



4. LITERATURE EVALUATION

4.1 Introduction

In Chapter 1 the spatial problems associated with the study area were discussed. It was ascertained that the area is characterised by inaccessibility. This problem was divided into three sub-problems namely: under-utilised space, illegibility and lack of circulation control.

In Chapter 3, attributes of the physical environment as well as the needs of the social component regarding circulation control, legibility and utilisation of space were described. The users of the systems and spaces are equally important in defining both problems and opportunities. The study area is therefore defined by physical and bio-physical attributes, but it is characterised by a social component.

It is evident that the study area is frequented by a variety of users of all ages, backgrounds, cultures, education levels and even physical capabilities. It is important to investigate how improving the three sub-problems will influence the social component of this 'system' and its interaction within its setting or environment.

A literature evaluation of experiential landscapes and restorative benefit aims to improve the understanding of what could be an appropriate environment within, the context of the Hospital Hill.

4.2 Public Health Environment

The social-cultural component was divided into three user groups: pedestrians (including cyclists, joggers, traders and patients being transported by golf carts), vehicular traffic (private vehicles, taxis, buses, delivery trucks and ambulances) and transitional movement. It is necessary to determine characteristics of an environment that would be beneficial for interaction of the three user groups (social-cultural component). However, addressing the physical (spatial) needs of the users as identified in Chapter 3, is still no guarantee that all the different user sub-groups will regard the intervention as an environment which is favourable to their needs. To address cross-group and individual differences that might occur, the human environment is a very important aspect which must be considered.

"It is widely accepted by person-environmental theorists that once the most basic of Maslow's hierarchical needs have been met, the human aspects of the environment play a more

significant role in the elicitation of behaviour than the physical ones." (Moos 1987 in Griffin 1990)

This means that once the biological needs, the needs for safety and the need for love and belonging has been successfully achieved, the individual will aspire to improvement of status/self esteem . Then finally, on level 5 of Maslow's hierarchy, the individual would strive toward *actualisation*. The characteristics of the environment within which the social component (and by implication the individual) interacts, can influence the realisation of such needs, and is subsequently of vital importance to designers. As stated in the introduction, it is after all the duty of landscape architects to create meaningful landscapes (environments) for the pleasurable experience of humans. Such experiences could assist individuals in their quest for actualisation.

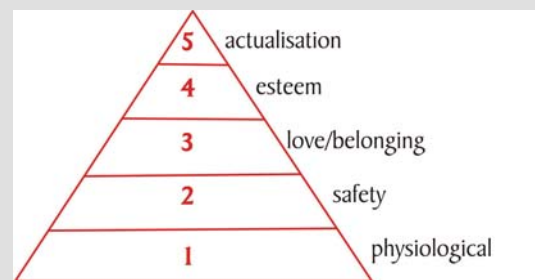


Fig. 4.1: Maslow's hierarchy of needs (Maslow, A.H (1943, Fig 7)

In their research on "Experiential Landscapes", Thwaites and Simkins (2007) found that social context has an important influence on the manner in which activity is oriented. Human activity is a response to a continuous exchange between individual motive and opportunities provided by the wider environment, which consists of physical and social aspects.

It is virtually impossible for the designer to determine what a space might mean to any specific individual at any specific time and to design accordingly. A more practical approach would be to determine categories of experience that are necessary for sustaining human well-being in general, and then to design for opportunities of contemplation that could lead to place making and actualisation. Three theories will be investigated to compile a layered system from which clues indicating how to address the interface between the physical and social environment at the Hospital Hill, can be gained. This will then be used in Chapter 6 to explore possibilities for individual place making and aspirations toward actualisation.



4.3 The Experiential Environment

The first theory which will be investigated is that of “Experiential Landscapes” researched by Thwaites and Simkins (2007). This theory is based on the analysis of the way in which people experience outdoor spaces within their everyday environment. In theory a person pays less attention to surroundings that they are not intentionally visiting, while spaces that read strongly to people who are used to them, will inevitably be even more legible to visitors. The theory is specifically aimed at places where the individual did not make a, and thus it finds particular application at the Hospital Hill.

Thwaites and Simkins’ investigation of CDTA ((Centre, Direction, Transition and Area), 2007) is considered a very viable way to analyse the experiential qualities of the areas, where both pedestrian and vehicular traffic occur. This theory is regarded as a set of parameters against which experiential qualities of the principal lines of movement can be measured to achieve strong enough qualities to guide both regulars and visitors, as well as pedestrian and vehicular users.

The three anticipated lines of movement that were identified for pedestrians, vehicles and transitional spaces in Chapter 3 were considered as journeys (refer to **Fig. 3.13**). They were evaluated at selected points in terms of spatial and experiential dimensions of CDTA to determine spatial strengths and weaknesses regarding the existence of:

- Centre
 - Social imageability
 - Social interaction
 - Restorative benefit
- Direction
 - View
 - Movement
- Transition
 - Threshold
 - Segment
 - Corridor
 - Ephemeral
- Area
 - Thematic continuity

