



**Cape Peninsula  
University of Technology**

**THE ENHANCEMENT OF DEAF TEENAGE GIRLS' INSTITUTIONALIZED  
ENVIRONMENT THROUGH MULTI-SENSORY DESIGN**

**by**

**ERNA LOURENS**

**Dissertation submitted in fulfilment of the requirements for the degree  
Bachelor of Technology Surface Design in the Faculty of Informatics and  
Design at the Cape Peninsula University of Technology**

**Coordinator: Alettia Chisin**

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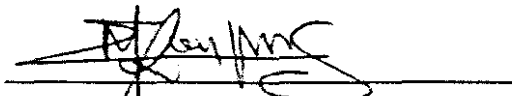
**Practical supervisor: Karen Suskin and Elize Potgieter**

**Cape Town**

**October 2010**

## DECLARATION

I, Erna Lourens, declare that the contents of this dissertation represent my own unaided work, and that the dissertation has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

  
Signed/

22 Okt 2010  
Date

## ABSTRACT

The purpose of this research is to generate a social outreach project by raising funds as well as getting sponsors to enhance the living environment at an institution for deaf girls. The focus is on *Huis Soekie*, a hostel which accommodates 17 deaf girls between the ages of 11 and 15. It is one of eight hostels situated at the De La Bat School for the Deaf in the rural town of Worcester.

Frank Vodvarka and Joice Manice Malnar's work about Multi-Sensory design was used as inspiration to establish creative ways in which to enhance the living environment of institutionalized deaf girls. The living room of the hostel was chosen as focus area, since interaction among deaf people is important and the girls spend most of their time in it. To contribute to a more relaxing environment in this living room, secondary research was done on how nature together with the correct choice of colours can have a positive effect on humans' emotions.

The living area of the hostel therefore has a central narrative and theme portraying nature as inspiration. All of the products that were designed for this space also incorporate elements of multi-sensory design. This type of design should be beneficial to the Deaf, because their other four senses are better developed than those of able people. This should also enhance their experience of the products.

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## **DEDICATION**

I wish to dedicate this dissertation to Martha Lourens, for being the best mother in the world.

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# 1. INTRODUCTION

## 1.1 Statement of the Research Problem

Little attention is paid to living conditions of institutionalized deaf children and their emotional well-being due to inadequate funding from government. This lack of funding includes poor maintenance and a shortage of qualified staff (Cook, 2010). When these institutions were originally built and designed, no or little attention was given to the fact that deaf children would reside there.

## 1.2 Background to Research/Context

My focus will be on *Huis Soekie*, a hostel which accommodates 17 deaf girls between the ages of 11 and 15. This is one of eight hostels situated at the De La Bat School for the Deaf in the rural town of Worcester. I chose to focus on this hostel, because organisations or volunteers are keen to help smaller children. The reason being they are still cute and innocent. The older children, usually more difficult and rebellious, are often neglected (Cook, 2010).

A list of the other seven hostels with their complement of deaf children and staff members follows:

### 1. *Huis Jonkheer*

- 16 boys
- Ages 14-19yrs
- 2 staff members

### 2. *Huis Klaradyn*

- 15 girls
- Ages 15-16 yrs
- 2 staff members

### 3. *Huis Nou-of-Nooit*

- 16 boys
- Ages 13-16 yrs
- 4 staff members

#### **4. *Huis Saamstaan***

- 11 boys
- 7 girls
- Ages 11-18 yrs
- 3 staff members

#### **5. *Huis Trompie***

- 19 boys
- Ages 7-14yrs
- 3 staff members

#### **6. *Huis Poplap***

- 11 girls
- Ages 7-11 yrs
- 3 staff members

### **1.3 Significance of Knowledge Gap**

Although much research has been done to help improve the living standards of deaf people, most of the research only focuses on electronic devices to improve their hearing and help with the education of the Deaf. According to my findings little is being done to find creative ways of improving the living environment of institutions for deaf children by means of multi-sensory design.

### **1.4 Topic**

**Social outreach:** The proposal aims at generating a social outreach project by raising funds as well as eliciting sponsors to enhance the living environment at the institution.

**Multi-sensory:** An experience relating to more than one of our five human senses (Oxford, 2006).

## **1.5 Clarification of Basic Terms**

- Institutionalized: Suffer the deleterious effects of long-term residence in an institution (Oxford, 2006).
- Environment: The surroundings or conditions in which a person lives and operates (Oxford, 2006).
- Well-being: The state of being comfortable, healthy or happy (Oxford, 2006).
- Destructive behaviour: When a person behaves in a negative or uncivilized manner (Oxford, 2006).
- Deafness: Without hearing or having impaired hearing (Oxford, 2006).
- Sense: A faculty by which the body perceives an external stimulus, one of the faculties of sight, smell, hearing, taste and touch (Oxford, 2006).

## **1.6 Objectives of the Research**

The aim of this research is to understand the significant impact of the living environment of an institutionalized child on that child and to find solutions inspired by sensory design to improve the resident's living environment.

## **1.7 Research Question and Sub-questions:**

### **Research Question:**

How can a multi-sensory design approach enhance the living environment for institutionalized deaf girls?

### **Sub-questions:**

1. What are the effects of an institutionalized environment on the well-being of the residents?
2. What are the benefits of a multi-sensory design approach when applied to deaf teenage girls?

3. To which type of design language do girls between the ages of 11-15 relate to and how do I develop one that will be significant and aesthetically sustainable in order to improve the living space of these girls?

## 2. LITERATURE REVIEW

### 2.1 Previous/Existing Research

Amira Osman, an architect and lecturer at the University of Pretoria, did research on inclusive design for all disabilities. She believes that when designers create environments or products for disabled people, these products are used by only people with a specific disability and by very few others. It reinforces the way in which the disabled become separated from mainstream society and are seen as a distinct group. According to Osman the solution lies in applying inclusive design to all environments and products which will then accommodate the needs of a much broader spectrum of people (Osman, 2001).

Hansel Bauman, an architect at HBHM Architects, designed a school building for deaf children. Their design team collaborated beforehand with the Deaf community on its functionality. Some of the features of the building include, "no right-angled walls or sharp turns, since people cannot see or hear people coming around corners. Instead corners are curved. The placement of windows was also very important. In this building windows are located so they produce diffused light, not glaring light, so that students can see what is being "signed" (Bauman, 2008).

### 2.2 Key Concepts:

- Institutionalized: According to Abraham Maslow some of the main consequences why certain children show destructive behaviour are disorientation, of being without roots or of despising one's roots, of being torn from one's home and family, friends and neighbours or of being a temporary new-comer (Maslow, 1970: 20).
- Designing for deaf girls: Frank Vodvarka and Joy Manice Malnar prove that it is as important to design for people's emotions as for their observation. Their design approach employs sensory response, sentiment and memory as critical

design factors in designing an environment (Vodvarka, 2004: 43). The results involve a more uplifting experience for the people who interact with the building (Vodvarka, 2004:15).

