Exploring The Composition of Restorative Environments Conducive to Post Traumatic Report and Recovery Processes in Young Women.

Towards an Inner City Support Centre for Young Women in Durban

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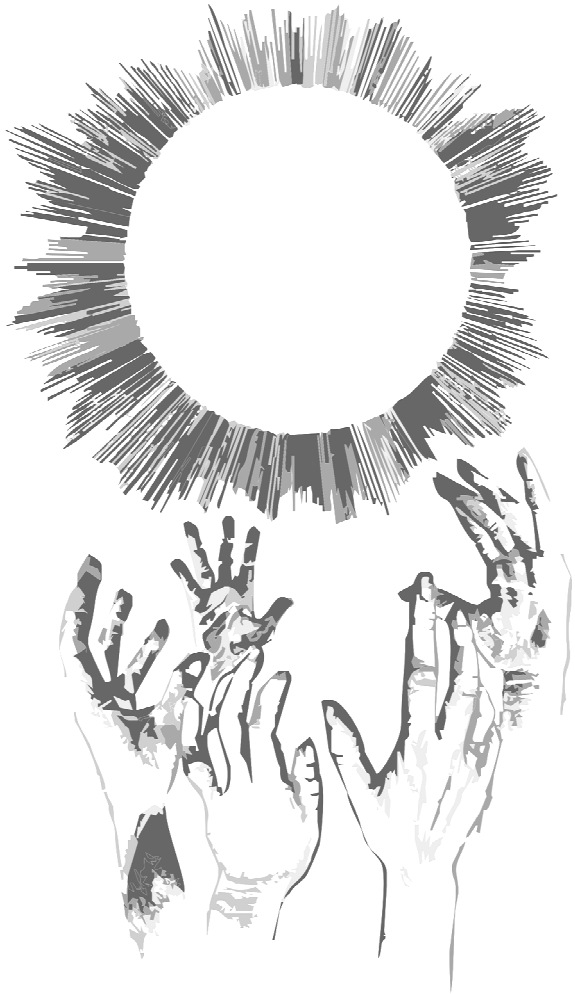

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COLLEGE OF HUMANITIES

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DEDICATION

This dissertation is dedicated to all the girls and young women whose voices have yet to be heard.

You are not alone.

ACKNOWLEDGEMENTS

To all the women who have shaped and supported the work in this dissertation:

- To my Mom, Ms Anne Eneman and my Aunt, Ms Corinne Bly - You are my safe haven and my inspiration. I owe you everything.

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- To all the wonderful friends and colleagues who have tried to keep me sane - I appreciate the effort. I'm not sure I like being sane though.

ABSTRACT

This dissertation argues that research in Restorative Environments should begin to analyse situations in which restoration is actively promoted to treat specific conditions. The trauma of rape, sexual assault and abuse has been explored in this dissertation as a negative precursor, which requires physical, psychological, mental, and social restoration. By applying an understanding of this trauma, and its inherent constructs, the existing frameworks of Stress Recovery Theory (SRT) and Attention Restoration Theory (ART) have been redefined to meet the needs of the victims. Using a feminist standpoint, and a constructivist-grounded methodology, an analysis of the existing literature, several precedent studies, architectural case studies, and a series of in-depth interviews with victims advocates from a Non Profit and Non Government organisation based at several local Police Stations, the Department of Social Development Offices, and the Thuthuzela Care Centres, revealed several themes which formed the overall framework of the research argument, and its subsequent conclusions:

(1) Refuge, in the form of a sense of safety and retreat are essential to disclosure. The integration of Perception Theory, particularly in terms of multi- sensory design, can create a sense of warmth and refuge in the built form.

(2) Reflection, in terms of instoration, and cognitive and aesthetic distraction, can facilitate victim self-regulation. The use of Biophilic design principles, and particularly fractals, can promote reflection within the built form.

(3) Reintegration, through a sense of belonging and normality promotes longer term recovery. The incorporation of the principles of Sense of Place can initiate longer term reintegration and restoration in the built form.

Furthermore, through the fieldwork component of the research, this dissertation has concluded that although the functional medico-legal aspects of hospital crisis care environments and police report environments in Durban are reported to be generally well considered, an understanding of these experiential themes of Refuge, Reflect and Reintegrate, are not typically incorporated into these environments. Additionally, as a means to support the existing environments for report and recovery in Durban, there are several Non Profit and Non Government Organisations who have set up their own support facilities to meet the various longer term legal, psychological and medical needs of the victims. Unfortunately, their lack of infrastructure, funding and environmental connection to formal first response environments, such as hospitals and police stations, have resulted in a disconnect between points of first disclosure and continued recovery. This dissertation has concluded that this impedes the recovery of the victims and arguably reduces the number of cases reported.

In the context of the ongoing stigma around cases of rape, sexual assault and abuse, the design of positive environments for tackling the layers of toxicity experienced by the victims- from the initial report stage, through the healing phases, and into the final stage of re-integration into society - is more important than ever. And as such, more research, and practical measures should be taken to understand how a single cohesive report and recovery environment can meet the many perceptions, experiences and needs of the victims - whether immediate or long term, physical or psychological, individual or group.

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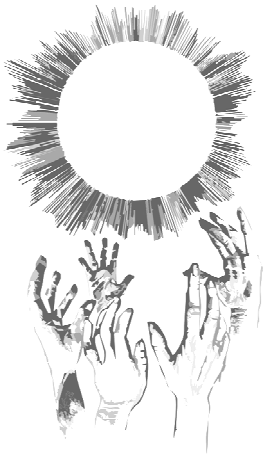


THE IMPORTANCE OF RESTORATIVE REPORT AND RECOVERY ENVIRONMENTS

1.1 BACKGROUND AND MOTIVATION OF THE STUDY

1.1.1 DISCUSSING THE PREVALENCE OF SEXUAL VIOLENCE IN SOUTH AFRICA

Recent statistics from the South African Police Services have suggested that every 35 seconds a woman in South Africa is sexually assaulted, or raped. (SAPS; 2009). Additional statistics from the National Institute for Crime Prevention and Rehabilitation (NICRO), estimated that only 20% of women report the case to the police annually (Robertson; 1998). As alarming as these statistics are, more shocking is the fact that one study found that over 40% of rape instances reported to the police, were for children under the age of 18 (RAPCAN; 2008), with even larger percentages remaining unreported due to lack of responsiveness from the medico-legal system (Jewkes et al; 2005).

Several authors have discussed the prevalence of sexual violence and underreporting, attempting to contextualise it, in order to understand it (Jewkes & Abrahams, 2002). A key point is the fact that South Africa has a history of sexual violence, arguably rooted in the insidious dehumanization imposed by the Apartheid regime, and the role of the Homelands in destroying family structures, and eroding male identities. This resulted in a socio-physical environment where men have learnt to express their shared 'masculine' wounds through violence - not only in the armed struggle, but also in domestic struggles, where the personal lives of men have become a battle ground for regaining power (Jewkes & Abrahams, 2002).

This premise is further supported by statistics which clearly reveal that the majority of rapists and offenders are known to the victims, with direct relatives and school teachers held accountable for 21% and 33% of sexual offenses, respectively (Jewkes & Abrahams, 2002). Furthermore, stereotypical views about male and female sexuality are often used to explain the frequency of sexual assault, and could explain why rape is perceived as socially sanctioned (Jewkes & Abrahams, 2002). In keeping with recent feminist research on rape, it has been posited that the ‘coercion of women is a manifestation of male dominance over women, an assertion of such dominance and an instrument in the establishment of dominant positions amongst other men’ (Jewkes & Abrahams, 2002: p.1240).

Unfortunately, this is not common to South Africa alone. A recent international report by UNICEF (2014) revealed that around 120 million girls - close to 1 in 10 - have been raped or sexually assaulted by the time they turn 20. Depicting data from 190 countries, the report urges governments, parents and experts from different fields to unite and confront this reality. The report clearly states that sexual violence, particularly against girls and young women, has far reaching consequences - in terms of physical, social and psychological development.

This situation is made all the more disturbing by research which suggests that sexual violence and rape are pervasively the most under-reported incidents of violent crime (Vetten, L; 1997 and Robertson; 1998; Nicholson and Jones, 2013). Despite the apparent prevalence of rape and sexual violence, most victims continue to leave the crime unreported due to the shame and secrecy that continues to accompany it, with victims of sexual abuse or rape often having to find ways to cope in isolation.

Many authors (Garbarino and Kostelny; 1992, Banyard, and Williams; 2007, Barringer, CE. 1992. Burgess; 1995, Brownmiller;1975, Vetten; 2000) further speculate that the explanation that so many incidents of rape go unreported to the police include:

- **a lack of access to services, counseling and chance of empowerment;**
- the personal psychological pain and disgrace of being exposed as a victim of rape;
- a fear of retaliation or intimidation by the perpetrator, who is often a member of the victim's family/ community;
- an inherent loss of trust in community and society as a whole;
- this is compounded by the fact that victims blame themselves or fear that family, friends or law enforcement agencies will blame them.

1.1.2. THE PHYSICAL AND PSYCHOLOGICAL AFTERMATH OF SEXUAL VIOLENCE.

Traumatic experiences have a variety of sources – ranging from natural calamities, to unintentional human actions that result in automobile, industrial, and other types of accidents; as well as intentional human actions that are reported daily, such as criminal activities, wars, political repression, domestic abuse, and sexual assault. And it is important that sexual assault be similarly understood as a traumatic event. Sexual assault is not just unwanted sex but is usually experienced as life threatening and as an extreme personal violation (Crombrinck & Skepu, 2003). This is supported by Van der Kolk's (1994) continued studies on the effects of trauma on the human body and the mind, where rape and sexual assault are consistently referred to as a form of trauma.

Although not a psychiatric diagnosis, Rape Trauma Syndrome (RTS), was the first attempt to understand and rationalise the cluster of emotional responses experienced by a victim after the extreme stress of rape or sexual assault. And consistent with the diagnostic features of PTSD, researchers have noted that rape victims exhibit a variety of disorders, including anxiety, sleep disturbances, and intrusive thoughts and images of the assault. Anger is also frequently observed in rape victims (Crombrinck & Skepu, 2003). Although the complexity of each individual case makes it difficult to fully put into words the psychological experiences of young women who have been victims of rape and sexual abuse, there are a series of symptoms that are seemingly collective amongst the victims. The character of these symptoms relate to the extreme physical and emotional violation that these victims have experienced.

According to various authors, these symptoms include feelings of powerlessness, a distorted self image, a sense of acute anxiety, (Briere, 1989), a lack of place identity (Proshansky et al; 1983; Korpela; 1989), the prevalence of self destructive behaviours and/or aggressive behaviours, a chronic perception of danger, an intrinsic pre-occupation with control, and a sensation of violation of trusted 'safe places'. (Garbarino et al, 1992; Holman and Stokols, 1994; Crombrinck & Skepu, 2003). Furthermore, if victims rebuild their self image, and self esteem, based on others reactions towards them, then unsupportive responses from others can and will exacerbate these symptoms, and will ultimately have a detrimental effect on recovery.

In the direct aftermath of trauma, victims need the presence of a compassionate person, and assurances of safety, non-judgement and protection are very important. Hence, although an examination of statistics and literature reveals that sexual violence against women and girls is neither a recent nor receding phenomenon (Brownmiller 1975; Donat and D'Emilio 1992; Tomaselli 1986), it is clear that much work still needs to be done in removing the stigma around rape, and establishing safe report and recovery environments for the victims.

Furthermore, many authors offer discourse on the repercussions of not reporting and resolving these various psychological issues, and the impact of this on the victims' overall interactions with society. Post assault adjustment issues include a continued sense of social rejection, feelings of denial, continued self-blame, an increased risk of re-victimization, minimized active efforts to optimize their socio-physical environment, and an overall weakened attachment to place (Proshansky et al;1983; Korpela; 1989; Holman and Stokols, 1994).

In the end, it is essential to understand that the process of report and recovery from sexual abuse and rape is an extensive and rhythmic process - one which needs to be taken into consideration when designing an environment conducive to the recovery and restoration of the victims. Perhaps the following description is the most articulate in defining this process: (Barringer, 1992, p. 15) described survivors healing process from sexual abuse not as linear, but "*as a spiral, as a repeated traversing of the issues, layer by layer, piece by piece, sorting and resorting, until the toxicity of the abusive experiences has been released*."

Figure 1.1. Expressing the Trauma of Rape and Sexual Assault (by author).

1.1.3. SOUTH AFRICA'S LEGAL AND MEDICAL RESPONSE TO SEXUAL VIOLENCE

Although the Sexual Offences and Related Matters Amendment Act (Act no. 32 of 2007) expanded the legal definition of rape, and addressed many of the ongoing issues relating to how sexual offence cases are managed by the police, hospitals and in the courts, it is arguably true that the medical and criminal justice systems remain a complex structure that is unsympathetic to the victims (HRW report A904; 1997). In 2010/11, the Open Democracy Advice Centre together with the United Nations Development Programme and the South African Department of Social Development, undertook a Victim Empowerment Feasibility Study. The study, conducted by K. Dey, J. Thorpe, A. Tilley and J. Williams. (2011), and cited in rapecrisis.org (2011), identified several key gaps in the legislation, including, but not limited to the following:

- A lack of psychosocial support for survivors within the medico-legal system, often resulting in victims of crime being insufficiently prepared for trial, and seriously impeding the chances of a successful conviction.
- A strong complaint from victims was that they lack knowledge of their rights to services within the system, and the individual progress of their own cases within the system.
- This is augmented by the fact that there is no central system, facility or body that monitors cases, or holds officials and service providers responsible for non-performance of their duties.
- All of these factors result in lower conviction rates, increase medical and legal costs for the victims and their families, and often exacerbate the experience of secondary trauma.

This further adds to the understanding of why so many victims would be reluctant to report cases of rape or sexual assault, and ultimately highlights a noteworthy need to design report and recovery environments that effectively support the current legislature by providing supportive, empowering and restorative response environments.

This premise is then further supported by various NPO's and NGO's - including Rape Crisis, Childline and Lifeline, etc. - who accentuate the fact that there is still very little provision made for survivors to receive any form of psychosocial care inside the justice system, and that far too many officials are biased against survivors and treat them insensitively, causing secondary trauma, or 'secondary victimization'. Many rape victims perceive this secondary trauma as worse than the rape or sexual assault itself as it leaves them feeling betrayed by those that are seen as the designated "caregivers" in society (Robertson; 1998).

This continued lack of successful service delivery for victims is particularly insidious when seen in the context of the compounded risks surrounding rape in contemporary South Africa. A study completed in 2009 highlighted that 19,6% of men who had committed rape in South Africa were HIV-positive (Jewkes, Sikweyiya, Morrell and Dunkle. 2009) confirming that rape is a significant factor in the spread of HIV. Under the Sexual Offences and Related Matters Amendment Act (Act 32 of 2007), all HIV-negative rape survivors have the right to free Post-Exposure Prophylaxis (PEP) to reduce the risk of HIV infection as a consequence of the assault. But this cannot be accomplished, unless the victims have a report and recovery environment conducive to the disclosure and treatment of rape and sexual assault, that is then fully supported by an effective medico-legal system.

1.1.4. REPORT & RECOVERY ENVIRONMENTS FOR VICTIMS OF SEXUAL VIOLENCE.

At the moment, Durban has four Rape Crisis Centres in the eThekwini Health District - the Pinetown District Surgeons Office, Addington Hospital, Prince Mshiyeni Mission Hospital, and Mahatma Ghandi Memorial Hospital. Although these hospitals, as both report and recovery environments for various incidents of trauma (including sexual abuse and rape), attempt to offer specialized care and counselling to the victims, reform efforts have not been consistently applied, and there continues to be a serious scarcity of both human and financial resources (Naidoo; 2013).

In addition to this, lack of appropriate training in Trauma Informed Care, staff apathy, and a consistent non adherence to protocols has greatly compounded the problem of 'secondary traumatisation'. (Naidoo; 2013). Furthermore, it can also be perceived that these hospital environments are not fully conducive to the process of disclosure and treatment as they typically focus on emergency treatment and the correlated functional aspects of the environments, and do not place enough importance on the psychological effects which the spaces themselves have on their users.

Because police stations and hospitals often serve as a first point of contact when reporting or seeking treatment for various forms of trauma, it is essential that the functions these facilities offer are supported, and supplemented, by environments which offer a sense of safety, sensitivity, privacy, and restoration. Without this, it could be argued that the process of disclosure and recovery would be inherently impaired.

Although the Police is often the first point of contact, according to Naidoo (2013), rape and sexual assault should be viewed as a medical emergency too. After all, victims are physically assaulted, often with resultant head injuries, fractures, drug intoxications, and various internal injuries. Furthermore, Police staff are generally overwhelmed with other cases, or are simply uninformed and unsympathetic, and victims are often forced to give statements to an untrained male officer, within the hearing of others waiting for attention (Naidoo; 2013; HRW report A904; 1997.)

Hence, Naidoo (2013) elaborates that crisis support facilities should be established at all district and regional hospitals, and should be purpose-designed to offer maximum safety and privacy, offer multi-disciplinary services on a 24-hour basis. This includes specialised medical care, trained and empathetic psychologists, psychiatrists and nursing staff and a SAPS desk for reporting the assault Naidoo (2013).

It is the contention of this dissertation, that whilst the crisis care centres at Addington Hospital, Prince Mshiyeni Mission Hospital, Mahatma Ghandi Memorial Hospital and the Pinetown District Surgeons Office meet many of the immediate medical needs of the victims, there is a continued lack of psychosocial support - and it is this lack of support that inherently hinders the full report and recovery process.

Several authors further extrapolate that Crisis Centres, Support Centres and Trauma Response Centres should also be uniquely positioned to respond to the emotional and social needs of the victims (Ullman and Townsend; 2007). Their services should focus on three main aspects: 24hour crisis hotlines, individual and group counselling, and medical and legal advocacy (Ullman and Townsend; 2007). However, various studies reviewed in Ullman and Townsend (2007) show that there continue to be many organisational barriers that lead to a lack of therapeutic services.

According to research conducted by Tottenham (2010) and Pollak, Vardi, Putzer Bechner, Curtin (2005), children and adolescents who were institutionalised to various medical facilities exhibited an increased prevalence of anxiety disorders, and expressed greater difficulty in regulating their emotions. The study further illustrated that the type of care-giving and the environmental psychology of institutional environments - whether hospitals, support wards, group homes, or other facilities - often acts as a psychological stressor (Tottenham, 2010). From this it can be deduced that placing victims of sexual abuse and rape in an environment that is perceived as 'institutional', would further traumatise the victims, and would certainly not provide the healing and safe environment it has already been established they so evidently require in order to disclose and contest the "layers of toxicity" (Barringer, 1992).

Hence, the purpose of this dissertation will be to argue that existing hospital environments should be supported by a restorative environment that compliments the functional emergency services provided. The design of restorative environments which are sensitive to the emotional acuity of the users, and which engender a sense of recuperation, rejuvenation and rehabilitation should be considered equally essential to the process of recovery (Christopher Day; 1990, Kellert; 2005, Rapoport; 1995).

1.2 DEFINITION OF THE PROBLEM, AIMS AND OBJECTIVES

1.2.1 DEFINITION OF THE PROBLEM

Based on the low report rates for incidents of rape, sexual assault and abuse (SAPS; 2009), it is clear that hospitals and affiliated care centres, as both immediate and long term report and recovery environments for incidents of trauma, are not effectively meeting the physiological and psychological needs of the victims. In addition to this, despite the extent of literature relating to Trauma Centred Care, Optimal Healing Environments and Restorative Environments, very little research exists to suggest how this could be applied to report and recovery environments for incidents of rape and sexual assault.

Hence, it becomes clear that the perceptions and environmental needs of the victims need to be recognized and incorporated into the design of future victim support and care environments, so as to ultimately ensure that the report and recovery processes are sensitive to the needs of the victims and are considered restorative experiences. Furthermore, it can be argued that if these environments are able to sensitively respond to the most acute form of psychological trauma, as can be considered the case with rape and sexual assault, then they can arguably respond to the broader spectrum of psychological trauma.

1.2.2 AIM

The aim of this dissertation is to explore how the perceptions and environmental needs of the victims can be incorporated into the composition of report and recovery environments to promote posttraumatic restoration.

1.2.3 OBJECTIVES

The following objectives relate to the triangulation of three things - **(a)** the reported perceptions and experiences of the victims, **(b)** the interrelationship between the victims and the built environment, and **(c)** an exploration of a holistic restorative design framework conducive to post traumatic report and recovery processes.

1. To investigate the reported experiences of the victims during post traumatic report and recovery processes.
2. To analyse how report and recovery environments affect victims of trauma both physically and psychologically.
3. To identify the psychological, spatial, and environmental needs of individuals recovering from traumatic experiences.
    - To explore how sensory design can create a sense of refuge.
    - To understand the role of 'nature' in promoting reflective processes.
    - To understand the role of 'place' in initiating re-integrative processes.
4. To ultimately conceptualise how the composition of a Report and Recovery Environment can promote a Restorative Experience.

1.3 SETTING OUT THE SCOPE

1.3.1 DELIMITATION OF RESEARCH PROBLEM

It is necessary to note that for the purpose of this research the focus will be on young women (between the ages of 12 -35 years old) who have been victims of psychological trauma, specifically rape and sexual assault.

Although, South Africa's National Youth Policy (2009-2014) defines youth as persons from 15-34 years old, statistics from Former Women's Minister, Lulu Xingwana, quoted in The Mail and Guardian (29.03.2011) , stated that 12 to 17 years of age was emerging as the most vulnerable age group for incidents of rape and sexual assault. Hence, the research age group has been extended to cover those most vulnerable to incidents of rape and sexual assault.

It is also relevant to note that whilst children under 18 are considered legal minors under South African law, there are exceptional circumstances where the law has granted minors the capacity to act independently. Currently, children can consent to medical treatment from the age of 14 (Strode, Slack, and Essack.; 2010).

In addition, it is important to mention that all research data and reported experiences will be obtained from the NGO/NPO counsellors and advocates working with the victims, and not directly from the victims themselves. Where existing report and recovery environments in hospitals are discussed, the research will focus on the psychological and social aspects i.e. the restorativeness of the environment, and not any legal, political or economic factors.

Furthermore, as an architectural dissertation, the study will not provide any recommendations or solutions for medical therapies or other non-architectural treatments, for young women recovering from trauma.

1.3.2 DEFINITION OF TERMS

- **Environment** : refers to the physical and sensory composition of a building, space, street or urban design, and its subsequent perceived construct and sense of "place".

- **Environmental Psychology:** is an interdisciplinary field focused on the interplay between humans and their surroundings - including natural, social, cultural, learning and healing environments.

- **Optimal Healing Environments:** refers to the composition of environments where social, psychological, spiritual, behavioural and physical components of healthcare are orientated towards the support and stimulation of wellbeing.

- **Post Traumatic Stress Disorder:** refers to a mental health condition that is the result of either experiencing or witnessing a traumatic event. Symptoms tend to include stress, anxiety, flashbacks, poor concentration, emotional imbalance, restlessness, hyper-vigilance, disbelief, anger, self-blame, and numbness.

- **Rape:** is defined as unwanted penetration, whether oral, anal, or vaginal. Rape can be committed between strangers (stranger rape), between married couples (spousal rape), between acquaintances (date rape), or even between several individuals (gang rape).

- **Salutogenesis:** is a term coined by Aaron Antonovsky (1996) to describe an approach that focuses on factors that support psycho-physiological health and wellbeing, rather than factors that cause negative effects or illness.

- **Sensorimotor Psychotherapy:** refers to Dr Pat Ogden's (1981) comprehensive method for healing disconnections between the body and mind that occurs as a result of trauma and attachment failures - this includes play therapy.

- **Sexual Assault:** refers to any unwanted sexual contact, including forms of fondling and molestation. Sexual assault of children often includes incest as a subset of this structure of sexual violence.

- **Stressor:** refers to an event, environmental condition or experience that causes stress or trauma to a being.

- **Trauma Informed Care:** refers to a treatment framework that incorporates an understanding and sensitive response to the effects of various forms of trauma.

1.3.3 STATING THE ASSUMPTIONS

The primary assumption is that architectural environments influence people - physically, emotionally and spiritually. It is also assumed that the perceived lack of restorative experiences in hospital report and recovery environments formulate an environment that is not wholly conducive to the disclosure of rape and sexual assault, and the subsequent process of post traumatic recovery. Furthermore, as stated previously, this research is an architectural dissertation, therefore any conclusions and recommendations are based on therapies defined by professionals within the fields of psychology and psychiatry. Any therapies discussed in this dissertation are assumed to be the most appropriate and effective methods of therapy for individuals recovering from psychological trauma, in particular incidents of rape and sexual assault.

1.3.4 WORKING HYPOTHESIS

People perceive their surrounding environments differently; this varies according to their age, gender, race and culture; as well as their emotions, attitudes and experiences. Although there are a vast range of individual perceptions, by identifying a specific group of people - in this case traumatised young women and girls reporting incidents of rape and sexual assault - commonalities can be recognized, and an understanding of these can be used to develop an appropriate approach for the design of a built environment which meets their specialised physical, social and emotional needs. Ultimately, such an environment should be conducive to the post traumatic processes of report and recovery from rape and sexual assault.

1.3.5 RESEARCH QUESTIONS

Primary Question:

- How can the victims perceptions and environmental needs be incorporated into the composition of report and recovery environments, in order to promote posttraumatic restoration?

Secondary questions:

1. What are the reported experiences of the victims during post traumatic report and recovery processes?
2. How do report and recovery environments affect victims of trauma both physically and psychologically?
3. What are the psychological, spatial, and environmental needs of individuals recovering from traumatic experiences?
   - How can multi-sensory design create a sense of refuge?
   - What is the role of 'nature' in promoting reflective processes?
   - What is the role of 'place' in initiating re-integrative processes?
4. How can the composition of a Report and Recovery Environment promote a Restorative Experience?

1.3.6. RESEARCH METHODS AND MATERIALS

INTRODUCTION AND RATIONALE

As the research is centered on gaining an in-depth understanding of the reported experiences and perceptions of young women who are recovering victims of traumatic experiences, in particular rape and sexual assault, the research approach is a fully qualitative one. Furthermore, in view of the sensitive nature of the subject matter, and the predominant, and long standing influence of feminist theory in understanding both the causality and dynamics of sexual violence, a methodology was required which would reflect the feminist approach to research, and yet ultimately sustain a constructivist grounded analysis of the data.

Hence, an organized approach to the collection and analysis of data was established in order to propose recommendations to the various questions and themes inferred by the topic. Both primary and secondary data collection has been used, as outlined below. However, whilst the essence of the research methodology will be delineated below, Chapter four will expand on the epistemology, the methodological approach, the data collection for the case studies and interviews, and the selected means of subsequent analysis.

PRIMARY DATA: IN DEPTH INTERVIEWS AND CASE STUDIES

Material gathered in terms of the primary resources was done via the means of focused interviews and a subsequent investigation into the “report and recovery experiences” of trauma victims - specifically girls and young women who are victims of rape and sexual assault. A well known local 'grassroots' NGO's and NPO's, who met the requirement of being both a venue for the report of incidents of rape and/or sexual abuse, and also the continued treatment and counselling of the victims was approached to serve as a research sample.

- **Childline KZN (Headquarters)** is a long-standing non government, non - profit organisation based in Durban's Inner city, with firsthand knowledge of the various issues being explored in the research. Additionally, many of the case workers and psychiatrists work with Rape Crisis centres and other report and recovery environments for cases of rape, sexual assault and sexual abuse. Childline, therefore, serves as an umbrella 'lens' for the research.

Homogenous and purposeful sampling was used to accumulate a sample size of 11 research participants who fit the criteria of advocates working with young women (aged 12 -35 years old) who have been victims of trauma, in particular, sexual abuse or rape. During the course of the research, several family members of young women who were victims of sexual assault approached the researcher, requesting to become part of the research. Although not part of the original methodology and sampling strategy, the researcher accepted that the perspectives of the victims' families could broaden the scope of the research 'lens'. **As such, an additional 5 in-depth interviews were conducted via the means of snowball sampling.**

Correlated observational case studies of the facilities and premises of Childline Headquarters, and the UKZN Campus Health Clinic further served as a means of gaining an understanding of the experiential qualities of the current settings for the process of disclosure and treatment of victims of rape and trauma. These studies were carried out by engaging directly with the environment through site visits, observations of space, on-site interviews and architectural reviews of the overall space making and planning logic.

SECONDARY DATA: LITERATURE AND PRECEDENT STUDIES

The initial underpinning of the research was established through secondary data collection in the form of a literature review, which investigates the relevant concepts and theories surrounding the topic, and three precedent studies, which similarly explore the architectural themes surrounding the topic. This research provided the theoretical framework through which the primary data were later interrogated and analysed.

Hence, through the use of literature relating to the perceptions of traumatised young women and girls, the validity of the research was further grounded within a broader context, without having any unnecessary direct contact with the victims. This form of research comprised of various published media such as: (1) Journal articles by various authors; (2) Books by various authors; (3) Reports, academic papers, and documents; and (4) World Wide Web.

This research forms part of the literature review chapter where published literature relating to the research questions are explored in order to build and frame the argument offered in terms of restoration and post traumatic report and recovery. Thereafter, three precedent studies were selected based on the emerging architectural criteria for a report and recovery environments from the literature review. These precedents were then used as a tool to graphically explore the key themes covered in the literature, and to ultimately serve as a means to understand the restorative qualities required for report and recovery environments for traumatised young women.

Finally, to improve the reliability and validity of the research, multiple methods were utilised throughout. A triangulation of information by engaging in multiple methods, such as interviews, literature reviews and observational case studies resulted in a more valid, diverse and reliable perception of realities. Furthermore, all data were compared across the methods (i.e. between interviews and literature, between case study observations and interviews and between literature and case study observations) in order to ensure that the data was treated and analysed as a whole, rather than fragments. This allowed for any emerging or unanticipated themes to be determined.

REACTIONS TO PROBLEMS AND LIMITATIONS

All research participants were given the opportunity to withdraw information, or discontinue their participation in the research. Respect for the participant was overriding of any potential gains for the researcher, and the privacy and preference of the participant took precedence at all times. When such a situation occurred, the researcher safely disposed of all relevant research relating to that participant, and through the proposed sampling sources, obtained a new research participant. Furthermore, it is an accepted limitation that the researcher did not have direct contact with the anticipated user group for the proposed architectural design. This is based on the researchers intention to avoid any form of 'secondary victimization'.

1.4 THEORETICAL FRAMEWORK

1.4.1 INTRODUCTION.

Using the approach of a social-constructivist, the framework of this dissertation will aim to understand the complexity and connections between the various theories and concepts that relate to restorative environments and post traumatic report and recovery processes. Following this approach, particular emphasis will be given to the relationships between the victims and their socio- physical environments, with the intention of expanding on current restorative research premises.

The theoretical framework of this dissertation will illustrate that a truly restorative experience cannot only include notions of temporary cognitive and affective restoration, but also needs to:

(1) Accommodate for the perceptions of the victims and promote healing 'lived' experiences that evoke a sense of refuge;

(2) Integrate the reflective qualities of nature set forth by the theory of Biophilia (the love of nature); and;

(3) Re-establish a meaningful experience of place and self through the principles of 'sense of place' and particularly the Tripartite Place Attachment Model.

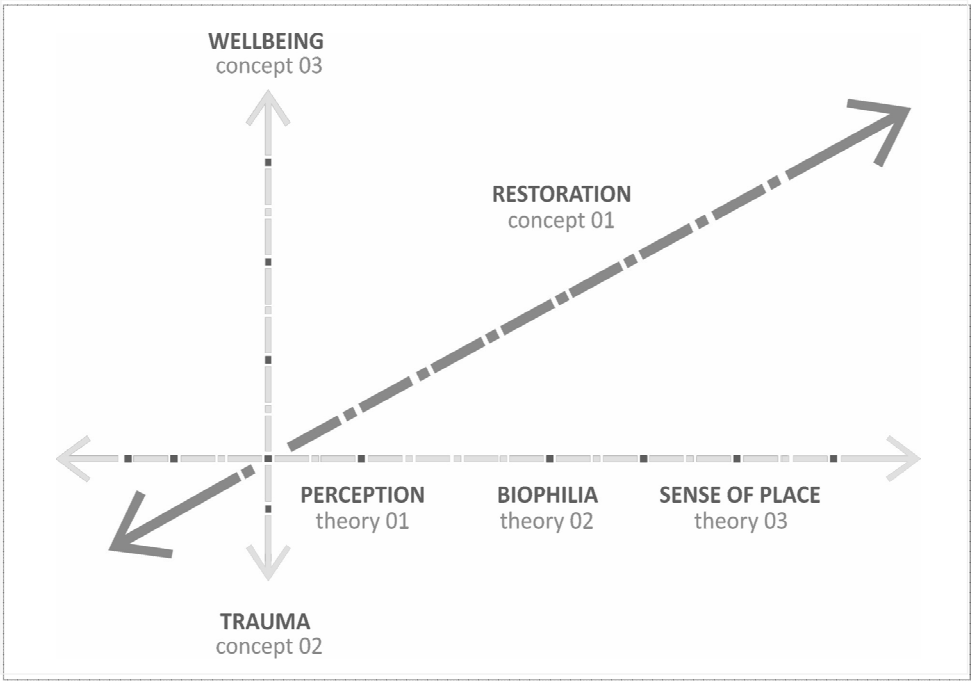


Figure 1.2. Establishing a Research Framework (by author).

1.4.2 THEORIES:

THEORY 01: PERCEPTION:

Perception Theory looks at understanding people's reactions to sensory experiences (Malnar, 2004). Philosopher Taylor Carmen (2008) postulates that one can differentiate between two aspects of perception. The first relates to passive sensory experiences; and whilst the second then relates to the active motor dimension which deals with bodily responses to these experiences. Both the processes of sensory experience and perception fall under the broader field of phenomenology, where several authors, including Norburg Schulz (1980) highlight their role in creating meaningful lived experiences through cognitive, and affective processes. Merleau-Ponty, similarly, describes this aspect of phenomenology as the way in which peoples' perceptual contact with their world influences the totality of their experience and wellbeing.

Sensory Design, as a proponent in Perception theory, explores the role of a total sensory experience in influencing our attitudes, wellbeing and behaviours. This design approach, as clearly elaborated in the work of JM Malnar (2004), subsequently focuses on the composition of various environmental stimuli within an environment, and their ability to improve the experiences and quality of life for building occupants. Similarly, Sensory Design architects, such as Peter Zumthor (2006) promote the notion that experiencing architecture has less to do with what the building looks like but rather to do with how it engages with all of our senses. Indeed, according to Zumthor (2006), people experience a space with their entire body, through elements of movement, memory and imagination.

THEORY 02: BIOPHILIA:

Edward Wilson, coined the term in his book Biophilia (1984), arguing that human beings have a natural attraction to nature, rooted in evolutionary psychology. Kellert (2005), further explains the concept of Biophilia as instrumental to physical, emotional, intellectual, and moral well-being. According to Wilson (1984) and Kellert (2005), natural spaces are continuously cited as conducive to various adaptive and reflective processes. Biophilic Architecture is subsequently a term that then refers to the merging of artificial structures with natural structures, with the intention of creating environments that restore and maintain human health, promote well-being, reduce stress, and improve cognitive and affective processes. The role of Biophilic Design in health and wellbeing is extensively explored in the work of Kellert (2005), and the evidence-based design literature of Roger Ulrich (1983; 1984), where several links to the potential role of Biophilia in restorative processes are suggested.

THEORY 03: SENSE OF PLACE:

In order to design a truly restorative experience for report and recovery environments, it can be argued that the composition of that environment would have to evoke a renewed sense of 'place'. Indeed, many phenomenologist's have discussed the quality of people's experiences and wellbeing in relation to place - in the context of both the built and natural environments. Norberg-Schulz (1980), for example, identifies phenomenology's potential in architecture as the ability to make the environment meaningful through the creation of specific places. In addition, Sense of Place, has become the foundation of the Place Attachment tripartite framework of Person-Process-Place (Scannell and Gifford, 2009). This framework will be used in this dissertation as a means to understand how restorative affective and cognitive processes can be used to establish or, where necessary, re-establish a sense of place.

Place Attachment places particular focus on the relationship between the individual and the experience or process of shaping affective and cognitive bonds to a place to generate a sense of place. Emphasis is placed on the perceptions of the persons experiencing the place and the subsequent processes of establishing an attachment and sense of place. The work of Heimer (2005) in particular shows the potential for a connection between sense of place and the existing SRT and ART frameworks, whilst the work of Stedman and Ingalls (2013) shows the potential for a connection between Sense of Place, Biophilia, trauma, resilience and re-establishing an attachment to place.

1.4.3 CONCEPTS:

CONCEPT O1: RESTORATION:

Several theoretical frameworks within the field of Environmental Psychology exist to describe Restoration in relation to People-Environment relationships. These include the affective-based Stress Recovery Theory (Ulrich; 1983), and the cognitive-based Attention Restoration Theory (Kaplan and Kaplan; 1989). Stress recovery theory (SRT: Ulrich, 1983) reviews restoration as a recovery process from the stress which occurs when an individual is confronted with a situation that is perceived as demanding or threatening to their well-being. Roger Ulrich laid the foundations for SRT in the 1983 article 'Aesthetic and Affective response to the Natural Environment', in which he argued that the initial response of people towards an environment is one of generalised affect (either like or dislike) and is dependent on the features within that environment.

Attention Restoration Theory (ART: Kaplan, 1995; Kaplan & Kaplan, 1989), on the other hand, focuses on the restoration from mental and psychological fatigue that occurs after prolonged stress and use of cognitive resources. ART was fully explored for the first time in 1989, by Rachel and Stephen Kaplan in their joint work, 'The Experience of Nature'. According to Kaplan and Kaplan (1989), certain characteristics of an environment can facilitate in combating depleted mental resources, thereby allowing for a process of cognitive, and subsequently affective, restoration to take place. Key elements in their research were visual preferences, human perception processes and people-nature relationships.

CONCEPT O2: TRAUMA:

Essentially, trauma refers to the impact of an extreme stressor or incident on an individual's psychological and physical functioning (Van der Kolk;1994). Unlike less severe incidents, traumatic incidents - whether natural or manmade disasters, or perpetrated violence in the form of physical or sexual assaults - frequently result in psychological trauma, with prolonged disruptions in physical and psychological functioning (Van der Kolk, 1994). Essentially, those who are traumatized will develop characteristic symptoms that may include recollections of the event, and either physiological arousal or numbing of general responsiveness (Van der Kolk, 1994).

Whilst a full discussion of the effects of Trauma and Post Traumatic Stress Disorder are outside the scope of this dissertation, an awareness of the basic physiological and psychological responses of the victims is necessary to determine the state from which the victims require restoration. Of particular relevance to the research is the role of the environment in combating trauma and promoting wellbeing through restorative processes. According to Flannery (1994) recovery from trauma requires the re-establishment of "domains" lost during the traumatic incident. These include: (1) the ability to shape ones environment to meet ones needs- "*reasonable mastery*". (2) links to emotional, psychosocial support - "*caring attachments*". (3) assistance with goal support and active participation in activities - "*meaningful purpose*". (Flannery, 1994).

CONCEPT O3: WELBBEING:

Wellbeing has many definitions, yet perhaps the most appropriate is positive psychology - whether in the form of autonomy, improved relationships and subsequent resilience (Keeling, Clements-Croome, Luck, & Pointer, 2012). However it is essential to bear in mind that any attributes of positive psychology developed needs to be optimalized in terms of a more measurable form that directly relates to the experiences and perceptions of the particular users.

Furthermore, wellbeing provides a perspective of health that looks at the full spectrum of fitness for life rather than the traditional dichotomy of sick or healthy, mind or body (Davies, 2011)**.** Wellbeing should be explored as a spectrum of mental health ranging from disorder, through languishing to moderate health, and finally flourishing. This suggests that it is not only the sick that can be helped nor the healthy that can function (Huppert, 2009).

Several authors argue that health processes could be promoted by implementing designs that are salutogenic – i.e., that focus on the factors that keep us well, rather than those that make us unwell. Hence, Salutogenic approaches to research in wellbeing are based on identifying factors that promote psychosocial and physical wellbeing. (Dilani, 2008).

1.5 DOCUMENT OUTLINE

This architectural dissertation is divided into eight parts:

- **Chapter One** discusses the *'who'* of the dissertation, in terms of the research background, motivating for the research, clearly establishing a research problem, and laying the foundation for Chapter Two. An exploration of sexual violence in South Africa, through which the need for the inclusion of safe, restorative report and recovery environments are identified as key themes.

- The first part of the literature review in **Chapter Two** focuses on the *'what'* of the dissertation, by discussing the existing frameworks for Restoration. A review of the affective-based Stress Recovery Theory (SRT), and the cognitive-based Attention Restoration Theory (ART), with a need to relate these frameworks to concepts to trauma, and post traumatic stress is given particular focus. Furthermore, the potential links to the theories of Perception, Biophilia and Sense of Place, discussed in Chapter Three are mentioned.

- The second part of the literature review in **Chapter Two**, focuses on the *'why'* of the dissertation, by reviewing the role of the socio-physical environment in wellbeing. This section aims to redefine the concept of wellbeing in relation to trauma recovery. As such, this chapter will analyse the specific psychosomatic needs of the victims, and aim to gain an understanding of the victims needs. Furthermore, the potential links to the theories of Perception, Biophilia and Sense of Place, discussed in Chapter Three are mentioned.

- The first section of **Chapter Three** investigates the process of perception within socio-physical environments, the importance of healing sensory experiences, emphasizing *'how'* these experiences lower stress levels, promote wellbeing and allow for 'lived' experiences within report and recovery environments. Ultimately, the theory of perception is explored as a means of creating refuge within the built form.

- The second and third sections of **Chapter Three** analyse the role of nature and sense of place in relation to restoration and wellbeing. This ultimately grounds the *'how'* of the theoretical argument into a context of *'where'.* The theories of Biophilia and Sense of Place are explored as theories that contribute to combating stress responses, improving reflective processes, and supporting self-regulation and post traumatic growth to facilitate longer term recovery. These theories are ultimately explored as a means of promoting reflection and initiating reintegration

- **Chapter Four** then expands on the methodology of the research, exploring the feminist standpoint of the research, the constructivist grounded approach to the collection and analysis of the data, and the various ethical considerations that formed the constraints for the collection of data.

- The theories and concepts discussed are then explored through the examination of key precedent studies in **Chapter Five**. The relevant examples are discussed, based on their position as a 'best practice' scenario for the themes highlighted in the literature review - namely refuge, reflect and re-integrate -, with particular focus on light, form, space, and materiality.

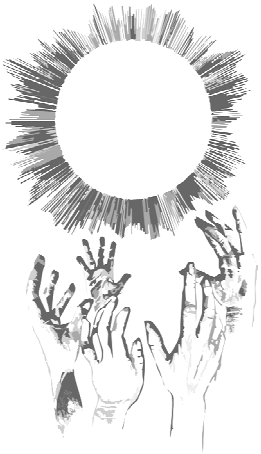
- **Chapter Six** then discusses and analyses the findings of the research case studies and interviews, placing particular importance on the perceptions and lived experiences of the victims, the post traumatic processes of reporting and recovering from rape or sexual assault, and both the practical and psychosomatic needs of the victims - whether medical, legal or therapeutic.

- **Chapter Seven** discusses the dissertation conclusions in the form of a holistic, expanded definition of restorative experiences. This chapter then explores how restorative environments can incorporate various aesthetic and spatial elements to create an environment conducive to restoration within the post traumatic processes of report and recovery. This ultimately reiterates *'why'* this is essential in the design of future support and care centre designs.

- Finally, Chapter Eight, offers a design report for the proposed design of a new support centre for young women in Durban's Inner City. Through a definition of the typology and its requirements, a possible client and brief, a probable site, and a series of conceptual and contextual responses, the design framework for a new best practice support centre is conceptualised.

CHAPTER TWO:

LITERATURE REVIEW:



REVIEWING RESTORATION , TRAUMA, AND WELLBEING IN THE BUILT ENVIRONMENT

2.1 INTRODUCTION

The literature review in this chapter will aim to argue that there is a growing need for individual restorative environment frameworks to specify some condition from which a person needs to be restored. Of course, before a person can become restored, he or she must have some diminished capability. It is clear that, integral to the existing frameworks is the presence of a negative precursor - the cause or source of the depletion of some resource or capability. Whether this is physical, psychological, mental, social, or a combination of these in character should be considered a more active component in the design of restorative experiences that ultimately promote recovery and wellbeing. It is only through this, that an understanding of restorative environments beyond the commonplace conditions already explored within the existing frameworks, can be achieved. For the purpose of this research, focus will be cast on the traumatic experience of rape or sexual assault in young women, on the basis that this event incorporates something that requires not only immediate medical attention, but also psycho-physiological restoration.

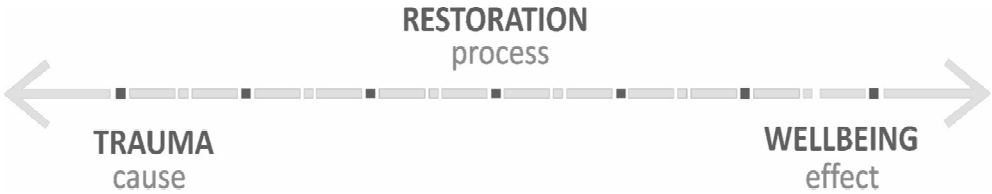


Figure 2.1 Diagrammatic Synopsis of Connections between Concepts (by author)

2.2 UNDERSTANDING RESTORATION AND RESTORATIVE ENVIRONMENTS.

In order to understand how Restoration and Restorative Environments have the potential to contribute to post trauma recovery, one needs to first understand the existing definitions and frameworks. Restoration can be defined as 'the process of renewing physical, psychological and social capabilities diminished in ongoing efforts to meet adaptive demands' (Hartig, 2007). Within the field of Environmental Psychology, restoration is used as an umbrella term to refer to an experience of psychological and physiological recovery processes, as triggered by a particular environment (Steg, Van den Berg, & De Groot, 2012).

The process of restoration often involves instorative (Hartig, 2007) processes, such as the deepening of adaptive abilities and building on personal strengths, as well as self regulatory processes. Although much work has been done in the environment-behaviour-design field regarding the process of restoration, the need to develop an approach that goes beyond the conceptual frameworks of Stephen and Rachel Kaplan's (1989) Attention Restoration Theory, and Roger Ulrich's (1983; 1984) psycho-physiological Stress Recovery Theory arguably remains. Yet, despite these apparent limitations, findings from restorative environments research are increasingly being used to guide the design of both built and natural environments.

In the literature, the term 'restorative' is especially used to define the process of psychological recovery from low mood, fatigue and stress (Kaplan S. , 1995) (Ulrich R. , 1983). These can be considered indirect health mechanisms, as they ultimately promote health and wellbeing through intermediary mechanisms. Stress, for example, is linked with increased cardiovascular disease, depression and anxiety disorders - so, processes that relieve stress have indirect benefits on physical and mental health.

Given its emphasis on recovery processes, restorative design frameworks appear to be most suited for situations and contexts where healing and developmental processes are being hampered by the perceived non-supportiveness or 'non-restorativeness' of their environment (Steg, Van den Berg, & De Groot, 2012). As such, restorative elements seem to have become an important component in Evidence Based Design (EBD) frameworks for various healthcare settings (Kellert & Heerwager, 2011).

2.2.1 REVIEWING STRESS RECOVERY THEORY AND ATTENTION RESTORATION THEORY.

Several key People-Environment relationships have been proposed within the framework of the research currently being analysed as ways to understand and explain environmental behaviours, responses, and experiences in terms of the connection between environmental supportiveness and preference for place. Two dominant theories include Ulrich's (1983; 1984) Stress Recovery Theory, which focuses on an affective or emotional model, and Kaplan and Kaplan's (1989; 1995) Attention Restoration Theory, which is essentially a cognitive model. Research into restorative environments has primarily been guided by these two explanations, each with its own interpretation of the construct of restoration.

Stress Recovery Theory (SRT) is concerned with recovery from the stress which occurs when an individual is confronted with a situation that is perceived as demanding or threatening to well-being (Ulrich, 1983). Ulrich (1983) argued that peoples initial response towards an environment is one of generalised affect (either like or dislike) and is dependent on environmental features. Ulrich's (1983) psycho-physiological model speculates that affective and aesthetic responses to the visual stimulus of an environment ("preferenda") spark an affective psycho-physiological response producing recovery from stress.

According to Ulrich (1983) these features include the presence of natural content, structural features such as complexity, spatiality clues, elements of depth, prospect and mystery e.g. deflected vistas and a sense of refuge e.g. absence of threats. Ulrich (1983) postulated that positive responses to these features activate and initiate the restorative process because they provide a breather from stress, accompanied by reduced levels of negative feelings such as fear and anxiety. Ulrich (1983) claimed that if that environment drew affective interest, conscious cognitive processing would then take place, resulting in a more deliberate restorative experience.

Attention Restoration Theory (ART), on the other hand, focuses on the restoration from mental and psychological fatigue that occurs after prolonged stress and use of cognitive resources (Kaplan, 1995; Kaplan & Kaplan, 1989). Visual preferences, human perception processes and people-nature relationships were key elements in the research of Rachel and Stephen Kaplan (1989). A core assumption of ART is that people have limited cognitive and attention capacities, which become depleted with prolonged or intensive use (Kaplan and Kaplan1989; Kaplan, 1995). Depletion of these resources ultimately results in Directed Attentional Fatigue (DAF).

According to Kaplan and Kaplan (1989), certain characteristics of an environment can facilitate in combating DAF, namely: (1) fascination, or the capacity of an environment to automatically draw attention without cognitive effort; (2) a sense of extent or connectedness; (3) a feeling of retreat or being away from the daily obligations and routines; (4) the compatibility between an individual's inclinations and the characteristics of that environment. Kaplan and Kaplan (1989) hypothesized that through a combination of these environmental qualities, a process of cognitive, and subsequently affective, restoration could take place.

2.2.2 LINKING CURRENT DEFINITIONS OF RESTORATION TO PERCEPTION, NATURE AND PLACE.

With the aim of not only integrating Attention Restoration Theory and Stress Recovery Theory, but also expanding on the existing frameworks, this dissertation will explore 3 key principles within the field of Restorative Environments research, as can be understood from the following analytical outline:

STRESS AND COPING - POTENTIAL LINKS TO THE THEORY OF PERCEPTION

Stress can be simply defined as prolonged uncertainty, lack of predictability and stimulus overload. Ulrich (1983) is currently the protagonist in understanding and disseminating this definition of 'stress' - particularly in hospital environments. Research in Ulrich's (1983) SRT model has identified numerous behavioural and cognitive outcomes of stress - including anxiety, diminished altruism, helplessness, and attentional fatigue. Ulrich (1983) claims that this phenomenon is further enhanced in those already experiencing fatigue or trauma. Similarly, according to the ART model set forth by Kaplan and Kaplan (1989), stress is triggered by 2 factors: (1) possibility of harm and (2) resource inadequacy - where attention and psychological adaptability can be considered a limited resource (Kaplan; 1995).

Consequently, a restorative environment should avoid triggering these stressors through the design of legible, coherent environments, which avoid stimulus overload and offer a sense of refuge (Ulrich;1983); (Kaplan and Kaplan; 1989 and Kaplan; 1995). Furthermore, restorative environments should concurrently promote positive sensory experiences and, consequentially, the formation of positive memories. This is why a restorative environment should be attuned with users needs, and ultimately promote positive cognitive mapping, through positive experiences and associations. This essentially sets the groundwork for the **discussion In Chapter Three**, which promotes the idea that **Perceptions and Sensory Experiences**, are essential in the first stages of restoration, as this theory is most relevant to the establishment of a sense of refuge.

ATTENTION AND FATIGUE - POTENTIAL LINKS TO THE THEORY OF BIOPHILIA

According to Kaplan and Kaplan (1989), there are two kinds of stimuli: those that involuntarily demand human notice, as well as those things, places or ideas to which people must voluntarily direct their attention to. Excessive use of this directed attention is seen as either a cause of stress (as per the ART model), or something which exacerbates stress (as per the SRT model). Restoring one's capacity to voluntarily direct their attention is a major factor in maintaining human effectiveness and psychological poise (Kaplan and Kaplan; 1989).

And so, a restorative environment should encourage involuntary attention and soft fascination (a soothing enthrallment with elements of the environment), in order to allow for recuperation from directed attention fatigue (Kaplan and Kaplan; 1989 and Kaplan; 1995). The design of elements of distraction or soft fascination facilitate in reducing mental and psychological fatigue during both cognitive and affective perception processes. This essentially sets the groundwork for the **discussion In Chapter Three**, which promotes the use of **Biophilia and Natural Elements** in an environment to promote reflection - after all, nature introduces the self to a space of calmness and serenity, providing a space for reflection that allows one to connect with the self (Salingaros and Masden II , 2008).

COMPATIBILITY AND PREFERENCE - POTENTIAL LINKS TO THE THEORY OF SENSE OF PLACE

According to Korpela, Hartig and Kytta (2002), people, including children and adolescents, and those suffering from stress and trauma, tend to actively look for places where they feel confident and competent, places where they can make sense of the environment, and positively engage with it. This is not dissimilar to the architectural theory of Sense of Place. Research studies by Kaplan and Kaplan (1989) and Appleton (1975) have similarly expanded the notion of preference to be synonymous with environmental compatibility.

Furthermore, according to Appleton (1975) and Kaplan and Kaplan (1989) preference for an environment requires that the environment has: (1) complexity: where the environment contains enough variety to make it worth learning about; and (2) refuge and mystery: the prospect of acquiring more information within a secure environment. One could further infer that compatibility and preference are dependent on the success of that environment to meet the other 3 criteria mentioned.

Therefore, a restorative environment should promote place preferences through a balance of complexity, refuge and mystery (Kaplan and Kaplan;1989 and Appleton; 1975), to further support the reduction of mental fatigue and stress, and establishment of positive spatial experiences. This directly correlates to the **discussion In Chapter Three**, which postulates that a **Sense of Place**, is ultimately necessary to initiate longer term restoration through Re-integrative processes.