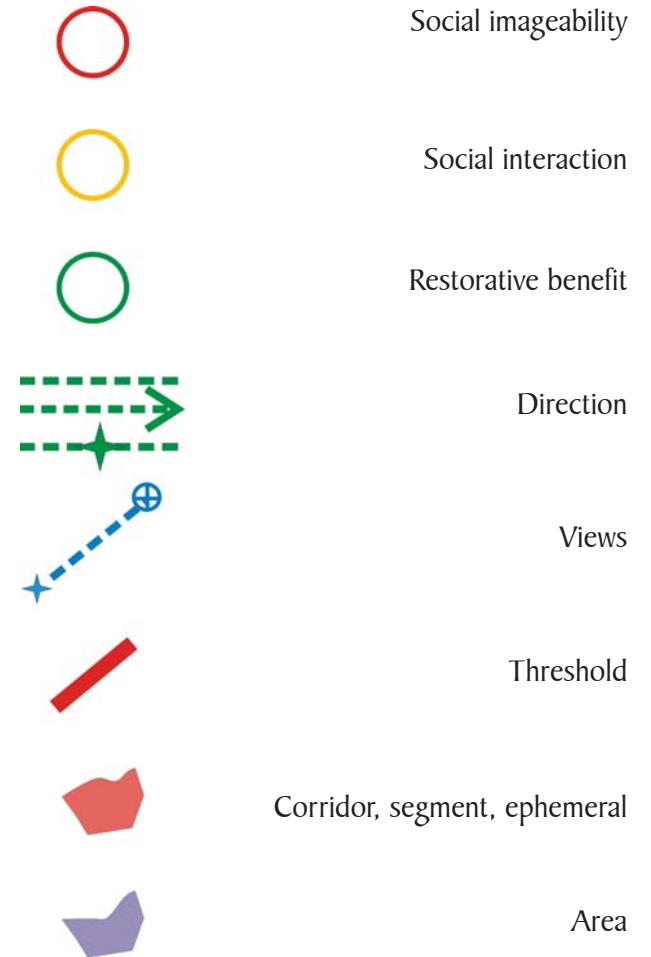


Fig. 4.2: Experiential Landscape Theory. (Thwaites, Simkins, 2007: Plate 4)

Although this approach is dependent on the personal frame of reference of the analyst, as well as the scale (on a smaller scale, a centre could for example be composed of areas, transitions and other centres), it gives valuable guidance in improving the existing environments in terms of their legibility, circulation efficiency and how space can be re-claimed. It is of course inevitable that visitors and regulars can have completely different conceptions of the same spaces; due to the varied utilisation of these spaces by the different groups.

The challenge lies in finding experiential qualities in all spaces which will guide users in terms of circulation through a series of legible locational, directional and transitional spaces. This creates the prospect of individual spaces conveying meaning to the individual and becoming a place that holds the potential for aspiring toward actualisation. both of these prospects will occur at the Hospital Hill, which in essence is an urban environment.

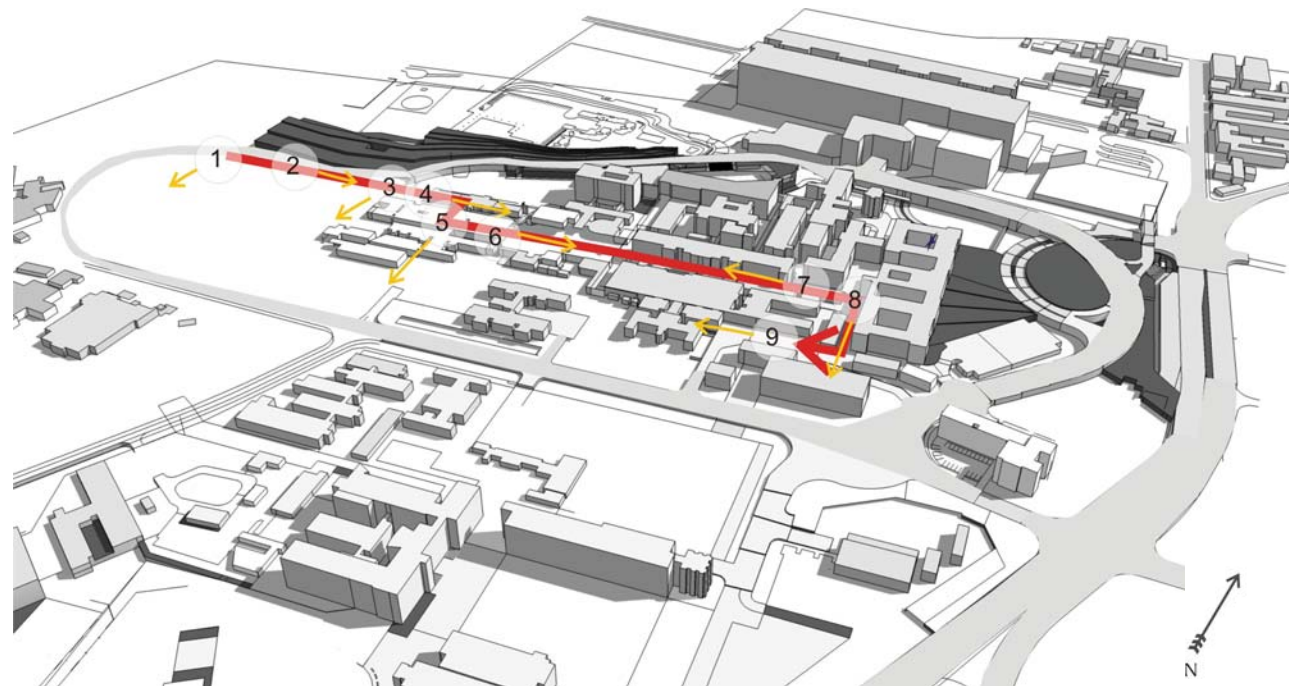


Fig. 4.3: Experiential Journey 3. (Author, 2008)

The following range of sketches proposes a sequential depiction of the secondary line of movement – journey number 3. The journey starts at the newly constructed parking areas at the western extent of the site and leads towards the arcade, through a series of directional and locational interventions (secondary line of

movement). The secondary line of movement bisects the site in an east – west direction and terminates at the brear of the Curlitzia residence. There it opens up into a green space at the trauma unit.