### **2.3 Theoretical Underpinning**

Several case studies (done by paediatricians and child psychiatrists) on the effects of institutionalization will be included in the literature review to interpret the behaviour of institutionalized children. According to the theorist Abraham Maslow the main principle which determines the relative occurrence of two types of behaviour seems to be that the child who is insecure, basically let down or threatened in his needs for safety, love, sense of belonging and self-esteem, is the child who will show more selfishness, hatred, aggression and destructive behaviour towards the world (Maslow, 1970: 89). Therefore, hostile and destructive behaviour in the human being will practically always be found to have originated from an exchangeable reason of some sort, in reaction to another state of affairs (Maslow, 1970: 90), thus we have to accept that people are not born with hatred, destructiveness and violence, these are mere consequences of deprived needs (Maslow, 1970: 91).

The philosophy of sensory design of the architects Frank Vodvarka and Joy Manice Malnar will also be discussed, since their work is used as inspiration for this dissertation. The reason for this is that when one or more of the five human senses are not fully developed, the other senses become better developed (McCallaghan, 2010).

Their research is about finding ways of designing for all the human senses especially in the field of architecture. According to Vodvarka and Malnar people use all their sensory modalities when they interact with products, but the roles of the senses are not identical when interaction takes place (Vodvarka, 2004:33).



### **3. METHODOLOGY**

#### **3.1 Approach**

I want to design interactive wall coverings for their entertainment, soft furnishings to replace the uncomfortable existing furniture (since the effects of institutionalization lead to a need for comfort and warmth), wall paper, scatter cushions and a soft carpet. I will use nature as inspiration for the shapes and motifs of my products, since nature plays an important part in our emotional well-being and therefore by using nature as inspiration for my designs, it will contribute to a more relaxing environment in the living-room. The use of colour for my designs will also be well considered since colour evokes different emotions in people and if applied correctly to products or interiors, it can have a positive effect on the viewers' emotions.

The above-mentioned products will all have some incorporated elements of sensory design. This is beneficial, because the other four senses of the deaf girls are better developed and those lead to an enhanced experience with the products (McCallaghan, 2010). I want to focus on the visual and haptic senses and also include products which stimulate their sense of smell.

##### **3.1.1 Visual sense**

Sight is the essence of the deaf, since they listen and learn with their eyes (Loftus, 2010). According to Keith Nesbitt (Computer Scientist at the University of Sydney) visual properties basically consist of size, orientation, grey scale, colour, light and shape (Nesbitt: 2000). I decided to focus on colour, because the right use of colour is astatically pleasing and can have a relaxing effect on the girls (King, 2001:121). Colour is therefore going to play an important part in my surface designs.

##### **3.1.2 Haptic Sense**

Nesbitt explains that haptic properties deal with the sense of touch. Many types of information are gathered by the human haptic sensory receptors (Nesbitt: 2000). According to Anna-Marie Loftus (psychiatrist at the De La Bat school) the Deaf are very expressive and tactile (Loftus, 2010). Tactile refers to the sense of contact with an object. Other object properties such as hardness and surface texture can also be included in design to stimulate the tactile sense (Nesbitt: 2000).

### **3.1.3 Sense of Smell**

Hearing people often connect to music or specific sounds to be reminded of pleasant or romantic memories and since deaf people cannot hear music, they often rely on their sense of smell to remind them of a romantic or pleasant or memorable experience (Deafsa, 2009).

### **3.2 Data-collection Methods**

My aim is to spend a generous amount of time with the deaf girls and get to know their personalities, interests, likes and dislikes. A small case study with a group of hearing girls of the same age might be done to compare the similarities with and differences between them. A comparative analysis will be done on the behaviour of girls who spend weekends at home to those who stay in.

Different inspiration boards from various art periods were assembled, which I reckon might be relevant to teenage girls. I will take these boards to the hostel to obtain the opinions of the residents and to involve them in the design process.

Research will be done on Deaf culture and the developmental stages of teenage girls. Deaf culture is capitalized since the Deaf see this culture as an expression of their identity (Deafsa, 2009).

### **3.3 Data Analysis**

The information I will gather while interacting with the girls, as well as in my research on Deaf culture will be used as a guideline. This will assist in a needs assessment to determine which areas within the hostel should receive priority when changes are implemented.

## **4. DELINEATION OF THE RESEARCH**

I will not focus on the interior of the entire hostel. I will only work on the areas within the hostel which would require priority for changes to be made. The practical will be interconnected with the theory of the research Frank Vodvarka and Joy Monice Malnar did on sensory design.

## **5. SIGNIFICANCE OF THE RESEARCH**

The way I see it deaf children and teenagers already have to function with a handicap in life and the fact that they are institutionalized exacerbates the situation. The purpose of this research is therefore to explore the living environment of the deaf girls and to do a needs assessment study to determine how I can apply design as a change agent to create a better environment for the institution.

## **6. EXPECTED OUTCOME, RESULTS AND CONTRIBUTIONS OF THE RESEARCH**

At the end of the year my expected outcomes involve a living environment at *Huis Soekie* that will uplift the residents and make their stay at the hostel enjoyable. I will contribute by establishing creative ways in which to enhance the living environment of institutionalized deaf girls.

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### Interviews

- Cook, P. 2010. Interview with the head of the De La Bat School on 24 February 2010, Worcester.
- McCallaghan, G. 2010. Interview with a qualified nurse on 6 March 2010, Robertson.

## 8. SUMMARY

The purpose of this research is to generate a social outreach project by raising funds as well as getting sponsors to enhance the living environment at an institution for deaf girls. The focus will be on *Huis Soekie*, a hostel which accommodates 17 deaf girls between the ages of 11 and 15. It is one of eight hostels situated at the De La Bat School for the Deaf in the rural town of Worcester. Several case studies (done by paediatricians and child psychiatrists) on the effects of institutionalization will be mentioned to understand the significant impact of the living environment of an institutionalized child on that child. Frank Vodvarka and Joy Monice Malnar's research on sensory design will be used as an inspiration to establish creative ways in which to enhance the living environment of institutionalized deaf girls.



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**October 2010**

# CHAPTER ONE

## Introduction

The purpose of this research is to investigate whether a more accommodating living environment can be provided to institutionalized deaf teenagers by generating a social outreach project made possible by raising funds and eliciting sponsors. Several case studies on the effects of the living environment at institutions on occupants will be mentioned in order to comprehend the behaviour of institutionalized children. Frank Vodvarka and Joy Monice Malnar's research on sensory design acts as inspiration to establish creative ways in which to enhance the living environment of institutionalized deaf girls.

My focus will be on *Huis Soekie*, a hostel that accommodates 17 deaf girls between the ages of 11 and 15. It is one of eight hostels situated at the De La Bat School for the Deaf in the rural town of Worcester. I chose to focus on this hostel, because organisations or volunteers are usually keen to help smaller children, since they are still cute and innocent. The older children, usually more difficult and rebellious, are often neglected (Cook, 2010).

Due to inadequate funding from government, little attention is paid to the living conditions of institutionalized deaf children and their emotional well-being. This lack of funding results in poor maintenance and a shortage of qualified staff (Cook, 2010). When these institutions were originally designed and built, no or little attention was given to the fact that deaf children would be residing there.

*Huis Soekie* has no morning wake-up system or some arrangement to remind the girls of their activities in the course of the day. The house mother has to wake each girl personally. This means even more strain on her tight programme as she is the only person catering for all the needs of the seventeen deaf girls under her care. The girls have the added responsibility of always being aware of the time in order to keep to their daily routine. As I see it, deaf children and

teenagers already have a handicap in life and the fact that they are institutionalized exacerbates the situation. Thus, this research endeavours to explore the living environment of the deaf girls and to do a needs assessment study to determine how I can apply design as a change agent to create a better environment for the residents of the institution by means of social outreach and through a multi-sensory design approach.