2.2.3. INTEGRATING RESTORATIVE ENVIRONMENT FRAMEWORKS THROUGH KEY THEMES.

There continues to be much debate in the Restorative Environments field as to whether stress is a result of fatigue, or fatigue is a result of stress (Kaplan S. , 1995). However, it is the disputation of this dissertation that during post traumatic experiences these symptoms are interwoven, and occur concurrently, both affectively and cognitively. As such, they will be addressed as related problems. Although SRT and ART provide different terms to illustrate how their respective frameworks assist in Restoration, it is the contention of this dissertation that direct links exist between these terms through three key themes, as shown below:

REQUIREMENT FOR RESTORATION	RELEVANT SRT TERMINOLOGY	RELEVANT ART TERMINOLOGY
1. **THEME -REFUGE:** reduction of stress and improved coping mechanisms.	• absence of threats • spatial clues, depth,	• elements of coherence, and extent
2. **THEME- REFLECT:** reduction of fatigue and improved ability to adapt.	• natural content	• indirect attention/ soft fascination
3. **THEME -REINTEGRATE:** environmental compatibility and preference.	• complexity of environment • prospect and mystery	• compatibility of environment and purpose

Figure 2.2 Integrating SRT and ART (by author)

Based on the table, it becomes clear that both Stress Recovery Theory (SRT) and Attention Restoration Theory (ART) provide a large body of evidence indicating the restorativeness of an environment in terms of how they support cognitive restoration (as measured by improved concentration) and affective restoration (as measured by reduced blood pressure, reduced levels of stress hormones and improved mood states) according to several key themes.

The active promotion of restoration is undeniably essential in the design of support environments that are sensitive to the needs of traumatised victims (whether physical or psychological) and which ultimately aid in the processes of disclosing the trauma and recovering from the trauma. This further re-iterates the need to explore and respond to the **perceptions** of the users, through an understanding of **sensory design**.

Additionally, a relatively recent area in the field of restorative research is the impact of social context on the various restorative processes. These social contexts are defined by as higher order processes (Hartig, 2007), which exist above the individual, and which affect opportunities to access and use different environments for restoration. Researchers are similarly beginning to explore the effects of social processes in restoration - for example, where safety is an issue, the absence of people could constrain restoration (Staats and Hartig, 2004).

Furthermore, where nature was initially considered the primary source for restorative processes (Ulrich, 1983), researchers are now discovering that associations of nature, rather than nature per se, may be the therapeutic force in restorative experiences (Korpela, 2006).

These findings from the literature further add to the need to explore both **Biophilia** and **Sense of Place** as key theories in the Restoration process. And, although both A.RT. and S.R.T. attempt to illustrate the importance of nature, and environmental preferences, in both affective and cognitive forms of restoration, few attempts have been made to link these frameworks to trauma recovery, in particular. Furthermore, few attempts have been made to illustrate the importance of this in terms of an architectural response to trauma.

Ultimately, it is evident that efforts still need to be made within the existing frameworks to link the need for restoration to situations that move beyond common sources of fatigue and stress. It can also be argued that these frameworks are still limited to an understanding of environments which merely support or permit restoration, instead of purposefully 'promoting' restoration (Hartig; 2007).

2.3 CONNECTING TRAUMA AND WELLBEING THROUGH THE BUILT ENVIRONMENT.

The complexity of a trauma experience and its symptoms can be explained through various clinical and practical descriptions. Van der Kolk (2014) elaborated on the physiological, hormonal, and emotional aspects associated with trauma and posttraumatic stress disorder (PTSD). Korn (2013), and Cori (2007) explored the variety of complications that exist for trauma victims, based on the type of trauma, the level of physical and psychological development, the age of the victim, and the cultural context. However, the source and type of trauma experience can have a direct effect on the individual's trauma, his or her experience of the event and the probability or possibility of recovery (Smith, 2014). For the purpose of this research, the traumatic experience of rape and sexual assault and its inherent constructs (Cori, 2007); (Korn, 2013) will be given particular attention.

Furthermore, contrary to philosophers, such as Merleau-Ponty who initially described 'dwelling' as the basic principle of human existence (Merleau-Ponty, 1962), various authors have attempted to move beyond the basic human physiological needs of shelter, food and security, and also address the psychological needs of a buildings users. This would be essential in addressing the various stages of trauma recovery, and post trauma wellbeing. Consequently, this section will explore the existing literature on what the needs of trauma victims are and whether the built environment has the ability to meet those needs.

2.3.1.CONCEPTS OF TRAUMA AND WELLBEING - MIND, BODY AND MEMORY

Van der Kolk's (1994) continued studies on the effects of trauma on the human body and the mind, consistently refer to rape and sexual assault as a form of trauma. According to Van der Kolk (1994), when someone experiences a stressful or traumatic event, the amygdala, an area of the brain that contributes to emotional processing, sends a distress signal to the hypothalamus, activating the sympathetic nervous system and evoking an immediate stress response. This initial instinctual stress response is commonly known as the fight-or-flight response (as coined by Cannon, 1932). And it is this response, in conjunction with intense emotions at the time of the trauma initiate the long-term conditional responses to reminders of the event (Van der Kolk; 1994).

Under normal conditions, sensory organs send information to the brain, where the hypothalamus and amygdala assess the information, simultaneously highlighting any emotional significance in a process of constructing memories that is both active and constructive (Van der Kolk; 1994). However, during a high-stress event, this process is bypassed, and the automatic nervous system is activated, where the sympathetic nervous system then initiates the fight or flight response, often leading to the failure of the creation of declarative memory, and the subsequent organization of the trauma on a somatosensory level (Van der Kolk; 1994) in the form of non-declarative memories. This, then, explains why traumatized individuals are plagued by the return of dissociated, incomplete Sensorimotor reactions in the form of intrusive images, body sensations, sounds, smells, as well as physical pain, and numbing (Ogden & Minton, 2000); (Van der Kolk B. , 1994).

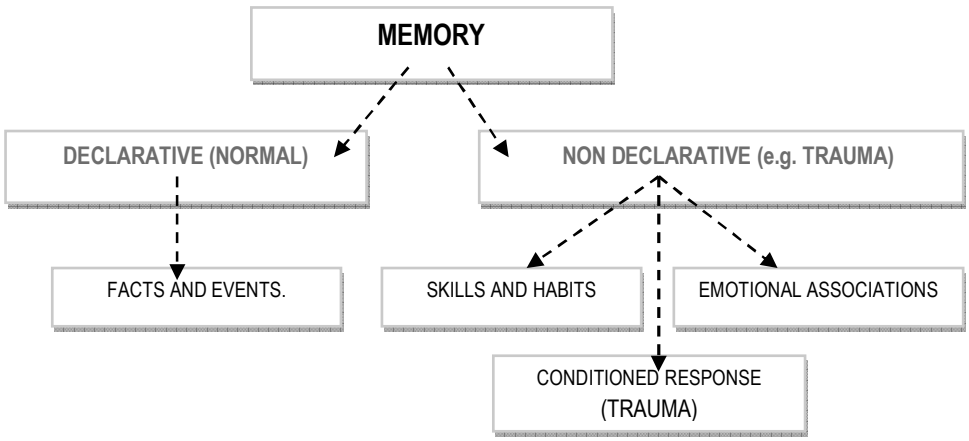


Figure 2.3 (a). Schematic of Different Forms of Memory (Van der Kolk B. , 1994, p. 258)

These unresolved Sensorimotor reactions condition emotional and cognitive processing, often disrupting the traumatized person's ability to self-regulate, think clearly, communicate with others, or obtain accurate information from emotional states (Van der Kolk, 1996); (Ogden & Minton, 2000). As a result of this, Van der Kolk (1994), postulates that the victims reactions to environmental stimuli (unconditional stimuli) becomes a conditioned response (as shown in figure 2.2). Eventually, even nonthreatening cues associated with the trauma (conditional stimuli) can elicit a defensive reaction by themselves (conditional response). A rape victim, for example, may respond to conditioned stimuli, such as the approach of an unknown man, as if she were about to be raped again, and experience immediate stress and panic.After all, experience is processed on three levels, which are mutually dependent and intertwined: Sensorimotor, cognitive and affective (Ogden & Minton, 2000).

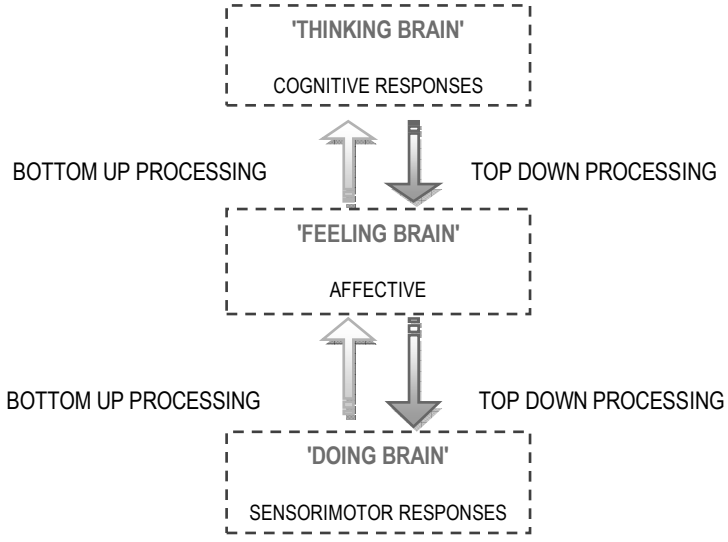


Figure 2.3.(b).Sensory Processing in the Brain (by author)

The interplay between top-down and bottom-up processing holds significant implications for the treatment of trauma. Most methods of traditional psychotherapy address the cognitive and emotional elements of trauma, using bottom up processing, and do not include techniques that work directly with sensory elements, despite the fact that trauma affects the body and many symptoms are somatically based (Van der Kolk B. , 1994).

For this reason, Sensorimotor Psychotherapy was established as a method to integrate Sensorimotor processing with cognitive and emotional processing in the treatment of trauma (Ogden & Minton, 2000). Interventions that directly address the body and the senses can work to help process experiences and memories, and ultimately regulate autonomic arousal of the fight or flight reflex (Ogden, Pain, & Fisher, 2006). SMART (Sensory Motor Arousal Regulation Treatment) was initiated by Dr. Bessel Van der Kolk at the JRI Trauma Centre in Brookline, Massachusetts. This centre aims to combine using (1) the protective sensory properties of secure, coherent environments; (2) activities from the motor-sensory realm, such as play therapy, art therapy and sensory integration therapy; (3) and creating mindfulness through movement activities. (Warner, 2007); (Warner E. e., 2014), in order to ultimately initiate the relaxation and healing process.

With this form of therapy, the aim is to avoid attempting to have the victim directly re-live the trauma scenario, as this would risk re-traumatisation of the victim. Instead, the focus is on self-regulation through the senses, and emphasising the victims present existence. This method has proven to be successful with adolescents, particularly those who are victims of sexual abuse or assault (Warner E. e., 2014). Therefore, Warner (2007) writes that by making the victims feel safer, and by providing an environment that helps them to cope with their emotions and Sensorimotor reactions, they can begin to narrate their trauma with greater clarity, ultimately aiding in the report and recovery process.

Parallels can be drawn between the aims of Sensorimotor psychotherapy techniques and Maslow's Hierarchy of needs (Maslow, 1959), in the sense that any environment catering for the victims needs to not only trigger post trauma recovery processes, but ensure that a state of wellbeing is achieved. Although the needs of individuals vary, Maslow hypothesized that these complex needs tend to be psychologically, emotionally and socially based, as summarised in Figure 2.3.

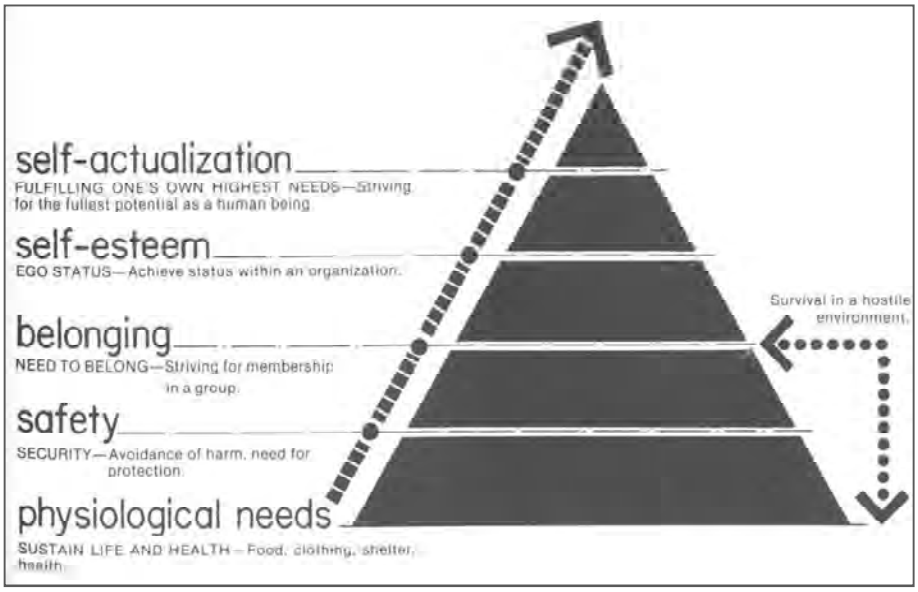


Figure 2.4. Maslow's Hierarchy of Needs (Wilson, 1984, p. 163)

According to this hierarchy (Wilson, 1984), one must satisfy lower level basic needs, before progressing on to meet higher level growth needs, with the ultimate goal being a state of self-actualization. However, it is important to note that Maslow's five stage model was later expanded to include cognitive and aesthetic needs (McLeod, 2007). Succinctly described, cognitive needs relate to the quest for knowledge, and meaning; whilst aesthetic needs relate to an innate appreciation and search for beauty, form and balance. It was hypothesized that these additional needs should be met before a state of self-actualization could be achieved (McLeod, 2007). Furthermore, according to Keeling, Clements-Croome, Luck and Pointer (2012), 'Wellbeing' has many definitions - yet perhaps the most appropriate is positive psychology - in the form of autonomy, improved relationships and resilience. Wellbeing also provides a perspective of health that looks at the full spectrum of fitness for life rather than the traditional dichotomy of sick or healthy, mind or body (Davies, 2011).

The following table summarises different descriptions of well being from the literature, where it becomes clear that many focus on positive mental wellbeing or positive psychology:

MASLOW (1959)	HUPPERT (2011)	HUPPERT (2009)
HIERARCHY MODEL: • Physiological; • Safety; • Belonging; • Esteem; • Cognition; • Aesthetic; • Self Actualisation; • Transcendence.	• Competence; • Emotional Stability; • Engagement; • Meaning; • Optimism; • Positive Emotion; • Positive Relationships; • Resilience; • Self esteem; • Vitality.	**PERSONAL:** • Satisfaction; • Positive Affect; • Optimism; • Self esteem. **INTERPERSONAL:** • Sense of Belonging; • Social Support; • Social Recognition; • Social Progress.

Figure 2.5. Summary of 'Wellbeing' Descriptions (Keeling, Clements-Croome, Luck and Pointer; 2012; pg 02)

Based on the table, it becomes clear that Maslow's view of wellbeing was individualistic in nature, where other people matter only when they contribute to the individuals sense of belonging or self esteem. However other studies show that there are correlations between familial, workplace and societal relationships and individual wellbeing - and these connections should not be overlooked when designing for wellbeing and positive experiences (Huppert, 2009); (Huppert, 2011). It is, however, essential to bear in mind that any attributes of positive psychology developed need to be optimalized in terms of a more measurable form that directly relates to the experiences and perceptions of the particular users (Keeling, Clements-Croome, Luck, & Pointer, 2012).

Hence, for the future purpose of this research, focus and emphasis will be given to the need for a healing and calming environment for post trauma victims. The Table below, combines an understanding of the literature from several authors (Garbarino et al, 1992; Holman and Stokols, 1994; Crombrinck & Skepu; 2003, Barringer; 1992) on the symptoms and consequences of rape and sexual assault, and relates them to Maslow's Hierarchy of needs. The intention of this is to clearly understand what needs the built environment would need to address in order to promote restoration, and consequently, wellbeing.

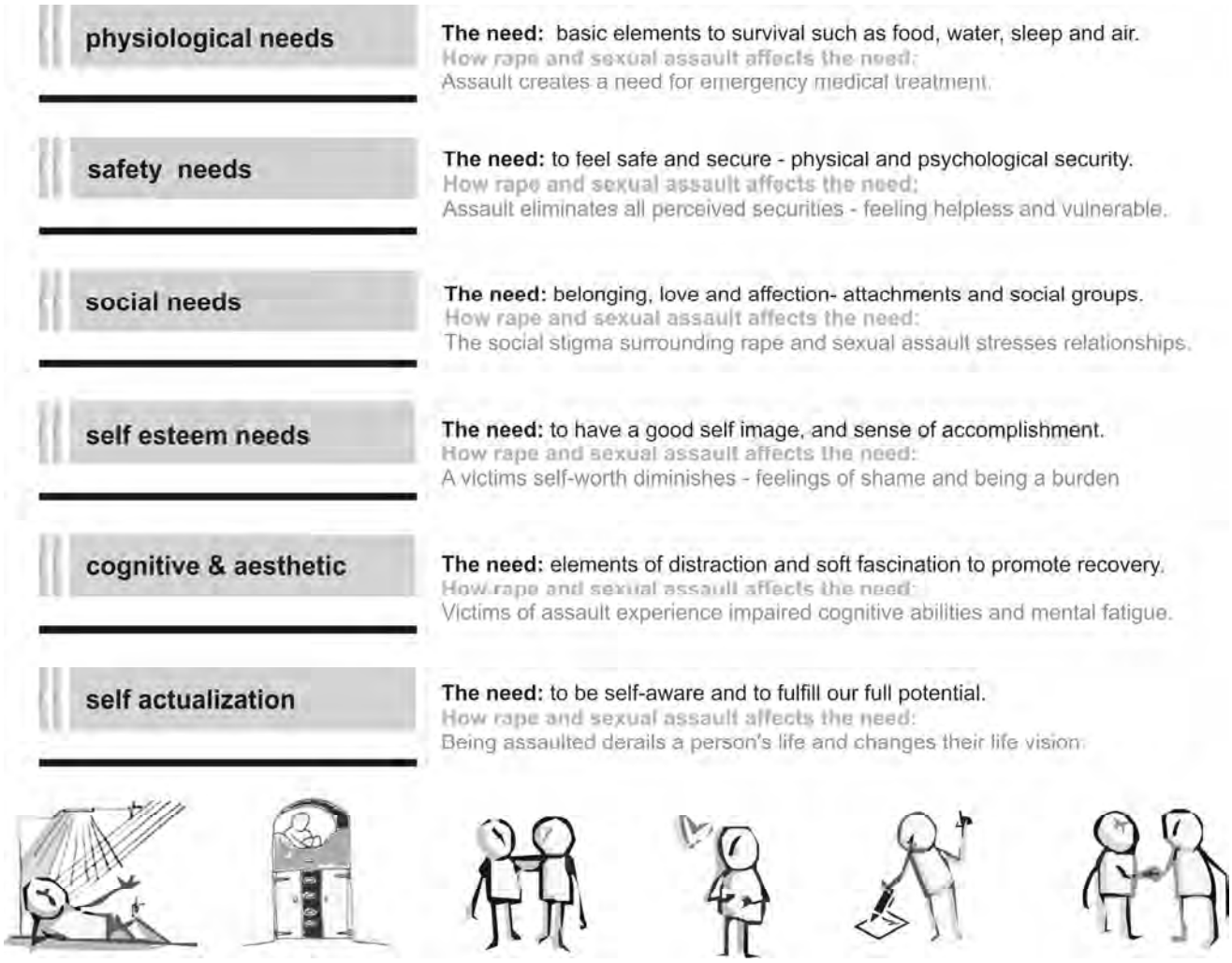


Figure 2.6 Relating Maslow's Hierarchy of Needs to the Symptoms of Rape and Sexual Assault.

(by author)

2.3.2 THE POTENTIAL ROLE OF THE BUILT ENVIRONMENT IN TRAUMA RECOVERY AND WELLBEING

Despite ongoing discussions of wellbeing, for many years environments were designed to follow the functionalist approach, and only cater for the basic physical needs, as expressed by the following: "the view was that environments must be designed for people to be placed in, to meet their needs and to satisfy their purposes." (Stokols, 1974, p. 28). Unfortunately, these static environments allowed people only a limited amount of control over their environment, and were arguably unable to satisfy the more complex psychological, emotional and social needs, as highlighted by Maslow (1959). Furthermore, as per the work of Tottenham et al (2010), these types of 'institutional' environments aggravate anxiety and stress, and could consequently not be considered appropriate for any report and recovery processes in trauma victims.

However, with recent consciousness, more and more built environments have been designed as flexible, allowing people to shape and alter their surroundings to suit their needs (Stokols, 1974). From this it becomes apparent that trauma response environments should be people-centred, and allow people to become active participants in their environments. This improves the users experience of place, reducing stress, and lifting their resultant mood.

According to Keeling, Clements-Croome, Luck and Pointer (2012), buildings should look beyond concepts of 'comfort' and have "positive" environments that actively contribute to the occupants recovery and well-being. This is supported by the work of Norburg - Schulz, who argues that the environment, of which architecture forms an integral part, influences our mood (Norberg-Schulz; 1965: 22). And so it becomes evident that the built environment and human behaviour are closely intertwined, much in the 'osmotic' way typically described by Merleau-Ponty (1962). It can be further deduced then, that a respect for this relationship is essential in establishing a sense of healing and safety within a psychosocially supportive environment (Proshansky et al;1983; Korpela; 1989; Holman and Stokols, 1994).

Unfortunately, research to date has mostly focused on associations between negative affect and illness in relation to psycho-physiological wellbeing. Negative affect was generally connected with specific action tendencies - such as fear, or the need to escape, and positive affect with inactivity. However, a review of empirical evidence linking both positive and negative emotion to health was published by Consedine and Moskowitz (2007). Their resulting conclusions are summarised in the table (Figure 2.7) on the following page:

DISCRETE EMOTION	PHYSIOLOGICAL	INTRAPERSONAL	SOCIAL
NEGATIVE AFFECT:			
Sadness	• Reduced energy and activity. • Reduced Appetite.	• Poorer Medical treatment adherence.	• Reduced Interactions.
Anger	• High levels of aggression. • Increased risk of illness, disease and cardiovascular problems. • Increased chronic pain.	• Reduced Attention. • Attribution of Blame.	• Poor social relationships. • Increased conflicts.
Fear and Anxiety	• High escape action. • Increased risk of asthma, heart disease and arthritis. • Detrimental behaviours e.g. alcohol / drug consumption	• Avoidance behaviours.	• Reduced Interactions.
DISCRETE EMOTION	**PHYSIOLOGICAL**	**INTRAPERSONAL**	**SOCIAL**
POSITIVE AFFECT:			
Joy and Happiness	• Improved Health in samples with Chronic Illness • Lower mortality risks. • Antidote to Stress.	• Expanded attention. • Openness to experiences and propensity to play. • Improved Confidence	• Strengthened social bonds • Improved socio-economic status.
Interest and Curiosity	• Lower Mortality rates. • Reduced Hypertension.	• Engagement, creativity and openness to ideas. • Cognitive flexibility and creativity	• Strengthened social bonds • Improved socio-economic status.
Pride	• Lower cardiovascular stress. • lower mortality via self-esteem construct	• Self-esteem and self-efficacy linked to improved behaviour	• Strengthened social bonds • Improved socio-economic status.

Figure 2.7 Summary of Negative and Positive Reactions to Socio-Physical Environments

(Based on the research of Consedine and Moskowitz; 2007)

With this discussion in mind, one can then raise the question of whether the built environment can specifically promote trauma recovery and wellbeing through the post trauma recovery phases identified by Ogden & Minton (2000) and Ogden, Pain, and Fisher (2006),namely: (1) stabilization and symptom reduction (arguably similar to a creating a sense of refuge); (2) working with traumatic memory (arguably similar to the process of instoration and reflection); and re-integration and post trauma growth (arguably dependent on a sense of place).

Ultimately, the literature has already provided part of the answer - through the process of restoration. However, as it stands, the literature has only suggested potential connections between post trauma recovery, wellbeing and the built environment. Although sensory design, nature, and a sense of environmental connection to place are often mentioned for their role in influencing attitudes and behaviours, and overall wellbeing (Pallasmaa, 2005); (Keeling, Clements-Croome, Luck, & Pointer, 2012), few direct connections are made to how this could trigger a post trauma recovery process - either in terms of Ogden and Minton's (2000) post trauma recovery steps, or the themes of restoration previously discussed. Similarly, the themes which explore restoration as a process now need to be expanded to suit the concepts of post trauma recovery and wellbeing.

And so, one can deduce that the built environment can potentially promote post trauma recovery and restoration, but the potential of the built environment in triggering the phases of recovery need to be expanded to suit the specific experiences and needs of the victims, and specifically understood in relation to the phases of recovery. Subsequently, these continued gaps in the literature serve as the driving force for this dissertation. It is the argument of this dissertation that restorative environments should seek to actively address those sources and situations where restorative experiences are most urgently required, as could be considered the case with victims of extreme trauma.

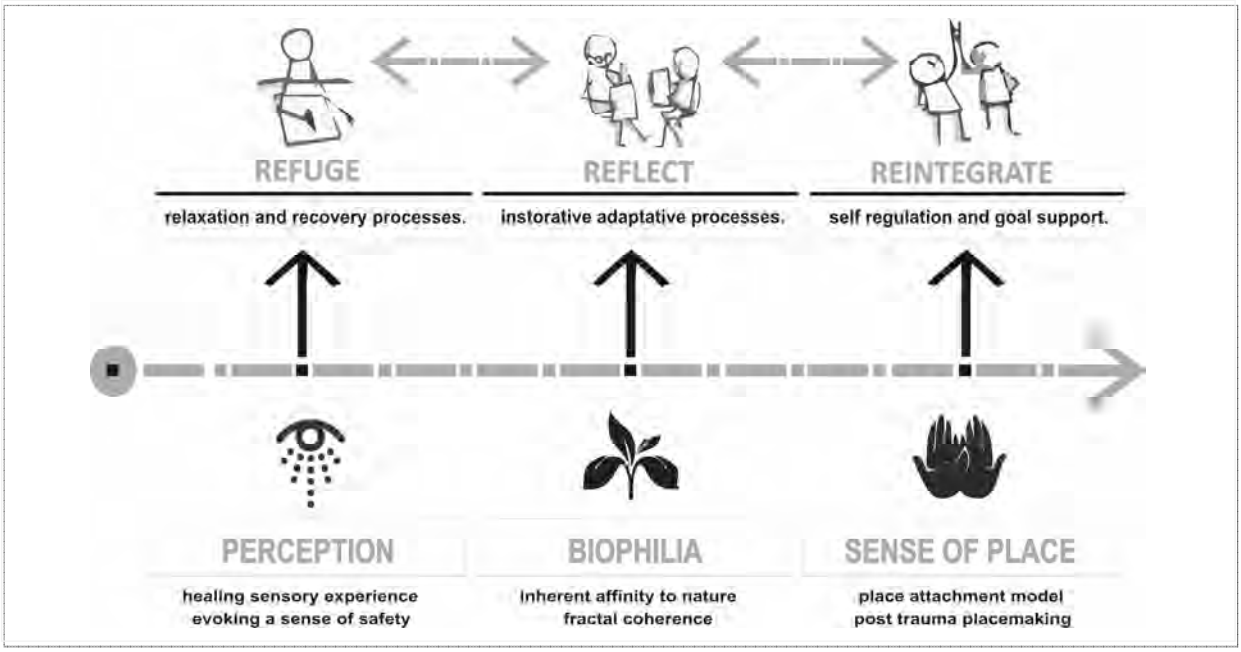


Figure 2.8 The Proposed Way Forward: Expanding on Restoration through Perception, Nature and Place. (by author)

2.4. CONCLUSION

Clearly, much work has been done in trying to understand the concepts of both restorative environments, and the role of the built environment in recovery and wellbeing. Connections exist between the logic of these two frameworks, as seen in the continued work of Ulrich (1983) and Kellert (2005) , but there continues to be very few links to the importance of these frameworks in the environmental responses to trauma and trauma recovery.

Furthermore, research in Restorative Environments, in particular, should look beyond an understanding of environments which merely support or permit restoration, and instead begin to analyse environments in which restoration is actively promoted (Hartig; 2007).

The potential links to Perception Theory, Biophilia and Sense of Place as theories which could assist in achieving this are occasionally mentioned, but not fully explored - especially in relation to Trauma. Although there are links to the incorporation of nature and place preferences within the existing restorative environments framework, very little research exists to explain how these concepts would assist in actively promoting post trauma restoration within a trauma report and recovery environment.

Similarly, although connections have been made between sensory design and a holistic view of wellbeing in the built environment (Keeling, Clements-Croome, Luck, & Pointer, 2012), many environments continue to be perceived as institutional, insensitive, austere and stressful (Naidoo, 2013).

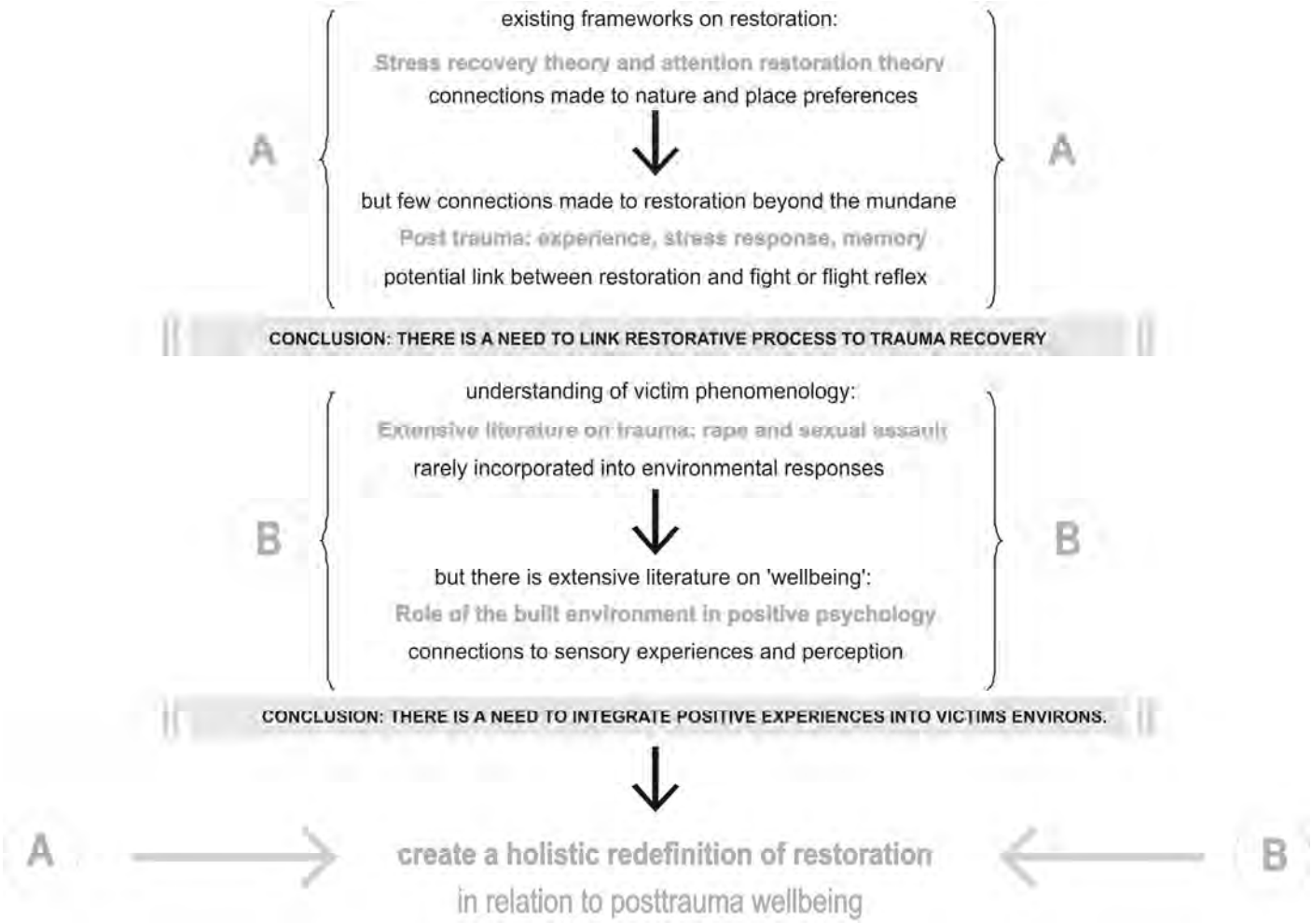
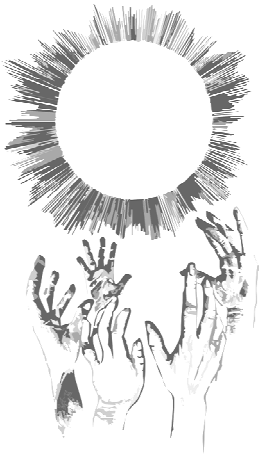


Figure 2.9. Graphic Summary of Literature and Gaps Driving the Dissertation (by author)

CHAPTER THREE:

THEORETICAL PERSPECTIVES



REDEFINING RESTORATIVE EXPERIENCES FOR REPORT AND RECOVERY ENVIRONMENTS

3.1 INTRODUCTION:

Based on the review of the literature in the previous chapter, it is clear that there is a need to design report and recovery environments that both effectively respond to trauma, and allow for the initialisation of restorative processes. It is the aim of this dissertation to illustrate that a truly restorative experience for trauma victims cannot only include the concepts of temporary cognitive and affective restoration explored by SRT and ART, but also needs to accommodate for healing elements that generate a truly 'lived' experience of the restorative environment.

Subsequently, the incorporation of:

- The theory Perception, in terms of the ability of multi- sensory design to promote a sense of refuge;
- The theory of Biophilia, particularly the use of fractals, and their inherent reflective properties;
- and the integration of Sense of Place to initiate longer term reintegration and restoration;

will be explored as essential components in creating a more holistic definition of restoration, in relation to trauma.

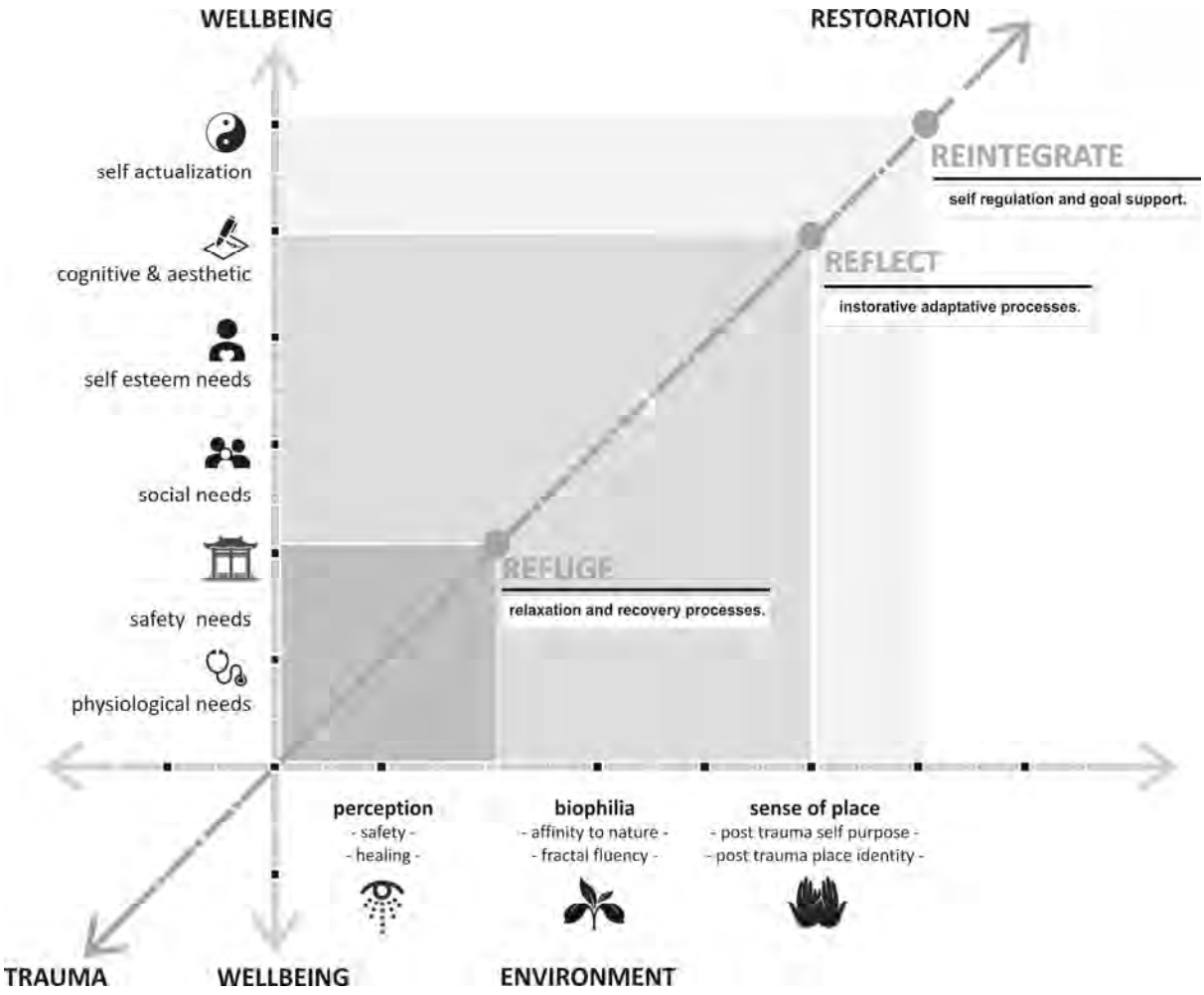


Figure 3.1. Graphical Summary of Proposed Theoretical Analysis (by author)

PART 01 - CREATING REFUGE THROUGH THE THEORY OF PERCEPTION

Within the fields of Phenomenology and Environmental Psychology, several authors (Norberg Schulz;.1965, Pallasmaa; 2005; Holman and Stokols; 1994, Kaplan and Kaplan; 1989; Rapoport; 1995) theorize that in order to effectively design positive architectural experiences, one needs to first understand the perceptions of the users, and how they experience their environments through sensory processes. The expanded concepts of wellbeing from the previous chapter, also suggest that there is a connection between positive psychology and sensory experiences. Hence, the first section of this chapter will explore the role of multi-sensory experiences and perception in the design of report and recovery environments where a sense of refuge is triggered, and where restoration could be actively initiated, rather than merely supported.

3.2.1 EXPLORING MANKIND AND THE ENVIRONMENT THROUGH THE PROCESS OF PERCEPTION.

Most modern understanding of perception is rooted in Gestalt Theory. This is a theory which has arguably made some of the most influential contributions to psychology, since its inception in 1912 (Rock & Palmer, 1990). Gestalt theory emphasizes the complexity of creating meaningful perceptions to rationalise a current context (Rock & Palmer, 1990). And according to Norburg-Schulz, (1965), this practice of perception is a subconscious process that allows people to understand, translate and draw relationships with not only the functional, but also the experiential (sensory) qualities of their surrounding environments.

To expand this understanding, Phenomenologist's are now placing more emphasis on 'perceptual space'. Defined by (Relph, 1976), 'perceptual space' is the realm of direct emotional encounters with natural or built spaces. Relph suggests that a particular group of people may share common perceptual spaces with common meanings and experiences. For the purpose of this research, it will be assumed that victims of trauma, in particular rape and sexual assault, share such a 'perceptual space'. An environment designed for posttraumatic report and recovery processes, arguably needs to establish a sense of connection and meaning between these users and the environment in order to facilitate the process of disclosing and recovering from the trauma.

The theory of perception and, inherently, sensory design, seems to acknowledge this notion of 'perceptual space', and emphasize that humans experience their surroundings through all the senses: smell, sight, touch, smell, sound. Merleau-Ponty (1962) supports this by emphasizing that spaces are not merely perceived, but lived, thereby forming emotional bonds. Furthermore, the relationship between mankind and the built environment has been established as bi-directional, in the sense that, humans are affected by the environment and yet, in turn, they also affect the environment. Merleau-Ponty (1962 cited in Pallasmaa, 2005: 20 & 21) defined architecture as an "osmotic relation between the self and the world"; with each mutually defining the another.

Pallasmaa (2005) argues that by connecting the body and mind to a space, architecture can evoke and establish association through the use of memory and imagination (Pallasmaa, 2005) creating both mental and physical 'lived' experiences. Ultimately, the phenomena of understanding these experiences through the senses of sight, sound, smell and taste, and the haptic sense/touch, is what is known as perception (Hesselgren, 1975).

In addition to this, the perception of an environment has certain emotional (Norburg-Schulz, 1965) and behavioural implications (Hesselgren, 1975); (Pallasmaa, 2005); (Rapoport, 1995), not only affecting people's experiences of a space, but also their emotions and behaviours. Without this dimension of feeling and emotion, architecture remains an object, an artefact with no soul, and with no memory beyond the 'lived' experience.

Philosopher Taylor Carman (Carman & Hansen, 2004), further elaborates on this by distinguishing between two aspects of perception, namely, a passive sensory dimension of sense experiences; and, second, an active motor dimension, which relates directly to Sensorimotor actions. However, according to Seamon (2010), these sensory and motor dimensions are never separate; but rather they work together effortlessly "so that awareness and action unfold as an integrated, continuous experience" (Seamon, 2010: 6). Sensory architecture subsequently attempts to address all the senses, fusing the sense of self with experiences of the world, attempting to create spaces that strengthen a sense of reality. This is arguably very much in line with the vision of Gestalt Psychology, as discussed earlier.

Sensory architects, such as Peter Zumthor (2006) further argue that the qualities and aspects of the world around us - including matter, space and scale - are measured by our bodies and require the use of all our senses to create both an affective and cognitive experience. One can concur with Pallasmaa (2005), who stated that architecture, through the mediation of the senses is "the art of reconciliation between ourselves and the world." (Pallasmaa, 2005, p. 72).

Now, it becomes clear that experiencing architecture has less to do with the aesthetics of a building, but more with how it engages with all of our senses. People experience a space with their entire body, through movement, memory and imagination (Zumthor, 2006); (Pallasmaa, 2005). Senses, taken as a whole, are an information seeking system. They interact with the environment, and in turn, transmit signals to the brain. Each of the five senses use different means for exploring the environment.

3.2.2 LINKING THE SENSES TO PERCEPTION:

Salingaros and Masden II (2008), argue that human neurological mechanisms instinctively crave physical, psychological and biological connections to the world around them. According to Salingaros and Masden II (2008), both natural and built environments posses an intrinsic potential to enable strong connections, which in turn could induce healing experiences. Environments devoid of neurologically stimulating and nourishing information, such as colourless, drab, minimalist surfaces and spaces, often result in feelings of anxiousness and sensory deprivation (Salingaros and Masden II, 2008).

But based on Van Der Kolk's (1994) analysis of how post traumatic memory is formed, it also becomes clear that report and recovery environments should avoid sensory experiences that trigger memories of the trauma, whilst concurrently promoting sensory experiences that form positive relationships between the report and recovery environments.

Salingaros and Masden II (2008) further concur with Van der Kolk (1994) that emotional reactions to sensory input is a subconscious form of memory and imagination, and that avoiding bland or negative stimulus, and promoting positive stimulus within an environment is essential to psychological restoration and learning. The work of several authors (Pallasmaa, 2005); (Zumthor, 2006) further support this premise. And so, response environments for victims of trauma, should strive to use a full sensory experience to create positive spatial experiences and evoke a sense of refuge.

Unfortunately, hospitals, and various crisis centres, with their emphasis on diagnosing, curing, and treating, have become cluttered, noisy, and stressful environments with little regard for the potentially detrimental effects these environments have on the patients physical or psychological well-being (Keeling, Clements-Croome, Luck, & Pointer, 2012); (Naidoo; 2013).

Science and technique in sensory design may appear to focus on the removal of discomfort, while art provides components of pleasure - but the relationship is subtle and more complicated. So, when a building is designed just to be functional it is possible to reduce sensory design into its components and then remove distraction, malfunction and annoyance, but when a building is an experience like a hospital or crisis centre, where various post trauma processes occur, then it is more important to think of all the senses together (Keeling, Clements-Croome, Luck, & Pointer, 2012) and how these inform the users perceptions.

According to the psychologist James J. Gibson, the 5 sensory systems can be categorized as 5 perceptual systems (Gibson, 1966), as shown in Figure 3.2 below. This supported his view that our senses are integrated information seeking mechanisms. In the place of the traditional sight, sound, taste, smell and sight, Gibson (1966) instead integrated the visual, auditory, taste and smell, basic orienting and haptic systems.

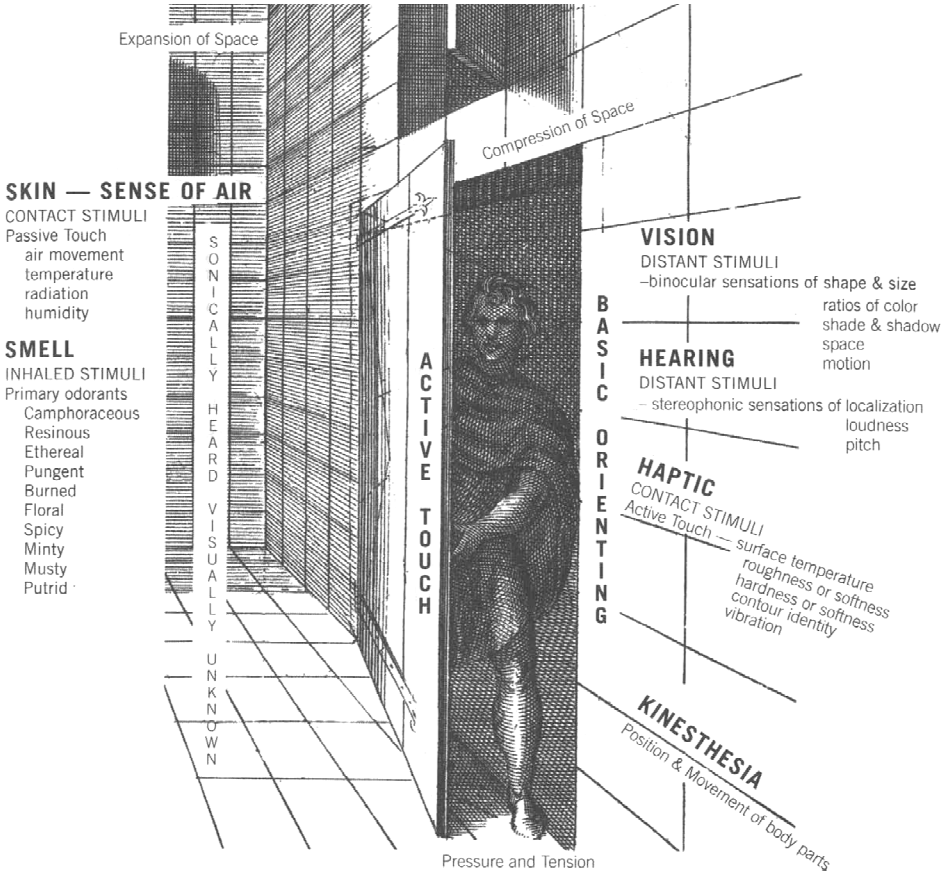
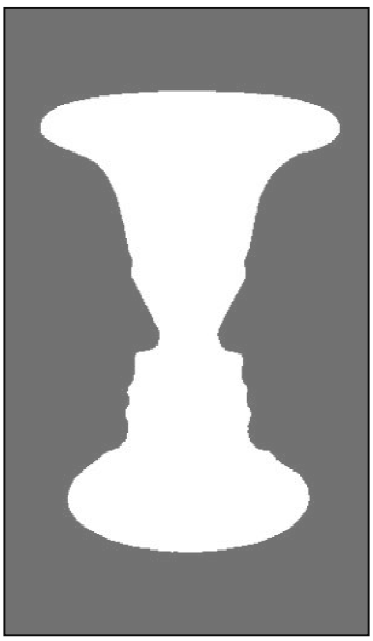


Figure 3.2. Range of Senses (Malnar and Vodvarka., 2004: 151)

VISION AND FIGURE-GROUND PERCEPTION: Sight is regarded as the most important and influential sense, based on the logic that how we perceive our environment is usually centered around what we see. Vision could be considered the main sensory input, with the other modalities complementing it - what the eye sees, the other senses then confirm and amplify (Pallasmaa, 2005).



To better comprehend the structure of a visual field, people organize elements into two opposing groups: positive elements that are perceived as figures and negative elements that provide a background for the figures (Ching, 1979). As seen in figure 3.3., a figure is something to which a person directs their attention; it is considered to be perceptually bright, seeming to have more intensity than the background. The ground, alternatively, always seems to be under the figure, and generally lacks a particular form, hence appearing continuous. Thus, people's understanding of any composition - including architectural - depends on how they interpret the visual interface between positive and negative elements (Ching, 1979).

Figure 3.3. Rubin vase: figure-ground perception. John Smithson. http://psychology.about.com/od/findex/g/figure-ground-perception.htm; Retrieved:(March 2015)

As already established within the frameworks of SRT and ART, legibility and visual coherence are essential to the support of both cognitive and affective restorative processes (Kaplan S. , 1995). However, one could also easily argue that visual stimuli act from a distance, and are thus, detached from the human body. Hence any design that only predominantly accommodates for vision, does not create a full experience (Pallasmaa, 2005).

Subsequently, Pallasmaa (2005), argues that architecture should divert emphasis from focused vision to peripheral vision. After all, it is this which determines the quality of an architectural environment. Peripheral vision transforms retinal messages into spatial and bodily experiences, so that in other words, it integrates people with a space, thereby avoiding a sense of detachment (Pallasmaa, 2005). This consequently correlates with SRT's recommendations for deflected vistas and spatial clues (Ulrich R. , 1983); and ART's recommendations for environmental extent (Kaplan S. , 1995) as components for restorative environments.

TASTE AND SMELL: Smell is the sensory experience which takes the longest to reach the brain and, yet once it has reached the brain, that smell lasts longer than any of the other sense stimuli (Pallasmaa, 2005). Furthermore, the olfactory sense is regarded as the sense with the most powerful emotional effects due to the processing of smells and emotions in the same part of the brain (Augustin, 2009). Everything has its individual scent and our sense of smell is extremely sensitive, with human beings having the ability to recognize over ten thousand different types of odours (Day, 2007).

Since it is not possible to name all odours, spatial qualities, are instead, often associated with certain smells. The expression “it has a hospital smell” is familiar to most people because of the smell associated with hospitals. Hence, people respond to smells according to their 'scent memories', - the memory links between scents and experiences (Augustin, 2009). Thus, Pallasmaa (2005: 54) explains that "the most persistent memory of any space is often its smell."

Additionally, particular smells can effect and influence people, for example, workers can experience improved mood and concentration when exposed to the ‘scent effects’ of lemon and jasmine (Augustin, 2009). Furthermore, taste and smell are usually linked, and these two senses, when used in architecture, can create heightened experiences that have the power to subconsciously evoke emotions, or trigger memories. Naturally, restorative report and recovery environments should avoid unpleasant odours, and instead incorporate scents that evoke feelings of calmness and safety, and that ultimately assist in promoting positive spatial experiences.

TOUCH/ HAPTIC SYSTEM: The Haptic system essentially consists of any stimuli which involves touch. It can subsequently be defined as the process of recognising objects through its physical properties. The sense of touch is often referred to as unconscious vision, providing three-dimensional information to objects (Pallasmaa, 2009). Haptic experiences occur through movement and the physical exploration of a space.

According to Pallasmaa (2009), touch is one of the most primal and natural experiences in architecture. Pallasmaa argues that Touch is the sensory modality which integrates people's experiences of the world with themselves (Pallasmaa, 2009). Furthermore, Pallasmaa (2009) explains that all of the senses, are extensions of touch, and that all of our sensory experiences are related to tactility - after all, by touching materials and surfaces, we experience more than by simply seeing it. Ultimately, it is tactile experiences that establish the aesthetic qualities of perceived objects and environments (Pallasmaa, 2009) and provides information regarding weight, densities, textures, and temperature - all important attributes within the built environment. The Beeswax Walls of the St Ignatius Chapel in Seattle (Designed by Steven Holl) serve as a particularly spiritual and calming example of the power of tactility.

Figure 3.4 Tactility: Beeswax Wall (Architect: Steven Holl)
http://gohistoric.com/photos/979.
Retrieved: (March 2015.)

KINAESTHETIC AND VESTIBULAR: These senses, as part of our basic orientation system, form the basis of understanding the relationship between a horizontal plane and our vertical posture. These senses are associated with bodily equilibrium and are the means by which we pick up information about our orientation in relation to gravity, force and acceleration (van Kreij, 2008). Kinaesthesia is a sense mediated by the muscles, tendons, and joints and is stimulated by various bodily movements and tensions (van Kreij, 2008). Fundamentally, kinaesthesia deals with people's positions and movements within space and this impacts directly upon the way in which people perceive the built environment. Ultimately, it affects the senses and peoples experience of space through their positions and motions (van Kreij, 2008). On the other hand, the vestibular system, situated in the inner ear, provides information regarding where the body is in space, as well as its speed, direction and movement in relation to the pull of gravity.

Thus, the vestibular system is responsible for people's balance and posture. And as the body is a tool for sensing space, so consequently, the movement and orientation of it determines people's experiences and perceptions of the built environment. Pallasmaa (2009; 106) makes reference to the 'Steps in the Marsh' garden at the Heian Shrine in Kyoto as an excellent example for addressing the vestibular system when designing multi-sensory spatial experiences.

Figure 3.5 Vestibular: Steps in the Marsh
https://www.flickr.com/photos/banzainetsurfer/8932510427/
Retrieved: (March 2015.)

It could be argued that designing for these senses could facilitate in meeting the Gestalt Therapy notion of needing to immerse oneself in the present moment, in order to help deal with past experiences (Yontef, 1993). By creating experiences that address the way people move through a space, and orientate themselves within a space, the 'lived' experience of the building is emphasised, and the focus from the trauma experience is diverted.

