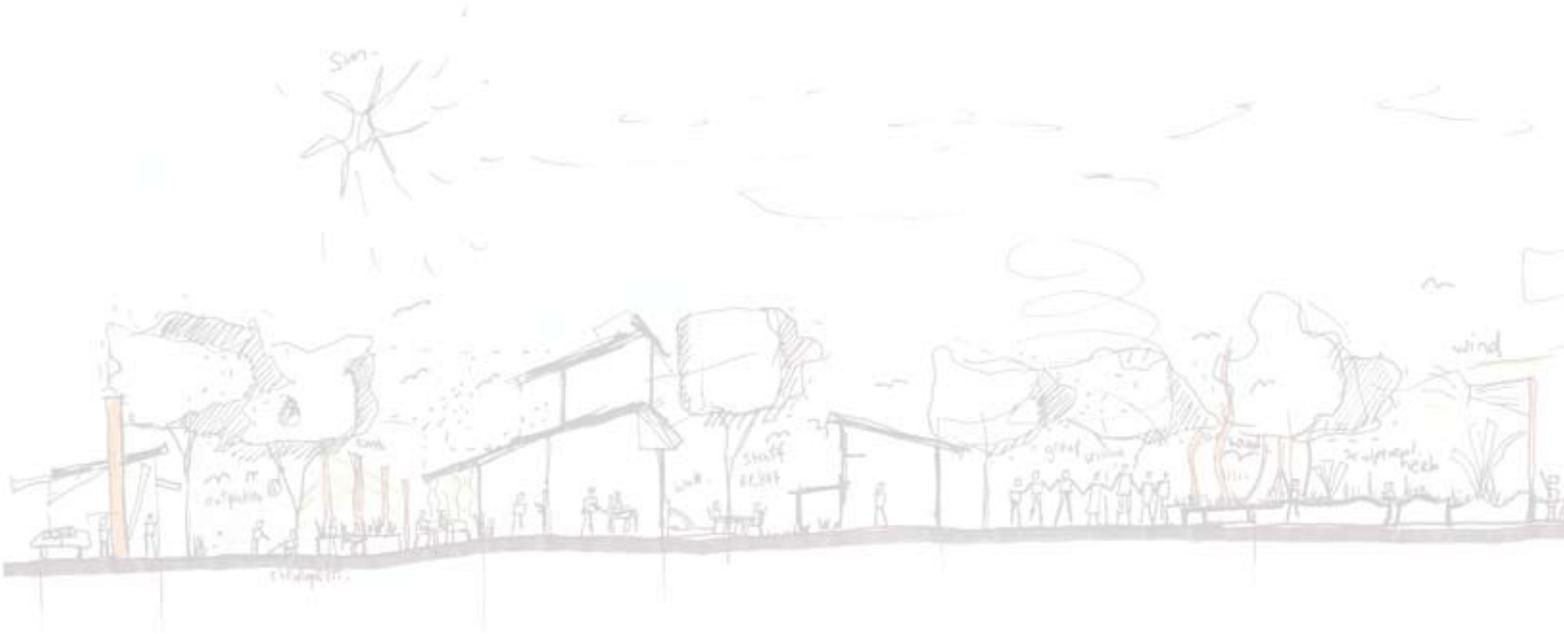
Hospital is given thumbs-up

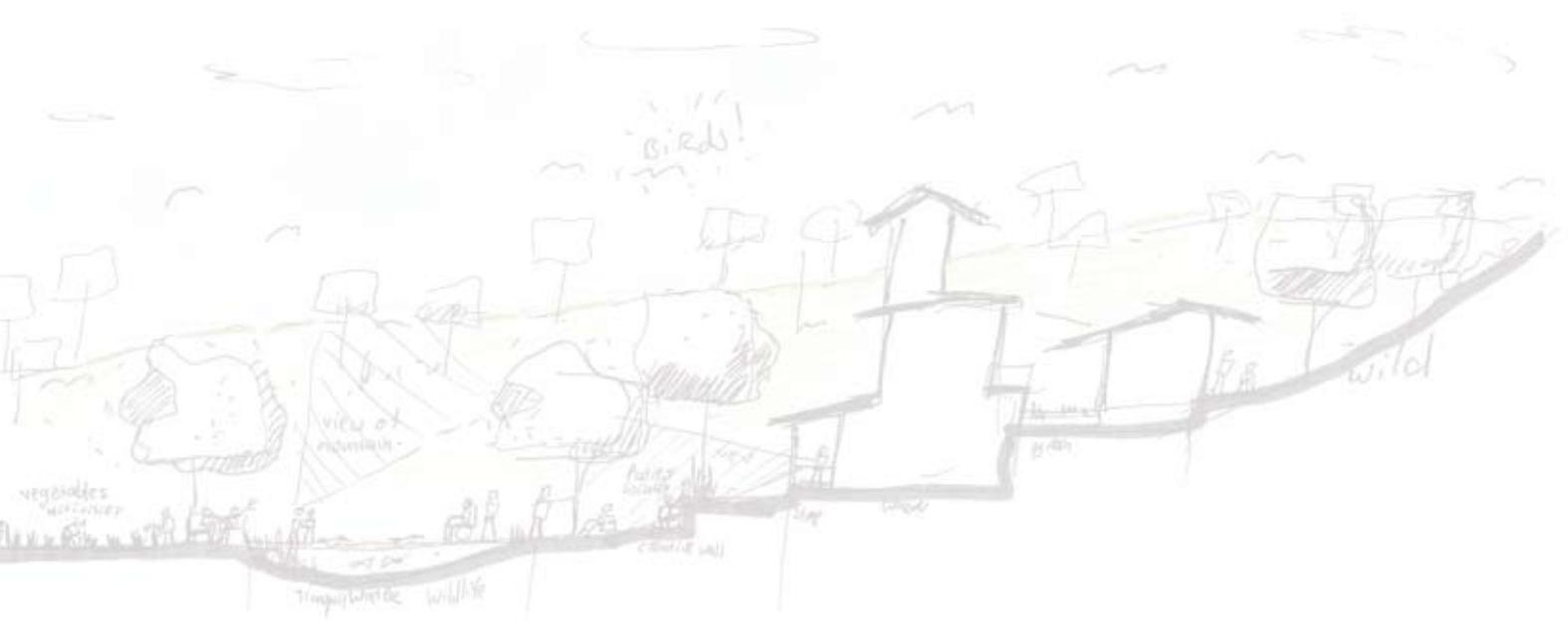
## 2.5. CONCLUSION

A historical study of outdoor environments at psychiatric hospitals indicated that a restful physical setting with activities like farming, vegetable gardening and other outdoor activities effectively assists in the healing process. To further assist in improving mental well being a Landscape Architect should consider the influence physical and social outdoor environment on human emotions.

The theoretical research indicated that outdoor environments have the potential to support the emotional healing process when:

- it satisfies the basic human need for contact with nature in both its pure form and in the form of gardens or horticultural therapy.
- it is legible and easy to function in.
- time and change is enhanced in the design, heightening the level of consciousness and awareness.
- formal and informal interaction between patients, public and staff is encouraged to reconnect isolated patients and establish a sense of belonging and familiarity.
- interaction between humans and natural systems are encouraged establishing a feeling of connectedness to a larger whole.
- it provides a variety of uplifting experiences and activities.
- it aids in the de stigmatization of mental illnesses by exposing the public to patients that fulfil “normal” social roles.
- it has a strong identity resulting and enhanced by positive publicity.







# CONTEXT ANALYSIS



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

# 3.1. LOCATION

Fig. 3.2: South African provinces with Gauteng highlighted in green

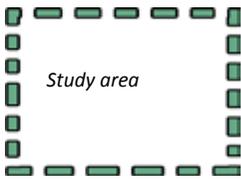
Weskoppies hospital is significant in the context of South Africa not only because it is the largest psychiatric hospital in the country but also due to the ground breaking work concerning modern psychiatric treatment done at the hospital (Lewende Monument 1992:11).



Fig.3.3: Map indicating the location of Pretoria West in Tshwane.



Weskoppies is situated in Pretoria-West. This part of Pretoria has a rich and colourful history (Fig. 3.3). In the 1870's this area was surveyed for burger right erven. There was an agreement that the Voortrekkers would receive farms in the Transvaal, but many preferred large stands and settled mostly in Pretoria West. After 1902 farmers flocked to the city from the countryside, and so the existing Goede-Hoop residential area developed rapidly. There was some criticism on the Urbanization of the area from foreigners and Newspapers, who wanted this area to maintain its rural character (Meiring 1980:35).



## 3.1.1. CITY CONTEXT: STUDY AREA

The study area includes Pretoria west, the central business district and stretches south to Freedom Park and the Voortrekker Monument including the embankment between the Langeberge and the railway line. This area will be studied to gain knowledge on the possibilities of integrating Weskoppies as a healing outdoor environment into the city and surrounding areas (Fig. 3.4).



## 3.1.2. CAMPUS CONTEXT: PROJECT AREA

The whole 149 hectares of the Weskoppies campus will be studied to give guidance and inform the development of a therapeutic open space framework (Fig. 3.4).

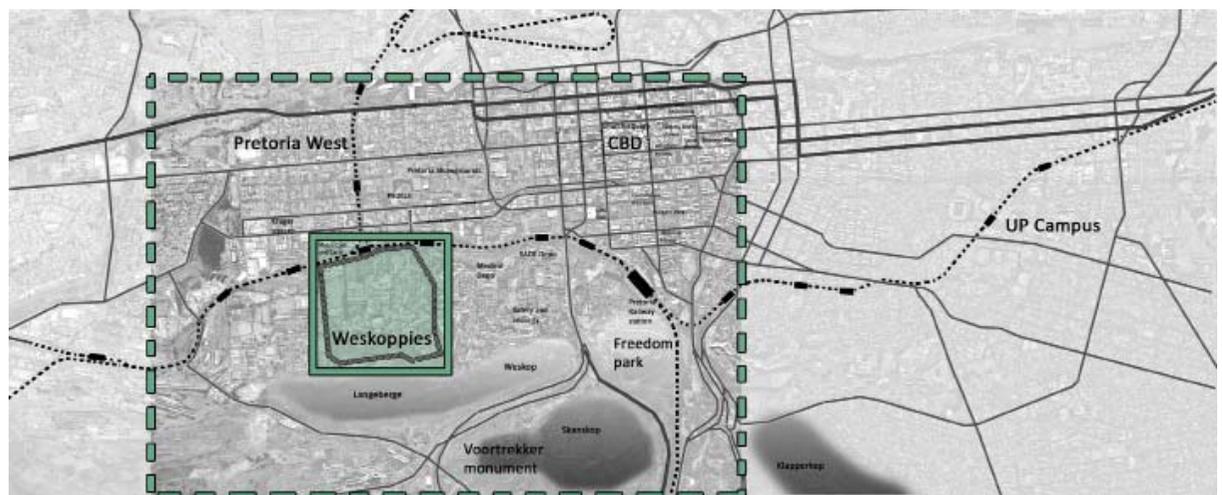


Fig 3.4: This map indicates the study area & project area (Author 2009)

## 3.2. STATUS QUO

Weskoppies hospital provides psychiatric services to 1087 in-patients, a large number of outpatients with 1137 full time staff members and others in session posts. The 149 hectare site contains 274 buildings and structures (Weskoppies, 2009:3). The hospital is also used as a centre for Court observations by the Department of Justice and serves as a training facility for medical faculties at the University of Pretoria. Throughout the year there is an influx of students at Weskoppies.

As a specialized institution Weskoppies serves as a referral point for hospitals located in the Tshwane municipal area. The catchment area stretches as far as Mpumalanga, the North western province and also includes forensic patients across the border (Mabena, 2009). The hospital serves a diverse population in terms of culture and social standing and comprises urban, informal and rural communities (Weskoppies 2009: 4).

Weskoppies provide mental care for all the different mental illnesses while schizophrenia, bipolar disorder and substance abuse are amongst the most common. It is the only psychiatric hospital in the province with a maximum security unit and facilitates children and adolescents that cannot be managed at other institutions (Mabena, 2009).

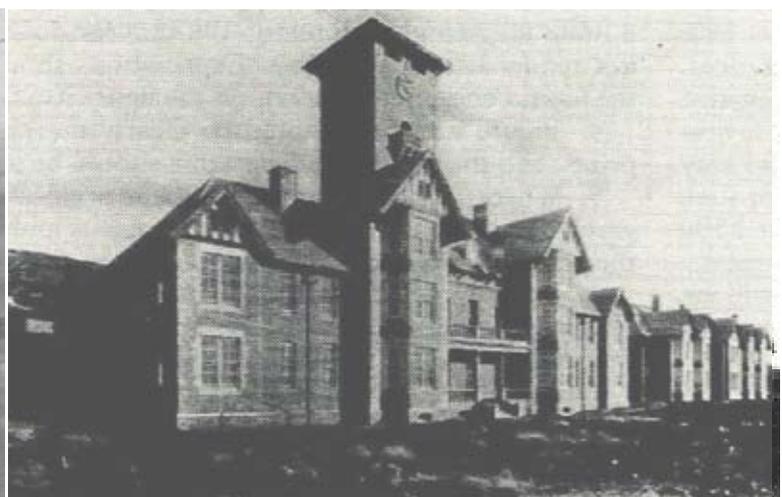
## 3.3. HISTORICAL CONTEXT OF WESKOPPIES

Weskoppies hospital, formerly known as the *Krankzinnigengesticht te Pretoria* was established as the first psychiatric institution in the independent Zuid Afrikaansche Republiek. Although there were already several mental hospitals in South Africa by 1890 including Grahamstown (1875), Pietermaritzburg (1880), Bloemfontein (1883), and Port Alfred (1889) none of these were in the independent Zuid-Afrikaanische Republiek(ZAR) (Plug & Roos, 1992:218).

Tenders for the first building were invited in February 1890 based on plans by the Government Engineer Architect S. Wierda. The building was erected at its current location, 2km west of the Pretoria railway station (Fig. 1.5). By May 1892 the hospital advertised in newspapers to inform the public that the curators were ready to consider applications for admissions (Plug & Roos, 1992:218).

*Fig 3.5. (left): The first photograph of the Administration block in 1892 (Breedt, 2009).*

*Fig 3.6. (below): View from the north east (South African Medical journal, 1992:221)*



By the end of 1898 the number of patients increased to 138 of which more or less 25 of the earliest patients were transferred from various prisons in the ZAR to the asylum where they were kept due to a lack of appropriate accommodation. Due to overcrowding in the hospital at the beginning of the 20th century this practice was stopped. The number of African patients turned out to be larger than expected and plans for additional accommodation was already considered before the institution was officially opened, but there was no money left for new buildings and accommodation became problematic (Plug & Roos, 1992:219).

### 3.3.1. THE HOSPITAL ENVIRONMENT (Fig. 3.7)

The building was situated in the “Old Botanical Garden” and during the first year 500 trees were planted even though the water supply from a well in the grounds was limited. In 1893 the hospital was connected to the municipal water supply and a 2, 5 ha vegetable garden was laid out. At that stage the hospital was described as ‘a beautiful building very healthily situated, with large gardens and cultivated fields’ (Plug & Roos, 1992:219).

In May 1896 Dr. Smeenk from Holland was appointed as the medical director for the hospital. In his first annual report he declared that the asylum was both a custodial institution for chronic patients and an institution for healing acute patients. His approach required that every effort should be made to promote the eventual cure of patients. Proper physical care led to significant improvement in a number of patients. The curators after lengthy observation congratulated the country that the money invested for improving the hospital environment was well spent because a significant improvement could be seen in patients with previously poor environmental conditions (Plug & Roos, 1992:219).

Dr. Messum a physician at the hospital noted that the physical condition of many of the patients only improved during the first two months and stayed constant thereafter due to their unemployed existence. He and Dr. Smeenk then stressed the importance of various forms of work and recreation. These activities formed part of their treatment and the hospital made use of the patients remaining mental abilities. Their aim was to counteract the harmful effects of institutionalization. The success of their approach was reflected in the amount of patients that passed through the institution. Dr. Smeenk seldom mentioned the use of medication in his reports (Plug & Roos, 1992:219).

*Fig 3.7: The Hospital environment in 1892 (Breedt, 2009)*



### 3.3.2. THE DARK DAYS

The conditions in the hospital deteriorated considerably during the Anglo-Boer War. Serious overcrowding led to the erection of many temporary galvanized iron cells and due to a lack of space violent patients could not be separated from the other patients. There were insufficient work and recreation facilities and a lack of attendants. In 1899 the editor of the Transvaal Leader newspaper made an unauthorized visit to the hospital, in his report he described the hospital as dark, poorly ventilated, overcrowded, insanitary, lacking facilities for work or recreation and run by untrained staff. Frederick B. Higginson, a patient released from the hospital in 1899 published a story of his experiences during this time and added to this description: unhygienic conditions, nightly confinement of patients in small cells without any sanitary facilities for 12 hours and of patients being beaten by uncaring attendants. Until February 1901 this period remains one of the most difficult times in the history of the hospital. A doctor at the institution described the conditions in a report during this time; "All the patients were filthy in the extreme, their hair long and matted and they were all swarming with lice.... No provision was made for patients who required relieving themselves at night. . . ." (Plug & Roos, 1992:220).

The staff shortage was relieved in May 1901 and four attendants and four nurses were appointed from the asylum near Grahamstown. New buildings were ready for occupation in 1906. The new administration gradually restored the hospital to what it had been in its earliest years (Plug & Roos, 1992: 221).

### 3.3.3 CONCLUSION

The early history of Weskoppies hospital proves that an enlightened approach with a stimulating hospital environment and outdoor activities, recreation and work opportunities can significantly improve mental and physical health. However due to a lack of resources during the Anglo-Boer War it was difficult for Weskoppies to maintain and put these ideals in practice. Another limitation of the enlightened approach was the fact that it was only practicable if there was adequately trained staff to supervise and segregate patients. The availability of effective medication in the 1950's has changed, but not removed, the limitations of the enlightened approach. The lesson that can be learned from Weskoppies early history is that these enlightened approaches can only be effective when there are sufficient resources to put these ideals into practice (Plug & Roos, 1992: 221).

Today the main building complex now declared Cultural Heritage buildings houses most of the administrative and support services, clinical psychology and social work as well as five female wards. The campus consists of a patchwork of hundred years of additions with a combination of old and new buildings (Fig. 3.10). The infrastructure is already overloaded while patient and staff numbers are still increasing therefore the history of the hospital should be preserved in a changing environment. (Weskoppies Business plan, 2009:3).

*Fig. 3.8 (below left): View from the north drawn by Hannes Meiring (Meiring1980:17)*

*Fig. 3.9 (below): Front view from the north west drawn by Hannes Meiring (Meiring1980:17)*

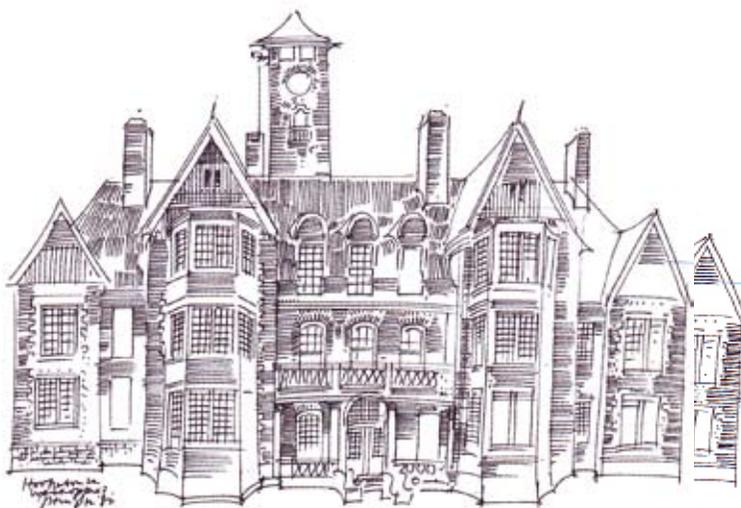
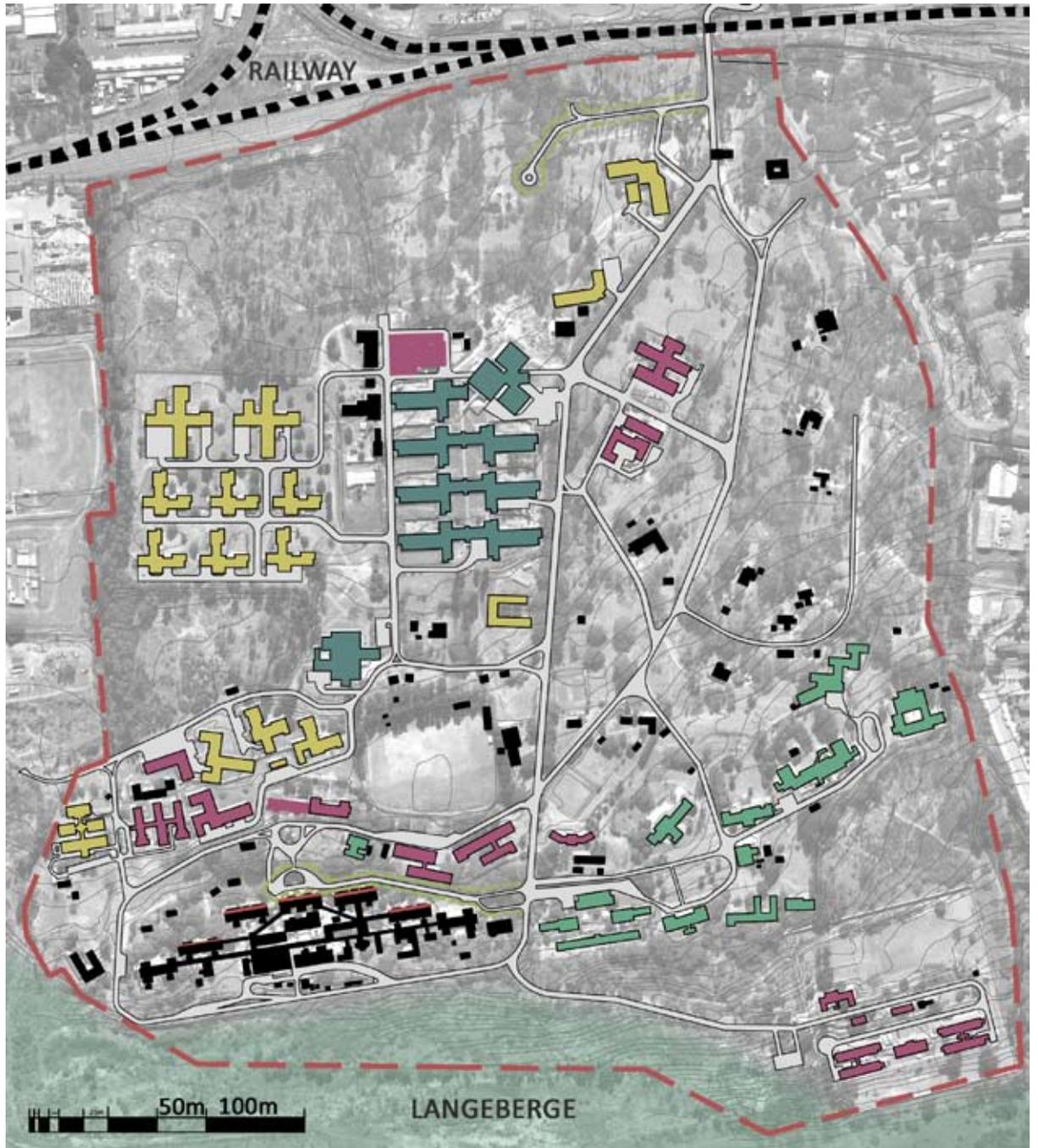


Fig 3.10: Historical growth: a patchwork of more than hundred years additions. The buildings in black on the southern edge were the first buildings to be erected. (Author 2009)



### HISTORICAL GROWTH

#### LEGEND

- |   |                  |   |               |   |               |   |                            |
|---|------------------|---|---------------|---|---------------|---|----------------------------|
|  | 1890-1910 Fabric |  | 1970's Fabric |  | 2000's Fabric |  | 1890's tree boulevard      |
|  | 1950's Fabric    |  | 1980's Fabric |   |               |  | Facades protected by SAHRA |



## 3.4 CITY CONTEXT

On a city wide scale, Weskoppies is hidden and doesn't have an "address". The site is isolated from the city by means of the railway line and industrial zone that forms a barrier on the northern edge while the mountain range forms a barrier on the southern edge.

### 3.4.1. LAND USE, ACTIVITIES AND FEATURES (fig. 3.11)

- The site is bordered by an industrial land use on the north, housing on the east and west and the natural landscape of the Langeberge on the south.
- The South African Defence Force is situated on the east and the Police Training College on the west (Geel 2005:20).
- Places with cultural and historical significance within a 2km radius from the campus include Freedom Park, the Voortrekker monument, Church Square and the Transvaal museum.
- Other activities include Pilditch Athletic stadium and the Pretoria showground situated 500m north of the site.
- Shopping facilities in close proximity to the site includes Nedwest and Metro Cash and Carry.

### 3.4.2. MOVEMENT AND ACCESS (fig. 3.11)

- Weskoppies is bordered by the railway line with a small railway station on the north making it accessible to the staff, outpatients and the public that have to travel long distances to the campus.
- The major East-West routes that serves the site includes the N4 national route, situated 1.3 km north of the campus entrance and the two through routes Soutter and Mitchell street within 500m from the site entrance leading into the CBD. Busses and taxis make regular use of these routes. Some busses also accommodate drop-offs on the campus (Geel 2005:20).
- The site is accessed from a single entrance point for vehicles and pedestrians from Ketjen Street.
- On the southern side of the railway line near the Weskoppies entrance a not very obvious vehicular route connects the site to Freedom Park and the Voortrekker Monument.

### 3.4.3. URBAN OPPORTUNITIES AND CHALLENGES (fig. 3.12)

The following opportunities and challenges were identified at a contextual level:

- Possibility for a connection between Weskoppies, activities at the showground's and Pilditch stadium.
- The historical significance of the original buildings at Weskoppies gives the opportunity to link the campus with the other surrounding areas with cultural and historical significance.
- Improve sense of arrival and integrate into city's open space system
- Improve pedestrian movement towards the site from taxi/bus drop-offs and surrounding areas.
- Give Weskoppies an address/ identity.
- Good publicity and increased contact between the public and the mentally ill is essential in changing the negative stigma associated with Weskoppies as a psychiatric hospital. Due to its isolated position within the city, integration with the rest of the city by means of changing surrounding infrastructure will be costly and inadequate. In order to make Weskoppies a destination in the city it needs to provide the visitors with an unique experience that can't be found anywhere else in Pretoria making the visitor whether pedestrian or vehicular willing to cross the barriers created by the Railway line and industrial zone.

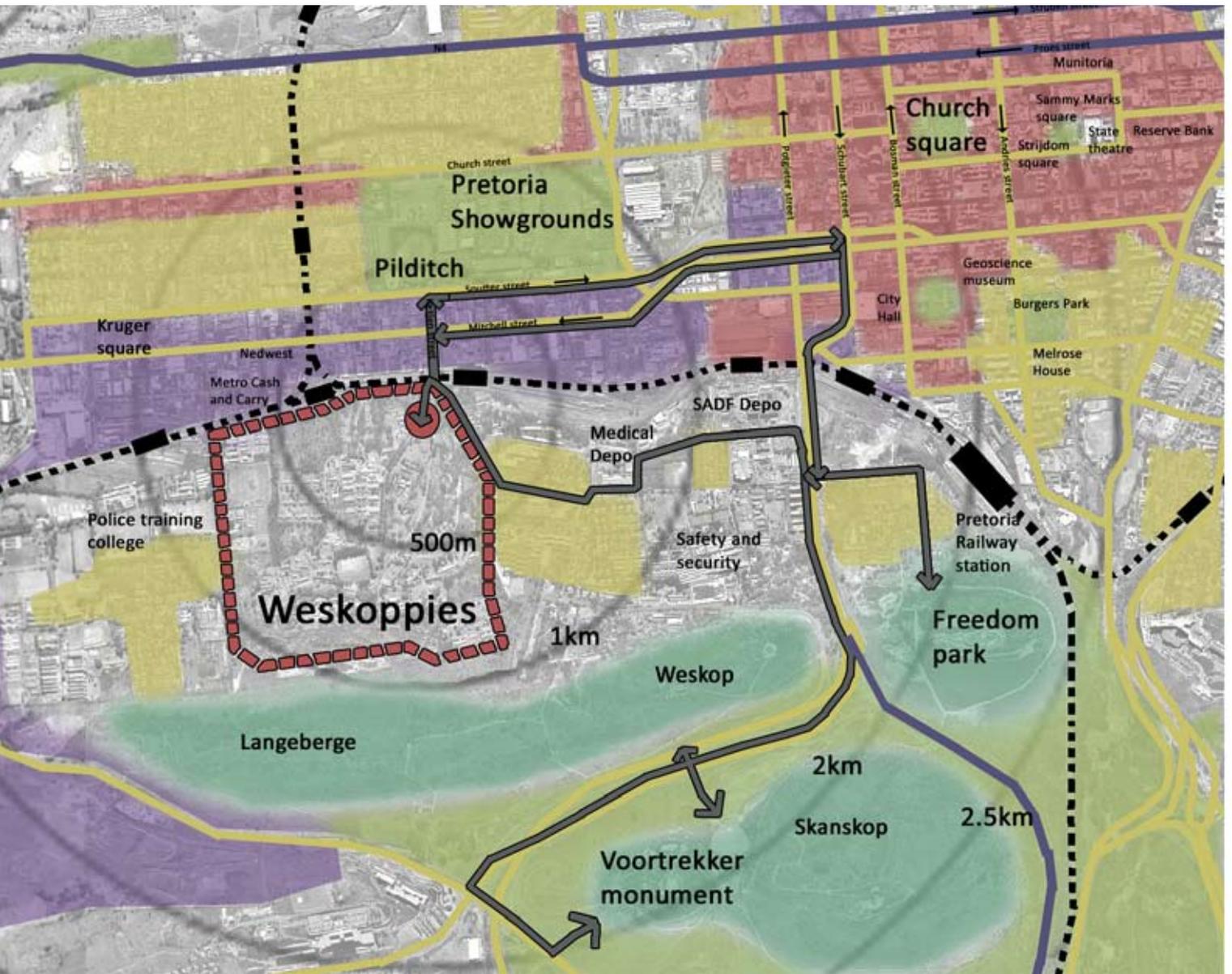


Fig 3.11: City Context analysis illustrating land use, activities, features, movement and access (Author 2009).

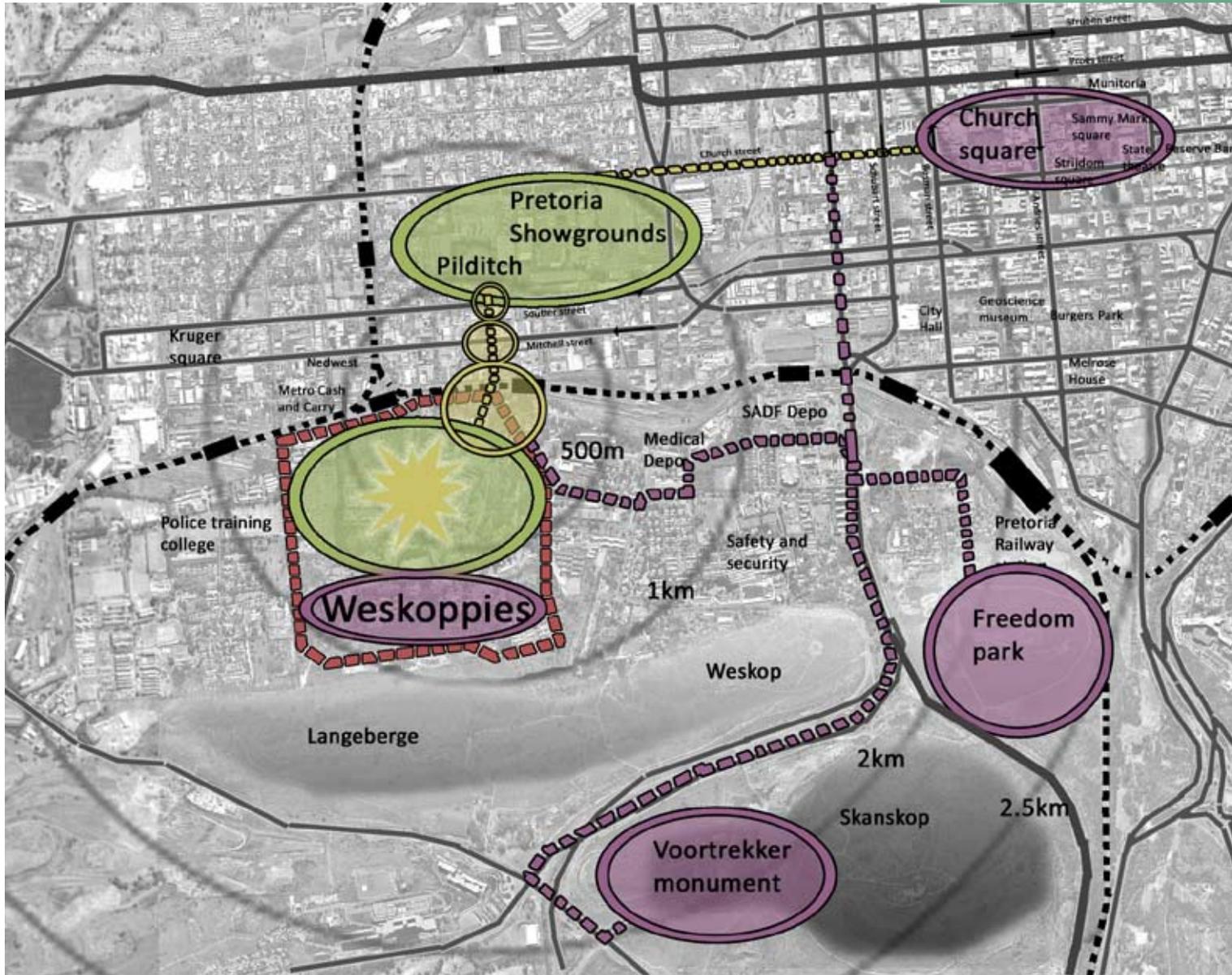
**CITY CONTEXT ANALYSIS**  
LAND USE

- Industrial
- Bussiness
- Residential
- Residential
- Ridges

MOVEMENT AND ACCES

- National Route
- Main Through Route
- Other Routes
- Railway
- Site boundary
- Access point
- Railway station





**URBAN OPPORTUNITIES**

**LEGEND**



Places with historical significance



Places with recreational value



Celebrated Nodes



Unique attraction



Improved pedestrian route



Vehicular route



*Fig 3.12. Map illustrating Urban opportunities and challenges for integrating Weskoppies into the open space system of Pretoria (Author 2009).*

## 3.5. PHYSICAL SITE ANALYSIS

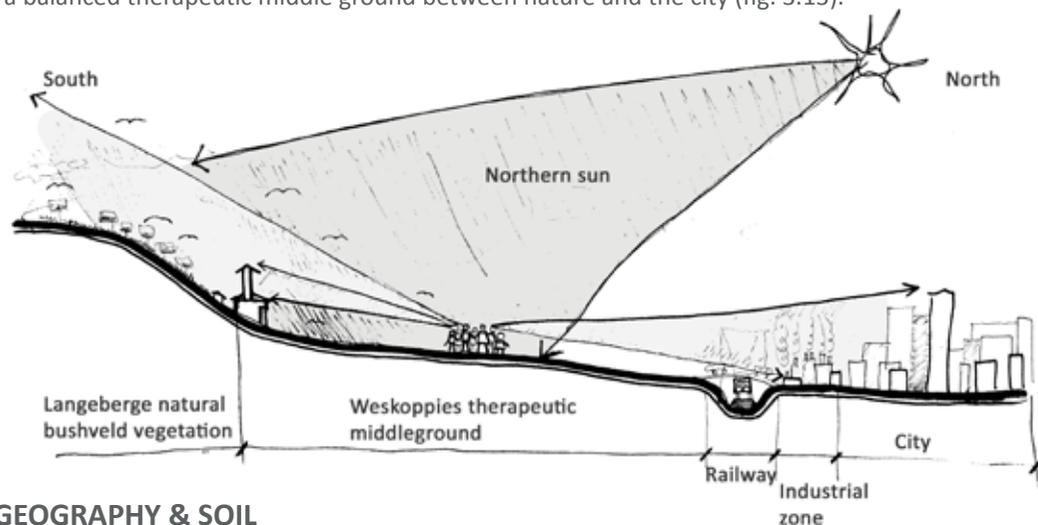
According to Lewis(1990:55) a community's physical environment which includes buildings, vacant spaces and streets influences the way members of the community feel about themselves.

### 3.5.1. TOPOGRAPHY

Weskoppies is situated on the ridge of the Langeberge which forms part of the ridge system that provide structure to the city. The Topography varies from a gradient of 2. 5% on the lower slopes to 12% on the upper slopes in a north south direction and a slope that varies between 1% and 3% in a east west direction.

The site slopes down to the north, resulting in maximum northern sun exposure and a warmer micro climate. The slope also exposes the site to prevailing summer and winter winds. The position and gradient of the site provides excellent views to the city on the north and the natural landscape from the site. The site has the potential to become a balanced therapeutic middle ground between nature and the city (fig. 3.13).

Fig 3.13 Topography with gradient allowing views to the city and the mountain and maximum sun exposure (Author 2009)



### 3.5.2. GEOGRAPHY & SOIL

Quartzite can be found on the southern upper slope of the site while the rest of the site consists of Shale. Due to the high resistance of quartzite to chemical weathering and the high silica content the upper slopes are covered by a thin layer of soil (fig. 3.15).

Geology		Soil		Geology		Soil	
	soil pattern	Soil form		soil pattern	Soil form		
shale	Plinthic Catena:Upland duplex and marginalitic soils rare, dystrophic and/or mesotrophic, red soils widespread.	Hu 34% Av 22%	Quartzite	Miscellaneous land classes, rock areas with miscellaneous soils.	Rock 55% Ms 24%		
<b>Red-Yellow-Grey Latosol Plinthic Catena</b> Neutral, sands/loams, red dominant but with much rocky land							

Fig 3.14 . Table indicating the Geology & Soil on campus . Legend for fig. 3.1 (Author 2009)

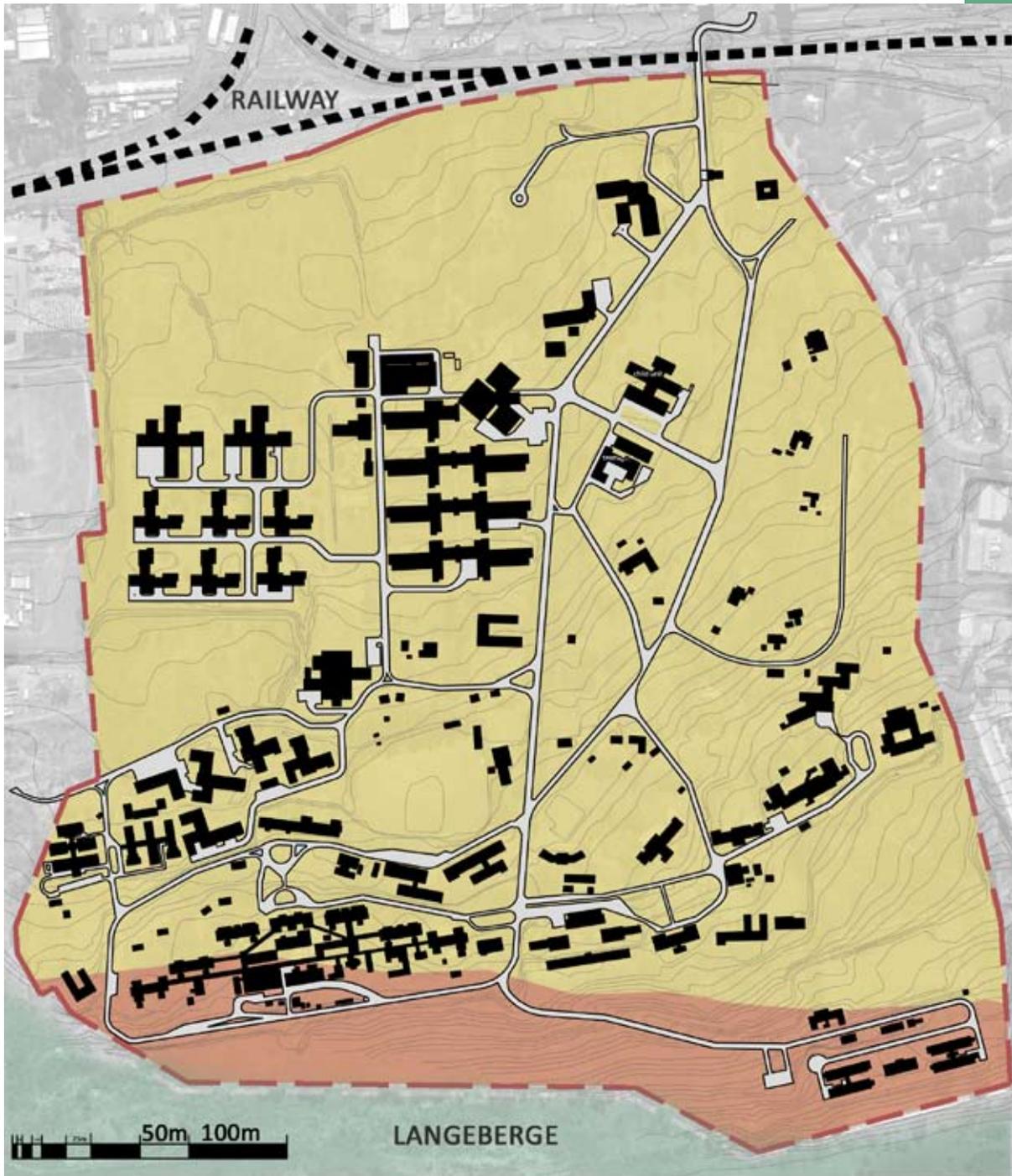


Fig 3.15:Geographic and soil map. The Southern slopes of the Langeberge ridge consists out of Quartzite, whereas the northern larger part of the campus consists out of shale (Author 2009).

GEOGRAPHY AND SOIL



### 3.5.3. VEGETATION

Fig 3.16 (right): Earlier years- an open view to the main building, very little trees in sight (Breedt 2009).



Fig 3.17 (far right): Today- trees block the views towards the building (Author 2009).

When the hospital was established in the vegetation type could be described as grass veld vegetation with very little to no trees (fig.1.16) . In the early years a lot of effort was put into creating a beautiful hospital environment and 1280 Trees were planted in 1918. On the northern side of the building complex Himalaya pine trees were planted (Lewende Monumente 1992: 11).

Today the site is characterized by lush indigenous and exotic trees on the lower slopes with typical Acacia caffra bushveld trees on the higher slopes (fig. 3.17). The FMU is in the process of removing a large number of exotic trees.

The author distinguished between 3 different types of vegetation on the campus

#### NATURAL BUSHVELD

#### DISTURBED BUSHVELD

#### MAINTAINED VEGETATION

Fig 3.18 (right): Natural Bushveld (Author 2009) get a better picture!