- **Social outreach:** The proposal aims to generate a social outreach project by fundraising and sponsorship to enhance the living environment of the residents at the institution (Oxford, 2006).
- **Multi-sensory:** An experience relating to more than one of the five human senses (Oxford, 2006).

The aim of this research is thus to interpret the significant impact of the living environment in an institution on those children and to find solutions to improve the residents' living environment with sensory design as the inspiration.

## **2. Research Question**

How can a multi-sensory design approach enhance the living environment for institutionalized deaf girls?

### **2.1 Sub-Questions**

- What are the effects of an institutionalized environment on the well-being of the residents?
- What are the benefits of a multi-sensory design approach when applied to deaf teenage girls?
- To which type of design language do girls between the ages of 11-15 relate to and how do I develop one that will be significant and aesthetically sustainable in order to improve the living space of these girls?



#### **4. Aims and Outcomes for Remainder of Paper**

Chapter Two of my dissertation will serve to answer sub-question one. This chapter outlines the related theory based on institutionalization (researched by several psychiatrists and paediatricians) and multi-sensory design by Frank Vodvarka and Joy Monice Malnar. I use this theory to underpin my research and explain sensory design.

Chapter Three outlines my research approach which is *qualitative and done through secondary research*. I shall therefore link my research approach to my secondary research and theory and discuss how this combination helped me to develop a design narrative for the deaf girls. The main focus of Chapter Three will therefore be on sub-question two.

Chapter Four will outline my findings discovered by my data-gathering techniques to explain my approach towards my practical component. *Information gathered from my literature review and secondary research* will also refer to substantiate the design choices I make for my practical component.

Chapter Five will outline my business proposal, followed by my conclusion that will summarize the contents of my dissertation and therefore concludes the study.

#### **4. Summary**

In this chapter I outlined the problems faced by *Huis Soekie* due to inadequate funding from government. I included background information about *Huis Soekie* and discussed the purpose for my research. I included my research topic to reveal my research problem. I mentioned the sub-questions to be answered so that I can fulfil my research objectives which I also included in this chapter. To conclude, I gave a brief outline of how I intend to pursue the remainder of my dissertation.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter investigates the effects of a living environment at an institution on its occupants, in order to understand the behaviour of institutionalized children. A brief overview of Deaf culture and Deafness is included to give the reader an understanding of how differently from hearing people, the deaf experience the world. This is relevant to determine how change should be implemented to improve their environment and products have been developed that have been informed by *this research and the focus of Chapter 4*. The emotional developmental stages of teenage girls are also discussed in this Chapter. The information gathered will then be transferred to this context, in order to determine which changes within the hostel should have priority when renovation takes place.

The architects Frank Vodvarka and Joy Manice Malnar's philosophy about sensory design will also be discussed, *since their work is used as inspiration for this dissertation*. The reason for this is that when one or more of the five human senses are not fully developed, the other senses become better developed (McCallaghan, 2010). Another case study by Keith Nessbit (Computer Scientist at the University of Sydney) about multi-sensory design is also included.

## **2.2 Living Environment at Institutions**

### **2.2.1 Case study of institutionalized children and their adaptation in later adulthood**

Christopher J. Perry, John J. Sigal, Sophie Boucher and Nikolas Parè, are psychiatrists who did a case study on seven adults who had been institutionalized at very young age. A common denominator between all seven adults is that they now have attachment issues. In the case study the psychiatrists refers to John Bolby's work. He was a British psychologist, psychiatrist and psychoanalyst, who was known for his interest in child development and for his pioneering work on attachment theory. Bolby explained that attachment is a basic human need beginning in infancy. When attachment is not nurtured or is disrupted, lasting negative consequences include anxiety, depression and difficulties in intrapersonal relationships. The absence of a long-lasting relationship with a close adult, family member or caretaker usually leads to attachment issues (Perry et al., 2006: 4).

### **2.2.2 An article on institutionalized children: One view from Paediatrics and Child Psychiatry**

Deborah A. Frank, Perri E. Klass, Felton Earls, and Leon Eisenberg are medical doctors who wrote an article about their views on the effects of institutionalization on children. The article also includes statements of well-known paediatricians and child psychiatrists. According to these doctors, early childhood institutionalization increases the likelihood that deprived children will grow into psychiatrically disadvantaged and economically unproductive adults. Henry Dwight Chapin is a paediatrician who strongly believes that putting together many children under one roof is not good for them, no matter how well the institution is managed. Harlan Spitz is a paediatrician and a child psychiatrist who states not even the best trained caregivers can replace the level of interaction and reciprocity with children achieved by mothers. According to Dr Micheal Rutter and Dr David Quinton (child psychiatrists) institutionalization has a more

negative effect on the social development than the intellectual development when the child reaches adulthood (Frank et al., 1996).

The authors of the article concluded that not all the negative effects of institutionalization can be prevented, but with the necessary funding to purchase, design and provide products and materials in a context of social interaction some of the negative effects of the social development of institutionalized children can be avoided (Frank et al., 1996).

## **2.3 Deaf Culture and Deafness**

### **2.3.1 Deafness**

Communication is a very powerful tool for humans to get what they want and to understand what other people need or expect from them (Nieman et al., 2004: 34). People usually communicate by speaking and listening. Children, who are deaf or cannot hear well, learn to communicate by seeing (Nieman et al., 2004: 21). They also get much information from people's facial expressions. Deaf children often use touch to communicate with each other. When a hearing person touches a deaf person appropriately, it will help the hearing person to communicate their care and concern in a manner that nothing else can. Sometimes movements and looks can take the place of a word or sign. Deaf people therefore find touch extremely useful (Nieman et al., 2004: 30).

When using sign language or lip reading to communicate with deaf people, always try to have light from the sun or a lamp to shine on your face. When the light comes from behind, your face and hands will be in shadow and thus harder to see (Nieman et al., 2004: 28). To get a deaf person's attention some people will hit a nearby object to make a loud noise so that the person can feel the vibrations (Nieman et al., 2004: 27).

### **2.3.2 Deaf Culture/ Community**

Deaf people sometimes reckon that no community cares about their welfare because family and neighbours make them feel unwelcome, as they do not know how to communicate with them. Deaf people often feel a close bond to each other, because they face the same problems and share a similar way of communicating (Nieman et al., 2004: 140). Sign language is used by deaf people throughout their institutional and broader social community. It is a language that uses hand shapes, body movements, gestures and facial expressions to communicate experiences, thoughts, needs and feelings. Sign languages are real languages which have an organized grammar and structure just like spoken languages do (Nieman et al., 2004: 73).

Deaf people play a very important role in each other's lives, because they can be a source of comfort and guidance one to another. These communities formed by the Deaf are usually very strong (Nieman et al., 2004: 140). South African Deaf culture has its own history, shared values, social norms, customs and technology which are transferred from one generation to the next. Deaf culture is capitalized since deaf people see this culture as an expression of their identity (Deafsa, 2009).