POST SENSORY PERCEPTION: These sense modalities, as discussed individually, should however, not be considered separate. Merleau-Ponty (1962) and Seamon (2010) emphasize that the senses work in conjunction, and mutually resonate to make each experience more meaningful. Malnar & Vodvarka (2004), elaborate on post sensory perception, stating that humans experience three kinds of sensory responses:

(1) First, an immediate physical response to stimuli; an involuntary reaction of the sense organs to stimuli.
(2) Second is a response conditioned by prior knowledge of its source. It produces a variety of reactions depending on its character and our understanding of its source.
(3) The third is a Sensorimotor response to stimuli as it becomes identified in ones memory with a particular place and time; in other words a memorable or remembered sensation. (Malnar & Vodvarka, 2004, p. 21).

3.2.3 CREATING A SENSE OF REFUGE WITHIN THE BUILT ENVIRONMENT.

Based on the discussion of the different senses, it is clear that coherence and positive stimulation are proponents of perception that contribute to a sense of Refuge. Coherence refers to the simplicity or clarity of building elements and form, and is particularly important as it enables users to make reasonable deductions about the identity, meaning and location of objects and spaces within buildings.

Therefore, a coherent and logical building form with good way finding, using signage, artwork, and other visual clues, is essential in helping users navigate their surroundings without getting lost or having to depend on others (Schweitzer, Gilpin, & Frampton, 2004). Multiple, repetitive features, underlying expression of rules and thematic continuity all contribute positively to coherence (Kaplan and Kaplan; 1982). Disorganization and blandness are examples of opposing impedances to coherence and may cause stress because the users cannot makes sense of them - their meaning, function, or even basic form and composition are hard to comprehend.

Light, especially, makes spaces easier to orientate - it can reveal or conceal the spatial volume or features, or to draw attention to a task. According to Zumthor (2006), light in architectural form is very important as it captures the essence of a space and gives it character. A character, that is remembered and which can be recalled in memory through the senses. This light quality has the ability to transcend its user to therapeutic state of mind, thereby creating a memorable, holistic experience, that is a retreat that can be recalled -and re-visited- far beyond its lived experience (Zumthor, 2006)

However, not all spaces in buildings require the same amount of light - in cases where patients spend all their days in the rooms, it is important that patients have dim light, and no glare. Day lighting is hence a viable solution for lighting general spaces, but for activities involving attention, for example therapy rooms with workshops or teaching activities, direct day lighting could also result in issues of glare. These type of rooms should be designed with low transmitting glazing, or solar shading systems.

In addition to environmental coherence, it is important to bear in mind that human beings function and recover optimally with moderate levels of stimulation (Kaplan S. , 1995). Too much stimulation causes distraction and results in a sensory overload that interferes with cognitive processes (Kaplan S. , 1995). It is, therefore, essential that report and recovery environments avoid overstimulation. Loud noises, bright lights and colours, particularly at the red end of the spectrum all appear to increase stimulation, with crowding and inappropriately close interpersonal stimulation aggravating this (Evans & and McCoy, 1998). These elements of overstimulation are also not conducive to creating a sense of calm and refuge. However, as previously discussed, and as illustrated in the figure below, an environment should also avoid the other extreme of the spectrum. A balanced sense of stimulation is necessary to establish a positive connection to an environment.

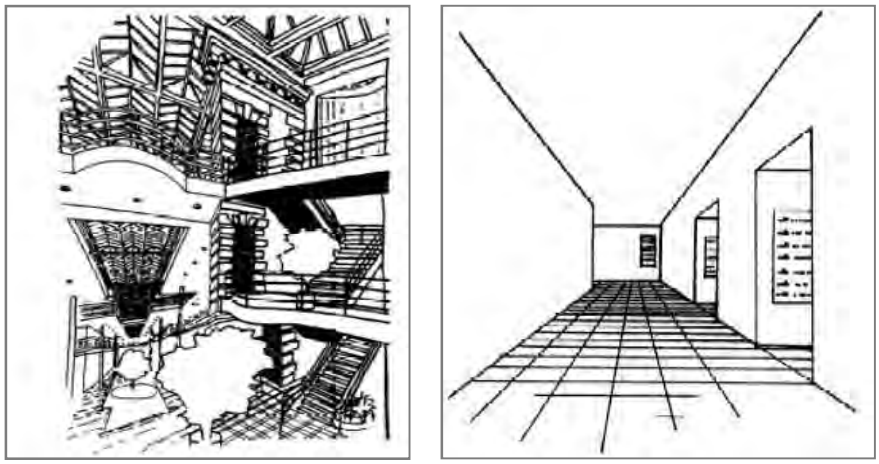


Figure 3.6. Stimulation: Two Extremes (Evans & and McCoy, 1998, pp. 86 - 87)

On the other hand, claims are made that pleasing aromas can reduce blood pressure, slow respiration, and lower pain-perception levels, whilst odours (negative smells) are observed to stimulate anxiety, fear, and stress (Schweitzer, Gilpin, & Frampton, 2004). Healing and wellbeing within an environment can only be established if the sensory experience of that environment establishes a positive bond between the person and the environment. Positive exposure to visual, olfactory and acoustic stimulation is strongly influenced by layout, circulation and the individuals location within a space (Ulrich R. , 1983). View orientated spaces, and operable windows further expose users to ambient smells, breezes, and all the sensory stimuli of an open environment (Ulrich, 1983).

Figure 3.7 Sensory Experiences to Calm Children and Adolescents and create a Sense of Refuge.
Designed by the Dan Pearlman Agency for the Evangelisches Konigin Krankenhaus Hospital in Berlin, Germany.
(http://5osa.com/1978); Retrieved: March; 2015.

Peter Zumthor (2006) further suggests that such experiences be created through the harmonious composition of light, form and space, and materials and construction, in order to create a holistic experience that feeds the mind, body and soul. Additional properties of the built environment such as sound, smell, aesthetic qualities, privacy, and control are also said to influence the wellbeing of a person through the psychological and the physiological systems of the human body (Zumthor, 2006); (Ulrich, 1983); (Pallasmaa, 2005); (Keeling, Clements-Croome, Luck, & Pointer, 2012).

The process of de-stressing involves all the senses, with texture, colour, light, harmony, sound and smell, working psychologically on our mood, reducing stress, and evoking a preference for place (Day, 2004); (Ulrich, 1983). Ultimately, this can further nurture the human being as a whole, supporting health physically and spiritually, thereby nourishing the soul (Day: 2002). Additionally, psychological, hormonal and physical responses to environments are interlinked (Day, 2004), and the environment that one is put into during a recovery period is very important as it affects the rate of the recovery process and the patient's susceptibility to the treatment and therapy.

Two examples of architectural compositions that fully encapsulate the above principles, can be found in the work of Louis Kahn's Philip Exeter Library in New Hampshire (Figure 3.6.), and Peter Zumthor's Therme Val in Switzerland (Figure 3.7). Louis Kahn's work is particularly commendable for its manipulation of light and form, whilst Zumthor's unique compositions of textures, colours and volumes create a unique multi-sensory experience that is remembered well past its 'lived' experience.

Figure 3.8 Exeter Library (Architect: Louis Kahn)
(http://www.archdaily.com/63683/ad-classics-exeter-library)
Retrieved: March; 2015.

Figure 3.9 Therme Vals (Architect: Peter Zumthor)
(http://ideasgn.com/architecture/therme-vals-switzerland-peter-zumthor/)
Retrieved: March; 2015.

From this, one can conclude that healthy, holistic, calm environments which use multi-modal sensory experiences to evoke positivity through both memory and imagination (Van der Kolk B. , 1994); (Pallasmaa, 2005) and lower stress levels are essential to initiating post trauma recovery and restoration. Through the use of sensory elements, restorative environments could reinforce a sense of safety, refuge and wellbeing, subsequently creating positive experiences that improve cognitive and affective restoration. Sensory design ultimately has a key role in redefining the concept of Restorative Environments and expanding the existing SRT and ART frameworks by contributing to the reduction of psychological and mental fatigue, improving cognitive mapping (Kaplan S. , 1995) and aiding in stress recovery and coping mechanisms (Ulrich R. , 1983).

And so, it can be inferred that architecture most successfully satisfies human needs - including the perceptual needs of the victims - when there is a balance between the concepts of function and experience. This is supported by Barr (1970), referring to the work of Walter Gropius, who theorised that by understanding the nature of what people sense and experience, and the way they perceive it, the potential influence of man-made designs on human feelings and thinking can be better understood. Unfortunately, this relationship is frequently not considered in report and recovery environments for trauma victims in Durban (Naidoo; 2013). And in a society where the stigma and secrecy of rape continues to instil feelings of guilt and shame in trauma victims, report and recovery environments need to utilise this 'osmotic' relationship to establish a safe, non-judgemental and restorative experience.

PART 02 - PROMOTING REFLECTION THROUGH THE THEORY OF BIOPHILIA

The frameworks of Stress Recovery Theory (SRT) and Attention Restoration (ART) draw several connections between restoration and nature. The second part of this chapter will aim to understand how this could relate to processes of post trauma restoration. Biophilia theorists often support this by emphasizing the need to explore what elements of nature can be incorporated into the built form to generate a positive environmental psychology.

3.3 1. CONNECTING BIOPHILIA TO REFLECTIVE AND INSTORATIVE PROCESSES.

As previously discussed, victims of trauma are “stuck” in the flight or fight mode of their reaction to a life threatening experience - a normal, even evolutionary response to a violent experience. During the traumatic experience the “primitive” or “lizard” brain takes over a person’s reactions in order optimize survival (Smith, 2014). At the same time, other parts of the brain effectively shut down (Van der Kolk B. , 1994). Areas of the brain that optimize memory, speech, and rationality become disconnected from actions. Hence, according to the research of Smith (2014), victims of trauma inevitably seek out the serenity, peacefulness, and soothing aspects of natural spaces on their own in order to reflect and adapt to their situation.

Research by Roe (2008) further illustrates that activity in natural settings promotes increased capacity for trust and recollection processes; exploratory behaviour; and social cohesion. Roe (2008) concludes that nature is most conducive to many of the reflective and instorative processes of restoration, where 'instoration' can be defined as the strengthening of capabilities to meet demands and combat stress through improved self-identity and self-esteem (Hartig et al, 1996). Further research by Roe (2008) indicated that long term exposure to natural settings improved behaviour, mood and social interaction in young people with trauma, helped build creativity, and expand thinking in terms of memory recall. Roe (2008) subsequently states that the outcomes of nature might be termed therapeutic.

Kaplan and Kaplan (1989) similarly discussed the 'reflective' properties of nature and its overall restorative effectiveness in terms of instorative processes. Additionally, Van den Berg, Hartig and Staats (2007) elaborate that natural environments and natural elements within the built environment improve perceptions, encourage exploration and sense making, and attract a person's attention via soft fascination, thereby correlating with existing ART and SRT frameworks. From this, it becomes clear that nature is an important asset to the design of both healing and restorative environments as it introduces the self to a space of calmness and serenity, providing a space for reflection that allows one to connect with the self (Salingaros and Masden II , 2008). Furthermore, the use of natural elements such as greenery and water appeals to all the senses which help in the healing process (Ulrich R. , 1983).

However, it was not until the work of entomologist EO Wilson (1984), that this inherent connection was given a name. The word Biophilia (Wilson, 1984) refers to the intrinsic human love of nature and all living things in nature. Wilson used the term to describe people's inclination to affiliate with the natural world. Stephen Kellert, in his joint work with Wilson (1993), referred to nine dimensions of the Biophilia tendency.

Exploring the implications of each of these dimensions may give us insight into the human attraction to nature - especially during a time of crisis - and help to establish an innate basis for nature in healing. An examination of each of the nine dimensions of Biophilia shows similarities between these dimensions and Maslow's (1959) hierarchy. However, as shown in the figure below, it is natures ability to support reflective and instroative processes - both introverted and extroverted -which are of most relevance to the research.

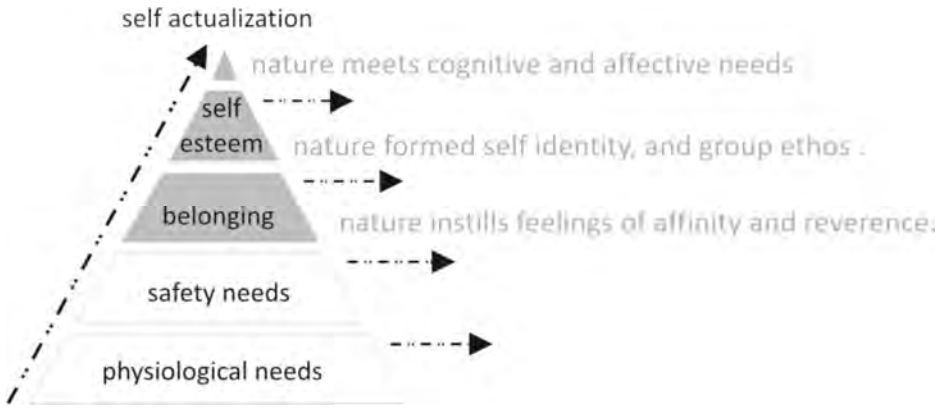


Figure 3.10 Linking Biophilia to Aspects of Maslow's Hierarchy of Needs (by author)

Sense of Belonging, and social needs are explored through Wilson and Kellert's (1993) term Moralistic. According to Wilson and Kellert (1993), Moralistic refers to strong feelings of empathy, responsibility and respect - even reverence - for the natural world, and ultimately the conviction that there is a fundamental meaning, order and harmony in nature. Self-esteem needs, on the other hand, are perhaps most similar to Wilson and Kellert's (1993) term Symbolic.

Symbolic refers to the concept that nature formed the foundation for various myths, rituals and even languages, thereby creating meaningful expression and ultimately serving as the source for identity, selfhood, and group ethos (Kellert & Wilson, 1993). Cognitive and Affective needs are explored through the terms Naturalistic, Eco-logistic, Aesthetic, and Humanistic. Essentially, these terms all aim to explore the various psychological needs to appreciate, understand and connect with elements of nature (Kellert & Wilson, 1993).

From this, it can be inferred that natural surroundings are required for "fulfilling a variety of emotional, cognitive, and spiritual needs in the human animal" (Kellert & Wilson, 1993, p. 60). Releasing the mind and body of the victim from being "stuck" in the flight, or fight response to trauma is arguably one outcome of these experiences. This inter-relationship of healing, resilience, and engagement with the natural world after traumatic experiences is further explained by a number of authors, including Buzzell and Chalquist (2009), and Tidball and Krasny (2013).

These authors imply that by reconnecting nature and person, a transformative healing experience could take place (Buzzel & Chalquist, 2009); (Tidball, 2013). Similarly, within the existing frameworks of SRT AND ART, natural environments have most often been cited as being Restorative (Kaplan and Kaplan; 1989; Ulrich, 1984). According to Ulrich's (1983) evolutionary hypothesis, humans may reflexively have a preference for open, low-risk environments like the savannas to which human ancestors would have typically retreated when recovering from a threat (Joye, 2007).

3.3.2. COMPREHENDING THE REFLECTIVE PROPERTIES OF NATURE:

The Perceptual Fluency Account (Steg, Van den Berg, & De Groot, 2012) , argues that one of the key reasons nature is cited as restorative, is because natural environments are processed more fluently than urban settings. This is because of the use of fractals within natural environments and elements (Steg, Van den Berg, & De Groot, 2012). The work of Salingaros (2012), clearly supports this by illustrating that humans are tuned to prefer an environment that has the self-similar properties of fractals in nature.

According to Salingaros (2012), this automatically dampens the body's response to stress by improving environmental coherence through the use of scale, order and hierarchy. Salingaros (2012) postulates that humans enjoy complex patterns and fractals, as they are psychologically distracting and nourishing. Unfortunately, according to Salingaros (2012), modern architecture is Euclidean and non- fractal, and built forms that follow the norms of this movement often cause further stress to their occupants.

Furthermore, Salingaros (2012) proposes that the human perception system responds well to fractals, as the human mind, itself, has an intrinsically fractal structure. Salingaros' (2012) series of Fractal experiments with humans confirm that subjects expressed a positive preference for mid-range fractals: 1.3 - 1.5. The paintings of Jackson Pollack intrinsically follow this fractal ratio, and are arguably liked by many as a result. Salingaros (2012) postulates that a preference for this fractal occurs as it resonates the fractals of the mind, and the beating patterns of the heart.

Furthermore, the calming and therapeutic effects of fractals have been proven to counteract the physiological and psychological symptoms of stress, and trauma (Ulrich; 1983). Symptoms such as increased blood pressure, heart rates, depression, and anxiety, are reduced within restorative environments that actively incorporate fractal patterns (Salingaros; 2012). These fractal patterns can be reflected in the structural rhythm of the built form - in terms of column spacing, window spacing, or various ornamental and sculptural elements.

3.3.3 PROMOTING REFLECTIVE PROCESSES WITHIN THE BUILT ENVIRONMENT.

However, the positive effects of nature and Biophilia must be understood in architectural terms. According to Salingaros and Masden II (2008), one aspect of Biophilia is the intimate merging of artificial structures with natural elements. This involves the use of natural light, ventilation, using natural materials and surfaces, and incorporating plants into the building structure.

In line with the work of many sensory architects, Salingaros and Masden II (2008), encourage architectural forms to focus on the complexity and sensory qualities of natural forms. However, Salingaros and Masden II (2008), emphasize that this is not to be confused with unrealizable organic forms, but should rather be realised through the use of human levels of scale, organised details and their hierarchical connections.

Biophilia often makes an alternative choice to plain literal imitations, using conceptual schematics and fractals to represent restorative elements from nature. According to Joye (2007), various psychological factors indicate that these conceptual schematics can be as effective as the real natural elements, and serve as equal triggers for restorative responses.

Examples of this exist (perhaps subconsciously) in the work of Frank Lloyd Wright, Antoni Gaudi and Santiago Calatrava. Fractals are used a tool for exploring the restorativeness of nature within the built form (Joye; 2007), and also express complexity, mystery, coherence, and legibility (Kaplan and Kaplan; 1989), as well as the concept of prospect and refuge (Appleton, 1975). In other words they are perceived as interesting, yet evoke a sense of safety and non-hostility.

Figure 3.11 Johnson Wax Headquarters

(Architect: Frank Lloyd Wright)

(http://www.archdaily.com/438992/ad-classics-la-sagrada-familia-antoni-gaudi/)

Retrieved: March; 2015

Figure 3.12 Oriente Station

(Architect: Santiago Calatrava)

(http://www.fastcompany.com/3010506/the-architecture-of-santiago)

Retrieved: March; 2015

In terms of spatial configuarations, Salingaros and Masden II (2008) emphasize that transitional spaces, and inner relams, that reflect the 'retreat' of natural spaces, should be incorporated into the building design. Patio's, verandas, courtyards and vistas all add the a feeling of complexity, mystery and coherence, and promote reflection, exploration and engagement (Salingaros and Masden II; 2008).

The incorporation of elements of involuntary attention and soft fascination into the building form would further promote the replenishment of cognitive and affective capacity. As discussed, natural elements and aspects of nature are most conducive to soft fascination and the restorative processes of reflection and instoration. Natural elements, particularly plant life, should be actively incorporated into the building in the form of atriums, courtyards, and green walls which add to the sensory and spatial richness of the environment and offer both cognitive and aesthetic diversion. These elements provide a means of attenuating stress, and can thus function as a coping resource that can help victims alter the balance between environmental demands and personal resources.

The use of natural light, nature themed art and sculptural pieces, burning fireplaces, various water displays, direct contact with natural elements, as well as views of nature further support restoration through a combined sense of soft fascination and of 'being away'. (Hartig and Evans, 1993; Kaplan and Kaplan, 1989; Ulrich, 1993). Regular exposure to light, in particular has been demonstrated to increase the amount of melatonin produced in the brain, thereby uplifting moods (Zilber, 1993). Jurong Hospital, in Singapore, is shown in Figure 3.11 as an example of this.

Figure 3.13 Therapeutic spaces at Jurong Hospital, Singapore, incorporates views to nature and natural light. (Architect: Studio 505)
(https://littlegreenseed.wordpress.com/); Retrieved: March 2015

Salingaros and Masden II (2008), additionally suggest some practical techniques to support the Biophilia Hypothesis, and provide neurological nourishment at a human scale. They particularly emphasize that scales and hieracrhical elements should follow an "inverse power law", where, as in nature, there is a maximum amount of detail at the smallest scales, several on intermediate scales, and minimal on the largest scale. This implies the necessity for articulated texture and stimulation at prominent and accessible areas. Furthermore, designs should establish a scaling hierarchy for components to create a sense of coherence.

Similarly, a certain amount of symmetry, and particularly, a richness of sub-symmetries and connective symmetries is essential in creating coherence and allowing for a sense of order and complexity (Salingaros and Masden II; 2008). Natural materials and materials from older buildings should also be re-used as the charatcer of these materials adds to the complexity and individuality of a design, neurologically engaging the users (Salingaros and Masden II; 2008).Likewise, non-natural materials, such as concrete, should be molded to form ordered surface patterns that improve the visual and tactile richness of the material, and evoke a sense of being natural.

It becomes clear, then, that the integration of architectural environments with natural environments is essential, on the foundation that such environments allow people to feel connected with their surroundings, thereby promoting reflection and a sense of familiarity and trust. The principles discussed take inherent lessons from nature to add to the sensory complexity and coherence of the built environment. With their focus on sof tfascination and connection, these priciples clearly support and expand on the existing frameowrks of SRT and ART, whilst concurrently reiterating the importance of sensory connections (whether visual or tactile) with the environment to support neurological and psychological restoration.

PART 03 - INITIATING RE-INTEGRATION THROUGH THE THEORY OF SENSE OF PLACE:

Banyard and Williams (2007) place particular emphasis on the need for victims of sexual assault to be in supportive environments which generate a sense of spirituality and community, and promote positive cognitive mapping and attachment to place. It is essential to highlight that the term "environment' should be extended to embrace not only the physical (whether natural or built), but also socio-psychological aspects of an environment - this includes social, cultural, interactional, transactional and organisational aspects that might affect psychological health and wellbeing (Proshansky et al, 1976; Canter, 1997). For example; Canters theory about place speculates that the notion of experience in an environment is the sum total of all the transactions between the person and the environment - whether personal, social, or cultural. (Canter, 1997, pg 118.).

Love of Place (Tuan; 1974), Genius Loci (Norburg Schulz, 1980), and Sense of Place (Steel, 1981) are closely related theories that examine the interrelationship between mankind and the environment. All 3 theories recognize the value of the physical environment, both manmade and natural, in evoking affective responses. It is accepted that there are many areas of overlap between these theories, including the value of order and continuity, elements of mystery and enclosure, and the use of multi-sensory experiences. However, Sense of Place, in particular has become the foundation of the Place Attachment tripartite framework of Person-Process-Place (Scannell and Gifford, 2009), which will be used in this dissertation as a means to understand *how* affective and cognitive processes can be used to establish or, where necessary, re-establish a sense of place.

After all, as previously mentioned, one of the symptoms victims of rape and sexual assault incur is a lack of place identity or sense of place (Proshansky et al; 1983; Korpela; 1989), and it is essential that a truly healing and restorative environment re-encapsulates this sense of identity through an 'osmotic' (after Merleau-Ponty;1962.) relationship between the user and the environment. With the continued stigma around rape, there is a need to create a safe, accessible environment that 'normalises' the treatment of rape and sexual assault, and removes the misconceptions around the phenomenon of sexual violence. As such, any intervention, ultimately needs to be place-specific and needs to support the goals and self-regulatory processes of the victims within their own community or 'environment'.

3.4.1. UNDERSTANDING SENSE OF PLACE AS A PROCESS.

Place attachment, as a proponent of Sense of Place, is a relevant link as it refers to the bonding experience that occurs between individuals and environments that are perceived as being meaningful. As a result, place attachment is often considered relevant to the study of environmental preference, especially where a heightened sense of safety is required (Scannell and Gifford; 2009). Various authors further argue that a bond with a meaningful space, or 'sense of place' is an affective tie that fulfils a fundamental human need (Relph, 1976; Tuan, 1974).

Scannell and Gifford (2009) have proposed a tripartite framework to explain place attachment as a multidimensional concept:

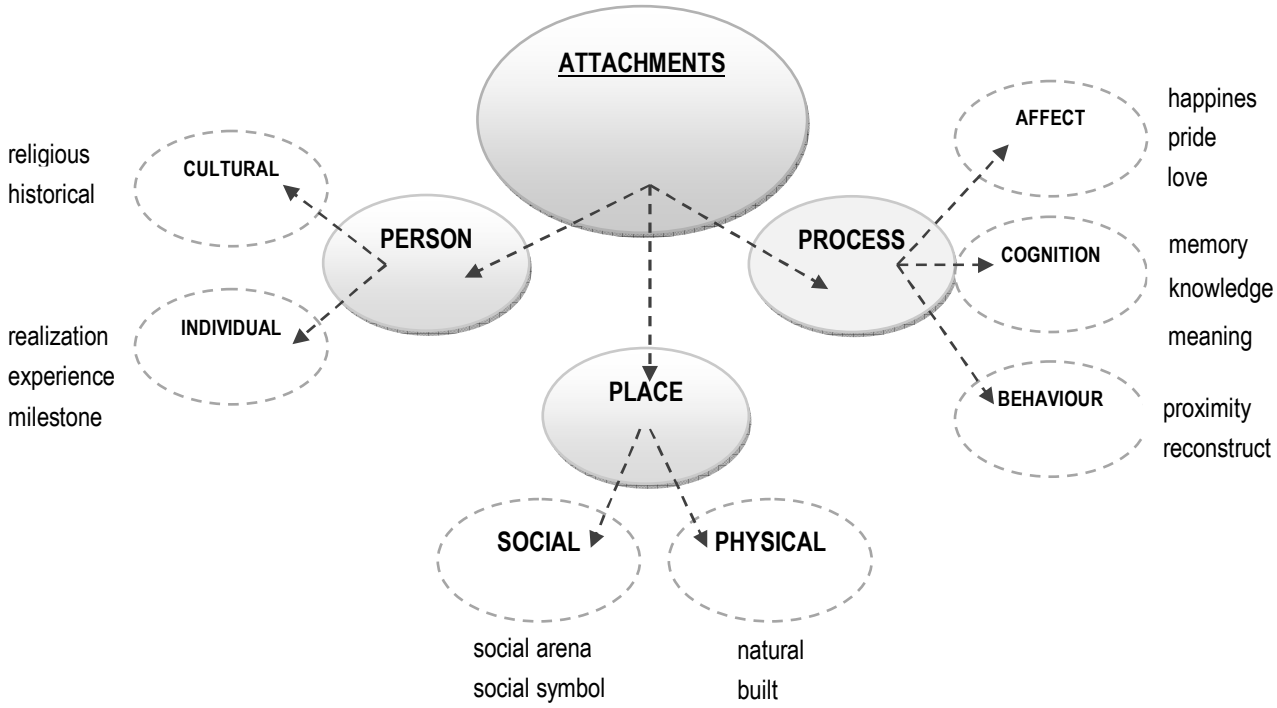


Figure 3.14 Tripartite Place Attachment Model (Scannel & Gifford, 2010)**.**

3.4.2. CONNECTING RESTORATIVE EXPERIENCES TO PLACE:

The Place Attachment Model can be seen as particularly relevant in the design of restorative environments as it is linked to the ability of an environment to offer: (1) security and survival advantages; (2) goal support and self-regulation capabilities; (3) as well as individual and place identity.

- **SAFETY:**

One can emphasize that the physical aspects (i.e. resources) of a place encourages both cognitive and behavioural expressions of attachment (Scannell and Gifford; 2009). Cognitive and affective bonds are expressed through positive cognitive maps and spatial experiences, and positive effect, where it is acknowledged that the environment is a source of security and safety. The behavioural bonds are expressed by maintaining proximity to the source of safety and security (Scannell and Gifford; 2009).

This inherently answers the base level needs described in Maslow's (1959) model, and also supports physiological and psychological wellbeing. Finally, research quoted in Scannell and Gifford (2009) indicates that place bonds are more intense amongst vulnerable individuals, where a sense of safety and security is most needed. Restorative environments should be linked to places that offer protection and a sense of security, thereby increasing confidence and allowing for a process of disclosure and healing to occur.

- SELF REGULATION:

This perspective suggests that positive affective bonds are the result of cognitive understandings that a place is compatible with physical, social and psychological needs (Scannell and Gifford; 2009). Several authors in the field of Environmental Psychology further link this to the ability of an environment to promote self-regulation (Korpela M. , 1989); (Korpela, Kytta, & Hartig, 2002). Self control, and self-regulation is seen as a limited resource, and because place attachment enhances positive emotions and allows for cognitive freedom, affective processes can be regulated, and cognitive loads can be reduced, consequentially evoking a sense of restoration.

Korpela, Hartig and Kytta (2002) conducted a study on restorative experience and self regulation amongst children and adolescents to understand place preference amongst children in Finland, and found in their research that favourite places require positive activity, but also allow the children and adolescents to clear their minds, relax and pour out troubles. From this it becomes clear that such a preference or attachment to an environment would be essential for the disclosure and posttraumatic recovery of incidents of rape and sexual assault.

- PLACE IDENTITY:

Place identity, as a proponent of place attachment, is a term which refers to "dimensions of the self that define an individual's personal identity in relation to the physical environment by means of a complex pattern of conscious and unconscious ideas, beliefs, preferences, feelings, values, goals and behavioural tendencies, and skills relevant to the environment" (Proshansky, 1978 cited in Kyle, Gerard, et al.; 2004).

These formative experiences, as well as restorative qualities can guide one to identify with and become attached to them. Identifying with a place could make it seem more compatible and hence more restorative within both the ART framework (Kaplan S. , 1995) and SRT framework (Ulrich R. , 1983); (Kaplan S. , 1995). Tuan, (1974) similarly argues that the cultural and psychological relations with a place or environment form an inherent part of a person's attachment to place. Emotionally based connections to a specific place are most likely because it is "home", and is imbued with memories, contains an important history, and is tied to events and experiences that shaped who we are.

There is some evidence to suggest that a connection between a preference for different types of restorative environments and place attachment exists. Various environmental theories have assumed that environmental preference is reflective of the perceptual mechanisms that allow the individual to assess, typically in an automatic, instinctive, rapid manner, whether an environment should be approached or avoided (Appleton, 1975; Ulrich, 1983, Kaplan and Kaplan, 1989).

This could , then, help explain why environmental preference and restoration are biologically integrated concepts, particularly for individuals who are feeling weak or low, these environmental affordances for restoration would have an even greater adaptive value (Ulrich, 1985). As discussed, preferred places are restorative because they often provide a comfortable environment - that is familiar and secure - and which allows a person to engage in a process of self-regulation. This allows one to recover from stress and turn attention to problem solving and self reflection as one is able to organise thought and feelings, and achieve a state of emotional balance (Scannell and Gifford, 2010; Korpela, 1989).

Similarly, research by Roe (2008) highlighted that 'niche-environments' meet individual developmental needs and facilitate processes of person-environment fit (Roe, 2008). Additionally, and in correlation with the thinking of Maslow (1959), Roe (2008) found that young people and adolescents (including those with various troubled backgrounds and traumatic experiences) preferred combination environments that met developmental needs such as autonomy, integration, novelty, self-identity and continued social interactions.

Ultimately, people name settings such as their own homes, parks, cafes, museums, and even churches as their favourite places and places that make them feel better when they are stressed (Mayfield, 2011; Korpela and Hartig, 1996). In a study conducted by Scopelliti and Giuliani (2004), when people were interviewed about experiences they considered restorative, younger people noted more "exciting" places whilst older people noted more "relaxing" places. Additionally, environmental compatibility, as derived from the ART framework was found to have the most relative importance on restorativeness. Korpela and Hartig (1996) Kaplan and Kaplan (1989) cited in Mayfield (2011), define compatibility as the extent to which there is a correlation between the opportunities that an environment offers and the desires or needs of the user themselves.

A ' sense of place' is specific not only to the individual, but also to a unique locale and its myriad of meanings, qualities, history, and characteristics. There may be other places that have similar components, but there is, literally, “no place like home”. At the same time, “home” may not always be a safe haven, particularly if this is where the trauma was experienced. This “home” ground may be a residence, a church, a school, a workplace, or anywhere that would usually be considered a safe place, except that it has been redefined by the events that are traumatic and have recast the person’s perceptions of the world. Stedman and Ingalls (2013) subsequently explored the interaction of individual and community involvement in rebuilding place and environment in the aftermath of catastrophic events, and stress that this rebuilding (often called “greening”), is a method for psychological recovery for both the individual and the community.

It could be inferred, that eventually, a victim of sexual abuse or rape, would need to re-establish their relationship with their environment, and ultimately re-establish a sense of place. This is supported by the work of Tuan (1974) and Stedman and Ingalls (2013) who argue that attachment to a specific locale is enduring and essential for wellbeing and health of all who are able to feel grounded in a specific place. Dislocation and alienation are the alternative realities that express themselves in a detachment and alienation from place, community, and, ultimately, self. The question remains: How could a report and recovery environment heal the community, and the individual, and through a process of Placemaking, contribute to posttraumatic Growth?

3.4.3. INITIATING REINTEGRATION AND POSTTRAUMATIC GROWTH WITHIN THE BUILT ENVIRONMENT

Interventions for posttraumatic stress typically do not take into account the potential for adversarial growth (Linley & Joseph, 2004). However, positive changes have been empirically recorded following various trauma events, including rape and sexual assault (Linley & Joseph, 2004). Ultimately, the process of struggling with adversity changes the higher level functioning of an individual and improves their overall recovery and resilience (Linley & Joseph, 2004). This is not dissimilar to meeting Maslow's construct of self actualization.

There is a need to clearly establish what environmental variables are associated with adversarial growth. Linley and Joseph (2004) focused on problem-focused coping, acceptance and positive reinterpretation, based on community and environment support as key factors. Alternatively, authors such as Zeisl (2006) postulate that 'place neurons' are effectively responsible for a sense of place and are stimulated by spatial perception. These spatial perceptions depend on a sense of orientation, where different environments correspondingly relate to different patterns of neural activity. A sense of “place” may be defined by the activity of these 'place neurons', understanding the features that influence them may help to illuminate how we are impacted by architectural design elements:

- **Personalization:** Engaging oneself with a place, and making it one's own.
- **Territory** : an extension of a familiar zone, where one feels safe.
- **Wayfinding:** Mental and physical activities that link place and territory.

Figure 3.15 Improving Connection to Place - Triggering Place Neurons (Kayan; 2011).

Place also has a particular geographical base; and its context of activities and environments creates an affective and cognitive identity (Seamon, 1982). A person's sense of place involves various social worlds (as shown in Figure 3.13), whereby it joins the past, present and future, and ultimately affects a person's growth and resilience through various attachment processes.

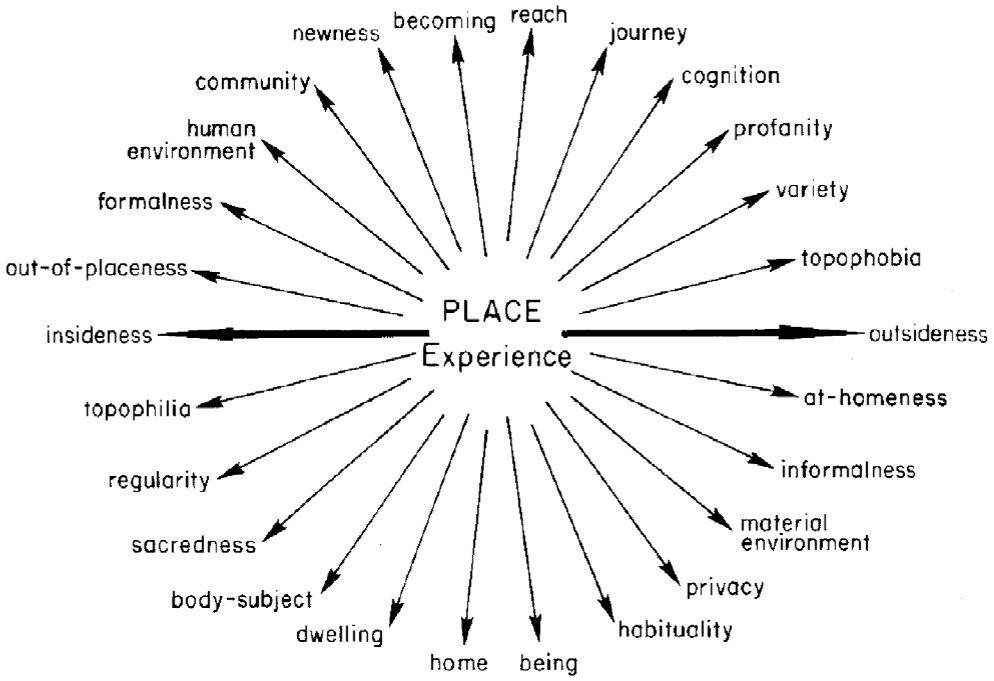


Figure 3.16 Intrastructural tensions in a phenomenological structure of place (Seamon, The Phenomenological Contribution to Environmental psychology, 1982, p. 134)

And, in line with the work of Linley and Joseph (2004), several authors further extrapolate that the survivors own coping efforts, meaning-making and benefit finding are dependent on the environments ability to support both emotion-focused and problem-focused activities (O' Dougherty Wright & Crawford, 2007). This also refers to the survivors ability to "emphasize the positive", and re-establish a sense of self, and a sense of place. This ultimately correlates with Banyard and Williams (2007) requirement of a sense of community, and a sense of altruism as part of the recovery process, and re-iterates the relevance of 'place' and 'community' in longer term restorative processes.

Arguably essential to personal growth is the idea of compatibility. Compatibility has been described as the 'match' between persons and their environment (Kaplan S. , 1995). Environmental compatibility for victims of trauma, as previously discussed, would require a calming and healing experience, stimulated by elements within report and recovery environments. However, equally important to environmental compatibility is the corresponding potential to control that environment. For the purpose of this research, control is defined as the ability to either alter the physical environment or regulate ones exposure to ones surroundings. Giving users an opportunity to optimize their environments, by allowing them to manipulate their environment to suit their needs, would improve restorative processes by reducing stress and anxiety.

Figure 3.17. Personalised, operable systems Improve Control and Compatibility Photographer: Paul Ott

Retrieved: (http://www.architonic.com/aisht/dynamic-facade-kiefer-technic-showroom-ernst-giselbrecht-partner-architektur-zt-gmbh/); March 2015

Furthermore, there are also major symbolic elements of control in design. For example, sterility, uniformity of furnishings, and restrictions on personalisation options all contribute to the 'institutional qualities' of a building - often resulting in feelings of powerlessness amongst users (Rivlin and Wolfe, 1985). Physical constraints, flexibility, responsiveness, privacy, and defensible space are key design elements salient to control (Glass and Singer; 1972 and Evans and Cohen; 1987). Contrarily, elements that reduce flexibility of choice, and impact behavioural options can produce or exacerbate stress (Glass and Singer; 1972 and Evans and Cohen; 1987).

The use of clear planning, landmarks, and way finding systems could further contribute to triggering 'place neurons' (Zeisel; 2006) and arguably enhance a sense of control. Clear planning should be a principle in every architectural design - however easy planning is especially important for medical staff in healthcare facilities, as it helps avoid delays and injuries. Furthermore, all circulation should be visible, from the corridor, so the users and victims can feel confident that they can find their way alone.

Privacy, or the ability to regulate social interaction, is another major contributor to a sense of control in space (Altman; 1975). Perhaps the central design element influencing privacy is spatial hierarchy. Prolonged experiences with uncontrollable environmental conditions and undefined privacy hierarchies have also been associated with feelings of helplessness (Cohen et al; 1986) - helplessness in turn is clearly associated to psychological distress.

The provision of spaces ranging from places that offer privacy and solitude, through small group areas, to those that foster contact with the public, constitute the major components of spatial hierarchy within a building (Alexander, 1972; Zimring, 1982). The extent to which spaces are interconnected via doorways and pathways influences the social regulation capabilities of spaces. In addition to this, as illustrated in Figure 3.18, visual or acoustical permeability of barriers, and the depth of a space within a building also affects the social interaction potential (Zeisel, 2006).

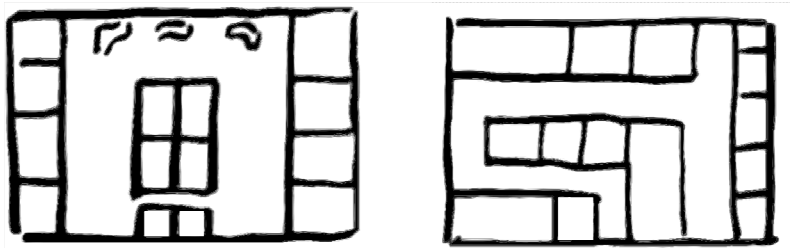


Figure 3.18 Clear, Ordered Circulation with Privacy Gradients Vs Undefined Hierarchies (by author).

Legibility - the ease with which one can comprehend spatial layouts - is critical to a buildings comprehensibility and the users ultimate sense of control within an environment. Legibility is enhanced by regular geometric shapes (Weisman; 1982)., distinctive interior markings (Evans; 1980) and views of the external environment. And, as per the framework of both SRT and ART, legibility would be essential in restorative processes, as it reduces the resultant impact on mental and coping resources. A restorative environment should arguably avoid feeling 'bland', as lack of stimulation leads to a sense of detachment (Kaplan S. , 1995).

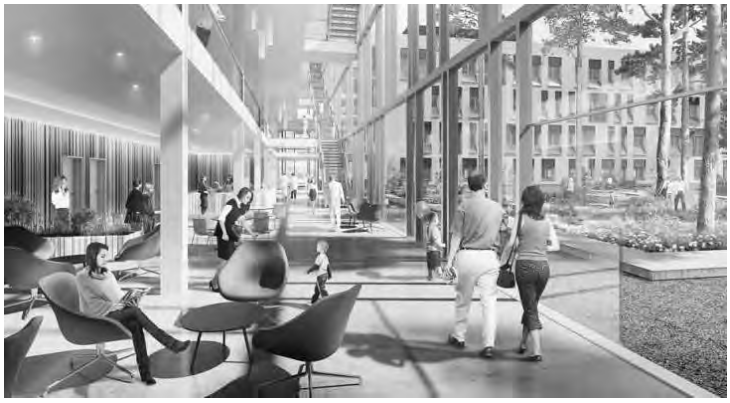


Figure 3.19. Modulation, External Views, Clarity of Circulation Svet Zdravia Competition Entry

Retrieved: (http://dutchhospitaldesign.com/next-generation-hospital-michalovce-slovakia/); March 2015

Finally, the way that people relate to places often has much to do with the physical characteristics of the place, but also with their own experiences and perceptions of it, and this emerges in an interplay of perceptive, cognitive and affective behaviour patterns (Scopelliti and Giuliani, 2004) that would ultimately influence to restorative processes needed for report and recovery environments. Therefore, prior place preferences - whether church, library, cafe, park or other environments (Van den Berg, Koole, & Van der Wulp, 2002) - need to be taken into account, and integrated into to restorative experiences that are compatible with the victims needs.

Numerous studies show that stress, anxiety, depression, and loss of control are detrimental to health (Tottenham, 2010); (Ulrich, 1983). However, clarity, optimism, hardiness, self-efficacy, and a sense of control are linked to good health, as they create an environment that reduces stress and anxiety, and promotes comprehensibility (Schweitzer, Gilpin, & Frampton, 2004).

3.5 CONCLUSION: TOWARDS A SALUTOGENIC RESTORATIVE EXPERIENCE.

It is indubitably true that the design of a restorative environment, which facilitates the various report and recovery processes which victims of trauma undertake, should take a salutogenic approach – i.e., the environment should focus on the factors that concurrently promote wellbeing and restoration, rather than those that are not psychosocially supportive (Dilani, 2008). As explored extensively in the previous sections, various elements of an environment can work together to create a Psychosocially supportive experience which stimulates and engages people, and supports an individual's restorative process.

Antonovsky (1996), similarly postulated that Salutogenesis should focus not on the individual but on the interaction between people and the structures of society - including the built and natural environment, and interwoven human resources. According to Antonovsky (1996), the success of this relationship is reflected in a patient or victims sense of coherence within an environment. Antonovsky's (1996) concept of sense of coherence (SOC) maintains that a person with a high sense of coherence can better decide on the most appropriate coping strategy in a stressful situation. In Antonovsky's (1996) formulation, sense of coherence has three components:

1. **Comprehensibility** (cognitive component). Refers to the extent to which various stimuli from both the external and internal environment make sense. In order for an environment to make sense it should be ordered, consistent, predictable, structured and clear (Antonovsky, 1996).

2. **Manageability** (behavioural component). Refers to the extent to which a person perceives and manages the cognitive and affective challenges of an environment. Resources, such as self-regulation, control and reflection, can be supported or positively challenged by an environment (Antonovsky, 1996).

3. **Meaningfulness** (affective and motivational component). Refers to the extent to which a person feels that life makes sense emotionally and that problems, demands and challenges are worthy of commitment, engagement and resolution (Antonovsky, 1996).

The graphic summary below aims to cross- analyse the success of the various components previously argued as necessary for restorative processes against Antonovsky's (1996) concept of sense of coherence (SOC):

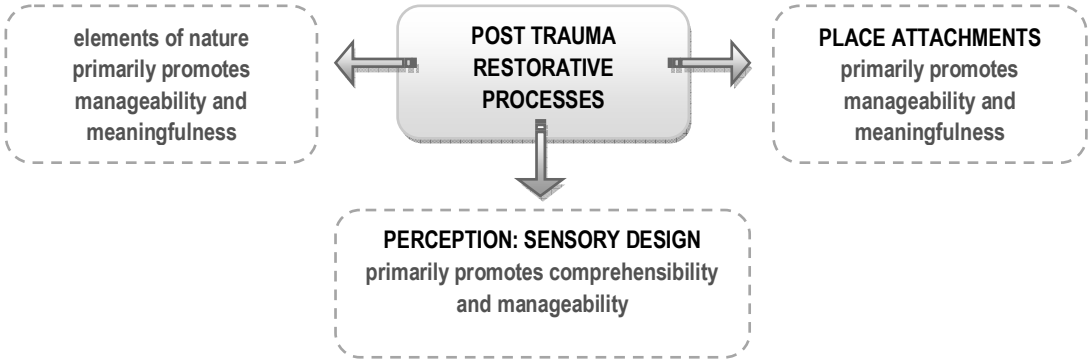


Figure 3.20 Cross-Analysis with Sense of Coherence (by author).

In conclusion of this theoretical argument:

- By incorporating an understanding of perception theory through the active design of healing sensory experiences, one can create a sense of refuge in the built form.
  This can be rationalised through Antonovsky's (1996) concept of sense of coherence as supporting comprehensibility and manageability.

- By incorporating preferences for natural environments, Biophilic elements - particularly in the form of fractals and elements of soft fascination, - one can promote reflection in the built form.
  This can be rationalised through Antonovsky's (1996) concept of sense of coherence as supporting manageability and meaningfulness.

- By incorporating the design principles of Sense of Place, one can initiate longer term restoration, reintegration and post traumatic growth.
  This can be rationalised through Antonovsky's (1996) concept of sense of coherence as supporting manageability and meaningfulness.

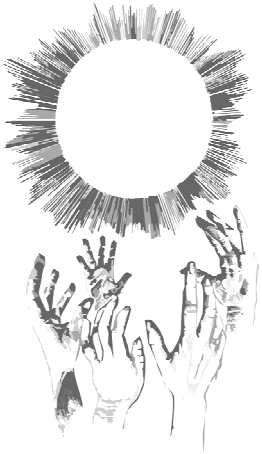
Based on this, it can be concluded that the existing restorative environments framework has the potential to be expanded to include environmental design guidelines that promote restorative experiences for victims of extreme trauma e.g. rape and sexual assault. However, the question remains as to how these themes directly correlate to the stages of the victims report and recovery experience.

After all , an understanding of how these themes trigger an environmental experience is not enough. Indeed, an appreciation of why these themes are needed in report and recovery environments, and examples of exactly how they can be executed in the built form should be considered in order to answer the key research question: How can the victims perceptions and environmental needs be incorporated into the composition of report and recovery environments, in order to promote posttraumatic restoration?

The next chapters of this dissertation will aim to explore and investigate various practical proponents of the framework established in the review of the literature and the analysis of the various theories and concepts. Through the methodology, the precedent studies, the fieldwork, and the resultant discussions, the preliminary argument put forth in this capter wl be further extrapolated and contextualised to Durban's inner city.

CHAPTER FOUR:

RESEARCH METHODOLOGY.



A METHODOLOGY SENSITIVE TO THE VICTIMS AND THE IDEALS OF THE RESEARCH.

4.1 INTRODUCTION

This section outlines the research approach, epistemological standpoint, and methodology applied to this dissertation. It defines the procedures for data collection and identifies the techniques and methods used to gather all information - both primary and secondary. Finally, this chapter also explores how the data was analysed and contextualised.

4.2 RESEARCH APPROACH AND ANALYSIS

As mentioned briefly in the introduction to the methodology in Chapter One, the research is centered on gaining an in-depth understanding of the reported experiences and perceptions of young women who are recovering victims of traumatic experiences, in particular rape and sexual assault. As such, the research approach is a fully qualitative one. And, in view of the sensitive nature of the subject matter, and the long standing and leading influence of feminist theory in understanding both the causality and proponents of sexual gender based violence, a methodology was sought which would reflect the feminist ideals of research, and yet ultimately sustain a constructivist grounded analysis of the data that would assist in generating a new perspective to the existing literature.

4.2.1 FEMINISM AS A STANDPOINT EPISTOMOLOGY

There are questions as to whether there actually is a pure feminist methodology (Letherby, 2003). Feminist analysis is usually based on the conviction that research in sociology should better represent the lives of everyday women - ones which are often presented from a male dominated viewpoint. However, it is important to understand that feminist epistemology does not reject the use of traditional methods of social inquiry, but rather seeks to contextualise it (Letherby, 2003). Hence, feminist researchers start with a commitment to create practical knowledge that will make a difference to women's lives through both social and individual change (Letherby; 2003) In line with this, feminist researchers aim to confront silences in mainstream research - both in relation to the issues being studied and the ways in which research itself is conducted (Letherby, 2003). **Letherby (2003) has articulated the following key points as being essential to all feminist research:**

(1) Value the personal and private as worthy of study; (Letherby, 2003; pg 73);
(2) Develop non-exploitative relationships within the research; (Letherby, 2003; pg 73);
(3) Give constant attention to the significance of gender as an aspect of life; (Letherby, 2003; pg 73);
(4) Value reflexivity and sentiment as a source of insight (Letherby, 2003; pg 73);
(5) Challenge the norm of 'objectivity' that assumes that knowledge can be collected in an uncontaminated way,
(6) and in the end, attempt to characterize the complexity of the research layers (Letherby, 2003; pg 73).

It is essential, that the research is ultimately not exploitative towards women as a source of knowledge, and that the research ultimately attempts to reduce secondary victimization within the medical and criminal justice system.

4.2.2. CONSTRUCTIVIST- GROUNDED THEORY ANALYSIS

Grounded theory is an approach to qualitative research analysis that emerged during the 1960's debates around the virtues of quality versus quantity. Grounded theory was introduced by the sociologists Barney Glaser and Anslem Strauss (Pidgeon & Henwood, 1997), who chose the term grounded theory to suggest that theories should be generated by - or grounded in - the cyclical inspection and comparison of qualitative data (Pidgeon & Henwood, 1997). Furthermore grounded theorists aim to connect emerging research with already existing theories and literature in the field.

Hence, theories should evolve during the course of the research - as an ongoing interchange between analysis and data collection (Pidgeon & Henwood, 1997). Charmaz's (2003) development of Constructivist Grounded Theory, expands on Grounded Theory by taking a middle ground between positivism and postmodernism. Ultimately the focus is on creating an interpretative portrayal of the world.

Essentially this results in a process of recognising the mutual formation of knowledge by both the viewer and the viewed, with an ultimate aim of constructing an interpretive meaning. Charmaz (2003; 250) defines constructivist grounded theory in 3 points:

1. Grounded Strategies need not be rigid, or in any way prescriptive;
2. The focus should be on the meaning, and furthering the existing perspective;
3. Grounded theory can be adopted in constructivist grounded theory approaches, without embracing the positivist leanings of earlier proponents of grounded theory.

This suggests that an analysis and theory building method following this approach would take into account both the socio-structural aspects of the young women's lives, as well as their individual responses to the trauma.

The use of in-depth interviews, and case studies are compatible with constructivist grounded theory. And although these methods are not exclusively feminist in nature - they greatly support the feminist nature of the research. So, although the research perspective will remain feminist, the methodology itself has been chosen based on its ability to support the construction of data to support the research perspective.

4.3.ETHICAL CONSIDERATIONS

Research into sensitive topics presents the researcher with several serious ethical and practical challenges. In view of the commitment of the researcher to allow the young women's voices to be heard without inflicting any form of secondary victimization, an intensive semi-structured research methodology was used to collect data from various victims advocates working in tandem with the victims during their various report and recovery processes.

4.3.1.WORKING WITH VICTIM ADVOCATES

Whilst reports from victims could be seen as an important source of information regarding various post traumatic experiences, Ullman and Townsend (2007) support the notion that a more sensitive, alternative approach is to seek the perspectives of advocates whose role it is to provide both direct support, and to help victims access resources from other medical or legal systems. Due to the sensitivity of the research sample, the experiences of the victims will, instead, be analysed through the eyes of the advocates working in tandem with these young women. This 'lens' allows the researcher to obtain the required information regarding the perceptions and experiences of young women recovering from trauma, without causing any further distress to the victims themselves. It is also of great importance to clarify that the core of the research is not to explore the actual trauma event(s), but to better understand the victims' process of posttraumatic recovery, and their reported perceptions of the environment required for this purpose.