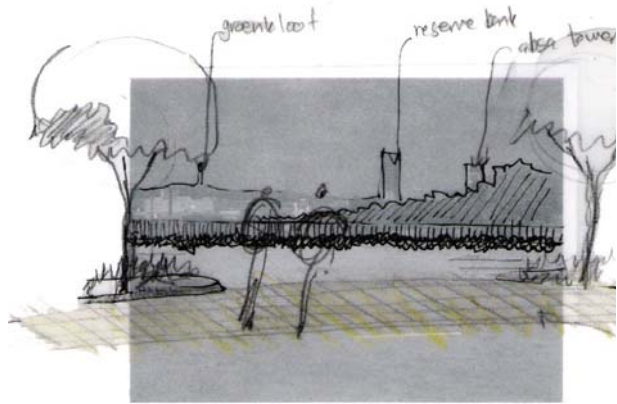


Fig. 4.4: Journey 3-1. View from proposed parking towards CBD.
(Author, 2008)

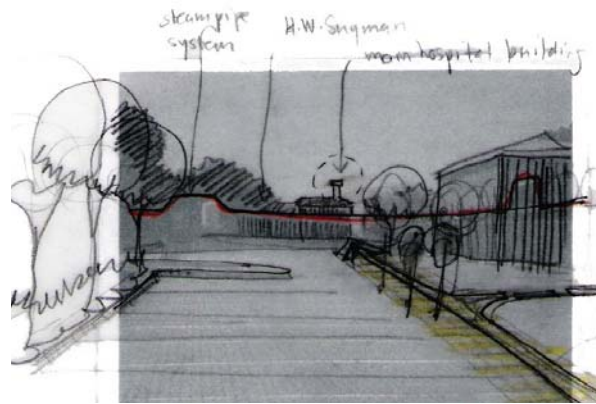


Fig. 4.5: Journey 3-2. View from proposed parking towards T.R.H.
(Author, 2008)

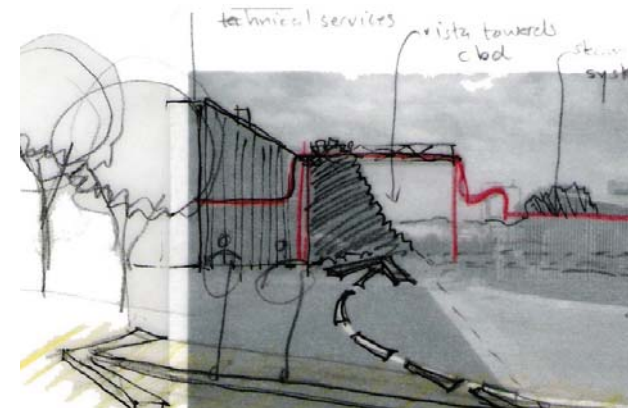
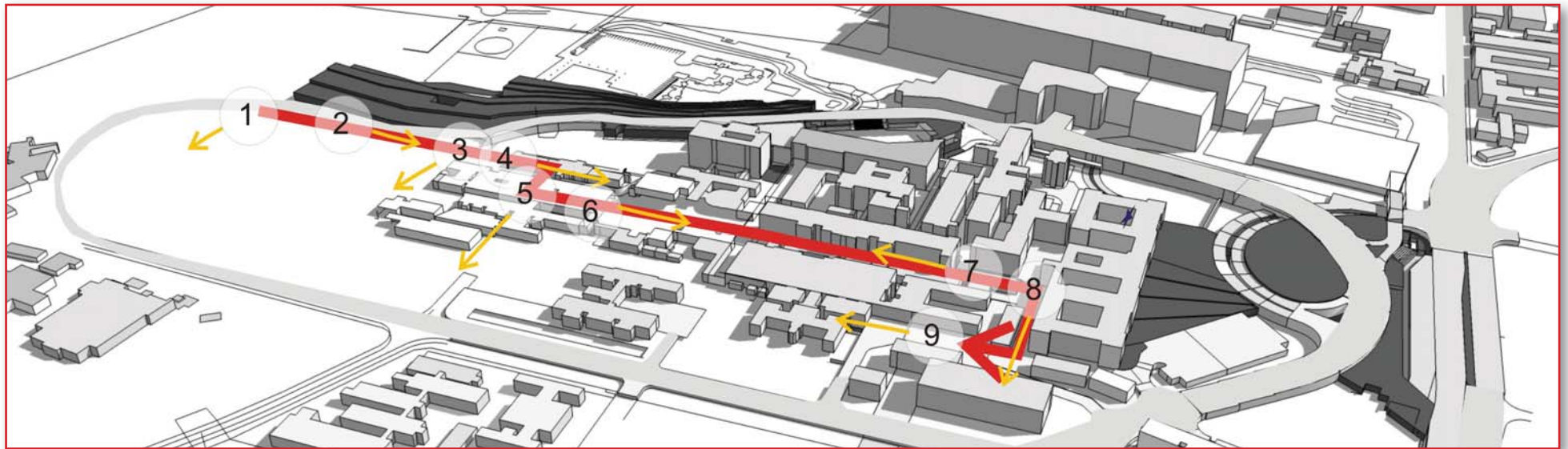


Fig. 4.6: Journey 3-3. Journey from parking towards technical services
(Author, 2008)