Fig 3.19 (middle): Disturbed Bushveld (Author 2009)

Fig 3.20 (far right): Maintained vegetation (Author 2009)

A variety of grass species, Acacia's and other typical bushveld trees can be found on the higher mountain slopes.

The natural bushveld vegetation in this area should be protected, kept free of invader species and rehabilitated where possible.

This area provides an opportunity to satisfy the basic human need for contact with nature in its pure form by means of a hiking trail and lookout points.

The lower slopes of the site are overgrown with invader shrubs, exotic trees (mostly Eucalyptus) and grass species.

This area could be rehabilitated to its natural state where possible and could also be used for agricultural purposes.

A large portion of the site is made up of lawn with scattered trees. The natural grassland vegetation in this area is severely disturbed due to development over the years. The tree species include a variety of exotic species like: Eucalyptus, Jacaranda mimosifolia.

Indigenous species typically include various Acacia's, Combretum's, Celtis africana and Phoenix canariensis. These areas could also be used for agricultural or intensive landscaping purposes. The use of indigenous species should be encouraged.

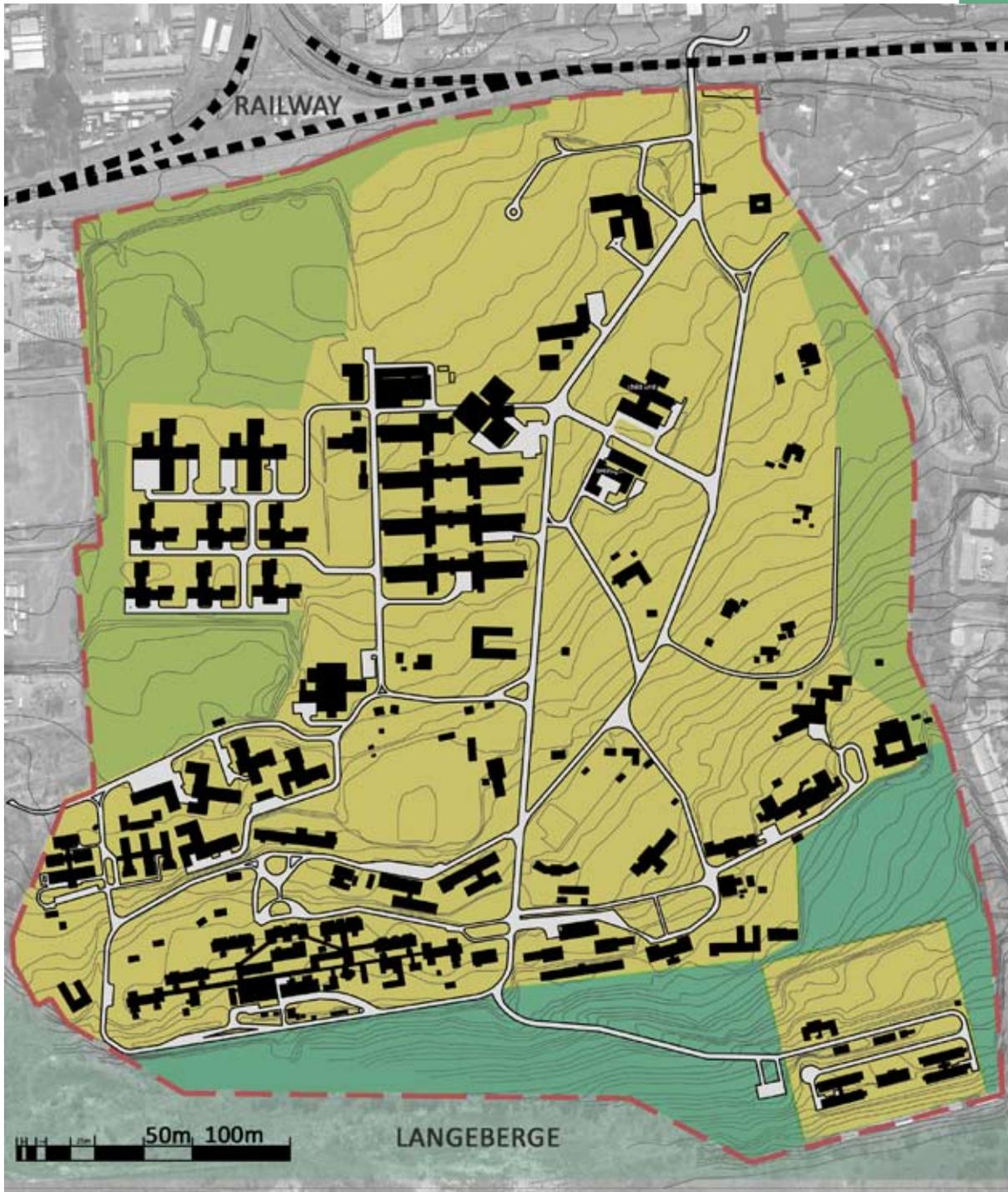


Fig 3.21 :Map indicating the three vegetation types as identified by the author (Author 2009).

**VEGETATION TYPES**

 Natural Bushveld

 Disturbed Bushveld

 Maintained Vegetation



Fig 3. 22. Table indicating the temperature and rainfall of Pretoria (<http://www.weather.co.za/Climat/Climstats/Pretoria-Stats.jsp> accessed on 5 March 2009)

### 3.5.4. CLIMATE

Relative humidity: 30%  
 Hours Sunshine: 60%  
 Winter solstice: 22 June -44  
 Summer solstice: 22 December 87  
 Temperature: see fig. 3.22

#### PREVAILING WINDS

Summer: North-East  
 Winter: North-East to North-West  
 (Geel 2005:27)

Month	Temperature (° C)				Rainfall (mm)
	Highest Recorded	Average Daily Maximum	Average Daily Minimum	Lowest Recorded	Average Monthly
January	36	29	18	8	136
February	36	28	17	11	75
March	35	27	16	6	82
April	33	24	12	3	51
May	29	22	8	-1	13
June	25	19	5	-6	7
July	26	20	5	-4	3
August	31	22	8	-1	6
September	34	26	12	2	22
October	36	27	14	4	71
November	36	27	16	7	98
December	35	28	17	7	110
Year	36	25	12	-6	674

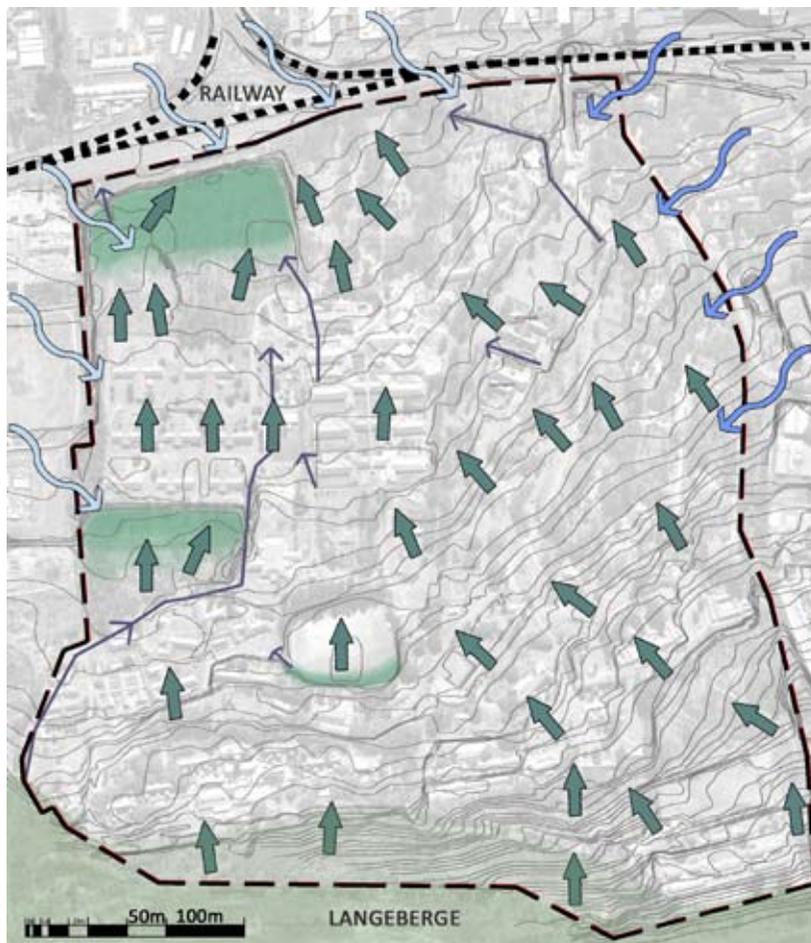
### 3.5.5. RAINFALL AND WATER MOVEMENT

Pretoria is situated in the summer rainfall region and receives an average annual rainfall of 674mm (Fig. 3.22). Rainwater could be captured during summer and stored for the dryer winter months.

The high water table on the upper slopes of the mountain results in high amounts of water coming from the mountain and accumulating on the site against buildings. Agricultural trenches are being used to disperse the water away from the buildings (Breedt 2009). There is an opportunity to capture the water and use it for irrigation.

Apart from the two wetlands water also settles at other small lower areas on the site, creating habitats for a variety of bird species, amphibians and other animal species. These areas should be protected and rehabilitated where possible (Fig. 3.23).

Fig 3. 23. Wind direction, water movement and wetlands. (Author 2009)



#### WIND AND WATER MOVEMENT

-  Wetlands
-  Water movement on contours
-  Streams and swales



### 3.5.6. CIRCULATION AND ACCESS (Fig. 3.33 next page)

#### Access

The site is accessed from a single access control point at the northern side of the site (fig. 2.24). Busses are accommodated with drop offs and pickups at bus stops on the site (fig. 2.25) and makes use of the prominent vehicular route (fig. 2.26) (Geel 2005:31) . However working patients and some staff members, that make use of other types of public transport outside Weskoppies have to walk from these transport nodes. To enter or exit the site, the pedestrian patients and staff have to make use of vehicular route that crosses the railway line with a bridge. This road is far too narrow for pedestrians and vehicles at the same time and becomes a safety hazard.



Fig. 3. 24. Weskoppies entrance, note the absence of a pedestrian path. Pedestrians have to make use of the vehicular route (Author 2009)



Fig. 3.25. Bus stops. Note the absence of a pedestrian movement system (Author 2009)



Fig. 3.26. Prominent vehicular route. Note the absence of a pedestrian walkway (Author 2009)

#### Movement

Due to a lack of a formal walkway system, pedestrians make use of informal paths and vehicular routes across the site to move between wards, offices and the outdoor gathering area.

The site does not accommodate wheelchair users but golf cars are also used for movement around the site.



Fig. 3. 27. Pedestrians have to make use of the vehicular route due to the absence of a pedestrian movement system (Author 2009)



Fig. 3. 28. Pedestrians have to make use of the vehicular route (Author 2009).



Fig. 3. 29. Informal pedestrian paths (Author 2009).

#### Boundaries

Buildings have very strict access control, especially closed wards and the maximum security unit. High retaining walls can be found at many areas on the site due to the steep slope, these become boundaries between different areas. There is a number of fenced off areas around buildings but also randomly around pieces of land.



Figure 3.30. (far left) retaining wall as a boundary (Author 2009)

Figure 3.31. (middle) Fenced off areas without buildings (Author 2009)

Figure 3.32. (left) Fenced off closed wards (Author 2009)

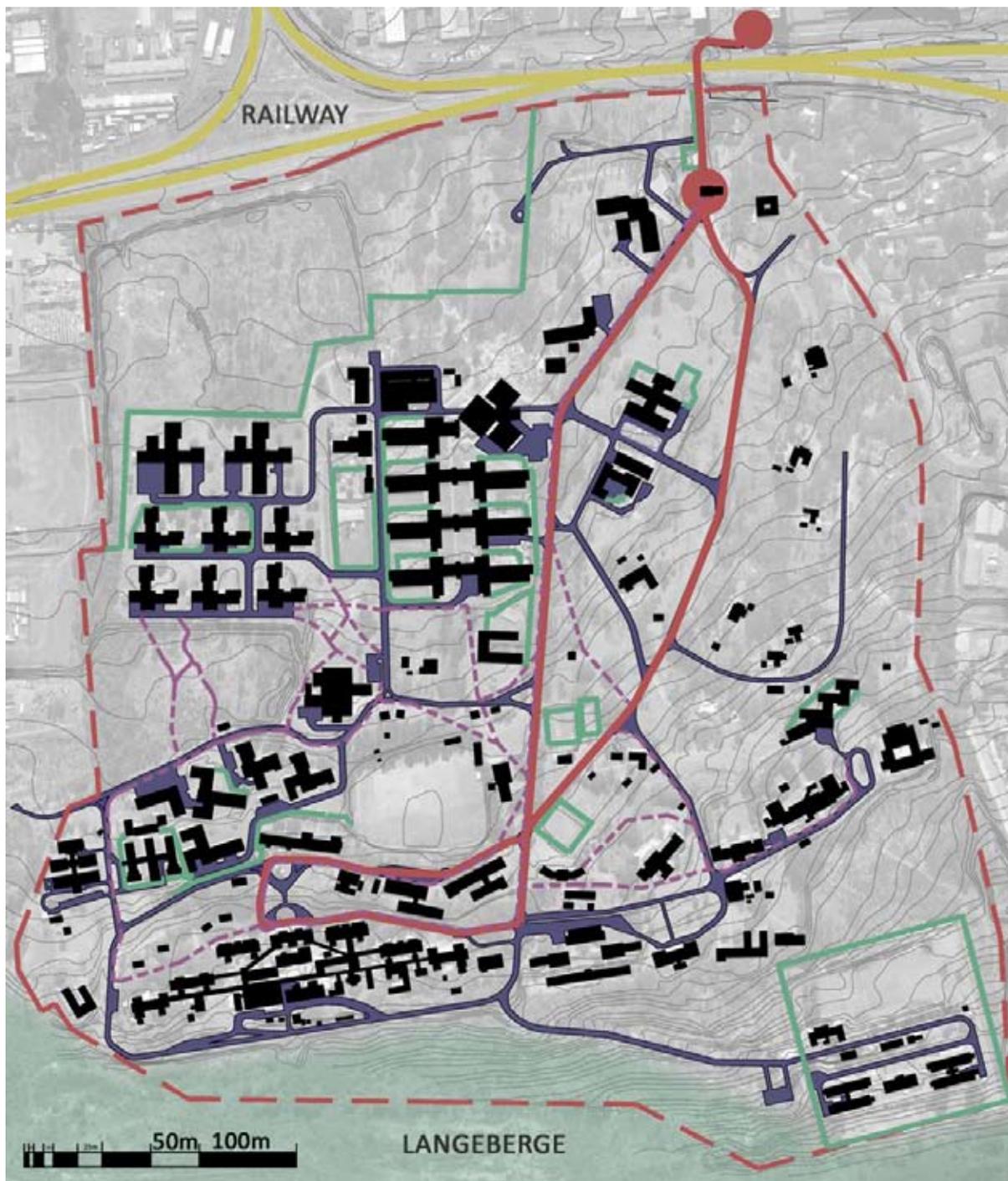


Fig 3.33: Read in correspondence to Fig. 3.24-32 Map indicating the existing movement, Access & Boundaries(Author 2009).

### MOVEMENT AND ACCESS

- |   |                                       |   |                                |   |        |
|---|---------------------------------------|---|--------------------------------|---|--------|
|  | Railway line                          |  | Informal pedestrian movement   |  | Access |
|  | Primary vehicular route               |  | Physical boundaries and fences |   |        |
|  | Secondary vehicular route and parking |  | Site Boundary                  |   |        |



## 3.6. CONCLUSION

Weskoppies' colourful history, heritage and character should be taken into consideration when selecting materials and making design decisions. Its isolated position within the city context could be improved by providing a unique outdoor experience within the cities' open space system. A sense of arrival and improved pedestrian circulation to and within the campus will also help to counteract the physical isolation of the campus (Fig. 3.12). Currently the outdoor environment at Weskoppies is not being optimally used as an integral part of the healing process. Due to the topography enough natural vegetation on the site, vast open spaces, and adequate rainfall, it can accommodate contact with nature and natural systems, provide a variety of experiences and support a feasible agricultural industry. For these reasons the outdoor environment at Weskoppies has great potential to serve as an additional component in the healing process.

Through analysis the following ideas, opportunities and constraints were identified:

- Areas with natural vegetation can be used for a hiking trail that provides the user with a wilderness experience (Fig. 3.21).
- The areas with disturbed vegetation can be rehabilitated or used for agricultural purposes (Fig. 3.21).
- The topography provides excellent views to the city and the mountain. Lookout points can enhance these views (Fig. 3.13).
- The relatively steep slope provides the opportunity for interesting terracing at areas where a flatter surface is needed (Fig. 3.13).
- Water from roofs and other surfaces can be captured and stored for domestic use or irrigation. Safety should be a consideration when designing water systems.
- Retention ponds can also be visually stimulating but should be fenced off for safety reasons.
- Water storage tanks can act as an orientation mechanism in the landscape.
- Pedestrian movement and its links to public transport nodes need to be significantly improved in and around the campus (Fig. 3.27-29).
- For safety reasons vegetation and structures in the landscape should not obstruct views on the site.
- Some of the unnecessary roads can become pedestrian routes.



# SOCIAL ANALYSIS

## 4.1. INTRODUCTION

Humans read and interpret their physical surroundings to get clues on how to use, interact and behave in it. Although patients and staff at Weskoppies are encouraged to participate in a variety of sport and social activities to re socialize them, the outdoor environment only provides sport facilities and doesn't reflect this kind of interaction (Fig. 4.2-4.10). The Author analyzed the social environment at Weskoppies through observations, conversations with various patients, and interviews with staff and students

## 4.2. BUILT INFRASTRUCTURE

The land use and building functions on the campus includes housing for staff and patients, buildings and other infrastructure that accommodate the treatment of mental illnesses, as well as training for medical students from the University of Pretoria.



*Fig. 4.2: western male wards without outdoor social area*



*Fig. 4.3: eastern male wards with a small outdoor socializing area.*



*Fig. 4.4: female wards without social outdoor spaces*



*Fig. 4.5: nurses homes with no connection to the outdoors or nature.*



*Fig. 4.6: nurses homes enclosed with palisade fencing*



*Fig. 4.7: kiosk with inadequate areas for social interaction and too little shade.*



*Fig. 4.8: Administration (Heritage building)*



*Fig. 4.9: clubhouse*



*Fig. 4.10: occupational therapy with no connection to the outdoors.*

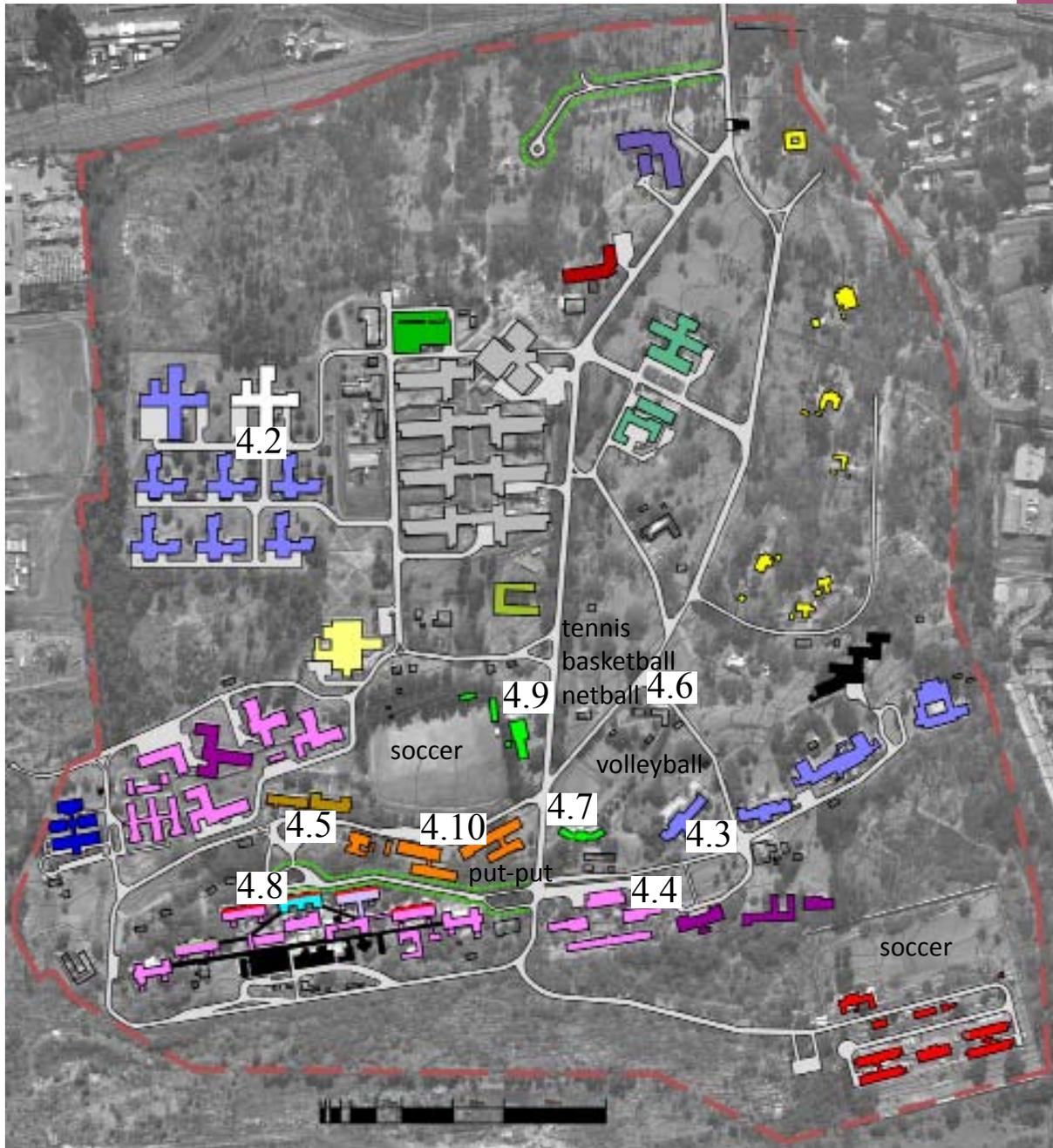
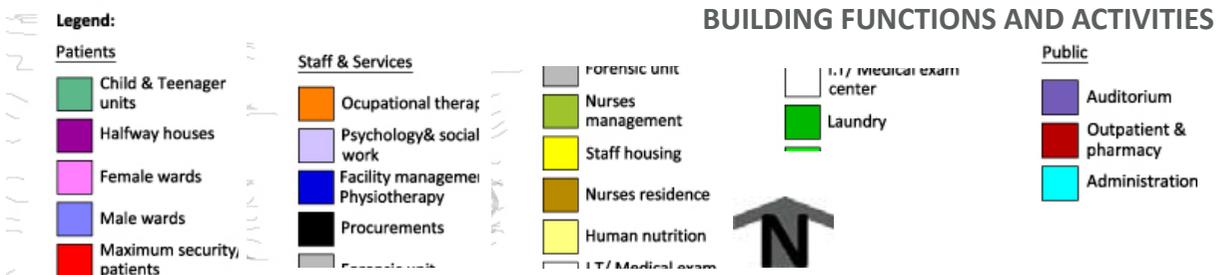


Fig. 4.11. Read in conjunction with fig. 4.2-4.10. Building Functions & Activities (Author 2009)



## 4.3. PATIENT CLASSIFICATION

There is two different kinds of wards

- Open wards : patients can move around freely outside the buildings and
- Closed wards : for those that are a danger to themselves and needs more supervision.

This study will aim address patients from open wards and supervised patients in closed wards.

The patients are further classified in 3 units. Each has 3-4 levels of illness

- Forensic unit- long term patients 30-40 years
- Chronic unit - long term, cannot function in society on his own.
- Acute unit - short term, rehabilitation is possible

Other patient groups

- Geriatric ward- old patients
- Children
- Adolescents

## 4.4. ACTIVITIES

*Fig. 4.12. Read in conjunction with Fig. 4.13-4.18. Map with sport and exercise activities. Areas where patients do individual exercises like push-ups or sit-ups are indicated as red dots on this map.*

*(Author 2009)*

A constraint for outdoor activities is the fact that supervision is needed to prevent patients from going astray or running away. (Interview with C.E.O Mabena on 16 April 2009).

### 4.4.1. SPORT & EXERCISE (fig. 4.12- 4.18)

The outdoor recreational infrastructure at Weskoppies facilitates a variety of sports, these include:

- Put-put
- 2 x Soccer fields
- 2 x Tennis
- Basketball
- Netball
- Volleyball
- Jukskei



The sport fields are not only for use by patients but are also used by staff members on a regular basis. The surrounding community also makes use of the sport facilities at Weskoppies. Most of the social interaction between patients occurs during the occupational therapy sessions where they engage in activities like: Target through, volleyball, basketball, soccer, boeresport, dancing and other games. Weskoppies also have a running and walking club for the staff and some patients (Mabena 2009). The author also observed that patients do physical exercises like push-ups, sit ups and stretching on their own around the kiosk area and different wards (fig. 4.18).

*Fig. 4.13 (right) Put put court (Author, 2009).*

*Fig. 4.14 (middle) Patients playing baseball on soccer field (Author, 2009).*

*Fig. 4.15 (far right) Tennis courts also used for basketball & netball (Author, 2009).*





Fig. 4.16: Volleyball court with no shaded places to sit for spectators (Author, 2009).



Fig. 4.17: Juksej court doesn't accommodate spectators (Author, 2009).



Fig. 4.18: Patient doing physical exercises (Author, 2009).

#### 4.4.2. EVENTS

Patients tend to lose track of time due to their physical isolation from the world outside Weskoppies, therefore important annual events like Christmas, Valentine's Day and Spring day are celebrated. Most of these events take place in a clubhouse near the soccer field. This especially gives long term patients something to look forward to. There is also an opportunity for Weskoppies to accommodate other social events like music festivals that involves the public.

#### 4.4.3. WORK SCHEMES

Patients are not forced to work but Weskoppies provides the patients with optional work opportunities for which they get paid. As part of the industrial therapy, patients also have the opportunity to earn money by assembling plastic funeral flowers at Weskoppies for a plastic company 'pearl plastics' (Fig. 4.19- 4.20). Due to the vast open spaces at Weskoppies, there is an opportunity to produce real flowers through cut flower farming (refer to 7.9).



Fig.4.19 & 4.20: photos of the workshop where plastic funeral flowers are being assembled by Weskoppies patients (Author 2009)

Some of the workers in the gardens are older generation patients and very few of the younger people work in the gardens. This becomes a problem because the productivity of the older patients are decreasing. There exists a need to encourage the younger generation of patients to become involved in outdoor work schemes and develop a sense of self worth, ownership and responsibility for their outdoor environment (Mabena, 2009).

The advantage of accommodating more job opportunities in the outdoor environment at Weskoppies is that employed rehabilitated patients will not relapse due to unemployment and an inability to sustain themselves. Through this, rehabilitated patients can be monitored and seek necessary treatment when needed.

#### 4.4.4. SOCIALIZING

The kiosk in close proximity to the sports fields is a popular social gathering point. Seating in this area does not encourage social interaction between different sizes of groups. Male and female patients from different wards, staff, students and visitors interact with each other around this area. This area is busy throughout the day and as an outsider the author perceived this area as the safest (Fig.4.21). This area was chosen by the author for the development of a sketch plan which will serve as a catalyst project. Patients also socialize with each other around their wards (Fig. 4.22).

Fig. 4.21: (top right) Male patients socializing around their ward (Author 2009)



Fig. 4.22: (top far right) patients socializing outside the kiosk (Author 2009)



#### 4.4.5. STROLLING

Fig. 4.23: (right) patient on vehicular route (Author 2009)

Patients that need supervision are occasionally taken for walks in groups or individually. Patients are often seen wandering around and strolling on their own or in pairs making use of vehicular routes (Fig. 4.23) and informal paths (Fig. 4.23). There exists no pedestrian movement system. Due to the potential variety of the outdoor environments at Weskoppies there is an opportunity to provide Weskoppies with pedestrian routes that exposes the pedestrian to a variety of experiences.

Fig. 4.24: (far right) patient wandering around on informal path (Author 2009)



#### 4.4.6. INDIVIDUAL ACTIVITIES

These activities are unique to every individual at Weskoppies but are reflective of typical behaviour of patients with mental illness as a result of medication, the emotional state and environment. These include amongst others smoking, sleeping, contemplating playing guitar and pacing.

##### RESTING

Fig. 4.25: (right) Weskoppies patient sleeping on the lawn (Author 2009)



Fig. 4.26: (middle) Weskoppies patients lying on the lawn (Author 2009).

Fig. 4.27: (far right) Contemplating Weskoppies patient. (Author 2009).

Patients sleeping or lying on grass is a common sight at Weskoppies and other mental institutions as a result of boredom, lack of motivation and the medication that causes drowsiness.

##### CONTEMPLATION



Patients are often seen sitting alone, doing nothing. The landscape should provide patients with private and public areas for reflection which forms important part of the healing process

## 4.5. SOCIAL PROBLEMS

The following problems were identified by the author through interviews with patients and staff members.

### 4.5.1. UNEMPLOYMENT

Due to an inability to adapt in society, as well as difficulty in finding an appropriate job for the patient's mental condition and abilities, many rehabilitated patients end up on the streets or relapse after rehabilitation.

### 4.5.2. LACK OF SUPPORT

Rehabilitated patients often have no community support system to return to when they leave Weskoppies. A lot of patients especially the long term chronic patients have lost complete contact with any family or friends. Anel de Beer (De Beer 2009) a chronic occupational therapist in an interview said that patients are encouraged to make Christmas, Valentines and Birthday cards as well as photo frames etc. but often have no one to give it to, or no one's picture to put in the frame. This often has a further negative effect on the patient's mood and condition. She also stated that there is a need for activities that allows patients to feel that they are doing, and accomplishing something for themselves. They also need to be encouraged to get involved in community projects to establish a support system.

### 4.5.3. LACK OF MOTIVATION

Staff members often have difficulty to get patients involved in activities and community projects due to a lack of motivation the patient feels as a symptom of their mental illness.

Vincent(2009: 24) states that: *"your will is what makes you feel human. This is the paradox of asylums, and their fatal flaw. Put a person in a cage and you cannot help him. But leave him to his devices and he cannot help himself, or will not. Freedom is a prerequisite for healing a broken mind. It cannot be fixed against his will. Yet a broken mind is a broken will, a freedom that does harm, even potentially serious physical harm to itself and possibly others. A freedom that can attack or maim."*

An outdoor environment with a positive, inviting character and identity could provide an additional motivational component, a key ingredient to emotional healing.

### 4.5.4. BOREDOM

Casual conversations with patients by the author revealed that a lot of patients experience boredom, due to their monotonous outdoor environment and daily routine. There is a need for a variation of exiting outdoor experiences and daily activities.

### 4.5.5. TIREDNESS

As a result of their medication, patients need to sleep or rest for longer hours than healthy individuals during the day. Due to tiredness, patients are not always physically able to be involved in outdoor activities when they need to. The outdoor environment should provide individuals with comfortable areas that accommodates rest.

### 4.5.6. ISOLATION

Patients are physically and emotionally isolated from the outside world. In conversations with patients most of them were unable to tell how long they have been in Weskoppies, what the date was and what was happening in the news. This causes additional stress and a feeling of helplessness. It could also make it difficult for patients to cope with life outside Weskoppies.

### 4.5.7. STIGMATIZATION

Unfortunately mental hospitals like Weskoppies get a lot of publicity for isolated negative events and criminal patients. (Fig. 2.3). The name Weskoppies is well known amongst Pretoria and the rest of South Africa and mostly associated with the negative events as portrayed by the media. Most people could tell some or other funny or scary story they heard about Weskoppies or someone hospitalized there, even though the story teller has never been there and don't know where it is. People who have visited Weskoppies before, often sketches a different more positive picture. It is therefore important that the outdoor environment should assist in establishing a positive identity and character that could eventually result in more positive publicity (Fig. 2.4).

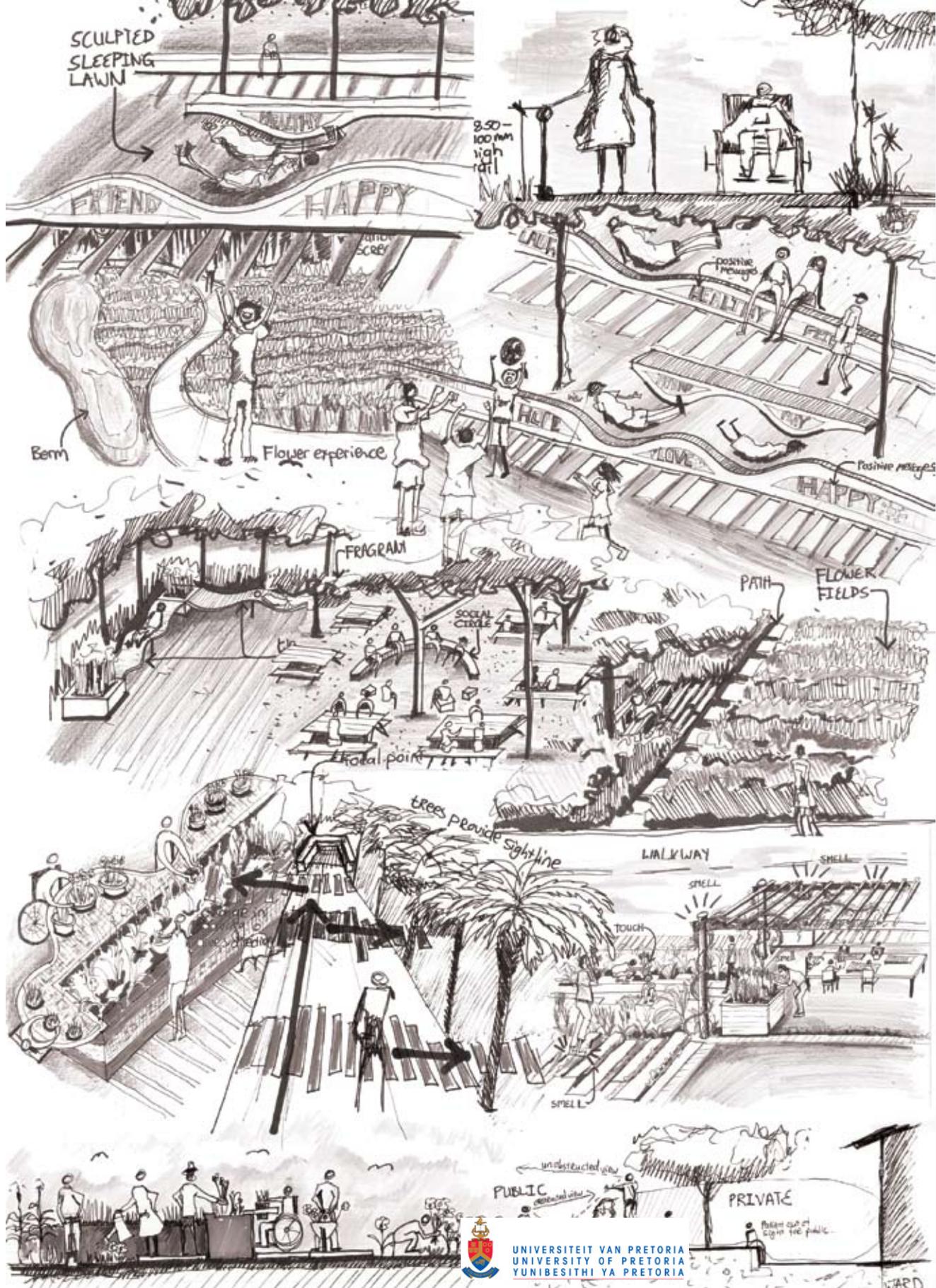
## 4.6. CONCLUSION

The social analysis indicated that patients and staff members at Weskoppies are encouraged and have a need to participate in different outdoor social activities. However, the outdoor environment doesn't reflect and support social interaction adequately. The physical outdoor environment should be designed to encourage community participation, invite and accommodate the necessary social activities and processes. This will also give the outdoor environment at Weskoppies a unique positive identity, which will influence the way people behave and feel in it significantly.

The following opportunities was identified in the social analysis:

- The accommodation of social events like music festivals and a flower or vegetable market that is open to the public.
- Creating job opportunities by using the open spaces at Weskoppies for agricultural purposes (refer to 5.3.1. & 7.9)
- Designing spaces that encourages social interaction (refer to 5.6.1).
- Providing pedestrian routes that expose the pedestrian to a variety of experiences (refer to 7.4).
- Opportunity to accommodate outdoor resting spaces for patients (refer to 5.5).
- Accommodating private areas for reflection & contemplation (refer to 5.5.1).
- Accommodate community projects and a sense of ownership (refer to 5.3.4).
- A Design where the patient is engaged with his natural surroundings to improve motivation.
- Communicating time & change in the design (refer to 5.4.2).

DESIGN GUIDELINES



## 5.1. INTRODUCTION

The design guidelines are a synthesis of solutions to problems identified through theoretical research as well as the physical and social analysis. The author identified six guidelines, each with sub guidelines which functions as a summary of what an outdoor environment should provide in order to enhance the psychological healing process. The six guidelines includes: independence, purpose, consciousness, rest, connectedness and physical activity. These will be described and illustrated in this chapter and applied to the open space framework, sketch plan and technical resolution.

## 5.2. INDEPENDENCE

*Fig.5.2: Walkway that accommodate independent functioning for people with different abilities (Author, 2009)*

Institutionalized individuals are not only dependent on medication but also dependent on staff members by choice or for permission to do certain things. The physical and social outdoor environment should provide patients with the confidence to maintain their roles as independent individuals (Tyson, 1998:34).



### 5.2.1. INDEPENDENT FUNCTIONING

The landscape should enable people from different abilities or disabilities to function independently. The surfaces of walkways should accommodate wheelchair users, and other differently abled individuals (Fig. 5.2).

### 5.2.2. FREEDOM

*Fig. 5.3: The outdoor environment should give a sense of freedom (Author 2009)*

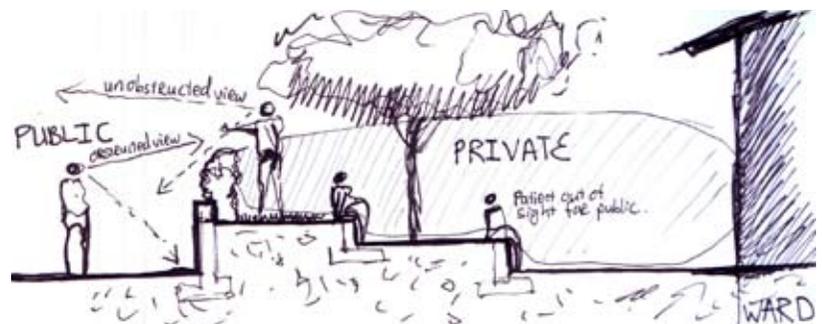
Institutionalized individuals experience a lost sense of freedom. The outdoor environment should provide patients with a sense of freedom. This can be achieved by creating soft boundaries in the landscape to prevent the patient from feeling caged in (Fig. 5.3).



### 5.2.3. PRIVACY

*Fig. 5.4: Passive surveillance: patients around the ward are not visible to the public, but patients can have an open view to the landscape when standing on the platform (Author 2009).*

Patients and staff need places where they can sit in private, on their own (Fig. 5.12) or in groups, somewhat concealed from by passers while they can still have a view over the landscape and outdoor activities through passive surveillance that doesn't compromise their safety (Fig. 5.4).



### 5.2.4. CHOICE & CONTROL

Institutionalized patients might experience a loss of control and choice (Green places, 2005:27). The outdoor environment should provide the user with a choice of sunny, shady, private, or social areas to sit. The user should also have a choice between different outdoor experiences or activities (Fig. 5.11) and whether they want to participate or just observe (Fig. 5.7). As part of the horticultural therapy program patients could also be allowed to research and choose what they want to plant.

### 5.2.5. LEGIBILITY

The theoretical research indicated that humans prefer and feel more relaxed in places where it is the easiest to extract information needed to function properly (refer to 2.3.2). The landscape should be simple and easy to read. Attention can be directed to important areas by making use of contrast, natural borders and sight-line views located along paths for visual connections between places. Structures or planting along a path can lead the eye to an important focal point while change in paving type, or signage can give clues and encourage movement to a certain area (Fig. 5.5).

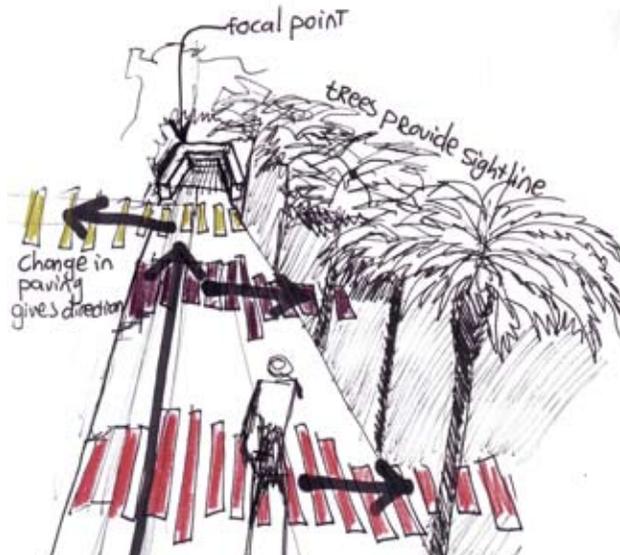


Fig. 5.5: A row of trees can focus the attention on an important feature while change in paving colour/material can invite the user to explore other places (Author 2009).

## 5.3. PURPOSE

An negative effect of institutionalization includes a lost sense of purpose. Patients often have difficulty to identify or establish their role in society. An outdoor environment that provides work opportunities, motivation and positive messages can help to restore a sense of purpose for institutionalized individuals.