Working with the victims advocates, according to Ullman and Townsend (2007), can be beneficial in three ways:

1. their bottom up approaches with the victims gives them firsthand knowledge of the various barriers the victims face.
2. they have an understanding of the various challenges which the service providers themselves experience in assisting victims. This may help to create a deeper perspective on the context of rape, and the prevention of worker trauma or burnout in rape crisis centres.
3. collaborative work with advocates and organisations is particularly important to understanding safety and confidentiality, and potentially co-exploring improved treatment methods and spatial conditions. (Ullman and Townsend; 2007).

4.3.2. ANONYMITY AND ADMINISTRATION

Anonymity and confidentiality were of paramount importance to protect the identities of the women seeking consultation with the advocates involved in the study. To assist in preventing any interaction between the researcher and the victims, and to ensure the anonymity of the victims, it was proposed that all research and interviews be conducted at non-consultation times, as to be confirmed by the respondents.

In addition, all participants were provided with an informed consent agreement, where they confirm that they are willing to participate in the research, that they understand the purpose of the research, the procedures of the research, the voluntary nature of the research, and their right to stop the research at any time. Once issues of confidentiality, anonymity and the option of not answering questions that are at all invasive were addressed, it was assumed that the interviewee would become more comfortable with the process of interviewing. Each set of Interview notes was assigned an anonymous code and date of interview e.g. Participant 01; 10 February 2015. Additionally, all interview notes or records were made available to the participants to ensure that the notes accurately represent the information provided by the participant during the course of the interview.

4.4. PRIMARY RESEARCH DATA: IN DEPTH INTERVIEWS AND CASE STUDIES

The research design was a descriptive, cross sectional study that made use of semi-structured in depth interviews and case studies to indirectly analyse the perceptions of victims of trauma within current report and recovery environments. At the moment, Durban has four Rape Crisis Centres in the eThekwini Health District - Addington Hospital, Prince Mshiyeni Mission Hospital, Mahatma Ghandi Memorial Hospital and the Pinetown District Surgeons Office. Although these hospitals, as both report and recovery environments for various incidents of trauma (including sexual abuse and rape), attempt to offer specialized care and counselling for the victims, reform efforts have not been consistently applied, and there continues to be a serious scarcity of both human and financial resources (Naidoo; 2013).

The challenge to meet these social issues has resulted in the appearance of several NGO's and NPO's within these inner city housing areas. Unfortunately, these organisations have limited resources and capacity, demonstrating a need for an architectural intervention to support these crisis centres and organizations, and provide an environment where young women and girls can report incidents of rape and sexual, and receive both physical and psychological restoration. So, in keeping with the ethos of avoiding 'secondary victimization', a local grassroots organisations, known for their continued advocacy for victims of rape and sexual abuse, was approached to serve as a research sample.

Reducing the scope of the researchers bias, while simultaneously enhancing the scope of the participants insight were important considerations in ensuring that the voices of the victims advocates were objectively understood and grounded in reality. The 'in -depth interview' was chosen as a research tool to ensure flexibility, and the collection of intensive knowledge of the topic. The concept of 'purposive' or 'theoretical' sampling (Strauss and Corbin, 1998) guided the determination of the size of the sample, with the ultimate goal being sampling to the point of redundancy i.e. where a point theoretical saturation had been reached. Constant comparison, another feature of grounded theory (Strauss and Corbin, 1998) involves comparing and integrating emerging themes from the data collected. It allows the researcher to identify when narratives from respondents are beginning to repeat, thereby indicating that saturation and comprehending was complete.

4.4.1. SELECTION OF THE RESEARCH SAMPLE:

The target study population consisted of purposive sampling of victim advocates and care providers from an NGO and NPO, who met the requirements of being both a venue of first response in the reporting of incidents of rape and/or sexual abuse, and also the continued treatment and counselling of the victims. Respondents within the research sample had to meet the specific criteria of: **(1)** Having experience with young women between the ages of 12 and 35 who were victims of sexual abuse, sexual assault or rape; and **(2)** Are currently working in an environment used for the report, treatment and/or medico-legal advocacy of the various aspects of sexual abuse, sexual assault or rape.

The organisation approached was Childline KZN. Formed in 1986, Childline has frequently been mentioned in various local news and social media networks for their continued efforts to protect children from violence, and in particular, sexual violence. The organisation is non-profit, and non-governmental, and has strong connections to many Durban hospitals, clinics, police stations and schools. Its reach within the community is extensive, and its programmes have developed to not only offer a toll free crisis line, but also extensive social work within both urban and rural areas, as well as continuous professional development, training, and report and counselling services at its Durban-based Headquarters.

Childline does extensive work with young girls and women, and their affiliation with Lifeline, several Crisis Centres, and their continued bottom up approach make them the best research sample source for obtaining an objective and holistic understanding of victims perceptions and the importance of restoration within report and recovery environments. By conducting research through this organisation, and not contacting the victims directly, any risk of 'secondary victimization' through the research is avoided, and a more holistic, objective, and grounded perspective of the primary research question is obtained.

During the course of the research, several family members of young women who were victims of sexual assault approached the researcher, requesting to become part of the research. Although not part of the original methodology and sampling strategy, the researcher accepted that the perspectives of the victims' families could broaden the scope of the research 'lens'. Having experienced the report and recovery process with the victims on a continued basis, these participants proved to have invaluable insight into the perceptions of the victims. As such, an additional 5 in-depth interviews were conducted through snowball sampling with the family members of 4 victims who met the research requirements.

4.4.2. DEVELOPMENT OF THE RESEARCH INTERVIEW:

Through the use of **semi-structured in-depth interviews** with the respondents, a series of questions were utilised to gain an understanding of both the participants and the victims reported experiences about the physical environment required for posttraumatic psychological restoration within report and recovery environments. The interview questions were based on the themes discussed in the Literature and Theoretical Analysis (*For a full copy of the research interview questions, please refer to the Appendix):*

PART 01: THE VICTIMS: Interrogating the observations and experiences of the victims advocates, this section aims to understand the reported experiences and perceptions of young women who have been victims of rape or sexual abuse. Focus is given to their perceptions and interactions with people and environment.

PART 02: THE REPORT EXPERIENCE: Exploring the reported perceptions of the victims, this section aims to review the victims experiences with the process of reporting the trauma. The sensitivity and approachability of various report environments - Police Stations, and Hospitals are given particular attention.

PART 03: THE RECOVERY PROCESS: This section examines the process of post traumatic recovery. Focus on the psychological and physical needs of the victims is given, in order to start gaining an understanding of an environment conducive to the various layers of recovery and re-integration required by the victims.

SECTION 04: RESTORATIVE ENVIRONMENTS (VICTIMS): Reviewing the observations of the advocates, this section aims to understand the composition of Restorative Environments. This section interrogates the reported experiences of the victims, through the theories of Perception, Senses, Biophilia and Sense of Place.

SECTION 05: RESTORATIVE ENVIRONMENTS (THOSE WORKING WITH THE VICTIMS): Recognising the toll that dealing with trauma on a daily basis has on the various advocates, this section aims to similarly explore the composition of an environment that is conducive to restoration for those who work with the victims.

4.4.3. SELECTION AND ANALYSIS OF CASE STUDIES:

Although it was the original intention of the researcher to review the premises of the existing Crisis Care Centres at Mahatma Ghandi Memorial Hospital and Prince Mshiyeni Hospital, the length of the procedure for ethical clearance from the Department of Health and the National Prosecuting Authority was unfavourable to the completion of the research within the given time frame. It was also acknowledged that contact with the victims would be unavoidable. As a result, a more contained environment, where contact with the victims, and any subsequent risk of secondary victimization could be avoided, was sought. Observational case studies of the facilities and premises of Childline Headquarters, and the UKZN Campus Health Clinic ultimately served as a means of gaining an understanding of the experiential qualities of the current settings for the ongoing processes of disclosure and treatment of victims of trauma. Using the theoretical framework explored through the literature as a guideline, the case studies were analysed according to their contextual application of the following 3 architectural themes: (1) Light and Form (2) Spatial Organisation (3) Materiality and Experience. Although the case studies are not necessarily an example of a 'best practice' architectural scenario, the longstanding success and contextual responses were of invaluable assistance in constructing a more grounded architectural response.

4.5. SECONDARY RESEARCH DATA: LITERATURE AND PRECEDENT STUDIES:

Through the use of secondary information, particularly in the form of literature relating to the perceptions of trauma victims, and the role of the senses, nature and sense of place in restorative processes, the theoretical underpinning for this dissertation was initially formed. This form of research comprised of various published media such as: (1) Books by various authors; (2) Journal articles by various authors; (3) Reports, documents and academic papers; (4) Television Broadcasts; (5) World Wide Web. This research was used to build an argument in terms of post traumatic report and recovery, and the role of the socio-physical environment in re-establishing wellbeing through several integrated restorative processes. This argument was then tested, first via the selected precedent studies, and then through the analysis of the interview data.

The precedent studies reviewed in this dissertation were selected during the review of the literature. Three key design themes - namely Refuge, Reflect, and Reintegrate - were gradually formed through the repeated interrogation of the research surrounding restoration and post trauma report and recovery. Each of the selected precedent studies - subsequently exemplified one of those key themes, and were then analysed as a 'best practice' model . Although these precedents are certainly not limited to just one particular theme, it was the contention of the researcher that the underlying design ethos best reflected the related theme. These precedents were then compared to the design of a final precedent study which specifically related all 3 themes to the design of a response environment for women and children who are victims of trauma.

Unfortunately, although many local organisations, with the Thuthuzela Care Foundation Crisis Centres of worthy note, have made admirable efforts to improve the socio-physical environment for report and recovery of trauma, there exists no local architectural response creditable as a precedent study. Furthermore, the proposed typology has never been explored to the extent that all the key themes have been integrated into a single architectural response. The precedent studies should therefore, serve as the 'tool kit' for a new architectural typology that holistically considers all the phases.

4.6. DATA EXPLICATION METHODS

Strauss and Corbin (1998) describe data analysis as the interplay between the researchers and their data. In order to move from the individual narratives to a more general composite stage of understanding, the researcher must search for commonalities of meanings, which enable the researcher to suggest common patterns of experience. However, it was the contention of the researcher that by breaking the data up into segments, an understanding of the phenomenon as a whole would be compromised.

4.6.1. CODES AND CODING

In order to investigate the constituents of the phenomenon - this being the perceptions and experiences of the victims-, while keeping the context of the whole, a thematic constructivist-grounded analysis was used. To support this methodology, open coding, where labels were generated to describe the emerging themes in the data on both a detailed and abstract level (Pidgeon & Henwood, 1997) were used.

In order to collapse the coded themes into a manageable size, they were then grouped into clusters based on differences and similarities. Each cluster was then labelled, and fully described for its range and variations. As the process of coding unfolded, the coded themes were refined, extended and related to each other as further material was explored (Pidgeon & Henwood, 1997). Constant comparative analysis was a technique utilized throughout the process in order to identify differences and similarities that existed between instances to ensure that the full complexity of the data was explored (Pidgeon & Henwood, 1997).

The final stage of the research process involved 'recontextualising' (Morse, 1994) - or reanalysing these differences and similarities within the broader context - so that it became a more relevant part of the greater theme, and could be made applicable to other settings. The ultimate goal of 'recontextualising' in this research problem is to add to the growing understanding of the role of restorative processes in environments designed for various post trauma report and recovery.

4.6.2. VALIDITY, RELIABILITY AND RIGOUR

If the research is proven to be honest and genuine (validity), then the reproducibility and stability of the data is consequently ensured. Lincoln and Guba (1985) support this by arguing that there can be no validity without reliability, and a demonstration of the former (validity) is sufficient to establish the latter (reliability). Hence, if the validity and trustworthiness of the research can be maximized or tested, then a more 'credible and defensible result' (after Johnson, 1997;) will allow for generalization, which is one of the structures of high quality qualitative research.

To ensure the validity and reliability of the research, multiple methods were utilised throughout the research. A triangulation of information by engaging in multiple methods, such as interviews, literature reviews and observational case studies resulted in a more valid, diverse and reliable perception of realities. All data were compared across the methods (i.e. between interviews and literature, between observations and interviews and between literature and observations) in order to ensure that the data were treated and analysed as a whole, rather than as fragments of the whole.

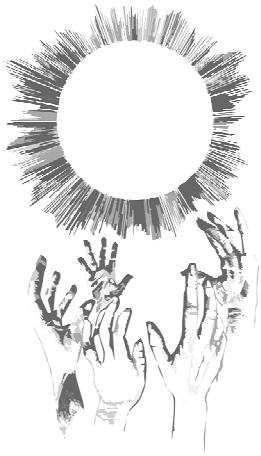
Through a process of respondent validation of any relevant research notes, a means of checking for any inconsistencies and challenging assumptions was generated, and all data were re-analyzed based on any feedback. It is also relevant to note that the sample was purposively selected based on their expected ability to assist in answering the research questions - this choice of an appropriate sample, as well as an adequate sample size ultimately assisted in ensuring that the research displayed elements of saturation and replication, thereby adding to the validity and rigour of the findings.

4.7. CONCLUSION

This chapter has ultimately formed the framework through which the precedent studies, case studies, and the research interviews are to be conducted and analysed in the subsequent chapters. At all times, the underlying purpose of the research will be to construct a new grounded perspective on the importance of restorative experiences in post trauma report and recovery environments, ultimately adding to the existing body of knowledge, and demonstrating a means through which socio-physical environments can empower young women who have experienced trauma.

CHAPTER FIVE:

PRECEDENT STUDIES.



INTERROGATING THE APPLICATION OF VARIOUS RESTORATIVE DESIGN THEMES.

5.0 CHAPTER FOUR| PRECEDENT STUDIES

5.1 INTRODUCTION

The proposed typology has rarely been explored to the extent that all the key themes explored in the literature have been integrated into a single architectural response. As such, the precedent studies should serve as the 'tool kit' for a relatively new architectural typology that holistically considers all the phases. The precedent studies reviewed in this dissertation were selected during the review of the literature. Each of the selected precedent studies subsequently exemplified one of the key themes, and were consequently analysed as a 'best practice' model . Although these precedents are certainly not limited to just one particular theme, it was the contention of the researcher that the underlying design ethos best reflected the related theme. These 'best practice' studies were then compared to the proposed design of a final precedent study, which is currently the closest model of a 'best practice' for the proposed typology, and which ultimately responds to a similar context, climate and programme. Each of the precedent studies in this chapter aims to explore a unique, yet practical, composition of the restorative qualities of architecture. Using the framework set out in the theoretical argument in Chapter 03, this chapter will interrogate three precedents selected for their response to three key design themes: Refuge, Reflect, and Reintegrate. Texture, colour, nature, ergonomics, human-based proportions, light, and formal elements of control and legibility are all explored as means for creating holistic, calming and healing experiences which could be considered to various forms of psychological recovery and restoration.

Figure 5.1 Summary of Themes to be Analysed in Precedent Studies. (by author)

5.2 PRECEDENT STUDY 01: REFUGE

MAGGIES CARE CENTRE, LONDON, ENGLAND.

5.2.1 BACKGROUND AND RATIONALE

Maggie's Centers are the legacy of Margaret Keswick Jencks, a terminally ill woman who had the notion that treatment environments and their results could be improved through the active design of psychosocially positive environments (Annemans, 2012). However, it is necessary to mention that Maggie's Centres were not intended to serve as a replacement for conventional cancer therapy, but rather as an additional caring environment that would provide support, information and practical advice to the patients and their families. These centres are always located near, but separate from, existing hospitals. The Hammersmith's Maggie's Centre in London opened in April 2008, and was designed by Rogers, Stirk, Harbour and Partners as the first purpose-built Maggie's Centre in England (Annemans, 2012). In May 2009 the centre won a RIBA award for architectural excellence and was named as London Project of the Year, and on October 17, 2009 Rogers, Stirk, Harbour and Partners, were awarded the Stirling Prize.

5.2.2 LOCATION AND OVERALL BUILDING ENVIRONMENT.

The Hammersmith Maggie's Care Centre is located at a busy intersection in Hammersmith, next to Charing Cross Hospital. Although the neighbourhood is not located in the central hub of London, and is generally composed of pleasant brick-and-stucco row houses, the site itself is anything but soothing. And so, with the hospital serving as a domineering figure on the landscape, the building was conceived by Rogers as a "heart" hidden away in the defensive wrap of a building's four walls (Rogers & Harbour, 2010). In contrast to the bland colours of most healthcare settings, the building is painted a warm orange and features various open, flexible spaces. (Annemans, 2012). The aim was to create a completely non institutional building, that creates both a welcoming character and a becomes a source of shelter from the intensity of urban life (Annemans, 2012).

Figure 5.2 Maggies Care Centre: Charing Cross Hospital, West London.
Retrieved: (Source: David McManus for www.rsh-p.com ; 2014) March 2015.
http://www.rsh-p.com/news/news_list/capital_health_exhibition_at_the_building_centre

5.2.3 THE BUILDING DESIGN: CREATING REFUGE THROUGH THE THEORY OF PERCEPTION

5.2.3.1 ELEMENTS OF SANCTUARY

The Hammersmith centre is the first Maggie's Centre that has to engage not just with close proximity to a large teaching hospital, but also with the hospital car park and the overwhelming dominance of a major traffic artery. In response, the architects designed an environment that plainly wraps the building up and shelters it from the "outside" world. The interior is a series of naturally lit oases which are intended to transition people into a calmer world, and subsequent frame of mind (Rogers & Harbour, 2010). The unique floating roof then controls elements of light and views, emphasizes the "heart", and gives the centre an exacting quality.

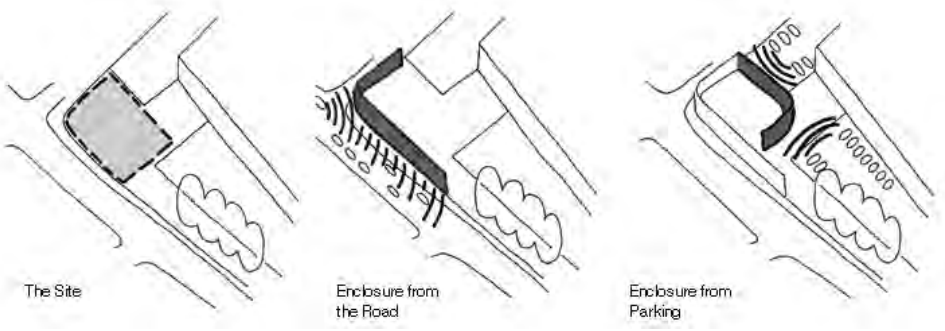


Figure 5.3 Maggies Care Centre: Architects Conceptual Sketches: Site Response
Retrieved: (Source: Unknown Author for www.rsh-p.com ; 2014) March 2015;
http://www.rsh-p.com/projects/maggies-london/

The centre is approached by crossing a semi enclosed courtyard, with the only hint of the building's interior seen through several cut-outs in the exterior walls of the building (Annemans, 2012). Through a series of turns, one is given the impression of being gradually embraced by the building, ultimately becoming isolated from the outside world. This feeling of allowing the building to accept the visitor is meant to reflect the visitors recognition of their need for assistance. Ultimately, this contrast to a typical hospital environment provides a source of worthy opposition to the otherwise oppressive surroundings (Rogers & Harbour, 2010).

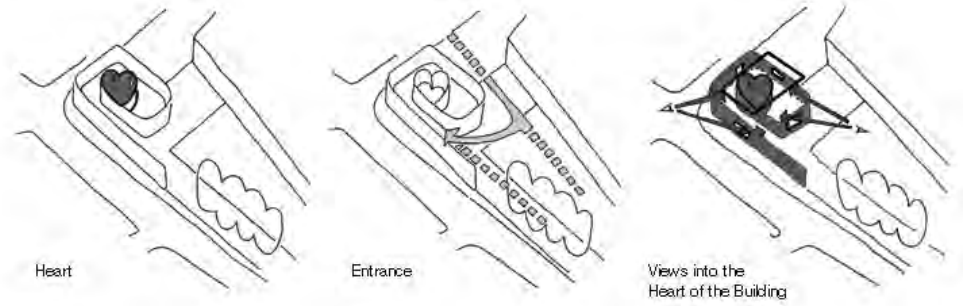


Figure 5.4 Maggies Care Centre: Architects Conceptual Sketches: Embraced into the Heart
Retrieved: (Source: Unknown Author for www.rsh-p.com ; 2014) March 2015.
http://www.rsh-p.com/projects/maggies-london/

Overall, the building is warm, calming, and filled with daylight.. The roof simultaneously limits the view of the adjacent hospital tower. This 'floating roof' is punctuated by a distinctive series of openings, some of which are visible from street level. These unglazed roof lights allow natural light, wind and rain into the garden areas below, whilst allowing the roof to shade the spaces and façades beneath (Rogers & Harbour, 2010); (Annemans, 2012). The ground and first floors are designed to be open to each other, and are articulated only by the steel roof structure which sits on a series of columns to delicately cantilever out over the gardens and decks below.

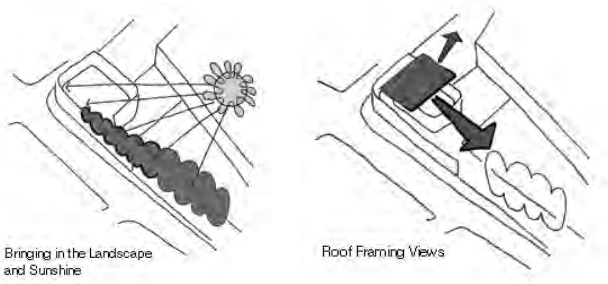


Figure 5.5 Maggies Care Centre: Architects Conceptual Sketches: Embraced into the Heart
Retrieved: (Source: Unknown Author for www.rsh-p.com ; 2014) March 2015.
http://www.rsh-p.com/projects/maggies-london/


Figures 5.6, and 5.7 The 'Arm' walls and Over-Sailing Roof Create a Sense of Sanctuary
Retrieved: (Source: AJ Walsh for www.e-architect.co.uk; 2010) March 2015.

http://www.e-architect.co.uk/london/maggies-london

5.2.3.2 CREATING A HOME AWAY FROM HOME

Although the brief described the character of the spaces needed to create an appropriate environment, it did not resort to precise area schedules (Rogers & Harbour, 2010). Instead it was left to the architects to interpret the practical realization of these spaces (Annemans, 2012). Ultimately, the architects stated their key aim as a desire to create a hierarchy of space, where visitors could find their own special place within the building. Furthermore, the building has both an open door policy and a definitely open plan design (Rogers & Harbour, 2010).

The architects, hence, conceived the floor plan of the centre to be a series of four 'tables', the 'table' tops of which include the library, the consultation rooms, the sitting areas, and bathrooms. The heart of the building, main point of circulation, and centre to the 'tables' is the kitchen. Furnished with a woodstove and a large kitchen table that is visible from almost any point in the building, this space plays a vital role in providing an informal round-table for people to meet (Annemans, 2012). Adjacent to the kitchen, Maggie's Centre breaks down into a series of secondary spaces or 'table tops', including a large courtyard, several gardens, three large sitting rooms, and several more intimate rooms designated simply as personal spaces (Annemans, 2012).


Figures 5.8, and 5.9 The heart - Kitchen- is Visible from all Subsidiary Spaces
Retrieved: (Source: AJ Walsh for www.e-architect.co.uk; 2010) March 2015.

http://www.e-architect.co.uk/london/maggies-london

Because it was impossible for the architects to predict exactly how many of the spaces would be used, and at what times, flexibility of the overall design was fundamental (Rogers & Harbour, 2010). Subsequently, each room on the ground floor has an external area with an individual plan, suggesting multi-functional opportunities and allowing the centre to respond to visitors ever changing needs (Rogers & Harbour, 2010). Similarly, the upper-level spaces – including the multi use sitting rooms and workspaces – are found above the 'table tops', where each is split into both an internal space and an external balcony (Rogers & Harbour, 2010); (Annemans, 2012).

5.2.3.3 WARMTH OF COLOUR, MATERIAL AND LANDSCAPING

The warm red-orange coating of the exterior stucco walls is not used indoors, although it is visible through the cut-out windows. Instead, warm tones from the birch panelling, Siberian larch trim, and polished concrete create an environment that is ultimately neutral, clean, but non-institutional (Rogers & Harbour, 2010); (Annemans, 2012). Furthermore, high quality acoustics paneling in the office and meeting spaces ensure that proximity and compactness do not compromise a sense of seclusion and privacy (Annemans, 2012). Echoes within the double-volumes is further reduced by carpets and furnishings, while personal chat spaces are located at the edges of the building (Annemans, 2012). Finally, the small home-like qualities of the centre, the avoidance of 'hospital' features such as duty stations, and conventional signage, all add to the warm, calming qualities of the design.

The landscaping, by Dan Pearson Studio, provides a consistent link with the hospital site. The building is surrounded by several fast-growing birch trees, which filter out noise pollution from the road, whilst a series of mature plane trees line a direct route from the existing hospital to the Centres courtyard (Rogers & Harbour, 2010). The sense of an inward-looking, protected environment extends through the courtyard gardens by use of selected vistas to the landscaped public spaces beyond, with various stone sculptures and wooden benches punctuating the route and adding to the overall human-orientated approach of Dan Pearson's landscaping.

Figures 5.10, and 5.11 Warm Materials and Finishes add to the Character and Legibility of the Centre.
Retrieved: (Source: AJ Walsh for www.e-architect.co.uk; 2010) March 2015.

http://www.e-architect.co.uk/london/maggies-london

5.3 PRECEDENT STUDY 02: REFLECT

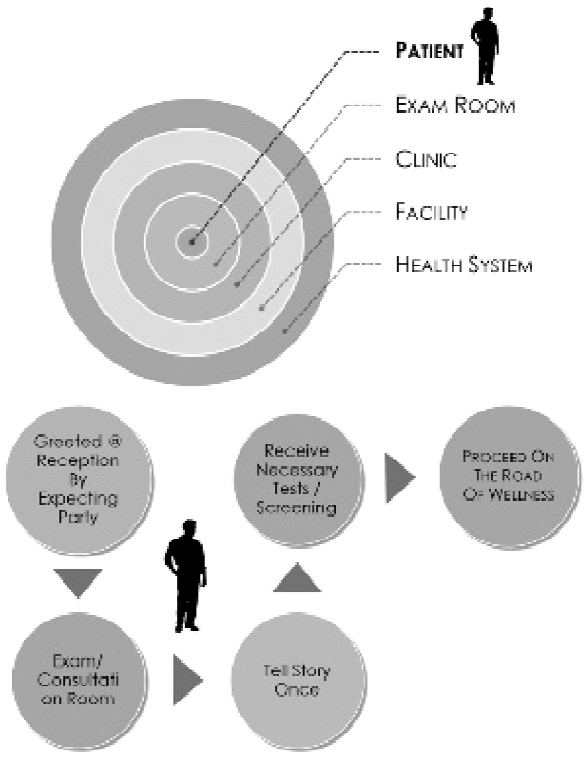
DUKE INTEGRATIVE MEDICINE, SOUTH CAROLINA, USA.

5.3.1 BACKGROUND AND RATIONALE

The healthcare centre designed by Duda Paine Architects is considered the first of its kind. It has been designed solely for the collective practice of both alternative and conventional medicine. Winner of AIA's National Healthcare Design Award for 2010, the centre's program is a case in point of how nature and science should coexist to actively promote wellbeing (Duda/Paine Architects, 2011). Health of body, mind and spirit are considered jointly through the variety of programs and spaces offered within the centre. Coherence and warmth are primarily promoted through the integration of the building with the surrounding natural elements, ultimately creating a relaxing, reflective experience of 'being away' for the centres patients and visitors.

5.3.2 LOCATION AND OVERALL BUILDING ENVIRONMENT.

The climate of North Carolina is sub-tropical and humid, which is similar to the climate experienced in KwaZulu-Natal. The serene and scenic campus in Durham, itself, already serves as an effective stress reliever (Duda/Paine Architects, 2011). The centre serves many users, including a patient population searching for a combination of both traditional and alternative medical approaches to physical and psychological wellbeing. This focus on holistic well-being and innovation guided the architects to design from a **patient-centered** perspective.



The traditional patient experience involves extended waiting and repetitive iteration of the same activity. A patient is traditionally questioned no fewer than three times during a normal visit. This is an example of how the process of receiving care is typically stressful, frustrating and time consuming. Alternatively, Duke Integrative Medicines patient model aims to minimise this inefficiency, reduce stress, and improve overall treatment efficacy (Dukes Integrative Medicine, 2011). According to the Centres overall process, the patient checks in, and is greeted by an expecting party, and is then taken to an examination and consult room, where their story is only told once. Thereafter, all relevant testing, screening and procedures are done, and the patient is admitted to the centre, or advised to continue receiving outpatient care.

Figure 5.12 Patient Centred Model and process of Care.

Retrieved: (Source: Dukes Integrative Medicine, 2011) March 2015.

http://www.aia.org/practicing/groups/kc/AIAB086508

5.3.3 THE BUILDING DESIGN: PROMOTING REFLECTION THROUGH THE THEORY OF BIOPHILIA

5.3.3.1 A HOLISTIC EXPERIENCE OF MIND, BODY, SOUL

Lighting, and its considered design, defines the centre's spaces and helps to orient users within them. In many areas, light is used to induce a mood or evoke an emotional response (Duda/Paine Architects, 2011). Ultimately, the centre's lighting supports its mission: to approach healthcare as a holistic endeavour embracing the mind, body and spirit. The meditation room, a covered courtyard at the centre of the facility, has the most involved and adaptable lighting scheme (Duda/Paine Architects, 2011). Furthermore, the architects designed for optimal natural light throughout the building, with operable windows in all treatment rooms and in the offices. On the exterior, light is cast against the natural building materials, creating a warm, intimate glow and articulating the architectural composition of the Library rotunda (Duda/Paine Architects, 2011).

Figures 5.13 and 5.14 The Meditation Room and Glowing Rotunda in the Library are central features that exemplify the use of light to create a holistic calming experience.
Retrieved: (Source: dudapaine.com); March 2015; http://www.dudapaine.com/duke-integrative-medicine.html

Conventional medical settings are typically perceived as sterile and clinical. In contrast, Duda/Paine created a warm formal composition dedicated to bridging the gap between physical and mental well-being by interweaving nature, and the building, into a single coherent environment (Healthcare-Design-Magazine, 2010). One of the main ways the architects achieved this was by creating a physically, and visually permeable connection between the facility itself, and the surrounding landscape (Healthcare-Design-Magazine, 2010 Volume 11).

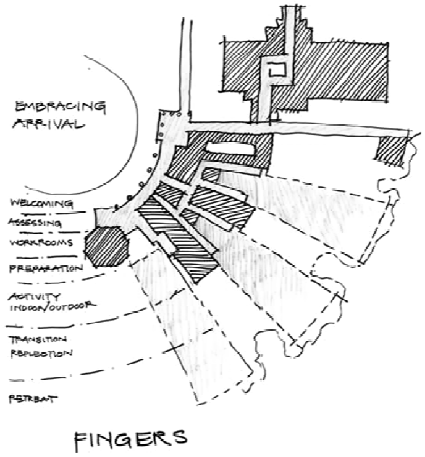


Figure 5.15 The 'branches' of the facility stretch into the forest to the east.
Retrieved: (Source: dudapaine.com); March 2015; http://www.dudapaine.com/duke-integrative-medicine.html

Three primary branches spread out outward from the curving entrance, whose vaulted colonnade refers to the Gothic language of the West Campus, directly across from it. As the buildings branches reach toward the neighbouring Duke Forest, they invite nature in, while also offering a series of discoveries along the way, in the form of seating areas, meditative corners, framed views, gardens, and fountains (Healthcare-Design-Magazine, 2010 Volume 11). These elements of prospect, refuge and mystery add to the restorative experience of the composition.

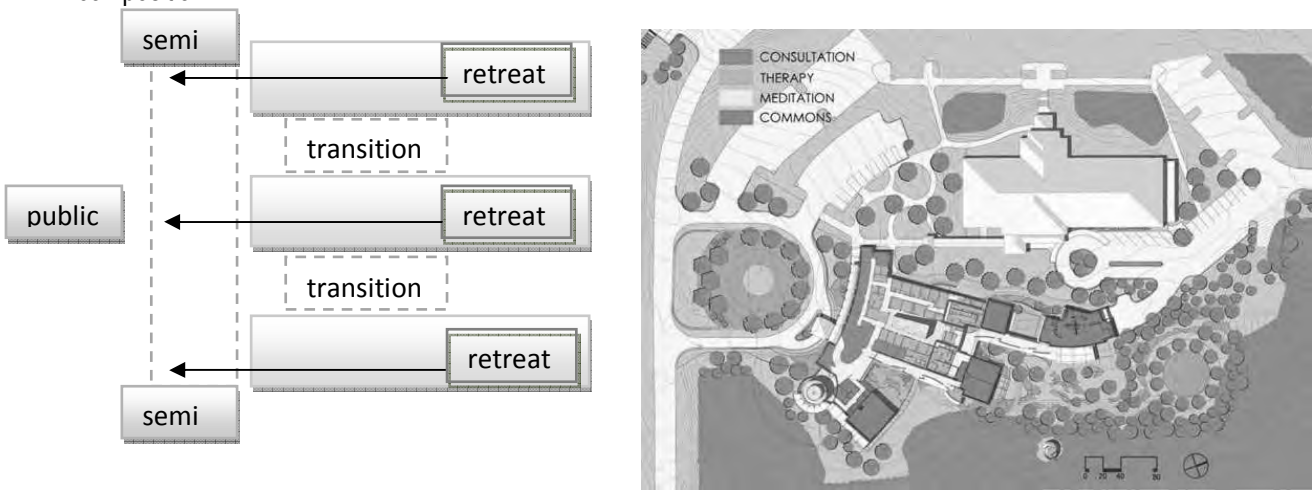


Figure 5.16 The plan of the Integrative Medicine Centre
colour coding of the zones: consultation, therapy, meditation and commons.
Retrieved: (Source: archinnovations.com); March 2015
http://www.archinnovations.com/featured-projects/health-carefacilities/dudapaine-architects-duke-integrative-medicine-duke-university/

Glass walls break down visual restrictions to the exterior and encourage physical access to the exterior elements of the wellness program, which includes functional herb gardens, a meditation pavilion, ornamental and walking paths, and several seating areas. Finally, the golden ratio inspired the truss work along the entrance loggia, and creates proportions that are in tune with a sense of human scale, further improving the legibility of the design.

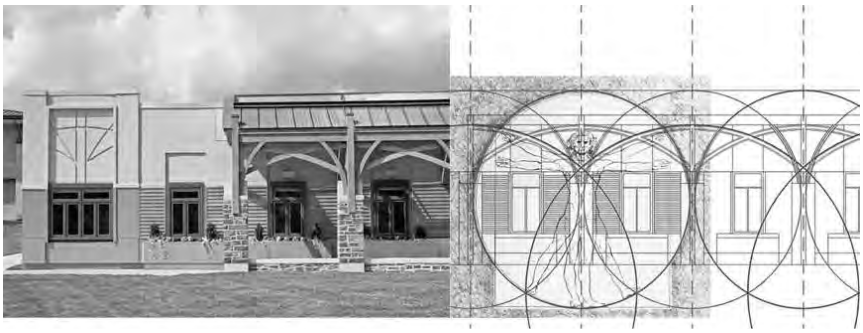


Figure 5.17 Proportion plays a key role in integrating the patients with their environment.
Retrieved: (Source: dudapaine.com); March 2015
http://www.dudapaine.com/duke-integrative-medicine.html

5.3.3.2 FORMAL AND INFORMAL SPATIAL PATTERNS

Despite its floor area of about 2430 sq m, the layout and spatial organisation remains comprehensible, pleasant and relatively compact. One of the approaches used to achieve this was “positive distractions”. The architects argued that because the act of waiting itself can provoke anxiety, the two main waiting areas try to refocus the mind by engaging the senses. For example, in the main waiting area; a bench-lined hall faces a water-wall that is flanked by a bamboo garden. Similarly, in the library, overhead arches provide a visual meditation on structure and light (Healthcare-Design-Magazine, 2010 Volume 11).

A second approach used by the firm was integrating programmatic richness and variety. Because the therapeutic process must be individually tailored, the architects provided for different levels of activity (ranging from contemplative reading to larger group exercises), as well as different levels of privacy (ranging from public gathering to solitary meditation spaces). The building houses 14 therapeutic treatment rooms, several conference and workshop spaces, a fitness facility, a community library, several meditation spaces, a quiet room, and selected spa facilities (Bravewell, 2007). Inspired by the Wheel of Health - a philosophy and strategy for achieving healing - the centre focuses on Mindfulness. The functions and spatial organisation allow for elements of self-care, which include attention to the unique mind-body connection, movement and exercise, relationships, personal spirituality, and the physical (including natural) environment (Bravewell, 2007).

Figure 5.18 Architecture to promote Mindfullness
Retrieved: (Source: bravewell.org); March 2015
http://www.bravewell.org/content/Duke_BestPractices.pdf

A gently curved entrance radiates into branches whose corridors terminate in meeting spaces e.g. the nutrition centre or smaller meditation rooms. Continuous glass walls along the garden edges create a visual connection between the interior space and the garden spaces (Duda/Paine Architects, 2011). The circular library (Figure 5.19), where arched wooden trusses suggest a canopy of trees, is intended to serve as a place to allow patients to actively have a say in their treatment strategies (Healthcare-Design-Magazine, 2010 Volume 11). It is also the most public space in the facility, as articulated by its unique rotunda.

The ‘anteroom’ at the centre of the facility (Figure 5.21), on the other hand, is a naturally lit covered garden and is the most private space within the facility. Patients emerge from the treatment rooms on each side, and into this space. Flanked by the water wall at one end and planted with bamboo, the garden also features arched wooden truss work similar to that seen along the entrance loggia and sitting room.



Figures 5.19, 5.20, and 5.21 Views of the Library, Nutrition Centre, and Patient 'Anteroom'
Retrieved: (Source: dudapaine.com); March 2015
http://www.dudapaine.com/duke-integrative-medicine.html

5.3.3.3 NATURE AND PLACE EXPERIENCE

Wood, stone and a palette of neutral colours are used throughout the centre to communicate the perception of warmth and comfort. The use of wood and glass, in particular, accentuate feelings of calm, connectedness and coherence. When used as an interior finish, wood, in particular, conveys a feeling of warmth (Duda/Paine Architects, 2011), as shown in Figure 5.22. The use of exterior wood and stone construction against a milieu of trees and shrubs further provides a calming and comforting environment for the patients and visitors, that strengthens their connections with the setting(Duda/Paine Architects, 2011), as shown in Figure 5.23.


Figures 5.22, and 5.23 The Materials evoke a natural sense of calm, order and connectivity.
Retrieved: (Source: dudapaine.com); March 2015
http://www.dudapaine.com/duke-integrative-medicine.html

Ultimately, Dukes Integrative Medicine is an example of a building that matches the goals of Stress Recovery Theory (Ulrich, 1983) and Attention Restoration Theory (Kaplan and Kaplan, 1989), and especially Biophilia in architectural design. The design of the centre synthesises the building with nature to promote health in an approach that is clearly salutogenic. The facility is designed with nature in mind and thereby emphasizes the restorative and instorative benefits of nature, whilst also promoting the conservation of the surrounding landscape. Natural geometry inspires the structural forms within the centre, improving the overall perceptual fluency and fractal coherence of the centres architecture.

5.4 PRECEDENT STUDY 03: RE-INTEGRATE

OSTRA HOSPITAL, GOTHENBURG, SWITZERLAND.

5.4.1 BACKGROUND AND RATIONALE

The architects clearly expressed that an overall desire at Östra Hospital was to break the stigmatisation associated with various forms of psychiatric care. Lundin (From & Lundin, 2010) argues that psychiatric care facilities should avoid a heavy, institutional feel, as the opposite is actually a precondition for achieving a healing environment (From & Lundin, 2010). For its efforts at de-institutionalising psychiatric healthcare, the building received a Forum for Healthcare Building Research's Healthcare Award in 2007.

5.4.2 LOCATION AND OVERALL BUILDING ENVIRONMENT.

The facility consists of nine care units providing a total of 120 bed spaces. A welcoming entrance, a dignified solidity, and a smallness of scale for the accommodation parts were stipulated as essential design features by the architect (From & Lundin, 2010). Although the designers had the existing Östra Hospital buildings to relate to (a hospital built during the 1970s, with tall lamellar blocks positioned on a north-south axis), the architects managed to successfully blend their human-orientated approach with both the existing buildings and the surrounding park landscape (From & Lundin, 2010).

Furthermore, an evaluation, funded by ARQ – The Foundation for Architectural Research, and in co-operation with Roger Ulrich, has shown that incidents of distress and violence within the facility have been drastically reduced (From & Lundin, 2010). The report on theories for reducing stress and aggression in psychiatric facilities was inspired by his analysis of the design:

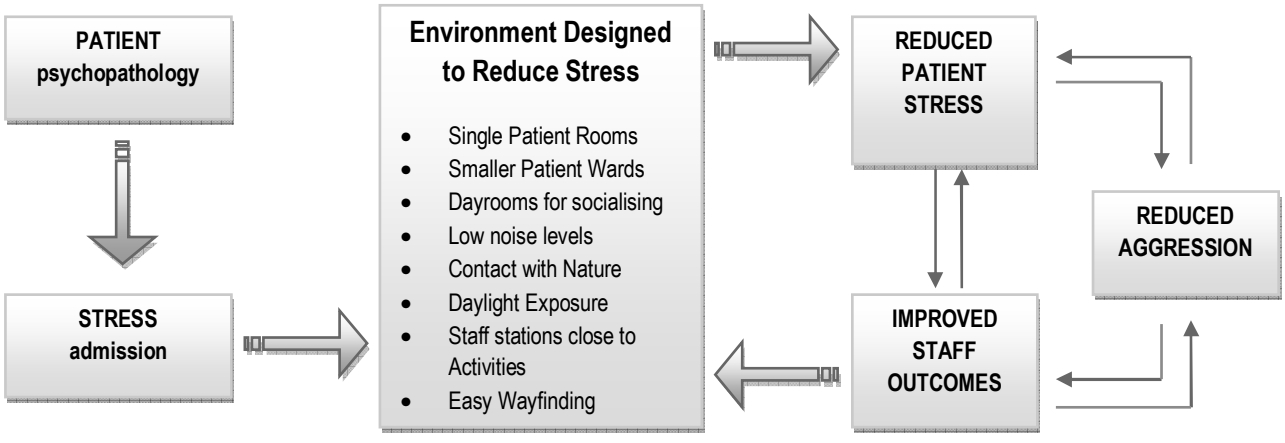


Figure 5.24 Reducing Stress and Aggression in Psychiatric Environments (Ulrich, Bogren, & Lundin, 2012)

According to the architects not infrequently, a mentally ill person has a feeling of exclusion combined with a negative self-image (From & Lundin, 2010), . This is arguably very similar to those recovering from the trauma of rape and sexual assault, where the continued stigma around the incident, further exacerbates the trauma. The architects argue that a patient's self-esteem should be boosted by offering them dignified premises. Recovery environments should strive to offer a balance of home-like cosiness and professionalism (From & Lundin, 2010).

5.4.3 THE BUILDING DESIGN: INITIATING RE-INTEGRATION THROUGH SENSE OF PLACE

5.4.3.1 DE-STIGMATIZATION OF THE CARE ENVIRONMENT

Ultimately, the architects aimed to achieve an open atmosphere by giving the building a friendly, respectful and welcoming character where 'normality' as opposed to institutionalisation were the key elements for achieving patient wellbeing (From & Lundin, 2010). The architects principles for de-stigmatization of care environments were expressed by 'the six little houses':

House 1: An attractive external composition, integrated with the natural setting ensures that patients and visitors have the impression of entering a dignified, coherent, and meaningful building. To counteract prejudice, the architects felt it was important not to give the building an isolated, "backyard" position on the hospital campus and instead to simply make it one of a number of buildings, accessed just as easily as all the others (From & Lundin, 2010). Several reviews by patients and staff have shown that communication with the other hospital buildings works well and the building feels like a natural part of the Östra Hospital (From & Lundin, 2010).


Figures 5.25, and 5.26 Dignified, Meaningful Entrances (From & Lundin, 2010, pp. 71-73)

House 2: Several small-scale low-rise building developments comprising of 2 or 3 storeys care units allow for maximum contact and proximity, and optimise views to the courtyards and outdoor areas. Positive diversions are actively incorporated as an environmental factor which increases positive feelings, captures attention and alleviates uneasy thoughts (From & Lundin, 2010). As such, views of nature, trees, flowers and water, and the incorporation of laughter and humour, and music are all integrated into the Östra Hospital Psychiatry facility.


Figures 5.27, and 5.28 Contact, Proximity and Design for Human Scale (From & Lundin, 2010, pp. 84-85)

The architects support the belief that daylight can positively affect both patient and staff wellbeing (From & Lundin, 2010). In the Östra Hospital Psychiatry building, relatively copious amounts of daylight are admitted to the care units, largely due to the incorporation of the gardens and light courts (From & Lundin, 2010). These gardens and courtyards also allow for a sense of 'being away', and provide users with more aesthetic stimuli (From & Lundin, 2010, p. 50).

Figure 5.29 Light and Nature as Restorative Stimuli (From & Lundin, 2010, pp. 88-89)

House 3: The architects offer a balance of both social spaces and isolation in the form of single rooms, coupled with opportunities for socialising via flexible modules with sheltered patios (From & Lundin, 2010). The architects also allow for the patients to feel in control, by allowing users to vary the lighting in the room, and having an architectural design with a signage system that makes it easier to find one's way around in the building (From & Lundin, 2010). Through the use of various internal control features, the patios and the gardens, the architects aim to improve the comprehensibility and meaningfulness of the spaces (From & Lundin, 2010).

House 4: Care and treatment are fully incorporated within the unit through continuous contact and communication between treatment staff and the patients (From & Lundin, 2010). Furthermore, to meet secrecy requirements, the architects paid particular attention to the acoustic conditions of the offices and the consultation rooms (From & Lundin, 2010).

House 5: All Emergency care facilities are kept separate from the planned care facilities (From & Lundin, 2010). Planned care is usually associated with outpatient treatment and with preliminary investigations prior to admission to the residential treatment centre (From & Lundin, 2010). To optimise the prerequisites for treatment, the planned care facilities were designed so as not to be affected by the noise, and over stimulation of the emergency care facilities.

House 6: Variation of stimuli, in the form of different external textures and proportions, layered ceiling heights, glazing quantities, shifting views to the outdoors, and colour ensures that all the senses are continually addressed. Similarly, both staff and patient facilities were designed to remain compact, and in close proximity of one another, yet also large enough to avoid feelings of stress and overcrowding (From & Lundin, 2010). Finally, the overall "playfulness" in the architecture has been the result of the architects main aim to provide a source of healing through architecture (From & Lundin, 2010).

Figures 5.30, and 5.31 Variation of Stimuli (From & Lundin, 2010, pp. 76-82)

5.4.3.2 LEVELS OF INTIMACY FROM EXTERIOR TO INTERIOR

The possibility to choose between solitude and social interaction has been made possible by single bedrooms and small patient units with adjoining common rooms. In this way, the patients can progressively increase their personal space. According to the architects, socialising and discretionary seclusion within these spaces are necessary and are stated as a basic prerequisite of rapid recovery (From & Lundin, 2010). Being able to go aside when one is feeling overwhelmed, or when anxiety and aggressions make themselves felt, is essential (From & Lundin, 2010). However, the architects concede that constant withdrawal is also detrimental to recovery and so the facilities design aims to develop the patient's social capacity. The care departments are all intended to gradually increase the patients' personal spheres, from their own room, to the garden, café and public areas (From & Lundin, 2010).

To help achieve this, the internal spaces were based upon three pillars.

- **The Garden:** Consists of a lush oasis surrounded by several building elements. No staff escort is needed - even if the patient has been admitted for compulsory treatment (From & Lundin, 2010).
- **The Heart**: is the central area of the ward department and consists of a kitchen, dining area, living room, and activity room all grouped around a small glazed conservatory. It is this element, which helps the building to maintain the feel of a 'corridor-free department (From & Lundin, 2010)'.
- **The Residential group**: The traditional Swedish veranda inspired the common social corner in the residential groups which accommodate 4-5 people each. The residential group is visible from the "heart", but can also be separated and used for patients with related conditions (From & Lundin, 2010).

Figures 5.32, and 5.33 View of the 'Heart' and a 'Residential Unit' (From & Lundin, 2010, pp. 78-84)

Similarly, the individual care rooms have incorporated the idea of multiple spaces: a patient can lie in bed looking straight out of the window; or be seated in the adjacent armchair with a blanket over their legs; or sit with the door ajar looking out towards the "Heart" (From & Lundin, 2010). The individual rooms and care units are intended to steadily increase patients' personal space, to help them finally "break the bubble" out to a normal life (From & Lundin, 2010), as shown in Figure 5.34.

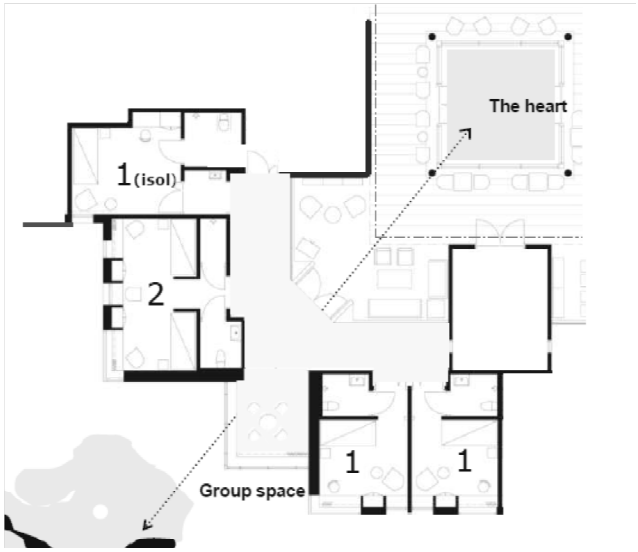


Figure 5.34 Plan View of the 'Heart' and a 'Residential Unit' (Bergsland, 2009, p. 21)

5.4.3.3 A CENTRAL AXIS AND THE USE OF COLOUR

The café is at the beginning of what the architects refer to as “the entrance axis” (From & Lundin, 2010). This axis is consistently lined with both internal and external training facilities, several activity departments for the patients and a small research unit. Entrances to the care units and the consultation and admin offices have also been concentrated here. One side of the main axis is closed, and painted a dark blue to compliment the veneered panels of the entrance hall which continue along the ceiling. Large glazed sections on the other side, however, maintain continuous visual contact with the care units’ courtyards (From & Lundin, 2010).

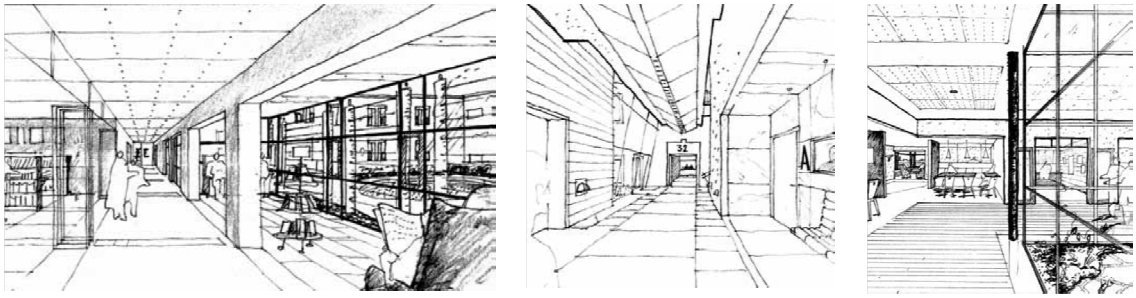


Figure 5.35 Central Axis and Central Core Emphasized through Materiality - Sketches by Architect, S. Lundin.
(From & Lundin, 2010, p. 103; 104; 106)

The main axis derives rhythm from the care unit entrances and the furnished foyer spaces (From & Lundin, 2010).. Each sub axis culminates in a central circulation core, with a large glazed section demarcating the receptions and the heart of the building. The heart maintains a bright and airy feel, as the architects intended people to be drawn from the periphery and into the centre of the department (From & Lundin, 2010). The ceiling is gypsum board, with fixed, smooth friezes with removable expanses of perforated board. Surrounding walls are a warm shade of colour, to give weight and dominance (From & Lundin, 2010).

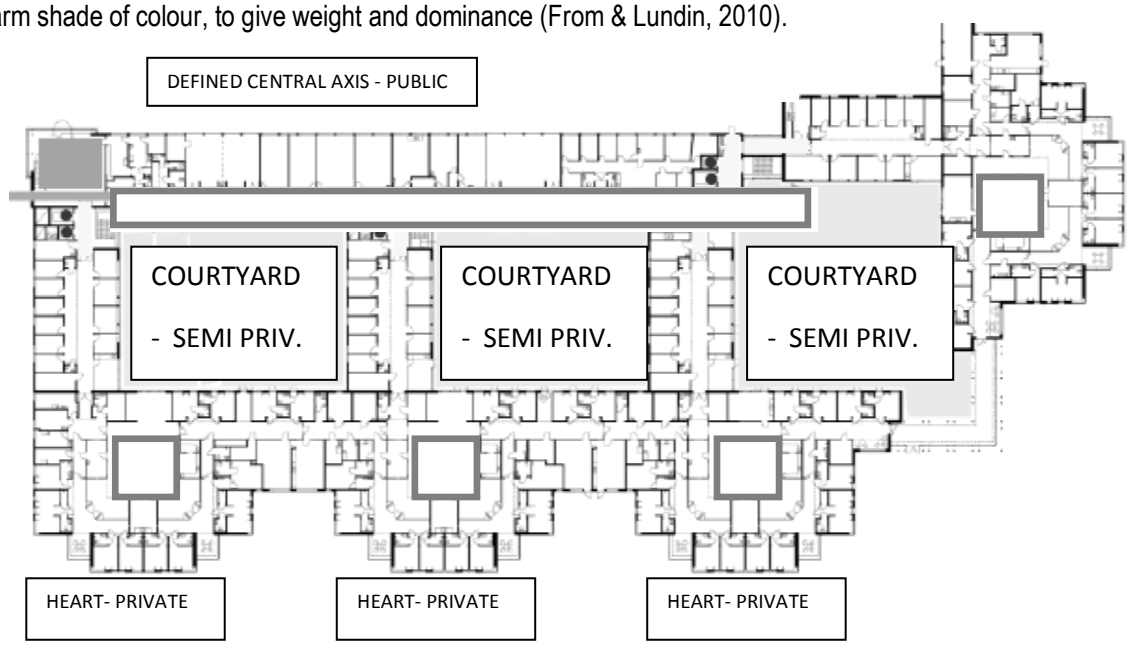


Figure 5.36 Materiality used to Manipulate Privacy Gradient and Spatial Organisation
(Bergsland, 2009, p. 12)

5.5 PRECEDENT STUDY 04: CONSIDERING THE VICTIMS

- WOMENS SHELTER, RAMAT HASHARON, ISRAEL

5.5.1 BACKGROUND AND RATIONALE.

The project was recently commissioned by the Israeli charity No To Violence, founded in 1977, and led by human rights activist Ruth Rasnic (winner of the Israel Prize for her contribution to the field). The building is a pilot project in the design of purpose built shelters for victims of Domestic violence and abuse in Israel, and is set for completion in 2017 (dezeen.com; 2015). Designed by Amos Goldreich Architecture, based in London, UK, and Jacobs-Yaniv Architects, based in Ramat HaSharon, Israel, this shelter will be named after Ada and Tamar de Shalit. Amos Goldreich, is the son of Tamar de Shalit, an interior designer who provided refuge for Nelson Mandela in 1961 at Lilliesleaf Farm in Johannesburg. According to the architects, unlike most shelters, this centre is being designed with a clear programmatic layout that will serve the acute needs of its residents, as they recover from their individual traumas (agarchitecture.net; 2015). The building will provide the charity's first centre for female victims of domestic violence and their children, and house its administrative headquarters.