It is therefore important to remember that unlike members of ethnic minority groups, deaf people do not receive their culture from their parents. Cultural transmission has been carried out by schools for the Deaf (Cohan, 1994: 55). The location varies from around deaf schools, deaf clubs or work cooperatives to religious organizations (Nieman et al., 2004: 140).

## **2.4 Emotional Development of Teenage Girls**

Erik Erikson is a psychiatrist who believes that children need to go through eight stages of development to become self-sufficient adults. Girls between the ages of 13 to 20 reach the fifth stage called *Learning Identity versus Identity Diffusion (Fidelity)*. The girls at *Huis Soekie* are between the ages of 11-15 and therefore at this stage of their emotional development. During this psycho-social stage teenagers need to find the answer to the question "Who am I?" Most girls usually have self-doubt issues at the beginning of this stage. Erikson believes that during this time teenagers should acquire self-certainty as opposed to self-consciousness and self-doubt (Child Development Institute: 2000-2010).

## **2.5 Multi-Sensory Design**

### **2.5.1 Modelling the Multi-Sensory Design Space**

Keith V. Nesbitt (Computer Scientist at the University of Sydney) wrote an article about using multi-sensory design to represent abstract data. In his article he explains some of the properties that apply to help the reader get a better understanding of multi-sensory design. Nesbitt believes that space is perceptually dominant and therefore the first design choice to make is to decide how to use the space. Visual, Haptic and Auditory properties have most often been used in designing. Visual properties basically consist of size, orientation, grey scale, colour, texture, light and shape. Auditory properties consist of two types of listening, namely everyday listening and musical listening. Haptic properties have to do with the sense of touch and can be divided into exploration or manipulation of tasks. Usually haptic tasks involve a combination of both exploring and manipulating. Many types of information are gathered by the human haptic sensory receptors. Temperature, pain, tactile, chemogenic and kinesthetic information are examples. Tactile refers to the sense of contact with an object, for example force, inertia and vibration. Other object properties such as hardness and surface texture can also be included in design to stimulate the

tactile sense. Kinesthetic refers to the sense of motion and position in space of joints and limbs (Nesbitt: 2000).

### **2.5.2 Sensory Design in Architecture**

The architects Frank Vodvarka and Joy Manice Malnar believe that for architectural design to be successful it has to rely on shared sensory data, whether invoked or directly experienced (Vodvarka, 2004: XI). In their book they included research done by other architects, theorists and designers to substantiate their research. Some of this research is also mentioned in this section.

E. V. Walter (theorist) believes that a place is a location of experience. It stirs up and organizes memories, images, feelings, sentiments, meanings and the work of imagination. According to him the feelings of a place are the mental projections of people, but they come from a communal experience and they do not happen anywhere else. Only a specific place can evoke such feelings (Vodvarka, 2004: 10). Frances Downing (an architect) believes that memories flash into our consciousness, whether we want it to or not. Memory is energetic and often seems to form and reform experiences without the person's conscious authorization. It is our senses that spark our memories. Our memories are vital information gathered through sensual experiences namely sight, sound, smell, touch and taste. Sensory experiences can also evoke emotional dimensions such as belonging and safety and cultural identity (Vodvarka, 2004: 21).

It is therefore important to bear in mind that people appreciate a place not just by its appearance, but also by the way it smells, feels and sounds. The use of wood is an example of such a multi-sensory application. This experience of wood is achieved by perceiving its smell, its texture and by the way it changes the acoustics and atmosphere of a room or space. Sensory experiences are therefore a vital element that shapes our response to spaces (Vodvarka, 2004: 24). Minoru Yamasaki (an architect) believed that each building or space should



enhance the lives of the people who enter or see it. For a person, a structure should communicate a sense of security and be so arranged that one never feels lost in it (Vodvarka, 2004: 66).

Gaston Bachelard (an architect) states that a person's home is their first universe and the place where their first thoughts, memories and dreams are shaped. A home is also the shelter to protect those memories and thoughts. It is not only the aesthetics of a house which helps the owner decide whether to stay or to leave, but the way the house makes a person feel emotionally (Vodvarka, 2004: 16).

Frank Lloyd Wright's (an architect and interior designer) most important principle is that he believes that an architectural environment is a whole, consisting of the structure and the interior filling it. According to him it is impossible to consider the building as one thing, its furnishings as another and its setting and environment as a third. A good choice of colour, soft textures, and textural materials are examples to be considered for making the space a success (Vodvarka, 2004: 35).

## 2.6 Summary

Not all the negative effects of institutionalization can be prevented, but with the necessarily funding to design and provide materials in a context of social interaction within an institution, some of the negative effects of the social development of institutionalized children can be lessened. Deaf children often use touch to communicate with each other. Sometimes movements and looks can take the place of a word or sign. Deaf people find touch extremely useful and I will therefore incorporate the touch sense into my design approach, which will be discussed in detail in Chapter 4. Deaf people also need to interact with one another all the time to support and guide each other. I therefore decided to focus on their social living area.

While busy with my design processes, I have considered that people appreciate a space not just for the way it looks, but for the way it smells, feels and sounds. People's senses activate their memories. Memories are vital information gathered through sensual experiences namely sight, sound, smell, touch and taste. I will therefore focus on the visual, haptic and smelling senses in keeping with a multi-sensory design approach.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter is based on primary, secondary and qualitative research which will provide inspiration for the conceptualization of products and outlines the methodology. The outcome of this research is to produce the required products to improve the environment at the hostel for deaf teenage girls. This chapter also explains why multi-sensory design is relevant to this research and will also feed into my practical component. A brief overview of Ronel Jordaan (a textile designer), Marrimekko Corporation (Finnish Design Company) and their work, where I found inspiration, are included. This goes to the development of my practical products, the focus of my next Chapter.

#### **3.2 Approach**

As mentioned earlier, the main objective of this dissertation is to create an uplifting environment for the residents of *Huis Soekie*. Due to lack of funding from government, the interior of the hostel is neglected, resulting in a negative living environment. Since interaction among deaf people is important (Nieman et al., 2004:140), I focused on the hostel's social area where the girls spend most of their time. The girls also informed me that they do not want to play outside anymore, but prefer to stay indoors and entertain themselves in the living room (Dorien, 2010). Like all modern teenagers they find it boring to play outside.

Since the girls are not interested in going outdoors, I decided to bring nature into their living room. I want, in sympathy with their needs create an environment in the hostel's living area that has a central narrative and theme portraying nature as inspiration. Being deaf can also result in a monotonous life, because they cannot hear any sounds to distract them. Speaking from a personal point of view, hearing people hear a lot of different sounds to entertain and distract them from

their daily routines. I therefore want to change the scenery of the living room somewhat to bring a bit of visual and haptic variety to their environment.

### **3.3 Multi-sensory design approach**

The products which form my practical component and are the focus of the next Chapter, all have some elements of sensory design incorporated. This is beneficial, because the deaf girls' other four senses are better developed (McCallaghan, 2010). As mentioned earlier, Frank Vodvarka and Joy Manice Malnar prove that it is as important to design for people's emotions as for their observation. Their design approach employs sensory response, sentiment and memory as critical design factors in designing an environment (Vodvarka, 2004: 43). The results involve a more uplifting experience for the people who interact with the building (Vodvarka, 2004:15). I will therefore focus on the visual and haptic senses and will also include products to stimulate their sense of smell.