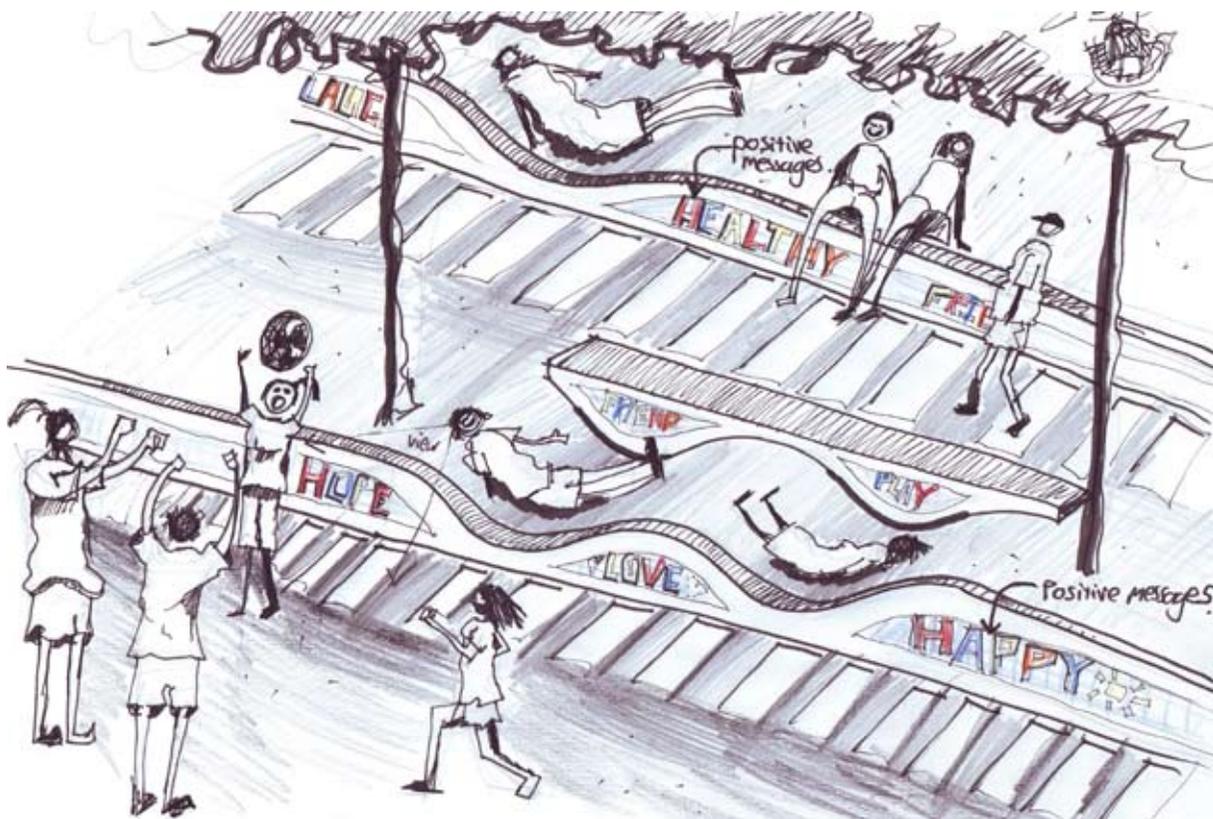
### 5.3.1. WORK OPPORTUNITIES

The outdoor environment should provide patients and the surrounding community with job opportunities and responsibilities (Fig. 5.6). This will create a feeling of purpose and independence. It can also alleviate the stigma of mentally ill patients when the public see how they fulfil “normal” social roles refer to (2.4.4). Patients can be involved in the maintenance of the outdoor environment while productive landscapes will provide further job opportunities (refer to 6.1.2) .



Fig.5.6:A horticultural therapy program and mosaic art provides patients with a sense of ownership. (Author 2009)

Fig. 5.7: Sketch illustrating how patients can be motivated to participate by watching other people participate in positive activities. Mosaic with positive words/motivational phrases can also uplift a patient's mood (Author 2009).



### 5.3.2. MOTIVATION

An interesting, inviting environment will motivate patients to participate in outdoor activities. If a patient observes other people that engage positively with outdoor activities, it would motivate them to get involved too (Fig. 5.7).

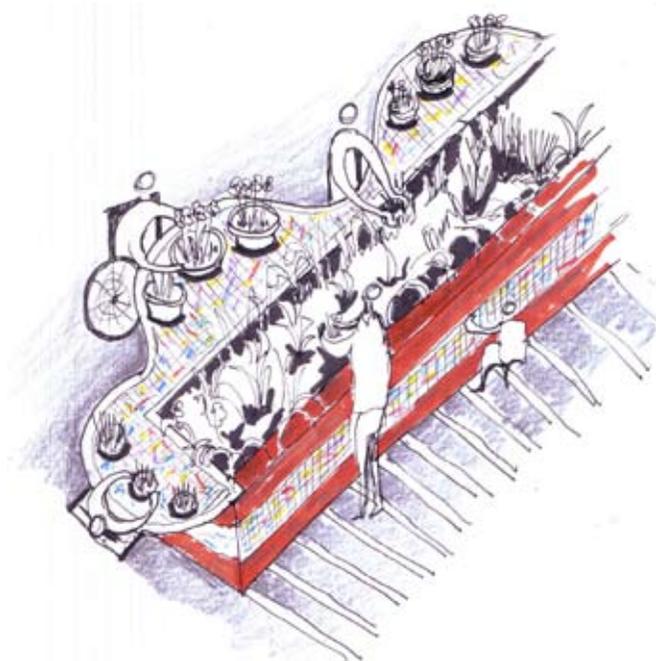
### 5.3.3. POSITIVE MESSAGES

Man made designed elements should be positive in their messages (Green places, 2005:28). Positive messages in the landscape can include positive images or phrases in mosaic art by Weskoppies patients (Fig. 5.7). Vibrant colours and a well maintained environment also gives a positive message (refer to 6.2).

Fig. 5.8: Patients are involved in the maintenance of the landscape while productive gardens like cut flower farming provides more job opportunities. (Author 2009)

### 5.3.4. OWNERSHIP

According to Tyson (1998:34) people have a need to identify personally with their surroundings. When people feel uninvolved and unfamiliar to an outdoor environment it can lead to disinterest and lower social usage (Fig. 5.8).

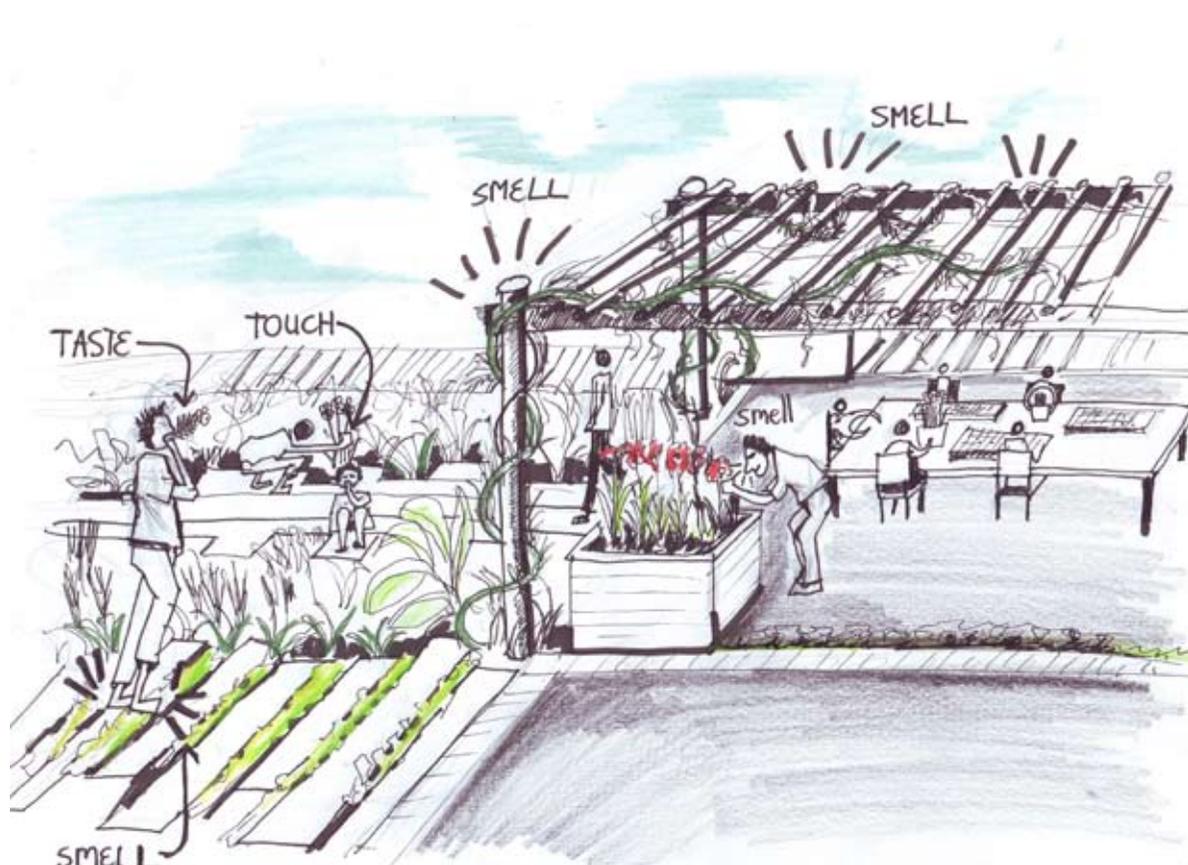


This could ultimately lead to the deterioration of physical features due to a lack of maintenance. To ensure continued life and growth the outdoor environment needs the involvement of people. The process forms an integral part of the healing potential of outdoor environments (Tyson, 1998: 175). The outdoor environment could facilitate a horticultural therapy program, where patients take ownership and responsibility for the garden. Patients should also be involved in the construction process and be allowed to make their 'mark' at Weskoppies through mosaic art as part of an occupational therapy program (refer to 6.2). All of these have the potential to strengthen the healing process by providing the patient with a sense of responsibility, pride and achievement (Fig. 5.8).

## 5.4. CONSCIOUSNESS

### 5.4.1. SENSORY STIMULATION

Awareness of surroundings and consciousness can be encouraged by stimulating the senses. Outdoor environments have the potential to stimulate the senses more intensely than indoor environments. Visual stimulation may include bright colours and positive messages in the landscape (Fig. 5.7). People should be allowed to touch plants and feel different textures in the landscape. Fragrant flowers and herbs in the landscape will stimulate the sense of smell which can bring back good or bad memories helping individuals cope with their reality. Herbs and other edible plants can also stimulate the taste sense (Fig. 5.9).

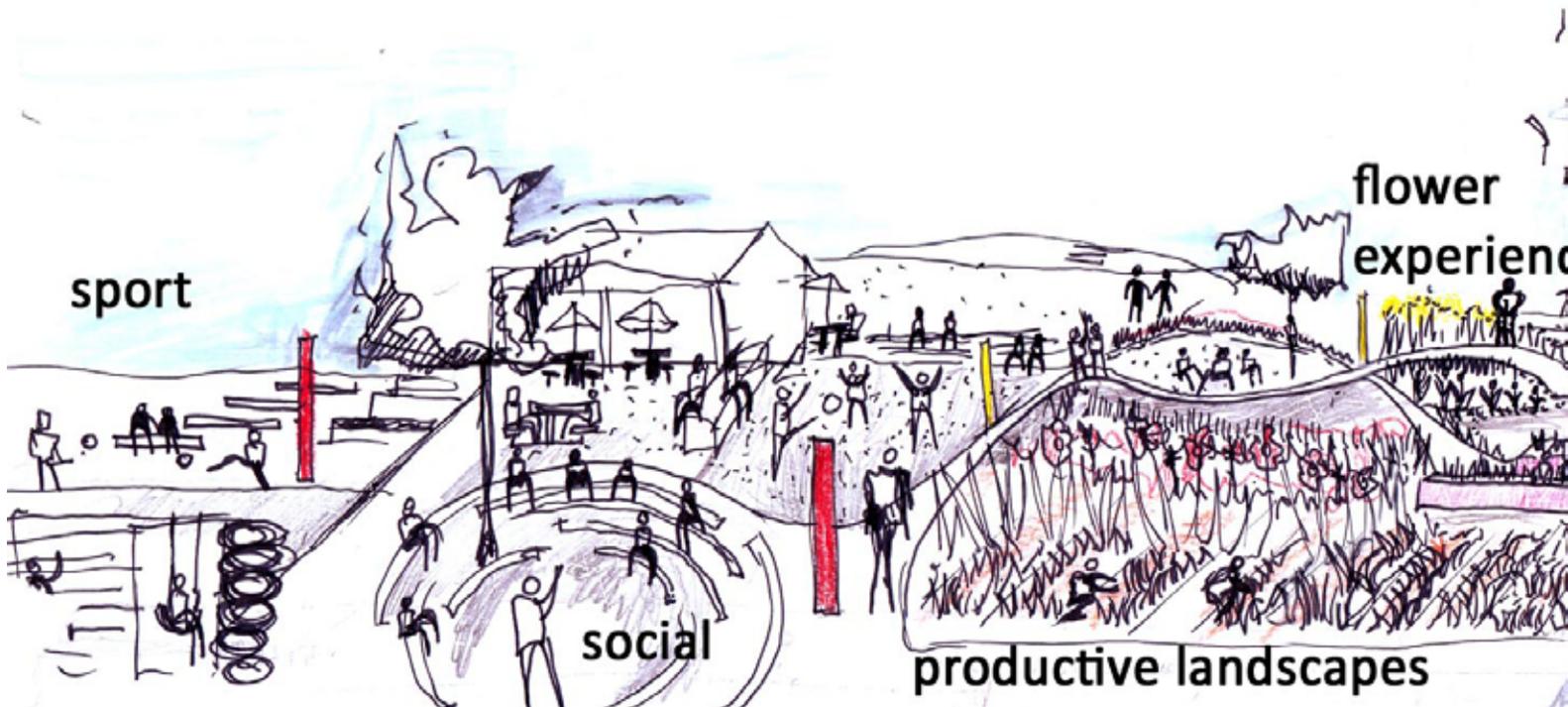
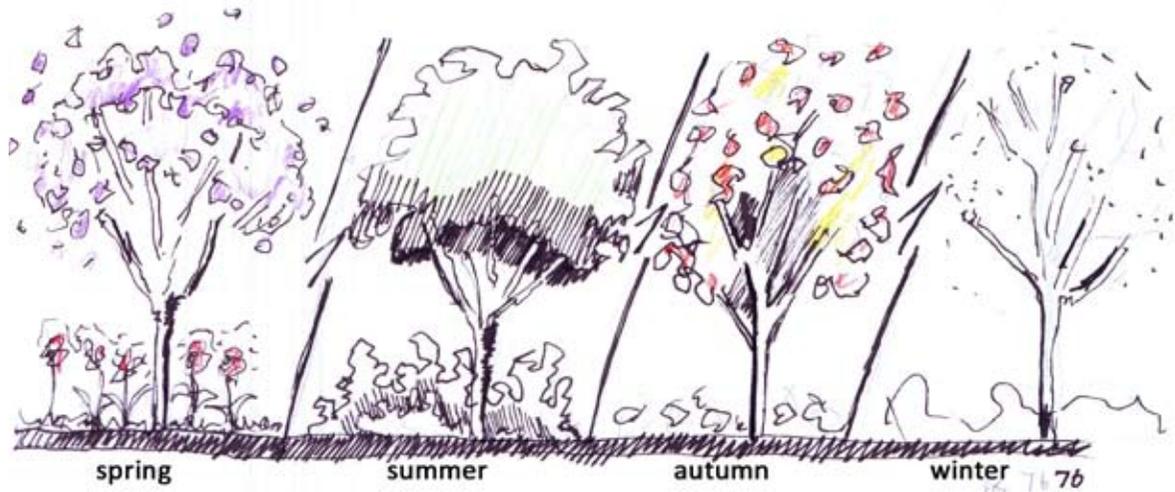


*Fig. 5.9: A horticultural therapy garden stimulates the senses. Fragrant flowers, climbing plants and crushed groundcovers stimulates the sense of smell. Herbs can be tasted and different and touched (Author 2009).*

### 5.4.2. AWARENESS OF TIME

Institutionalized individuals lose track of time and date which results in a feeling of helplessness. A healing landscape should heighten the users awareness of time. This can be achieved by implementing plants that accentuate the seasons (Fig. 5.10). A sundial in the landscape will also communicate time and the Landscape Architect should explore ways in which the date can be communicated in the form of an outdoor calendar.

*Fig. 5.10 :Seasonal change in the landscape heightens the patients sense of time and results in feelings of excitement and anticipation. (Author 2009)*



### 5.4.3. CHANGE

If the physical outdoor environment stays constant the people in it responds less and less to it (refer to 2.3.4). The outdoor environment should illustrate change throughout the year and over longer time periods. This brings life and an element of surprise and anticipation to the landscape. This will motivate patients to consciously notice and take interest in their outdoor environment.

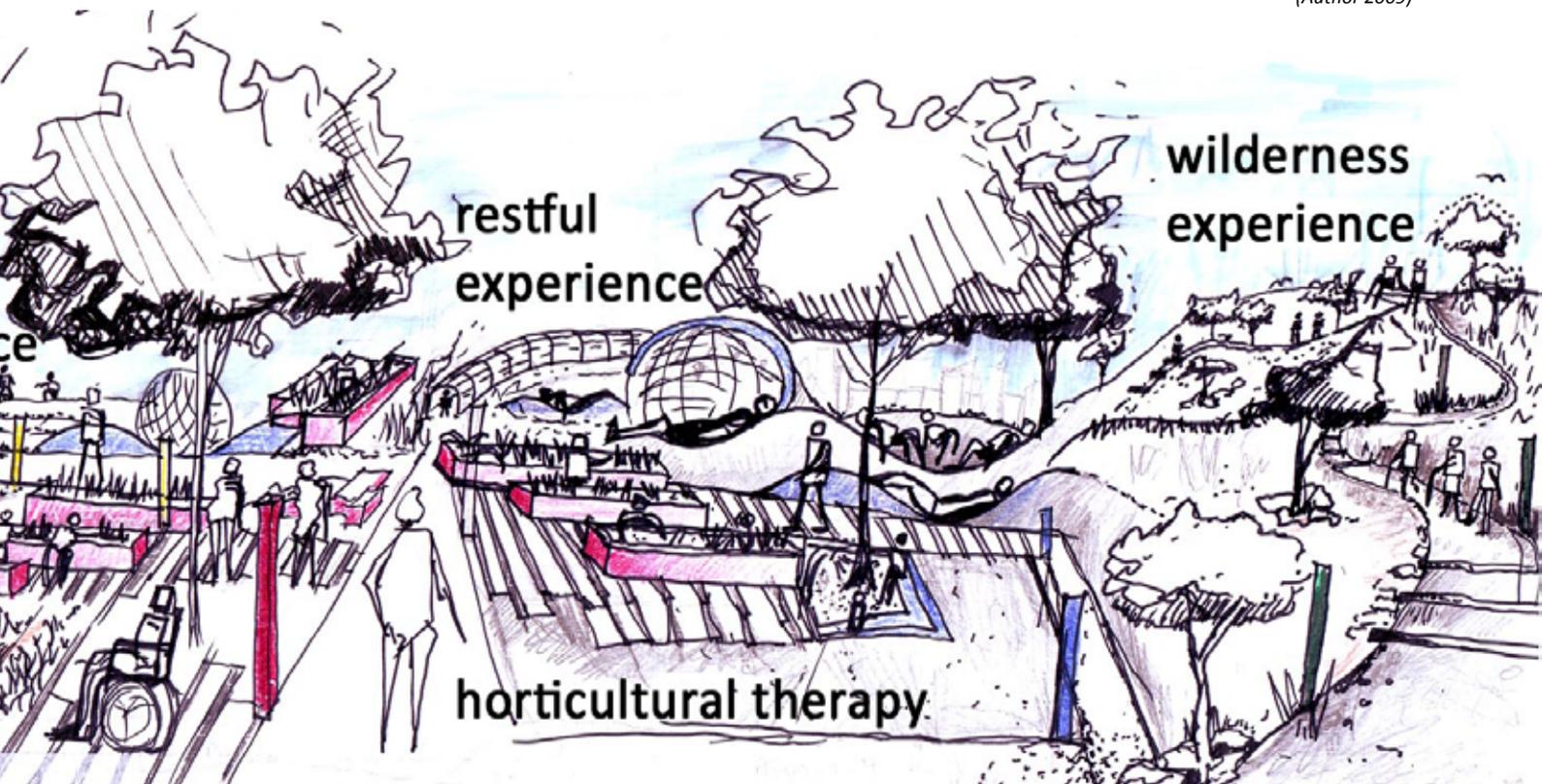
### 5.4.4. EXCITEMENT

The outdoor environment should create a sense of excitement. People need to have some activity that they can look forward to. Outdoor environments can accommodate events like music festivals, sport events and an outdoor markets on an annual or weekly basis.

### 5.4.5. VARIETY OF EXPERIENCES

To counteract boredom, the outdoor environment should provide the user with a variety of experiences and activities. These could include sport activities, social activities, horticultural therapy, a flower experience and a wilderness experience. Passive activities such as socializing, sleeping and observing should also be accommodated. (Fig. 5.11).

*Fig. 5.11 (below): A variety of outdoor experiences. (Author 2009)*



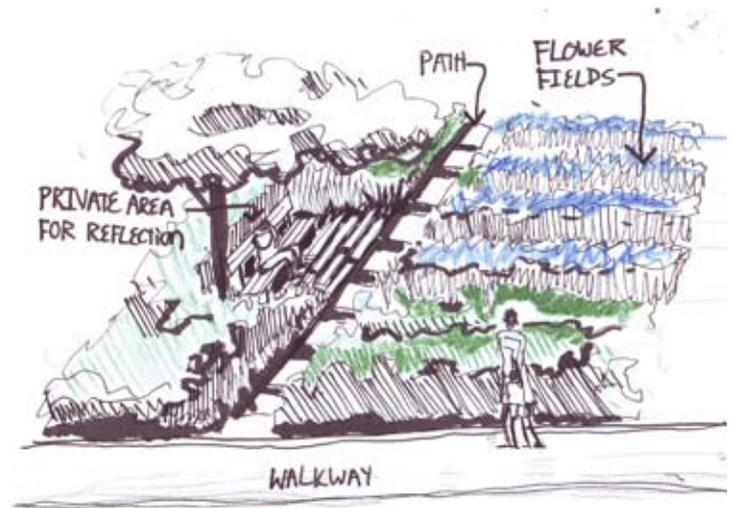
## 5.5. REST

Rest is one of the basic human requirements for survival; it is a vital ingredient for maintaining a healthy body and mind. Patients at mental institutions needs more rest than healthy individuals. The outdoor environment at mental institutions should therefore accommodate rest more intensively

### 5.5.1. REFLECTION

*Fig. 5.12 : The outdoor environment should provide patients and staff with private, intimate places for reflection. The illustration shows a seating pocket overlooking flower fields (Author 2009).*

Patients and staff often need time alone for reflection and contemplation to regain composure after stressful situations. The landscape should have quiet places where people can comfortably sit in privacy away from the mainstream activities (Tyson, 1998: 35)(Fig. 5.12).



### 5.5.2. RELAXATION

According to Fisher (2000:41), exposure to natural elements such as seasonal blossom, leaf change, the vibration of wind through leaves and twigs and birdsong could result in reduced stress levels.

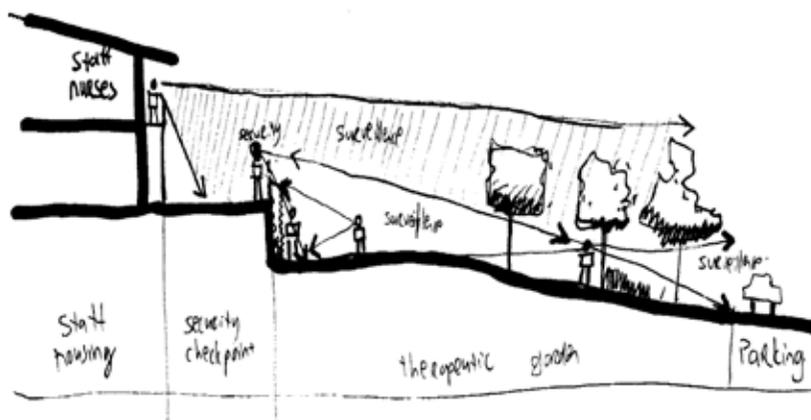
### 5.5.3. FAMILIARITY

Institutionalization may result in disorientation, feelings of disconnectedness and estrangement which increases stress and prolongs the recovery process. The outdoor environment should therefore be warm and welcoming to create a feeling of familiarity where the patient could rest and recover. The aesthetic should reflect the culture and context of the most of the users. Familiar elements should be integrated in the design (Tyson, 1998:33). By allowing patients to participate in creation and maintenance the outdoor environment they will be able to associate with it and experience a sense of familiarity.

### 5.5.4. SECURITY

A landscape can only accommodate rest when the users feel secure and safe in it. Staff members should be able to observe patients from different points while working (Tyson 1998:35). Vegetation or structures should not obstruct views at the public areas. Views may only be obstructed where privacy is required around the wards which are permanently under supervision of staff members. Paving should be slip resistant (Fig. 5.13).

*Fig. 5.13 : The sketch indicates how passive surveillance can strengthen security (Author 2009).*



### 5.5.5. COMFORT

The outdoor environment should be comfortable for the user to function in. Materials selected for seating should not be too hot or cold to sit on. Paving or planter materials should not cause glare. Horticultural planters should be at different heights to accommodate standing and seated people as well as wheelchair users. A good combination of shaded and sunny seating areas should be provided for comfort during summer and winter. Deciduous trees will provide shade during the summer while allowing sun to filter through in winter (Fig. 5.14).

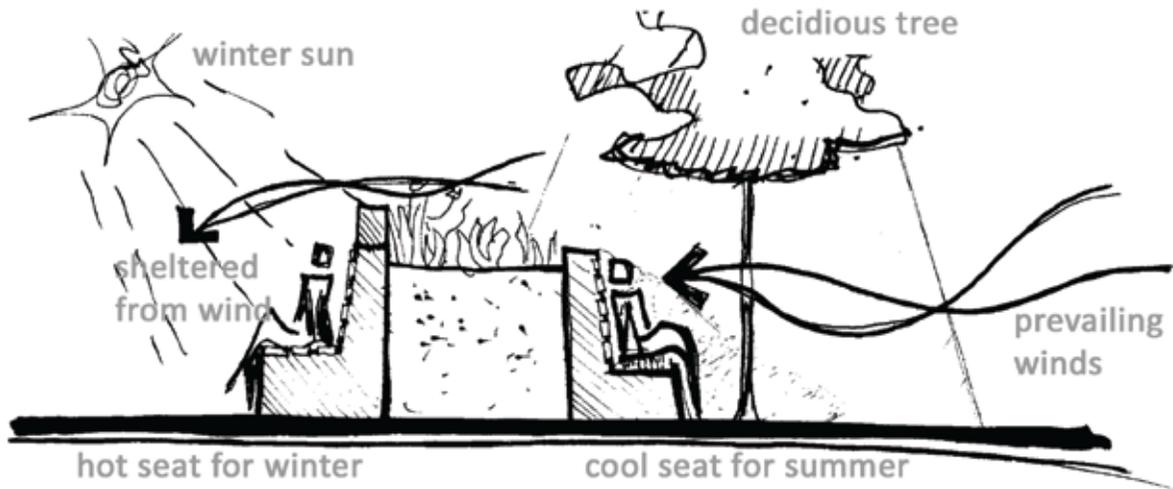


Fig. 5.14 :  
Comfortable seating areas for summer and winter (Author 2009).

### 5.5.6. SLEEP

Medication for mental illnesses often causes drowsiness. The outdoor environment should satisfy the patients need for sleep during the day. Lawn can be sculpted to provide comfortable sleeping spaces. Wooden benches could also be shaped to be comfortable for sleeping (Fig. 5.15- 5.16).

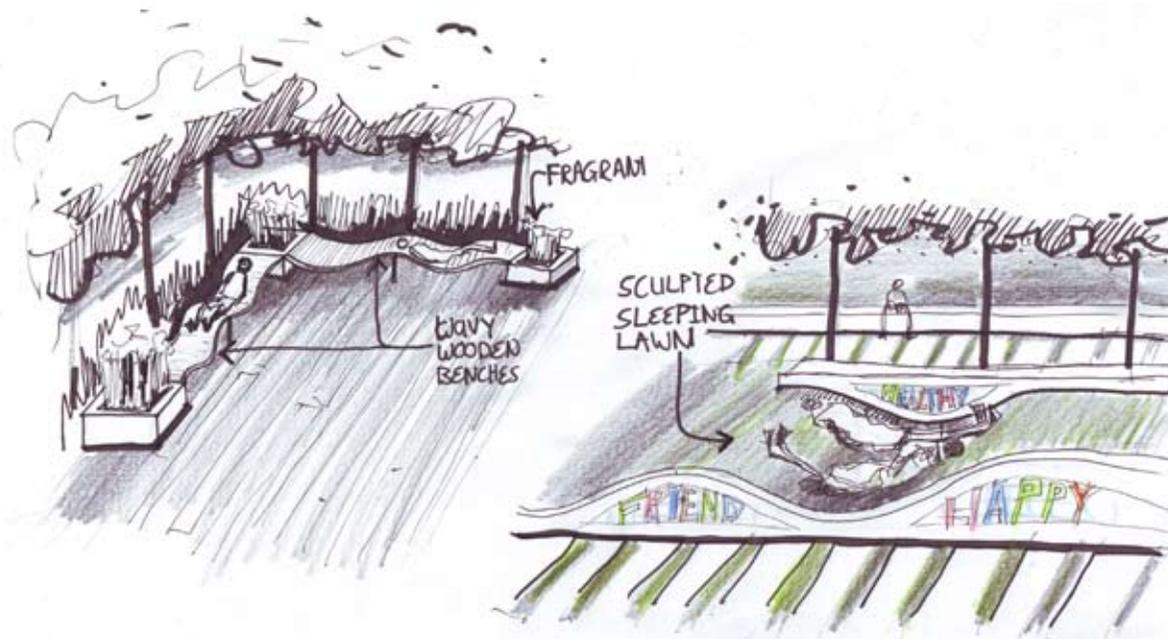


Fig.5.15 (far left):  
Comfortable wooden benches for sleeping (Author 2009).

Fig.5.16 (left): Sculpted lawn for comfortable sleeping (Author 2009).

## 5.6. CONNECTEDNESS

Institutionalized patients are physically isolated from the outside world and also often feel emotionally isolated from their surroundings and other people. This results in a feeling of powerlessness. The outdoor environment can assist in overcoming this isolation by accommodating social interaction, social support, connections with natural systems and accessibility.

### 5.6.1. SOCIAL INTERACTION

An outdoor environment can encourage social interaction with areas where people can meet or sit in groups. Sport, outdoor areas to eat and community activities such as gardening also encourages social interaction

Fig. 5.17 : An outdoor area that accommodates social interaction (Author 2009).



### 5.6.2. SOCIAL SUPPORT

Physical and emotional isolation negatively affects recovery (refer to 2.4.1). A community activity such as gardening or mosaic work can give character and identity to the outdoor environment. Family members or friends of patients should be allowed to be involved in the outdoor activity program. This will help patients adapt to their environment more quickly and also reassure the family member or friend that their loved ones are in quality care.

### 5.6.3. CONNECTED TO NATURAL SYSTEMS

Humans have a need for close contact with nature (refer to 2.3.2). The outdoor environment should allow people to be in contact with natural systems to realize their role and connectedness as part of an integrated whole. This can include hiking trails with lookout points in areas with natural vegetation which allows people to experience nature in its pure form. Wetland areas with bird hides can also bring people closer to nature and natural systems.

### 5.6.4. ACCESSIBILITY

The outdoors should be easily accessible from indoors to accommodate the pacing of some patients. People of all ages and abilities should have access to outdoor activities. The public and surrounding community should also have access to the outdoor environment at Weskoppies at specific times. However this should happen under controlled circumstances. The public could be allowed on Saturday's only to visit the flower farm or market. At these times security should be sharpened.

## 5.7. PHYSICAL ACTIVITY

The outdoor environment must encourage exercise and movement of different intensities as far as people are able (Tyson, 1998:34). Enough flat open space should be provided for sport activities and active occupational therapy activities (Fig. 5.18). Walking could be encouraged through flower fields, hiking trails and experiential routes throughout the site.



*Fig. 5.18 : An active outdoor environment (Author 2009).*

## 5.8. CONCLUSION

When an outdoor environment provides the user with independence, purpose, consciousness, rest, connectedness and physical activities at Psychiatric institutions like Weskoppies and other outdoor places it will have the potential to enhance the psychological healing process. The design guidelines influenced the design decision making process at various scales as illustrated in the open space framework and sketch plan chapters that will follow. The design matrix table at the end of the open space framework and sketch plan chapters will indicate how each of these guidelines have been addressed in the various design elements. This will serve as proof that the design addresses the guidelines as set out in this chapter.

# PRECEDENTS



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## 6.1. BLACKTHORN MEDICAL CENTRE( garden project)

Maidstone, Kent (UK)

by Clare Cooper Marcus

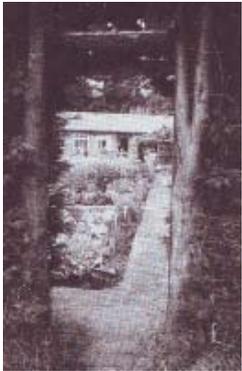


Figure 6.1. View of part of the garden. (Photo by Clare Cooper Marcus) (Sachs 1999:289)

### 6.1.1. DESCRIPTION

A facility that addresses both physical and mental illness by combining alternative medicine with a specialised indoor and outdoor environment designed for healing. The aim of Blackthorn Garden is to create through work a sense of usefulness and meaning to rebuild self confidence and self esteem. The Garden project provides a valuable social/physical setting, that relieves the patients from the distressing symptoms of mental illness (Sachs 1999:288)

The garden has 3 objectives:

- to rehabilitate people who have not responded to other treatments.
- to create an environment which encourage social interaction.
- to encourage various disciplines involved with mental health care to work together effectively (Sachs 1999:288).

The Garden Project consists of the following facilities:

- A quiet flower garden with trees, lawns and seating areas for patients and the surrounding community which is also used for fund raising events.
- A greenhouse and lath house used for the cultivation of garden and house plants to sell.
- Extensive vegetable gardens
- An organic cafe serving produce from the gardens to staff, patients, volunteers and members of the local neighbourhood.
- a craft hut (Sachs 1999:290)

Everything in the garden is used and what is left over is recycled in compost. The vegetables is used in the kitchen and the bedding plants and cut flowers are raised for sale or used in dried flower arrangements, massage oils, herbal preparations, jams and chutneys. All of these products are sold through the crafts program. Patients are referred to the hospital by psychiatrists, social workers and CP's as coworkers rather than patients, working alongside staff members and volunteers, depending on their mood. Similar to the patients at Weskoppies, the mental illnesses of these co workers include schizophrenia, chronic states of anxiety, depression or school phobia amongst others (Sachs 1999:290).

Figure 6.2. A coworker in the garden (Photo by Clare Cooper Marcus) (Sachs 1999:291)



### 6.1.2. OPPORTUNITIES AND IDEAS

Weskoppies also provides patients with work opportunities through work schemes, but there is a need to encourage the younger generation patients to get involved and interested in the garden.

The Blackthorn Medical Centre is a good example of how engagement with the natural physical environment can promote social interaction and restore a feeling of belonging and purposefulness while also teaching patients about responsibility (refer to 5.3.1 & 5.3.4).

## 6.2. MOROKA DAM PRECINCT

Moroko Park Precinct, Soweto

by Newtown Landscape Architects

### 6.2.1. DESCRIPTION

Moroka Dam Precinct includes an area of plus minus 20 ha that was developed around the Moroka dam as a 'neighbourhood park'. The project is a good example of how outdoor environment can provide social sustainability and community upliftment.

For the Landscape Architects the social challenge was to illustrate the potential of parks to uplift communities through community participation (NLA, 2005:1). The idea was also to create a sense of pride and ownership towards the environment (NLA, 2005:2). The community was involved in the project from the onset until construction. Amongst other ideas the community envisioned the idea of art in the park.

Individuals from the community were allowed to put their mark on their environment through mosaic art at strategic positions. The mosaic work reflects the social and political views of the community with graphics and phrases like 'keep clean', 'do not waste', 'condomise' and other powerful messages (NLA, 2005:2).

### 6.2.2. OPPORTUNITIES AND IDEAS

As part of the occupational therapy program patients can also do mosaic work on planters or retaining walls with positive images and uplifting phrases such as 'you are not alone' or 'there is always hope'. This will not only create a feeling of ownership and pride but also create an outdoor environment with a positive, uplifting identity (refer to 5.2.2).



Fig. 6.3-6.5 :Mosaic art by the community reflects the communities' views and culture (NLA, 2005).

Fig. 6.6 : A sense of ownership is established by allowing people from the local community to do the mosaic art (NLA, 2005).



# OPEN SPACE FRAMEWORK



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# 7.1. INTRODUCTION

## VEHICULAR MOVEMENT

-  Proposed ring road
-  Pedestrian crossing
-  secondary roads

## PEDESTRIAN MOVEMENT

-  Unsupervised route
-  Supervised route
-  Connecting routes

-  Acces points
-  Lookout points
-  Bird hides

## PROPOSED LAND USE

-  Active & social
-  Outdoor rooms & productive gardens
-  Agricultural (Herbs and cut flowers)
-  Lawn with scattered trees (park)
-  Wilderness
-  Semi-private

## BOUNDARIES

-  Berms
-  vegetation screen
-  permeable boundary
-  appropriate fencing
-  ha-ha
-  palisade fencing



The open space framework serves as a guide for developing the open spaces at Weskoppies to have healing benefits. For security reasons the public will only be allowed to use the open spaces at Weskoppies on weekends when security will be strengthened.

*Fig. 7.2 (Opposite page): Proposed open space framework indicating land uses, vehicular movement, pedestrian movement and boundaries (Author 2009)*

### The open space framework will aim to:

- Establish a social and active centre which will become the heart of Weskoppies.
- Improve vehicular and pedestrian circulation
- Give Weskoppies a positive identity
- Provide a unique attraction on Saturdays in the city.
- Provide all the users with a variety of therapeutic experiences and activities.

### The framework will be explained under nine subheadings, these will include:

- A summary of guidelines from the context analysis.
- specifications for vehicular routes.
- a guide for the pedestrian movement system.
- A proposal for soft boundaries to distinguish public areas from semi-private areas around wards and staff housing.

Different new land uses that contributes to creating a healing hospital environment with a variety of experiences will be proposed. These include:

- The active social area which will be the heart of Weskoppies.
- Outdoor rooms around buildings.
- Areas suitable for cut-flower farming and the process of cut flower farming
- A wilderness area with a hiking trail and lookout points.
- Wetland areas consisting of retention dams for irrigation with bird hides.

## 7.2. ANALYSIS SUMMARY (refer to fig. 7.3)

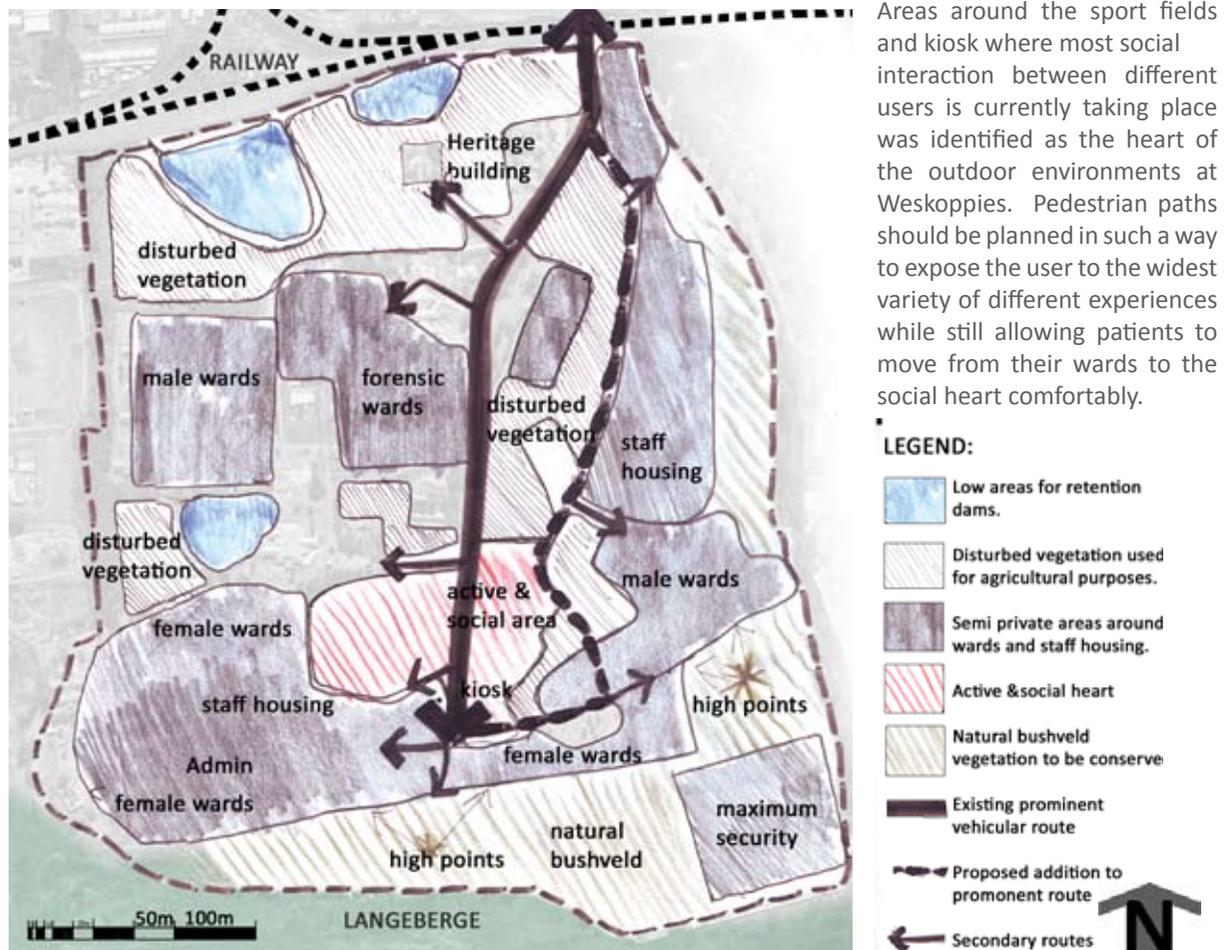
Areas with disturbed vegetation and other areas with low ecological value will be either rehabilitated or used for agricultural and recreational purposes. The existing bushveld vegetation area on the eastern and southern edge of the site should be protected and will be used for a hiking trail. Because this area is also situated on the highest part of the site it is the ideal place for lookout points. From there people can have a view over the whole site, the city in the distance on the northern side and have a view of the Langeberge on the southern side.

Three lower lying areas on the site was identified as potential wetland areas where storm water from the site and will be captured in retention dams and used for the irrigation for the proposed landscape and cut flower farm.

Areas around the wards and staff housing was identified as semi-private areas with appropriate soft boundaries where the public is not welcome. These areas will be outdoor rooms as an extension of the building.

The Highlighted road was identified as the most prominent and ends at the kiosk area. The kiosk area can therefore become the arrival or destination point. The secondary routes that leads to more semi private areas are only attached to this route on the left side of the road. Semi private areas on the right side of this route is not connected to it. This route can continue to become a ring road to link with semi private areas on the right side.

Fig. 7.3: A summary of how the context analysis influenced the development of the open space framework (Author 2009).



Areas around the sport fields and kiosk where most social interaction between different users is currently taking place was identified as the heart of the outdoor environments at Weskoppies. Pedestrian paths should be planned in such a way to expose the user to the widest variety of different experiences while still allowing patients to move from their wards to the social heart comfortably.

## 7.3. VEHICULAR MOVEMENT

The existing vehicular movement system at Weskoppies is illegible and haphazard with no hierarchy. There is no safe pedestrian crossings on vehicular routes. The proposal for an improved system is a hierarchy of routes which includes a primary route with secondary routes attached to it. Some unnecessary vehicular routes will be pedestrianised. To improve legibility, access and pedestrian comfort the following guidelines should be applied.