5.5.2 LOCATION AND BUILDING ENVIRONMENT.

The shelter has been designed to accommodate families from diverse ethnic groups and geographical settings - ranging from Russian, Ukrainian, Ethiopian, Arab and Israeli (agarchitecture.net; 2015). To ensure a sense of privacy, seclusion, and normalcy, the site is located in a quiet residential neighbourhood, surrounded by a mix of private residential homes, and high rise apartment blocks, not far from the city centre of Ramat HaSharon - a coastal city in close proximity to Tel Aviv. To respond to its general context, the shelter will feature a central courtyard, and take the form of a cloister design (as shown in the Figure below). The shelter will accommodate 12 families in individual quarters, over a 1600 square metre site (dezeen.com; 2015).

Figure 5.37 Overall Site Model of proposal - Model produced by Nimrod Regev, Studio Toro
Retrieved: (Source: agarchitecture.net; 2015) October 2015.
http://www.agarchitecture.net/shelter-for-battered-women-2/

5.5.3 THE BUILDING DESIGN: COMBINING REFUGE, REFLECT, AND REINTEGRATE

5.5.3.1. ENSURING SECURITY AND PROTECTION

Ruth Rasnic, quoted in Dezeen (2015) said : "The shelter will provide a much-needed refuge for abused women. They arrive in a state of real distress, these people have deep psychological problems, as do their children, so the shelter must provide them with a tangible sense of calm and security."

According to the architects, the existing shelter is housed in a makeshift building, and is currently not fit for its purpose (agarchitecture.net; 2015). The architect mentions that the new design will aim to specifically remedy the flaws of the old design - namely too many stairs, blind spots, and an overall compromised sense of safety for the women and children staying at the shelter (agarchitecture.net; 2015). Ultimately, creating a sense of safety, protection, and a peaceful haven inspired the overall cloister typology. The garden, as shown in the figures below, has been designed to be filled with natural light, with plants, shaded areas, and play spaces to help create a feeling of refuge, openness and discrepancy. This courtyard plays a vital role as a meeting place for the all the staff and residents alike.

Figures 5.38 and 3.39 - Cloister and Courtyard Arrangement
Retrieved: (Source: agarchitecture.net; 2015) October 2015;
http://www.agarchitecture.net/shelter-for-battered-women-2/

The Courtyard also serves a functional purpose, providing optimum visual connections, ensuring a sense of security and transparency between the families and the house mother and caretaker, as well as between the women and their children. This courtyard is then surrounded by an internal corridor - or street - which connects the outdoor spaces with the internal spaces, and ensure the form allows for smooth circulation, interaction, and layers of privacy.

5.5.3.2. IT TAKES A VILLAGE TO CREATE A HEART.

According to the architect, the building and its walled gardens were conceived as a small village which would provide independent accommodation, medical, legal and therapeutic services, as well as kitchens, laundry rooms, computer spaces, and a kindergarten. In addition, the architects have provided rooms and offices for live in staff, visiting social workers, child psychologists and a lawyer.

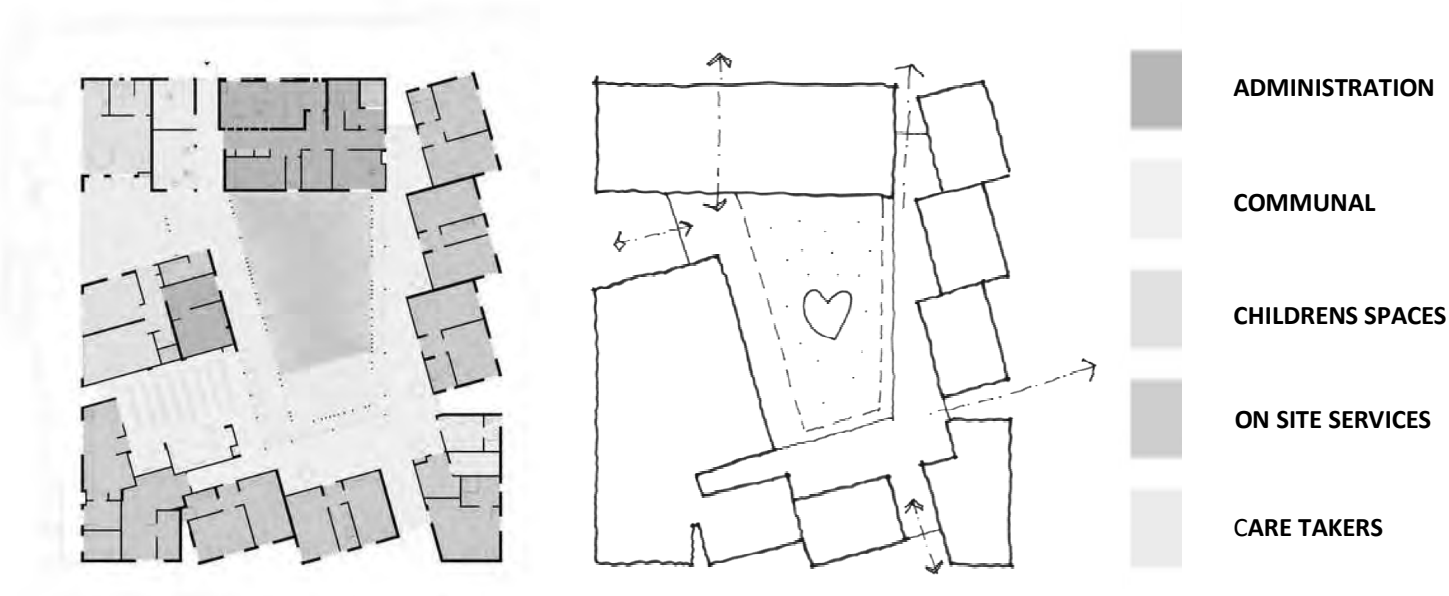


Figure 5.40 - Planning a Village with a Heart
Retrieved: (Source: agarchitecture.net; 2015) October 2015.
http://www.agarchitecture.net/shelter-for-battered-women-2/

As quoted in Dezeen (2015), the architect, Goldreich said: "Our approach was to design the building as a small village, accommodating a variety of functions. On arrival, each new family is given a small house that is part of the larger building." The centre will also accommodate for a diverse programme of therapeutic spaces, which as shown in the Figure above, all feed into the heart of the building. These spaces include mother and child training facilities, play therapy facilities, media therapy facilities, and volunteer cosmeticians, hairdressers, relfexologists , martial arts practitioners, as well as computer skills teachers (agarchitecture.net; 2015).

By creating a villages, the families and victims are encouraged to conduct a normal daily routine. At the same time, layers of privacy are accentuated through the internal corridor- street - and ensures that more public spaces are separated from recovery spaces (agarchitecture.net; 2015). For example the dining hall and nursery , which are part of the daily routine, are separated from the therapy spaces and the living units.

5.5.3.3. A BUILDING WITH TWO FACES.

According to a quote from the architect, Amos Goldreich on Dezeen (2015) : "Central to the brief from No To Violence, the charity that commissioned the shelter, was the provision of a safe environment for its occupants. In response, we created a building with two facades: the secure and protective external facade, and the inner aspect, which overlooks the internal." Amos Goldreich, with co-architects Tamar Jacobs and Oshri Yaniv, have hence ensured that the secure and protective external façade offers a sense of safety, whilst the inner façade onto the central garden - or therapeutic “heart” of the shelter- offers a sense of peace and calm.

The materials selected for the project are all sustainable and durable, and locally sourced. Natural ventilation and lighting further ensure that the buildings materiality and design respond to its climate. However, mechanical ventilation will be installed in office and consultation spaces to ensure the comfort of the women and children (agarchitecture.net; 2015).

Furthermore, as shown in the Figures below, the palette of materials will be sustainable and durable, and special attention will be given to the landscaping scheme, which will include indigenous planting, and a designated herb garden for kitchen staff (agarchitecture.net; 2015). All the landscaping design has been donated by USA based landscape architect Eran Schlesinger.


Figures 5.41 and 5.42 - Durability and Calmness as a palette for Materials
Retrieved: (Source: agarchitecture.net; 2015) October 2015.
http://www.agarchitecture.net/shelter-for-battered-women-2/

5.5 CONCLUDING COMAPARISON OF PRECEDENT STUDIES.

5.5.1 PERCEPTION AND SENSORY EXPERIENCE OF DESIGN: CREATING REFUGE

Duke Integrative Medicine, Ostra Hospital, and Maggie's Centre in Hammersmith, through the use of colour, texture and overall sensory variation are all noteworthy for achieving a restorative sensory experience. The balance of calming and stimulating environments is inherently in line with many of the theoretical themes explored in the literature review, and ultimately creates a sense of refuge and a sense of coherence.

From Maggie's Care Centre, however, it becomes most clear that vibrant, yet restrained, colours, warm textures such as timber, stone and rough concrete, and overall variation, adds to the legibility, character and charm of a design, and ultimately creates a dignified and inviting environment which could be considered conducive to creating a sense of retreat, and facilitating the disclosure process. As such, Maggie's Centre serves as a best practice study for creating an overall sense of refuge. Finally, from the analysis of the Ada and Tamar de Shalit Shelter it becomes clear that these considerations can be specifically applied in response environments for women and children who are victims of abuse.

5.5.2 INTEGRATION OF THE RESTORATIVE QUALITIES OF NATURE: PROMOTING REFLECTION

Whether in the appearance of courtyards (as with Ostra Hospital and Maggie's Centre in Hammersmith), or with atriums and Biophilic proportions (as with Duke Integrative Medicine), all three precedents actively incorporate elements of nature in their composition. The reflective and instorative properties of nature are accepted as means of further creating a sense of refuge, and 'being away', thereby adding to the restorativeness of the various building experiences.

Furthermore, these properties also add to a sense of connection, harmony, and ultimately coherence, by reducing any sense of confinement. The role of nature in providing positive distractions and creating reflective and meditative spaces is particularly well emphasized in Duke Integrative Medicine. At Duke Integrative Medicine, their use of garden spaces, meditation zones, and considered views of nature support the conclusion that this study serves as a best practice model for promoting reflection and instoration.

The analysis of the Ada and Tamar de Shalit Shelter, further accentuates that these properties of nature are essential to creating a peaceful, calming and restorative 'heart' to any environment designed to respond to the trauma experienced by women and children who are victims of violence.

5.5.3 PERSON-PLACE RELATIONSHIPS AND PLACE ATTACHMENTS: INITIATING RE-INTEGRATION

Through the incorporation of courtyards, atriums, meditation spaces, and various social spaces with defined hierarchies, and levels of intimacy, all three precedents promote a connection to self and to place, particularly through the processes of self-regulation. Although the need for privacy gradients and user control is best accepted and implemented in Ostra Hospital through the design of specialised patient rooms and levels of social interaction. Users are always encouraged to interact with one another and 'break out' of their bubbles.

At Ostra, TV rooms, libraries, cafes, and communal kitchens are some of the most relevant examples of how spaces can facilitate social interaction, and promote a sense of attachment to place. Furthermore, the informality of these spaces adds to their restorative experience, and is indubitably a valuable source of creating a non-institutional and informal environment for various processes linked to the disclosure and treatment of trauma or stress.

In the end, Ostra Hospitals design principles ensure that it serves as a best practice model for re-creating a sense of place and ultimately, improving patient self-esteem. Many of these principles are similarly exemplified by the privacy gradients, and overall sense of normality accommodated for in the in Ramat HaSharon.

RESTORE	LIGHT AND FORM	SPATIAL PLANNING	MATERIALTIY
REFUGE: Maggies Care Centre, London BY RICHARD ROGERS	- Bold Roof Canopy - Intimate Internal Gardens - Embraced by the Building	- Hierarchy of Spaces - Open Door/ Open Plan - Communal Heart - Kitchen	- Warm Tones, Bright Colours - An environment that is non institutional, yet neutral, clean
REFLECT: Duke Integrative Medicine BY DUDA PAINE ARCHIECTS	Light is used to Evoke Mood - Bright and Airy; or - Peaceful, Contemplative	- Non Clinical Therapy - Compact layouts - Visual connection to outdoor	- Warmth and Comfort - Wood, Stone, Natural - Glass for Max Views
REINTEGRATE: Ostra Psychiatric Facility BY WHITE ARKITEKTUR	- Light, free, open environ - Emphasis on 'Normality' - Intimate Scale	- Patient and Staff considered - Good access to Nature - Use of Light in all spaces	- Central Axis to Heart - Heart: Bright and Warm - Axis: Visual Contact
FOR THE VICTIMS: Ada & Tamar de Shalit Shelter BY WHITE ARKITEKTUR	- Protective, Rough Exteriors - Reflective, Calm Interiors - Embraced by the Building	- Central Courtyard - Heart - Intimacy Gradient Defined - Specialised Programme	- Durable, yet Calming - Sustainable, Local Sources - Playful, yet Practical

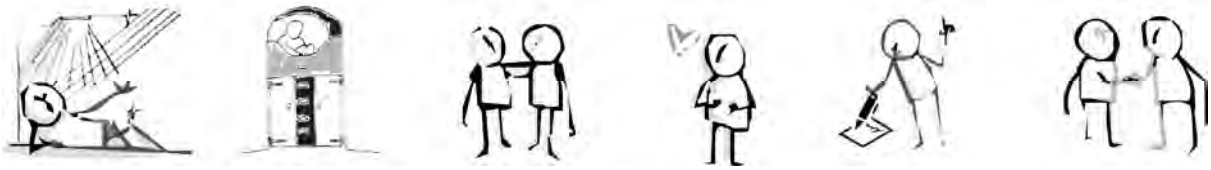
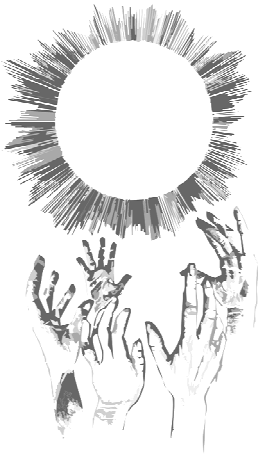


Figure 5.43 Summary of Elements Analysed in Precedent Studies. (by author)

CHAPTER SIX:

FIELDWORK AND ANALYSIS



CONTEXTUALISING RESTORATION THROUGH THE VICTIMS ADVOCATES AND FAMILIES.

6.1 INTRODUCTION TO FIELDWORK COMPONENT

Durban's city centre has recently undergone a regeneration, but despite these efforts, many inner city housing areas are plagued with various socio-physical and socio-economical issues, such as prostitution, transience, human trafficking and a decaying built environment. One of the many symptoms resulting from these issues is an increase in cases of sexual abuse and rape of young women and girls. So, whilst the previous chapter has discussed and analysed various 'best practice' scenarios and formulated a 'tool kit' for the design of a new typology that would respond to the experiences of the victims, in terms of the research's main themes, this chapter will now aim to understand and contextualise how current report and recovery environments in Durban have similarly attempted to respond to the experiences of the victims.

At the moment, Durban has four Rape Crisis Centres in the eThekwini Health District - Addington Hospital, Prince Mshiyeni Mission Hospital, Mahatma Ghandi Memorial Hospital and the Pinetown District Surgeons Office. Although these hospitals, attempt to offer specialized care and counselling for the victims, the literature has shown that reform efforts have not been consistently applied, and that there continues to be a serious scarcity of both human and financial resources (Naidoo; 2013). The challenge to meet these social issues has resulted in the appearance of several NGO's and NPO's within the city. And as a means to support the existing environments for report and recovery, these organisations have also set up their own support facilities to meet the various legal, psychological and medical needs of the victims.

Unfortunately, these organisations have limited resources and capacity, demonstrating a need for an architectural intervention to support these organizations, and provide a support environment where young women and girls can report incidents of rape and sexual, and receive both immediate and longer term physical and psychological restoration. As such, the case studies and interviews analysed in this chapter will aim to interrogate existing support systems and environments for posttraumatic recovery in young women who have been victims of rape and sexual assault in the Durban area, and evaluate what efforts still need to be made in terms of an architectural contribution to the resolution of this dilemma.

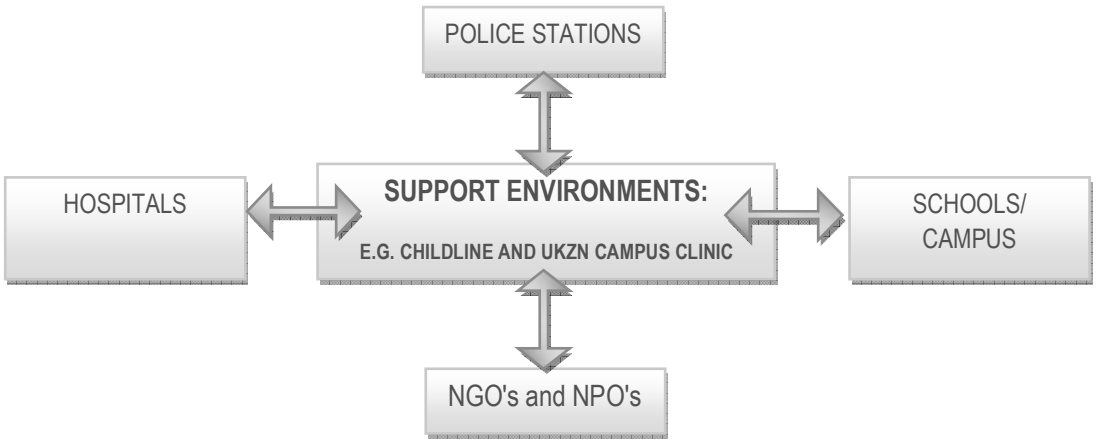


Figure 6.1. Diagrammatic Synopsis of Sample and Case Study Selection (by author)

SPECIALISED ENVIRONMENTS FOR THE VICTIMS MEDICAL AND COUNSELLING NEEDS

UKZN CAMPUS HEALTH CLINIC H.C., DURBAN, SOUTH AFRICA.

Although the number of victims who report incidents of rape and sexual assault at the clinic cannot be disclosed for the purpose of this research, a discussion during a tour of the facilities with the HOD of the Durban Metropolitan Health Clinics at UKZN, Mr Muzi Mthembu, confirmed that the number of cases entering the facility made this a valid research case study. However, only cases not formally reported to the police are treated at the UKZN Howard College Health Clinic. All other cases are referred to the crisis centres at St Augustine's (a private hospital) or Addington (a public hospital). To ensure there would be no risk of contact with the victims, this study was conducted on a Friday afternoon, when the clinic itself was closed for administrative purposes.

6.2.1 CONNECTION TO REPORT AND RECOVERY ENVIRONMENTS.

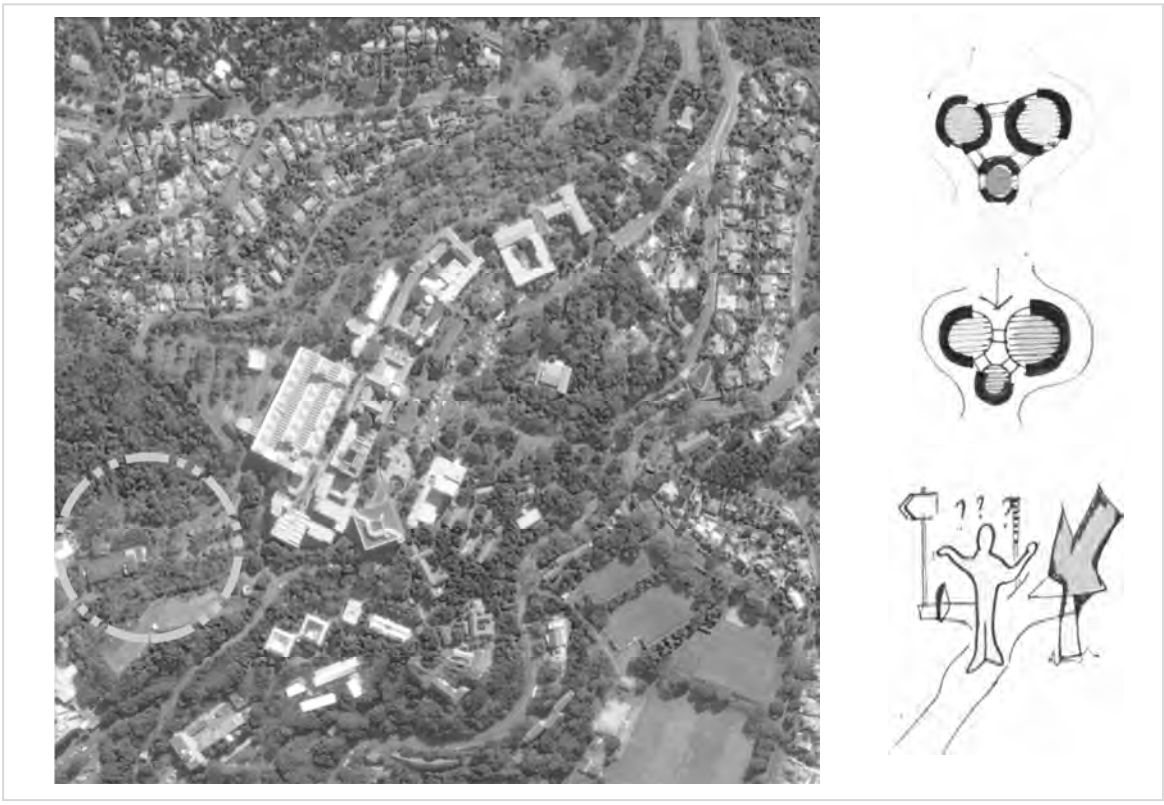


Figure 6.2 Locality of the UKZN Howard College Health Clinic
Centrally located, easily accessible, but lacking in appropriate way finding
(Source: Google Earth, edited by author. Accessed: 10-08-2015.)

Located at the base of the Shepstone Building, the UKZN Howard College Health Clinic offers a sense of retreat and seclusion. However, it remains centrally located and has strong connections to the Risk Management Services and the nearby student residences. The clinic is not easily located as there are minimal wayfinding mechanisms, save for a few signs along the pathways between the student residences. This does conversely ensure complete discretion and privacy.

6.2.2 THE FUNCTIONAL AND PSYCHOLOGICAL NEEDS OF THE VICTIMS.

The campus offers all the same services typically offered off campus - report and investigative services in the form of Risk Management Services, medical services in the form of the UKZN Howard College Health Clinic, and ongoing counselling and support facilities offered by both the College Psychologists and the UKZN Howard College Health Clinic.

Although the scale of this study is significantly smaller than the proposed research typology - it is nevertheless in terms of gaining a better understanding of the spatial and functional medical and counselling requirements of the victims. Furthermore, being a Campus Health Clinic, this study reflects how the needs of the older victims within the research study group (12 -35) are being met. After all, several of the victims could potentially be students studying at this campus, or similar environments.

6.2.3: ANONYMITY, ACCESSIBILITY AND PRACTICALITY

Figure 6.3. Approach - anonymity broken only by entrance signage
(Photographs by Author - September 2015.)

The overall form is reminiscent of a standard single storey school building. This sense of anonymity is well complimented by the facilities overall seclusion. Dense vegetation, and the fact that the building's entrance is recessed into its form, ensures that its users have a sense of progressively being embraced by the building. This principle, similar to those of Maggie's Care Centre in London, and the Childline Headquarters and Therapy Centres, is not as effectively integrated, due to the overall blandness of form.

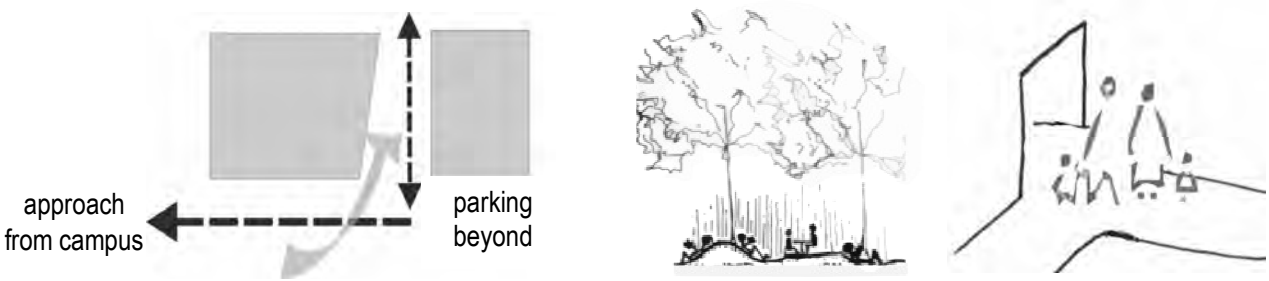


Figure 6.4. Recessed entrance and dense vegetation to evoke sense of seclusion
(Sketches by Author - August 2015.)

However, the form remains practical and functional, orientating its roof along the windward and leeward edges, maximising the potential for natural ventilation through the main entrance and waiting room areas, and ensuring that natural light penetrates both the private and public spaces along its edges. Internal shading systems are offered to reduce light and heat influx, and allow users a sense of control.

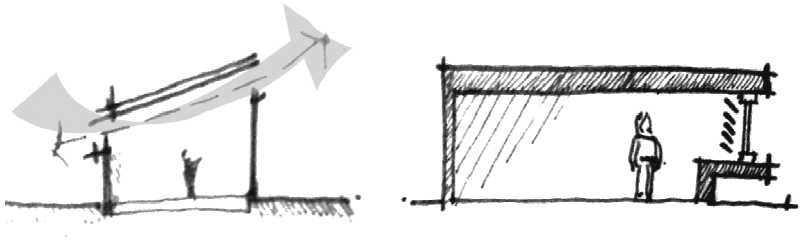


Figure 6.5. Efforts to maximise ventilation and control influx of heat and natural light
(Sketches by Author - September 2015.)

6.2.4 THE FLOW OF SERVICES WITHIN THE SPACES.

The facility offers the same services as any standard clinic or hospital outpatients treatment facility, including PEP scans and treatments, HIV and trauma counselling, and additional medical services. The entrance, reception area and waiting area are relatively open plan and informal. Patients or victims entering the facility have immediate contact with a nurse at reception, and are able to maintain visual contact with the admin staff and reception nurse whilst waiting to be attended to.

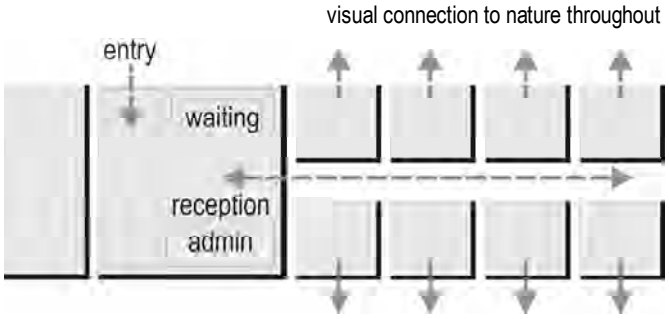


Figure 6.6. Clear distinction between public (waiting) and private (treatment) areas
(Sketches by Author - September 2015.)

The consult and treatment rooms are located along a passage which feeds off the main waiting area. These rooms also serve as counselling rooms. In addition, all consult rooms, treatment areas, and the waiting area have views to the outside, ensuring that nature, and natural light permeate the spaces and evoke a sense of calm and reflection.

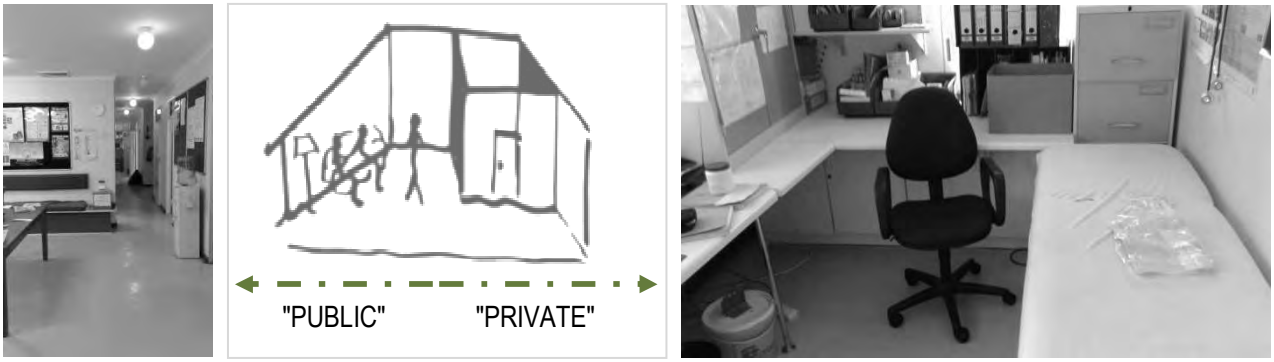


Figure 6.7. Typical healthcare facilities at the UKZN campus health clinic - Waiting and Consult Room
(Photographs by Author - September 2015.)

The consult room used for victims of assault is located at the end of the passage, ensuring maximum privacy for the victims. Reduction of noise, and pedestrian movement further facilitate a sense of seclusion.

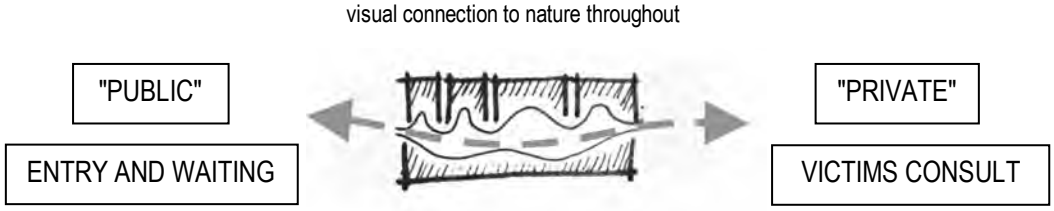


Figure 6.8. All consult and treatment spaces feed off a central passage, with victims consult at the back
(Sketches by Author - August 2015.)

6.2.5 NON- CLINICAL COMFORT

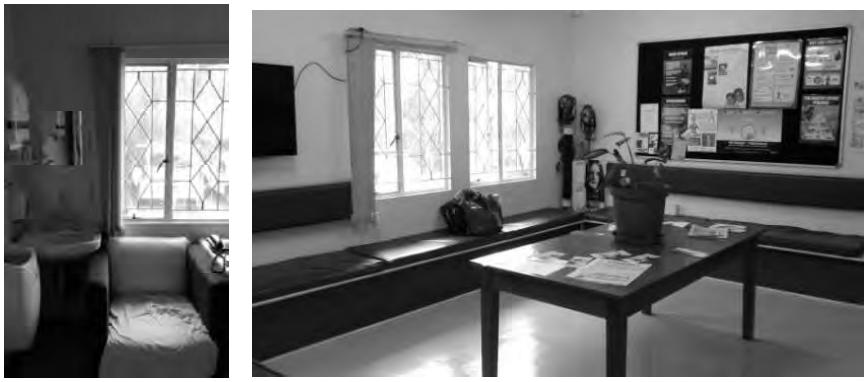


Figure 6.9. All consult and treatment spaces feed off a central passage
(Photographs by Author - September 2015.)

Similar to the Childline Headquarters and Therapy centre, the UKZN Campus Health Clinic facility makes use of the calming properties of the colours cream and blue. Comfortable furniture, artwork, health awareness posters and internal plants further add to a sense of informality. Although the building appears rather dull and institutional from the exterior, the interior is surprisingly informal and warm. This atmosphere is continued into the treatment rooms.

Cleanliness, without sterility and comfort, without clutter, are the overriding themes in the overall materiality of the facility. The use of a central table in the waiting area, and the u-shaped seating arrangements further emphasise a feeling of familiarity and warmth.

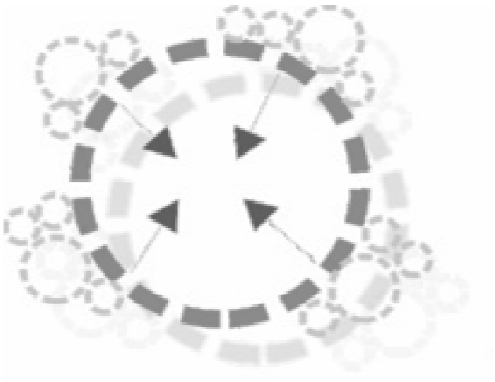


Figure 6.10. Informal seating and a table as a 'hearth' add a sense of warmth and informality
(Sketches by Author - September 2015.)

6.2.6 CONCLUSIONS AND GENERAL COMMENTS: UKZN CAMPUS HEALTH CLINIC

Contrasting this analysis of the UKZN Campus Health Clinic with the various themes discussed in the literature review and the precedent studies, the following conclusions can be made:

Maximising the design elements available - namely anonymity and simplicity - the facility may not be a best practice model, but does adequately cater to victims and patients. Legibility, privacy, dense vegetation and a rather secluded site further ensures that the facility is perceived as an immediate sense of refuge.

Constant visual contract with nature, the use of indoor artwork and plants, and the optimal use of daylight ensures that the spaces are conducive to self-reflection and self-calming. These elements of distraction and soft fascination, although not necessarily ideal, are effective. The waiting room especially is kept serene and conducive to reflection and instoration.

Informality, the inclusion of a central 'hearth' feature, and clearly defined layers of privacy ensure that the facility avoids a clinical feel, but retains a sense of functionality and coherence. Patients are given the impression of being in a professional, yet welcoming environment, which makes the best of its circumstances to create a unique character.

In the end, despite the limited financial resources, the facility has made perceivable efforts to design with the users in mind. Particular sensitivity is given to any potential cases of rape and sexual assault, in terms of both staff assistance, and the location of the treatment spaces within the facility itself.

SPECIALISED ENVIRONMENTS FOR VICTIMS LEGAL AND THEREPEUTIC NEEDS

CHILDLINE H.Q / THERAPY CENTRE, SOUTH AFRICA.

Childline is a well known and respected Non Government Organisation (NGO) and Non Profit Organisation (NPO) with links to many Police Stations and Thuthuzela Care Centres (TCC) in the KZN area. Childline's Durban Headquarters and Therapy Centre serves as a venue for continuous professional development, training, and report and counselling services.

6.3.1 CONNECTION TO REPORT AND RECOVERY ENVIRONMENTS.

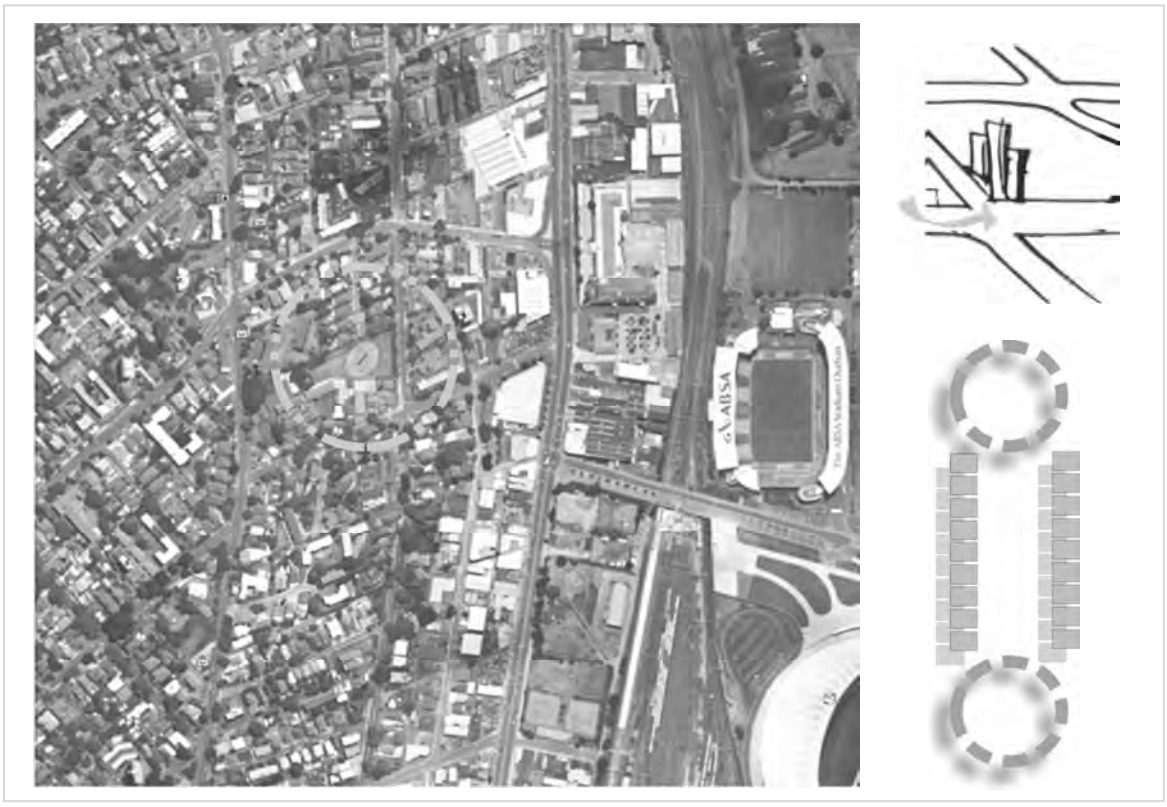


Figure 6.11. Locality of the Childline headquarters and therapy centre
Corner Site, separated into 2 easily accessible residential buildings.
(Source: Google Earth, edited by author. Accessed: 10-08-2015.)

Located on a corner site, less than a kilometre from the Stamford Hill Taxi rank, and along the route of several public transport systems, the Childline Headquarters and Therapy centre are located in a calm, yet easily accessible part of the city. The centres facilities are separated to include 2 residential buildings customised to suit the needs of the therapeutic staff and the various victims and families visiting the centre.

Whereas one building focuses on victim counselling and advocacy, the other building focuses on training, events planning and other admin related tasks. These buildings are located in close proximity to each other and are easily accessible by foot. The centre itself does not accommodate for the immediate medical needs of the victims - in cases where urgent medical attention is required, victims would be referred to the Thuthuzela Care Centres. However, many cases are reported within both the Crisis Line and Therapy Centre departments, and the building is used as both a first response environment and a continued treatment environment.

6.3.2 THE FUNCTIONAL AND PSYCHOLOGICAL NEEDS OF THE VICTIMS.

The Childline Headquarters and Therapy centre focus on counselling services, victim support, preparation of victims for court, a crisis hot line, and staff training. Outreach programmes and staff Debriefing are also integral functions within the centre. All social workers and counsellors from the various police stations, hospitals and sub offices meet on a regular basis at the centre to ensure that the organisations approach remains grounded and centralised. The centre itself has made several perceivable efforts to design a calming and friendly environment - for victims, families, and advocates alike.

6.3.3 ESTABLISHING A SENSE OF SAFETY AND RETREAT.

Figure 6.12a. Images of the entrances to the Childline H.Q. and Therapy Centre Buildings
(Photographs taken by Author - August 2015.)

Although the form of the facilities themselves are simply that of a standard residential building with a regional veranda/ patio design, the organisation has made excellent use of nature, colour, art and light to emphasize an experience of safety and retreat. Much in the way that Maggies Care Centres - as discussed in the previous chapter - embraces its visitors, so too does the Childline Headquarters and Therapy centre.

Both of the Childline buildings are accessed from a quiet residential street - Percy Osbourne Road. The buildings embrace their visitors through a series of architectural elements, starting with a walkway through a front garden, followed by front steps which lead to the main veranda/ porch. These transitional spaces are conceived as a means to gradually relax visitors, and evoke a sense of safety and retreat. This ensures that all those entering the premises experience a deliberate transition from the "Outside world" to the "Childline world".

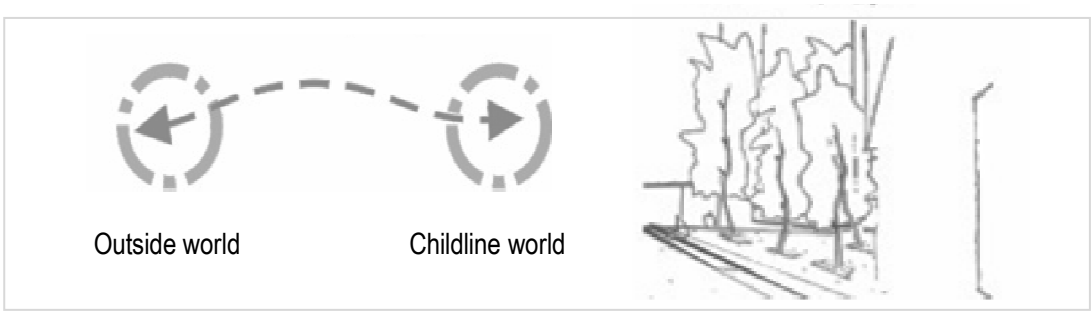


Figure 6.12b. Images of the entrances to the Childline H.Q. and therapy centres
(Sketches by Author - August 2015.)

The waiting areas and reception - as the first point of contact between the facility and the victims - are incredibly important These spaces make maximum use of daylight to evoke what the occupants themselves refer to as "light and airy" environment. This is arguably essential in keeping both staff and victims calm, as it ensures that the victims dont feel trapped or cornered, but alternatively offers an immediate sense of safety and escape.

6.3.4 BALANCING INTROVERTED AND EXTROVERTED SPACES.

The Childline facilities offer layers of privacy. Whilst the entrance, reception and waiting areas are open to victims, family and staff, the training rooms, staff offices and counselling rooms are located deeper in the building and are less readily accessible to those not utilising the spaces.

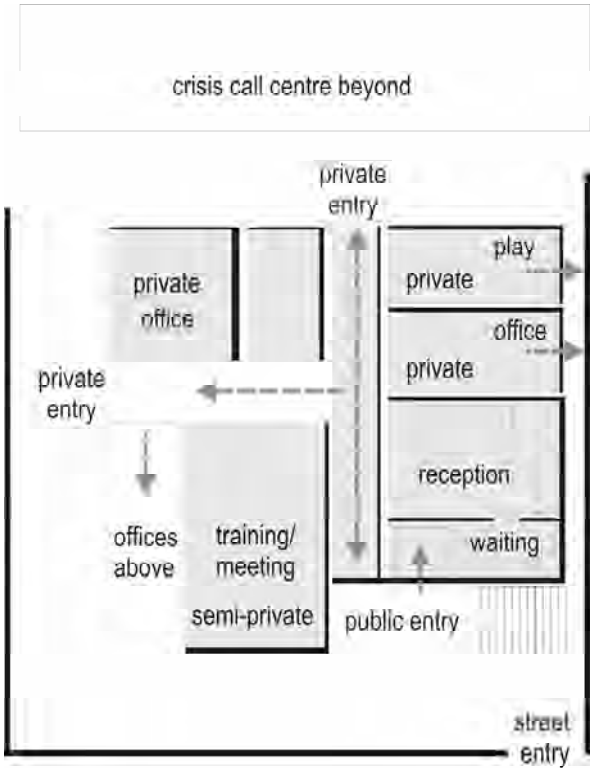


Figure 6.13. Clear distinction between public and private at the Childline therapy centre
(Photographs and Sketches by Author - August 2015.)

Spaces requiring total privacy, such as the playroom, which also serves as a victim counselling and observation space, are located at the rear of the building, and although designed to have a similar appearance to the waiting areas, is more secluded and confined. This ensures that the victims have a sense of privacy and seclusion during therapy sessions. This, then, fosters a feeling of trust - arguably an essential component in the relationship building steps of the overall disclosure and therapy process.

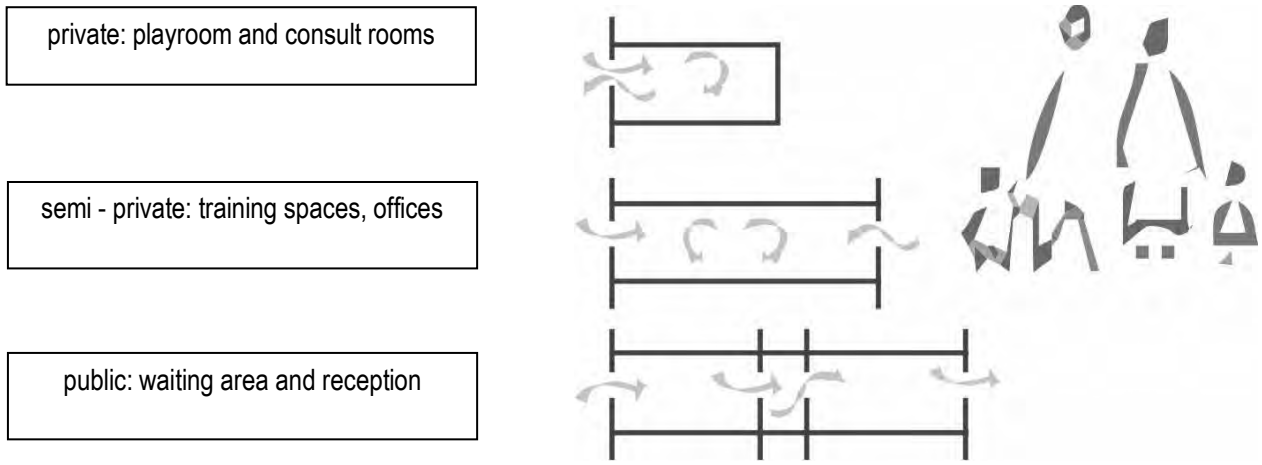


Figure 6.14. Layers of privacy and use at the Childline therapy centre
(Photographs and Sketches by Author - August 2015.)

Although counselling and victim advocacy are essential components of Childline's functions, equally fundamental and reputable are its efforts to engage the community, promote awareness, and de-stigmatise incidents of assault and abuse. Event spaces and training rooms are incorporated into the facilities second house, half a block from the main Therapy Centre. These spaces encourage interaction, and educate professionals, victims, and members of the public. Many of these spaces also serve as the location for group therapy sessions, especially amongst older victims, and staff debriefing sessions.

Figure 6.15. Event spaces and training Areas also serve as group therapy spaces
(Photographs and Sketches by Author - August 2015.)

6.3.5 THE USE OF NATURE, COLOUR AND ART.

Figure 6.16. Artwork, murals, and views are integrated throughout the facility
(Photographs and Sketches by Author - August 2015.)

The waiting room, reception area, playroom and event spaces, all incorporate various artworks - whether natural scenes, murals of cartoon characters, or posters discussing victim support and advocacy. These artworks serve as both a conversation starter between the counsellors and victims, and a source of distraction from reality for the victims and their families. These images also evoke a sense of warmth, friendliness and informality that is arguably conducive to the process of gaining the victims trust and facilitating the process of disclosure and treatment.

Figure 6.17. Informal seating layouts, views to the outside, and natural ventilation
(Photographs and Sketches by Author - August 2015.)

The use of a pale blue throughout the building creates a distinct, yet soothing experience for users. Furthermore, the furniture layouts, access to views of the outside, and the optimal use of natural light and ventilation ensure that all the spaces - whether formal or informal, public or private, - have a sense of calmness and flexibility. Staff, victims, and family are able to arrange furniture to suit their needs, open or close windows as per their comfort levels, and face views of the garden or stadium when in need of a distraction. This creates an experience of normality and total non-institutionalism.

6.3.6 CONCLUSIONS AND GENERAL COMMENTS: CHILDLINE H.Q / THERAPY CENTRE

Contrasting this analysis of the Childline Headquarters and Therapy Centre with the various themes discussed in the literature review and the precedent studies, the following conclusions can be made:

As expressed by the staff during on-site visits and tours of the premises, gaining the victims trust is an essential component of the recovery process, and the environment needs to evoke a sense of hope, warmth and privacy in order to achieve this. The Childline facilities make optimal use of their rather anonymous residential form, as well as elements of light, and a distinctively calming blue colour to evoke a sensory experience that emphasises a sense of retreat and normality. The importance of visual and physical experiences are expressed through elements of colour and play, ultimately ensuring that the environment is conducive to the process of disclosure and treatment.

Accepting the emotional ordeal that the victims and their families, and even the staff, experience, the facility offers opportunities for distraction - whether in the form of external views, toys and activities, or access to the garden facilities. Many of the staff have reported victims feeling comforted by the murals of natural scenes and the views to the garden. This is arguably because these natural elements are most conducive to soft fascination and the process of self-reflection.

Valuing privacy, and trust, above all else, the Childline facilities have clearly defined privacy gradients that are intuitively masked by the fact that the facilities are housed in a residence. Furthermore, the facilities overall accessibility, the artwork, the general informality of the spatial compositions, and the opportunity for user personalisation ensures that a sense of normality and warmth is sustained. Users experiences of the facility are reported as being that of a "home away from home"; a "safe place" and a "haven" - as will be discussed during the analysis of the interview data.

Ultimately, despite Childline's limited financial resources, the facilities have made noticeable efforts to ensure that the victims perceptions, emotional acuity and physical requirements are not only recognised, but in many cases, successfully met. All these efforts, although intuitively accomplished, can be rationalised back to the three architectural themes discussed in the previous chapters - Refuge, Reflect and Reintegrate.

PART 02: INTERVIEW DATA

PURPOSIVE AND SNOWBALL SAMPLE SOURCES

6.4 INTRODUCTION AND MOTIVATION:

The main sample source - the Social workers and Counsellors at Childline - are based at the Mahatma Ghandi TCC, the Prince Msyheni TCC, the Port Shepstone Provincial Hospital TCC, as well as several local police stations, and offices at the Department of Social Development (DSD). Furthermore, the counsellors and social workers working with Childline often have experience at more than one venue for the report and treatment of rape and sexual assault, and are trained to deal with victims from 01 - 18, or even up to 21 (in some cases). Additionally, Childline works concurrently with Lifeline, and cases are often referred between the two organisations.

The Social workers and Counsellors at Childline employ a bottom up approach with the victims which gives them firsthand knowledge of the barriers the victims face, and the challenges which the service providers themselves experience in assisting victims. This may help to create a deeper perspective on the context of rape, and the prevention of worker trauma or burnout in crisis and support centres. Hence, these Social workers and Counsellors served as a sample source for purposive data collection through 11 in-depth interviews. Their extensive expertise ensures that all the data obtained remains grounded in the entirety of the research context.

During the course of the research, the researcher was approached by several family members of the victims wanting to participate in the research. Their contributions were entirely voluntary and an additional 5 in-depth interviews were obtained through snowball sampling of personal contacts with the researcher and research participants. These interviews served as a means of cross analysing the data obtained from Childline with the family members observations of the victims perceptions and experiences. After all, the families spent more time with the victims, in both the report and recovery environments, and ultimately their home and community environments.

6.5 EXPLICATION AND ANALYSIS OF DATA.

In line with the foundations of Constructivist Grounded Theory, all data obtained was analysed inductively. Ultimately, the aim was to derive information that would concurrently shape the lens through which the theories and literature were being analysed. This similarly supported the Constructivist Grounded Theory method of cross comparison and cross analysis of different sources of data. To ensure that all data was inductively, and objectively, derived, the following methods were applied to the data obtained in the 16 in-depth interviews:

- Firstly, line-by-line in-vivo coding was applied to the interview transcripts. Here, the researcher used key phrases in the informants' own words (Chesler 1987).

- Secondly, a list of all in-vivo codes was made, and shorter code phrases were then developed to encapsulate the main idea of what the participants were saying in the interviews (Chesler 1987). These code phrases were then grouped together into similar code phrases, to create clusters.

- Thirdly, these clusters were ultimately grouped together to become the themes discussed in this chapter. Glaser and Strauss' (1967) technique of constant comparison - a method of comparing codes and themes for similarities and relationships - was used to cross analyse the information obtained through both the purposive and snowball sampling pools.

- Fourthly, clearer subcategories were identified as a result of this cross comparison, and sub categories were developed for each of the main themes. Continuous linkages were made between these themes through the subcategories, as will be explored in the discussion section of this chapter.

- Fifthly, the outline of the literature, and the framework for the analysis of the theories and concepts (Chapters 02 and 03) were continuously re-evaluated according to the themes emerging from the data analysis.

Ultimately the aim of the data analysis was to ensure that all the research - both primary and secondary - followed a central theme, or in the case of this dissertation, themes. It is, hence, through this process that the core themes of Refuge, Reflect and Reintegrate were integrated into Chapters 02 and 03. All concepts and theories, and discussions eventually correlate with these central themes.

6.6 DISCUSSION ON THE EMERGENT THEMES:

THEME 01. IMMEDIATE PERCEPTIONS AND EXPERIENCES:

Fear and stress emerged as the key immediate experiences of the victims after the assault and/or abuse. The expression of these experiences range from extreme sadness to extreme aggression, and at times, numbness. Fear of judgement, and stress over possible HIV infection, were the most frequently mentioned sub-themes. Anxiety, mistrust, shock, agitation, and aggression were the manifestations of these experiences.