Hearing people often connect to music or specific sounds to be reminded of pleasant or romantic memories and since deaf people cannot hear music, they often rely on their sense of smell to remind them of a romantic or pleasant or memorable experience (Deafsa, 2009). As mentioned in the previous Chapter Nessbit explains that haptic properties have to do with the sense of touch. Many types of information are gathered by human haptic sensory receptors (Nesbitt: 2000). According to Anna-Marie Loftus (psychiatrist at De La Bat school) deaf people are very expressive and tactile (Loftus, 2010). Tactile refers to the sense of contact with an object. Other object properties such as hardness and surface texture can also be included in design to stimulate the tactile sense (Nesbitt: 2000). Sight is most important to deaf people, since they listen and learn with their eyes (Loftus, 2010). According to Nesbitt visual properties basically consist of size, orientation, grey scale, colour, light and shape (Nesbitt: 2000). I decided to focus on colour, because the right use of colour is aesthetically pleasing and can have a relaxing effect on the girls (King, 2001:121). The following para-

graphs explain some of the important properties of colour which I will include in my practical component.

### **3.4 The Influence of Colour**

Some of the most important functions of colour are to provide *visual and psychological information and to generate reactions from a viewer*. The designer therefore can arouse various responses and become the controller of what the viewer perceives. An example is how technology has provided us with colour everywhere we look. We as viewers like the imagery technology provides, because it represents our dreams and desires (King, 2001: 115).

Colour connotations are key to this research because of their associations. Black, White and Grey are neutral colours and can have both positive and negative connotations. Black can represent power, sophistication and sexuality, but can also be used to represent death, emptiness and depression. Positive connotations for white include purity, birth and peacefulness, while surrender and cowardliness can also be represented through white. Since I will only be using colour for positive emotions, I will only mention the positive connotations of colour further along (King, 2001: 118).

Red has the greatest emotional impact of all. It represents love, luck, passion, sexiness, festivity and importance. Pink refers to health, beauty and femininity. Orange is present in nature, in sunsets, autumn leaves, fruit and flowers. It stands out well and creates a sense of warmth, cheerfulness, brightness and spice. Brown represents earth, wood, comfort and security (King, 2001: 119). Green is the largest colour family observable by the human eye and people's feelings towards green can vary. It can represent environment, growth and renewal, youth, health, calmness, cool and freshness. Blue is used quite often and represents royalty, heaven, coolness, truth, loyalty and high technology (King, 2001: 120). Purple is the hardest colour for the eye to separate and

should be used correctly. It represents bravery, spirituality and mystery. (King, 2001: 121).

Colour associations play a vital part in our emotions since colour has been shown to affect human moods, physiological responses and perceptions of temperature, size and ambiance. Coloured light is used to treat some illnesses and to relax patients in hospitals or institutions. Warm colours (red and orange) increase human attraction to external stimuli, cause states of excitement, generate higher arousal levels and increase grip strength (King, 2001: 126). People, who are depressed, lonely or lacking emotion, can improve their condition by being surrounded by orange (King, 2001: 127). Cool colours (green and blue) repress anxiety and are associated with calm and quieting moods. Nervousness, headaches, bad moods, anxiety and stress are usually blamed on everything except a negative environment, which may often be the root of the cause. Therefore we are all affected by our artificial surroundings (Mahnke, 1996: 13). Ulrich Beer (psychiatrist) claims that no one can encounter colour and stay neutral. We are immediately instinctively and emotionally moved. We either have sympathy, empathy, pleasure or disapproval within us as soon as we perceive colour (Beer, 1992: 11).

### **3.5 Designers' Usage of Colour**

Architects and designers use colour psychology to modify our behaviour. For example, Fast-food restaurants and coffee shops are often painted orange and pink to create excitement. The colours excite you and thereby entice you to come in, eat quickly and leave. Blue is rarely used in restaurants, because it has a relaxing effect on people. Hospitals make use of green walls to soothe their patients. Some prisons are painted pink to cheer the staff and subdue the prisoners (King, 2001: 121). Colour and light are major factors in an architectural environment. It has a great impact on human psychiatric, psychological, psychosocial well-being. Research has proven that light and colour affect the human organism on both visual and non-visual bases. The assumption that the

only significant roles of light and colour are to provide adequate illumination and a pleasant environment no longer applies (Mahnke, 1996: 15).

In the natural and the built environment there is always colour present. Human beings receive 80% of information from their environment. Colour is therefore a source of information and communication of unconditional necessity for the interpretation and understanding of the natural, artificial or architectural environment. Perception of colour in the environment always carries visual, symbolic, emotional and psychological effects. Colour stimulation received from the outside world corresponds with reactions in the inner world (in other words, the way we feel) (Mahnke, 1996: 18). Colour is not the only design element in the environment that has an effect on our emotions, according to Singh Vineet, nature also has a significant impact on people (Vineet, 2007).

### **3.6 Nature as inspiration**

#### **3.6.1 Importance of nature**

Singh Vineet (an Indian aspirant writer on Health) wrote an article about the effects of nature on human mental health. The following studies are included in his article to substantiate his writing. A recent study conducted in the United Kingdom, found that more than 75% of people live in urban areas, which means they are not surrounded by nature. This led to a drastic rise in mental health problems (Vineet, 2007).

Roger Ulrich (a pioneer in research in this area) conducted an experiment to explain that patients, suffering and recovering from identical operations, were more likely to recover quickly if they were able to see nature from their hospital beds every day. Research from the Netherlands and Japan also revealed that when people live closer to nature, they tend to live longer and enjoy a better and healthier life (Vineet, 2007).

According to Vineet nature is widely used as an element or modern therapy for people who are suffering from physical and mental health problems. New concepts such as hospital-therapy gardens and wilderness trips for people with a lot of stress have all shown positive effects on patients (Vineet, 2007).

Cecily Maller, Mardie Townsend, Anita Pryor, Peter Brown and Lawrence St Leger are part of the NiCHE Research Team at the school of health and social development at Deakin University, Melbourne, Australia. The above-mentioned people wrote a paper on the benefits humans experience when they have regular contact with nature (Maller et al., 2006: 2). Most of the research is in accordance with Vineet's article.

Some of the results of the paper include that participants who viewed slides of simple scenes of nature had a positive effect on their moods, while those who viewed scenes of urban areas experienced a negative effect on their moods. The paper also included evidence that *being near nature can help strengthen the activities of the right hemisphere of the brain and restore harmony to the functions of the brain as a whole* (Maller et al., 2006: 4).

### **3.6.2 Local designers inspired by nature**

Ronel Jordaan is a South African textile designer who makes beautiful felted products which are nature-inspired. She makes use of the felting process to create the textures and shapes of leaves and flowers, webs, thorns, hides and bark. *Figure 3.1 is an example of some of her interior products. Her most recognizable products are the pebbles and rocks seen in Figure 3.2* (Elle Decoration, 2010). I see this designer mimicking nature in a more realistic way. Her product range is therefore more suited for adults. I will also use felt as medium to create the shapes and contours of nature for my products, but in a more stylized manner suitable for teenagers.