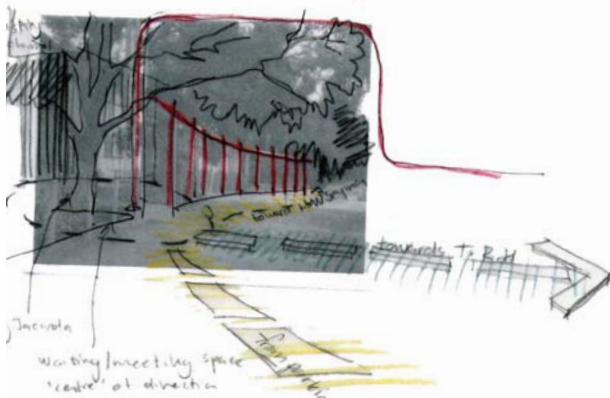


Fig. 4.7: Journey 3-4. View towards Dennekruijn and gathering space at start of secondary line of movement. (Author, 2008)

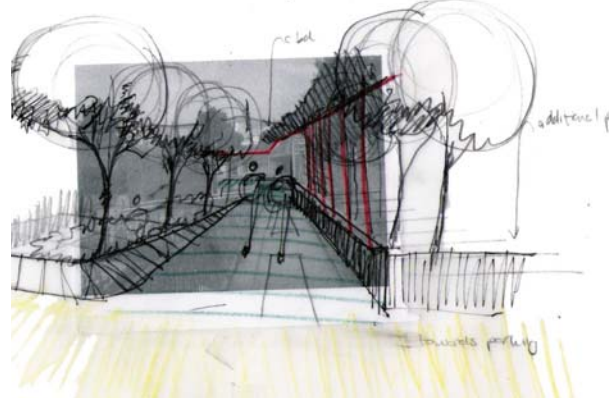


Fig. 4.8: Journey 3-5. View from gathering space through secondary line of movement, towards the CBD. (Author, 2008)

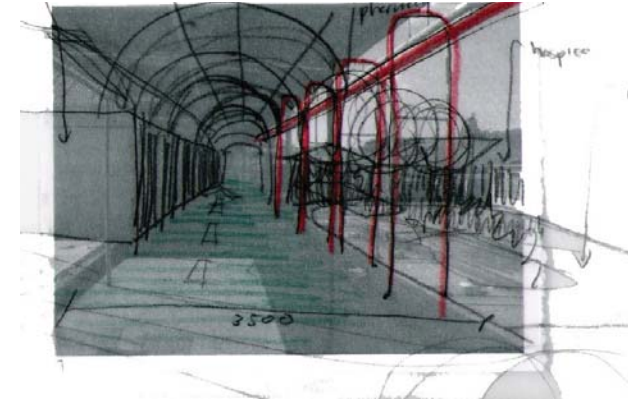


Fig. 4.9: Journey 3-6. View through secondary line of movement towards the east. (Author, 2008)

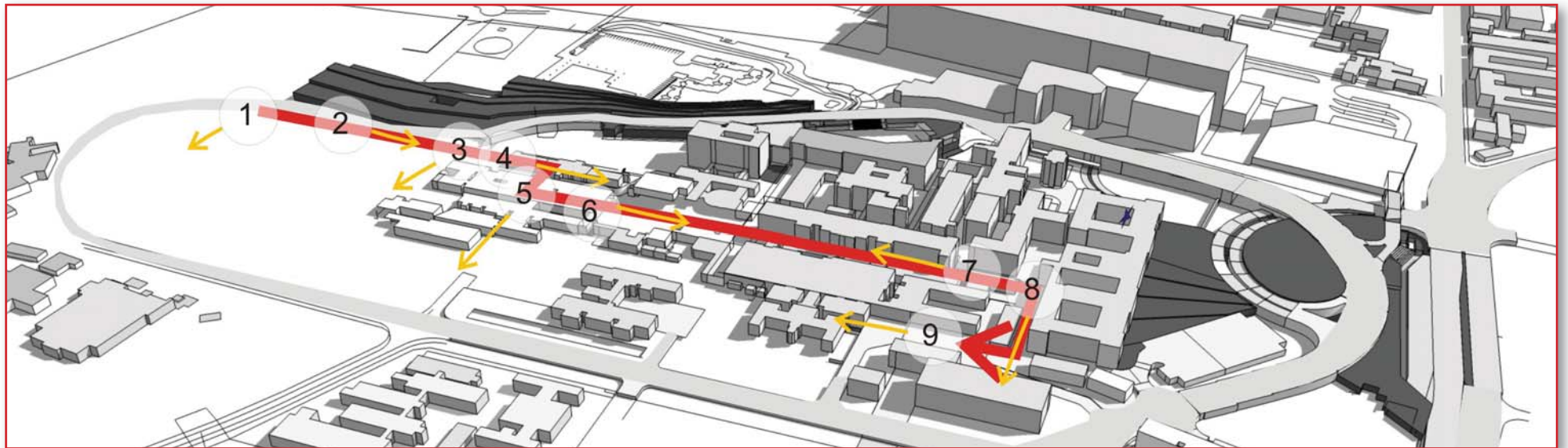




Fig. 4.10: Journey 3-8. View from secondary line of movement towards Outpatients clinic and Trauma Unit. (Author, 2008)



Fig. 4.11: Journey 3-9. View from parking area towards Outpatient's building. (Author, 2008)