Ultimately, the process of first disclosure was cited as gradual, and dependent on the ability of both the counsellors and the environment in gaining the victims trust.

One participant, a counsellor at the Mahatma Ghandi TCC, expressed the key point of stress, particularly over HIV infection, as follows:

> **P02**: *"The victims reactions vary. And sometimes it's very difficult to understand and empathise with them. HIV is usually the biggest stress. It takes time for them to disclose what has happened. You have to empathise and earn their trust. You cannot get the full story immediately.... We try to assist by asking them to take a PEP to help prevent HIV infection, but the victims sometimes get very aggressive at this point. On the other hand, some are very normal, they just do whatever they are told. It's almost like they are numb."*

Another participant, a social worker and counsellor with experience in several report and recovery environments, further emphasised the process of gaining the victims trust as essential in combating the victims initial fears of being judged:

> **P03**: *"The victims, and children in particular, don't know you, so building a relationship with the victim is very important. It is only in this way that they will trust and understand you enough to disclose what happened and what they are feeling.... Most are afraid of others opinions, and of being judged."*

Similarly, a counsellor and social worker at the Port Shepstone TCC further contextualised the victims feelings of fear and stress - synonymously manifested as a sensation of helplessness and hopeless - with the victims family and community:

> **P07**: *"First thing - you have to ask yourself what is trauma. And to that there are two main elements - helplessness and hopelessness. Many have this feeling of being stuck in a position where no one can help you. That's why it's not just about the victims, but the victim and their family. It's the victims feelings in relation their family. For example - the issue of virginity and virginity testing. Some of them are very traditional and go to Virginity Testing Events, and technically if they are not virgins, they can't go for female initiations."*

Based on this discussion, it is clear that any environment which aims to offer a report and recovery process, needs to emphasise a sense of normality, proactively de-stigmatise the assault and/or abuse experience, and allow for a gradual development of trust between the victims and the environment, and the victims and the staff.

THEME 02. LONGER TERM PERCEPTIONS AND EXPERIENCES:

Similarly, longer term perceptions and experiences are rooted in elements of distress and self blame. Volatile behaviour, and low self esteem emerged as key themes during both the immediate report experience, as well continued treatment sessions. Key behavioural products of these experiences are explosive mannerisms, antisocial behaviour, a lack of focus, tendencies for withdrawal and continual self blame.

One participant very clearly highlighted the depth of self blame as a fundamental post trauma experience:

> **P07**: *"Self blame. This is like the thing - they have to try to deal with this. Many of the girls, they go to parties, they date older men, and then when they get raped, they blame themselves. And sometimes when the perpetrator is known to them, the families also blame the victims, and this makes it very difficult. A lot of them are isolated at school, they become aggressive with other kids, some even talk to themselves. They lose focus, they lose friends, and they become very antisocial. But always.. they get angry with themselves, it's always "I" and it's never about the perpetrators."*

Another participant, a counsellor and social worker based at a local Police Station, contextualised these emotions back to the issue of Virginity, and the indistinguishable image of being a "bad girl" when no longer a virgin:

> **P08**: *"They already see themselves as a 'bad girl', especially where the loss of virginity is involved.... Some even tell me they don't want to go to church anymore, because they don't know where to sit. Especially in the Shembe culture - virgins sit together, and wear different attire to the others."*

The manifestations of longer term volatile behaviour were best expressed by the family members of one of the victims.

> **VP02:** *She became very withdrawn in general, and yet sometimes also very aggressive, and could easily start attacking boys of her age. But it was a long time before we realised she was being assaulted and abused. It was only through her behaviour that we discovered the truth and tried to get help."*

From the above, it becomes clear that many cases are not reported, and are only detected through changes in behaviour. It is often these longer term expressions which highlight the fact that the victims have in some way been assaulted and/or abused.

And although some victims may appear to be coping, at first, others express both immediate and longer term distress, as expressed by the following participant, a social worker and counsellor at the Mahatma Ghandi TCC:

> **P02**: "*Usually it depends on the age. Some are very overwhelmed and suicidal. They question God, and keep asking "Why me?".*

As such, it becomes evident that report and recovery environments should be capable of dealing with not only a diversity of emotions and perceptions, but also a mix of "fresh" cases, where the report has happened shortly after the incident, as well as cases where the report and disclosure occurs long after the incident(s) have taken place.

THEME 03. OVERALL PROCESS IS DISJOINTED:

The account of several counsellors and social workers, revealed that the overall report and recovery process is disjointed. Victims are required to disclose to several people, and often at several locations which are not closely linked. Despite this, or perhaps as a result of this, full disclosure does occur immediately. Several sessions are often required with the victims to understand the full extent of the event and the victims experience. This is clearly elaborated on in the following reference from a social worker and counsellor at one of the Department of Social Development (DSD) offices:

> **P01***: "The victims have to tell their story to so many people - at the police station, at the hospital, then to the social worker. But it takes a while - sometimes up to 6 sessions - to get the full report. So there is the constant re-victimization in the process."*

Furthermore, the first response environment itself varies. As clearly shown in the references from two separate social workers and counsellors below, most do choose to go the Police first, or to a hospital, but disclosure also takes place at schools, and churches.

> **P03***: "Most go to the Police Station first - they want to report the abuse or the assault as a crime. But others do go the clinic first..... After the victims report the case at the Police Station, they go to the District Surgeons Office, such as the one at Addington Hospital."*

> **P10:** *"It varies. Some actually report at church, or with the teachers. They're too afraid to tell their parents or anyone else. Others even disclose at Childline. And some get taken to the hospital and disclose there...."*

Based on the interviews from both the purposive and snowball sampling pools, as well as a naturalistic selective observation (Angrosino & dePerez,; 2000) of a typical hospital and a typical police station, it is the argument of this researcher, that although many efforts have been made in terms of accessibility, safety and functionality - a typical report and recovery experience is still largely disjointed.

Furthermore, the environments themselves are perceivably difficult to navigate, with victims having to pass through several public layers before accessing treatment. Indeed, a typical hospital places the care environment for the victims past the receptionist, admissions area, casualty ward, and a typical police station places a trauma disclosure room past the reception, front desk and main report area. This, then exacerbates the risk of secondary traumatisation. this is further aggravated by the fact that victims commonly have to visit both a Police Station and a Hospital to receive both medical and legal assistance, in cases where a TCC is not accessible.

Finally, as clearly explained by the Port Shepstone TCC social worker and counsellor, the TCC's are indubitably the best first response environment:

> **P07**: *"The first step after getting rape.. it's not the disclosure..it's getting to a safe place. But even still, many of the cases are not reported.... In 2015, the best thing is the TCC's. It's a one stop shop - Doctors, nurses, police, counsellors, comfort packs - these are all part of the process at the TCC's."*

Unfortunately, almost all participants emphasise that there continues to be very little connection between first response environments and environments for continued disclosure and treatment, as succinctly phrased in the following reference:

> **P07**: *"Longer term recovery and reintegration - that really depends on therapy. And that's not something offered at the TCC's. Which is why organisations like Childline should be based there. Also to help prevent re -victimisation."*

For this reason, any report and recovery environment, should support, and be supported by, a community network - in the form of hospitals, police stations, NGO's, religious facilities, and school environments - in order to improve connections between first response and longer term treatment, and ultimately reduce secondary victimization.

THEME 04. OVERALL PROCESS LACKS PRIVACY AND SYMPATHY:

Almost all participants explored the theme that the existing hospitals and police stations have an overall lack of privacy in their disclosure process, which at times, is exacerbated by a lack of infrastructure. However, in some cases, even if the infrastructure is in place, it is not effectively utilised. The following reference, from a social worker and counsellor based at a local Police Station, elaborates on this:

> **P08**: *"There are procedures - but the execution of these procedures is not always good.... Even though there is a private Trauma room, it's rarely used - and privacy is essential."*

Furthermore, several social workers expressed concern at what they considered unprofessional and unsympathetic responses within existing report and recovery environments. Both references below are extracted from interviews with social workers and counsellors who have experience in the local TCC's:

> **P07**: "*The police, and sometimes even the lay (HIV) counsellors at hospitals, are not sympathetic. They make the victim feel like they are exaggerating. And unfortunately there is just a growing lack of professionalism. But the TCC's are really the only good place.. "*
>
> **P06**: *"Honestly, I don't think they do enough. They all have targets to meet, and to many of the victims become just a number."*

The discussion of this theme then further supports the need for any report and recovery environment to support, and be supported by, a community network. This ensures that there are layers of transparency and that there is clear monitoring of how the victims needs are being met, and ultimately, how justice and treatment is made available to the victims.

THEME 05. RECOVERY REQUIRES A PERSON-TO-PERSON RELATIONSHIP:

Earning the victims trust, building a sense of solidarity and giving the victims time to process and disclose, emerged as key sub-themes under the idea that any disclosure and treatment process requires a positive person-to-person relationship. The next references from two counsellors and social workers at the Prince Msyheni TCC explore the overall process:

> **P10:** *"In the initial stages.. it's all about building a relationship. We don't ask about the rape incident.. We just focus on building a rapport. And then to facilitate the disclosure, we have activities, we assess their self esteem, talk about safety and protection, and who to contact if something like this happens. This makes them understand that there's nothing wrong with telling someone about what has happened. Then there's also the court preparation."*
>
> **P11***: "It's a long way. It needs a lot of time and a lot of energy. You have to build a relationship and trust."*

Similarly, the importance of understanding that re-building the victims self-esteem is a long process, which requires multiple sessions over time, are expressed by the following references - one from a social worker and counsellor at a local Police station, and the other from a victim's family member:

> **P08**: *"Self-esteem building. Whether the victims disclose or not - this is very important. The victims don't feel like a 'good girl', so you really need to help them re-establish that self-esteem. Therapy should go up to as many sessions as they need. Healing is a process."*

VP01: *"Patience is the first word that comes to mind. The victim needs lots of love and understanding. Constant reassurance.... The full story, the full extent of the trauma - that only came out after years of therapy. The first report was only the beginning of the truth. Regaining trust in people was another real problem. Making her feel safe and getting her to talk about everything was extremely difficult.*

THEME 06. RECOVERY REQUIRES A PERSON-TO-PLACE RELATIONSHIP:

Equally important to person-to-person relationships, is the need for the victims to have their various medical, legal and psychological needs met by supportive environments. Overcoming the stigma associated with assault and abuse, is repeatedly mentioned as a key sub theme in the design of supportive environments.

As expressed by a social worker and counsellor at one of the Department of Social Development (DSD) offices, these supportive environments need to be closely integrated with the actual report and recovery spaces:

P01: *"Trust needs to be earned. It takes several sessions to get the full story. And recovery is different from person to person. Pride, and overcoming the stigma is not easy.....It is very important that there are supportive environments for the victim outside of the consult spaces."*

At the same time, supportive environments need to also accommodate for the various ongoing physical and medical needs of the victims, as articulated by a counsellor and social worker at the Prince Msyheni TCC:

P10: *"During therapy, many have physical problems.. like abdominal pain, or they're periods are not regular. So we need to be able to refer them to a doctor and possibly admit them into the hospital. The trauma has long term physical effects."*

Treatment and disclosure environments also need to accommodate for various forms of therapy which address the physical, social, cognitive and self-esteem needs of the victim. Play therapy, mentioned by all 11 Childline participants, is generally considered an essential component in supportive environments. This is closely followed by a need for group sessions and a subsequent sense of solidarity:

P01: *"I mainly use Play therapy - so playrooms, play materials are used as a tool for analysis. With the older victims, I use board games and conduct group sessions to provide a sense of solidarity for the girls. So they don't feel they are alone in this. They feel less ashamed talking about their experiences, if there are other people who have had the same experience."*

THEME 07. SAFETY AND RETREAT ARE ESSENTIAL TO DISCLOSURE:

As already briefly suggested within previous themes, establishing a sense of safety and retreat is essential in gaining the victims trust and facilitating the report and recovery process. The sub themes explored below, aim to investigate what design elements could trigger this sense of safety and retreat.

PRIVACY:

Ascertaining seclusion, allowing for a sense of intimacy and assuring that the victims do not feel exposed or judged, are cited as means through which the design of privacy in an environment can facilitate the report and recovery process. As expressed by two of the counsellors and social workers, this definitive sense of privacy is crucial to disclosure:

> **P01**: *"But it is important to them that no one can see into the consult space. They don't want to feel as if they are being watched or judged."*
>
> **P06**: *"It can't be a wooden structure. Like the TCC at Mahatma - you can hear everything next door. And this makes it difficult for the victims to disclose. They're constantly wondering who else can hear them."*

WARMTH:

Simultaneously, the environment should go beyond the functional, and offer a sense of warmth, hope, and optimism. Offering the victims an environment which does not focus on the trauma and pain, ultimately facilitates the disclosure and treatment. Several key points relating to this are expressed by both the counsellors and social workers at Childline, and the victims' families:

> **P06**: "*The environment doesn't necessarily have to be childish, if you know what i mean. But even something like having carpets instead of tiles - so they can choose where to sit and how to sit. They need to be in a warm environment."*
>
> **P08**: *"It should be bright and have a happy feeling. They need to know they are getting help, but also in a fun place."*
>
> **VP02:** *"It's also important for the people who are helping the victims to not feel threatened by the environment. They too have a experienced a trauma - and they also need to feel safe and that the victim is in good hands."*

QUIET AND CALM:

In direct correlation with the above two sub themes, is the idea a report and recovery environment should offer a balance - in the sense that it is both calming and relaxing, without being seen as clinical. In the end, establishing such a setting is dependent on the sensory experience of that environment.

As expressed by both the counsellors and social workers at Childline, and the victims' families, avoiding unnecessary disturbances, and infusing peacefulness into the environment is crucial to helping the advocates gain the victims trust and consequently assisting the process of report and recovery:

> **P09**: *"There can't be any noise or disturbances. Even just the sound of people walking around - this creates distrust."*
>
> **VP01:** *"Any noise upset her. She had to be away from any noisy environments. People yelling, people fighting, any screaming.. or anybody who sounded upset, made her distraught. Silence was important. Like even footsteps on the floor upset her.*

Balancing cleanliness and professionalism, with a sense of familiarity, was also referred to by several TCC staff members, and the victims' families, as essential in improving the victims perceptions of report and recovery environments:

> **P07**: *"The environment should be very quiet and very clean - this impresses the victims. It proves your professionalism."*
>
> **P06:** *"Even though everyone wants a nice space, fancy environments could just intimidate the victims. And the therapeutic environments should also have a place to just sit. Somewhere calm, with just calm music. Even the waiting rooms should be separate - with no receptionist. Kind of like the family lounges you find in hospital theatres."*
>
> **VP02:** *"I think the victims need to be somewhere simple, clean with soft colours and soft music.."*

THEME 08. NATURE AND NATURAL ELEMENTS FACILITATE SELF-REGULATION:

As part of the report and recovery experience, nature was repeatedly cited as conducive to self-adaptive, and self-calming processes. Whether triggered through elements of distraction, reflection or simply as a means of offering alternative environments, all participants at some point maintained that nature, although generally not integrated into most current report and recovery environments, should be considered beneficial and conducive to report and recovery experiences.

DISTRACTION AND RELECTION:

Distraction in the form of light, views, and art were mentioned synonymously with natural elements. As expressed by the following references, the victims want a connection with their environment, which nature inherently provides:

> **P05**: *"The victims are surprisingly attentive to their environment. They want things that distract them and spark their curiosity."*
>
> **VP02:** *"Because during every session, she looked for something to fixate on - to dream and relax with. She often looked out the window. Something like a water feature or garden would have definitely improved her sessions and made it easier to disclose the assault details."*

It was also emphasised by both the counsellors and social workers at Childline, and the victims' families, that this distraction allows the victims to feel less confined, and offers them a form of relief during the report and recovery process:

> **P03**: *"Some of the victims need a view - like the one we have here of Moses Mabhida. They also need to be in a space where they feel free, and are not too confined."*
>
> **VP01:** *"Patterns, paintings.. were a diversion - they took her mind of her problems for a second and made it easier for her to talk and disclose. She needed a break from the treatment and the therapy."*

NATURAL LIGHT AND AIR:

Light; airy, and clean environments which are soothing and tranquil were similarly mentioned as being favourable to creating a sense of calm and reflection. Ultimately, nature, in the form of natural light, and natural ventilation, serves as a key trigger in this regard. A Port Shepstone TCC counsellor and social worker, a Childline therapeutic manager, and one of the victims family members expressed this mind-set in similar ways:

> **P07**: *"Light, cheerful colours help the victims to feel calmer. A big space, with lots of ventilation. The victims often start sweating and feel overwhelmed - they tend to lean towards the window."*

P09: *"People are unique. But usually bright spaces. You know the saying.. Joy comes in the morning, when there's light. So fear comes in the night, or in dark places..."*

VP01: *"She preferred lighter colours. Basically, she needed a room in which she could breathe. "*

ADAPTATION AND INSTORATION:

Several of the counsellors and social workers, as well as a Childline therapeutic manager, agree that a change of environment is essential after a report and recovery experience. Whether to conduct group sessions, or allow the victims to have an opportunity to calm down and self-adapt, nature is generally considered conducive to this, as expressed by the following references:

P05: *"Some of the kids want to play outside, and sometimes the older victims like to sit outside - maybe to just to think and get away for it all."*

P09: *"It' would be very nice if after a session there could be a change in environment. That's why we often ask the families to take them to beach afterwards - so they can just play in the sand or swim. Or even just see the waves and calm them down."*

As expressed by one of the counsellors and social workers at the Prince Msyheni TCC, nature is also essential in helping the victims process the trauma, as nature is most conducive to the process of instoration:

P11: *"Let's say.. sometimes the victim does not want to be examined. Then we will try to walk in the garden, sit with them and explain that this is just a once off process, that they are safe."*

THEME 09. A SENSE OF BELONGING AND NORMALITY PROMOTES LONGER TERM RECOVERY

Encouraging and sustaining victim re-integration into the community through awareness programmes, and sustaining a sense of normality and informality emerged as essential components to longer term recovery. The following sub themes consequentially discuss how architecture can contribute to rebuilding the victims self-esteem and sense of place.

JOURNEY:

As mentioned under previous themes, the report and recovery process is extensive, but several counsellors and social workers emphasise that community outreach programmes, and group workshops can facilitate the victims individual journey, and ensure that it is grounded in the support of the community:

> **P08**: *"There are things that should be done to help this. The victims should feel like 'I'm not alone. I'm not the only person... The community must not think the rape and the victims are a curse. So we do outreach programmes in the community - especially with the teachers, schools and clinics."*
>
> **P11**: *"The support of the family, the church, and an understanding from the society and the school can help. People need to understand their mood swings, their problems. They need academic support too."*
>
> **P04**: *"In most cases, the community does not support the victim. The victims say that members of the community talk about the victims behind their backs. Which is why outreach programmes are important to show the community how to support the victim. At the same time, it's also important to improve the victims self-esteem. Workshops, like dance or art, or even just the practice of drawing something and writing notes about all the positive things around you, and all the people that support you in your life, are a ways of improving self-esteem."*

The victims family members similarly reiterated this viewpoint:

> **VP01:** To recover from such a trauma, you need a very strong base. And that base is your place..your home and family and community..."
>
> **VP02:** "... a victim is only a survivor when she gets through the ongoing therapy....She needs to be a normal, self sufficient human being. The community needs to accept her and help her feel like a normal person ..."

CONTROL AND FLEXIBILITY:

Spaces designed to meet the needs of the victims, and which encourage re-integration and improved self-esteem, should also promote independence. Users should be offered a balanced sense of both routine and control, and personal choice. This is expressed by a social worker and counsellor at one of the Department of Social Development (DSD) offices:

> **P01**:*"Sometimes, I will leave the room - say I need to go make photocopies - and ask if they want the door open or closed. The younger victims always want the door open, so they cans see who's coming. But the older girls want to be alone, they don't someone to walk in, so they want the door to be closed."*

The victims family members similarly re-iterate this point, by emphasising that the victims needed a sense of control and flexibility in their environment - not only to feel safe, but to optimise their own report and recovery experience. The following reference from one the victims family members further elucidates this point:

> **VP01:** "*A sense of security, and a clear understanding of how to get out of the environment - she needed to know a way out at all times. And in order to talk and revisit and receive the psychological aspects of the treatment, she needed cushions.... to be able to move around, and not be forced to sit in one place, like a formal desk."*

INFORMALITY:

Finally, informal environments, and informal interactions were cited as being essential in promoting the victims sense of control and independence, despite their vulnerability, during the report and recovery process. Several counsellors and social workers with experience at all the local TCC's expressed their outlook in this regard, as follows:

> **P06**: *"It should be a quiet environment. Somewhere where it feels like just you and the victim - with no office or hospital sounds. It also has to be informal. Just a calming, soothing place. Which is not what there is at the Mahatma Ghandi Hospital TCC at the moment. There, the victims sit across the desk - this creates a sense that we are superior. It intimidates the victim and makes our work difficult. Lounge setups, and even just like huge bean bags would make it easier."*

> **P07**: *"But wherever it is, it needs to be spacious, open, but still have intimate seating arrangements. It has to be informal, and conducive to connectivity."*

> **P11**: "*It should be something like this play therapy room we are in. Something informal - with chairs and toys. Where the victims can relax and just sit and talk. The space must be friendly..and not dull."*

From the above discussion, it becomes clear the victims need a strong community base for re-integration, which can be actively promoted through a support environment which aims to educate the public, and create awareness. Furthermore, a sense of normality, and informality can improve the victims self-esteem, and further optimise their ability to control their own sense of place, and recovery journey.

THEME 10. DEBRIEFING AND SUPPORT FOR FAMILIES AND ADVOCATES

The final emergent theme, and one which is generally not considered in the design of report and recovery facilities, is the design of spaces which aim to debrief the victims advocates, and which allow for restoration and interaction between the victims family members and the victims advocates. The trauma of working or living with the victims is not negligible and the needs of these users needs to be equally integrated into the design of any report and recovery environment.

Access to the beach and ocean, formal and informal debriefing spaces, and opportunities to both share experiences, and temporarily escape the reality of the trauma are cited as important components for restoration for the victims advocates and families. The following references best express the majority opinion relating to this theme:

> **P01**: *"The beach. The ocean. I go there to jog or just to relax and look at the ocean. Listening to the waves helps me to de-stress. Sometimes it feels like the trauma comes home with you, so my colleagues and I sometimes go the beach as a group to de-stress."*
>
> **P07**: *"I just go home and cry. Or call my boyfriend. But we also have debriefings, and case conferences. But the beach would be a great place to be able to go to."*
>
> **VP01:** *"The sea. That was always the best place. Air. I needed to breathe afterwards."*
>
> **VP02:** "*A place with professionals, with people who care and who understand and who genuinely want to help. Somewhere where there is discretion. A simple open environment with some quietness and a bit of nature around."*

6.7 SUMMARY OF KEY THEMES EXTRACTED FROM DATA

To summarise, ten key themes emerged out of the data collected from the qualitative interviews with 11 advocates/social workers/counsellors (the purposive sample pool) and the victims family members (the snowball sample pool):

INTERVIEW CATEGORIES	EMERGING THEMES FROM DATA
PART 01: THE REPORTED EXPERIENCES	**01. IMMEDIATE PERCEPTIONS AND EXPERIENCES:** • **FEAR** behaviour and symptoms: fear of judgement; mistrust; anxiety; shock; helplessness; quiet; numb • **STRESS** behaviour and symptoms: anxiety; hyper activity; helplessness; no focus; agitated; aggression
	02. LONGER TERM PERCEPTIONS AND EXPERIENCES: • **VOLATILE** behaviour and symptoms: aggressive, unpredictable; antisocial; no focus; explosive • **LOW SELF ESTEEM** behaviour and symptoms: isolation, crying, suicidal; quiet; withdrawn; self blame
PART 02: THE VICTIMS REPORT PROCESS	**03. OVERALL PROCESS IS DISJOINTED:** • Retelling of story to several people and at several locations. • No, or very little connection between first response environments and environments for continued disclosure and treatment.
	04. OVERALL PROCESS LACKS PRIVACY AND SYMPATHY: • The existing hospitals, police stations have an overall lack of privacy in the process and infrastructure, and are at times, unprofessional and unsympathetic.
PART 03: THE VICTIMS RECOVERY PROCESS	**05. RECOVERY REQUIRES A PERSON-TO-PERSON RELATIONSHIP:** • The victims need time to recover and fully disclose. • Earning trust and building a relationship is essential. • Building solidarity and rebuilding the victims self esteem is key.
	06. RECOVERY REQUIRES A PERSON-TO-PLACE RELATIONSHIP: • Environments should help Destigmatising the rape/assault/abuse • An environment that offers privacy and warmth; and is non-clinical; and supportive is essential. • An environment with activities and play facilities; distractions from the pain is important. • Family and group therapy sessions are helpful to recovery.

INTERVIEW CATEGORIES	EMERGING THEMES FROM DATA
PART 04: RESTORATIVE ENVIRONMENTS (VICTIMS)	**07. SAFETY AND RETREAT ARE ESSENTIAL TO DISCLOSURE:** **PRIVACY:** • sense of safety and escape; allowances for intimacy and eye contact; security; feeling of being protected **WARMTH:** • sense of hope and of help; intimate; pleasant environments; environments that are not dull; but offer optimism. **QUIET AND CALM:** • relaxed environment; no disturbances or upsetting noises.
	08. NATURE AND NATURAL ELEMENTS FACILITATE SELF-REGULATION: **DISTRACTION AND REFLECTION:** • views; and art works offer a means to " dream and relax" **NATURAL LIGHT AND AIR:** • light; airy; clean environments evoke professionalism and calm; simple; environments that are soothing and tranquil. **ADAPTATION AND INSTORATION:** • group sessions could be more conducive outside; patients need a change in environment after sessions; victims should be able to walk outside to calm down.
	09. A SENSE OF BELONGING AND NORMALITY PROMOTES LONGER TERM RECOVERY **JOURNEY**: • being a normal part of the community; strengthen community base via outreach programmes **CONTROL AND FLEXIBILITY:** • Possibilities/ choices within spaces; not confined; victims should always have a way out; but routine is however important. **INFORMALITY:** • personalization, having their own things**;** informal group interactions; being understood.
PART 05: RESTORATIVE ENVIRONMENTS (FAMILIES AND ADVOCATES)	**10. DEBRIEFING AND SUPPORT FOR FAMILIES AND ADVOCATES** **PRIVACY; WARMTH; CALM; ADAPTATION; AND INFORMALITY**

6.8 OVERALL DISCUSSION OF FIELDWORK COMPONENT.

Based on the analysis of the case studies, and the discussion of the key emerging themes from both the purposive and snowball sampling pools, it becomes clear that a report and recovery environment can strive to meet the many perceptions, experiences and needs of the victims - whether immediate or long term, physical or psychological, individual or group. These findings are similarly supported by the literature, theoretical and conceptual framework, and the architectural precedent studies, but through the fieldwork and analysis have been grounded in an understanding of how and why they respond to the victims needs:

- By incorporating an understanding of perception theory through the active design of healing sensory experiences, one can create a sense of refuge in the built form.

  This chapter has concluded that this is essential to the disclosure process. Yet this is not typically considered in the current design of report and recovery environments in Durban.

- By incorporating preferences for natural environments, Biophilic elements - particularly in the form of fractals and elements of soft fascination, - one can promote reflection in the built form.

  This chapter has concluded that this facilities self regulation through instorative and reflective process. Yet this is not typically considered in the current design of report and recovery environments in Durban.

- By incorporating the design principles of Sense of Place, one can initiate longer term restoration, reintegration and post traumatic growth.

  This chapter has concluded that this creates a sense of belonging and normality that allows for reintegration and improved self esteem. Yet this is not typically considered in the current design of report and recovery environments in Durban.

This appreciation of why these themes are needed in report and recovery environments, hence, further responds to the key research question: How can the victims perceptions and environmental needs be incorporated into the composition of report and recovery environments, in order to promote posttraumatic restoration?

This chapter, together with Chapter fives' analysis of the precedent studies, has formulated a 'tool kit' which gives an understanding of how a best practice scenario for a report and recovery environment can be designed, and what efforts have already been made within Durban's Inner City to demonstrate such a scenario.

This chapter has then concluded that save for the TCC's (which are largely located in the City outskirts), current report and recovery environments in Durban - in the form of Hospitals and Police Stations - continue to offer a disjointed process which is lacking in privacy, sensitivity and communication.

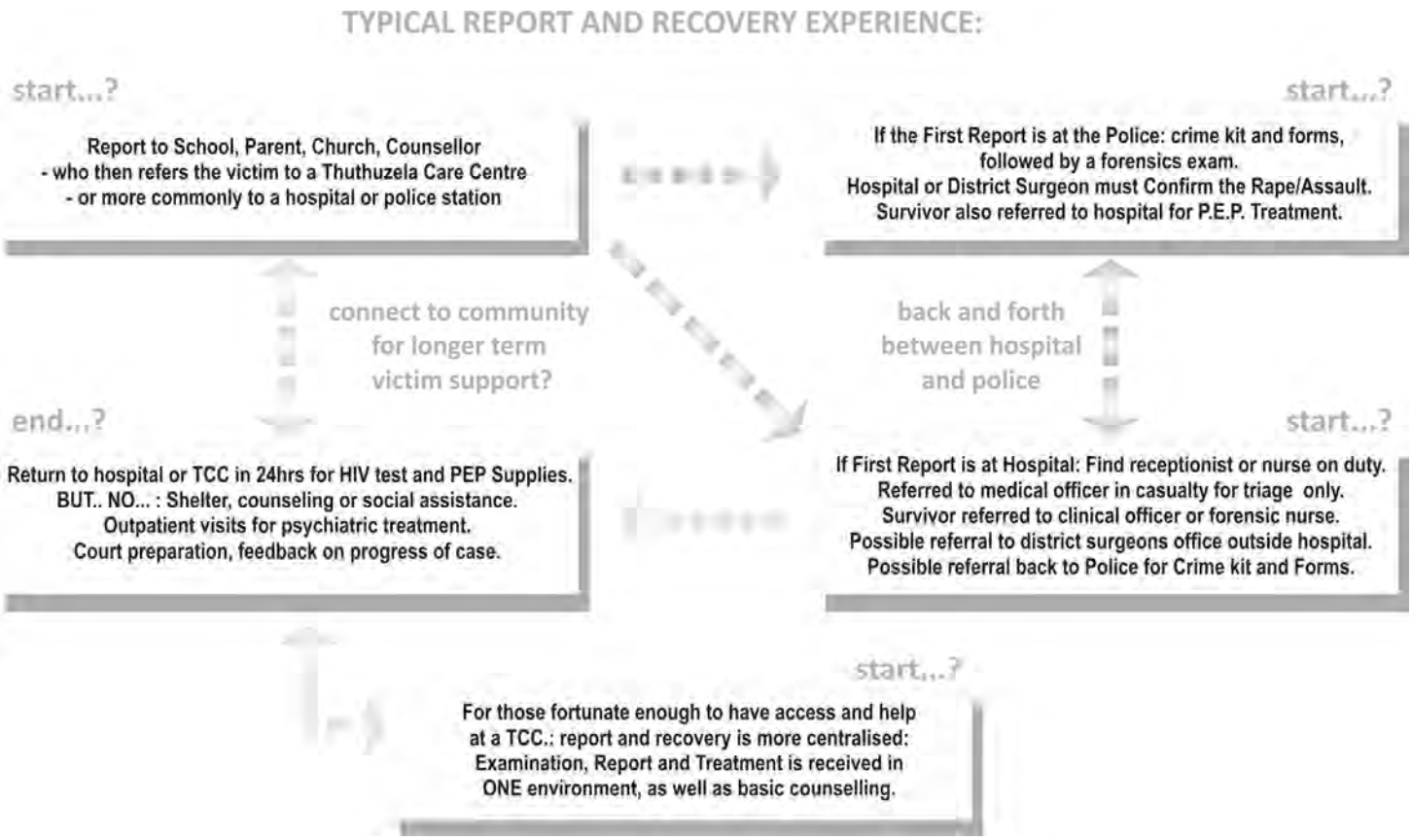


Figure 6.18. Diagrammatic Analysis of Typical Report and Recovery Process. (by author)

There are however NGO's and NPO's, as well as university healthcare systems, which attempt to assist the victims, but a lack of funding, formal infrastructure, and enough environmental proximity to existing Police Stations and Hospitals, as shown in the figure below, hinder the overall success and accessibility of these organisations.

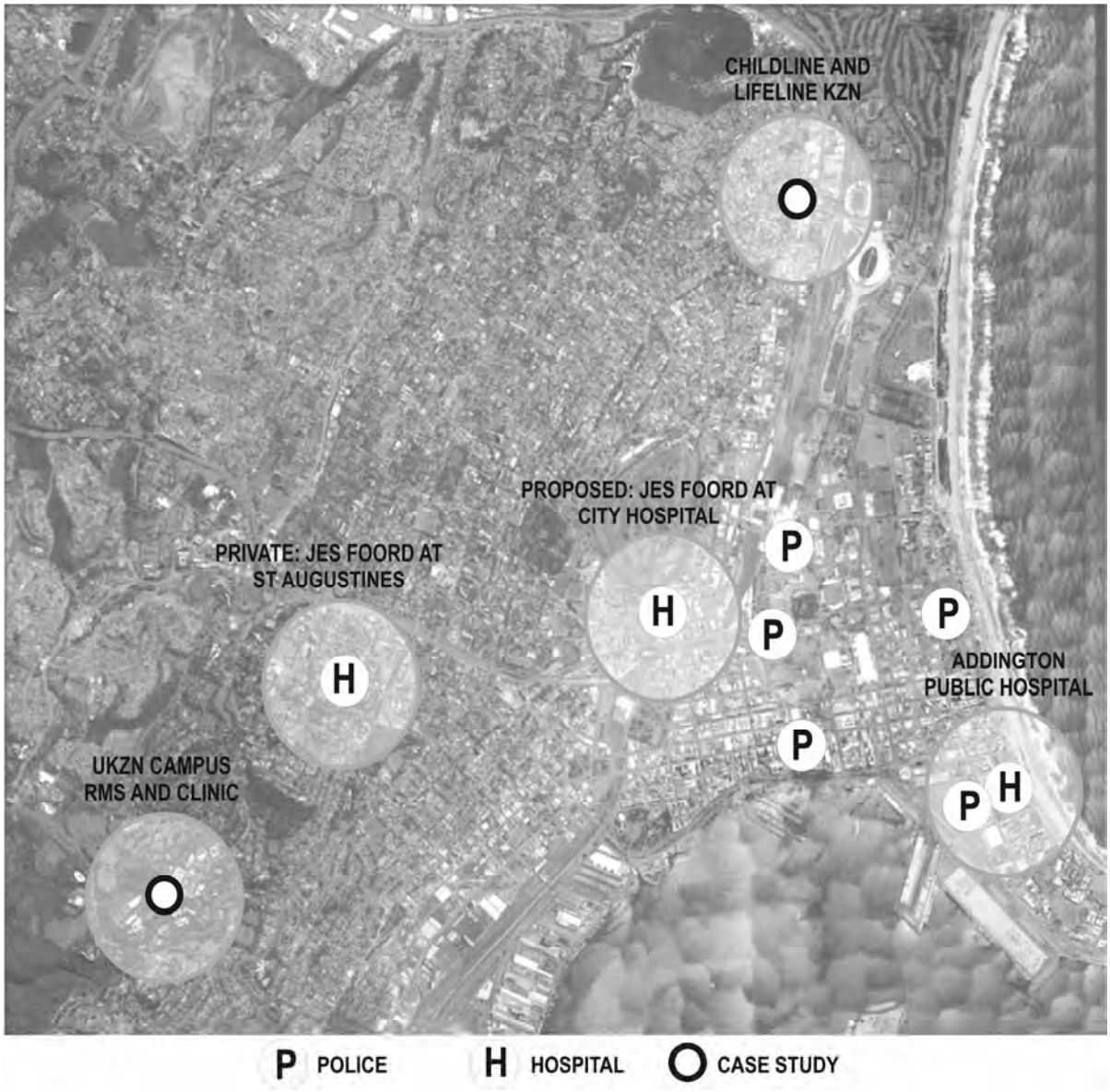
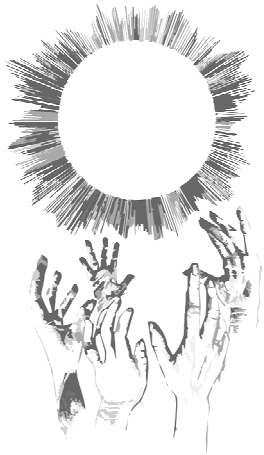


Figure 6.19. Locality of the Case Studies and Purposive Sample Source in the Context of Durban
Many NGO's and NPO's in Durban's Inner City require closer proximity to Police and Hospital Environments, and Improved Architectural and Programmatic Infrastructure
(Source: Google Earth, edited by author. Accessed: 10-08-2015.)

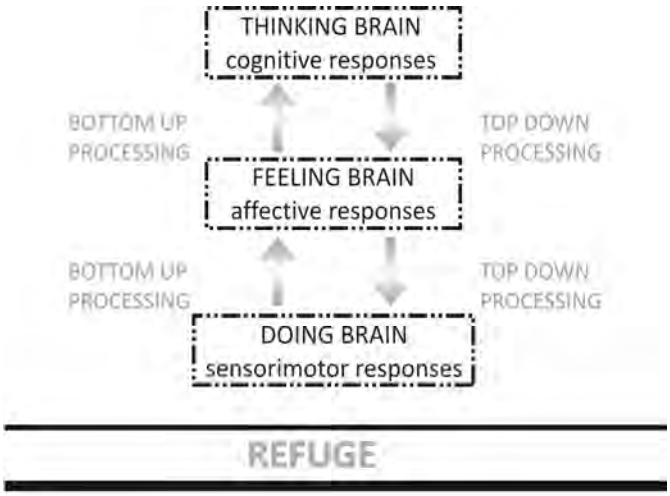
CHAPTER SEVEN:

CONCLUSIONS AND RECOMMENDATIONS

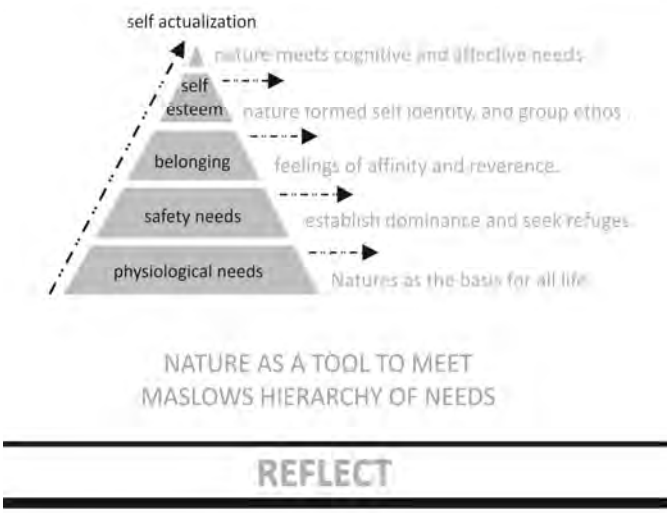


PRINCIPLES FOR A RESTORATIVE REPORT AND RECOVERY ENVIRONMENT.

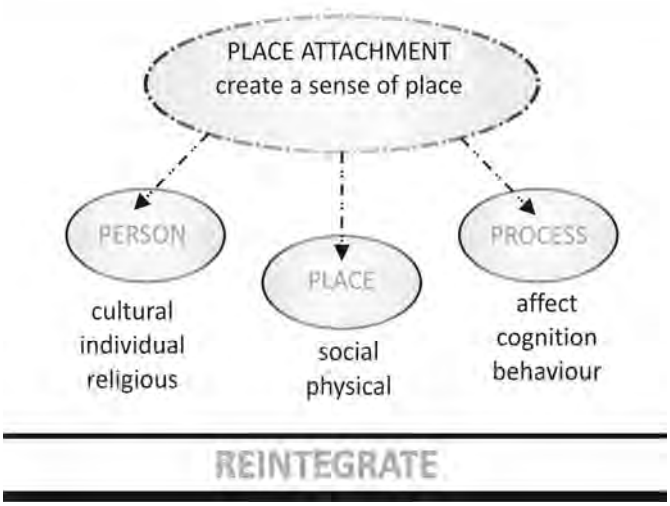
7.1 INTRODUCTION



Based on the analysis of Perception Theory and Sensory design experiences, it is clear that the incorporation of positive stimuli in a report and recovery, together with overall legibility and coherence can promote bottom up processing of the trauma experience, by addressing the "feeling brain" and the "doing brain". This would ultimately facilitate both the initial and the continued disclosure processes. This chapter will, therefore, recommend how this conclusion can be interpreted into 3 key design guidelines for the theme of "Creating Refuge."



An exploration of the theory of Biophilia then suggests that many of the needs which form part of Maslow's Hierarchy of Needs are met through nature, and the incorporation of natural elements into built environments. However, natures ability to meet the cognitive, aesthetic and social needs of the victims support the idea that nature is most conducive to the processes of reflection and instoration. This chapter will, therefore, recommend how this conclusion can be interpreted into 3 key design guidelines for the theme of "Promoting Reflection."



Finally, an investigation into the incorporation of the design values of the theory Sense of Place illustrated that architecture can trigger a process which re-connects the victims with their sense of self and sense of community. This is essential in improving the victims self-esteem and providing an opportunity for post trauma growth and self-actualization. This chapter will, therefore, recommend how this conclusion can be interpreted into 3 key design guidelines for the theme of "initiating Reintegration."

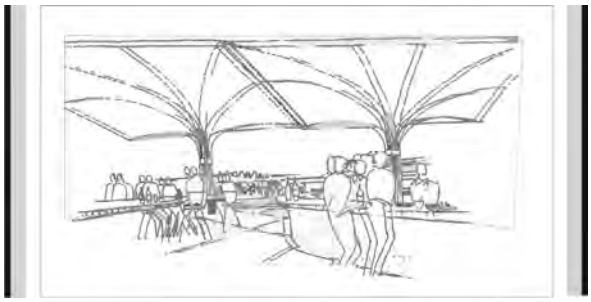
Figure 7.1. Redefining the process of Restoration in relation to the victims

(Illustrations based on literature, and modified by Author - August 2015)

7.2 RECOMMEDNATIONS FOR FUTURE REPORT AND RECOVERY ENVIRONMENTS:

7.2.1. GUIDELINES FOR CREATING REFUGE.

This dissertation has illustrated that establishing an immediate sense of safety and retreat is essential to both the initial and longer term disclosure process. Positive stimuli, legibility, and coherence can reinforce a connection with the report and recovery environment.

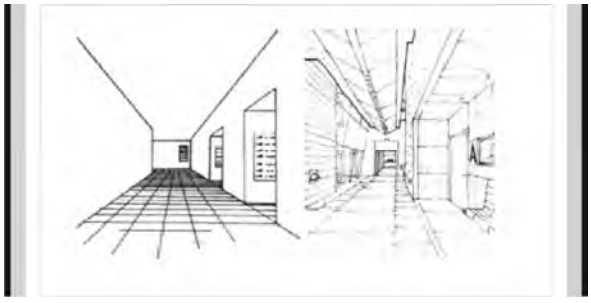


It is undeniably important that the victims immediate impression of the building is one of refuge. Establishing an immediate sense of safety and calm is essential. The design of a floating roof canopy, for example, can ensure that the victims initial perception of the building is one of safety and coherence.

Figure 7.2. Guideline - safety and retreat
(Sketches by Author - August 2015.)

Thereafter, the environment should ensure a sense of seclusion and solitude. The disclosure of the trauma itself is a difficult and time consuming process which requires privacy. Niches, and a clearly defined privacy gradient should be incorporated into any report and recovery environment.

Figure 7.3. Guideline - calm and seclusion
(Sketches by Author - August 2015.)



A report and recovery environment should also make an effort not to focus on the trauma and the pain. Optimism, stimulation, curiosity and warmth can be promoted through the use of positive sensory connections. However, legibility and coherence should not be compromised. A balance needs to be maintained at all times.

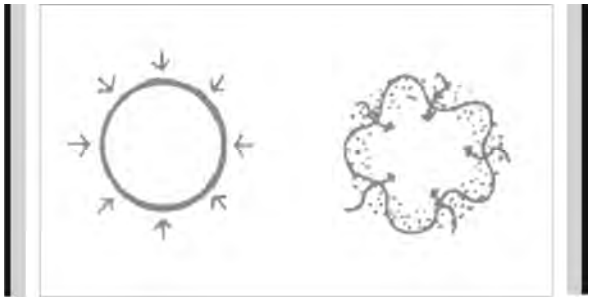
Figure 7.4. Guideline - warmth and legibility
(Sketches by Author - August 2015.)

7.2.2. GUIDELINES FOR PROMOTING REFLECTION.

This dissertation has argued that incorporating nature allows the victims to adapt to their new reality, in a cognitively and aesthetically calming way. Elements of soft fascination, distraction, fractal coherence and an appreciation for mans inherent connection with nature can support instoration and reflection within report and recovery environments.

Natural light and ventilation, is very important. Thermal comfort, and a sense of being in a "light and airy" environment promotes self-calming and makes sure the victims are comfortable during the report and recovery process.

Figure 7.5. Guideline - Optimal Light and Views
(Sketches by Author - August 2015.)



In addition, incorporating nature as a "change of environment" - or as an element between components of the report and recovery experience, can promote self-adaptation and instoration. A balance of introverted and extroverted functions should be included as forms of interaction with nature.

Figure 7.6. Guideline - Introverted and extroverted
(Sketches by Author - August 2015.)

The report and recovery process depletes cognitive resources, and elements of soft fascination - whether artwork, the incorporation of fractals into the architecture of the environment, or views to nature should be considered essential to the design. This allows the victims to calm down and reflect during and between aspects of the report and recovery process.

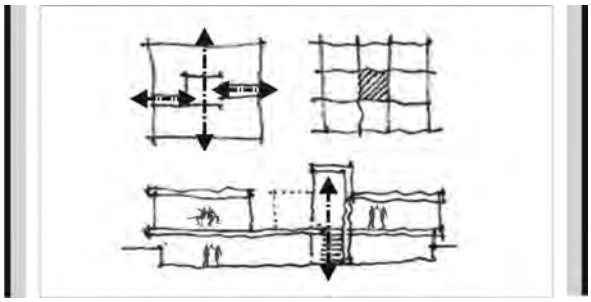
Figure 7.7. Guideline - distraction and reflection
(Sketches by Author - August 2015.)

7.2.3. GUIDELINES FOR INITIATING RE-INTEGRATION.

Ensuring a sense of informality and normality encourages de-stigmatisation and improves the victims self-image. Territoriality, good wayfinding, a clear and ordered design, and a sense of altruism can improve the victims self-esteem and lay the foundations for a renewed sense of connection with the self, the community and place. This is ultimately essential to post trauma growth, and any subsequent self-actualization.

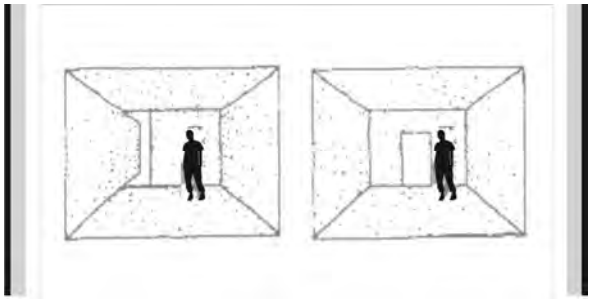
The overall process from victim to survivor should be celebrated. A sense of movement and journey should be established to inspire hope, and give the victims courage. Walkways, a central axis and visual connections in the environment can express this journey.

Figure 7.8. Guideline - journey and movement
(Sketches by Author - August 2015.)



In order to ensure that the victims have a sense of control, clear order, legibility and wayfinding should be incorporated within the form. This triggers a positive association via place neurons, and rebuilds a sense of self esteem - the victims are able to navigate the building on their own, and are not dependent on others.

Figure 7.9. Guideline - order and wayfinding
(Sketches by Author - August 2015.)



Similarly, all spaces should have a degree of flexibility. Users should be able to control and optimise their environment. Personalisation of spaces further ensures a positive and lasting connection with the environment. After all, the treatment process is a long journey - and this should be facilitated by a positive feeling of 'territory'.

Figure 7.10. Guideline - flexibility and control
(Sketches by Author - August 2015.)

7.2.4 GUIDELINES FOR FUTURE SITE SELECTION.

The research and analysis carried out in the literature review, precedent and fieldwork, make a combined effort to address the fundamental problem highlighted by this dissertation - that police stations, hospitals and affiliated care centres, as both immediate and long term report and recovery environments for incidents of trauma, are not effectively meeting the physiological and psychological needs of the victims.

Based on the research, it is clear that the centre should be easily accessible, and its services should have maximum reach. Connections to existing victim support systems should be considered in order to improve the overall efficacy of the design, and to establish a new best practice model which considers not only the immediate needs of the victims, but also longer term recovery and advocacy.

And, so, based on the various themes covered in the literature review and the topics explored during the fieldwork, a concrete set of criteria was established to govern the ultimate choice of site. These include:

- The accessibility of the site to existing response environments - police stations, clinics, and hospitals.
- The overall 'restorative potential' of the site - site legibility, noise levels, and sensory experiences.
- The proximity and exposure of the site to elements of nature - in terms of light, views and green spaces.
- The connection of the site to a broader community - schools, religious facilities and various cultures.
- The overall 'empowerment potential' of the site - nearby affiliated organisations and potential reach.

Overall, a site should be selected that also provides direct and safe access to local community resources - such as stores, jobs, schools, green spaces, additional health services, urban recreational spaces, and public spaces. These areas should be in close proximity so as to establish a sense of normalcy, and reduce any sense of fear.

Furthermore, Dr. Naidoo (2013) argues that Crisis Centre's should be established as a priority at all District hospitals and serve as a first port of call for survivors of sexual assault. This research has reiterated the importance of this, and supplemented it with a need for better connections between environments of first response, and those which accommodate for ongoing recovery.

Based on this, it becomes clear that the site should have a strong connection with an existing district or regional hospital, as well as an existing community and inner city urban network. This will also ensure that the Support Centre has a maximum level of reach, and will be consistently accessible to all potential victims within the city, and will be able to support both existing crisis care environments, and the many inner city organisations which assist the victims with longer term recovery .

7.3 CONCLUSION

In line with the original objectives set forth by the research, the literature, theoretical argument, precedent studies, case studies and interviews have answered the research questions, through the following findings:

What are the reported experiences of the victims during post traumatic report and recovery processes?: The victims experience a wide range of emotions and perceptions, which are not fully accommodated for in existing report and recovery environments. Stress, fear, volatile behaviour and an overall lack of self esteem have merged as the key experiences which report and recovery environment should strive to accommodate for.

How do report and recovery environments affect victims of trauma both physically and psychologically?: Secondary victimisation in the form of a disjuncture between immediate response and longer term treatment environments, constant re-telling or re-disclosure of the event, and an overall lack of privacy have emerged from the data as both physical and psychological stressors for the victims during their report and recovery experience.

What are the psychological, spatial, and environmental needs of individuals recovering from traumatic experiences?:

- The sensory experience of an environment would ultimately need to evoke a sense of immediate calm, privacy, warmth and optimism. Without this, the initial disclosure process would be impaired.
- Distractions, soft fascination and reflection can be promoted by elements of nature. This is essential in creating a change of environment between recovery sessions, and thereby facilitation instoration and self-adaptation.
- Improving the victims self esteem and potential for self actualization through the design of community awareness programmes, and community support systems is essential to reintegration - within both the report and recovery environment, and the actual communities

How can the composition of a Report and Recovery Environment promote a Restorative Experience?:

- The composition of any report and recovery environment needs to accommodate for the stages of restoration in order to effectively meet the many perceptions, needs and experiences of the victims.

In the end, and in line with the original research hypothesis, the research has illustrated that the victims perceptions and environmental needs can be incorporated into the composition of report and recovery environments, in order to promote posttraumatic restoration.

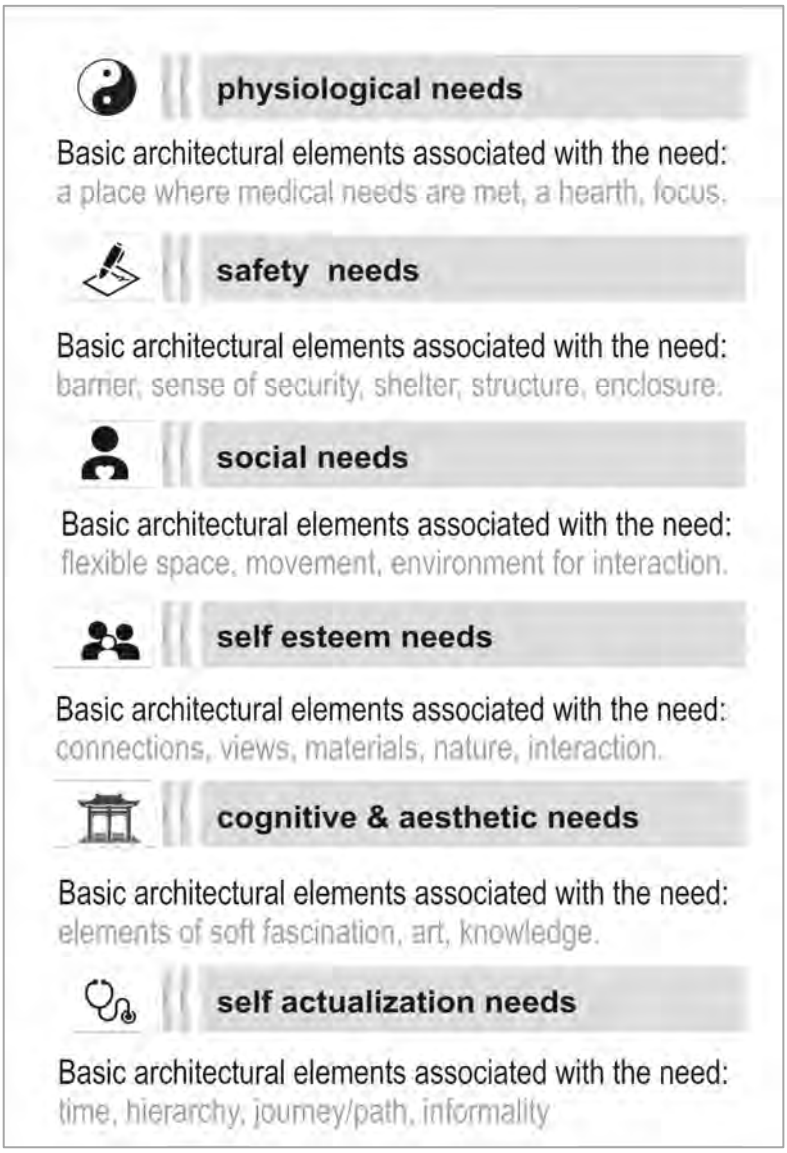


Figure 7.11 Summarising the Research Findings.
(Sketches by Author - August 2015.)