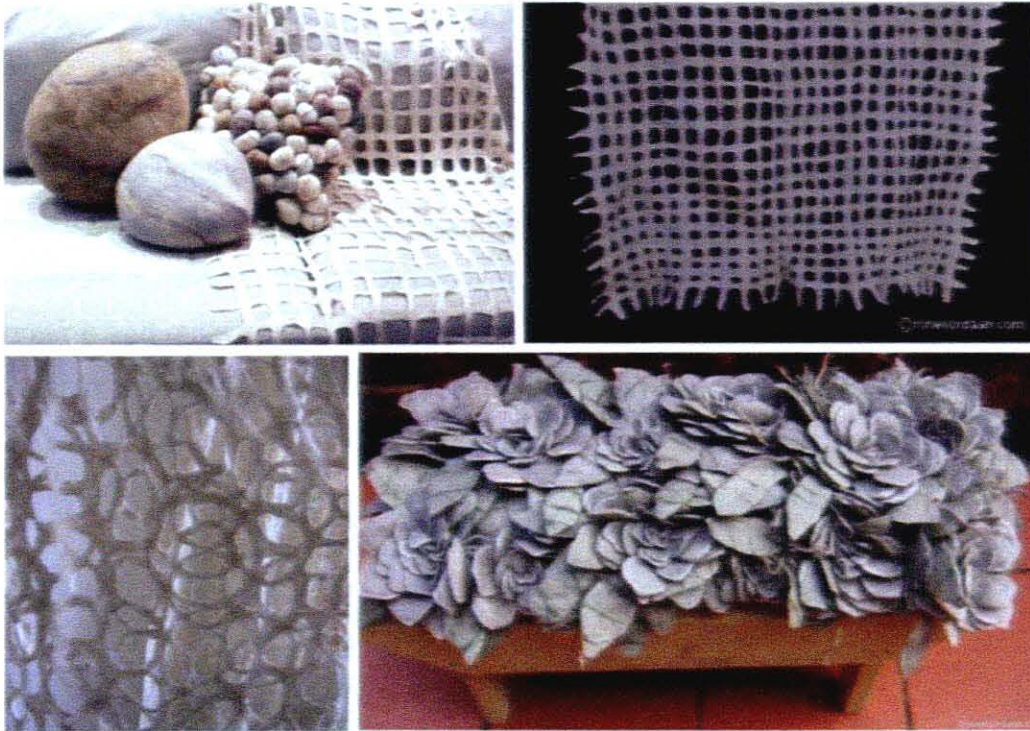


Figure 3.1: Ronel Jordaan, *Interior Products*, 2010. Felt, Size Unknown.

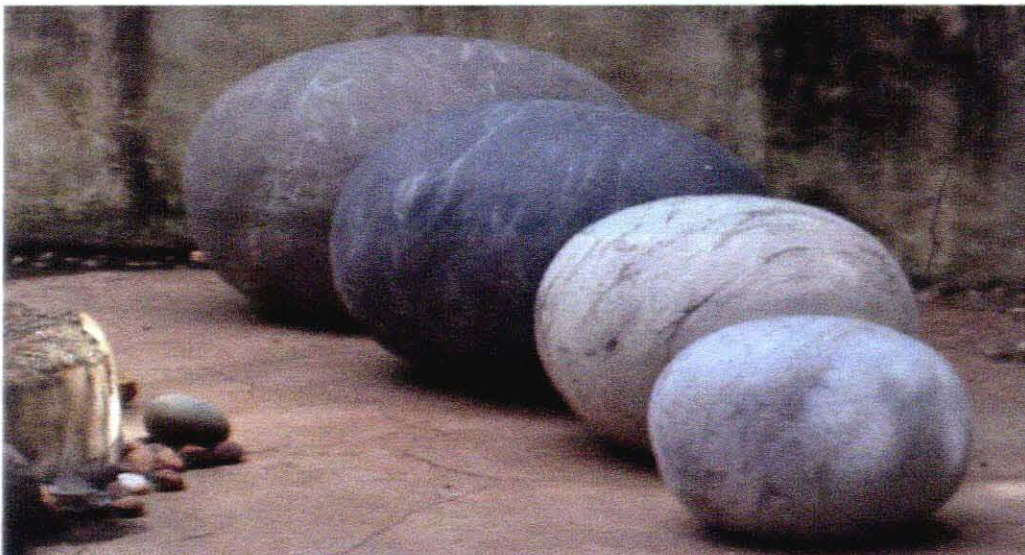


Figure 3.2: Ronel Jordaan, *Stones*, 2010. Felt, Size Unknown.

Marrimekko is a great example of designers who create stylized and bold patterns. Marrimekko Corporation, my second example, is a leading Finnish textile and clothing company (Marrimekko, 2010). Many of Marrimekko's textile and interior designs depict nature in a stylized and contemporary manner. The company also makes use of bold and bright colours to complement their designs. The designers have a mission, which is for their textiles to excite people to start decorating and making items themselves. Marrimekko's textiles are best suited for modern interiors (Palm, 2010). Figure 3.3 and Figure 3.4 are examples.



Figure 3.3: Marrimekko, *Textile Print 1*, 2010. Silk Screen, Size Unknown.





Figure 3.4: Marrimekko, *Textile Print 2*, 2008. Silk Screen, Size Unknown.

Marrimekko has a very bright and bold colour scheme for their designs. After a while bright and bold colours can become unsettling to the viewer (Mahnke, 1996:63). Since my products will remain in the hostel for a long time, my colour scheme will be toned down.

### 3.7 Summary

Having reflected on the theory and also on what has been produced , I have decided that a multi-sensory design approach for the living room at *Huis Soekie* will be beneficial, since the deaf girls' visual, haptic and sense of smell are better developed, which results in a stronger experience with the products. People also appreciate a space or products not just by the way they look, but by the way they smell, feel and sound. People's senses activate their memories, therefore people rely on their senses to decide whether they like a space or not.

Colour also evokes different emotions in people and if applied correctly to products or interiors, it can have a positive effect on the viewers. According to Beer, no one can encounter colour and stay neutral. People are immediately instinctively and emotionally moved (Beer, 1992: 11). Furthermore, nature plays an important part in our emotional well-being and therefore using nature as inspiration for my designs, it will contribute to a more relaxing environment in the living room.

## **CHAPTER FOUR**

### **FINDINGS**

#### **4.1 Introduction**

This chapter outlines my findings, discovered through data-gathering techniques, to explain my approach to the practical component of this dissertation.

Information gathered from my literature review and secondary research will also refer, to substantiate the design choices I made for my practical component.

It also discusses each of the products separately to inform the reader why and how each individual product was designed specifically for deaf teenage girls and in this way answer sub-question three: To which type of design language do girls between the ages of 11-15 relate to and how do I develop one that will be significant and aesthetically sustainable in order to improve the living space of these girls?

#### **4.2 Data-gathering Techniques**

Information was gathered in the form of ethnography by observation. I also gathered primary research from:

- Conversations with the residents of *Huis Soekie*.
- An informal interview with their house mother.
- Informal interviews with random teenagers.
- An interview with the school psychiatrist.

##### **4.2.1 Process and Outcome from Ethnography**

I walked around campus during the universal break of all the hostels (mentioned in Chapter 1) at De La Bat to observe how deaf children and teenagers interact socially with one another. The expressive body language of the deaf children was highly noticeable. When they communicate with each other much movement is

involved. Most of the girls sat very closely in their groups and touched each other when they interacted with one another.