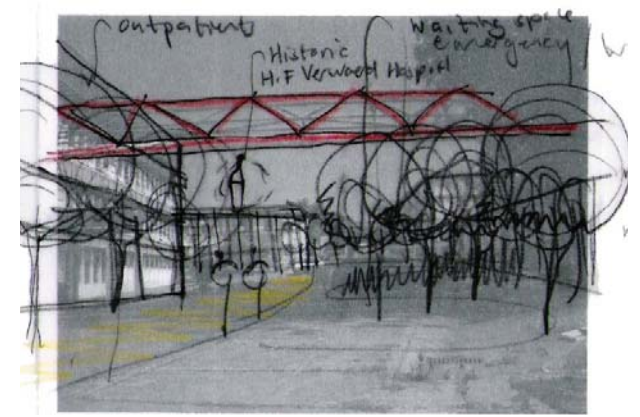
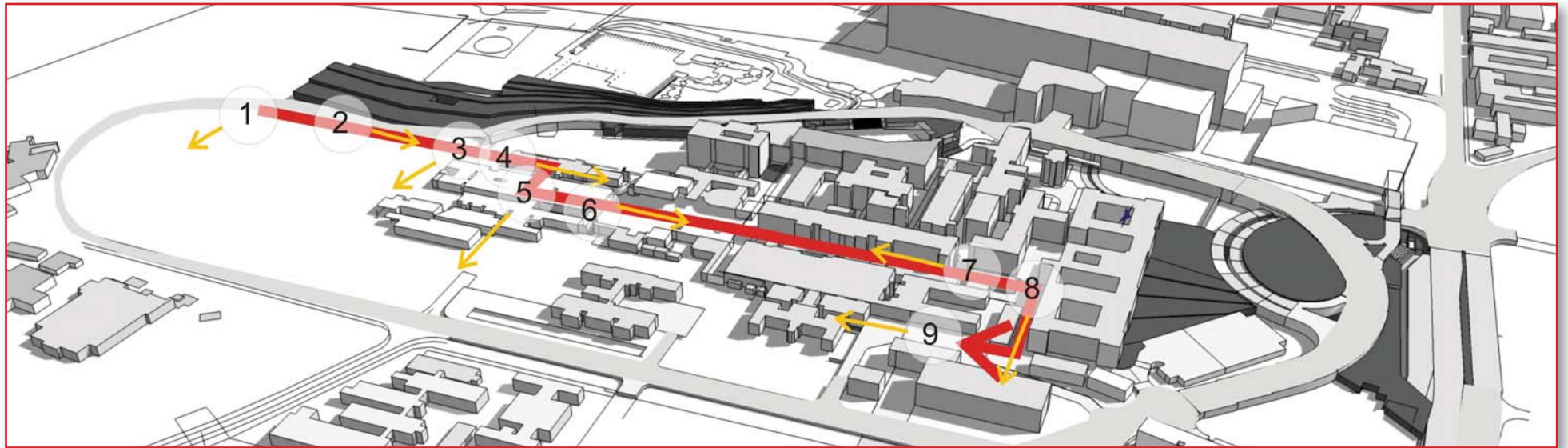


Fig. 4.12: Journey 3-11. View from proposed parking towards Trauma Unit (Author, 2008)



4.4 The Urban Environment and Public Health

Urbanisation is a reality, and in most cases, living in urban areas is the only option we have to be able to share in employment of resources. As described in Chapter 3, the study area is located in a node comprising of a variety of amenities, including marginal urban areas, residential, commercial and governmental precincts. Health and educational institutions define the character of the Hospital Hill. However, it is glaringly evident that the visual character of the Precinct is scarcely one which promotes feelings of security or improvement of health. Therefore, the second theory that will be investigated is that of restorative benefit. The aim is to add another layer to the basic experiential landscape, which will increase the prospect of acquired meaning to the individual.

Research by Berto (2005) has proven that people within urban environments are subject to attention depletion and consequently have to be restored to ensure optimal performance within the urban system. The introduction of spaces that aid the prospect of “restoration” from “normal, recurring needs for restoration” (Hartig, 2004) seems to be a valuable option in improving the

relationship between the individual and the urban environment. This opens up the range of application of restorative landscapes within a variety of settings. Benefits range from attention restoration and recovery from mental fatigue (Berto, 2005), to improvement of public health (Hartig, 2004; Berto 2005). Crisis rehabilitation of people who “are obliged to spend time confined in hospitals or other types of healthcare facilities.” (Ulrich, 1984), was also investigated. Furthermore, it has been stated that residing in a natural environment positively benefits people greatly affected by a crisis (the azimuth of a serious condition) more than people who are less affected ;and having contact with other people benefits people greatly affected by a crisis more than people who are less affected (Ottoson et al, 2008).

An important characteristic of restorative environments as Hartig (2004) stresses, is that no single environment can be restorative to all people at all times. He goes on to explain that restorative benefit is a process that can eventually be completed and that any benefit gained after equilibrium has been reached, may still be beneficial, but are not considered to be restorative.

The extent of restoration and the hypothetical application at the Hospital Hill, is based on a theory of restorative environments, as proposed by Hartig (2004). This theory emphasises the necessity to determine the characteristics of three components of restoration. Thus an argument for “public health” will be pursued from the literature..

The discussion and explanation of theory will subsequently be based on these three questions:

1. *The diminished capability that the individual is being restored from.*
2. *The process through which the depleted resource becomes restored.*
3. *The character of the environment that is promoting the restorative process.*

The first two of these questions denote the structuring of spatial hierarchy and the connection of spaces within the urban fabric. The third question, (through further investigation,) will investigate the potential of such landscapes for promoting “actualisation”, as described by Maslow, (1943) within a specific place.



4.5 The Hospital Hill - A need for restorative environment

As mentioned previously restorative environments can be applied to a variety of situations. It is expected that application of restorative benefit at the Hospital Hill will manifest as either one, or a combination of three investigations:

- Attention restoration
- Public health
- Crisis rehabilitation

The focus of the investigation for the educational facilities will fall on attention restoration as it is anticipated that they might benefit from it. The investigation of general public health in the transitional area could also lead to the improvement thereof. For the Hospitals, application of crisis rehabilitation will be investigated as that is to their advantage.