### 7.3.1. PRIMARY ROUTE GUIDELINES

The following guidelines are applicable to the proposed primary route:

- The primary vehicular route should be more prominent visually by having trees on both sides of the road.
- A pedestrian path should be accommodated on at least one side of the primary route.
- Lighting should be provided along the primary route for safety and legibility
- Signage should be provided along the primary route.
- Pedestrian crossings should be raised to slow down traffic.
- Bus stops should be placed along the primary route. The bus stops should have comfortable, sociable waiting areas that adjacent to it.

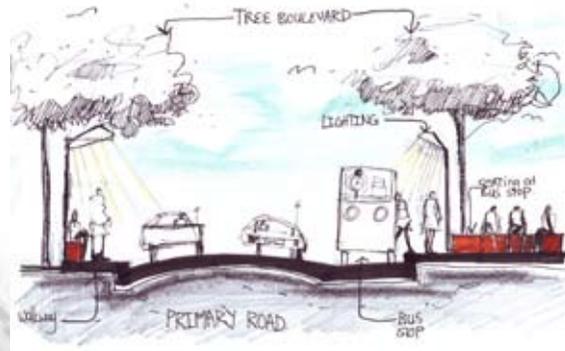
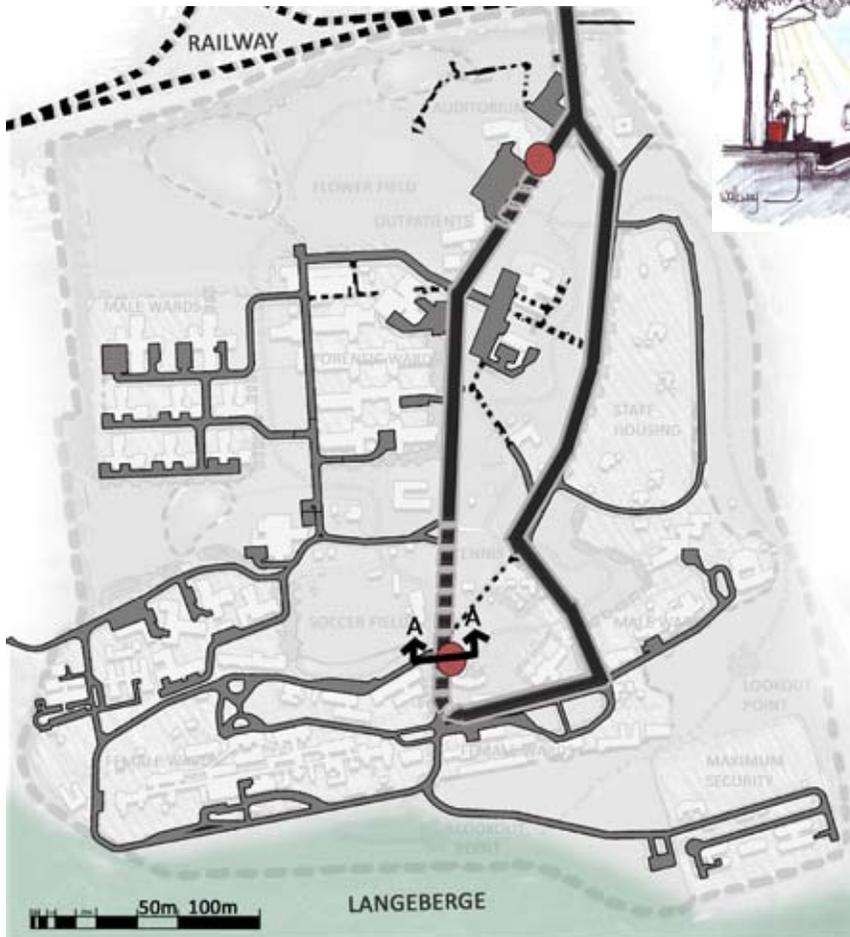


Fig. 7.4: Section A-A through the primary road with a tree boulevard, walkway, lighting, bus stop and seating areas (Author 2009).



### 7.3.2. SECONDARY ROUTE GUIDELINES

The secondary vehicular routes are connected from the primary route and leads mostly to the semi private areas. They are less prominent and pedestrian paths are only accommodated where necessary. Different tree species should be planted along each secondary road to give it an identity and make it more legible.

**LEGEND:**

-  Proposed Ring Road
-  Pedestrian crossing
-  Secondary Roads
-  Pedestrianised roads
-  Bus stop

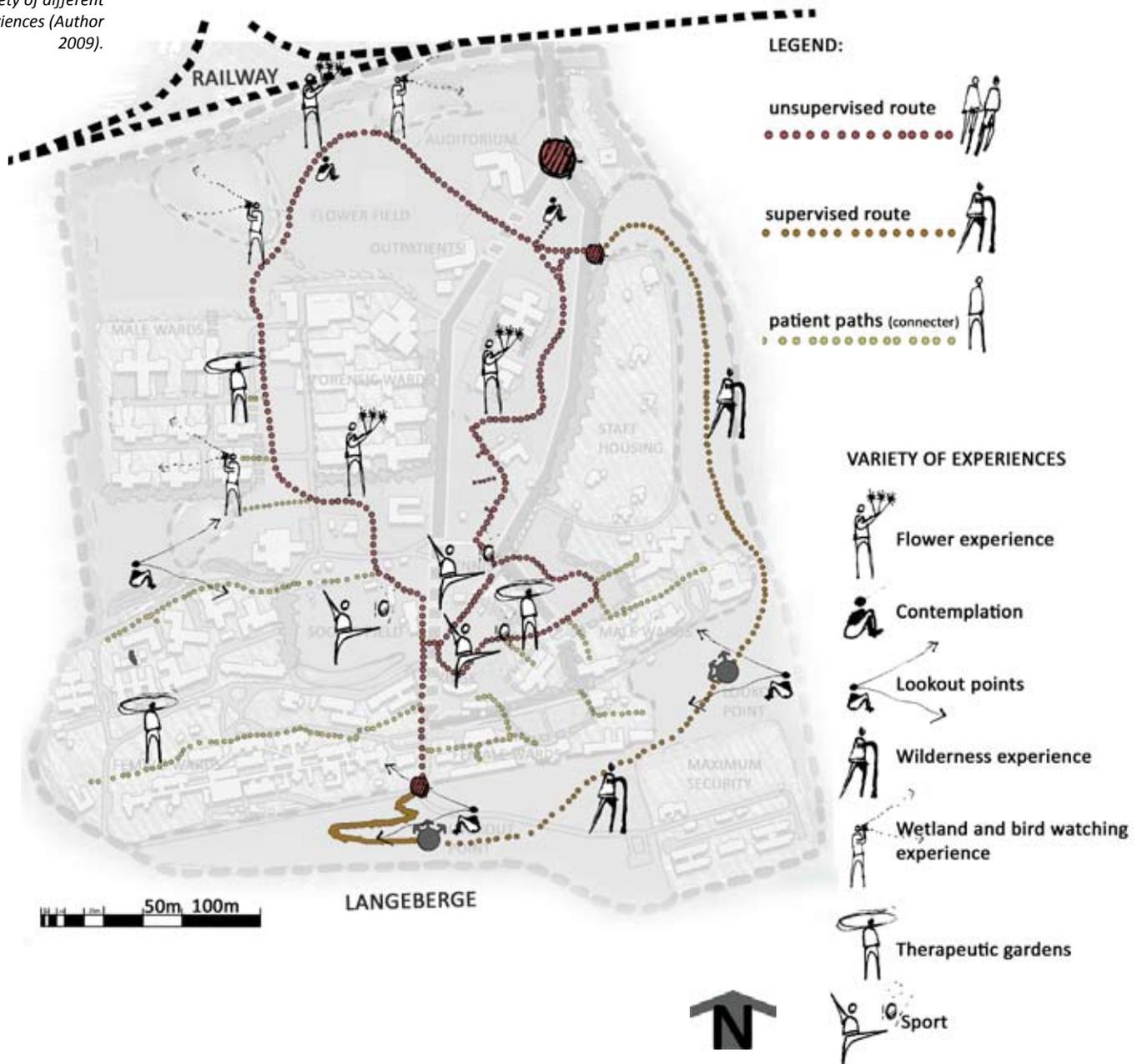
Fig. 7.5: Map indicating the proposed primary and secondary vehicular routes with bus stops (Author 2009).



## 7.4. PEDESTRIAN MOVEMENT

There is currently no formalized pedestrian movement system at Weskoppies. The proposed pedestrian route should be accessible to people with different abilities (refer to 5.2.1). The pedestrian movement system will fulfill the function of getting pedestrians safely from one place to another while also functioning as a experiential route that exposes the pedestrian to a variety of experience (refer to 5.4.5).

Fig. 7.6: Pedestrian movement system. The pedestrian is exposed to a variety of different experiences (Author 2009).



**7.4.1. UNSUPERVISED ROUTE**

This route is at all times accessible to staff, public on Saturdays, visitors and patients in open wards. It exposes the pedestrian to the widest variety of experiences but doesn't include the Wilderness experience, except on Saturdays when this area will be open to the public, staff and patients.

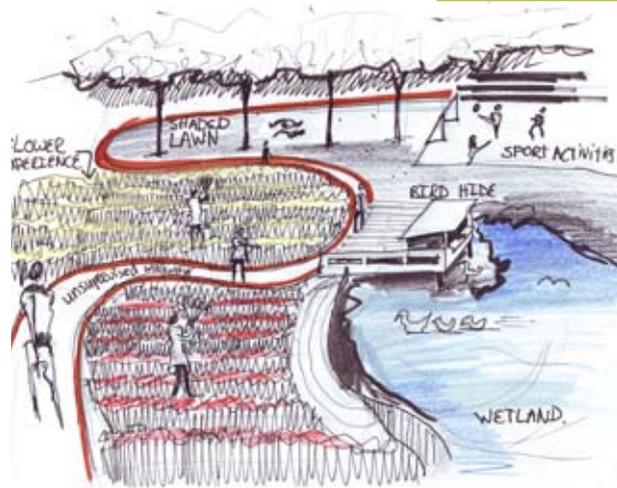


Fig. 7.7: The unsupervised route exposes the pedestrian to a variety of experiences. The sketch shows how the walkway connects to the flower experience, wetland, bird hides, shaded lawn and sport activities (Author 2009).



**7.4.2. SUPERVISED ROUTE (HIKING TRAIL)**

This route goes through the Wilderness area and is connected to the unsupervised route. It has controlled access and can only be used by patients under the supervision of a staff member. The reason for this is because the natural existing vegetation at the Wilderness area does not allow open views and can be a breeding ground for illegal activities. On Saturdays there will be a guided walk by a wildlife expert or volunteer for patients and visitors. Due to the steepness of the site this area will only be accessible to wheelchair users from the southern access point.

Fig. 7.8: The hiking trail needs to be used under the supervision of a staff member or educational guide (Author 2009).

**7.4.3. CONNECTING ROUTES**

The function of these routes is to serve as connector routes between the different wards and the social heart of Weskoppies. These routes will be narrower than the other pedestrian routes

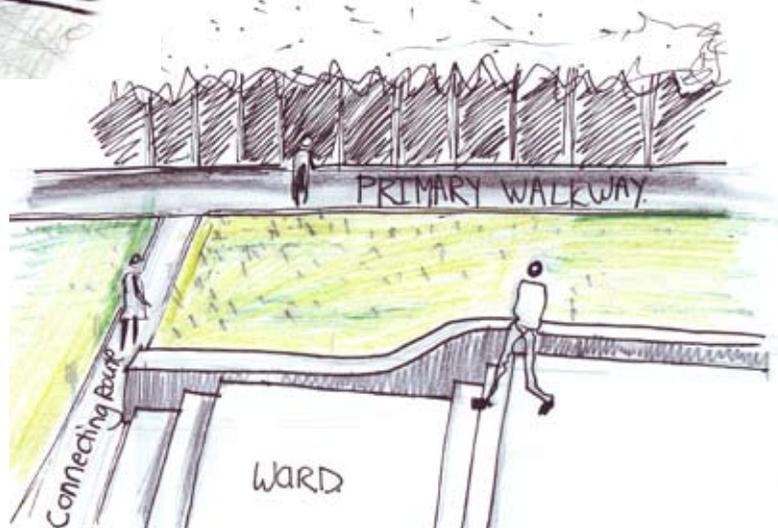


Fig. 7.9: A narrower connector route connects the wards to the primary walkway (Author 2009).

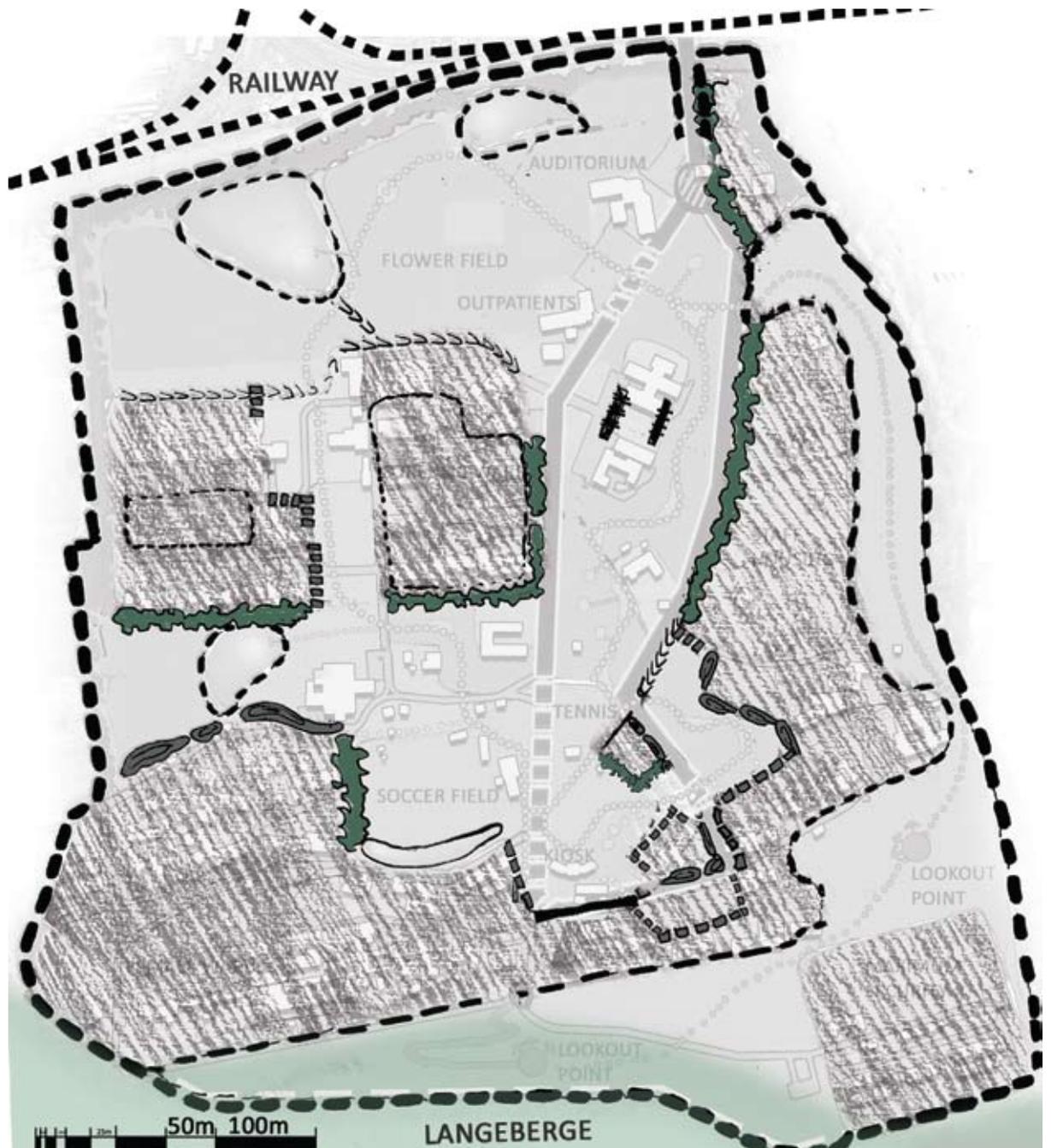
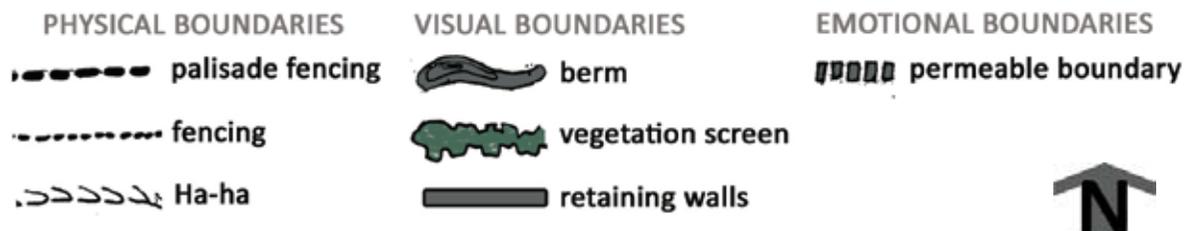


Figure 7.10: Boundaries map: The proposed position of different kinds of boundaries on the site to distinguish semi private areas from public areas. (Author 2009)



## 7.5. BOUNDARIES

The framework specifies that boundaries should be soft whenever possible. Patients must not feel caged in, but for security and privacy reasons semi-private areas will still be distinguished from private areas. Three different kinds of boundaries are proposed. They include: physical boundaries, visual boundaries and emotional boundaries.

### 7.5.1. PHYSICAL BOUNDARIES

Physical boundaries should be soft whenever possible by making use of ha-ha's (fig7.11). Fencing will only be used where it is absolutely necessary. The palisade fencing at the site boundary will remain. The Wilderness area will be fenced off with visually pleasing fencing. The fences will be softened with vegetation as much as possible.

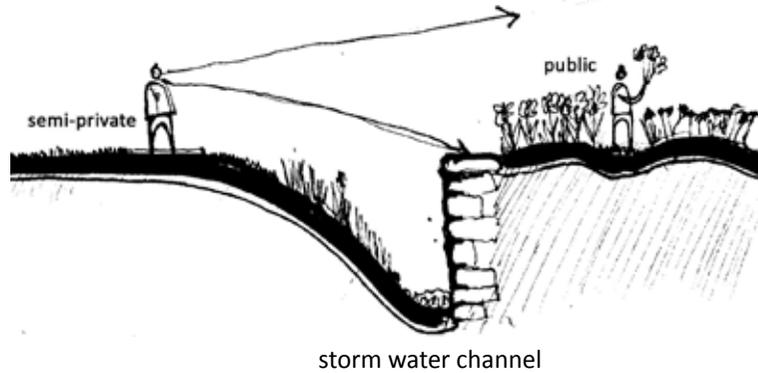


Fig. 7.11: Ha-ha physical boundary. Although a person cannot physically cross this boundary, the person will still have an unobstructed view to the other side. (Author 2009)

### 7.5.2. VISUAL BOUNDARIES

To achieve a sense of privacy at the areas around the wards and staff housing visual boundaries will be implemented. These will include berms, vegetation screens and retaining walls.

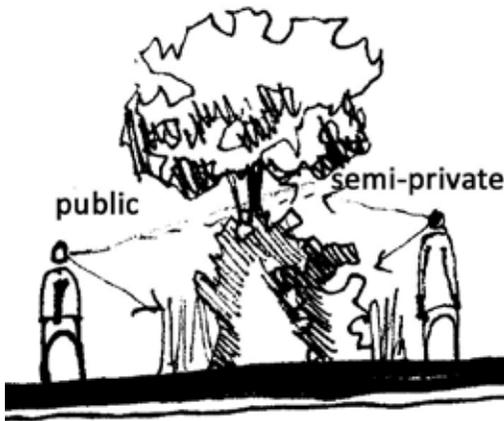


Fig. 7.12 (far left): Vegetation can act as a visual screen where privacy is required (Author 2009)

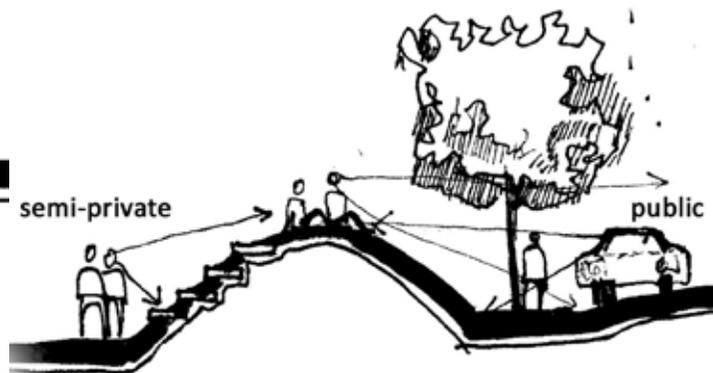
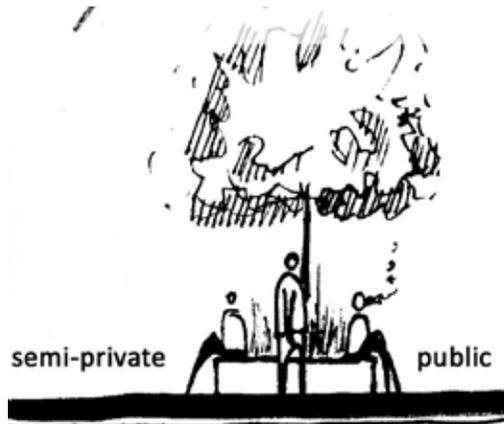


Fig. 7.12 (far right): Vegetation can act as a visual screen where privacy is required (Author 2009)



### 7.5.3. EMOTIONAL BOUNDARIES

Emotional boundaries involves physical structures in the landscape that is physically and visually permeable but still acts as an edge between semi private and public areas. They function as a territorial boundary and public will feel unwelcome to go beyond these edges. Signage could also discourage the public to enter these areas.

Fig. 7.14 :Structures in the landscape can define semi private areas and act as permeable emotional boundary Author 2009).

## 7.6. ACTIVE & SOCIAL HEART

The area between the different sports facilities which includes the kiosk was identified as the area that will be developed as the social and active heart of Weskoppies. A sketch plan will be developed for this area to serve as a catalyst for implementing the design guidelines for a healing outdoor environment. Visitors from outside will arrive at this area in the middle of Weskoppies where most social activities will be accommodated from where they will distribute to the rest of the site by making use of the experiential pedestrian route. Patients and staff from inside Weskoppies will meet and gather at this area to participate in sport, social activities, therapeutic activities or casual interaction.

This area was chosen for a detail design intervention due to the following reasons (Fig. 7.15):

- It includes most of the sports fields
- It includes the kiosk where the widest variety of patients, staff and visitors currently interacts with each other.
- It is in a more or less central position on the site, that makes it accessible
- The area is connected to the primary route and becomes a destination at the end of the route.
- The area is in close proximity to the Heritage buildings for visitors.
- This area is somewhat higher than the areas on the northern side and provides views over the landscape.

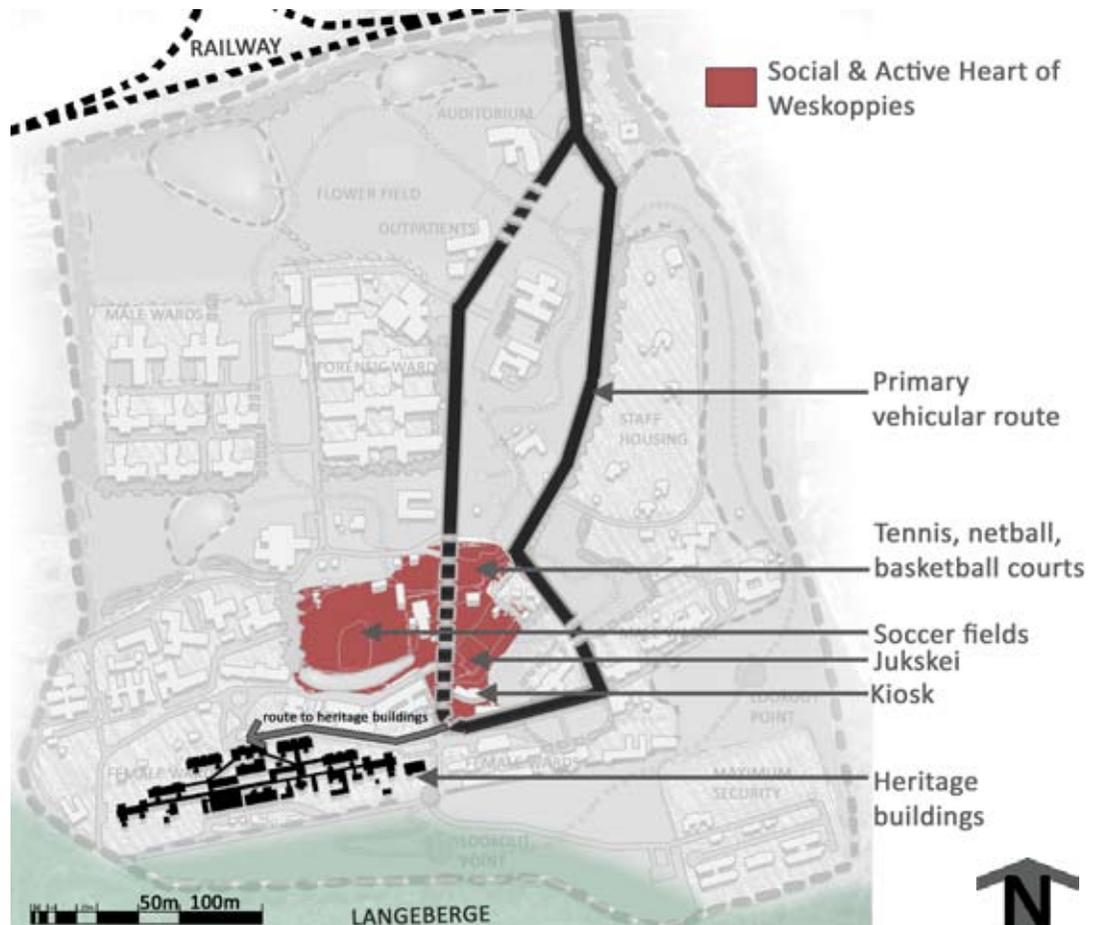


Figure 7.15: Map indicating the position of the active & social heart of Weskoppies which links with the primary vehicular route and includes most sports fields and the kiosk. (Author 2009)

This area will accommodate the following spaces and experiences (refer to 8.4):

- To encourage both formal and informal social interaction between patients, staff and the public and assist in creating a sense of belonging and familiarity (refer to 2.3.1.), an outdoor extension of the kiosk with shaded social seating areas will be accommodated (refer to 8.4.1).
- Other seating areas for social interaction at will also be accommodated at strategic places
- Places for spectators so to sit or lie around sports fields while watching others participate in sport activities. This could motivate and encourage them to get involved with outdoor activities (refer to 8.4.2)
- Horticultural therapy garden as part of the occupational therapy program to create a sense of ownership, responsibility and pride (refer to 5.3.4). This area will also provide the patient with sensory stimulation (refer to 5.4.1) and encourage contact with nature (refer to 5.6.3 & 8.4.3).
- Seating areas that accommodates smaller groups and privacy for individuals in colour pockets between flower fields to satisfy the need for privacy and time alone for reflection (refer to 5.5.1 & 8.4.4).
- Parking area for the public
- An multifunctional sport field in close proximity to the kiosk to accommodate physical activities which is a vital ingredient to maintaining psychological and physical health (refer to 5.7).
- Events open to the public or for Weskoppies patients and staff only.

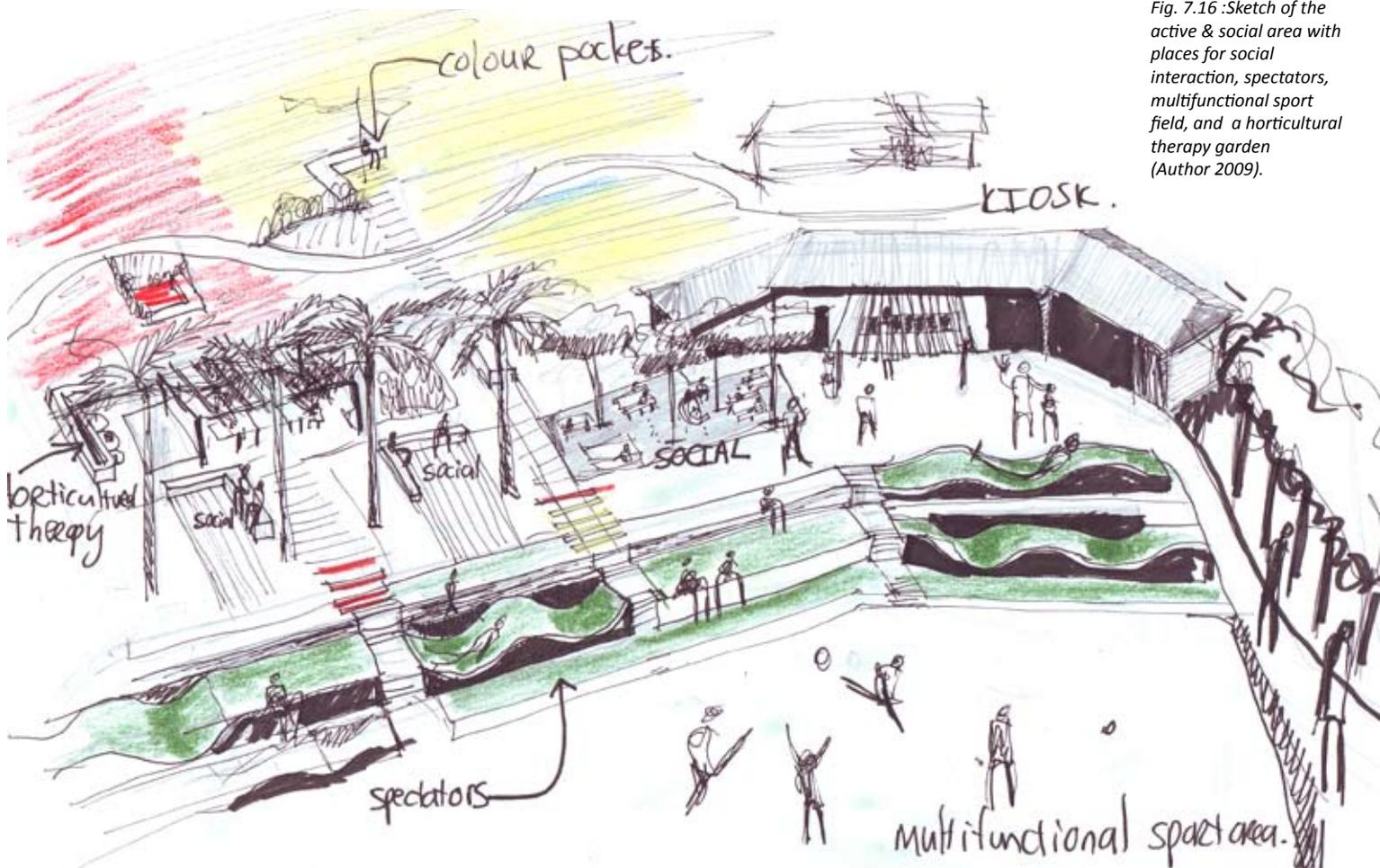


Fig. 7.16 :Sketch of the active & social area with places for social interaction, spectators, multifunctional sport field, and a horticultural therapy garden (Author 2009).

## 7.7. OUTDOOR ROOMS

Areas around the wards, staff housing and other treatment facilities that requires privacy was identified as areas which will be designed to be outdoor rooms and an extension of the buildings. These areas will be semi-private and be distinguished from the public areas by making use of soft boundaries as specified in 6.7.

Patients will feel safe and comfortable in these areas when they do not feel like participating in public events and don't want to be seen by the public. Staff members need privacy and need to get away from the public activities and stressful situations with patients to regain composure and strength to continue their work (Tyson, 1998:35).

By making use of passive surveillance the outdoor rooms will be visually blocked from by passers while still accommodating areas where occupants can have open views to the landscape and surrounding activities when they choose to.

The outdoor rooms should be specifically designed with the occupants needs or conditions in mind. Seating areas for socializing in groups or pairs should be provided as well as private seating areas for individuals. Outdoor rest should also be accommodated in these areas.

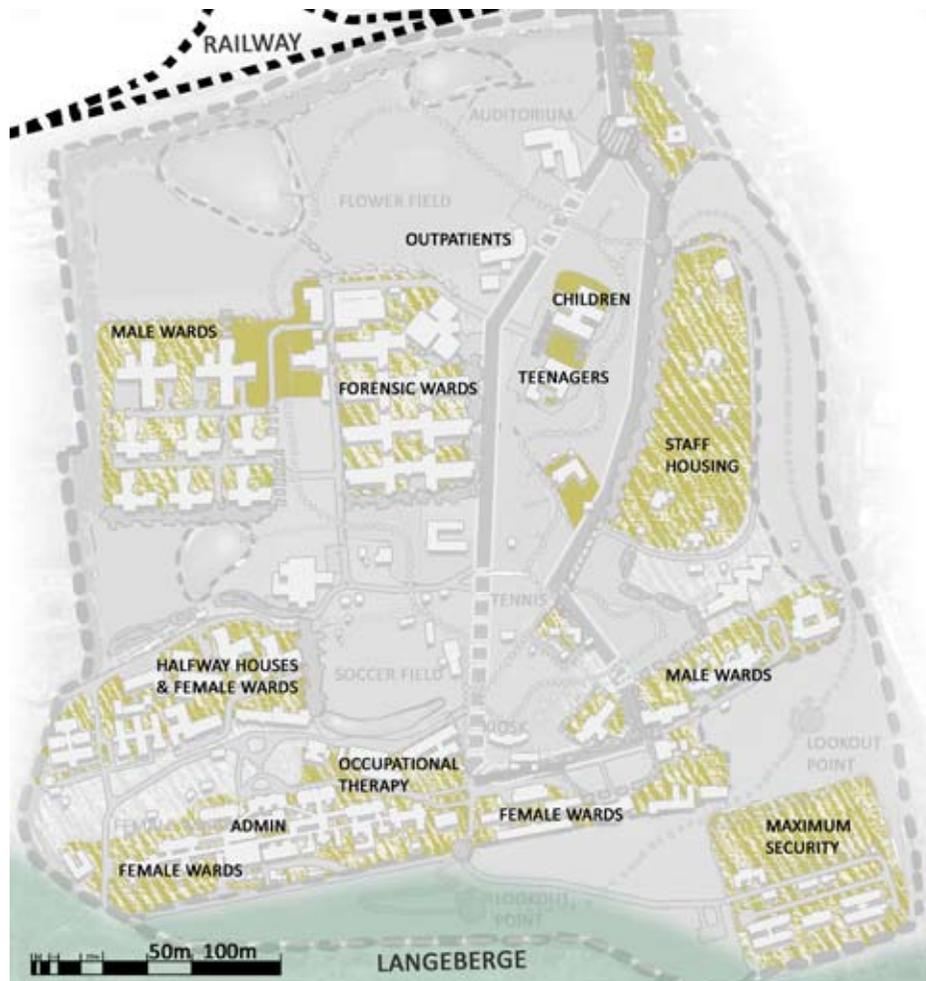


Figure 7.17: Map indicating the areas around wards, staff housing and private facilities that were identified as semi private and should be designed as outdoor rooms defined by soft boundaries. (Author 2009)

## 7.8. WETLANDS

Storm water from the site will be captured and retained in three retention dams at lower lying areas on the site. The water will be used for irrigating the designed landscape and the flower farm. The retention dams can be a safety hazard and drowning should be prevented by securing the retention dams. People can still be allowed to come closer to the water and the wetland system through bird hides. This will also get people in contact with nature and natural systems. The storm water system will be as open and natural as possible to allow contact between humans and natural systems while still considering safety. The wetlands also contributes to the ecological sustainability of the project. The Storm water management system will be explained in more detail in the technical chapter.



Fig. 7.18:(far left) A raised walkway to the bird hide with reeds and water plants on the side ([www.nma.gov.au/.../slideshow\\_2\\_4.html](http://www.nma.gov.au/.../slideshow_2_4.html)).

Fig. 7.19:(middle) The bird hides brings the user safely closer to the water and bird habitats ([www.huntsdc.gov.uk/Leisure+and+Culture/Parks+...](http://www.huntsdc.gov.uk/Leisure+and+Culture/Parks+...)).

Fig. 7.20 (top left): The openings at the Bird hides should be at the right height to accommodate wheelchair users. ([www.sanparks.org/.../birders/knp\\_bird\\_hides.php](http://www.sanparks.org/.../birders/knp_bird_hides.php)).

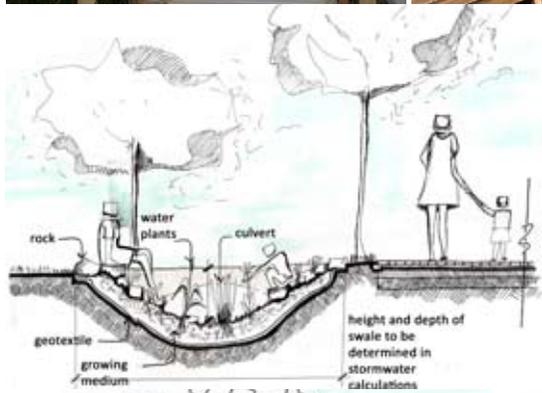


Fig. 7.21 (far left middle): Section that illustrates a swale as part of a natural storm water system that brings people closer to natural systems (Author 2009).

Fig. 7.22 (left):Map indicating the position of the retention dams on the site (Author 2009).

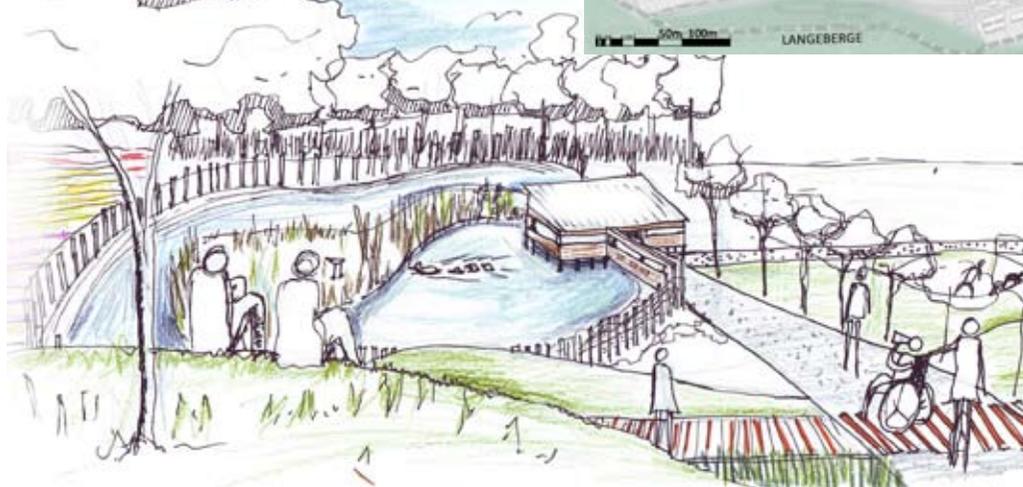


Fig. 7.23 (left) :The retention dams as a habitat for birds . The Dam is secured and people can get closer to the water in bird hides. (Author 2009).

## 7.9. CUT FLOWER FARM (AGRICULTURAL)

Due to its isolated position within the city (refer to context analysis) and the stigmatization associated with Psychiatric hospitals, Weskoppies will only be recognized as part of the open space system in the city if it provides the public with an unique experience which will make it worthwhile for people to explore on weekends. Due to the vast open spaces at Weskoppies and the sites position on the ridge of the Langeberge the author proposes a cut flower farm. A cut flower farm will not only result in an attractive hospital environment for staff and patients but will also provide work opportunities for the local community and patients. It will also attract the public by presenting them a unique experience within the city. When the public see mentally ill people working amongst healthy individuals from the surrounding community, fulfilling “normal” social roles it can result in changed attitudes and perceptions of mental illnesses and reduced stigma as stated in 2.4.4.

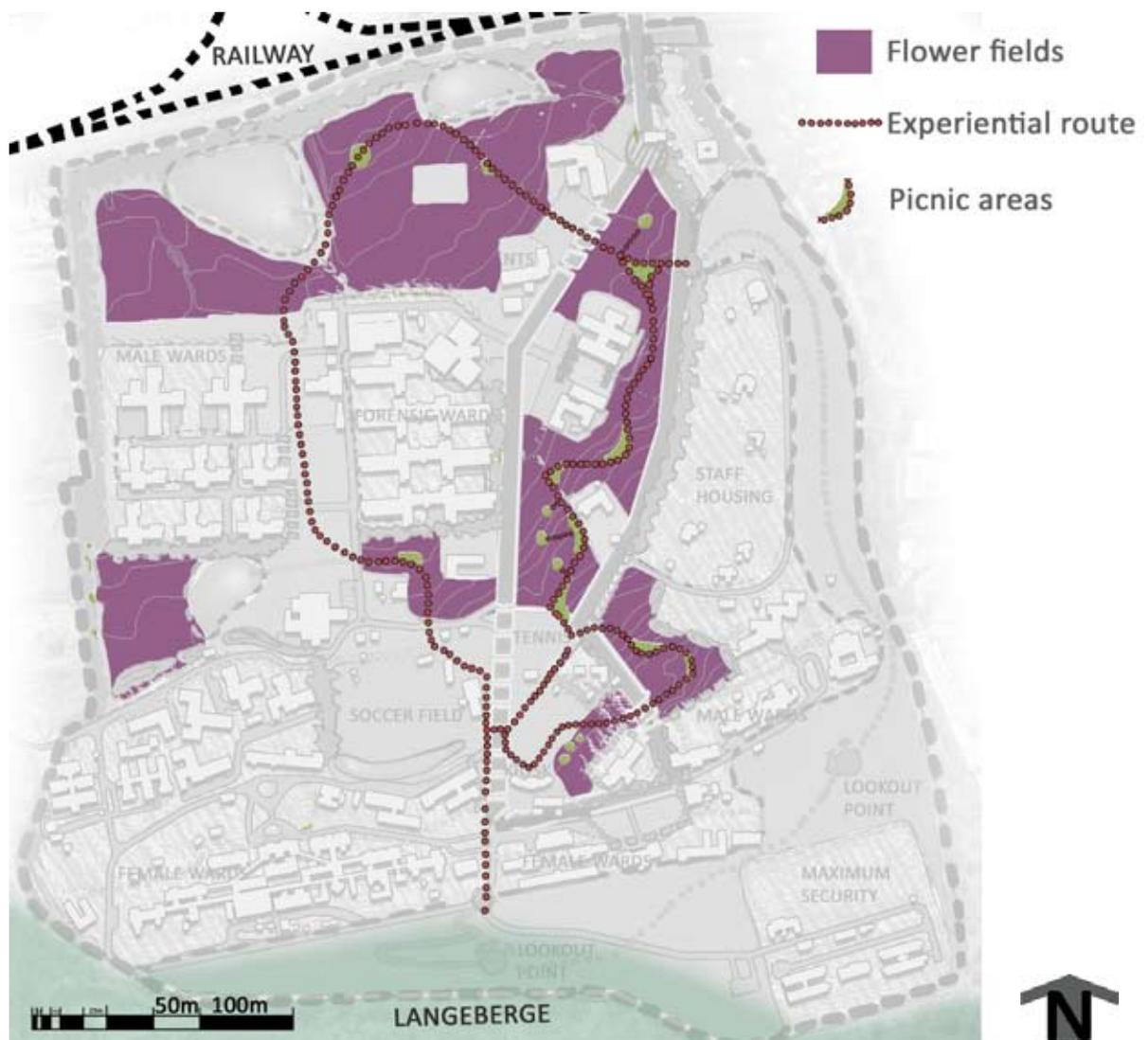


Fig. 7. 24:Map indicating the areas suitable for agricultural use that can be developed as cut flower fields. The experiential route with picnic pockets are also shown on this map (Author 2009).