#### **4.2.2 Process and Outcome of Primary Research**

##### **4.2.2.1 Informal interviews with the residents of *Huis Soekie***

The first visit to *Huis Soekie* was unpleasant since the girls had no interest in communicating with me or answering my questions. This is due to distrust because I cannot use sign language. Most of the girls were constantly busy with their cell phones and kept asking when they could leave. Some just left anyway and did not return. Eventually I gave up and asked them to think about what they like and what they would want changed about the hostel.

I noticed they sat very close together and were very affectionate with one another. When the girls communicated amongst themselves their faces were very expressive and excited. They use their entire upper body when they want to communicate or express themselves.

The next visit went much better. Some of the girls were friendlier and participated every time I asked a question. I think this is because they realized I want to help and my approach was honest. The girls told me what they liked, their favourite colours and animals. Most of them love plants and flowers. A common denominator was an intense need for soft and comfortable things, such as blankets and cushions. This is when I realised where and how I could improve their social environment. The girls seek warmth and comfort from soft products to compensate for the lack of love from their parents and homes.

#### 4.2.2.2 Interview with the psychologist at De La Bat School

From an interview with Ms Loftus (the child psychiatrist at the De La Bat School), I gathered the following information to keep in mind as soon as I began designing, particularly for the deaf girls at *Huis Soekie*.

Being deaf isolates the girls from their families, because their family members do not know how to properly communicate with them. This usually leads to the child being left at the De La Bat School at a very young age. The school then becomes their family and they spend most of their developmental stage there. While staying at the school it is very important for the deaf children to interact with one another to create a sense of belonging. They become each other's family members in a way to try and fulfil the lack of love from their biological families.

Deaf people are very expressive and tactile. They like touching things to help them gather information. While they are "talking" they act and mimic to help hearing people understand what they are trying to say. Deaf children do not like writing or words, since they struggle much with verbal language. They do not want hearing people to know this, because it makes them feel inferior and unintelligent (Loftus, 2010).

Since De La Bat is for all intents and purposes home to the girls, I want to try and make their stay as pleasant and comfortable as possible. They are tactile and therefore the products I design should have a lot of different textures. For these teenagers to be able to act and express themselves they should have enough space and be comfortable to do so. My products should therefore be as comfortable and spacious as possible. I will also not incorporate any words in my designs, since words have a negative connotation for them.

### Findings from interview

POSITIVE ASPECTS	NEGATIVE ASPECTS
Tactile	Isolation
Expressive	Restricted communication
Visual	Loneliness
Physical closeness	Neglect
	Struggle with verbal language

#### 4.2.2.3 Informal interviews with random teenagers

Visits to random girls (from Robertson Primary School) between the ages of 11 and 15 years were also conducted to find out which designs and colours they prefer. Most of these teenage girls like bright and cheerful colours. I took my inspiration boards along to see which design styles were most favoured. The favourite boards were very stylized and colourful. This information (along with nature and multi-sensory design as inspiration) helped me to create a design language for the girls at *Huis Soekie*. Figure 4.1 is an example of the four inspiration boards I took along. Figure 4.2 is an indication of the inspiration boards most liked by the teenagers.



Figure 4.1: Erna Lourens, *Concept Boards*, 2010. Photoshop, A3. Cape Town.



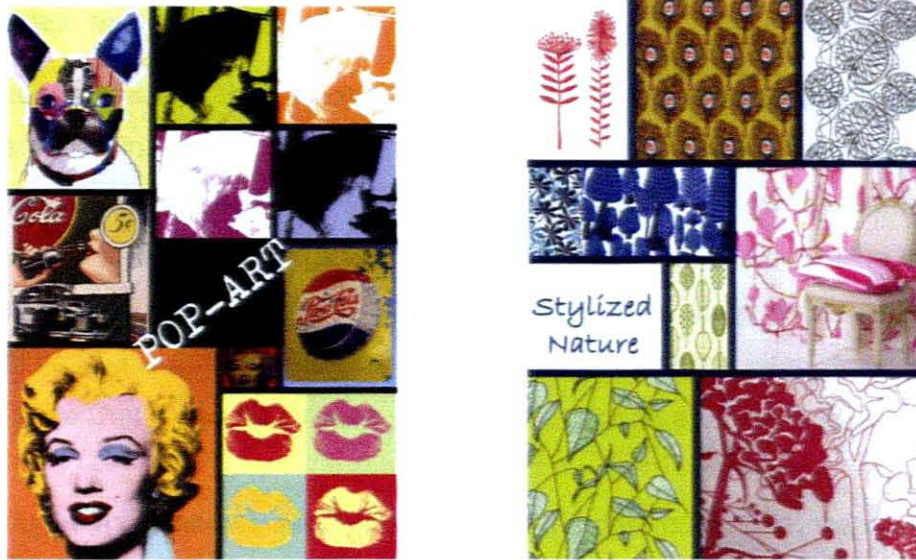


Figure 4.2: Erna Lourens, *Favourite Boards*, 2010. Photoshop, A3. Cape Town.

### 4.3 Development of Practical Component for the Deaf Girls

As mentioned in Chapter three, the girls at *Huis Soekie* spend most of their time in the living room, since they do not want to play outside anymore. The living area is therefore the environment where they socialize and interact with one another. This room should offer a comfortable and relaxing environment with exciting elements to prevent boredom. To contribute to a more relaxing environment in the living room, secondary research was done in Chapter three on how nature can have a positive effect on human emotions. According to Vineet, being close to nature lowers stress levels and helps with reducing depressing feelings (Vineet, 2007). Nature was therefore used as inspiration for all the surface adornments and shapes of the practical component. Real plant-life was also incorporated into one the products.

All of the shapes and contours of my products are inspired by flora growing in the Western Cape regions. The surface adornments and motifs of the products are also inspired by the same plant-life. All the designs are stylized to present a contemporary effect suitable for teenagers.

#### **4.4 Materials and Colours used**

As mentioned earlier in the Chapter, I came to the conclusion that the girls at *Huis Soekie* are in need of comfort and warmth. There is nothing better than hand-made felt to offer warmth and comfort. Since I made the felt myself, much hard work and love went into the fabric. By giving the girls of *Huis Soekie* these products, they will experience the wonderful feeling of receiving brand-new things instead of hand-me-downs. Added to that, they will feel appreciated, because they will know that these items were especially designed and made for them.

Much thought and research went into choosing the right colours for the products. Colour does not only fulfil aesthetic requirements, but also creates a sensation activating our thoughts and our cognitive mechanism (Mahnke, 1996:7). Colour is one of the strongest stimuli humans receive from the outside world and therefore influences our emotions more than we think (Mahnke, 1996:20). The correct combination of colour will therefore stimulate the residents' visual sense in a positive manner.

#### **4.5 Products: Soft Furniture Range**

The Gentle Prickle and Soft Stone furniture range were designed to replace the existing furniture. The residents made it quite clear that the existing furniture was not comfortable or relaxing at all (Dorien, 2010). Figure 4.3 is an example of the existing furniture. As the girls are all deaf, a multi-sensory design approach should be taken into account to stimulate the girls' other senses, which are better developed (discussed in Chapter three). An interior environment with elements to stimulate the different senses is an environment leading to positive experiences and memories for the people who interact with the room (Vodvarka, 2004: 22).