4.5.1 Educational facilities

"While the physical character and quality of a campus is defined by both its buildings and its open space, it is the open space which has the greatest potential for unifying and equalizing the shared space of the campus. It can promote the sense of

community derived from actively shared space, and provide for the enriching experiences of both planned and chance encounter." (Penn University guidelines, 1997)

This description of what campus outdoor space should be like, serves as a basis from which to argue for the additional benefits which could be achieved by incorporating attention restoration principles into the Hospital Hill open space framework.

1. *What is the diminished capability that the individual is being restored from?*

General fatigue caused by the urban environment and prolonged periods of concentration. In literature, distinction is made between voluntary and involuntary attention. Directed attention is tiring because, in addition to focusing on the object of attention, one has to ignore distractions as well.

2. *The process through which the depleted resource becomes restored.*

Attention restoration provides ways by which the capacity of attention can be

recharged. Kaplan (1995) states that involuntary attention (fascination) is effortless and will allow the attentional system to recover. Furthermore, a sense of "being away" (Kaplan & Kaplan, 1989) which involves escaping from unwanted distractions, could facilitate the process of restoration (Hunziker et al., 2007). Simonic (2006) states that an urban space could become a restorative environment if it is *"designed as a complex, coherent landscape in which users would already visually recognise potential for the variety of uses, related to their contact with natural elements."*

4.5.2 Transitional spaces

“Moving elements in a city, and in particular people and their activities, are as important as the stationary physical parts. We are not simply observers of this spectacle, but are ourselves a part of it ... Most often, our perception of the city is not sustained, but rather partial, fragmentary, mixed with other concerns. Nearly every sense is in operation, and the image is a composite of them all.” (Lynch, 1960: 2 in Miles. 2004)

Individuals representing almost all of the user groups, are present at any one time in the transitional spaces. The pace of movement is urgent, and the individual is eager to take in as much information as possible to aid speedy decision-making. However, in the same areas, one would always find individuals who are slowing down, waiting and observing. They are the spectators of the activity. The principles of the experiential landscape are primarily aimed at improving the experience of movement through a space, especially a transitional space. The theories of restorative benefit provide a valuable basis from which to create a pleasurable experience for the spectators and the individuals who choose to momentarily be remote, but not removed from

the urban spectacle. If such a space is always close, the principles of restorative benefit for the improvement of public health could prove very valuable.

1. *What is the diminished capability that the individual is being restored from?*

The diminished capability is general fatigue caused by interaction within the urban environment. This includes diminished attention, physical weariness and even mental fatigue.

2. *The process through which the depleted resource becomes restored?*

Although it can be argued that general open space might be adequately beneficial to improve these capabilities, it is anticipated that restorative principles could be applied to a greater advantage. The individual that seeks a sense of “being away” within a transitional area is already susceptible to soft fascination by the mere act of choosing to “slow down” within the boundaries of an area where he/she would still be able to observe the activity. Ottoson (2008) also claimed that the restorative benefits of having contact with other people during crisis rehabilitation are more beneficial to the patient than withholding contact. Could this also be applied as a principle in public health and attention restoration?



4.5.3 Medical facilities

“The individual.... who sits in an air-conditioned or heated room and gazes outdoors through a double-paned window experiences the outside world almost entirely in visual terms.” (Ulrich, 1984)

Although medical facilities are associated with hospital staff who could find attention restoration particularly beneficial, the needs of patients who are recovering from a crisis are even more susceptible to improvement by application of restorative principles.

1. *What is the diminished capability that the individual is being restored from?*

Diminished physical abilities, mental fatigue, stress, anxiety and exhaustion.

2. *What is the process through which the depleted resource becomes restored?*

Ottoson (2008) found that regular access to natural environments could act as a shock absorber should a crisis occur. Furthermore, they found that social

interaction had a positive affect on crisis rehabilitation. Ulrich (1984) states that the visual impact of the environment itself may convey safety or danger. Therefore regular access to a legible environment, which is high in both complexity and coherence, inducing soft fascination and conveying a feeling of safety would probably have a restorative benefit in crisis rehabilitation. The effect will be greater if positive interaction with the social component could take place.



4.6 Characteristics of the restorative environment

The third question Hunziker et al. (2007) posed, concerning the character of the restorative environment, will now be investigated. Although all people do not prefer the same types of environments, and it is obvious that cultural differences will have an influence on preferred types of environments ; we aim to compile a set of parameters for what a preferred environment for restorative benefit, within the context of Hospital Hill should be like.

Thwaites & Simkins (2007) explored the potential ability of a type of *centre* for potential restoration. They found that restorative benefit could be gained if the centre was separated from distraction; provided comfort, shelter and provision for rest. The effect was improved by the presence of nature in the form of trees and natural materials. Finally, stimulating features that encourage psychological engagement increases the benefit gained by the restorative centre.

Hunziker et al. (1997) explain that restorative benefit is a relationship between “extent, fascination, compatibility and being away”. Extent

relies on the relationship between perceptual and conceptual elements within a frame of reference, which could exist in the conceptual or imaginary domain. They therefore claim that “*extent can be experienced through intellectual activities, and not only in physical environments* and that compatibility “*exists in situations in which what the person wants to do matches with what the environment demands and supports*” (Hunziker et al., 2007).