The flower fields will also help to establish a new positive identity that Weskoppies will be associated with. Humans attach many different meanings to flowers, mostly positive meanings. The extensive use of flowers in the landscape of an psychiatric hospital will enhance the mental healing process of patients as a result of the inherent ability of flowers to uplift the human spirit. According to Janick (1990: 23), “flowers still retain extensive ceremonial use in the expression of joy, affection, welcome, gratitude, sympathy, celebration, grief, friendship, marital union or spiritual contemplation”. Flowers also accentuates the seasons and stimulate the senses with their colour, texture and fragrance (refer to 5.4.1. & 5.4.2).

The experiential pedestrian route includes a flower experience. The user can walk along this route to pick flowers or to just experience the aesthetic of the flower fields. Small pockets of open spaces with lawn and seating will be situated along this route where people can rest and view the flowers or have a picnic.

*Fig. 7. 25: Sketch showing open areas between flower fields along the path for picnicking etc. (Author 2009).*

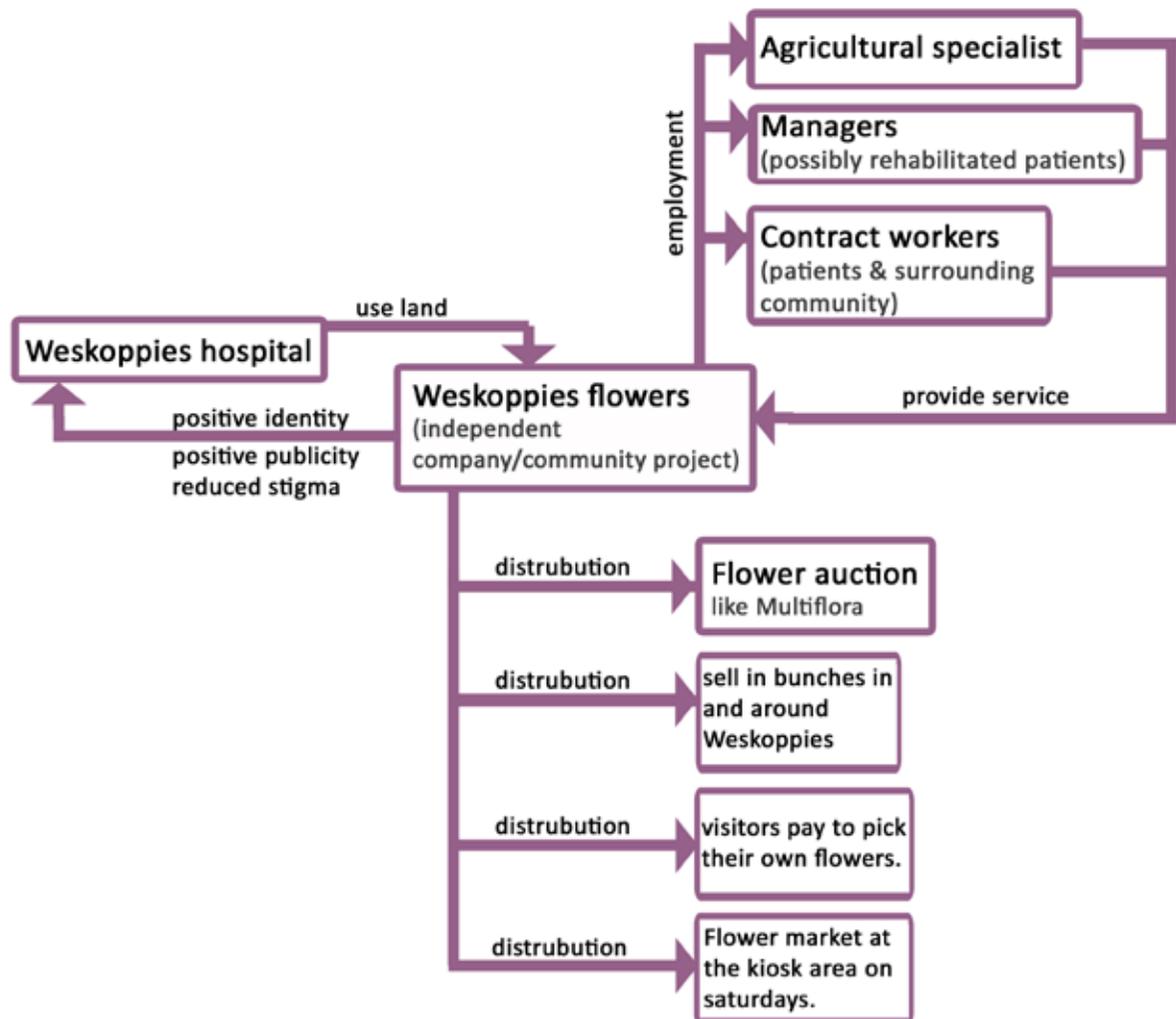


### 7.9.1. CUT FLOWER FARM STRUCTURE

Weskoppies flowers will be established as an independent company and a community project (fig. 7.26) which will provide new work opportunities not only to Weskoppies patients but also to the surrounding community. An Agricultural specialist should be employed to regulate the process of cut flower production. Capable managers will also assist in controlling the process. The cut flower farm should also provide flexible work opportunities to accommodate patients with fluctuating moods and motivation levels. An example is that patients will be paid according to the amount of flowers they pick and bind or with an hourly rate for other kinds of work. Monetary gain could be a motivation in terms of self worth and empowerment.

Flowers can be sold at flower auctions like multi-flora but could also be sold by patients in and around Weskoppies. There will also be a flower market at the area around the kiosk. This will create awareness and alleviate the stigma associated with mental illness, while establishing a sense of responsibility, purposefulness and pride for the patient selling the flowers. On a Saturday the public can also get the opportunity to pick their own flowers by pay for a bucket at the kiosk. Visiting friends and family can also buy flowers for their loved one and experience the process of flower farming at Weskoppies.

Fig. 7.26 :Diagram that illustrates the structure of a cut flower farm at Weskoppies. (Author 2009)



**6.9.2. THE PROCESS OF CUT FLOWER FARMING**

The description of the process of cut flower farming is based on a visit to a cut flower farm Semperflora near Brits and conversations with the owner of the farm. The process will be described by making use of photo's taken on the farm. The focus will be on flowers grown outside tunnels in open fields because open flower fields is what the author proposes at Weskoppies.



*Fig. 7.27: Preparation of flower beds: The field after being ploughed. The soil is improved with fertilizer and compost (Author 2009)*



*Fig. 7.28: The flower beds after flower seeds have been sown. Flowers can be sown directly in the flower beds or germinated in seedling trays (refer to fig.7.30) before being planted out in the field (Author 2009).*



*Fig. 7.29: A wire grid connected is placed over the flower beds to keep flowers in place. The grid will be moved up and be held in position with droppers or other appropriate vertical elements as the flowers grow taller. This is optional and not essential (Author 2009).*



*Fig. 7.30: Flowers plants can also be germinated in seedling trays or cultivated from cuttings in tunnels (Author 2009).*



*Fig. 7.31: Young flower plants after being transplanted from seedling trays to the flower beds (Author 2009).*



*Fig. 7.32: Young sunflower plants in an open field (Author 2009).*



*Fig.7.33: Blue and pink flowering Delphinium elatum plants with yellow mustard plants (Brassica juncea) in the background. The mustard plants are used as mulch in flower beds to prevent the growth of weeds (Author 2009) The display of different flower colours next to each other results in an interesting landscape. Walkway through such a landscape with pockets of open spaces for resting and picnicking in the flower fields will provide the users with a unique experience.*



*Fig. 7.34: Flowering blue Delphinium elatum plants with yellow mustard plants (Brassica juncea) in the background (Author 2009).*



*Fig. 7.35: Flowering blue Limonium sinuatum plants. Note the raised wire grids to keep plants upright (Author 2009).*



Fig. 7.36: Flowering blue *Limonium sinuatum* plants with wind breaks made from shade cloths. The flowers are protected from winds that comes from the mountain in the background (Author 2009).



Fig. 7.37: Tall and dense plants also functions as wind breaks (Author 2009).



Fig. 7.38: Labourers picks flowers and puts them in crates from where they will be picked up and delivered to the packing room (De Beer 2009).



Fig. 7.39: The flowers arrive at the packing room where they will be prepared to be sent to the flower market (Author 2009).



Fig. 7.40: The flowers are being trimmed by the laborers and prepared to be putted together in bunches (Author 2009).



Fig. 7.41: The flower bunches are placed on a machine where they are strung together mechanically (Author 2009).



Fig. 7.42: Labourers prepare flowers (Author 2009). Working with flowers can have an uplifting effect on the human spirit.



Fig. 7.43: flowers are ready to be distributed and stored in a cold room (Author 2009).



Fig. 7.44: Flowers are ready and loaded and taken to the flower market (De Beer 2009).

7.9.3. DESIGN CONSIDERATIONS

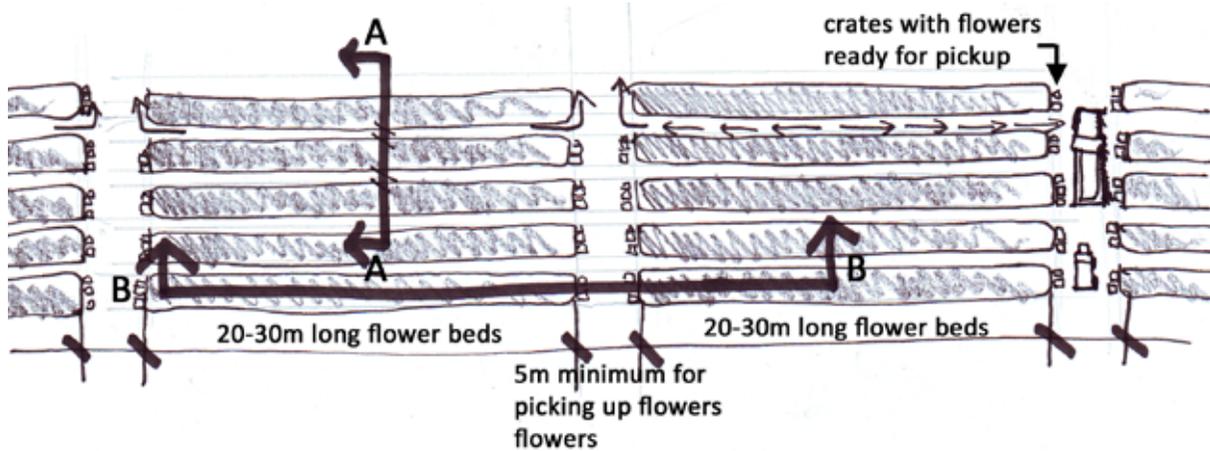
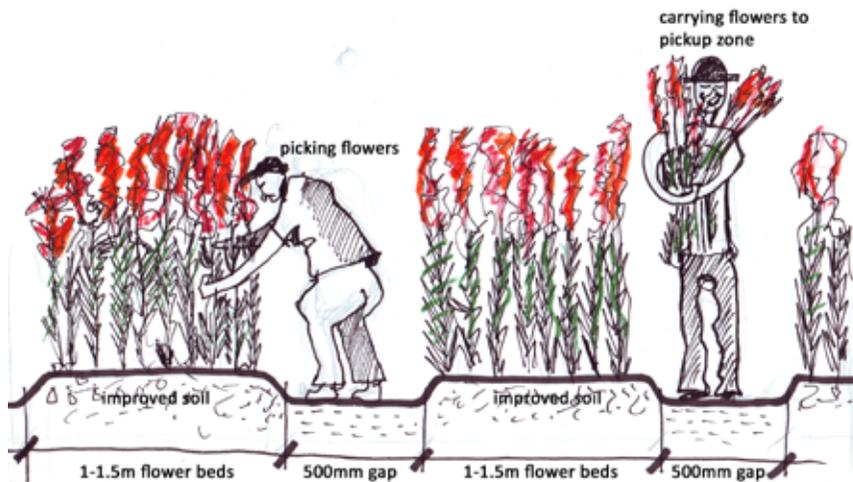


Fig.7.45: Flower beds are between 20-30m long with a minimum gap of 5m that functions as a pickup zone. Flowers from the flower bed will be taken to this point where it will be placed in crates and loaded to be taken to the packing room. (Author 2009).



Infrastructure needed:

- Irrigation system
- Packing room: +/- 15 x 20m
- Cold room in packing room
- Minimum of 1ha open space for a feasible flower farm.
- Tunnel / area with shading net for germination

Fig. 7.46: Layout of flower beds. Flower beds are between 1-1.5m wide with a gap of 500mm in between for walking and picking flowers. The flower beds are between 20-30m long with a minimum pickup zone of 5m (Author 2009).

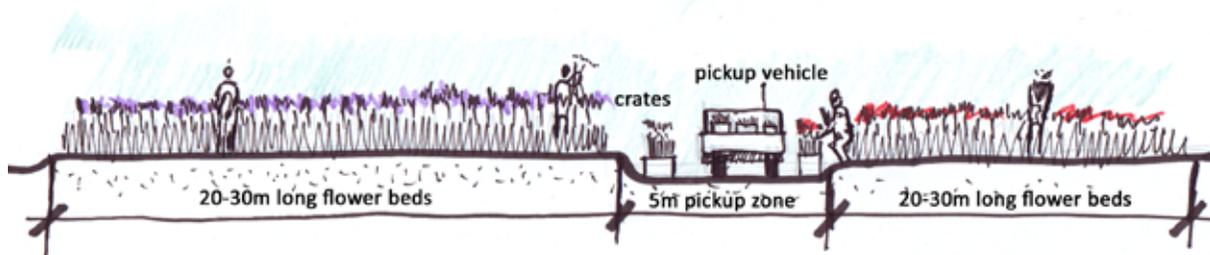


Fig. 7.47: Flower beds are between 1-1.5m wide with a gap of 500mm in between for walking and picking flowers. Picked flowers are then carried to the pickup zones (Author 2009).

## 7.10. WILDERNESS EXPERIENCE

The area on the eastern and southern edges of the site with existing bushveld vegetation will be conserved (Fig. 7.48). This area is currently a problematic due to the dense natural vegetation that obstructs open views making it a breeding ground for illegal activities (De Beer, 2009: interview). For this reason this area will be enclosed with fencing with controlled access points (Fig. 7.49)).

However this area will have a hiking trail which connects to the pedestrian movement system (Fig. 7.48) which can be accessed by patients under supervision of a staff member and will also be open to the public on Saturdays for educational walks lead by an environmental specialist.

The southern part of this area is the highest point on the site and lookout points will be provided from where the user will have panoramic views over the Weskoppies campus with the Langeberge in the Background (Fig. 7.50) The lookout point at the most southern part will be accessible to wheelchair users by providing a trafficable in situ concrete surface whilst the rest of the hiking trail will be made out of compacted earth with timber poles for steps.

The Wilderness experience will satisfy the basic human need for contact with nature in its pure form as stated in 2.3.3.

Fig. 7.48: Map indicating the area with natural existing bushveld vegetation which will be enclosed and used as a guided wilderness experience with a hiking trail with lookout points. (Author 2009)





Fig. 7.49: Illustration showing controlled access points and a hiking trail. (Author 2009)



Fig. 7.50: Illustration showing the lookout point with a panoramic view over Weskoppies campus and the city in the distance. (Author 2009)

# 7.11. CONCLUSION

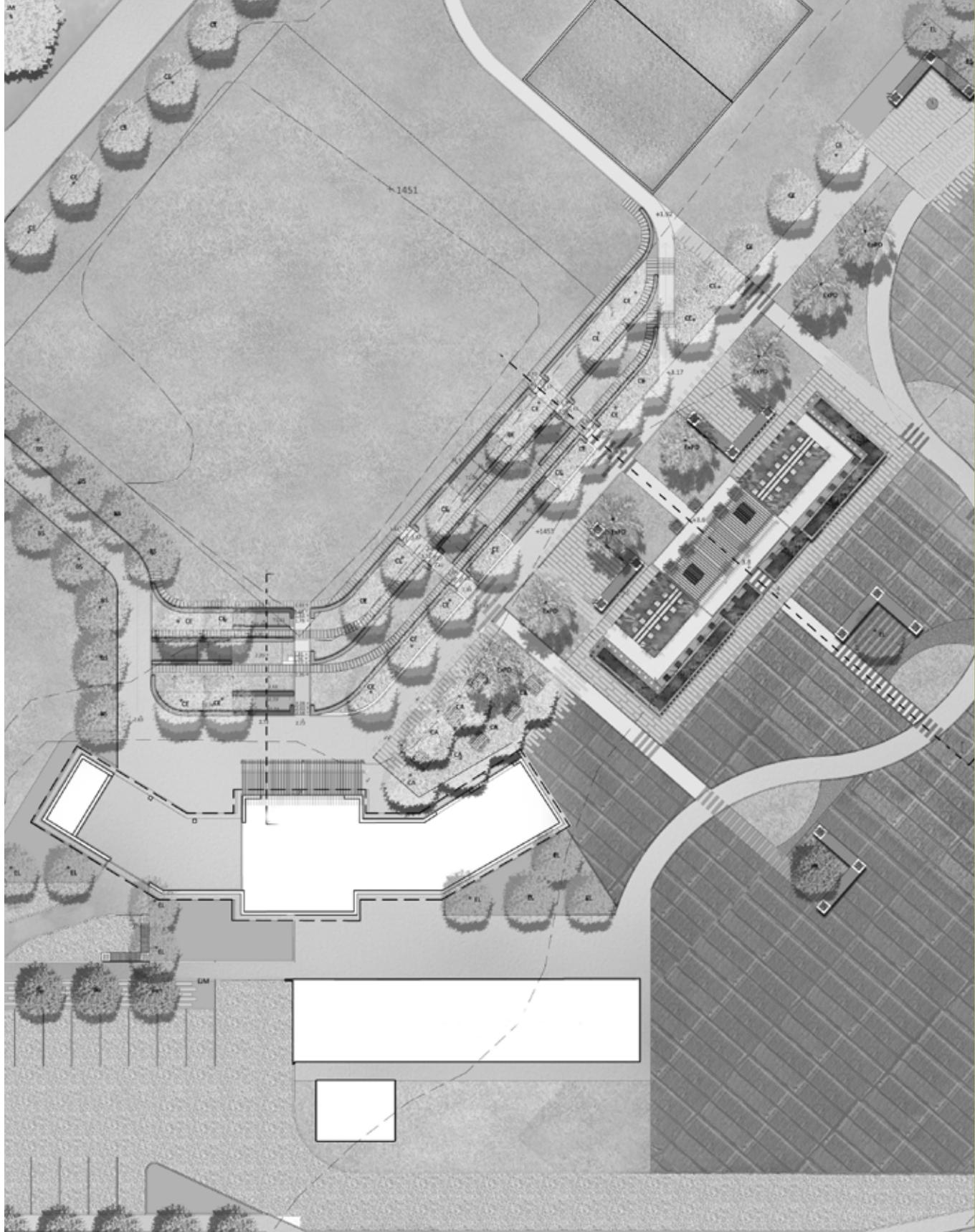
Fig. 7.51: The design matrix illustrates how the open space framework satisfies the design guidelines as set out in chapter 5 (Author 2009)

An improved vehicular movement system and a pedestrian movement system which exposes the user to a variety of therapeutic experiences (refer to 7.6 - 7.10) with soft boundaries between semi-private and public areas, enhances the healing potential of the outdoor environment at Weskoppies. The open space framework successfully addresses the guidelines aimed at developing the outdoor environment at Weskoppies to enhance the psychological healing process. The design matrix indicates how the open space framework satisfies the design guidelines.

OPEN SPACE FRAMEWORK								
	7.3. VEHICULAR MOVEMENT	7.4. EXPERIENTIAL PEDESTRIAN ROUTE	7.5. SOFT BOUNDARIES	7.6. ACTIVE & SOCIAL HEART	7.7. OUTDOOR ROOMS	7.8. WETLANDS	7.9. CUT FLOWER FARM	7.10. WILDERNESS EXPERIENCE
<b>DESIGN GUIDELINES</b>								
<b>5.2. INDEPENDENCE</b>								
5.2.1. Independent functioning								
5.2.2. Freedom								
5.2.3. Privacy								
5.2.4. Choice and control								
5.2.5. Legibility								
<b>5.3. PURPOSE</b>								
5.3.1. Work opportunities								
5.3.2. Motivation								
5.3.3. Positive messages								
5.3.4. Ownership								
<b>5.4. CONSCIOUSNESS</b>								
5.4.1. Sensory stimulation								
5.4.2. Awareness of time								
5.4.3. Change								
5.4.4. Excitement								
5.4.5. Variety of experiences								
<b>5.5. REST</b>								
5.5.1. Reflection								
5.5.2. Relaxation								
5.5.3. Familiarity								
5.5.4. Security								
5.5.5. Comfort								
5.5.6. Sleep								
<b>5.6. CONNECTEDNESS</b>								
5.6.1. Social interaction								
5.6.2. Social support								
5.6.3. Connected to natural systems								
5.6.4. Accessible								
<b>5.7. ACTIVE</b>								



# SKETCH PLAN



## 8.1. INTRODUCTION

*Fig. 8.2: Area to be developed as the catalyst project for which a sketch plan will be designed (Author, 2009)*

The area around the existing kiosk in the social and active heart of Weskoppies as proposed in the open space framework was chosen for a detail design because of its potential to act as a catalyst for the rest of the site. This is the area where most social interaction are currently spontaneously taking place between different patients, staff and visitors. It is more or less in a central location on the site in close proximity to most sport activities. This area is also located at the furthest point of the proposed primary road and becomes its end destination. It is in an ideal position to illustrate the transition between public and semi private due to the male ward situated at the lower right corner. It will be the arrival point for public on weekends from where they will explore the rest of the site by making use of the proposed pedestrian movement system. It will also become a gathering and meeting place for the patients and staff of Weskoppies. The first cut flower fields will also be proposed in this area.



## 8.2. ANALYSIS (refer to fig. 8.3. & 8.4)

- The most prominent landscape feature in this area is a row of old Date palm ( Phoenix canariensis) trees that suggests a strong line on the site (Fig. 8.4).
- The old jukse court is now being as a multi functional sports field .
- There is no boundary between the public area around the kiosk and the male ward in the lower right corner.
- The area in front of the kiosk gets direct northern sun with no shading provided. This makes it a uncomfortable and harsh area.
- The staff housing at the top is not visible from this public area due to dense vegetation.
- The prominent vehicular route from the entrance ends at the back of the informal parking area as shown on Fig. 8.3.

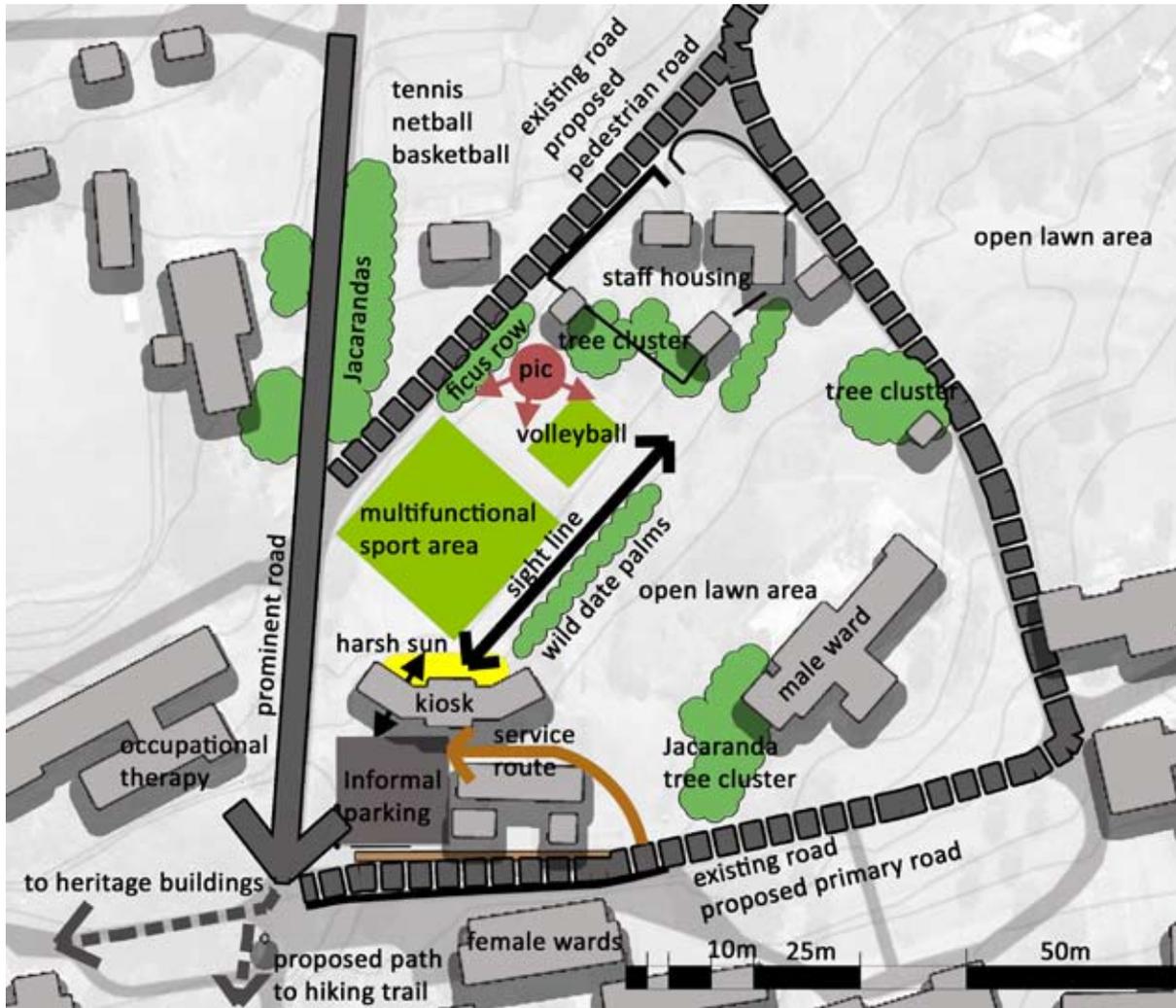


Fig. 8.3: Analysis diagram, highlighting the most prominent features (Author, 2009).



Fig. 8.4: Photographic analysis, highlighting the most prominent features (Author, 2009).

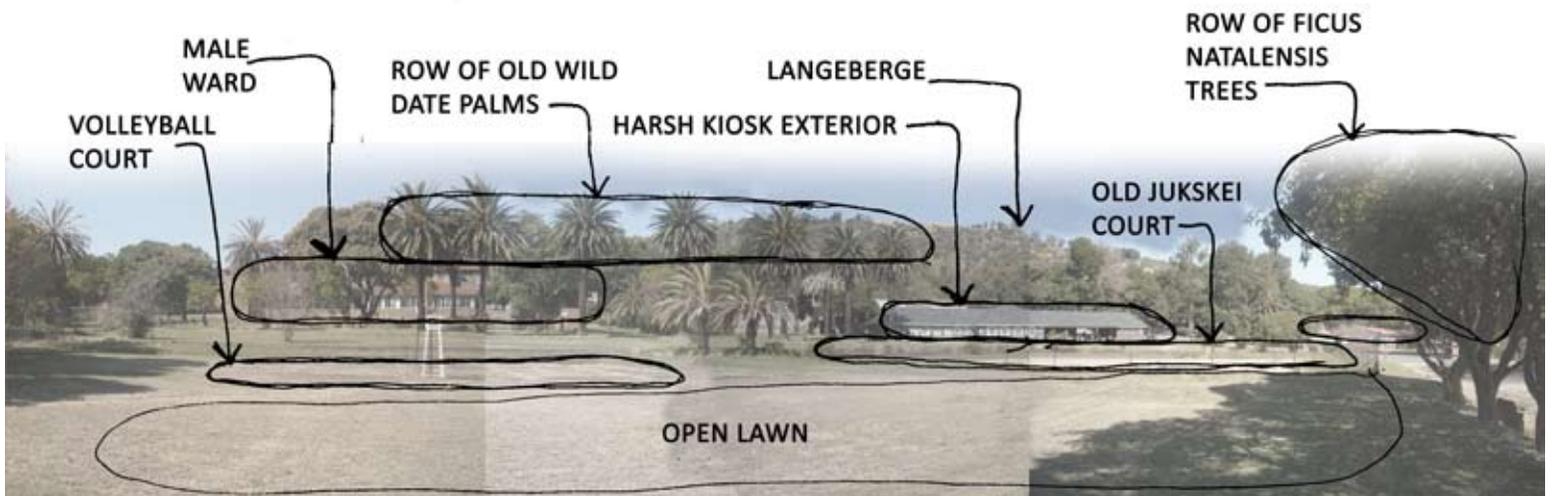


Fig. 8.5(opposite page):  
Design diagram  
illustrating the different  
spaces, circulation and  
boundaries as  
accommodated in the  
sketch plan  
(Author, 2009).

## 8.3. DESIGN PROPOSAL

The area chosen for the development of a sketch plan falls within the active and social heart as proposed in the open space framework (refer to 7.6). The aim of the sketch plan is to act as a catalyst project in establishing an outdoor setting at Weskoppies with potential to enhance psychological healing. This will be achieved by providing the user with a variety of experiences and spaces that aims to satisfy the design guidelines (refer to 8.5). These include; a social kiosk exterior, a stepped seating and sleeping area around the sport field, a horticultural therapy garden and colour pockets in the flower fields. Each of these will be discussed in more depth in 8.4.

The following elements are proposed to structure the design layout (Fig. 8.5). The application of these elements, experiences and spaces is shown on the sketch plan design on the next page.

### 8.3.1. CIRCULAR PRIMARY WALKWAY

The circular primary walkway provides the user with a variety of experiences which includes a social kiosk exterior, a seating and sleeping space that overlooks the multifunctional sports field, a horticultural therapy garden and a flower experience. On Saturdays flowers will be sold along this route in the area around the kiosk. The crossings with the primary vehicular route will be slightly raised and paved to slow down traffic and allow safe pedestrian crossings. This road is also accessible to wheelchair users. The diagonal vehicular route will be pedestrianised to form part of this route.

### 8.3.2. FLOWER WALKWAY

This route is connected to the primary walkway by means of various secondary pedestrian routes. The route exposes the user to an unique experience through the flower fields of different colours and connects the colour pockets with each other. It also takes the pedestrian to the flower package room where they can observe or participate in the flower production process.

### 8.3.3. SECONDARY PEDESTRIAN ROUTES

The secondary pedestrian routes connects pedestrians from all over the site to the primary route. It will be narrower than the primary route (between 1.5 - 2m) and also include the walkway next to the primary vehicular route.

### 8.3.4. SERVICE ROUTE

A service route is located at the back of the flower packing building to accommodate the pick up and delivery trucks for the kiosk and flower packing building. The route goes through the proposed parking area to link up with the primary vehicular route at both ends.

### 8.3.5. VEGETATION SCREEN

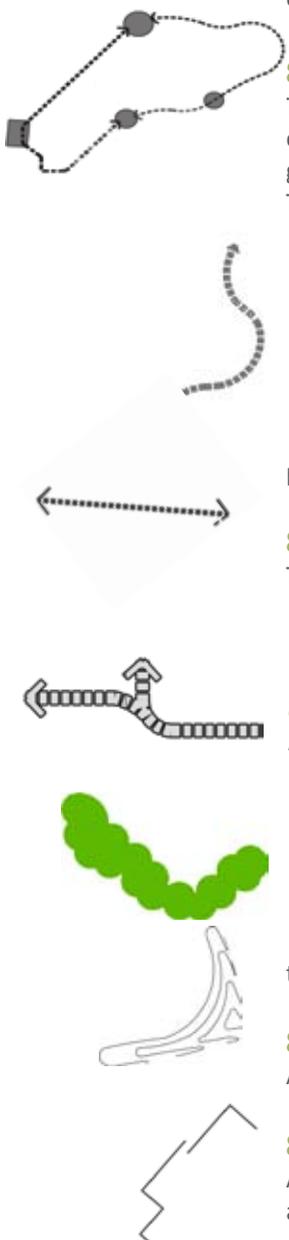
A vegetation screen consisting out of a tree forest that blocks the view from the road to the outdoor area at the male ward. The vegetation screen at the staff housing consists out of dense shrubs and trees to the public's view to the staff housing.

### 8.3.6. BERM

A berm acts as a further visual barrier between the road and the male ward.

### 8.3.7. RETAINING WALL

A retaining wall separates the semi private the outdoor room in front of the male ward. This retaining wall serves as both a physical and visual boundary.



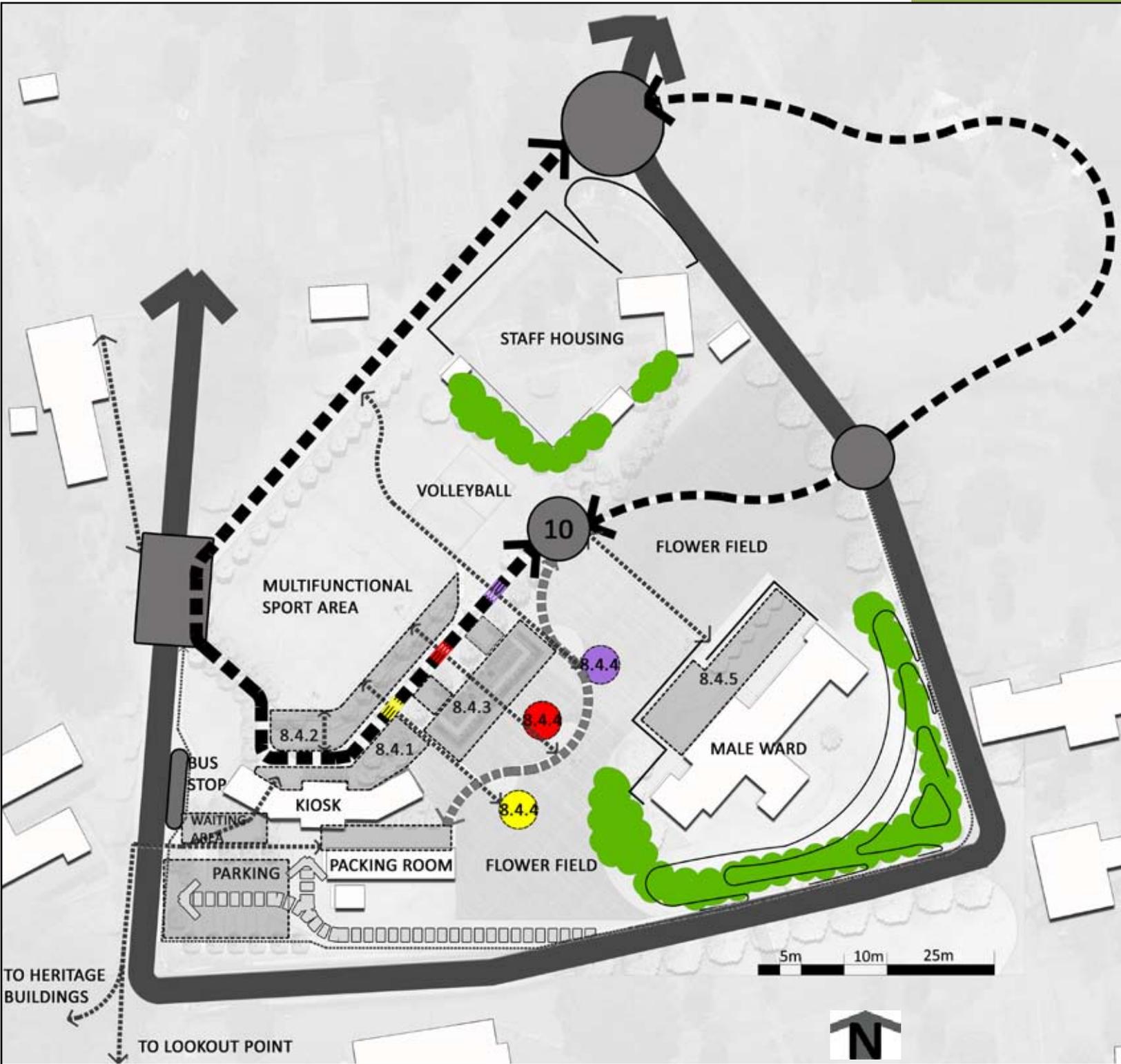
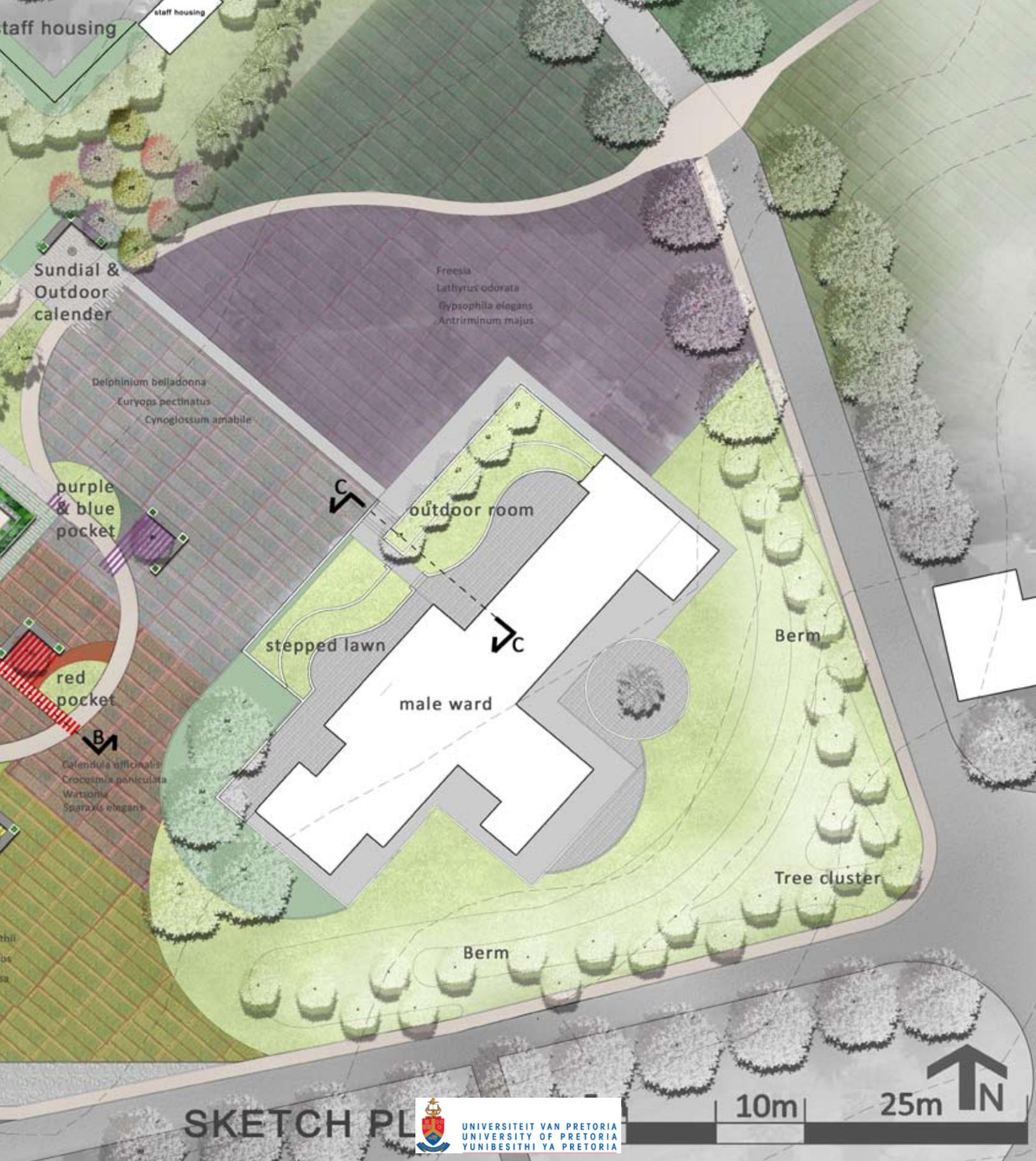


Fig. 8.6: A graphic illustration of the sketch plan showing the application of the structuring elements in 8.3 and the experiences and spaces that will be discussed in 8.4 (Author, 2009).