Each of the restorative processes triggered by the design of the report and recovery can be related back to Maslow's hierarchy of needs. In the end, as shown in the figure below, through these processes, the victims can be transitioned from a state of trauma to a state of wellbeing, as per Maslow's (1959) hierarchy of needs.

- **REFUGE:** safety and retreat are essential to disclosure. This meets the physiological and safety needs of the victims.
- **REFLECT:** nature and natural elements facilitate self-regulation. This, then, meets the social and self-esteem needs of the victims, as well as their cognitive and aesthetic needs.
- **REINTEGRATE:** a sense of belonging and normality promotes longer term recovery. This allows for the victims to strive to a state of self-actualization.

Unfortunately, based on the findings of the research, many of these aspects are not typically considered in the design of current report and recovery environments. In light of the continued prevalence of rape, sexual assault and abuse., it is essential that the needs and perceptions of the victims be better incorporated into the design of future report and recovery environments in the city of Durban.

More support and infrastructure should also be provided for the organisations which strive to support existing police stations and hospitals. These organisations offer longer term support, and through their bottom up approach with the victims, have contextual knowledge that is largely underestimated.

Future report and recovery environments should accommodate for their functions to ensure that all the needs of the victims are met - report and recovery environments can meet the many perceptions, experiences and needs of the victims - whether immediate or long term, physical or psychological, individual or group. As architects, and designers, it is essential to acknowledge the role of the built environment in promoting a positive experience after the occurrence of such a traumatic and distressing event.

Finally, it is also the recommendation of this dissertation, that more research should be done into the design of restorative environments for victims of rape and sexual assault. In the end, it is only through the combined efforts of the medico-legal system, the caregivers and advocates, and the environment itself, that the war against rape and sexual assault can be won.

CHAPTER EIGHT:

PRELIMINARY DESIGN REPORT

TOWARDS THE DESIGN OF AN INNER CITY SUPPORT CENTRE
FOR YOUNG WOMEN IN DURBAN.

8.1 INTRODUCTION

The research component of this dissertation has asserted through the literature, the precedent studies, the case studies and the interview data that architecture has a definitive, yet undervalued role in facilitating report and recovery processes. The following chapter will, therefore, aim to show how the various research aspects in this document could be practically applied to the design of a new Inner City Support Centre for Young Women in Durban's Inner City. The choice of site, client and accommodation, although guided by the researcher, will be wholly grounded in the results of the research itself.

Furthermore, as part of the overall feminist and grounded nature of the research, the proposals made in this chapter are intended to be as realistic and achievable as possible, thereby ensuring that the research could one day be applied and provide some assistance to the many young women who continue to be victims of sexual violence. It is the whole-hearted belief of the researcher that it is only through the collective efforts of the medico-legal system, the caregivers and advocates, and the environment itself, that the victims needs can be fully recognised and accommodated for.

This chapter will aim to rationalise how a report and recovery environment can accommodate for the various immediate and long term, physical and psychological, and, individual and group needs of the victims. In the end, the research has highlighted that the design of the report and recovery environment should accommodate for both "fresh cases" and cases which are being reported long after the incident(s) have occurred. Similarly, any support or care centre should accommodate for the medical, legal and psychological needs of the victims within one best practice model.

As highlighted within the research component, because police stations and hospitals often serve as a first point of contact when reporting or seeking treatment for various forms of trauma, it is essential that the functions these facilities offer are supported, and supplemented, by environments which offer a sense of safety, sensitivity, privacy, and restoration. And, as highlighted within the fieldwork, it is equally essential that these environments also offer continued care, counselling and legal support. After all, it is also the continued lack of support for survivors within the system, which often results in victims of sexual violence not reporting the crime, or not being inadequately prepared for trial. This seriously impedes the victims access to justice.

Any support environment should, therefore, consider the report and recovery needs of the victims in terms of both immediate and long-term medical needs, as well as both immediate and ongoing psychosocial support in terms of therapy and counseling. Similarly, to improve both report and conviction rates, any report and recovery environment should monitor cases, and hold officials and service providers accountable for non-performance of their duties. The victims should likewise be supported through the progress of their own case within the justice system.

8.2 THE PROJECT , CLIENT, AND TYPOLOGY REQUIREMENTS

8.2.1 PROPOSED PROJECT DESCRIPTION - TOWARDS A BEST PRACTICE MODEL.

To ensure practicality and maximum efficacy, this proposal should work concurrently with existing report and recovery systems, including the NGO's and NPO's which sustain existing legal and medical services, and offer support to these services in order to ensure that all the needs of the victims are being met. As such, the proposal should consider working within a defined community, where there is a highlighted need for improved service delivery to victims of rape, sexual assault and abuse, and where there is existing infrastructure in need of support. This will ultimately make the realisation of any best practice model more grounded and realistic.

Any such best practice model would have to combine medical, legal and psychosocial support systems into a report and recovery environment. However, as the research has asserted, the restorativeness of this environment is ultimately dependent on the architectural composition of that environment.

ACCESS TO HEALTHCARE SERVICES

- Examination and care of rape and sexual assault victims.
- Access to recovery wards and temporary shelter facilities.
- Accurate collection and processing of evidence and data.
- Immediate Counselling for victims.
- Continued HIV and PEP services.
- Continued therapy and counselling.

ACCESS TO LEGAL ADVOCACY

- Centralise all cases to diffuse secondary victimisation.
- Speedy and sensitive investigations and processing of evidence.
- De-stigmatise incidents of sexual assault to improve report rates.
- Encourage community awareness.
- Monitor all cases - combined efforts of NGO's, NPO's, district surgeons.

Support and enhance existing service delivery to victims of rape, sexual assault and abuse.

Offer both immediate and longer term treatment and advocacy to both 'fresh' and later cases.

Establish a psychosocially supportive 'best practice' scenario with maximum reach to victims.

8.2.2 THE CLIENTS: LOCAL NON PROFIT AND NON GOVERNMENT ORGANISATIONS.

As part of this dissertations aim to design a support centre which fully appreciates the experiences and perceptions of the victims, it is recognised that the many government facilities, including hospitals, police stations and district surgeons offices, would benefit from a closer relationship with the organisations which provide the victims with advocacy and support. Hence the proposed client would be a combination of the public Healthcare and Justice departments, the National Prosecuting Authority and the many NGO's and NPO's working concurrently in the city. These include - but are not limited to - the following:

- **CHILDLINE AND LIFELINE:** DURBAN BRANCH; INTERNATIONAL CONNECTIONS

Childline is a long-standing non government, non - profit organisation based in Durban's Inner city. Many of the case workers and counsellors have experience with Rape Crisis centres and other report and recovery environments for cases of rape, sexual assault and sexual abuse. This includes the Mahatma Ghandi TCC, the Prince Msyheni TCC, the Port Shepstone Provincial Hospital TCC, as well as several local police stations, and offices at the Department of Social Development (DSD). Childline works concurrently with Lifeline, the South African Police Services (SAPS), the National Prosecuting Authority (NPA), RAPCAN (Resources Aimed at the Prevention of Child Abuse and Neglect), and the United Nations Children's Fund (UNICEF)

- **UMGENI COMMUNITY EMPOWERMENT CENTRE:** DURBAN BASED ; NATIONAL CONNECTIONS

The Umgeni Community Empowerment Centre (UCEC) is a registered Non-Profit, Public Benefit organization which offers services ranging from counselling to skills development to those who are in desperate need of social intervention. UCEC's main focuses of attention are on problems like Human Trafficking, sexual violence, domestic abuse, unemployment, education, drug addiction, HIV/Aids pandemic, and child development needs. The Umgeni Community Empowerment Centre works closely with the Organized Crime Unit, the South African Police Services (SAPS), The Hawks, The South African National Council on Alcoholism and the University of South Africa. The organisation also networks with various government departments and is a member of the KZN HPPB (Human Trafficking, Prostitution, Pornography and Brothel) Provincial Task Team and the KZN Shelter Movement.

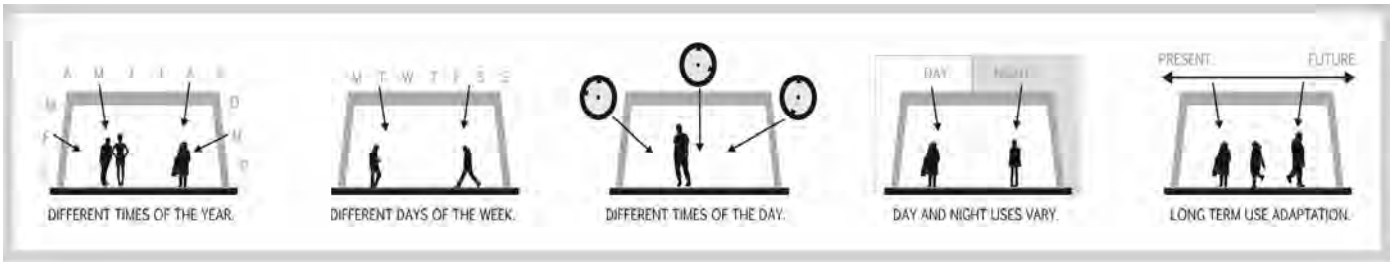
- **FAMSA, NICRO, AND CSVR:** NATIONAL AND INTERNATIONAL CONNECTIONS

FAMSA (Family and Marriage Society of South Africa); NICRO (National Institute for Crime Prevention and the Reintegration of Offenders) and the CSVR (Centre for the study of Violence and Reconciliation) study various cases of sexual violence, and regularly publish research to improve awareness, prevention and conviction rates. These organisations adopt multi-disciplinary approaches to understand and prevent violence, heal its effects and build sustainable peace locally, continentally and globally. Legal advice, and counselling typically form part of their services to the community.

These clients would essentially call for an Inner City Support Centre for Young Women In Durban which sensitively responds to the victims medical, legal and psychosocial needs.

<u>The clients brief would, therefore, request a facility which offers :</u>

- **immediate treatment services to supplement and complement the existing crisis care centres within the city of Durban - for both 'fresh' and delayed case reports,**
- **improved longer term recovery environments and therapy services, and temporary shelter**
- **improved access to legal consultancy, case follow-up, and court preparation,**
- **opportunities for community awareness and the continued research and de-stigmatisation of sexual violence, rape, and abuse in Durban and South Africa.**



This centre should be easily accessible, and open 24 hours per day, 7 days per week, and 365 days per year. The facility should offer core functions - including medical care, trauma counselling and official report facilities which are consistently available. Additionally, this centre should strive to create a flexible environment which goes above these basic needs, and considers the holistic wellbeing of the victims, in terms of environmental restorativeness, and the programme itself.

This programme should be community and place based, and offer a variety of uses to the victims, their families, the advocates and the community as a whole. The use of the facility at different times of the day, the week, and the year should be considered in order to ensure maximum flexibility, adaptability and potential for growth.

8.2.3 A PROPOSED ACCOMMODATION SCHEDULE FOR REPORT AND RECOVERY.

FUNCTION	DESCRIPTION AND ACTIVITIES	ESTIMATED SIZE
ENTRANCE	VICTIM ASSISTANCE AND ORIENTATION • reception/ waiting • consult office	TOTAL: 100 sqm
	FAMILY WAITING AREAS AND CONSULT • separate waiting area • consult office	TOTAL: 100 sqm
VICTIM INTAKE	MEDICAL EXAMINATION • medical consultation • examination and procedure • treatment area	TOTAL: 150 sqm
	CENTRALISED CASE REPORT • SAPS and NPA offices • staff and meeting areas	TOTAL: 200 sqm
OUTPATIENTS	MEDICAL TREATMENT • medical consultation • examination and procedure • treatment area	TOTAL: 150 sqm
	FAMILY SUPPORT AND CONSULT • open plan lounge areas • family and victim co-consult	TOTAL: 150 sqm
SERVICES	• supporting service areas	TOTAL: 150 sqm

Figure 8.1 Sketching the Spaces. (Sketches by Author - August 2015.)

2.3 A PROPOSED ACCOMMODATION SCHEDULE FOR REPORT AND RECOVERY.

FUNCTION	DESCRIPTION AND ACTIVITIES	ESTIMATED SIZE
THERAPY FACILITIES	OUT PATIENT AND IN HOUSE THERAPY • sensory and play therapy facilities • group and media therapy facilities	TOTAL: 600 sqm
	VICTIM THERAPY AND PSYCH CONSULT • psychiatrists and counsellors • social workers offices	TOTAL: 400 sqm
RECOVERY CENTRE	IN HOUSE RECOVERY AND SHELTER • single patient rooms - 12 women • double patient rooms - 18 women • communal: lounges, kitchens	TOTAL: 1500 sqm
	STAFF AND FAMILY VISTING • staff rest areas • doctors and psychiatrists offices • family visiting spaces	TOTAL: 500 sqm
FAMILY AREAS	TEMPORARY SHELTER FOR FAMILIES • total of 4 units with gardens • lounge and kitchen • 2 bedrooms per unit	TOTAL: 500 sqm
	FAMILY AND VICTIM INTERACTION SPACES • multipurpose physio spaces • multipurpose media spaces	TOTAL: 1000 sqm
SERVICES	• supporting service areas	TOTAL: 150 sqm

Figure 8.2 Sketching the Spaces. (Sketches by Author - August 2015.)

2.3 A PROPOSED ACCOMMODATION SCHEDULE FOR REPORT AND RECOVERY.

FUNCTION	DESCRIPTION AND ACTIVITIES	ESTIMATED SIZE
COMMUNITY AWARENESS	MULTIPURPOSE FACILITIES • lecture halls • work support centre • cafe / bistro	TOTAL: 800 sqm
	RESEARCH AND STATISTICS • study and research spaces • separate waiting area • consult office	TOTAL: 400 sqm
SEXUAL VIOLENCE N.G.O..'s and N.P.O.'s	WORKSPACES FOR ADVOCATES • staff offices • meeting areas	TOTAL: 300 sqm
	LECTURE AND MEETING SPACES • meeting rooms and lounges • staff training facilities	TOTAL: 300 sqm
COMMUNITY WATCH: LEGAL ADVOCATES	WORKSPACES TO ADVOCATES • staff offices • meeting areas	TOTAL: 300 sqm
	LECTURE AND MEETING SPACES • meeting rooms and lounges staff training facilities	TOTAL: 300 sqm
SERVICES	• supporting service areas	TOTAL: 150 sqm

Figure 8.3 Sketching the Spaces. (Sketches by Author - August 2015.)

8.3 SITE SELECTION AND ANALYSIS

SITE SELECTION PROCESS: SITE 01: ADDINGTON HOSPITAL, SOUTH BEACH AREA

CRITERIA:	DESCRIPTION OF SITE IN RELATION TO CIRTERIA:
 HOSPITAL	• Addington is a 570 bed and 2 200 staffed district and regional hospital, situated in South Beach, Durban. There are currently 16 clinics in Addington's catchment area. • The hospital already offers Prevention of Mother to Child Transmission (PMCT); a Crisis Centre and Post Exposure Prophylaxis (PEP) and Antiretroviral programmes.
 POLICE STATION	**Closest Police Stations:** 01. 165 Prince St, Point, Kwazulu Natal, 4001, Durban. (under 0.5km) 02. Stalwart Simelane St, Central, Kwazulu Natal, 4001, Durban. (under 3km) 03. Nicol Sq, Dr AB Xuma St, Central, Kwazulu Natal, 4001, Durban. (under 5km)
 ACCESSIBILITY	**Situated close to the Durban CBD and uShaka - easy access via bus, taxi and foot.** - Under 8km to Warwick Junction (Train, Bus and Taxi Terminals). - Under 5km to Workshop (Main Bus and Taxi Stop). - Under 1km to uShaka and Addington Primary School (Main Bus and Taxi Stop).
 SENSORY	**Legibility:** Medium Density with medium to high rise surrounds. **Noise Levels:** Low - Medium noise levels (noise increases towards west). **Sensory Experience:** Ocean Breeze, Calming Views, Human Scale Buildings.
 NATURE	**Views:** Extensive Views to the Ocean and Golden Mile Promenade. **Light:** Good exposure to Natural Light from all orientations. **Elements:** Water edge, several deciduous and palm trees, and extensive green spaces.
 COMMUNITY	**Schools:** Addington Primary School, several local community colleges. **Religious:** 4 Christian Churches within a 3km radius. **Demographics:** Various cultures and nationalities reside within the area. Students, immigrants, smaller families and individuals working in the CBD form the majority.
 EMPOWERMENT	Addington Hospital currently has a Crisis Centre which has affiliations with Lifeline and various local NGO's and NPO's. Furthermore, Umgeni Community Empowerment Centre, House of Life, NICRO, and Childline are organisations in close proximity to the hospital. Several religious community organisations also work in the area.

SITE SELECTION PROCESS: SITE 02: CITY HOSPITAL, GREY STREET AREA

CRITERIA:	DESCRIPTION OF SITE IN RELATION TO CIRTERIA:
 HOSPITAL	• City Hospital is a semi- private hospital and is part of Joint Medical Holdings. It is well-known for a 24-hour trauma unit including ambulance and emergency medical services. • The extended medical village includes: Durban Medical Centre, Durdoc Hospital, Ascott Centre, Medi-Centre and Maxwell Centre.
 POLICE STATION	**Closest Police Stations:** 01. 16 K E Masinga Rd, Old Fort, Kwazulu Natal, 4001, Durban. (under 3km) 02. Nicol Sq, Dr AB Xuma St, Central, Kwazulu Natal, 4001, Durban. (under 5km) 03. 50 Dr Yusuf Dadoo St, Central, Kwazulu Natal, 4001, Durban. (under 5km)
 ACCESSIBILITY	**Situated close to the Durban CBD and Warwick - easy access via bus, taxi and foot.** - Under 1km to Warwick Junction (Train, Bus and Taxi Terminals). - Under 5km to Workshop (Main Bus and Taxi Stop). - Under 1km to ML Sultan Campus (Main Bus and Taxi Stop).
 SENSORY	**Legibility:** Medium Density with medium to high rise surrounds. **Noise Levels:** Medium-High noise levels (noise increases towards south and east). **Sensory Experience:** Relatively busy and bustling, dilapidated structures.
 NATURE	**Views:** Views of Greyville Race Course - only to the North. **Light:** Exposure to West light, but limited exposure to North and East Light. **Elements:** No direct connection to existing green spaces or trees. However, Botanic Gardens is in close proximity - under 1km North West.
 COMMUNITY	**Schools:** St Anthony's Primary School, ML Sultan Campus, Orient School **Religious:** 2 Christian Churches, a Mosque and 2 Hindu Temples within 3km radius. **Demographics:** Various cultures and nationalities reside within the area. Students, Hostel dwellers and individuals working in the CBD form the majority.
 EMPOWERMENT	City Hospital currently has a Behaviour Analysis Centre which has affiliations with the Jes Foord Foundation and the Marianhill Multi-Purpose Community Centre. City Hospital has intentions to set up a new Crisis Care Centre within its structure. Several religious community organisations also work in the area.

SITE SELECTION PROCESS: SITE 03: MC CORD HOSPITAL, RIDGE ROAD/OVERPORT AREA

CRITERIA:	DESCRIPTION OF SITE IN RELATION TO CIRTERIA:
 HOSPITAL	• The KwaZulu-Natal health department officially took over Durban's 105-year-old McCord Hospital in 2014. • The institution is now used as a specialist eye clinic, and receives patients from local hospitals and clinics. • However, much debate continues regarding the use of the hospital and its ultimate purpose within the community.
 POLICE STATION	**Closest Police Stations:** 01. 16 K E Masinga Rd, Old Fort, Kwazulu Natal, 4001, Durban. (over 5km) 02. Nicol Sq, Dr AB Xuma St, Central, Kwazulu Natal, 4001, Durban. (over 5km) 03. 50 Dr Yusuf Dadoo St, Central, Kwazulu Natal, 4001, Durban. (over 5km)
 ACCESSIBILITY	**Situated close to the Durban CBD and Overport - easy access via bus, taxi and foot.** - Under 5km to Warwick Junction (Train, Bus and Taxi Terminals). - Under 10km to Workshop (Main Bus and Taxi Stop). - Under 1km to Overport City (Main Bus and Taxi Stop).
 SENSORY	**Legibility:** Medium Density with medium to high rise surrounds. **Noise Levels:** Medium-High noise levels (noise increases towards south and east). **Sensory Experience:** Relatively busy and bustling, generally pleasant area.
 NATURE	**Views:** Views of Durban CBD - towards the South and East. **Light:** Good exposure to natural light from all orientations. **Elements:** Several deciduous trees, and surrounding green spaces.
 COMMUNITY	**Schools:** Ridge Park High School, Durban High school. **Religious:** 6 Christian Churches within a 5km radius. **Demographics:** Various cultures and nationalities reside within the area. Students, diverse families and individuals working in the area form the majority.
 EMPOWERMENT	Due to McCords recent redesignation as a specialist eye clinic, there are currently no strong links with local NGO's and NPO's working with the victims. However, the hospital is in close proximity (under 3km) to the Childline and Lifeline Head Quarters and Therapy Centre's.

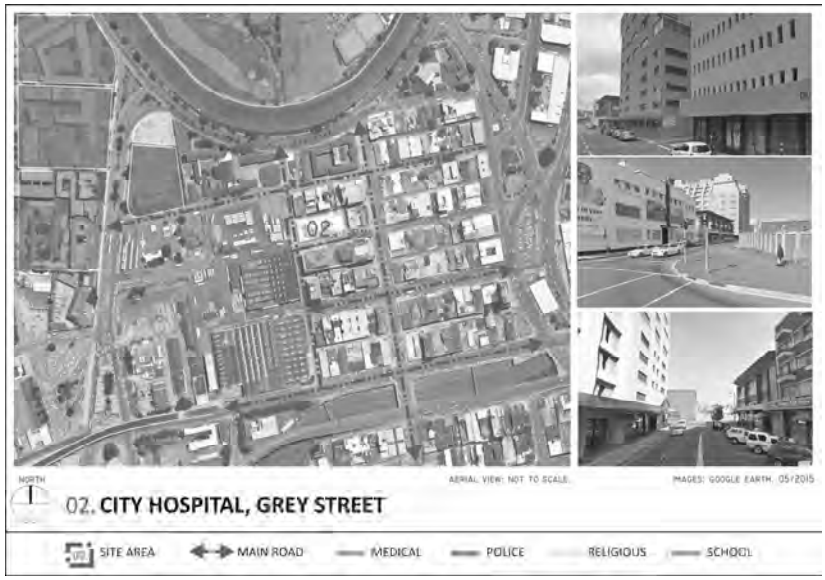
SITE SELECTION: FINAL CHOICE AND RATIONALE

Good Proximity to existing Hospital and Report Environments.

Good Connections to Local NGO's and NPO's, churches and schools.

Physical Site has inherent restorative properties - ocean, green space etc.

OVERALL RATING: 90%

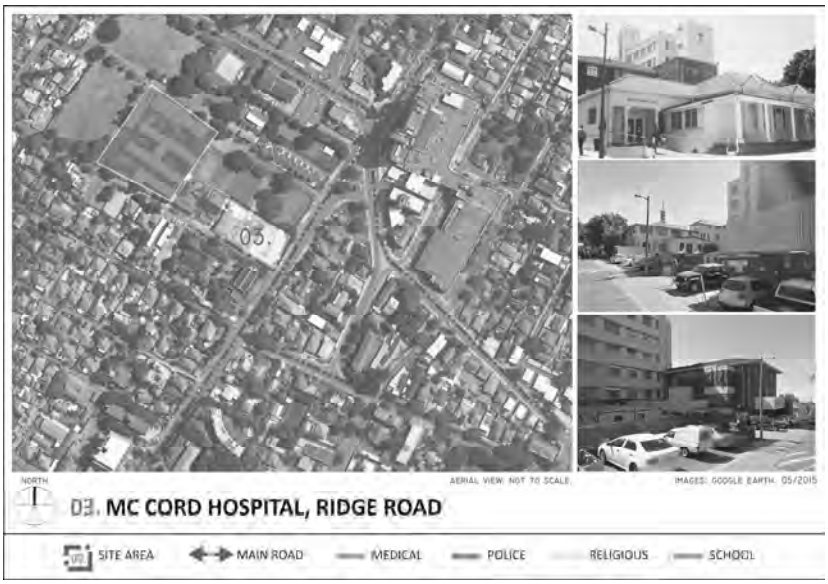


Good Proximity to several existing Hospital Environments.

Good Connections to Local NGO's and NPO's, churches, mosques and schools.

Physical Site has few restorative properties - no views or, green space etc.

OVERALL RATING: 70%



Poor Proximity to existing Report and Recovery Environments.

Few Connections to Local NGO's and NPO's, churches, mosques and schools.

Physical Site has some restorative properties - good views and green space etc.

OVERALL RATING: 50%

8.3.2 PROPOSALS FOR URBAN CONTEXT.

There are many proposed projects for renewal in Durban, particularly in the Inner City - The Addington, and South Beach Area included. Many of these are affiliated to iTRUMP (Inner eThekwini Urban Renewal and Management Programme). ITRUMP was established as a response to the urgent need to prioritise the regeneration of the inner city. Essentially, iTRUMP aims to improve the physical environment of the inner city through sustainable management principles, and strategic interventions (eThekwini Municipality; 2011).

Furthermore, the initiative strives to be proactive rather than reactive, working to stimulate private sector interest while fulfilling the needs of individuals that use public spaces. Consequentially, iTRUMP generally aims to incorporate a bottom-up, holistic and integrated approach (eThekwini Municipality; 2011). It focuses on six key outcomes, namely: (1) increasing economic activity; (2) reducing poverty and social isolation; (3) making the inner city more viable; (4) effective and sustainable urban management; (5) improving safety and security and (6) developing institutional capacity (eThekwini Municipality; 2011). Current plans include projects for the PINK, Warwick, Albert Park and South Beach/Point Areas:

- **Pheonix/Inanda/Ntuzuma/KwaMashu (PINK):** The initiative is aimed at helping the development of these communities by upgrading them in order to create an investor friendly environment.
- **Renovating the Inner City:** To revitalise Durban's inner city - including Warwick, the Centrum, East CBD, and the Albert Park area - as a sustainable and vibrant place to live and work.
- **South Durban Basin and Point Area:** To supply key infrastructure upgrades aimed at improving service delivery.
- **King's Park Sports District**: plans include housing, infrastructure, transport and hotels.

SOURCE: (eThekwini Municipality; 2011)

Furthermore, several strategies have also been put into place to help implement inner city regeneration:

- **Urban Management**, combating zoning issues, crime, joblessness, homelessness and social ills.
- **Better Buildings Program**, documentation and management of bad buildings.
- **Durban's UDZ,** a government tax incentive scheme which is aimed at combating decay & aiding regeneration.

SOURCE: (eThekwini Municipality; 2011)

iTrump also promotes the joint initiatives of private, non-governmental organisations and companies, and government departments. As such, the validity of this selected site is further grounded in its potential role to form part of iTrump's larger scheme. iTrump could subsequently serve as a co-client or co-sponsor for the proposed development. After all, the South Durban Basin and Point Area has specifically highlighted as needing upgrades for improved public service delivery.

8.3.3 URBAN AND SITE ANALYSIS.

Durban is situated on the east coast of South Africa in the province of Kwa Zulu Natal. The coast of Durban is a major tourist attraction, and is easily accessible from both the Centrum and Warwick Junction. Directly adjacent to the beach and Golden Mile, however, lies one of Durban's 'interstitial vacuums' - The Addington South Beach Area (Kearney; 1984). Despite its proximity to the ocean and harbour, the areas uses have been fairly limited.

For many years, the area was primarily used for storage, handling of cargo, and for accommodating various port services, residences and activities (Kearney; 1984). Even after the establishment of Addington Hospital in 1878, only paper warehouses, a Lucerne mill and a few scattered hotels and dwellings were developed up to 1931 (Kearney; 1984). Commercial development did, however, take place along Point Road and the tramway, and was a continuation of the larger bond stores and warehouses (Kearney; 1984).

However, as the port activities moved further into the Harbour towards Bayhead, and other areas that belonged to Portnet, the South Beach area went into a state of decline. Land uses in the area changed, as shops that had previously supported the area were converted into industrial uses. Today, land uses in the South Beach area are mixed. The area is predominantly residential with an increasing amount of commercial activity. The overall character of the area today is a result of the varied mix of uses and prevalence of union period flats and hotels in Style Moderne and sub-tropic deco (Kearney; 1984).

Figure.8.4..Historical Image of South Beach Area

Source: Arthur Gammage.

http://www.fad.co.za/Resources/arundel/N-Beach0001.jpg

Retrieved: 05/2015

Figure.8.5.. Current Image of South Beach Area

Source: Google Earth.

edited by author

Retrieved: 05/2015

The residents of South Beach are generally low to middle income. Whilst the area used to be predominantly white during the Apartheid era, the area is currently occupied by a diverse mix of African cultures. Many immigrants and locals who live in the area have set up smaller businesses, and crèche services. The area consists predominantly of hotels, holiday flats and timeshares, as well as permanent residences.

Furthermore, several high rises are used for student accommodation, which led to the introduction of several internet cafes and gyms in the area. The road parallel to the promenade, Erskine Terrace, consists of the Children's Hospital, Addington Hospital, and several abandoned buildings. Certain educational and recreational uses are also found in the area - specifically around Bell Street and Rutherford Street.

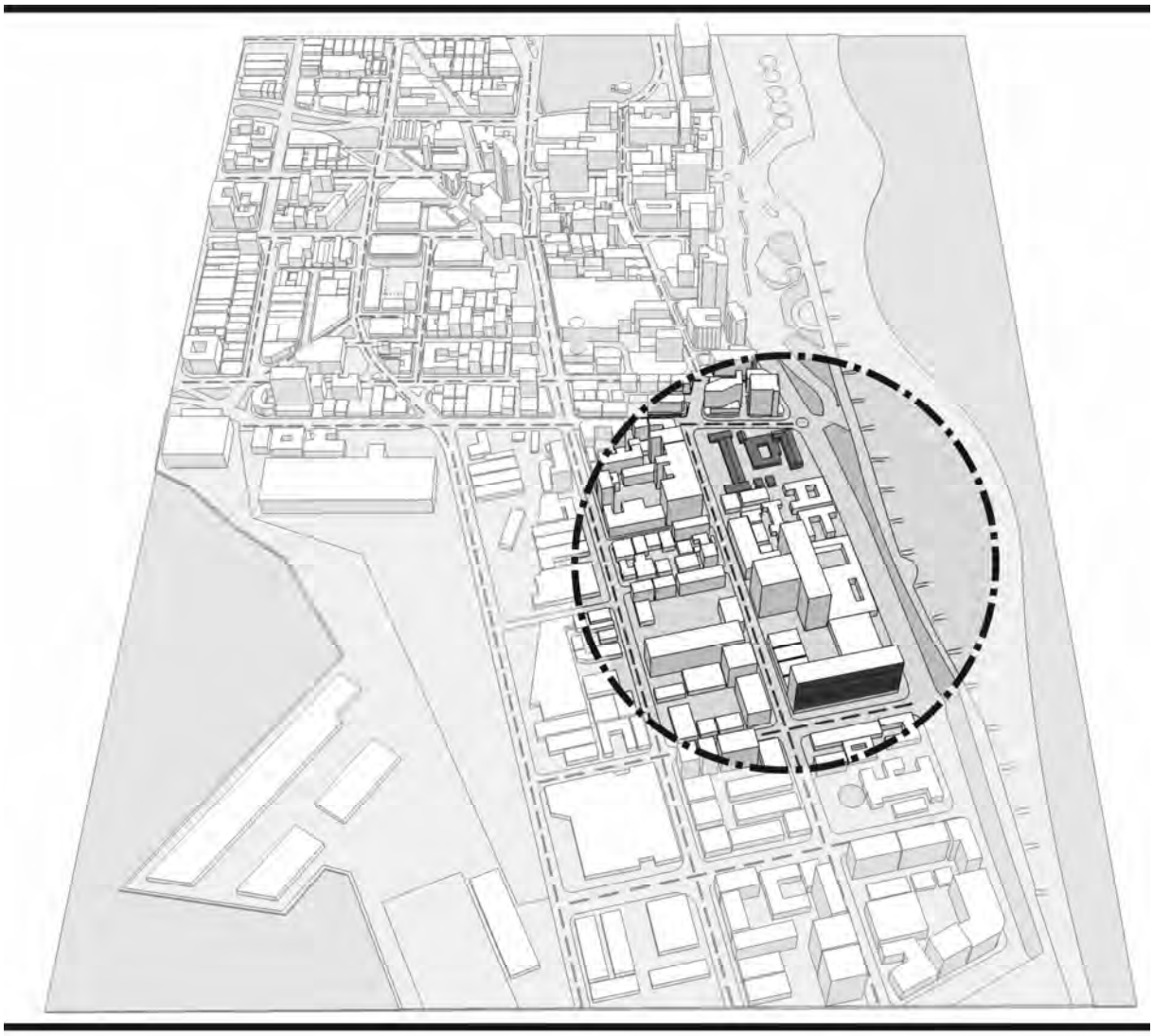


Figure 8.6. SketchUp Model of the South Beach with Addington Hospital with the Proposed Site and surrounds highlighted.

Source: Model by Author.

According to KZN Health (2001), the first functional hospital in Durban, "The Bayside Hospital", was situated on Victoria Embankment at the site now occupied by the Supreme Court. However, in 1879, a new Government Hospital was built at the present proposed site, and named after Rt. Hon. Henry Addington who held the post of Prime Minister of Great Britain in 1801 (KZN Health; 2001). The name Addington originates from the late BWH Addison, the first Superintendent of the hospital in 1878 (KZN Health; 2001).

Figure 8.7. Views of the original Addington Hospital, including the proposed site

Source: The KZN Local History Museum, Old Court House Building Archives (Retrieved in 2015)

Additions to the Hospital complex were ongoing for many years, and the hospital as it stands today was only completed and officially opened on 10 November 1967 (KZN Health; 2001).

Figure 8.8. Views of the existing Addington Hospital (prior renovations) , including the proposed site

Source: The KZN Local History Museum, Old Court House Building Archives (Retrieved in 2015)

Furthermore, the hospital is currently undergoing a new set of renovations, at the cost of approximately a billion rand (Mbuyani, 2013). Over the next 3 years, the renovations will revamp the 16-storey building, re-install electrical work, repair the roof and various drainage systems, and upgrade various interiors (Mbuyani, 2013). However, no plans are currently in the works for the surrounding buildings on the hospital grounds.

Ultimately, it becomes clear that the selected site, adjacent to Addington Hospital, forms part of a well recognised, easily accessible, service delivery network within the South Durban Basin and Point Area.

Figure 8.09 Figure-Ground of the Durban CBD, with the Addington and South Beach Area highlighted.

The proximity of the hospital, a local police station, and the district surgeons offices, highlight the selected site as optimal for the introduction of a support centre which would both supplement and complement the existing service structures, improve service delivery to victims of rape, sexual assault and abuse, and in the end, form a new best practice cluster for the city of Durban. It is this proximity to existing service facilities, together with the noise levels and visibility from the surrounding high rise residences, and the overall lack of circulation within the urban blocks that will form the main design challenges for the design of a new support centre on this site.

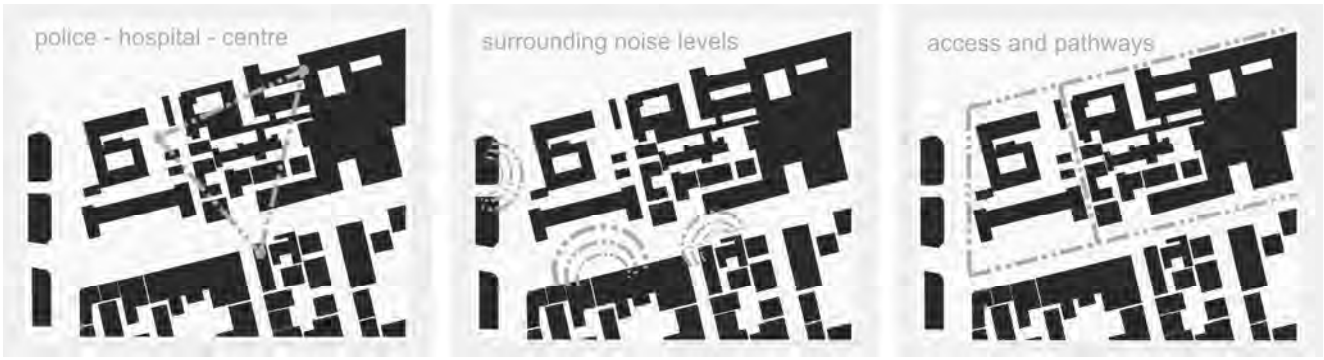


Figure 8.10 Figure-Ground of the existing Addington Hospital, including the current proposed site.

Figure 8.11 Exploring the Site Context, Scale, Usage and Access.

Source: Google Earth, edited by Author.

Retrieved: 09/2015

8.4 CONCEPTUAL AND CONTEXTUAL RESPONSES

8.4.1. THEORETICAL AND CONCEPTUAL FRAMEWORK

With the overall guidelines and recommendations set forth in Chapter 07, this section now aims to sepcifically contextualise it to the proposed project, in terms of a clear conceptual and theoretical guideline that is grounded in the the choice of site discussed in this chapter.

The overriding notion and theme of this research has been restoration. The research has called for a concept which entwines people, purpose, and place, in an environment that offers a sense of refuge, allows for reflection, and ultimately has a strong connection to place.

A tree, with its immediate sense of shelter, and gathering, also has a fractal coherence that is conducive to reflection, and soft fascination, and through its roots, is consistently grounded in its surroundings. As a symbol of protection, elegance and strenght, a tree inherently encapsulates the themes highlighted in this research and mirrors the need for the design to create a report and recovery environment that is discreet, calming, yet still recognisable.

Traditionally, trees have served as a place for shade and congregation - to disucss anything from religion, to justice, to everyday problems. Recognizable as a symbol of life, growth and hope across many cultures and religions, a tree would serve as an apporprate concept to respond to the needs of the victims.

CONNECTIONS TO KEY THEORIES: THE THEORY OF PERCEPTION: ARBOREAL ARCHITECTURE.

In line with the design generators set forth by the Theory of Perception, a tree does not only emphaisze focused vision, but peripheral vision as well. This integrates people with a space, thereby avoiding a sense of detachment (Pallasmaa, 2005). Furthermore, trees address all the senses - sounds, through the rustling of leaves; smell, through flowers or fruit, and haptic, through the textures of its bark, branches and leaves.

Ultimately, it is the combination of the senses, and tactile experiences that determine the sensuous qualities of perceived objects and environments (Pallasmaa, 2009). It is primarily through these sensory qualities, and its overall imagery of saftey, that trees also offer a sense of calm and seclsuion.

Trees also respond to the human scale, and offer a balance between a sense of warmth, through stimulation, and legibility, through its inherent structural organisation and hierarchy. Any report and recovery environment, should, like a tree, and as per the recommendations of Chapter 07, offer: Safety and Retreat; Calm and Seclusion; Warmth and Legibility.

Figure 8.12 Photographs of Dakar's International Conference Centre by Tabanlioglu Architects
(Photography by Emre Dörter)
http://www.designboom.com/architecture/tabanlioglu-architects-international-conference-center-dakar-senegal-04-07-2015/
Retrieved: 09/2015

Dakar's International Conference Centre, shown in Figure 8.12, with its balance of simplicity and warmth, legibility and complexity is an example of arboreal architecture which exudes a sense of refuge. Light, colour, visual depth, a sense of visual prospect and mystery, and the sound of water from reflective pools create a distinctive "retreat".

CONNECTIONS TO KEY THEORIES: THE THEORY OF BIOPHILIA: ARBOREAL ARCHITECTURE.

Trees with their networks of branches are an example of nature's fractal coherence. Trees are self-similar in pattern and highly irregular. Their fractal-like branching appearance is the result of biological, structural and mechanical needs. Most importantly, tree's leaves need ample amount of sunlight for photosynthesis, and as such are exposed to as much sunlight as possible. Salingaros and Masden II (2008), emphasize that Biophilic architectural considerations should learn from these sorts of functional rationales, and not be confused with unrealizable organic forms.

Instead, these principles could be achieved in architecture through the use of human levels of scale, balances between internalised functions, and extroverted functions, organised details and their hierarchical connections. Similarly, a certain amount of symmetry, and particularly, a richness of sub-symmetries and connective symmetries is essential in creating coherence and allowing for reflection (Salingaros and Masden II; 2008). Trees inherently respond to these aspects. Any report and recovery environment, should, like a tree, and as per the recommendations of Chapter 07, offer: Optimal light and Views; Introverted and Extroverted Spaces; Elements of Distraction and Reflection.

Figure 8.13 Photographs of the Chapel of St Albert the Great by Simpson & Brown
(Photography by Chris Humphreys)
http://www.archdaily.com/455429/chapel-of-st-albert-the-great-simpson-and-brown/52a1278ce8e44ec62300004b-chapel-of-st-albert-the-great-simpson-and-brown-photo; Retrieved: 09/2015

The Chapel of St Albert the Great in Edinburgh, as shown in Fugure 8.13, is an example of how perceptual fluency and coherence can be achieved through the use of fractals and arboreal proportions and hierarchies.

CONNECTIONS TO KEY THEORIES: THE THEORY OF SENSE OF PLACE: ARBOREAL ARCHITECTURE.

Finally, because trees are often recognizable as either landmarks (e.g. in the case of a trees in the savannah), or as a component in a larger network (e.g. in the case of a forest) they arguably evoke a sense of place. Their structure also offers a clear order, hierarchy and distribution of functions. Its phenomenon of apical dominance allows for a central stem that leads to other side stems or branches.

Trees also allow for a certain flexibility and resilience. For example, should a tree lose its main branch, the lateral succeeding branch will take its place. Similarly, flexibility and choice are accommodated for through its variety of branches, leaves and inherent networks.

Privacy, and the ability to regulate social interaction, is a major contributor to a sense of control in space (Altman; 1975). Perhaps the central design element influencing privacy is spatial hierarchy. Trees intrinsically express this hierarchy in both their structure and functions. Any report and recovery environment, should, like a tree, and as per the recommendations of Chapter 07, offer: Journey and Movement; Order and Wayfinding; Flexibility and Control.

Figure 8.14 Photographs of PAMM - Perez Art Museum, Miami, by Herzog and de Meuron
(Unknown Photographer for landezine.com)
http://www.landezine.com/index.php/2014/07/pamm-perez/
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Perez Art Museum, in Miami, is a quiet "iconic" structure, as shown ain Figure 8.14, which exemplifies flexibility, hierarchy and the ability of arboreal architecture to serve as an appropriate, dignified, and calming attraction. A sense of journey and destination, clear order, and easy wayfinding are incorporated in both the landscaping and the structure itself.

8.4.2 PROPOSED SITE RESPONSES: CREATING REFUGE

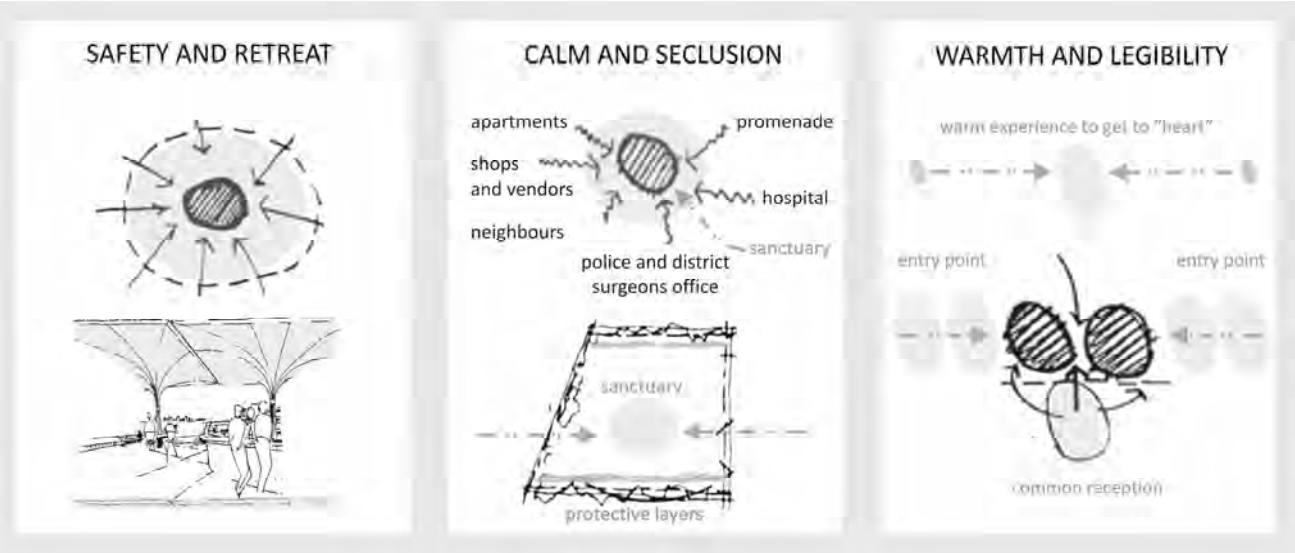

Figure 8.15 Initial Site Response Sketches. Source: by Author.

SAFETY AND RETREAT: Any site response should consider appropriate shelter imagery. Responding to the character of the area will be delicate, as there are a variety of architectural styles, scales and functions. However, evoking an immediate sense of gathering, sanctuary and shelter is essential. As shown in the research - particularly the study of Maggie's Care Centre in London - an over sailing roof gives users an immediate sense of safety and warmth. Human Scale should not be compromised, however. The area is defined by several high rise buildings, and the design of a discreet, intimate element of safety is necessary to demarcate this buildings experiential purpose.

CALM AND SECLUSION: Because the site is located in an urban area, some method of acoustical protection must be provided for the patients, residents and staff. Excessive environmental sounds can upsetting in that they are discomforting and often a source of insecurity for the victims. This would cause the patients and residents to feel anxious and unsafe, arguably nullifying the purpose of the building.

WARMTH AND LEGIBILTY: A likely challenge will be the location of the entrance. Connections to the promenade, the existing hospital (towards the south), police station (towards the south west), the main street, Rutherford Street (towards the north). hence, the idea of having several controlled "doors" / "entry points" meeting in one reception should be considered. As one passes to and from the building, the landscaping should create a dignified, warm, safe, and visible experience. Similarly, the building should aim to actively calm the users before they reach a centralised reception point. The building should essentially embrace the visitors. Building security and the natural context should work together to give a sense of warmth and belonging.

8.4.3 PROPOSED SITE RESPONSES: PRMOTING REFLECT

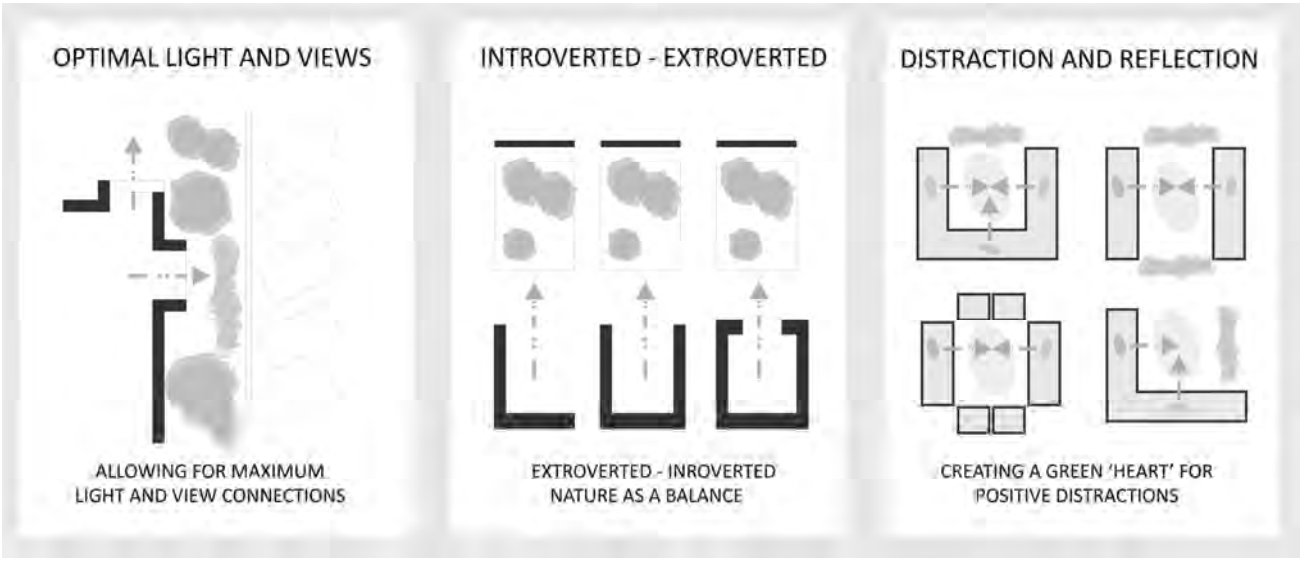

Figure 8.16 Initial Site Response Sketches. Source: by Author.

OPTIMAL LIGHT AND VIEWS: The building should be partially screened from the street and nearby buildings by trees, hedges, louvres or trellises. However, the formation of hiding spots should be avoided, especially in corners, or against the building. At the same time, optimal light from the east and sea facing facade, and the north and south facades should be established. Appropriate shading systems, as well as an over sailing roof element would assist in avoiding any resultant glare and heat gain. All landscaping elements should be low maintenance and resilient to ensure the environment is both practical and therapeutic.

INTROVERTED AND EXTROVERTED SPACES: Patients and residents should have safe, secure outdoor spaces where they can engage in constructive, therapeutic play and counsel activities. There should be a series of transitional spaces - between indoor and outdoor spaces - to provide more options for counselling and therapy. these spaces should preferably have controlled exposure to North and East light. Centralized outdoor play areas, relaxing garden spaces, and reflective niches should be provided to allow for various scenarios - whether introverted or extroverted.

ELEMENTS OF DISTRACTION AND REFLECTION: The use of a courtyard, or cloister typology should be considered to respond to the context of high density residences and the main hospital. This would not only provide a sense of safety, and seclusion, but would create internalised views - towards a "therapeutic green heart". If recovery and residential units area clustered in a courtyard configuration, the buildings will act as a protective barrier , and the courtyard will become a centralised source of soft fascination for patients, residents and staff. Access to the courtyard should be through a few major doors, one leading from the public shared spaces inside, one into the courtyard from each residential unit. Trees, bushes, and water features
can help to create a feeling of refuge and a human scale in the courtyard.

8.4.4 PROPOSED SITE RESPONSES: INITIATING REINTEGRATION

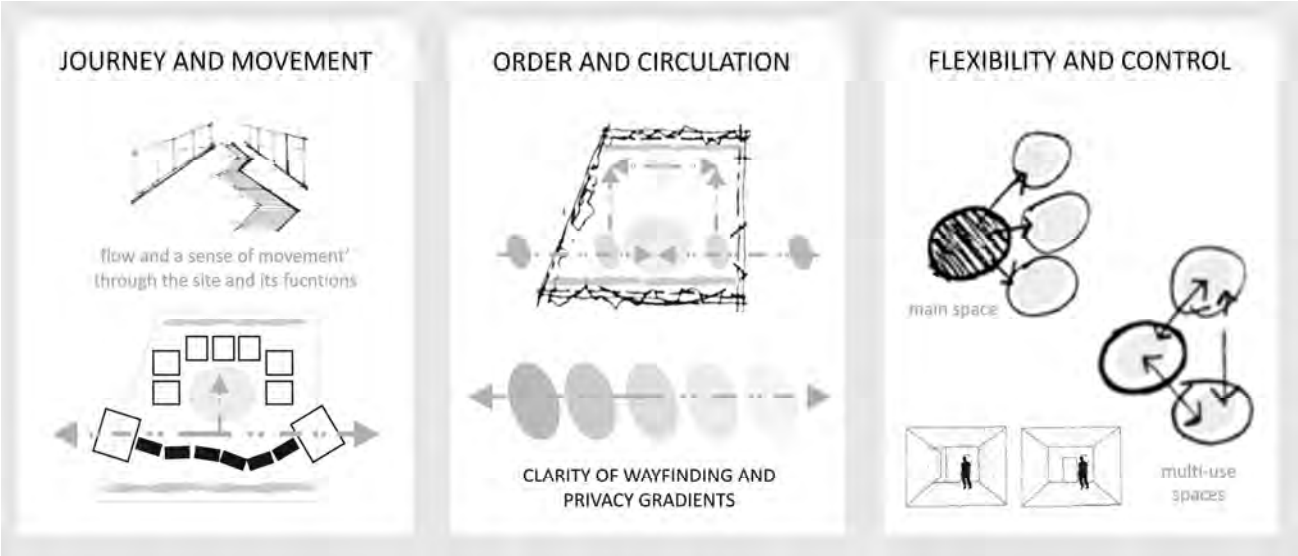

Figure 8.17 Initial Site Response Sketches. Source: by Author.

JOURNEY AND MOVEMENT: Starting at the point of entries to the building, transitional spaces and successive elements of the approach should be wilfully arranged to unfold sequentially. Entrance points related to the main hospital and police station, and to the main street, should - through a defined axis - cut across the site, and be interrupted only by a centralised reception point with access to the "therapeutic heart". This sense of journey is essential in creating a sense of autonomy and ensuring the users experience the building in the here and now. Practicality should also be conceptualised - controlled access points should be provided for the main entrances, and any service entries. Private functions should also be separated from the main "journey" and closing this section of at night should be considered.