However, the same authors also state that restorative potential evident in a place varies from one person to another; and also over time for any one person. Therefore no single environment can be restorative to the same extent to all people at all times. Furthermore, Kumar (2007) found that perception of the environment could be linked to behaviour of the user within the environment. It will therefore be virtually impossible to design spaces that have mono-restorative functions, i.e. restoring for example only trauma patients and no other. Consequently it is argued that the *availability* of a space with properties that could prove restorative to an individual is more important than specific guidelines for attention restoration, public health or trauma rehabilitation. Applied to the Hospital Hill the following can be claimed:



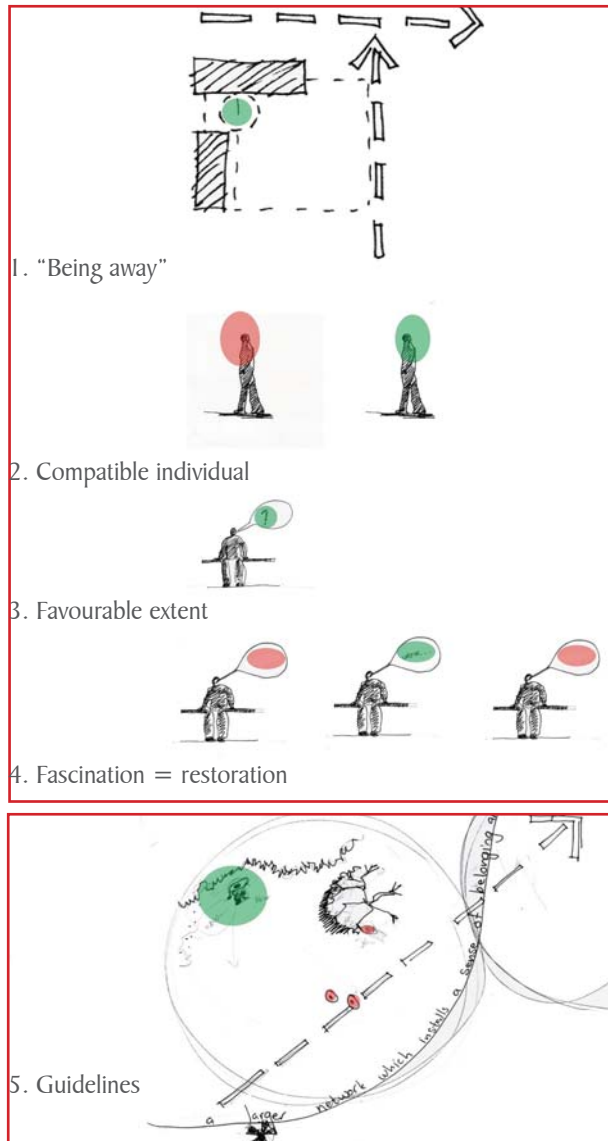


Fig. 4.13: Guidelines for public health (Author, 2008)

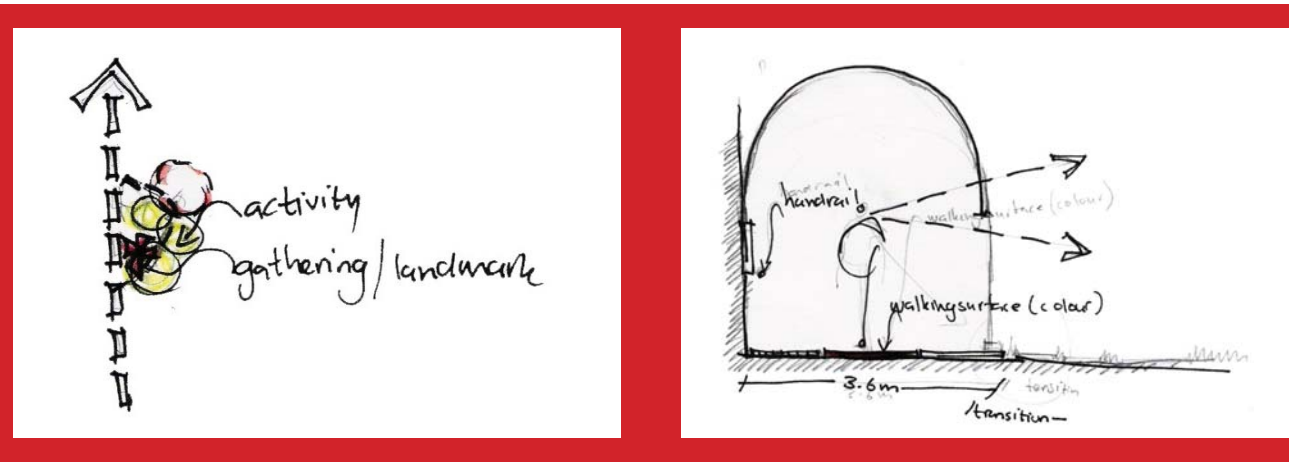
- A space should be available, nearby, removed but not remote, where a feeling of 'being away' can be achieved.
- Because the space is not inherently restorative it could only initiate benefit when a *compatible* individual enters the space.
- The experience of the compatible individual can be intensified if the *extent* of the environment is favourable to the individual. If the space or frame of reference contains physical or conceptual objects that will induce *fascination*, restorative benefit has been achieved.

All these factors are dependent on the frame of reference of the individual. However, the probability of inducing restoration and the degree of restoration can be intensified by the design if:

- Specific attention is paid to enhancing ephemeral qualities
- The environment is designed to be safe and accessible
- Comfort, shelter and provision for rest are provided
- Provision is made for chance social encounters and conversation

- The environment is rich in both complexity and coherence
- The environment is part of a larger network of spaces that induce a sense of belonging and orientation. The network and the specific space should be legible.
- Features that aid legibility are introduced, for example landmarks or nodes within the space. These could, if carefully designed, aid fascination and intellectual activities.

Referring back to the pedestrian and vehicular user groups, it is required to compile a set of parameters that will address restorative benefit for these groups. It is expected that the vehicular user will not gain much benefit other than visual benefit from restorative application. On the other hand the pedestrian group (consisting of a variety of sub-groups), will benefit greatly by the development of environments that are restorative in essence; whereas the individual could gain attention restoration, general regeneration in the application of public health, as well as crisis rehabilitation. From the principles listed for character of restorative environment, it was determined that the restorative spaces should be incorporated into a network of spaces. This network will guide movement and circulation, but the individual has the option of receding into a restorative space until he is restored enough to move back into the line of movement.