staff housing

staff housing

Sundial & Outdoor calendar

Freesia  
Lathyrus odorata  
Gypsophila elegans  
Antriminum majus

Delphinium belladonna  
Euryops pectinatus  
Cynoglossum amabile

purple & blue pocket

C

outdoor room

stepped lawn

C

male ward

Berm

red pocket

B

Calendula officinalis  
Crocosmia paniculata  
Watsonia  
Sparaxis elegantis

Tree cluster

Berm

10m

25m



SKETCH PL

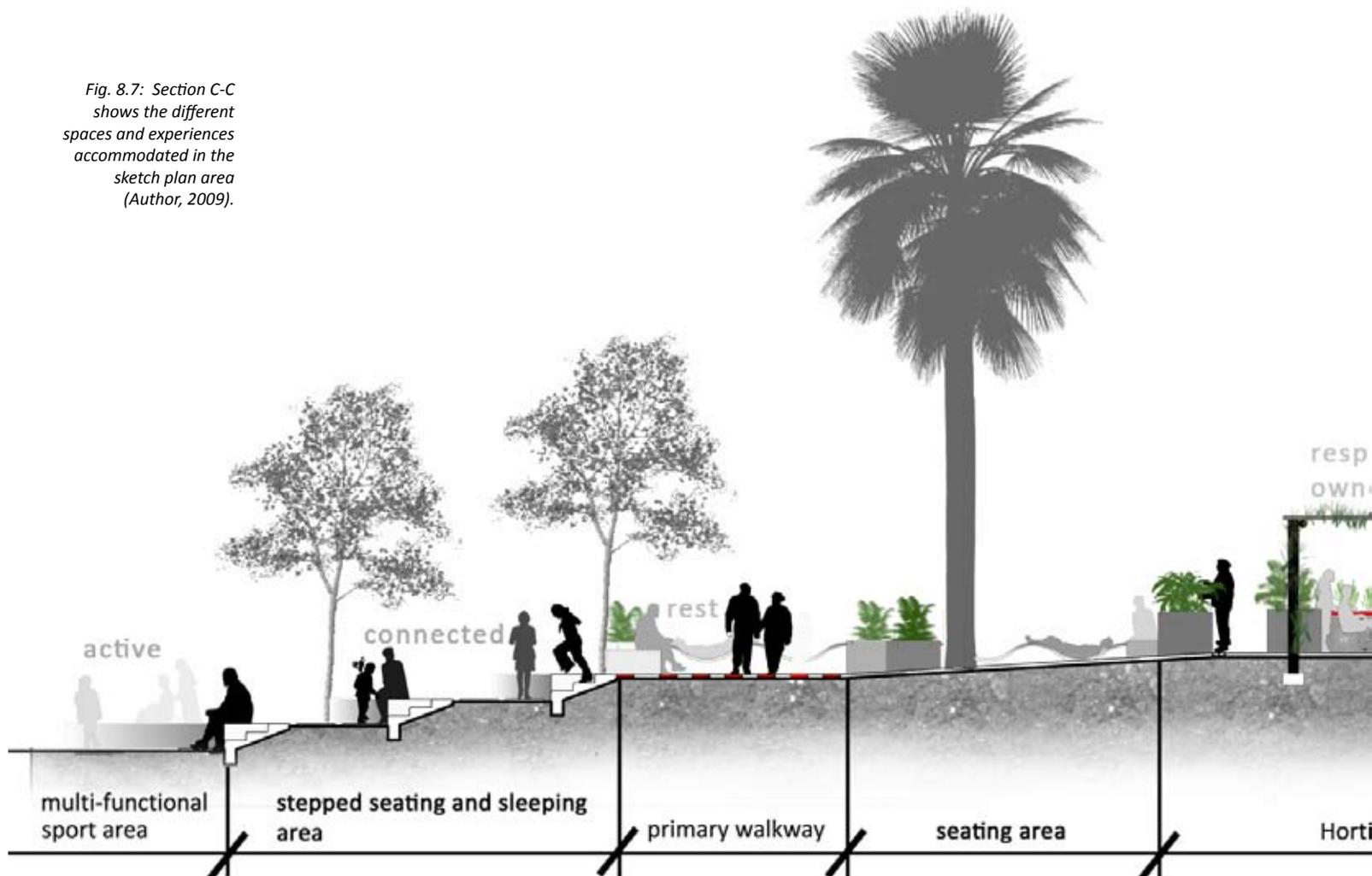


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## 8.4.SPACES AND EXPERIENCES

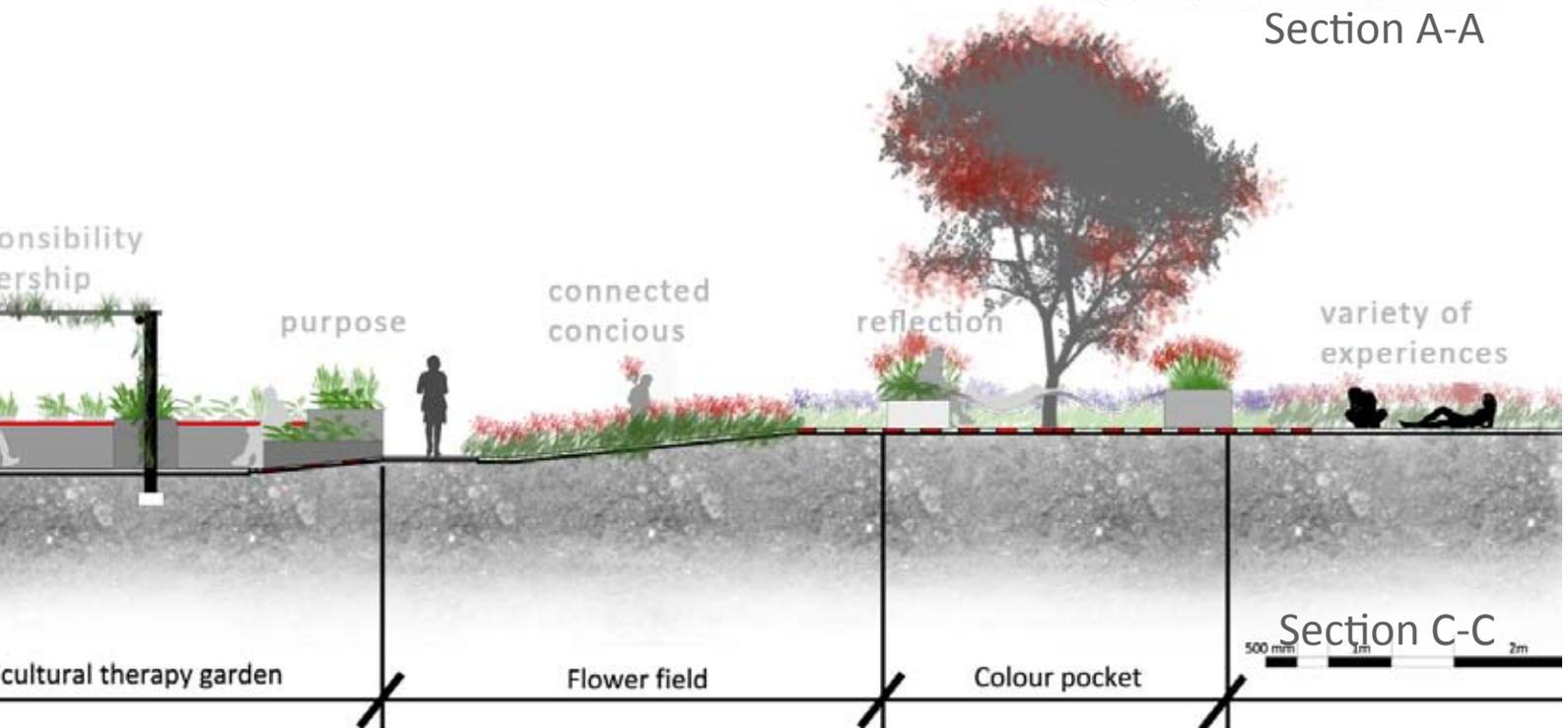
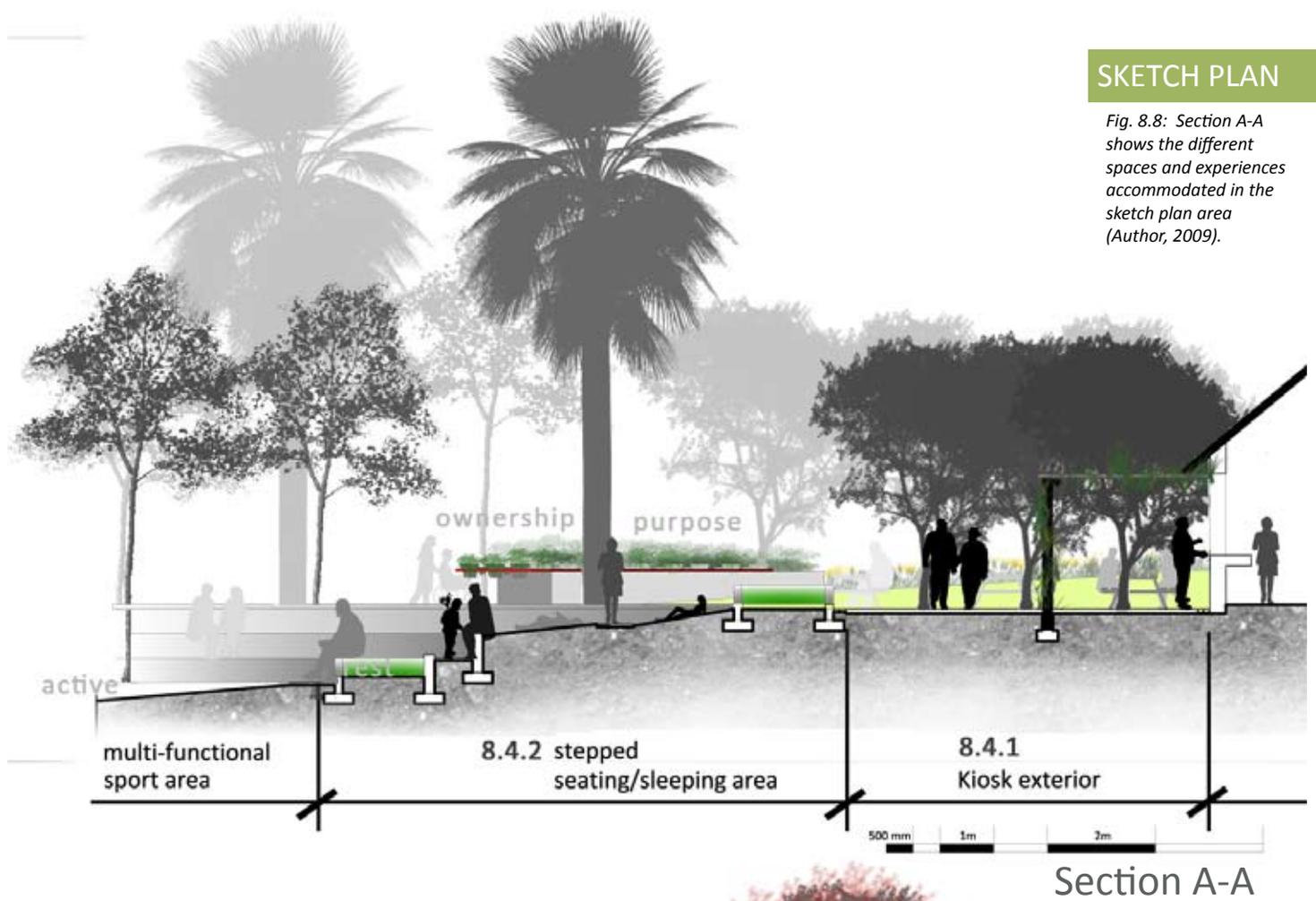
Section A-A and C-C illustrates the different spaces and experiences accommodated in the sketch plan to create an outdoor environment that enhances healing by addressing the guidelines as discussed in chapter 5 (refer to the design matrix in 8.5). These spaces includes the kiosk exterior, the stepped seating and sleeping area, the horticultural garden and the colour pockets in the flower field. Each of these spaces will be explained individually in more depth in 8.4.1 to 8.4.5. Refer to numbers in Fig 8.5, 8.7 & 8.8).

*Fig. 8.7: Section C-C shows the different spaces and experiences accommodated in the sketch plan area (Author, 2009).*



## SKETCH PLAN

Fig. 8.8: Section A-A shows the different spaces and experiences accommodated in the sketch plan area (Author, 2009).



### 8.4.1. KIOSK EXTERIOR

The current kiosk exterior doesn't accommodate sufficient social interaction to establish a feeling of connectedness amongst patients, staff members, visitors or the public (refer to 5.6.1). A comfortable social area around the kiosk area is vital to developing this area as the active and social heart of Weskoppies as proposed in the open space framework (refer to 7.6) The building doesn't allow easy transition between the interior and exterior. The northern facade receives full sun which results in a very harsh kiosk exterior.

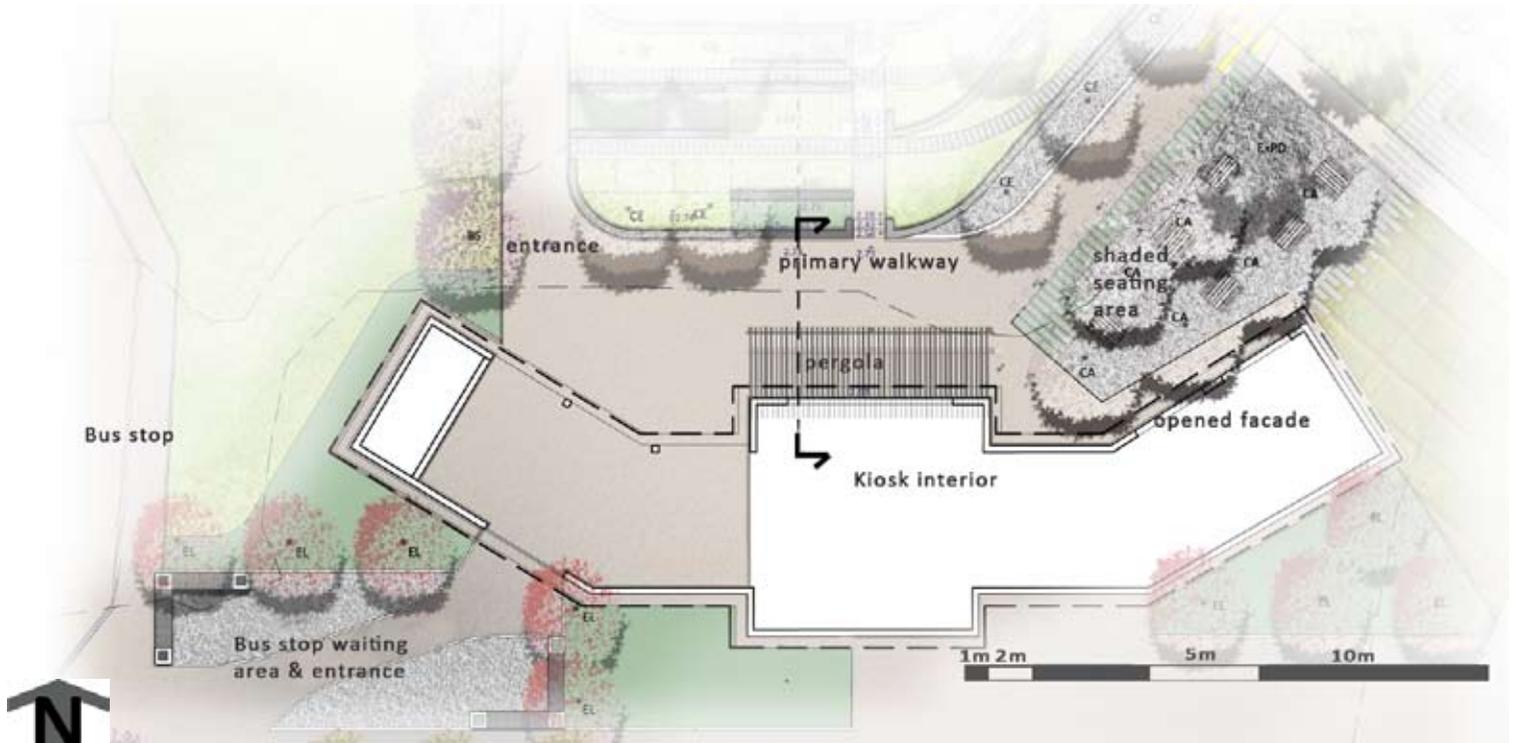
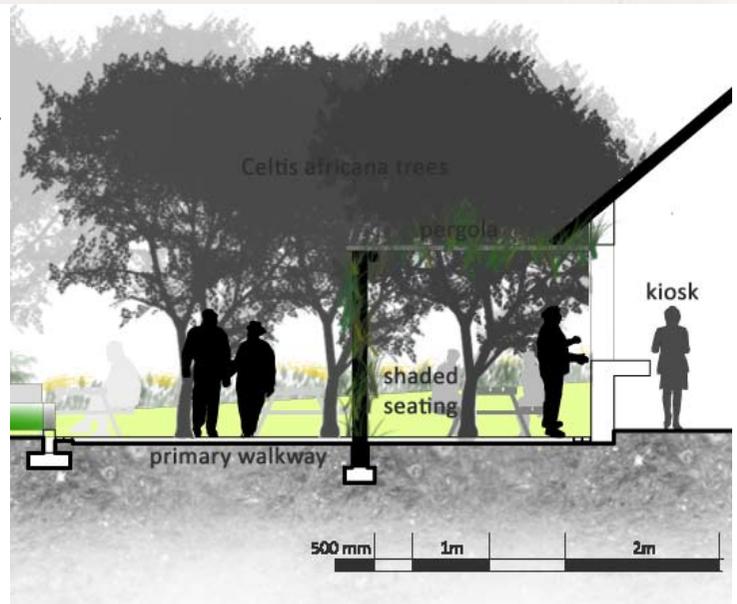


Fig. 8.9 (top): Kiosk exterior plan (Author, 2009).

Fig. 8.10 (right): Kiosk exterior section (Author, 2009).

The sketch plan design proposes opening up the northern facade to activate it and allow better transition between the interior and exterior. As indicated on the section (Fig. 8.10), people can also buy food and snacks directly from the outside of the building on the primary route. Shading at this area will be provided by means of a pergola with fragrant climbing plants that stimulates the senses (refer to 5.4.1). At the right side of the kiosk exterior the facade will be softened and shaded social seating will be provided in summer while sun will still be allowed in winter by planting *Celtis africana* trees (Fig. 8.10).





*Fig. 8.11: Kiosk exterior  
3d image (Author, 2009).*

### 8.4.2. STEPPED SEATING AND SLEEPING AREA

The area around the multifunctional sports field in front of the kiosk doesn't have comfortable places for people to sit while watching others participate in sport activities. By observing others participating in positive outdoor activities the discouraged patient could become motivated to get involved (refer to 5.3.2). Psychiatric patients are often heavily medicated which results in drowsiness during the day (refer to 4.5.5). Therefore the outdoor environment should accommodate outdoor resting for tired patients (refer to 5.5.6).

The sketch plan proposes a stepped seating and sleeping area around the multifunctional sports field where people can sit or lie comfortably while observing others participating in sport activities. Seating is accommodated by making use of terraced lawn with retaining walls. The lawn and retaining walls are waved at some places to provide comfortable places for patients to sleep or lie on. Mosaic work with positive messages by Weskoppies patients will be encouraged on these retaining walls.

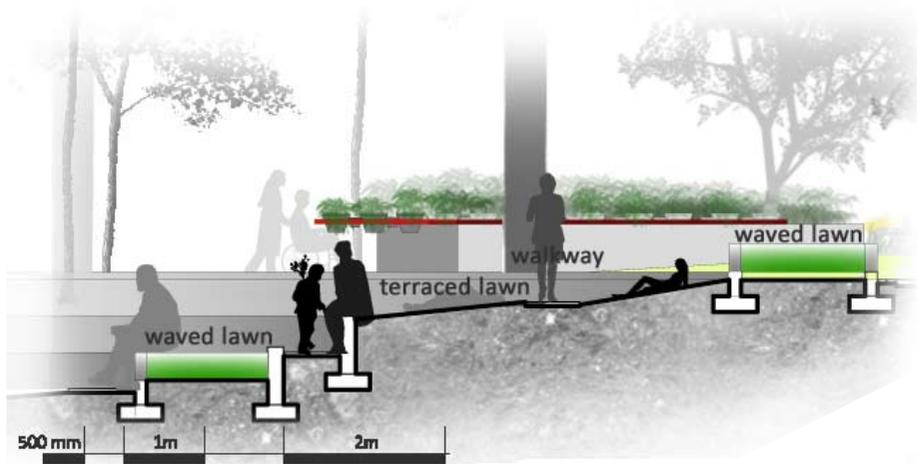
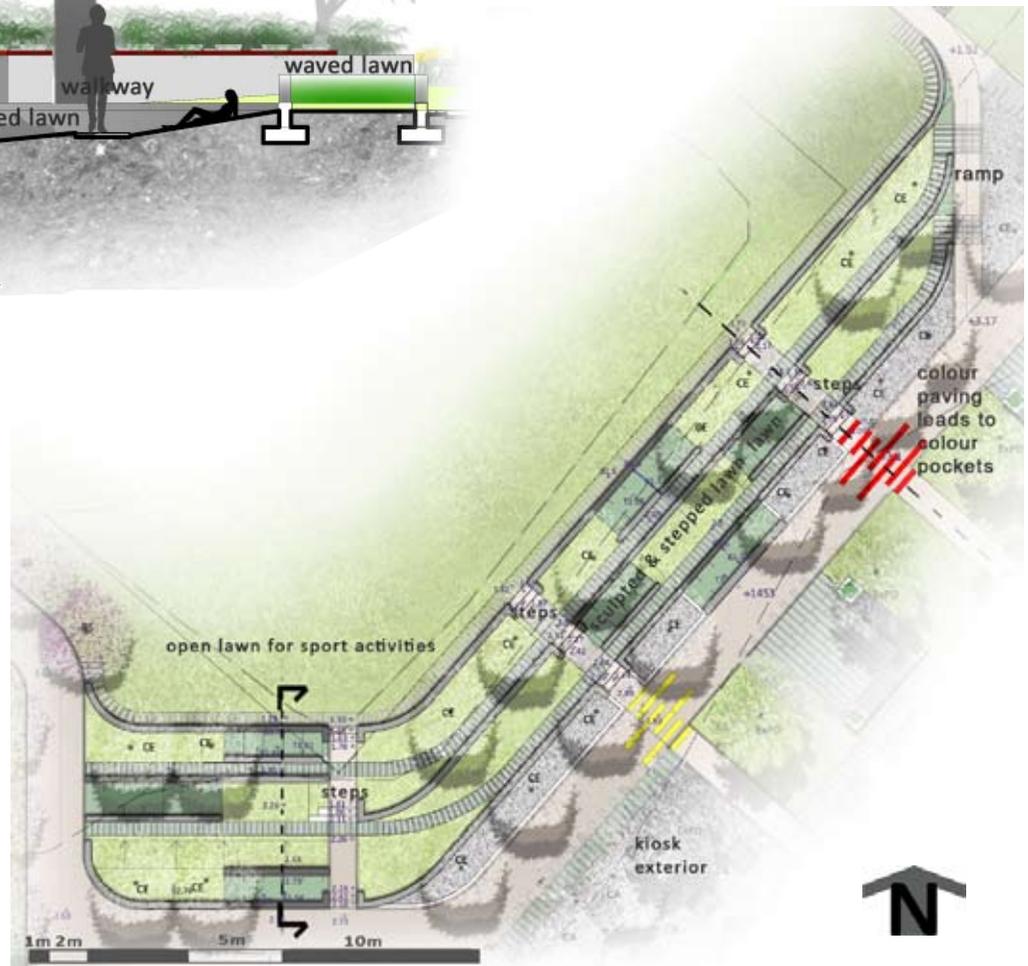


Fig. 8.12 (top): Stepped seating and sleeping area section (Author, 2009).

Fig. 8.13 (bottom): Stepped seating and sleeping area plan (Author, 2009).



*Fig. 8.14 (below):  
Stepped seating and  
sleeping area 3d image  
(Author, 2009).*



### 8.4.3. HORTICULTURAL THERAPY GARDEN

In an interview with Anel de Beer (De Beer, 2009) an occupational therapist at Weskoppies she stated that there exists a need for activities that allows patients to feel that they are doing, and accomplishing something for themselves. She started an informal herb garden with ten chronic patients at Weskoppies to encourage a sense of ownership, responsibility and pride. Working with plants and seeing them grow satisfies the basic human need for contact with nature and can therefore be a fulfilling experience for the individual (refer to 5.3.4). Working and taking care of plants in groups establishes community pride and also encourages social interaction and support (refer to 5.6.1 & 5.6.2). The author proposed a formal horticultural therapy garden in the sketch plan to facilitate a horticultural therapy program as part of the occupational therapy program.

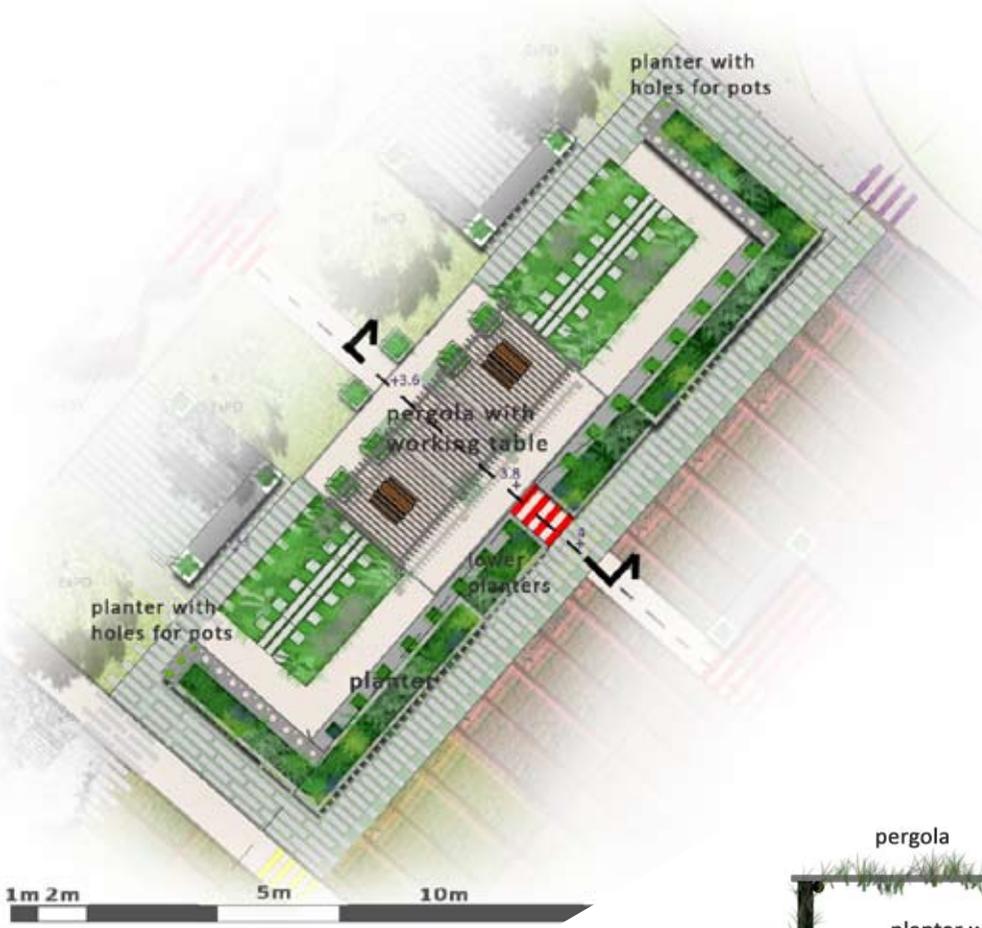
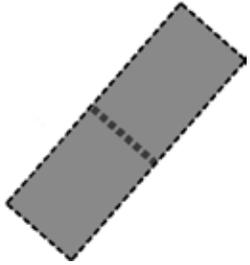


Fig. 8.15 Horticultural therapy garden plan (Author, 2009).

Herbs, vegetables and fragrant plants will be planted in this garden to maximise the sensory experience by stimulating the senses touch, smell, taste and sight. The horticultural therapy garden will include a central gathering space with working tables shaded with a pergola and fragrant climbing plants (refer to 5.4.1). The central gathering area will be enclosed with planters at various heights. The planters allow the user to experience and work with the plants at various heights. There is also an area where precast concrete slabs with holes for pots are attached to the edge of the planter. The height and depth of the concrete slabs will allow wheelchair users to comfortably work with the plants (refer to 9.3.2).

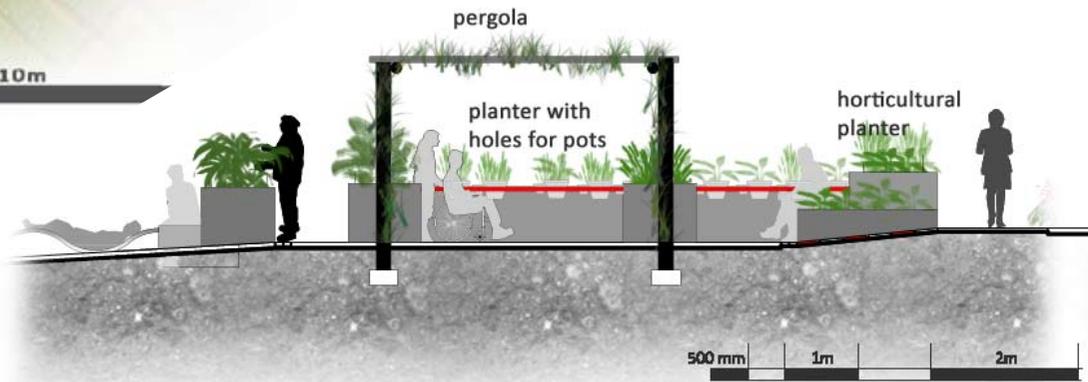


Fig. 8.16: Horticultural therapy garden section (Author, 2009).



*Fig. 8.17: Horticultural therapy garden 3d image (Author, 2009).*

#### 8.4.4. COLOUR POCKETS

Patients and staff need quiet places for reflection and restoration away from the mainstream activities (refer to 5.5.1). The colourfull flower fields provides an ideal setting to accommodate these places and provide the user with an unique experience.

The sketch plan proposes three colour pockets, yellow, red and blue/purple connected to each other with the flower walkway. These colours were selected because they fall within the colour range of most open air flower species (refer to 9.1.6).

These pockets could also function as a tool for staff members to analyze the moods and preferences of patients based on the colour pocket they use of on a regular basis.

Each of the pockets have a seating and waved sleeping bench (refer to 9.3.7) and a lawn area adjacent to the flower walkway. Brightly coloured strips of semi glazed ceramic tile inserts heightens the colour experience of each individual pocket.

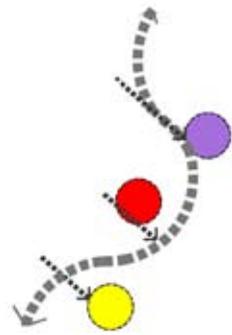
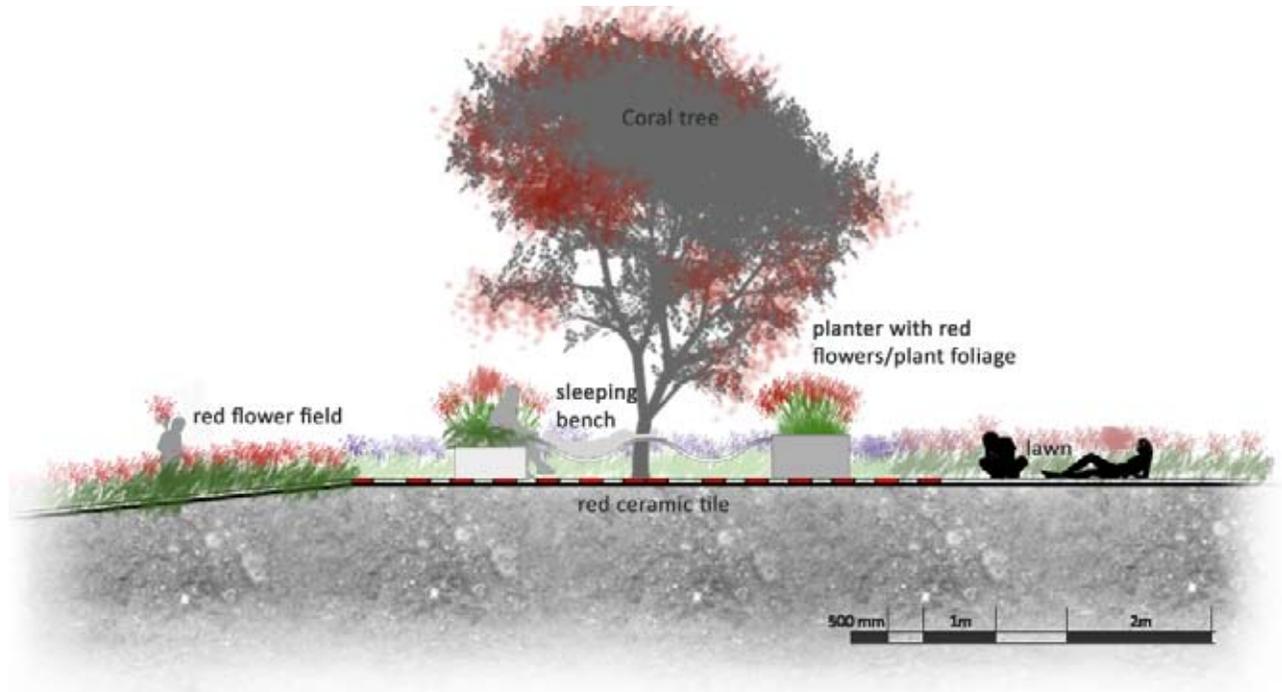
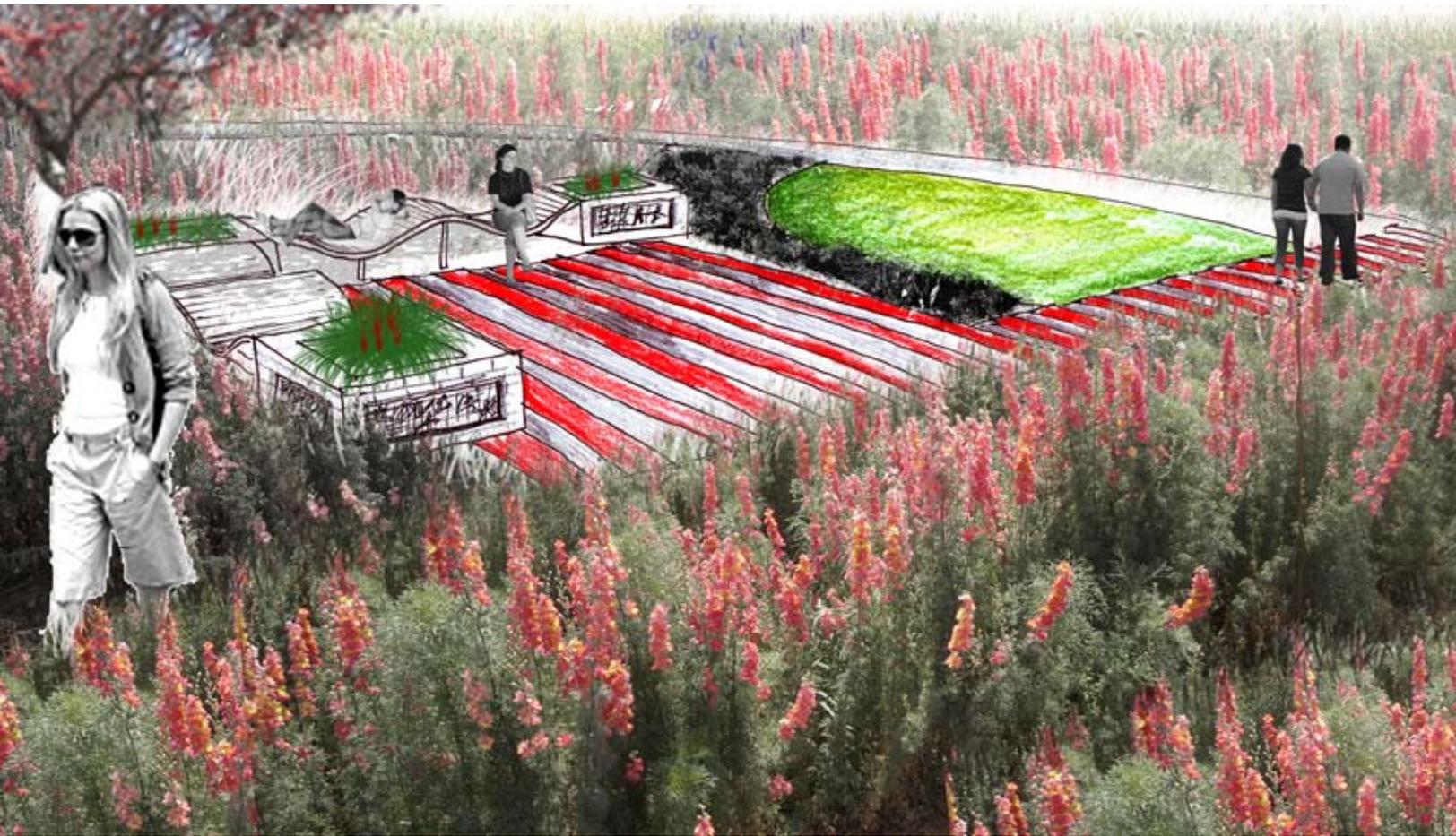


Fig. 8.18: Plan showing the different colour pockets (Author, 2009).



Fig. 8.19: Section through the red colour pocket (Author, 2009).





*Fig. 8.20: Colour pockets  
3d image (Author, 2009).*

#### 8.4.5. SEMI PRIVATE MALE WARD

There is currently no boundary between the area around the male ward and the public area around the kiosk. Patients need outdoor spaces where they feel safe while still enjoying the outdoors at times when they don't want to be seen by the public or patients from other wards.

Based on the framework the areas around the different wards, staff housing and other private services will be developed as semi private outdoor rooms( refer to 7.7).

The sketch plan proposes a retaining wall, combined with plants and a terraced lawn to function as a visual boundary between the public and the semi private outdoor room around the male ward. However, patients can still have a view over the public landscape from the top terrace of the outdoor room.

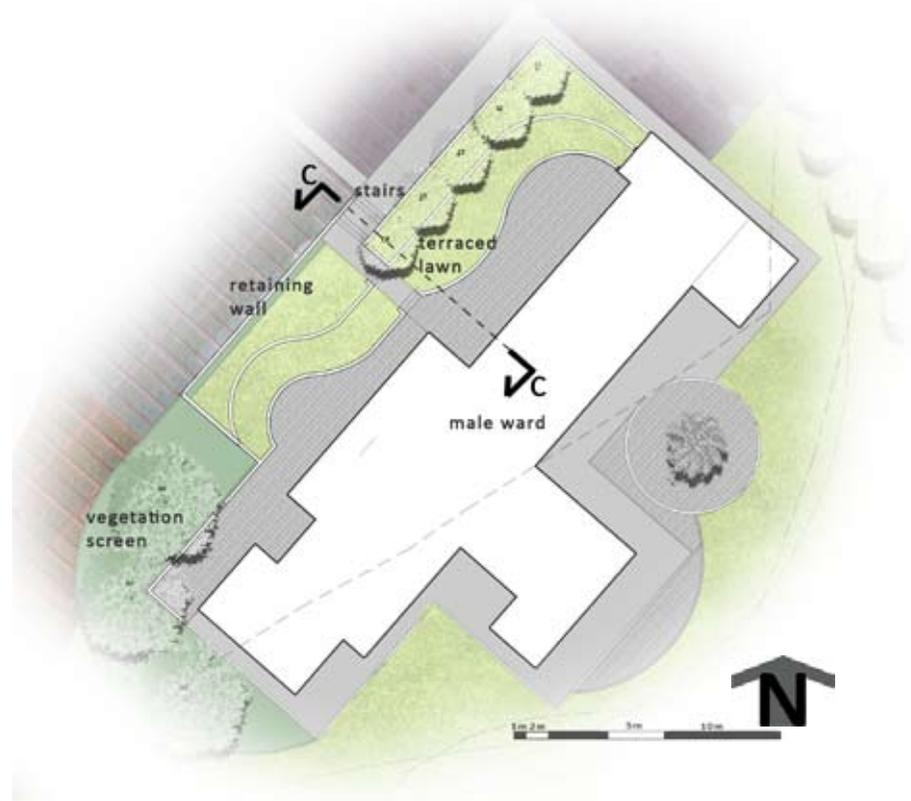


Fig. 8.21: Plan of the outdoor room at the male ward (Author, 2009).

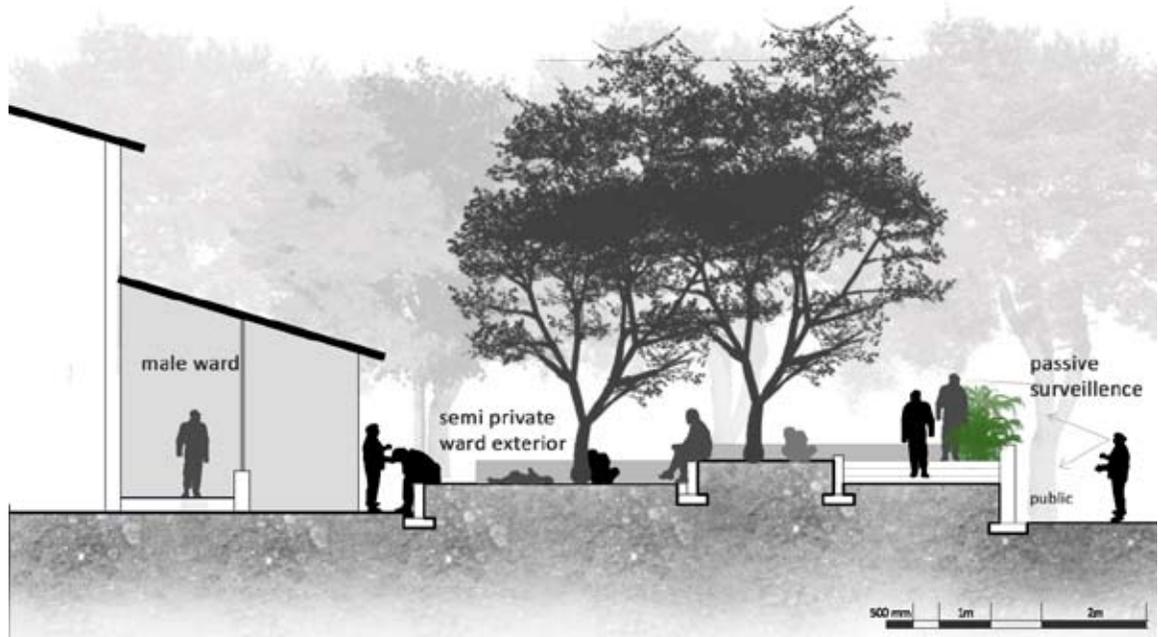


Fig. 8.22: Section of the semi private outdoor room at the male ward. Retaining walls form a visual boundary (Author, 2009).