ORDER AND WAYFINDING: Privacy gradients should be clearly defined, with only the main axis being semi-public, and any feeder spaces, being clearly defined as separate and private. From the inside of the building, the victim assist officers at the reception desk should have direct visual access to both the entrances and the 'therapeutic heart". Landscaping should be used to screen the entrance from the “outside world,” without eliminating the ability to scan the outdoors from within. The main circulation should feed off the axis cutting through the site, yet separate circulation should be provided for private subsidiary spaces.

FLEXIBILITY AND CONTROL: One should be able to exert territorial control - such as the use of flexible and moveable furniture, to give more freedom and choice to the patients, and the residents and staff. Outdoor sitting alcoves, benches along the courtyard pathways and within the central axis would allow for social interaction. Window seats and alcoves should also be provided so that users can retreat for privacy between treatments. These spaces should optimally face east, towards the ocean, or inwards, towards a courtyard. Spaces - whether indoor or outdoor - should also be flexible and multifunctional.

8.5 CONCLUSION

The design approach developed has been a response to the specific and specialised needs of individuals recovering from the trauma of rape and sexual assault and abuse, and aims to serve as a step in generating an understanding of how these users can be considered in the design of future report and recovery environments in Durban. Through the research components and the practical considerations discussed in this chapter, it is the conclusion of this dissertation that a new best practice cluster (which works with the existing police and hospital facilities in Durban's Inner City) can be created through the construction of a Support Centre for Young Women. This support centre can conceptually and contextually respond to the needs and perceptions of the victims, through the composition of a restorative report and recovery experience.

We may encounter many defeats but we must not be defeated.

-Maya Angelou

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APPENDIX:

RESEARCH TOOLS

COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

RESEARCH INTERVIEW

Julie Marie - Ange Eneman (209508070)

Exploring The Composition of Restorative Environments Conducive to Post Traumatic Report and Recovery Processes in Young Women.

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COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

INTERVIEW QUESTIONS

Interviewer: Julie Marie - Ange Eneman (209508070)

SEMI-STRUCTURED INTERVIEW QUESTIONS:

My name is Julie Eneman. I am currently studying Masters in Architecture at UKZN, and am conducting research around the topic*:* **Exploring The Composition of Restorative Environments Conducive to Post Traumatic Report and Recovery Processes in Young Women.**

Ultimately this is to inform the design of a new Inner City Support Centre for Young Women in Durban.

Firstly, I would like to thank you for agreeing to this interview - your time and expertise in this area is invaluable. During the interview, I would like to explore the symptoms of psychological trauma, in particular rape and sexual abuse, and the process of posttraumatic report and recovery. I would also like to gain an understanding of what you think a restorative environment for these victims would include, and how you feel architecture could contribute to the process of recovery.

Outline of Interview Questions:

Can you tell me a little about how long you have been working with trauma victims?

Please could you confirm that you are currently working with young women who are recovering from traumatic experiences, in particular rape and /or sexual abuse?

SECTION 01: THE VICTIMS.

This section deals with the reported experiences and perceptions of young women who have been victims of trauma, in particular rape or sexual abuse.

- Could you tell me a bit more about the reported **psychological experiences** of these victims?

- Based on your observations, how do these **victims interact** with the people around them - at home, at school or work, during consultation times, in the waiting areas?

- Based on the reported experiences of the victims and their families, how do these **victims respond to daily situations** - do they tend to be more **aggressive, or withdrawn**, or do they express difficulty in coping?

SECTION 02: THE REPORT EXPERIENCE.

This section aims to explore the young women's experiences with the process of reporting the trauma.

- Based on your experiences with the victims, do you find that the victims generally report the crime at a **Police Station first**, or do they seek **medical attention at a Clinic, or Hospital**?

- Can you **describe the process** victims of rape or sexual abuse follow in reporting a case and seeking treatment?

- How do you think the procedures set in place at Police Stations, Clinics and Hospitals have tried to be **sensitive** to the emotional acuity of the victims?

SECTION 03: THE RECOVERY PROCESS.

This section aims to understand the process of posttraumatic recovery these young women undertake.

- According to your knowledge and understanding of the victims experiences, can you explain the **process of psychological recovery from trauma**?

- What **forms of treatment** - both immediate and long-term - would you recommend for the victims?

- Based on your observations, and experiences with the victims, what are the various **psychological and physical needs** of the victims during the process of recovery?

SECTION 04: RESOTRATIVE ENVIRONMENTS (VICTIMS).

This section attempts to explore the environmental psychology of 'restorative', or 'healing', environments suitable for the disclosure and psychosomatic treatment of trauma.

GENERAL:

- Based on your observations, and interactions with the victims, can you describe an **environment where the victims feel safe** and comfortable talking about their experience?
  e.g. Do they feel more comfortable in a consult room, in a waiting room, or at home, at church, or in the garden?

- In your opinion, are there design elements -in terms of **spatial compositions, patterns, features, views** - that assist in creating a **more restorative** environment?

- If so, please elaborate as to why you think these elements are psychologically restorative?

SENSES:

- Based on your observations, and any reported experiences from the victims, are there certain **sensory elements** that can act as **either positive or negative** psychological triggers for the victims?
  e.g. are certain sounds, smells, textures more stressful or calming than others?

- Please elaborate on what sort of **sensory elements** you, based on your experiences with the victims, feel are necessary to create **a safe and restorative report** and recovery experience?

NATURE:

- Based on your knowledge, and experiences with the victims, do you think that **natural elements**, such as courtyards, plants, water features, gardens etc., help to create a **more calming and restorative** environment for the victims?

- Based on your experiences with the victims, do you find that **natural light, natural patterns and fractals**, help to create a more calming and healing environment for the victims?

PLACE:

- Based on your observations, and interactions with the victims, how important do you think it is for the victims to re-**establish a sense of purpose and place** within the community?

- Please elaborate on how this could affect the **ultimate recovery and re-integration** of the victims?

SECTION 05: RESOTRATIVE ENVIRONMENTS (THOSE WORKING WITH THE VICTIMS).

This section aims to gain an understanding of an environment that is equally restorative to those working with the victims.

- As someone working with the victims, can you describe an environment that you feel **more comfortable consulting with the victims** in?

- What sort of environment, would you, as someone working with the victims, require to **recover from a particularly difficult/upsetting consultation**?

Thank you most sincerely for your time and expertise.

COLLEGE OF HUMANITIES: MASTERS/PHD RESEARCH

INFORMED CONSENT FORM

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

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

My name is Julie Eneman. (student number 209508070). I am currently doing research on a project entitled: **"Exploring The Composition of Restorative Environments Conducive to Post Traumatic Report and Recovery Processes in Young Women."** This project is currently being supervised by Mrs. Judith Ojo Aromokudu at the School of the Built Environment and Development Studies, University of KwaZulu-Natal.

- **Student Contact Details:** Julie Marie-Ange Eneman. School of the Built Environment and Development Studies. University of KwaZulu-Natal, Durban. **Cell:** 083 233 3736; **Email:** jmaeneman@gmail.com
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- **HSSREC Contact Details:** P. Ximba. HSSREC Research Office, University of KwaZulu-Natal, Durban. **Tel:** 27(31) 2603587; **Email:** ximbap@ukxn.ac.za

Firstly, I would like to thank you for agreeing to take part in the project, and I would like to emphasize that:

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

Please note:

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

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

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

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

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

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

THE VICTIMS EXPERIENCE

physiological needs

The need: basic elements such as food, water, sleep and air.

How rape and sexual assault affects the need:
Assault creates a need for medical and psychological treatment.

safety needs

The need: to feel safe - physical and psychological security.

How rape and sexual assault affects the need:
Assault eliminates perceived securities - helpless and vulnerable.

social needs

The need: belonging, love and affection- social attachments.

How rape and sexual assault affects the need:
The social stigma surrounding sexual assault stresses relations.

self esteem needs

The need: good self image, and sense of accomplishment.

How rape and sexual assault affects the need:
A victims self-worth diminishes - feelings of shame and self blame.

cognitive & aesthetic

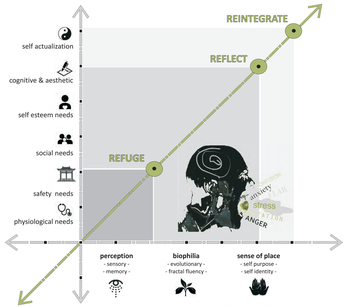
The need: elements of interactive distraction and soft fascination.

How rape and sexual assault affects the need:
Victims of assault experience stress and mental fatigue.

self actualization

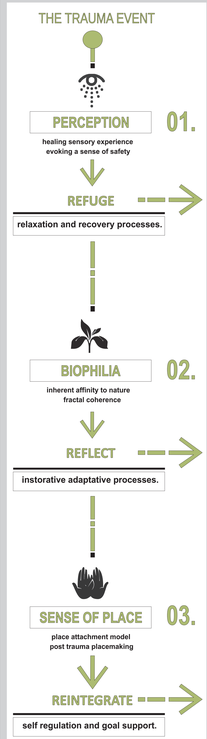
The need: to be self-aware and to fulfill our full potential.

How rape and sexual assault affects the need:
Being assaulted derails a person's life - changes their life vision.



BUILT AND NATURAL ENVIRONMENT

THE PROCESS



THE ROLE OF THE BUILT & NATURAL ENVIRONMENT

PERCEPTION: CREATING A SENSE OF REFUGE

Healing and wellbeing within an environment can only be established if the initial sensory experience of that environment establishes a strong positive bond between the person and environment. In cases of trauma, a need for safety, refuge and warmth is even more essential.

Environments devoid of neurologically stimulating and nourishing information, such as colorless, drab, minimalist surfaces and spaces, result in feelings of anxiousness and sensory deprivation. Optimism and hope can be established through the design of sensory rich connections to the environment.

The design of report and recovery environments should also ensure a sense of seclusion and solitude. A clear privacy gradient, coherency and legibility should be incorporated to facilitate the disclosure and recovery process, and reinforce a sense of safety.

BIOPHILIA: PROMOTING REFLECTION

Nature is an important asset to the design of healing and restorative environments as it introduces the self to a space of calmness and serenity, providing a space for reflection that allows one to connect with the self. Nature is hence conducive to the instorative aspects of restoration.

Report and Recovery processes deplete cognitive resources, and elements of soft fascination - whether artwork, or views to nature should be considered.

The calming and therapeutic effects of fractals have been proven to counteract the physiological and psychological symptoms of stress, and trauma.

Similarly, natural light and ventilation, are very important - a sense of being in a "light and airy" environment promotes self-calming

Nature should be used as a "change of environment" to promote self-adaptation and instoration with a balance of introverted and extroverted functions.

SENSE OF PLACE: INITIATING REINTEGRATION

The term restorative "environment" should embrace the socio-psychological aspects of an environment - social, cultural, and religious.

A restorative environment should re-encapsulate sense of identity as an 'osmotic' relationship between the user and the environment.

Victims of sexual assault need o be in supportive environments which generate a sense of spirituality and community, and promote positive attachments.

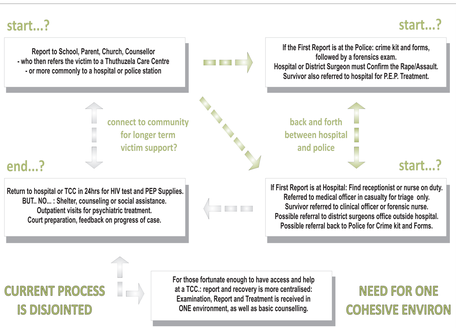
A sense of movement and journey should be established to inspire hope, and give the victims courage for the full extent of the recovery process..

Clear order, control and wayfinding should also be incorporated within the form. This rebuilds a sense of self esteem and independence for the victims.

Similarly, all spaces should have a degree of flexibility: users should be able to personalise and optimise their environment to suit their needs.

KEY RESEARCH FINDINGS: REPORT AND RECOVERY

THE TRAUMA	·FEAR: fear of judgement; mistrust; anxiety; shock; helplessness; quiet; numb
THE CONSEQUENCE	·STRESS: anxiety; hyper activity; helplessness; no focus; agitated; aggression
REPORT PROCESS	·VOLATILE: aggressive, unpredictable; antisocial; no focus; explosive
REPORT EXPERIENCE	·LOW SELF ESTEEM: isolation, crying, suicidal; quiet; withdrawn; self blame
PERSON-PERSON FIT	·RETELLING OF STORY: to several people and at several locations. Very little connection between first response and continued disclosure and treatment.
PERSON-PLACE FIT	· PROCESS LACKS PRIVACY AND SYMPATHY: overall lack of privacy in the process and infrastructure, and are at times, unprofessional and unsympathetic.
REFUGE: DISCLOSURE	·PERSON-TO-PERSON RELATIONSHIP: the victims need time to recover and fully disclose. Earning trust and building a relationship is essential.
REFLECT: SELF REGULATION	·PERSON-TO-PLACE RELATIONSHIP: Destigmatising the rape/assault, offer privacy and warmth; and distractions from the pain is important.
REINTEGRATE: NORMALCY	ESSENTIAL TO DISCLOSURE: privacy (security); warmth (hope; pleasant environments; optimism); quiet and calm (relaxed environment, no disturbance)
DEBRIEFING	FACILITATE SELF-REGULATION: distraction and reflection (views; and art); natural light and air; adaptation and instoration (change in environment)
	LONGER TERM RECOVERY: journey (community); control and flexibility (possibility, choices); informality: (personalization, informal group interactions)
	SUPPORT FOR FAMILIES AND ADVOCATES: debriefing sessions and a sense of privacy; warmth; calm; adaptation; and informality.



RESPONDING TO THE PROBLEM

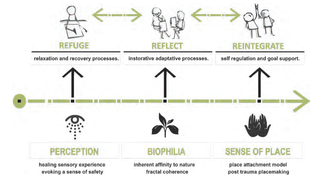
ACCESS TO HEALTHCARE SERVICES

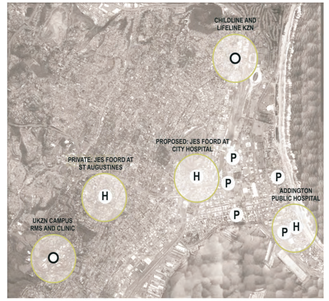
- Examination and care of rape and sexual assault victims.
- Access to recovery wards and temporary shelter facilities.
- Accurate collection and processing of evidence and data.
- Immediate Counselling for victims.

ACCESS TO LEGAL ADVOCACY

- Centralise all cases to diffuse secondary victimisation.
- Speedy and sensitive investigations and processing of evidence.
- De-stigmatise incidents of sexual assault to improve report rates.
- Encourage community awareness.

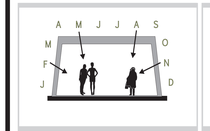
Support and enhance existing service delivery to victims of rape, sexual assault and abuse. Offer both immediate and longer term treatment and advocacy to both 'fresh' and later cases. Establish a psychosocially supportive 'best practice' scenario with maximum reach to victims.



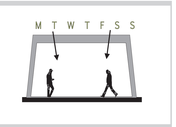


REPORT AND RECOVERY IN DURBAN (P) POLICE (H) HOSPITAL CARE STUDY

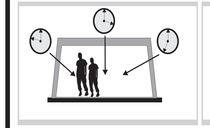
A NEW RESPONSIVE TYPOLOGY FOR DURBAN



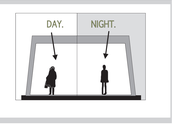
OPEN ALL TIMES OF THE YEAR.



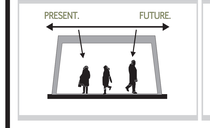
OPEN ALL DAYS OF THE WEEK.



SHORT AND LONGER TERM SERVICES



DAY AND NIGHT USES VARY.



LONG TERM USE ADAPTATION.

BOTH REPORT AND RECOVERY

01. exploring the composition of restorative environments conducive to posttraumatic report and recovery processes: the design of an inner city support centre for young women in durban.

julie marie-ange eneman (209508070)

SELECTING A SITE FOR A NEW REPORT AND RECOVERY ENVIRONMENT IN DURBAN

ADDINGTON HOSPITAL, SOUTH BEACH

ACCESSIBILITY	- Under 10km to Warwick Junction - Under 5km to Workshop - Under 1km to uShaka and Addington	✓
SENSORY	Medium Density Surrounds Low - Medium noise levels Ocean Breeze, Calming Views	✓
NATURE	Extensive Views to the Ocean Good exposure to Natural Light Water edge, several green spaces	✓
COMMUNITY	Addington Primary School 4 Christian Churches 3km radius. Various cultures, students, families	✓
EMPOWERMENT	Crisis Centre has affiliations with Lifeline NICRO, and Childline in close proximity	✓

01. ADDINGTON HOSPITAL, SOUTH BEACH — OVERALL RATING: 90%

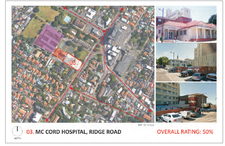
CITY HOSPITAL, GREY STREET

ACCESSIBILITY	- Under 1km to Warwick Junction - Under 5km to Workshop - Under 1km to ML Sultan Campus	✓
SENSORY	Medium Density surrounds Medium-High noise levels Relatively busy, dilapidated structures	
NATURE	Views of Greyville to the North limited exposure to North and East Light No connection to green spaces or trees	
COMMUNITY	St Anthony's, ML Sultan, Orient School 2 Churches, a Mosque and 2 Temples Various cultures, Students, Hostels	✓
EMPOWERMENT	Jes Foord Foundation has intentions to set up a new Crisis Care Centre	✓

02. CITY HOSPITAL, GREY STREET — OVERALL RATING: 70%

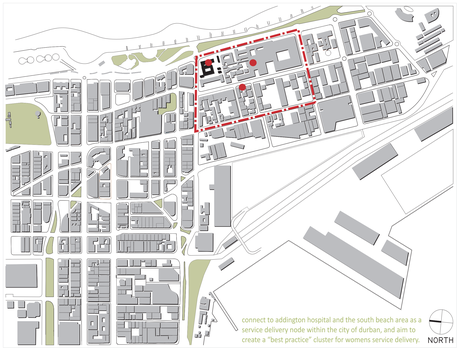
MC CORD HOSPITAL, RIDGE ROAD

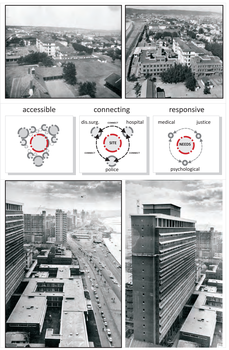
ACCESSIBILITY	- Under 5km to Warwick Junction - Under 10km to Workshop - Under 1km to Overport City	✓
SENSORY	Medium Density surrounds Medium-High noise levels Relatively busy, generally pleasant	
NATURE	Views of Durban - South and East Good exposure to natural light Several surrounding green spaces	✓
COMMUNITY	Ridge Park High, Durban High school 6 Christian Churches 5km radius Various cultures, diverse family types	✓
EMPOWERMENT	No strong links with local NGO's Close proximity to Childline and Lifeline	



03. MC CORD HOSPITAL, RIDGE ROAD — OVERALL RATING: 50%

A NEW REPORT AND RECOVERY "BEST PRACTICE" CLUSTER FOR THE CITY OF DURBAN





"REFUGE": PRECEDENT STUDY

BEST PRACTICE MODEL: REFUGE.

MAGGIES CARE CENTRE LONDON, ENGLAND ROGERS AND HARBOUR

LIGHT AND FORM

The centre's presence is signalled with the bold roof canopy that hovers high above the walls to glide protectively over a series of internal gardens, courtyards and roof terraces.

SPATIAL ORGANISATION

The architects created a hierarchy of space, with the kitchen at its heart, which allow visitors to find their own special place within a building that has an open door policy.

MATERIALITY AND LEGIBILITY

Red-orange exterior stucco walls warm tones from the birch panels, and polished concrete predominate, resulting in an environment that is neutral, clean, but non-institutional.

"REFUGE": IN CONTEXT

- easily accessible part of the city.
- a recognisable public healthcare district.
- connections to major nodes in the city:
  ushaka,
  warwick,
  city hall,
  the c.b.d.

ARBOREAL: "urban refuge"

Dakar's ICC by Tabanlioglu Architects

"REFLECT": PRECEDENT STUDY

BEST PRACTICE MODEL: RELECT.

DUKE MEDICINE SOUTH CAROLINA, U.S.A DUDA PAINE ARCH.

LIGHT AND FORM

In many areas, light is used to evoke a mood or emotional response. Lighting can be varied to a range of settings, from bright and airy to peaceful and contemplative.

SPATIAL ORGANISATION

The centre strives to portray a non-clinical environment and, hence the layout and spatial organisation remains relatively compact with visual extension from interior to the garden.

MATERIALITY AND LEGIBILITY

Wood, stone and neutral colours are used throughout the centre to communicate the perception of warmth. This accentuates feelings of calmness and coherence.

"REFLECT": IN CONTEXT

-good orientation, access to natural light.

-access to green spaces, and urban parks.

-views, scents and sound of the ocean.

-quick access to the beach and promenade.

ARBOREAL: "urban reflect"

Chapel of St Albert by Simpson & Brown

"REINTEGRATE": PRECEDENTS STUDY

BEST PRACTICE MODEL: REINTEGRATE.

OSTRA PSYCH HOSPITAL OSTRA, SWITZERLAND WHITE ARKITEKTUR

LIGHT AND FORM

Ultimately, the architects aimed to achieve a light, free and open atmosphere where 'normality' as opposed to institutionalisation. This positively affects wellbeing.

SPATIAL ORGANISATION

The care departments are all intended to gradually increase the patients' personal spheres, from their own room, to the garden, café and public areas.

MATERIALITY AND LEGIBILITY

A central axis runs from the entrance to the heart. The heart maintains a bright and warm feel, as the architects intended people to be drawn from the periphery to the centre.

"REINTEGRATE": IN CONTEXT

- access to several police stations,
- connections to hospitals, medical centres.
- connections to schools, religious facilities.
- links to education hubs, and social/recreational facilities.

ARBOREAL: "urban reintegrate"

P.A.M.M. by Herzog and de Meuron

WHERE DOES THIS TYPOLOGY EXIST?

BEST PRACTICE MODEL: FOR THE VICTIMS.

WOMENS SHELTER RAMAT HASHARON AMOS GOLDREICH

LIGHT AND FORM

The building and its walled gardens were conceived as a small village which would provide independent accommodation, medical, legal and therapeutic services, as well as kitchens, and a kindergarten.

SPATIAL ORGANISATION

The Courtyard provides optimum visual connections, ensuring security and transparency between the families and the staff. An internal corridor connects indoor-outdoor, ensures easy circulation and privacy.

MATERIALITY AND LEGIBILITY

The architects created a building with two facades: "the secure and protective external facade, and the inner aspect, which overlooks the internal." The materials are all sustainable, durable, and local.

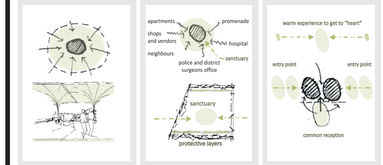
WHAT WOULD THIS TYPOLOGY AFFECT?

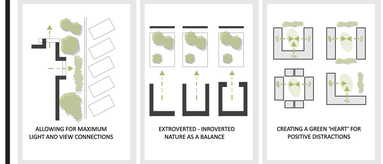
-create infrastructural support for existing clinics, NICRO, N.G.O'S and N.P.O's which aim to provide support and advice for women and girls affected by violence.

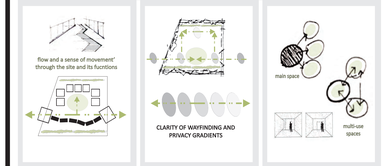
-create a defined service delivery hub with solid connections to combat gender violence in durban

ARBOREAL ARCHITECTURE

A TYPOLOGY THAT RESPONDS TO CONTEXT







02. exploring the composition of restorative environments conducive to posttraumatic report and recovery processes: the design of an inner city support centre for young women in durban.

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RESPONDING TO THE SITE THROUGH THE THEMES OF REFUGE; REFLECT; REINTEGRATE

building entrance and structure.
large, oversailing roof element.
accessible entrance and circulation.

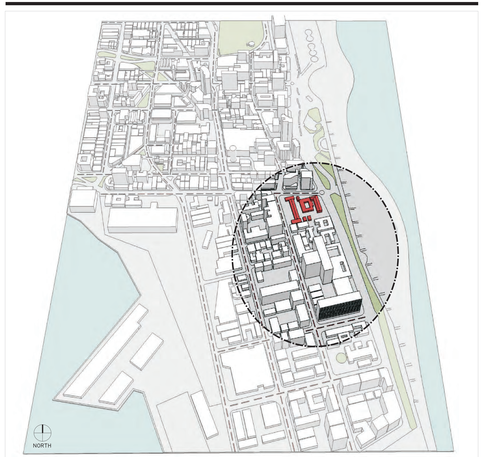
gardens, courtyards and atria that absorb maximum daylight and fresh air.
defined, organic pathways through site.

interactive activities and elements that serve as an intermediary between the internal functions and the public.


EDGE RESPONSES AND SAFETY


LINKS TO ELEMENTS OF NATURE


CONNECTIONS TO SITE APSECTS




view of the existing path to the main hospital

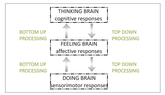

view of the existing dividing lane between sites


view of existing high rise residential surrounds


view of proposed site from beach promenade.

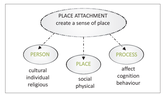

view of proposed site from beach promenade.

THE BUILDING AS A PROCESS

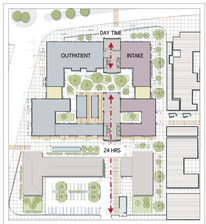


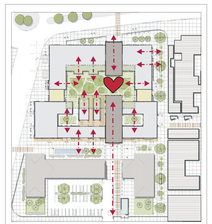

warmth, legibility and layered privacy


view-interaction: light & nature

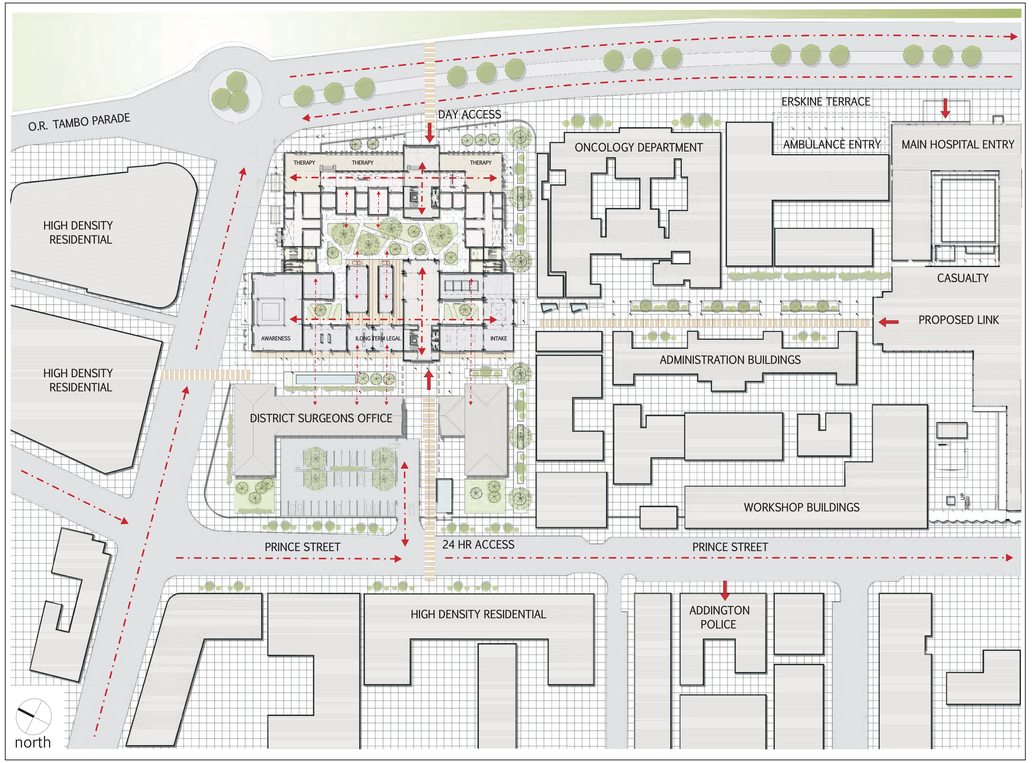



connections, control, flexibility

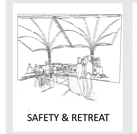




MASTER SITE DEVELOPMENT PLAN: A NEW SERVICE DELIVERY CLUSTER FOR POST TRAUMA REPORT AND RECOVERY

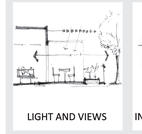


PRINCIPLES FOR A RESPONSIVE TYPOLOGY

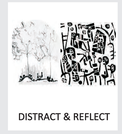

SAFETY & RETREAT
TREE IS SYMBOL OF SHELTER & GATHERING


CALM & SECLUSION
TREES HAVE LAYERED DENSITY OF LEAVES


WARMTH & LEGIBILITY
TREES OFFER A POSITIVE SENSE OF ESCPAPE


LIGHT AND VIEWS
TREES MAXIMISE LIGHT & SOLAR ENERGY


INTROVERT-EXTROVERT
TREES ADAPT; CHANGE TO SUIT NEEDS


DISTRACT & REFLECT
TREES HAVE A FRACTAL AESTHETIC ORDER


JOURNEY & MOVEMENT
TREES ARE GROUNDED IN CONTEXT: ROOTED


ORDER & WAYFINDING
TREES HAVE A CLEAR HIERARCHY


FLEXIBILITY & CONTROL
TREES ALLOW FOR GROWTH, FLEXIBILITY

03. exploring the composition of restorative environments conducive to posttraumatic report and recovery processes: the design of an inner city support centre for young women in durban.

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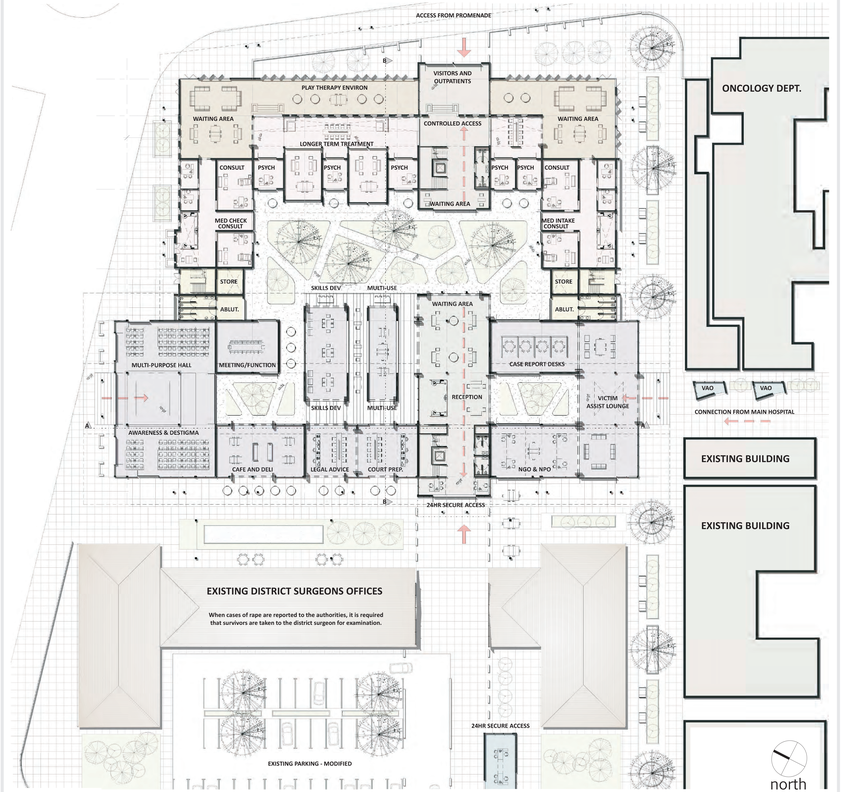
GROUND FLOOR:

VISIBILITY & CONNECTION: VICTIMS LOUNGE

V.A.O. 'NICHES' FOR SELF REFLECTION

INTERACTIVE, INFORMAL REPORT SPACES

SENSE OF CONNECTION TO FACILITY AS WHOLE



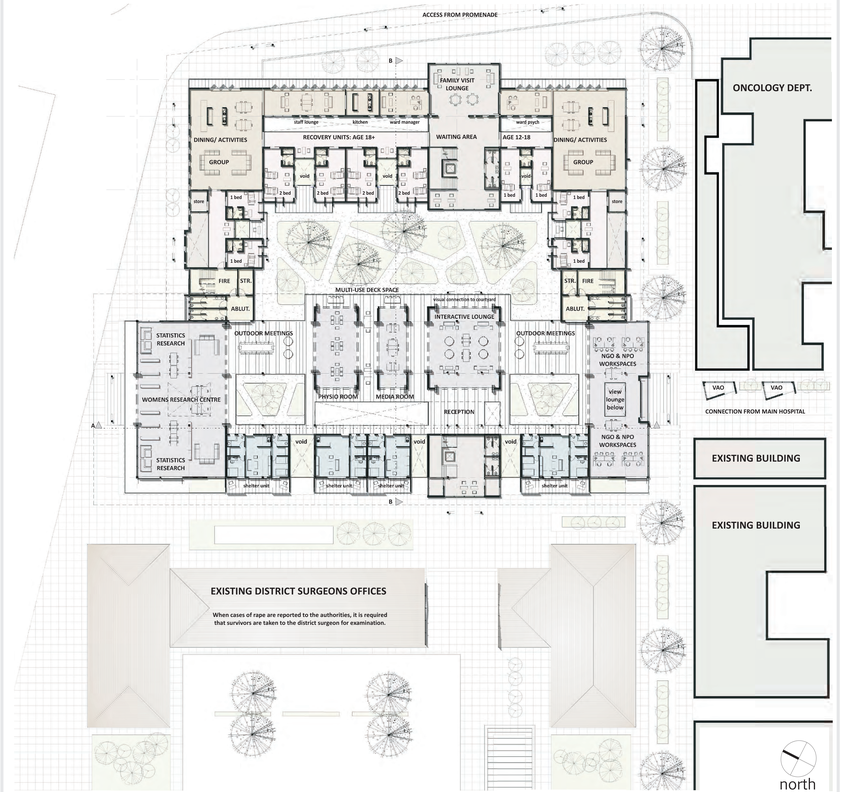
FIRST FLOOR:

CLEAR WAYFINDING TO CIRCULATION AREAS

FLEXIBLE INDOOR/OUTDOOR: MEDIA & PHYSIO

WOMENS RESEARCH FACILITIES

PATIENT ROOMS TO FACE CENTRAL COURTYARD



A SANCTUARY FOR THE VICTIMS

04. exploring the composition of restorative environments conducive to posttraumatic report and recovery processes: the design of an inner city support centre for young women in durban.

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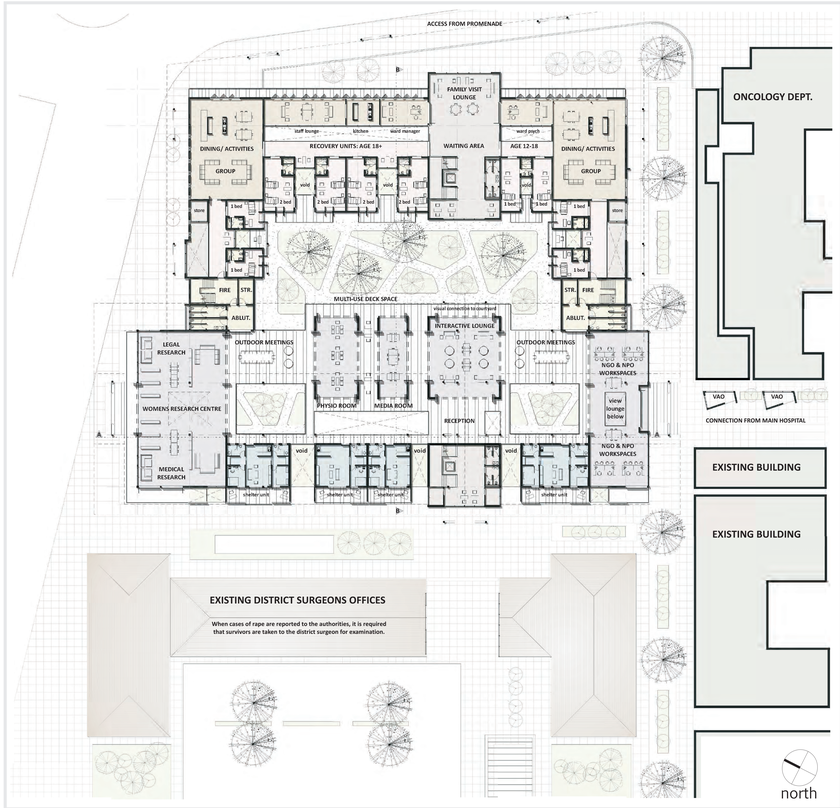
SECOND FLOOR:

FLEXIBLE OUTDOOR MEETING SPACES

SHELTER/ RESIDENTIAL UNITS: BALCONIES

N.G.O. AND N.P.O. COUNSEL AND ADMIN

CLEAR LINE OF VISIBILITY FROM HOSPITAL



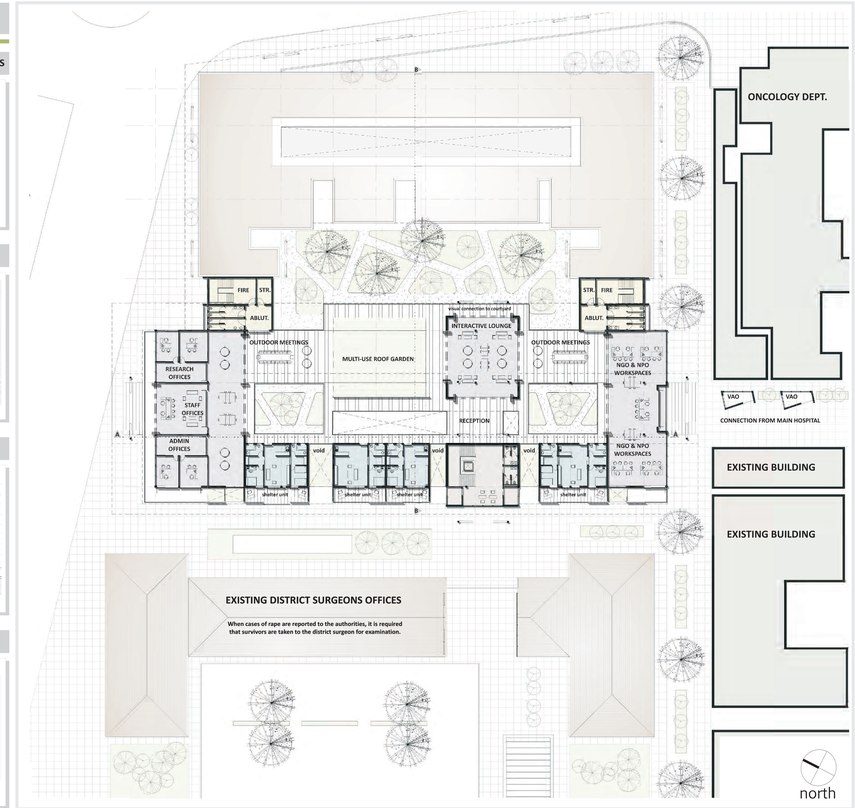
THIRD FLOOR:

WALKWAYS, ATRIUMS AND INTER LEVEL VOIDS

MAX NATURAL VENTILATION, LIGHT, VIEWS

FLEXIBLE SPACES - CHOICE OF USE

FLEXIBLE INDOOR-OUTDOOR USAGE



A SANCTUARY FOR THE VICTIMS

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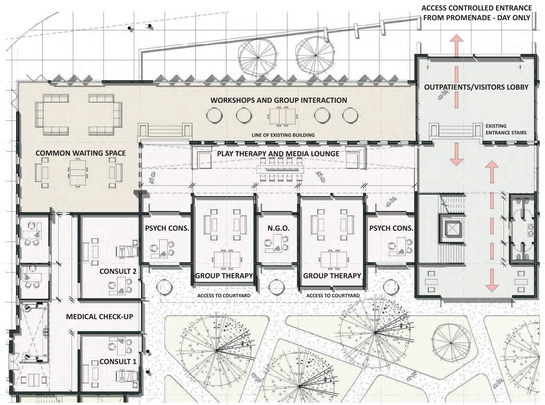
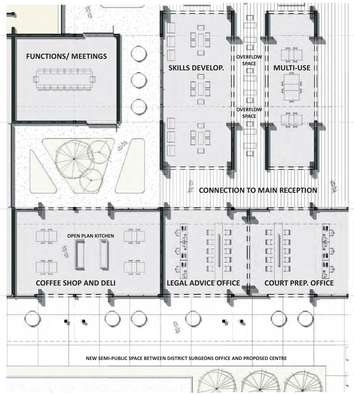
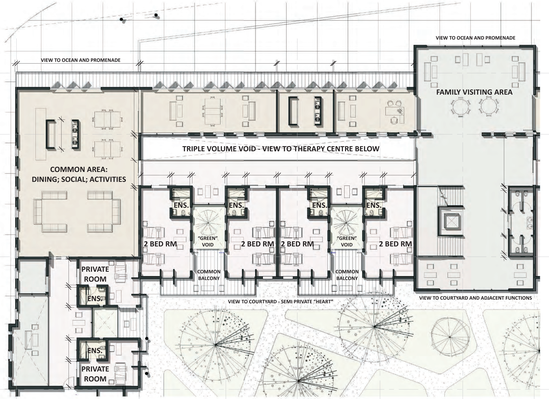
SELECTED DETAIL FLOOR PLANS AT SCALE 1:150



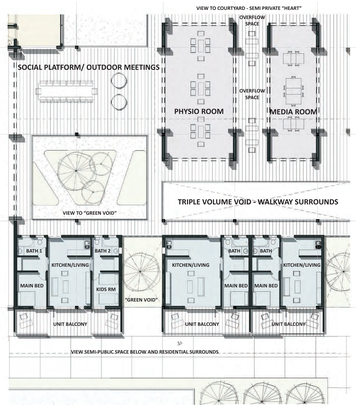
DETAIL PLAN OF GROUND FLOOR OUTPATIENTS THERAPY



DETAIL PLAN OF GROUND FLOOR D.S. EDGE ACTIVATION



DETAIL PLAN OF FIRST AND SECOND FLOOR RECOVERY WARDS



DETAIL PLAN OF FIRST AND SECOND FLOOR SHELTER UNITS

SELECTED CONCEPTUAL BUILDING PERSPECTIVES: KEY DESIGN DECISIONS

CIRCULATION CORES VISIBLE FROM ENTRANCE

ACCESS CONTROLLED DAY 'OUTPATIENTS' ENTRANCE FROM PROMENADE

CONNECTION - COURTYARD AS DIVIDING HEART

CUT THROUGH EXISTING DISTRICT SURGEONS TO ENTRANCE

CLEAR LINE OF SIGHT VIA HOSPITAL LINK

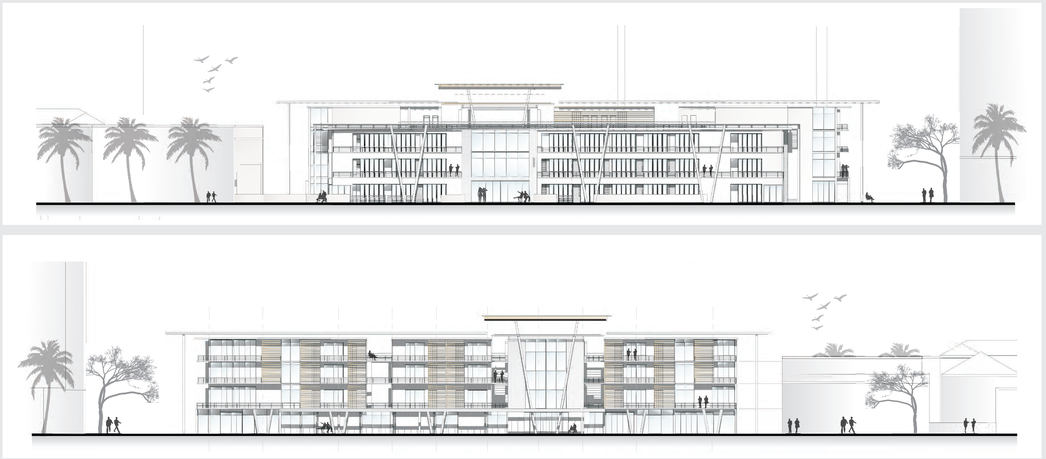
ACTIVATE EDGE BETWEEN CENTRE AND DISTRICT SURGEONS OFFICE

06. exploring the composition of restorative environments conducive to posttraumatic report and recovery processes: the design of an inner city support centre for young women in durban.

julie marie-ange eneman (209508070)

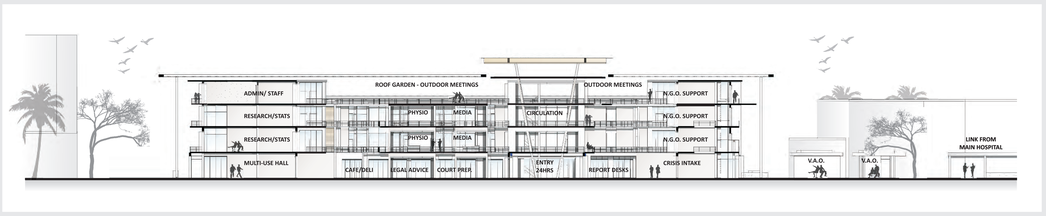
A SANCTUARY FOR THE VICTIMS

EAST AND WEST ELEVATIONS AT SCALE 1:250

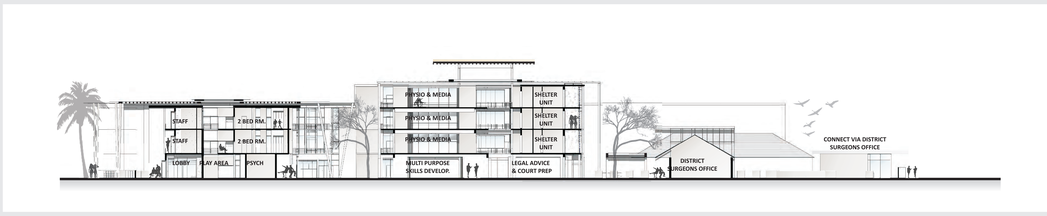


NORTH AND SOUTH ELEVATIONS AT SCALE 1:250

MAIN SECTION "A-A" AT SCALE 1:250



MAIN SECTION "B-B" AT SCALE 1:250



A SANCTUARY FOR THE VICTIMS

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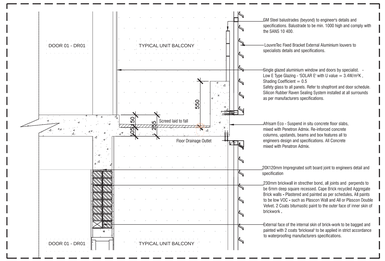
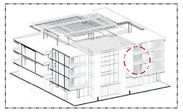
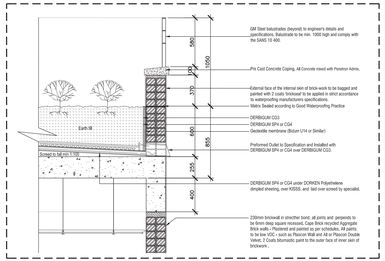
SELECTED TYPICAL STRUCTURAL DETAILS



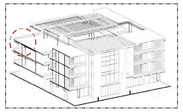
Colt Solar C Brise Soleil is a simple fixed aluminium brise soleil solar shading system. The horizontal arrangement of louvres inclined at various angles shade walls and window openings. Unlike 'Z' shaped blades, which reduce both direct and diffused light, the blade of the Solar C brise soleil is designed to control solar heat gain while allowing a large proportion of diffused light through the blade.



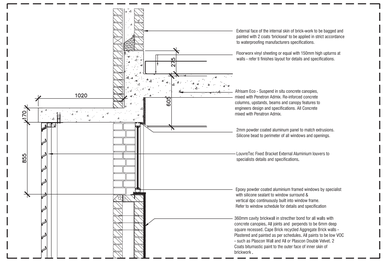
typical balcony and louvre detail at scale 1:20



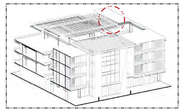
A green roof is a good insulator, it will also allow an urban garden for the residents, and encourage biodiversity in the area. This will be a sedum roof system to derbigum specification with a geofabric textile layer. Maximum 350 mm soil with in situ drainage and 50mm planting on top to specialist/ horticulturalist and landscape architects detail.



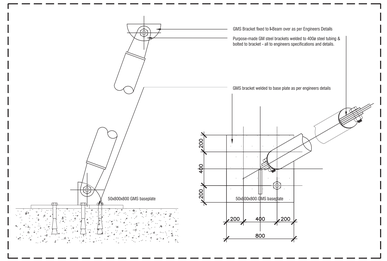
typical roof garden and "green void" detail at scale 1:20



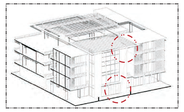
This use of a shading system provides various thermal benefits, by reducing solar heat gain and glare transmitted into internal spaces. This allows for significant reductions in the demand for air conditioning to be achieved, improving building comfort and reducing associated energy consumption, as well as greenhouse gas emissions.



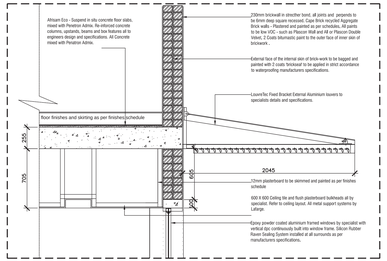
typical concrete canopy/ overhang detail at scale 1:20



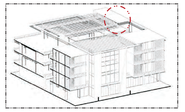
The majority of the material for the roof will be bespoke handmade timber slats fixed to an aluminium frame to architects detail. These will be made up of 38 x 114 balau timber slats secret fixed with galvanized m12 x 50 bolts to aluminium substructure @ 350 centres, fixed to either the masonry walls or angled structural steel columns, shown above, as per architects detail.



typical steel angled column junction detail at scale 1:10

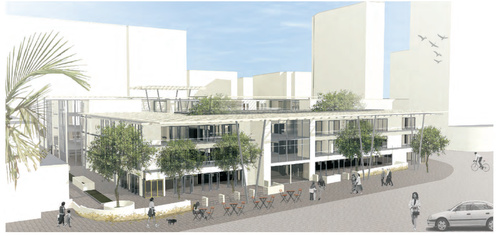


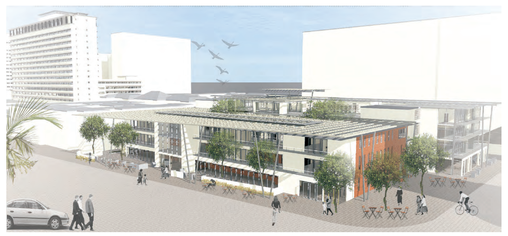
It is recommended that all aluminium be powder coated with the following specification: AkzoNobel's Interpon D2000 Ultra-durable polyester powder coating. The powder coating protects the aluminium substrate from the weather and thus from oxidation and corrosion. Furthermore, AkzoNobel Interpon D2000 is recognized as being an environmentally responsible alternative to conventional powder coating.



typical horizontal aluminium louvre detail at scale 1:20

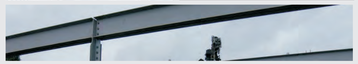
SELECTED EXTERNAL BUILDING PERSPECTIVES





ENVIRONMENTAL RESPONSIBILITY

Engineered balau timber flooring decking, screens and roof slats will be of various widths (38mm / 50 / 76mm x 25mm thick) but with 3mm gap between to be treated and sealed with 2 coats Rystix matt clear sealant. All wooden flooring shall have three coats of clear, lead free wooden floor sealer with preservative and anti-fungicidal properties applied according to the manufacturer's specification, to preserve the wood, and prevent fungi growth. However, the use of conventional timber screen systems throughout is not viable - these spaces need to be flexible, durable and low maintenance. As such, the use of Aluminium and glass sliding folding doors, with a UPVC shutter system is proposed.



All steel will have a layer of intumescent fire protective coating and will be powdercoated. The Paint specification for exposed coastal steelwork is : 1x primer coat Interseal 670 HS Aluminium (EGA 230/EGA 249) 100 microns. 1x coat Interseal 670 HS Grey (EGA 236/EGA 249) 100 microns. 1x final coat Interthane 990 Silver (PHX) 50-75 microns. All structural steelwork, base plates and fire protection to steelwork, is to structural engineers specification. All steelwork be hot dipped galvanised and painted to architects specification. All welds, cutouts, and drilled surfaces to be made prior to hot dip galvanising and all fixings, nuts and bolts to be hot dip galvanised steel or stainless steel. Isolated steel columns to be protected with intumescent paint finish to provide 60mins fire protection. All dimensions and fixing to engineer's specification. All welds in accordance with the engineer detail, all welds to be ground smooth and made good with epoxy filler for smooth, unblemished finish.

- Energy Sub-metering for different zones of the building to facilitate ongoing monitoring and management of energy consumption.
- Energy efficient light fittings such as LEDs. The capital out lay is more but the running costs are significantly lower and the life span of the globes is about 5 years.
- Lighting zoning and electrical layout must offer greater flexibility for light switching thereby making it easier to light only occupied areas of the building. Motion sensor switches should be considered.
- Solar PV panels to supplement grid power and possibly reduce peak energy demands.
- Rainwater harvesting: use this water for flushing toilets and irrigation. This will justify the capital outlay for storage tanks and pumps.
- Water sub-metering to facilitate ongoing monitoring and management of water consumption.
- Low flow taps and fittings. Water efficient toilets and waterless urinals.
- Materials should be left exposed wherever possible to minimise the use of paint and sealants and reduce maintenance costs within the building.

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