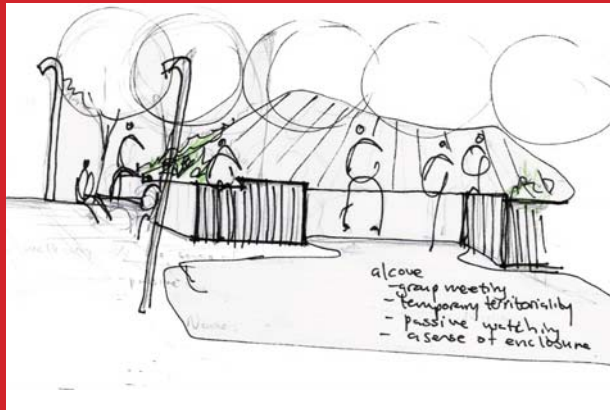


1. Activity pockets, alcoves

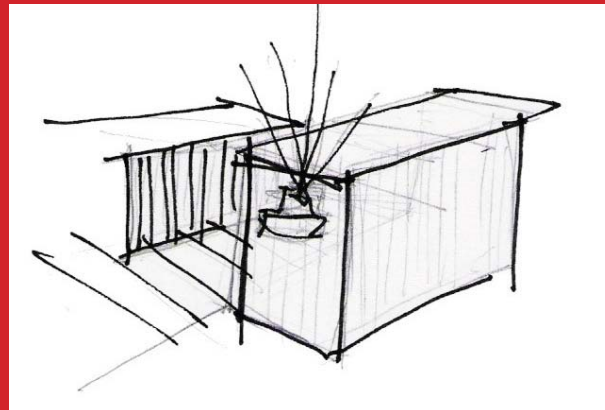
2. Arcade

Fig. 4.14: Design guidelines and patterns. (Alexander, 1975)

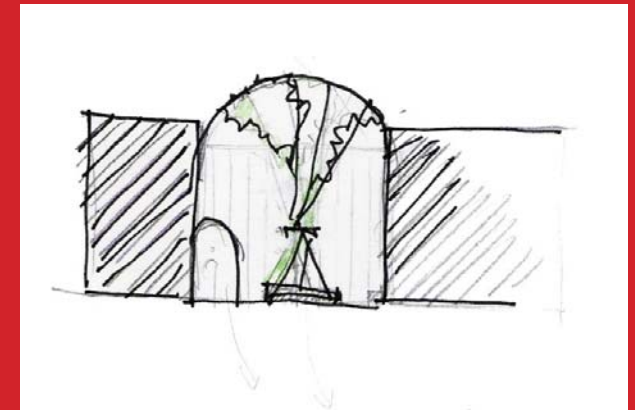




3. Meeting places



4. Roughly in the middle



5. A sense of enclosure

4.7 Restorative Open Space

The third theory that will be investigated is that of restorative open space (Thwaites et al., 2007). It is anticipated that a combination of the principles of experiential landscapes and restorative spaces, within a framework for restorative open space as described below, would be a viable method of incorporating a system for unification at the Hospital Hill.

“ ... spatial arrangement may offer potential to resurrect people’s connection with intuitively preferred forms and strengthen beneficial relations between human functioning and the spatial environment..”
(Thwaites et al., 2005)

Helleur (2001) in Thwaites et al. (2007) identified a wide range of specific properties and characteristics associated with restorative benefit. It was found that people benefit and respond positively to contact with the external environment when it fulfils their emotional, functional and behavioural needs, including the evolutionary, aesthetic and psychological dimensions to this. Helleur (2001) concluded that successful restorative urban settings are dependant on the implementation

of spatial networks which demonstrate consideration to issues of density, size and location.

Thwaites et al (2007) explored the possibilities of spatial configuration of human emotional fulfilment in urban open space, by proposing a conceptual framework for restorative urban open space, based on mosaics of linked and nested spaces woven into the urban fabric. The concept argues for fundamental properties of order as *“integrations of locational, directional and transitional spatial experience, which are present in the natural and cultural world and associated with human psychological benefit..”*
(Thwaites et al. 2005: 1)

Such a system of order within a network applied at the Hospital Hill will enhance the experiential qualities of the existing journeys that were identified in Chapter 3. A spatial hierarchy that varies in intensity of experience, but is always a recognizable unit, will strengthen the imageability of the Hospital Hill. It could also assist in alleviating circulation and legibility problems; while space could be reclaimed within locational spaces which could aid public health, within the larger network.

4.8 Application of Restorative Open Space to Hospital Hill

The axial lines of movement which were identified in Chapter 3 and analysed as journeys, will lead to the identification of spaces made up of combinations of centres, areas, direction and transition. These will be re-interpreted into a network of spaces consisting of directional, transitional and locational spaces. According to Thwaites et al., 2007 such an open space network should be evenly distributed on pedestrian routes, generally be contained and small in scale (15-20 x 30m) and located along places of interest. Although most of the restorative spaces in the context of the Hospital Hill will be located along the axial lines of movement, restorative spaces are required in other areas and at other institutions as well (these are not included in the site, but fall within the precinct). These spaces will be zoned in the urban framework, but will not be further elaborated on. Thwaites et al. (2005) also mentioned the occurrence of the individual space within a restorative framework. Individual spaces will be elaborated on in Chapter 6. and Chapter 7.



journeys

experiential attributes

restorative attributes

hierarchy of spaces

urban framework

restorative framework

guidelines for public health

individual places