*Fig. 8.23: Male ward 3d image (Author, 2009).*

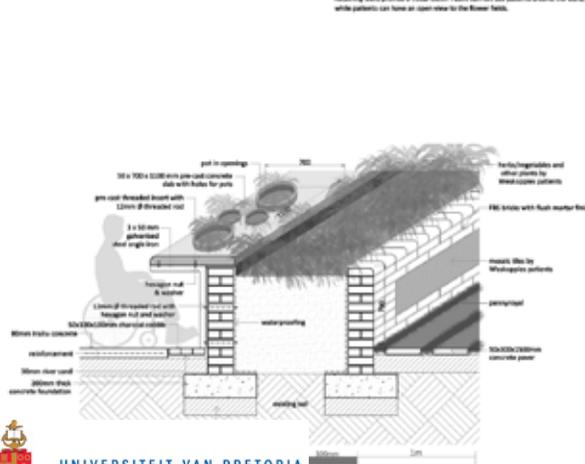
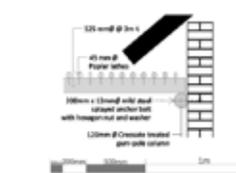
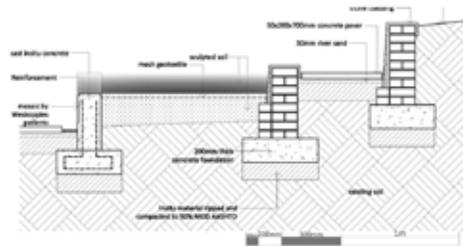
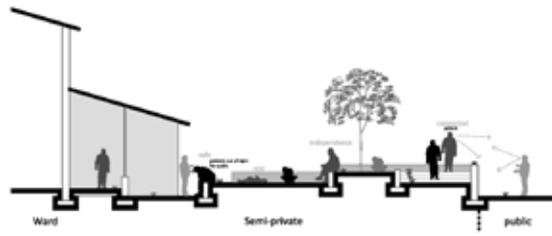
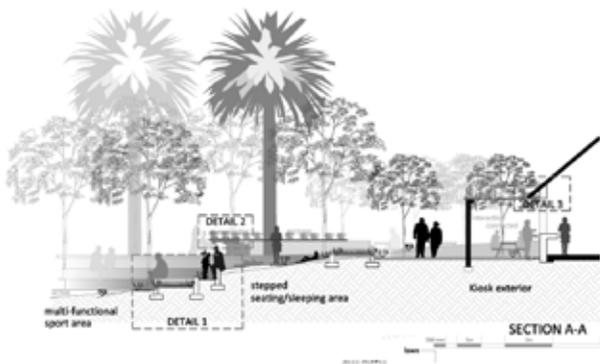
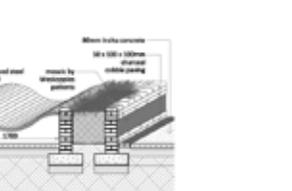
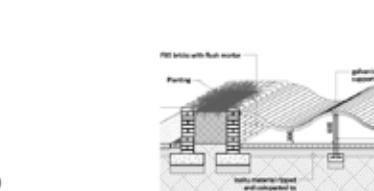
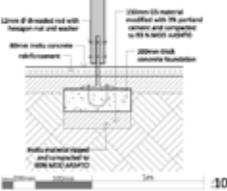
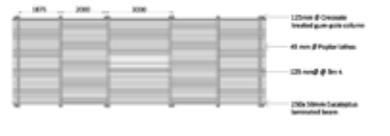
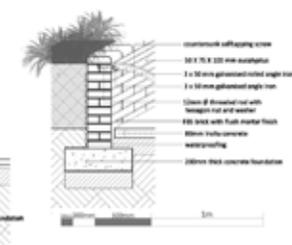
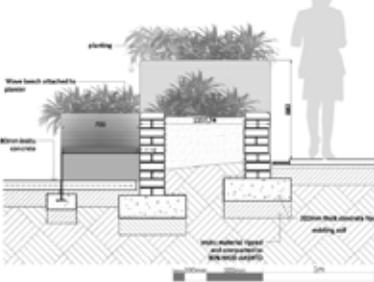
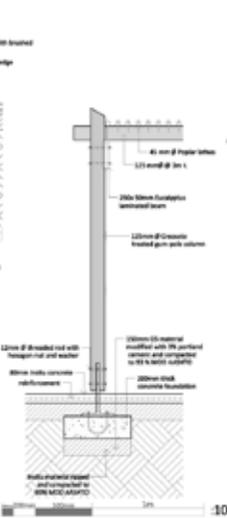
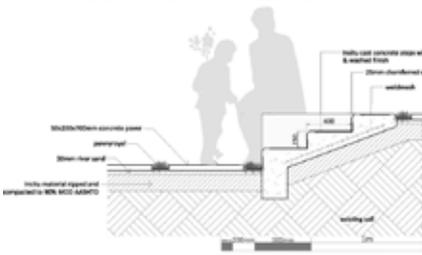
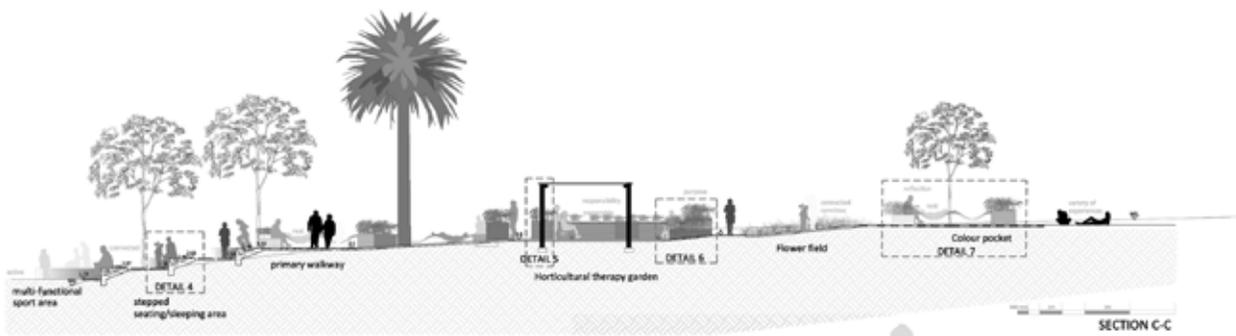
## 8.5. CONCLUSION

Fig. 8.24: The design matrix illustrates how the sketch plan satisfies the design guidelines as set out in chapter 5 (Author, 2009).

The sketch plan area functions as a catalyst for achieving a healing outdoor experience at Weskoppies. The unique flower experience and horticultural therapy garden will draw the public to Weskoppies on Saturdays and thereby allow social integration and interaction between patients and the public counteracting the current isolation of Weskoppies and its people. During the rest of the week the area will function as the social heart of Weskoppies where patients and staff members will feel familiar and at home by being involved in the maintenance and mosaic work. A sense of ownership and pride will be achieved with patients involved in the horticultural therapy, and flower farm program. This will ultimately lead to an healing outdoor environment with a strong identity for Weskoppies. The sketch plan design matrix (Fig. 8.20) illustrates how the sketch plan design addressed the design guidelines as set out in chapter five for creating an outdoor environment with emotional healing potential.

SKETCH PLAN							
	8.3.1. CIRCULAR PEDESTRIAN WALKWAY	8.3.2. FLOWER WALKWAY	8.4.1. KIOSK EXTERIOR	8.4.2. SEATING AND SLEEPING AREA	8.4.3. HORTICULTURAL THERAPY GARDEN	8.4.4. COLOUR POCKETS	8.4.5. SEMI PRIVATE MALE WARD
<b>DESIGN GUIDELINES</b>							
<b>5.2. INDEPENDENCE</b>							
5.2.1. Independent functioning							
5.2.2. Freedom							
5.2.3. Privacy							
5.2.4. Choice and control							
5.2.5. Legibility							
<b>5.3. PURPOSE</b>							
5.3.1. Work opportunities							
5.3.2. Motivation							
5.3.3. Positive messages							
5.3.4. Ownership							
<b>5.4. CONSCIOUSNESS</b>							
5.4.1. Sensory stimulation							
5.4.2. Awareness of time							
5.4.3. Change							
5.4.4. Excitement							
5.4.5. Variety of experiences							
<b>5.5. REST</b>							
5.5.1. Reflection							
5.5.2. Relaxation							
5.5.3. Familiarity							
5.5.4. Security							
5.5.5. Comfort							
5.5.6. Sleep							
<b>5.6. CONNECTEDNESS</b>							
5.6.1. Social interaction							
5.6.2. Social support							
5.6.3. Connected to natural systems							
5.6.4. Accessible							
<b>5.7. ACTIVE</b>							





# 9.1. MATERIALS

Materials was selected to complement and enhance existing materials, respecting the heritage of Weskoppies. The ability of the material to stimulate the senses was also considered when materials were selected. Flowers have the ability to lift the spirit and therefore the selected vegetation mostly consists out of flowering plants. Mosaic work done by Weskoppies patients on planters and retaining walls encourage community participation and give the people at Weskoppies a sense of ownership and pride.

Fig. 9.2: *Planting and paving plan*  
(Author, 2009).



**LEGEND:**

**SOFT LANDSCAPING (refer to 9.1)**



Tree species:  
(refer to the codes for tree species in 9.1.1).



Flowering shrubs: refer to the shrubs palet as illustrated in (9.1.2)



Fragrant groundcovers planted between pavers to release fragrance when crushed (refer to 9.1.3. for species)



Climbing plants at pergolas (refer to 9.1.4 for species ).



Herbs and vegetables as selected by patients in horticultural therapy program (refer to 9.1.5).



Red cut flowers (refer to 9.1.6 for species)



Purple/ blue cut flowers (refer to 9.1.6 for species)



Yellow cut flowers (refer to 9.1.6 for species)



Mixed colours cut flowers (refer to 9.1.6. for species)



Cynodon dactylon

**PAVING MATERIALS**



In situ concrete: a comfortable surface for wheelchair users



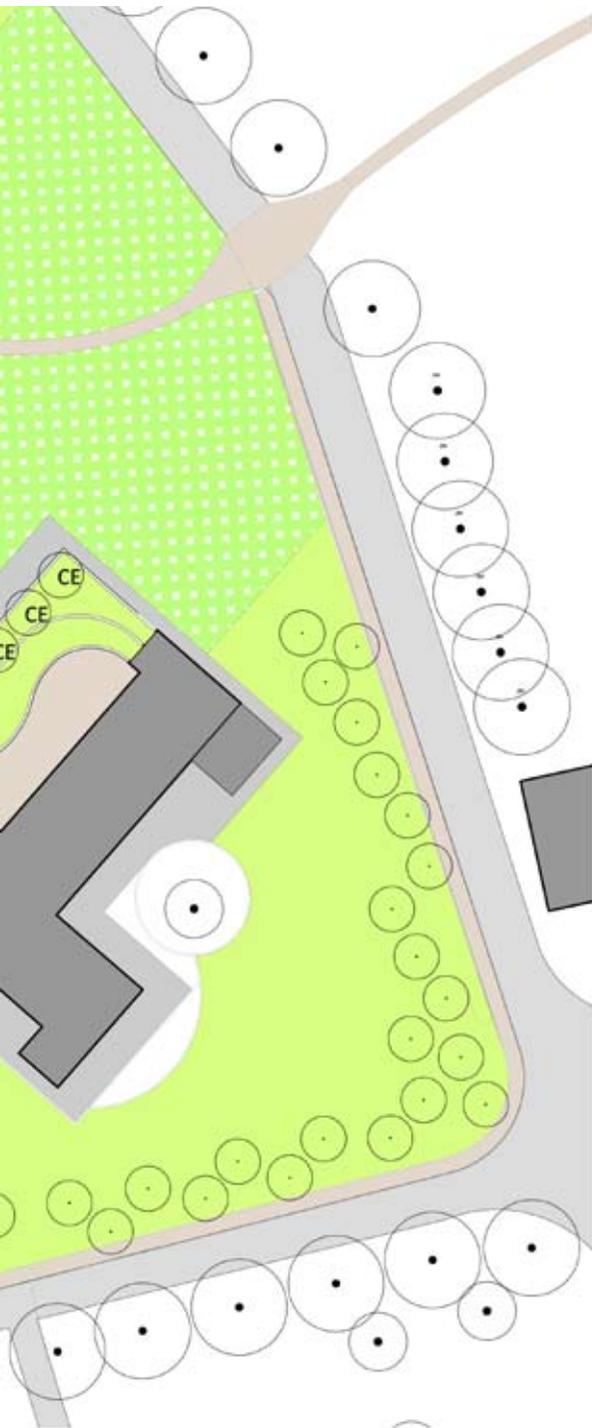
Gravel: provides texture, sound and a permeable surface for infiltration



Concrete pavers interplanted with fragrant groundcovers: releases fragrance when leaves are crushed.



Semi-glazed ceramic tile inserts: bright colours that lead the pedestrian to colour pockets.



### 9.1.1. TREES

Indigenous trees were selected based on their colours and their ability to change with the season. This creates a sense of anticipation and makes patients more aware of the time and seasons while the colours contribute to creating a uplifting, positive outdoor environment. The proposed trees also fit in with the existing trees at Weskoppies as well as the existing natural bushveld.



Fig. 9.3: *Bolusanthus speciosus* (BS)  
(Venter, 1998)



Fig. 9.4: *Pterocarpus rotundifolius* (PR)  
(Venter, 1998)

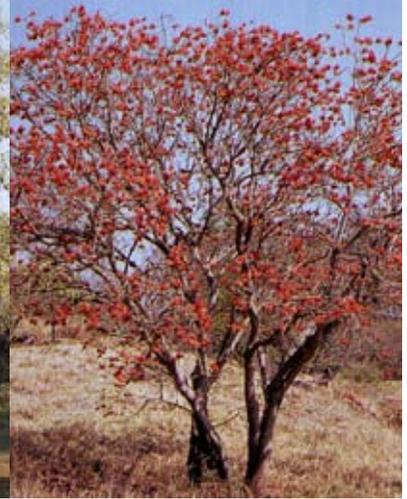


Fig. 9.5: *Erythrina lysistemon* (EL)  
(Venter, 1998)

***Bolusanthus speciosus* (Tree witseria):** The tree witseria was selected based on its purple flower display during spring that attracts insects. It has a non-aggressive root system ,grows quickly and can survive with little water. (VENTER. 1998:242)

***Pterocarpus rotundifolius* (Round-leaved kiaat):** Selected for its yellow flower display in spring, creating a cheerful environment and attracting insects. It has a is non-aggressive root system and grows quickly. (VENTER. 1998:58)

***Erythrina lysistemon* (Common coral tree):** Selected for its vibrant red flower display in spring attracting insects. Its root system is aggressive and it should not be planted close to paving. It grows fast. (VENTER. 1998:78)

***Combretum erythrophyllum* (River bushwillow):** The root system is non aggressive and the foliage provides autumn colours. It is a fast grower and can survive with little water. (VENTER. 1998:240)

***Celtis africana* (White stinkwood):** Selected because it is reflective of the seasons which is important in the context of Weskoppies. The tree also provides dense shade during the summer and sun during the winter when it loses all its leaves. It grows extremely fast. (VENTER. 1998:278)

***Acacia xanthophloea* (Fever tree):** Selected for its contrasting green trunk and foliage and fast growing nature



Fig. 9.6: *Combretum erythrophyllum* (CE)  
(Venter, 1998)



Fig. 9.7: *Celtis africana* (CA)  
(Venter, 1998)



Fig 9.8: *Acacia xanthophloea* (AX)  
(Venter, 1998)

### 9.1.2. SHRUBS

Indigenous shrubs was also selected to give a vibrant, uplifting colour display with flowers that accentuates the seasons. These shrubs doesn't require a lot of maintenance and fit in with the natural bushveld vegetation at Weskoppies. The flowers also attracts insects and birds.



Fig. 9.9: *Barleria obtusa*  
(Joffe, 2003)

Fig. 9.10: *Hypoestes aristata* (Joffe, 2003)

Fig. 9.11: *Plectranthus fruticosus* (Joffe, 2003)

Fig. 9.12: *Plectranthus neochilus* (Joffe, 2003)

Fig. 9.13: *Plumbago auriculata* (Joffe, 2003)



Fig. 9.14: *Dietes grandiflora* (Joffe, 2003)

Fig. 9.15: *Euryops pectinatus* (Joffe, 2003)

Fig. 9.16: *Tecomaria capensis* (Joffe, 2003)

Fig. 9.17: *Strelizia reginae* (Joffe, 2003)

Fig. 9.18: *Bauhinia galpinii* (Joffe, 2003)

**Barleria obtusa (BO):** This bushy shrub is ideal for reflecting the natural bushveld architecture at Weskoppies. The shrub was also selected for its masses of blue mauve, pink or white flowers in autumn. (Joffe, 2003:37)

**Hypoestes aristata (HA):** The Ribbon bush was selected for its mauve and pink flower display just before winter. It can be planted as a ground cover in the shady positions around the buildings. (Joffe, 2003:49)

**Plectranthus fruticosus (PF):** The Pink Fly Bush was selected for its pink or bluish mauve flower display in summer. It is ideal for a ground cover at shady positions underneath trees and close to buildings (Joffe, 2003:60).

**Plectranthus neochilus (PN):** This is a good low growing ground cover plant with deep blue and purple flowers in autumn and a strong garlic smell. (Joffe, 2003:61)

**Plumbago auriculata (PA):** This fast growing, drought resistant shrub will be planted in sunny areas where it will give a powder-blue flower display throughout summer. (Joffe, 2003:87)

**Dietes grandiflora (DG):** The white-orange-and-mauve flowers could be mass planted under trees and other partial shade areas. (Joffe, 2003:43)

**Euryops pectinatus (EP):** This shrub was selected because it is covered with bright yellow flowers from June to October. It will be planted in sunny positions. (Joffe, 2003:46)

**Tecomaria capensis (TC):** The cape honeysuckle is fast growing and drought resistant, it forms an informal hedge. It produces yellow flowers in Spring and summer. (Joffe, 2003:92)

**Strelizia reginae (SR):** This striking perennial is unique to the South African context. It produces flowers from March until October. (Joffe, 2003:66)

**Bauhinia galpinii:** This higher growing shrub was selected because it fits in well with the bushveld context and produces red flowers in summer. (Joffe, 2003:71)

### 9.1.3. FRAGRANT GROUNDCOVERS

The fragrant ground covers will be planted between precast concrete pavers. When crushed the leaves will release a fragrance and stimulate the sense of smell. The author proposes the following species:

#### Full sun

Thymus praecox (thyme)  
Achillea tomentosa (Woolly yarrow)



Fig. 9.19. Thyme



Fig. 9.20. Woolly yarrow



Fig. 9.21. Pennyroyal

#### Sun to partial shade

Mentha pulegium (pennyroyal)  
Mentha requienii (Corsican mint)  
Laurentia flavuliatilis (Blue star creeper)



Fig. 9.22. Corsican mint



Fig. 9.23. Blue star creeper



Fig. 9.24. Sweet woodruff

#### Shade

Galium odoratum (Sweet woodruff)

### 9.1.4. CLIMBING PLANTS

The following climbing plants can be used at the pergolas :

Jasminum multipartitum (Starry wild jasmine)  
Thunderbergia alata (Black-eyed susan)  
Pyrostegia venusta (Golden shower)  
Wisteria sinensis



Fig. 9.25. Jasmine



Fig. 9.26. Black-eyed susan



Fig. 9.27. Golden shower



Fig. 9.28. Wisteria

### 9.1.5. HERBS & VEGETABLES (HORTICULTURAL THERAPY)

The herbs and vegetable species will not be specified by the author. The selection of plant species will be part of the horticultural therapy program. Patients will decide what they want to plant in this area based on what they have learned.

### 9.1.6. CUT FLOWERS

The cut flower species is categorized in four different groups based on their colour. These include a yellow, red/ orange, purple/blue and mixed colours.

#### Yellow cut flowers



Fig. 9.29. *Graspedia globosa*



Fig. 9.30. *Helianthus annuus*



Fig. 9.31. *Bupleurum griffithii*



Fig. 9.32. *Euryops pectinatus*



Fig. 9.33. *Delphinium belladonna*



Fig. 9.34. *Cynoglossum amabile*

#### Blue & purple cut flowers

#### Red/ orange cut flowers



Fig. 9.35. *Calendula officinalis*



Fig. 9.36. *Crocosmia paniculata*



Fig. 9.37. *Watsonia*



Fig. 9.38. *Sparaxis elegans*

#### Mixed cut flowers



Fig. 9.39. *Antrirrinum majeus*



Fig. 9.40. *Lathyrus odorata*



Fig. 9.41. *Freesia*



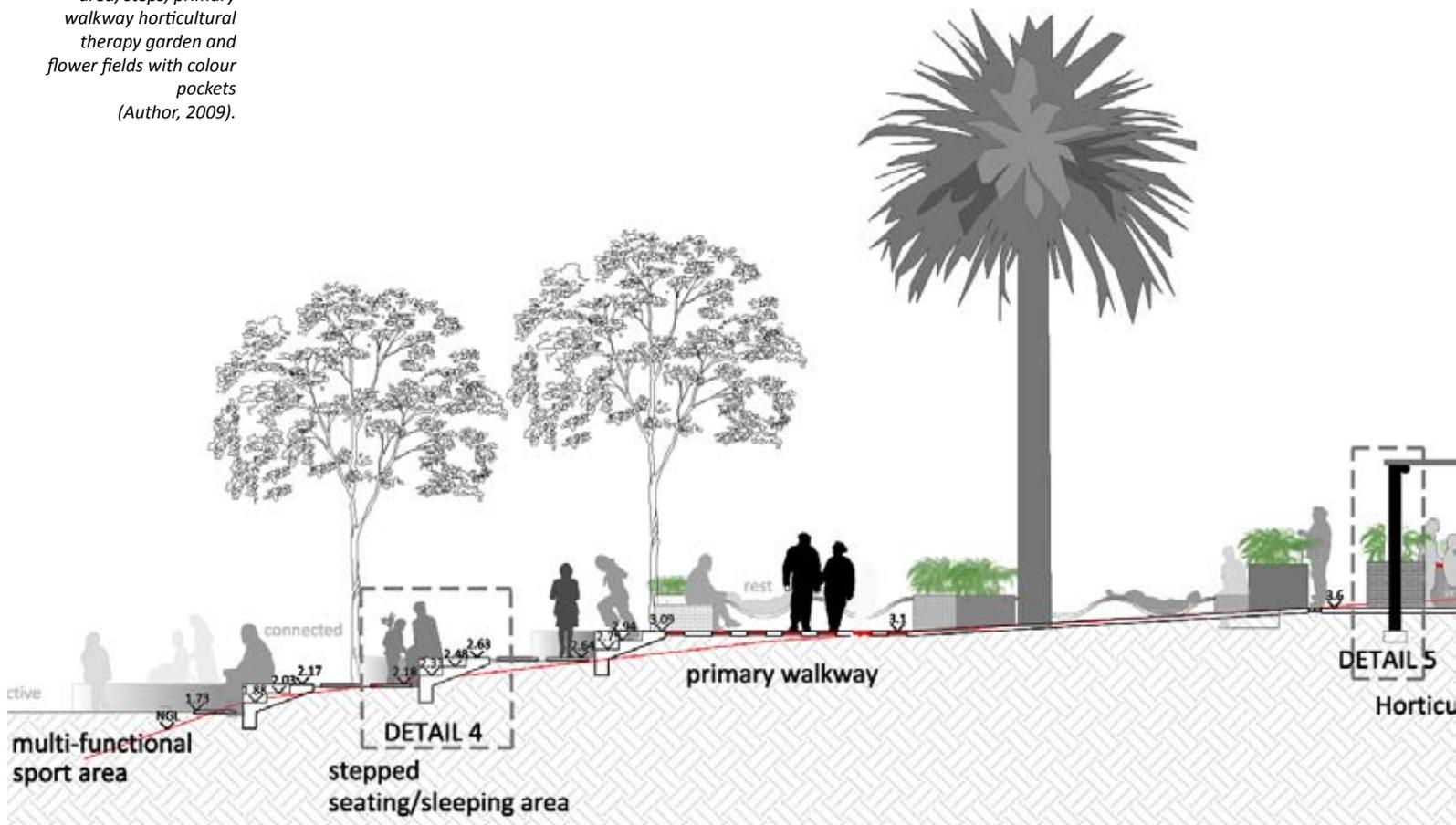
Fig. 9.42. *Gypsophila elegans*

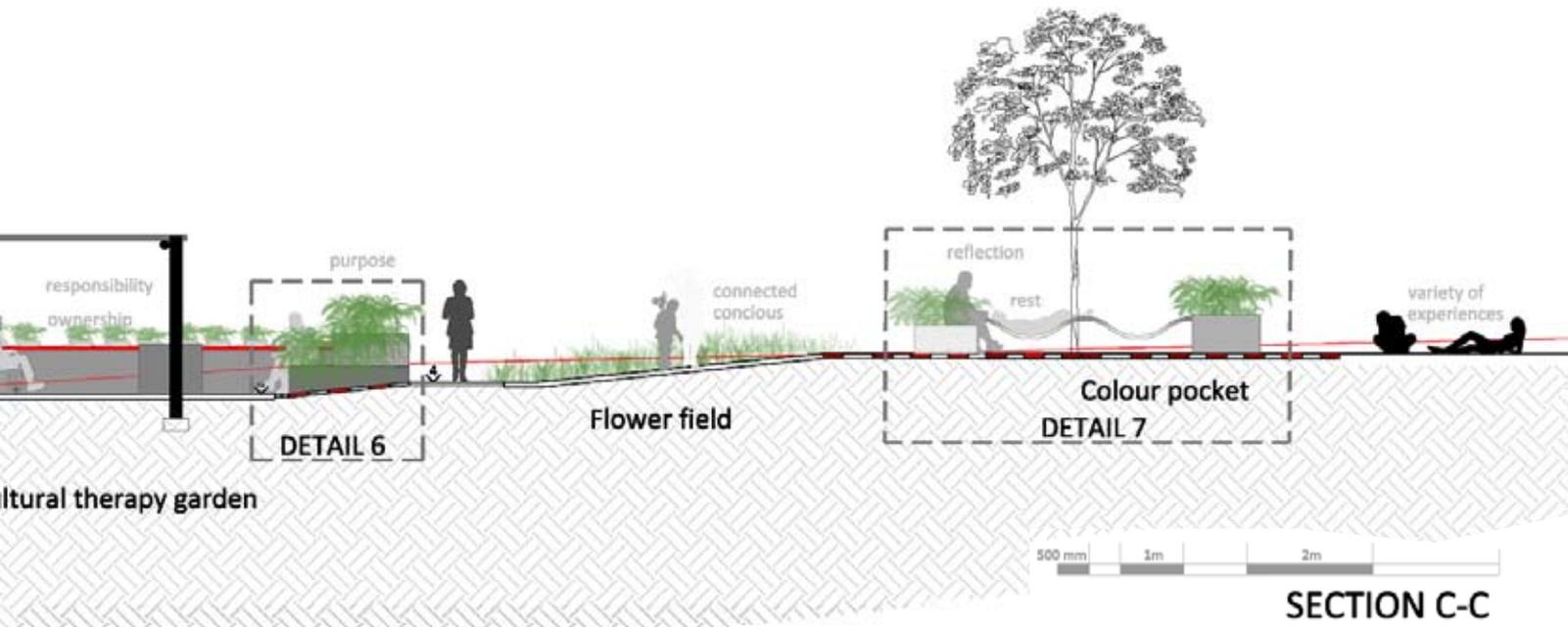
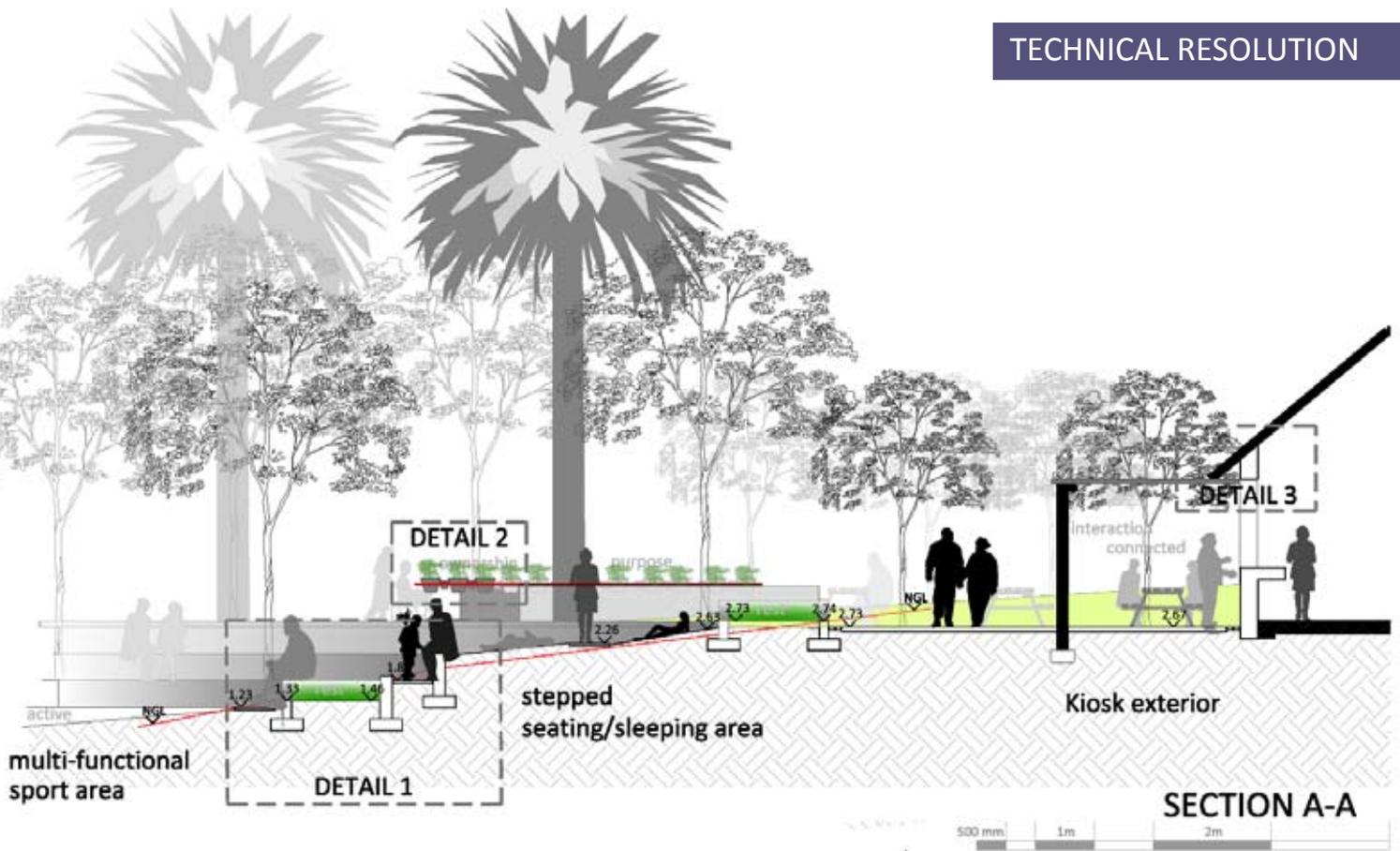
## 9.2. TECHNICAL DETAILS

Section A-A and B-B cuts through the most prominent landscape structures as proposed in the sketch plan. The numbered details will be explained on a bigger scale in 9.3.1 to 9.3.7. and includes; the sculpted sleeping and seating terraces, retaining walls, various planters, step details, pergola details and the waved seating benches. These details will show dimensions, material use, subsoil layers and fastening methods.

*Fig. 9.43  
(opposite page): Section A-A includes the multifunctional sport area with the stepped sleeping and seating area, primary walkway and kiosk exterior  
(Author, 2009).*

*Fig. 9.44  
(below): Section C-C includes the multifunctional sport area, steps, primary walkway horticultural therapy garden and flower fields with colour pockets  
(Author, 2009).*



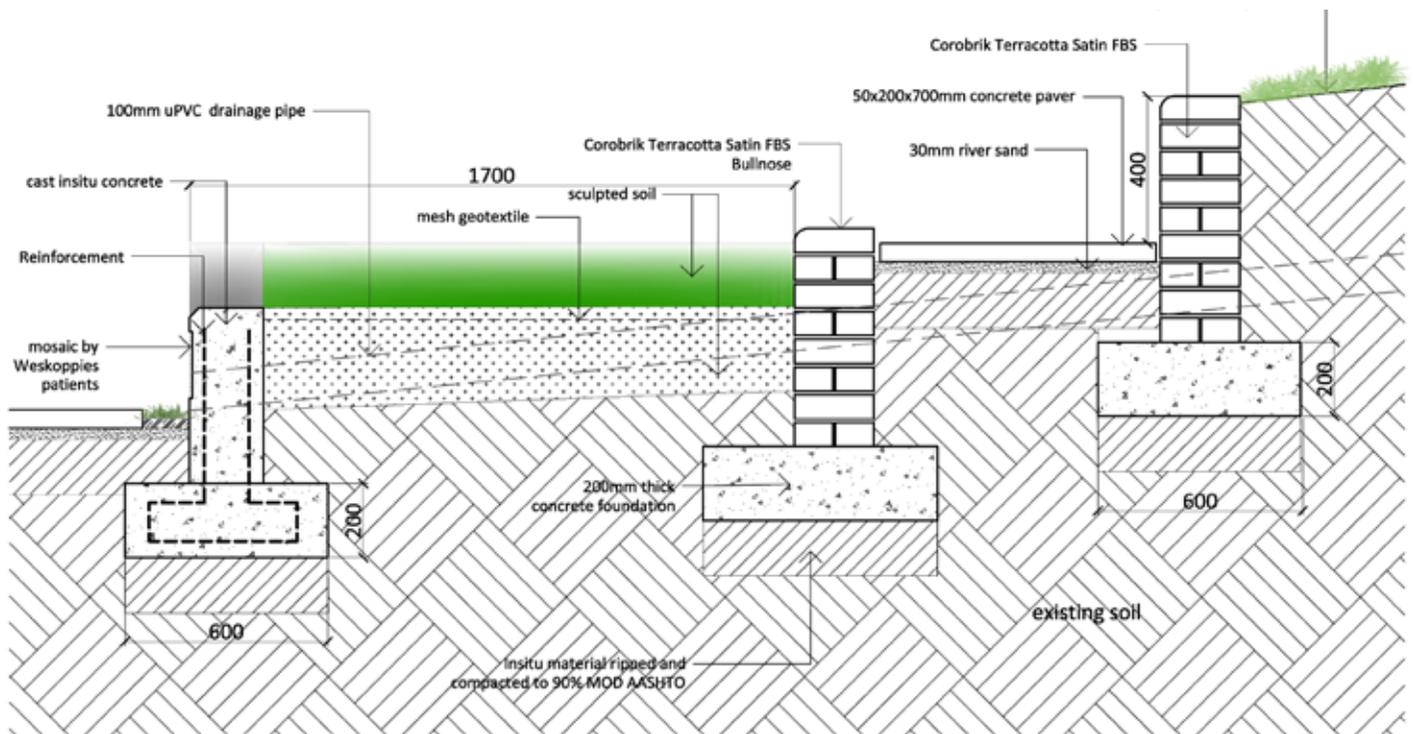


### 9.2.1. DETAIL 1: SCULPTED SLEEPING AND SEATING AREA

The Sculpted lawn is a comfortable sleeping area for patients that needs rest during the day. Seating walls and terraced lawns are also accommodated in this area. It is situated around the multifunctional sport area to allow people to observe sport activities.

A reinforced waved cast in situ retaining wall with mosaic work by Weskoppies patients retains the waved lawn area, while flat terraced lawn areas will be retained with stone clad retaining walls. A 50 x 299 x 700 concrete paver inter planted with fragrant ground covers will provide a walkway between terraces .

Fig. 9.45  
(below): Detail 1-  
stepped seating and  
sleeping area  
(Author, 2009).



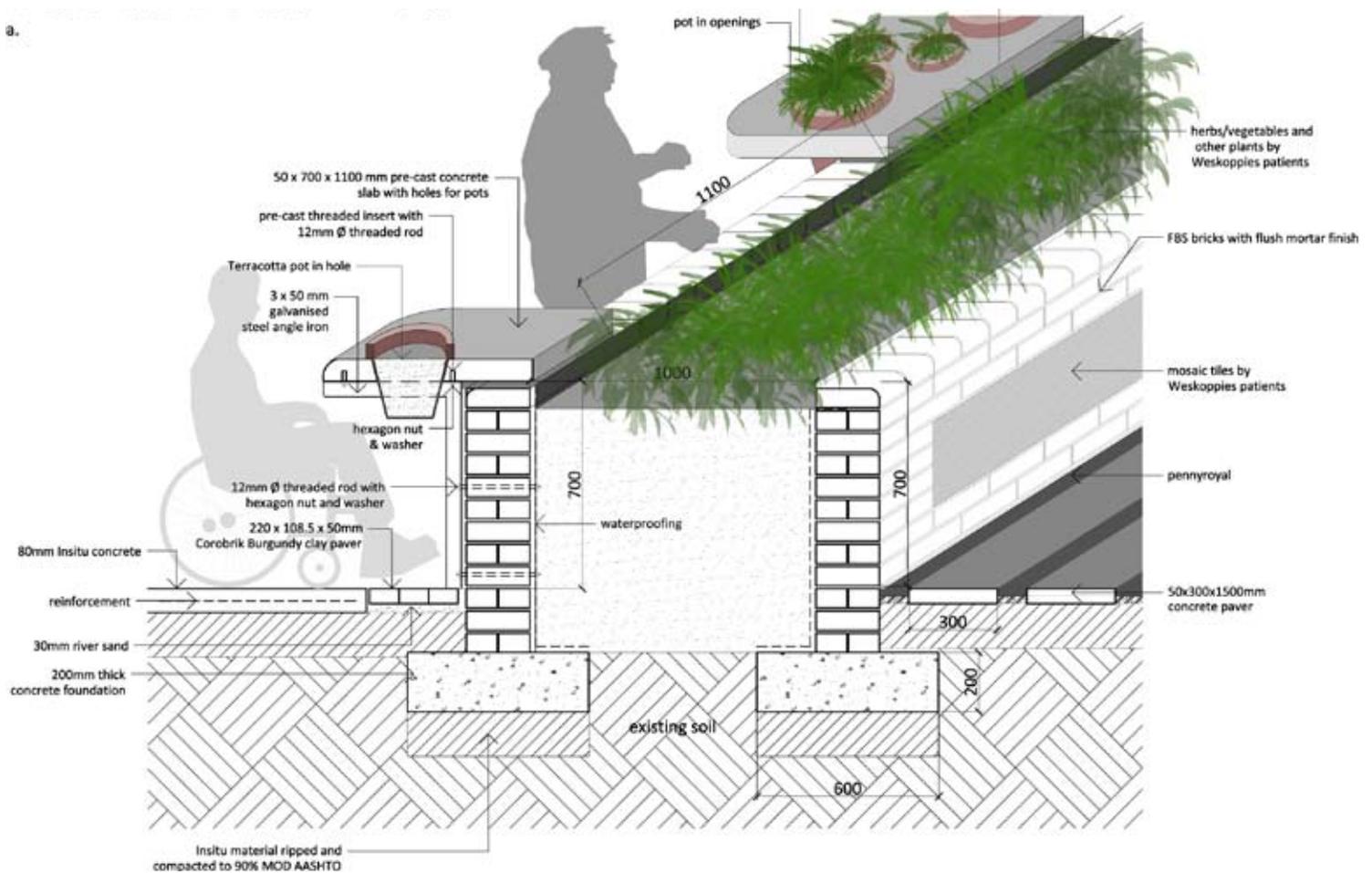
9.2.2. DETAIL 2: PLANTER WITH POT OPENINGS

Detail 2 shows a 700mm high horticultural planter with a 700mm wide pre-cast concrete slab attached to the inner edge. The concrete slabs have pre-cast holes in them to function as pot holders. As part of the horticultural therapy program patients will start out with small manageable size pot plants which they can place in these holes. The height of the concrete slabs makes it possible for wheelchair users to put their legs underneath the slab while working with the plants.

The planters are built with FBS bricks with a flush mortar finish. At certain places as indicated on the detail, mosaic work by Weskoppies patients will be accommodated. The detail also indicate the concrete pavers, inter planted with fragrant ground covers.

This planter in conjunction with the planter described in detail 6 encloses the horticultural therapy garden.

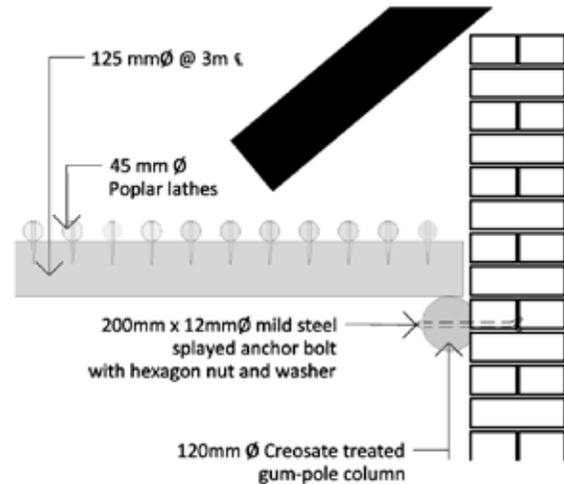
Fig. 9.46 (below): Horticultural planter with pre-cast concrete slab with holes for pots (Author, 2009).



### 9.2.3. DETAIL 3: PERGOLA FIXED TO WALL

Fig. 9.47 : Detail 3- Detail of proposed pergola fixed to existing kiosk structure (Author, 2009).

A pergola fixed to the existing kiosk structure is proposed for shading at the area where people can buy food from the outside. Fragrant climbing plants like *Jasminum multipartitum* will cover the pergola to stimulate sense of smell and provide denser shade.

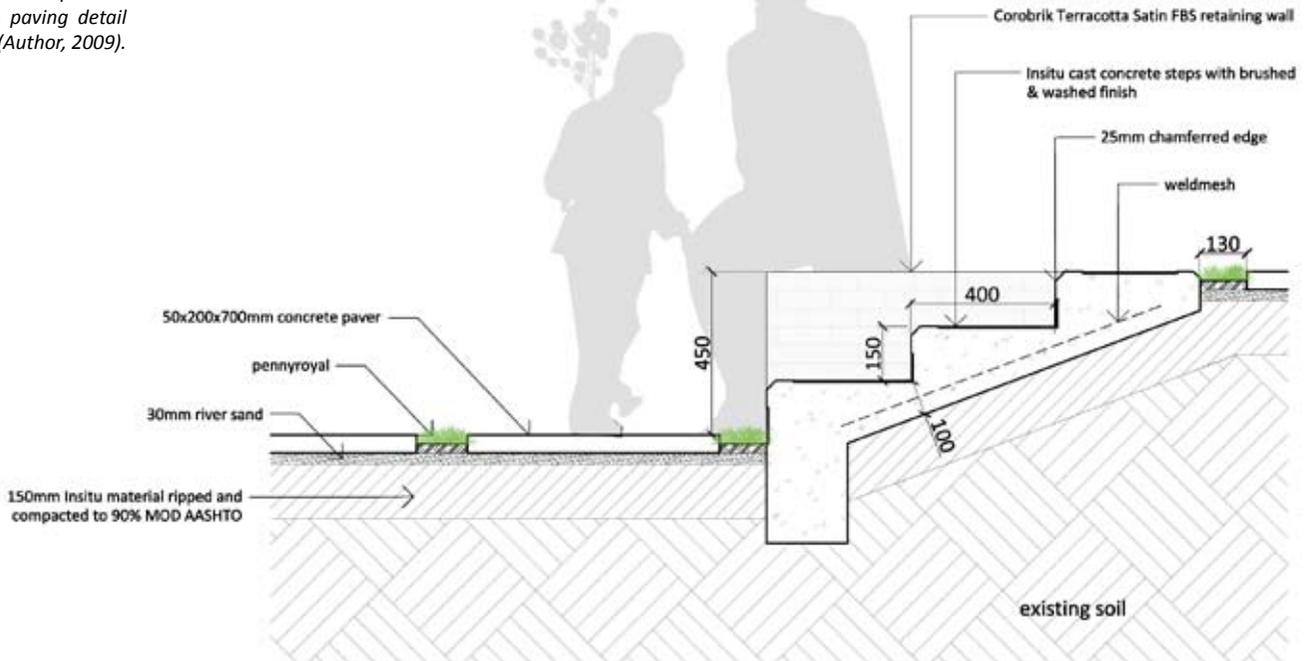


### 9.2.4. DETAIL 4: STEP AND INTER PLANTED CONCRETE PAVING DETAIL

The steps at the stepped seating and sleeping area will be cast insitu with a brushed and washed finish.

A walkway will be accommodated to allow movement between terraces. This walkway will consist out of 50 x 200 x 700mm concrete pavers inter planted with fragrant ground covers in 100mm openings.

Fig. 9.48 : Detail 4- Step and inter planted concrete paving detail (Author, 2009).



### 9.2.5. DETAIL 5 A & B: PERGOLA DETAILS

The pergola, situated central to the horticultural therapy garden will provide shading for the working tables. Fragrant climbing plants will cover the pergola stimulating the sense of smell while softening the structure and providing denser shading.

Materials used for the pergola includes; 125mm diameter creosote treated gum pole column, 250 x 50mm Eucalyptus laminated beams, and 45mm diameter poplar lathes

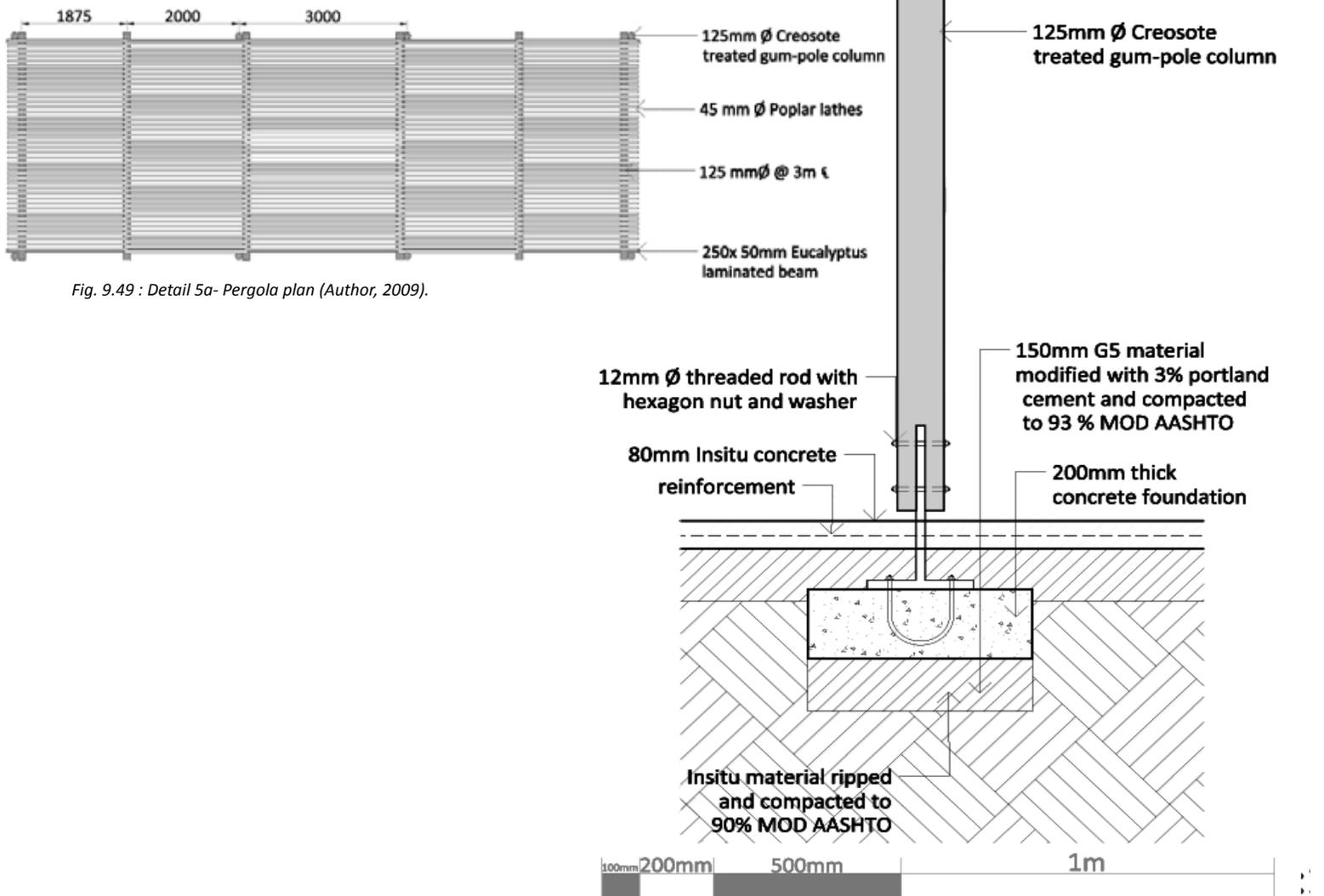


Fig. 9.49 : Detail 5a- Pergola plan (Author, 2009).

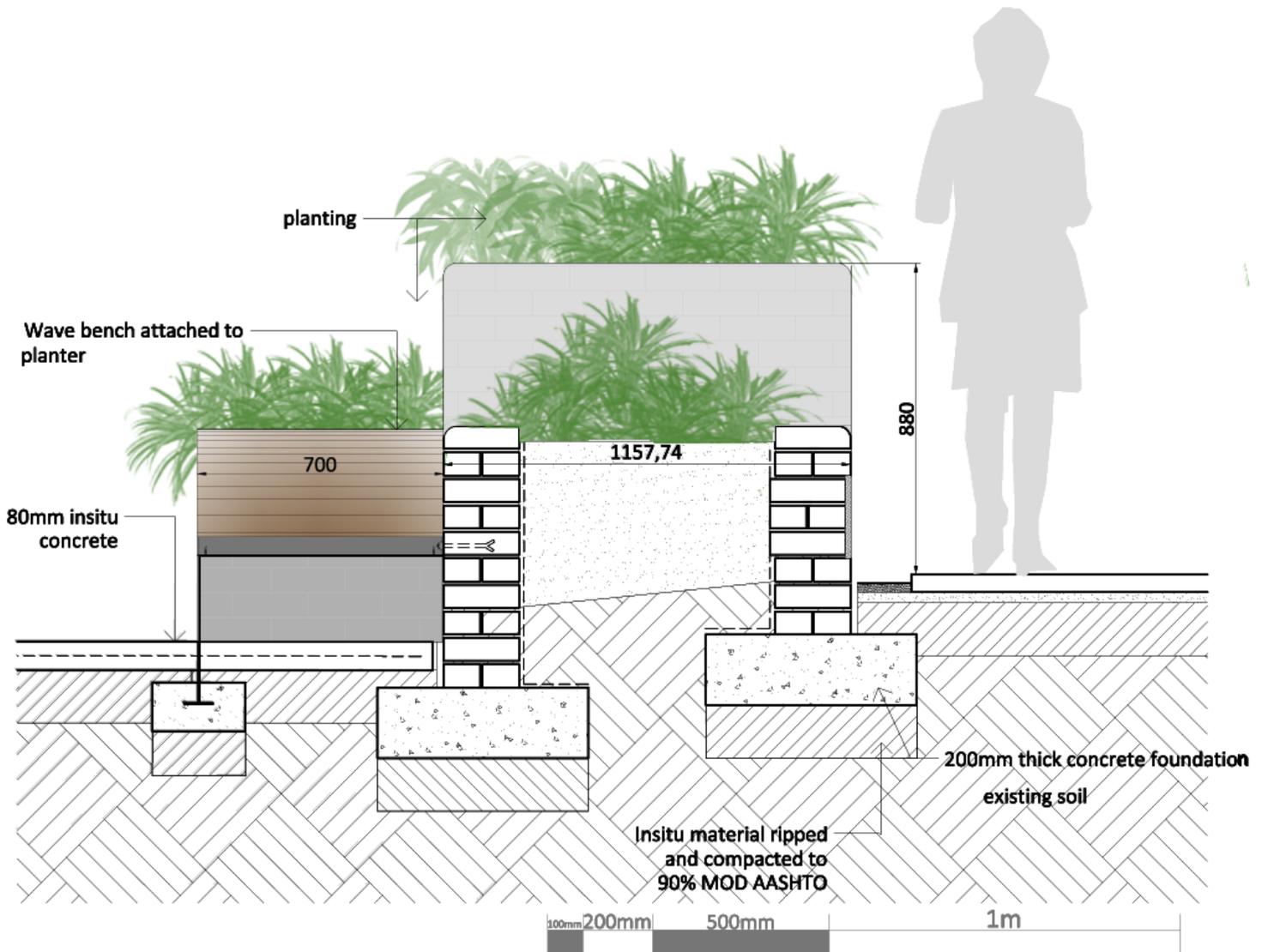
Fig. 9.50 : Detail 5b- Section trough pergola column (Author, 2009).

## 9.2.6. DETAIL 6: HORTICULTURAL THERAPY PLANTER WITH WAVE BENCH

The same waved sleeping benches as described in detail 7A & B will be attached to some of the face brick horticultural planters at the horticultural therapy garden. This allows patients to sit sleep or rest in a familiar environment between fragrant vegetables and herbs planted by themselves (refer to detail 7 A & B).

This planter in conjunction with the planter described in detail 2 encloses the horticultural therapy garden.

Fig. 9.51 : Detail 6-  
Horticultural therapy  
planter with wooden  
waved sleeping bench  
(Author, 2009).



**9.2.7. DETAIL 7 A & B: WAVED BENCH ATTACHED TO PLANTER**

Wavy wooden benches between square face brick planters becomes a comfortable outdoor sleeping area for patients that need rest during the day.

Fig. 9.52 (right): Detail 7A- The fastening of the waved sleeping bench to planter the planter(Author, 2009).

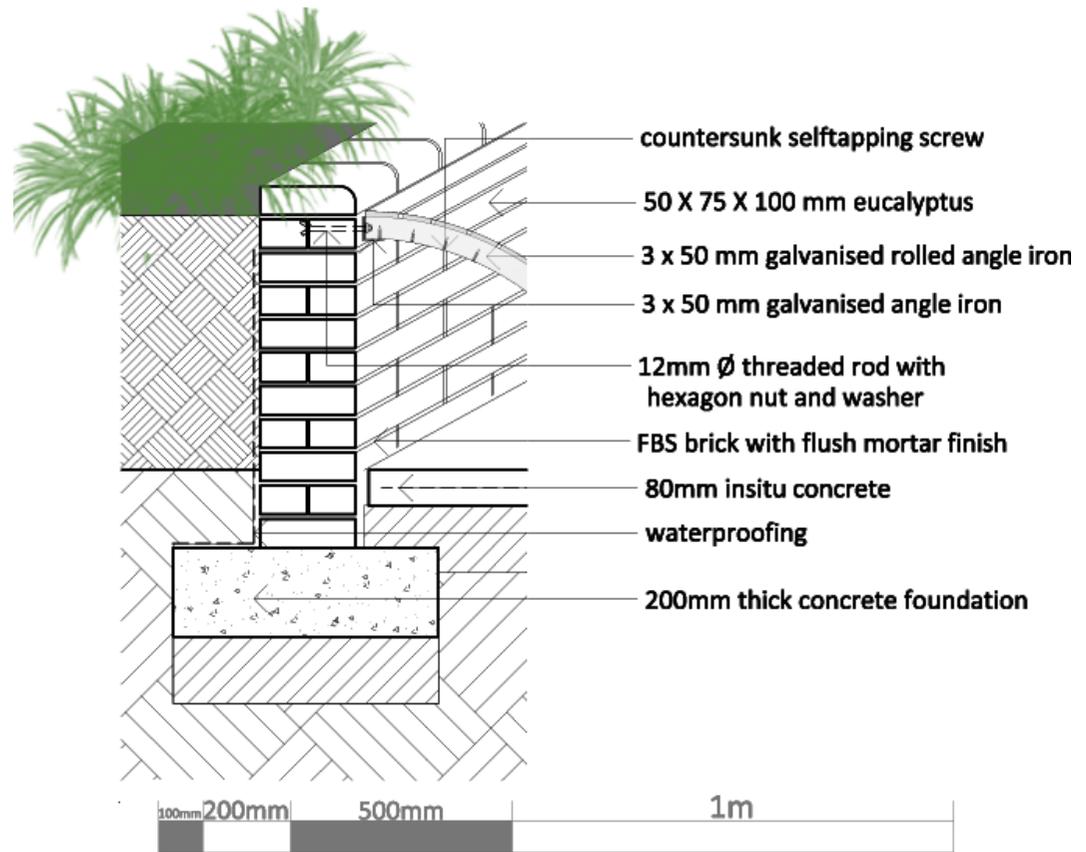
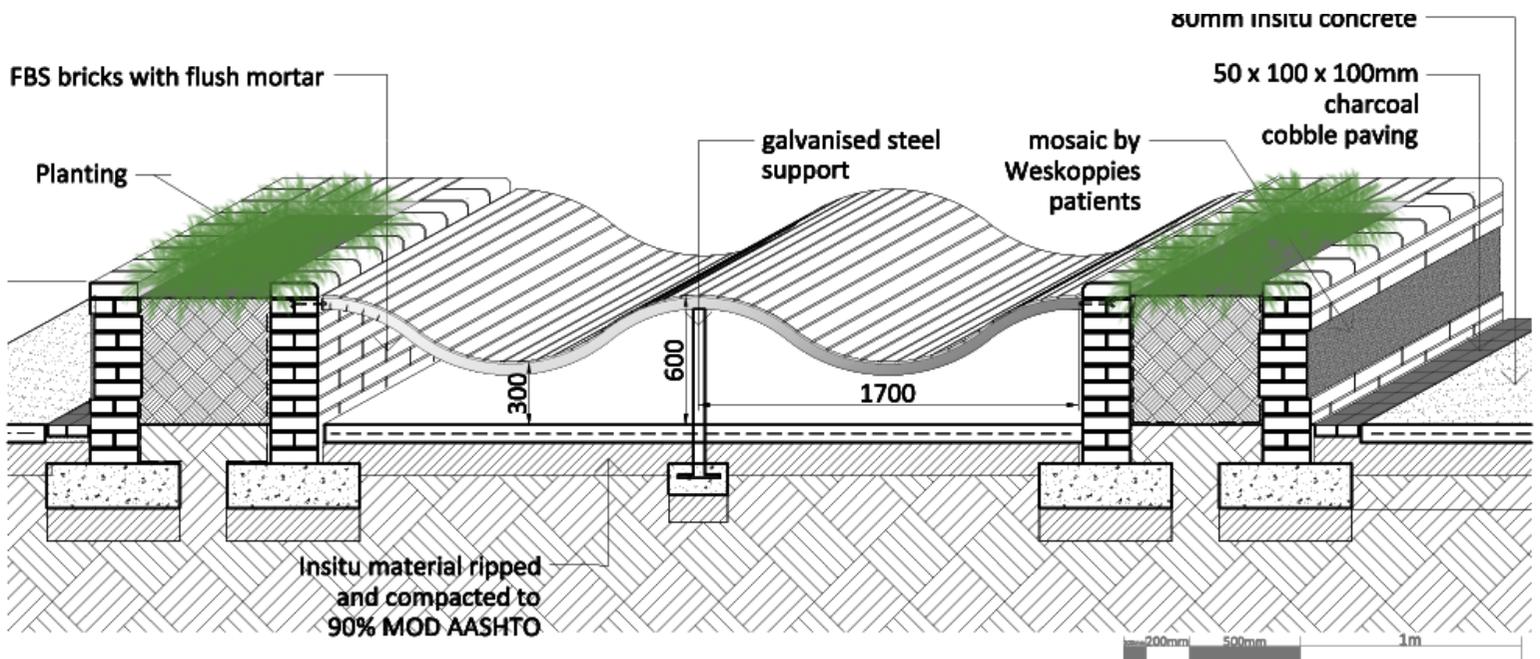


Fig. 9.53 (below): Detail 7B- Detail of a wooden sleeping bench attached to a facebrick planter (Author, 2009).

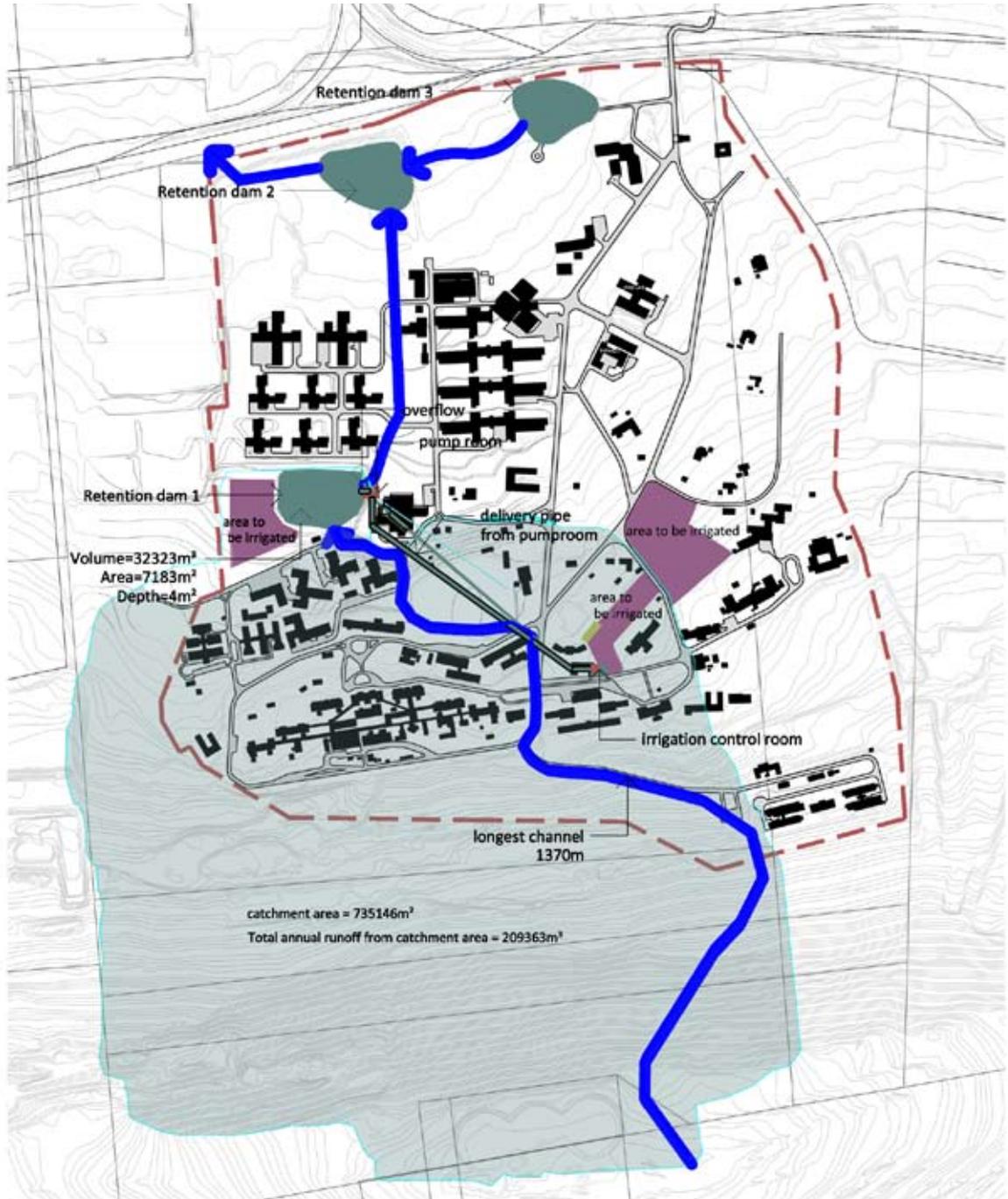


## 9.3. STORM WATER MANAGEMENT

Storm water will be captured in three retention dams and used for irrigating the landscape and flower fields. As part of the catalytic sketch plan only 2 Ha of land will be developed as flower fields initially. Retention dam 1 will be used for irrigating the first 2 Ha of flower fields. The rational method was used for determining peak flow and the catchment area and longest channel is indicated on figure 9.55.,

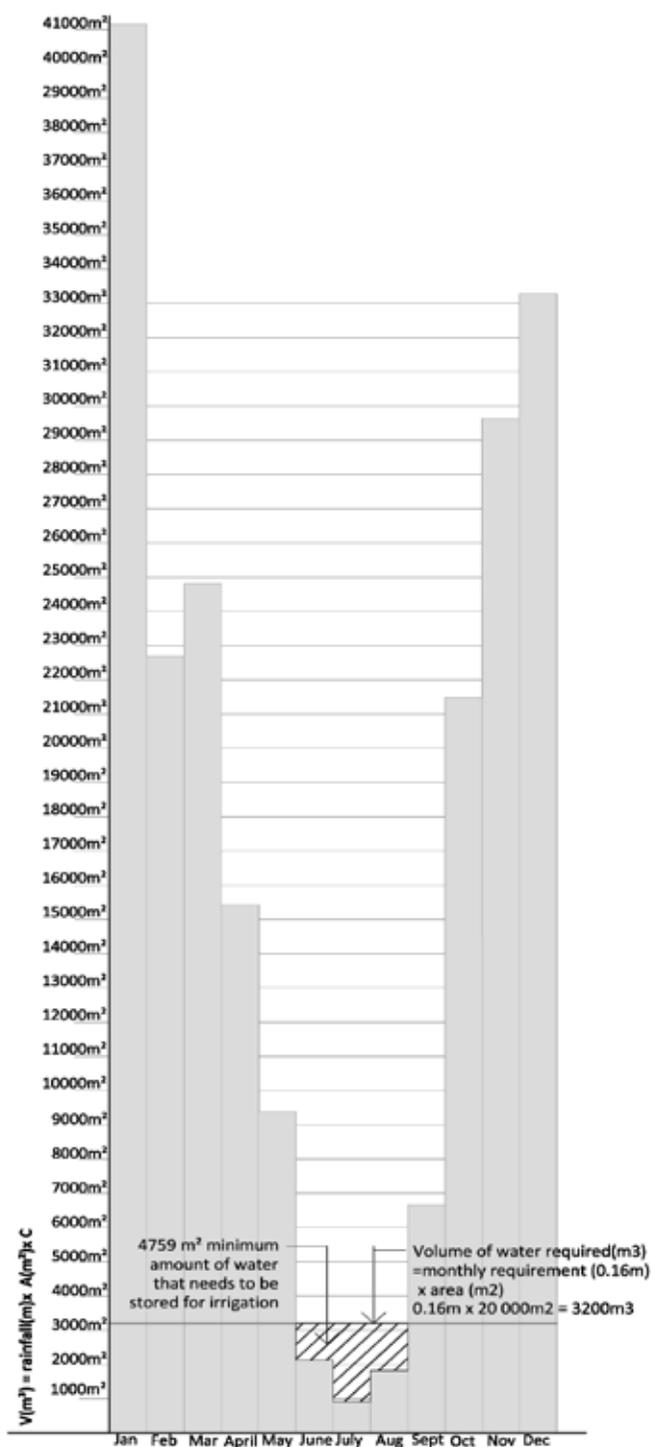
Fig. 9.54: Storm water management plan with catchment area and retention dams (Author, 2009).

Fig. 9.55 (opposite page): Table illustrating the rational method of determining peak flow and determining the capacity of Retention dam 1 (Author, 2009).



The Rational method to determine peak discharge					
		Q=C.It.A			
Catchment area (m <sup>2</sup> )		735146			
Length of the longest channel (m)		1370			
Elevation difference (m)		154			
Time of concentration (hours) from table		0.175			
Time of concentration (seconds) Tc		630			
Rainfall region		summer			
Average annual rainfall for pretoria(mm)		673			
Area to be irrigated (m <sup>2</sup> )		20000			
Irrigation needed for cut flowers (m)		0.16			
	Rainfall intensity m/sec (I)		Depth of precipitation(m)from table		
	I=Depth of precipitation/Tc				
2 year	4.7619E-06		0.003		
5 year	3.1746E-05		0.02		
10 year	3.80952E-05		0.024		
20 year	4.44444E-05		0.028		
50 year	5.55556E-05		0.035		
100 year	6.34921E-05		0.04		
Runoff coefficient ( C )					
	Area m	% of total	Coefficient ( C )	% x Coefficient	
Grassland (steep)	510324	0.694180476	0.45	0.312381214	
Lawn	131494	0.178867871	0.08	0.01430943	
Cultivated land	20000	0.02720548	0.5	0.01360274	
streets and pavements tennis netball	30366	0.041306081	0.8	0.033044865	
Roofs	30065	0.040896638	0.9	0.036806974	
lawn sport fields	12897	0.017543454	0.08	0.001403476	
Total				0.411548699	
	Peak discharge Q=C.A.I (m <sup>3</sup> /sec)				
2jaar	1.440706571				
5jaar	9.604710476				
10jaar	11.52565257				
20jaar	13.44659467				
50jaar	16.80824333				
100jaar	19.20942095				
Budget for retention dam (refer to graph)					
Month	Monthly rainfall (m)	In V(m <sup>3</sup> ) = rainfall(m)x A(m <sup>2</sup> )x C	Out Flowers need 0.16m/month V(m <sup>3</sup> )=0.16(m)xA irrigated(m <sup>2</sup> )	Total	
January	0.136	41146.57968	3200	37946.57968	
February	0.075	22691.1285	3200	19491.1285	
March	0.082	24808.96716	3200	21608.96716	
April	0.051	15429.96738	3200	12229.96738	
May	0.031	9378.99978	3200	6178.99978	
June	0.007	2117.83866	3200	-1082.16134	
July	0.003	907.64514	3200	-2292.35486	
August	0.006	1815.29028	3200	-1384.70972	
September	0.022	6656.06436	3200	3456.06436	
October	0.071	21480.93498	3200	18280.93498	
November	0.098	29649.74124	3200	26449.74124	
December	0.11	33280.3218	3200	30080.3218	
Total		209363.479	38400		
Minimum amount to be stored for irrigation (m <sup>3</sup> ) from graph	4759				
Total runoff from site	209363.479				
Depth of proposed retention dam (m)	4.5				
Area of proposed dam(m <sup>2</sup> )	7183				
Volume of water in proposed dam (m <sup>3</sup> )	32323.5				

Fig. 9.56: Graph indicating the volume of run-off per month from the catchment area and the required volume of water needed for irrigating 2Ha (Author, 2009).



Graph indicating the volume of runoff per month from the catchment area and the required volume of water needed for irrigation

The graph shows that far more water will be captured from the catchment area than needed for irrigation purposes. The dam will therefore be designed to accommodate more water than needed for irrigation purposes and will be full throughout the year, adding aesthetic value.

Water will be extracted from the retention dam to the pump room (Fig. 9.59) where it will be filtered and pumped to the irrigation control room (Fig. 9.58) closer to the flower fields.

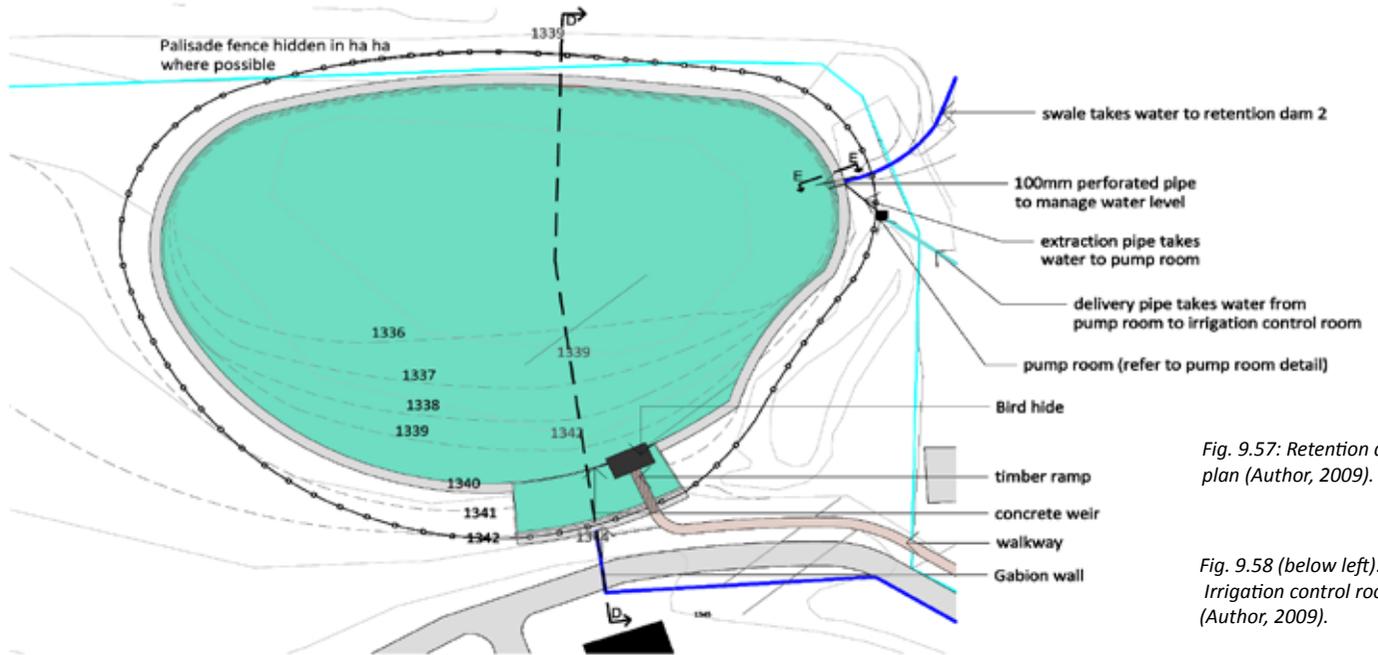


Fig. 9.57: Retention dam 1 plan (Author, 2009).

Fig. 9.58 (below left): Irrigation control room plan (Author, 2009).

Fig. 9.59 (below right): Section through pump room (Author, 2009).

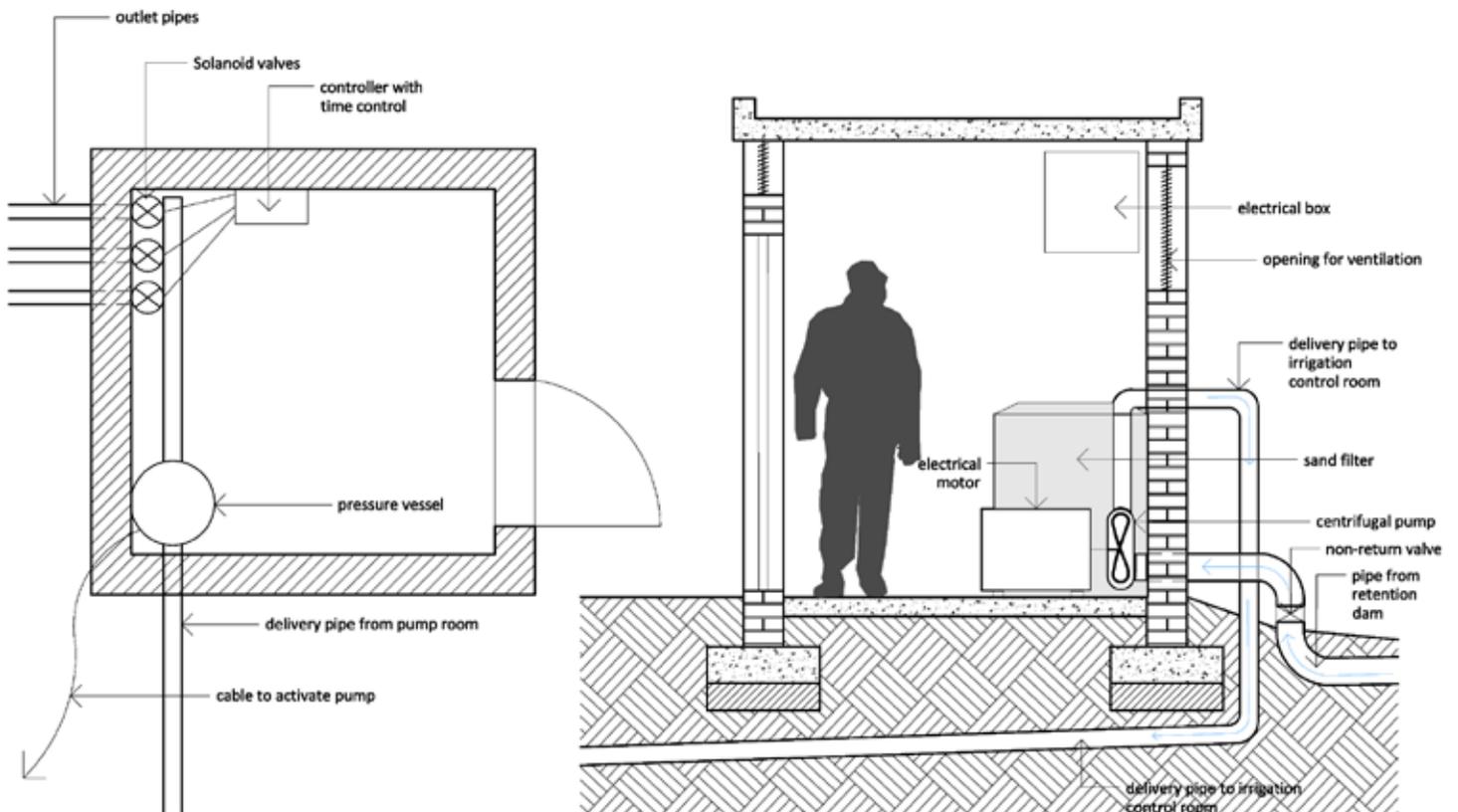
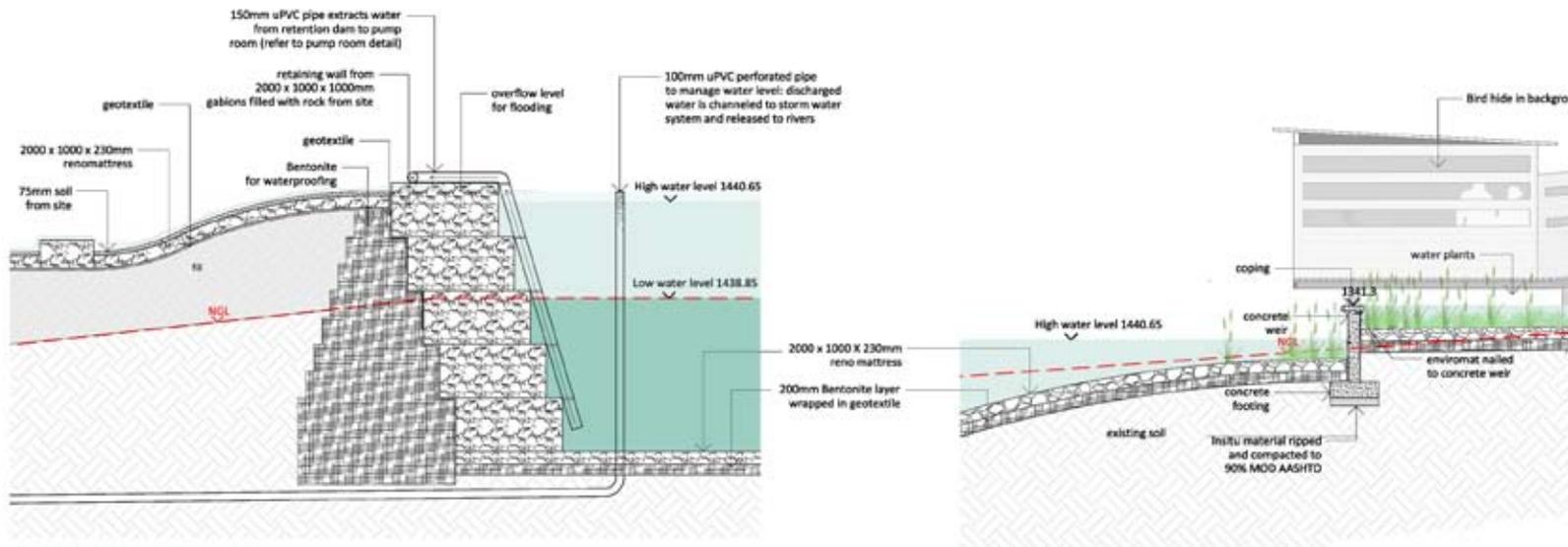


Fig. 9.60: Retention dam outlets and retaining wall  
(Author, 2009).



SECTION E-E 1:50 retention dam outlets at retaining wall

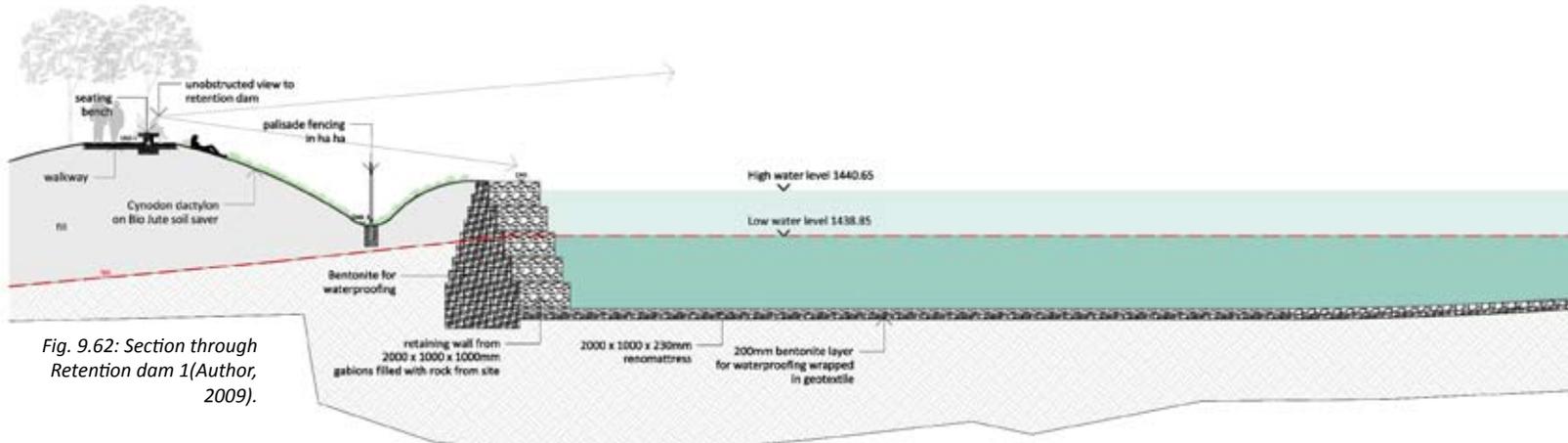
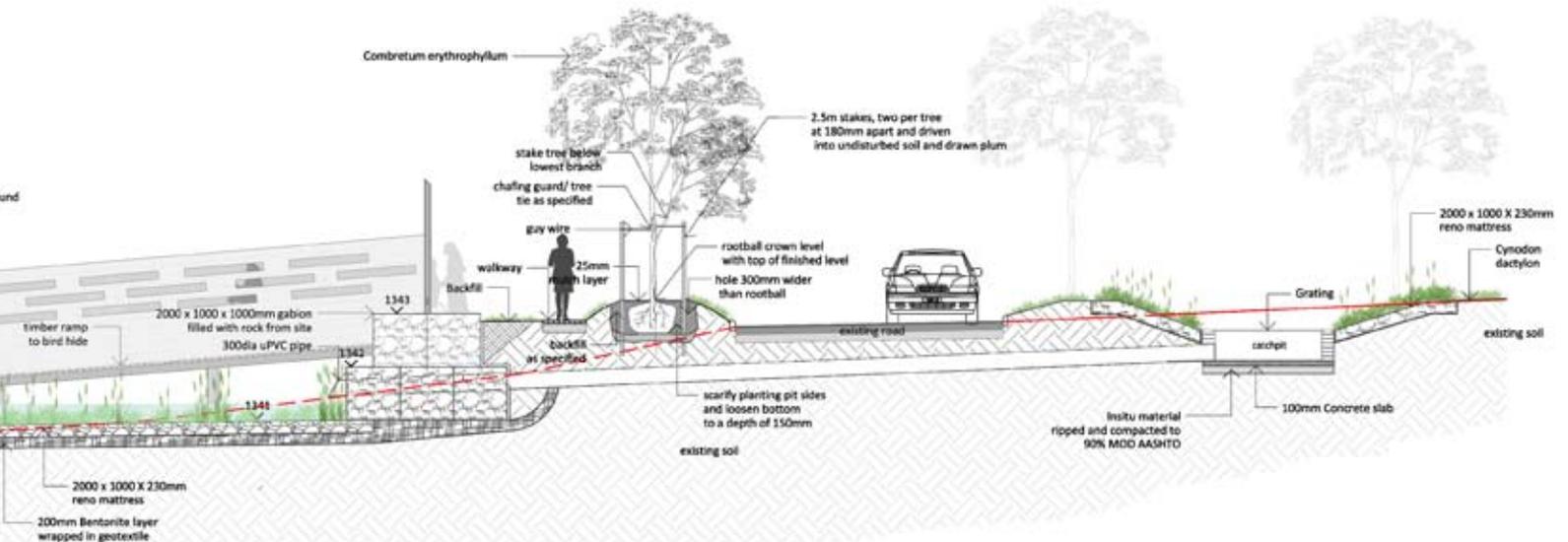
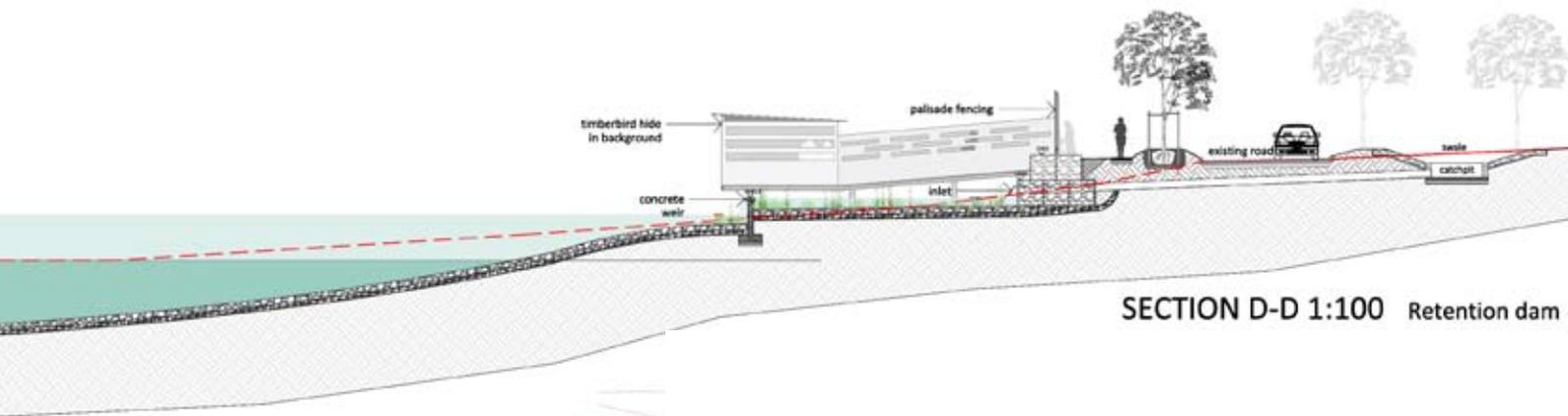


Fig. 9.62: Section through  
Retention dam 1(Author,  
2009).

Fig. 9.61: Retention dam inlet with bird hide in background (Author, 2009).



SECTION D-Da 1:50 retention dam inlet with bird hide



SECTION D-D 1:100 Retention dam



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