Figure 4.3: Erna Lourens, *Existing Furniture*, 2010. Photo. A5. Worcester.

The covers of the soft pieces of furniture are made from industrial felt, because it is much more durable than hand-made felt. The furniture has to be durable, because the De La Bat School does not have sufficient funds to regularly replace furniture. Inside the soft pieces of furniture are pouches filled with potpourri. When someone sits down, the potpourri will release different aromas depending on which oils, flowers and herbs were used. These refreshing aromas will then further enhance the pleasant experience of using the furniture. The pouches can easily be removed by unzipping the sides of the furniture and replacing them with other potpourri pouches.



#### 4.5.1 Product 1: Gentle Prickle Furniture

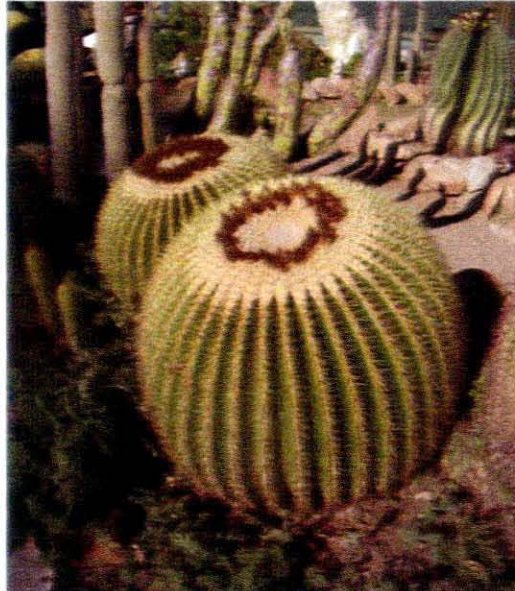


Figure 4.4: Erna Lourens, *Golden Barrel Cactus*, 2010. Photo. Ashton.

The shapes of the Gentle Prickle furniture are inspired by the Golden barrel cactus as seen in Figure 4.4. The shapes and sizes of the pieces of furniture are different to prevent monotony. In nature the shapes and sizes vary as well. The girls of *Huis Soekie* are of different sizes, therefore the taller girls will use the larger furniture and the shorter girls the smaller furniture. The smaller pieces can be used as cushions when lying on the floor or on the sleeper couches. As mentioned earlier the covers are made with industrial felt, but the spikes are made with 100% merino-wool roving and still remain soft. Small bits of merino-wool roving were also needle-felted into the industrial felt to contribute to the softness. Figure 4.5 is an example of the Gentle Prickle furniture.



Figure 4.5: Erna Lourens, *Gentle Prickle Furniture*, 2010. Felt. Robertson.

Different shades of green were chosen for the cacti furniture to correspond with the real succulents, however a fresher green was used to give a contemporary effect. The felt was tied-dyed in a subtle manner to get a variety of different hues. The tie-dye effect also contributes to the hand-made quality of my products and gives the furniture a playful edge.

Green is a very appropriate colour since it creates relaxing, tranquil and refreshing emotions. Green is also the most restful colour to the eye, since the eye focuses green exactly on the retina and will therefore not strain the viewers' eyes (Mahnke, 1996:63). Larger amounts of green can therefore be used.

Yellow was chosen for the spikes, because it is seen as a happy colour (Mahnke, 1996:62). Since green creates a calm effect, it can become too boring after a while, therefore hints of yellow are included to the colour scheme to bring a bit of

excitement. Yellow is also associated with cheerfulness, bright futures and hope (Mahnke, 1996:63). It should however not be used in large amounts, since it can become over-whelming and annoying (Mahnke, 1996:62).

#### 4.5.2 Product 2: Soft Stone furniture



Figure 4.6: Erna Lourens, *Soft Stone*, 2010. Felt. Robertson.



Figure 4.7: Erna Lourens, *Felted Rose Cacti*, 2010. Felt. Robertson.



The shapes of the stone furniture were inspired by large stones from the Palmiet River. Figure 4.8 is an example. The shapes were changed quite a bit to create comfortable pieces of furniture. Since the girls prefer to be in close proximity to each other (Loftus, 2010), the furniture can be moved together to cater for this need of physical contact.

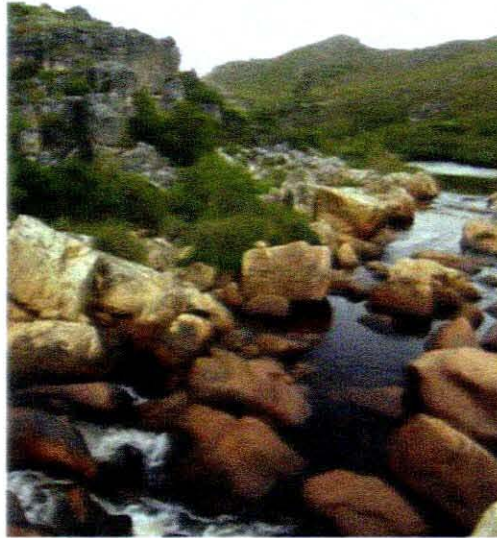


Figure 4.8: Miriam Mannak, *Large Stones*, 2010. Photo. Klienmond.

To have a common theme to run through the soft furniture, I added felted rose cacti on the stone furniture. See Figure 4.7. It gives the effect of cacti growing around the stones and creates a gracious texture to stimulate the tactile sense. The rose cacti are made from natural felt to add to the softness of the furniture. 100% merino-wool roving is needle-felted into the industrial felt to add to the softness and to mimic the patterns on the stones.

The colour grey was selected for the stone furniture to match with stones in nature. Grey is a very neutral and conservative colour (Mahnke, 1996: 66). Since my other products are more colourful, grey will tone down the colour scheme to prevent confusion. Since the pieces of the stone furniture are quite large, too much grey will cause dullness (Mahnke, 1996:67). The leaves of the rose cacti around the furniture can therefore be quite colourful to create an accent against

the grey colour. Purple, violet and green were chosen to match with the hints of purple and green in the rose cacti. Figure 4.9 is an example of rose cacti.



Figure 4.9: Erna Lourens, *Rose Cacti*, 2010. Photo. Ashton.

Purple and violet are associated with exclusiveness (Mahnke, 1996:64). This is a good association, since my furniture design is one of a kind. Purple and violet can also portray a feeling of sweetness and intimacy (Mahnke, 1996:65). This is the function of the stone furniture: to create a bond and closeness among those using it. Felted green rose cacti were also added to link up with the green colour scheme of the Gentle Prickle furniture.



#### 4.6 Product 3: Pebble Blankets



Figure 4.10: Erna Lourens, *Pebble Blankets*, 2010. Merino Wool. Robertson.

The pebble blankets are handknitted using 100% merino wool and have the same softness as handmade felt. The fact that these blankets are handmade conveys the love and hard work that went into the making of them. The residents of *Huis Soekie* would probably appreciate this very much. I think that there is nobody on earth who would not enjoy cuddling up under a soft luxurious blanket while relaxing in a big comfortable chair. Having a blanket wrapped around one also creates a sense of security. The main purpose of these blankets is to provide comfort, warmth and security while sitting on the stone furniture. They can also be used on the carpet or sleeper couches.

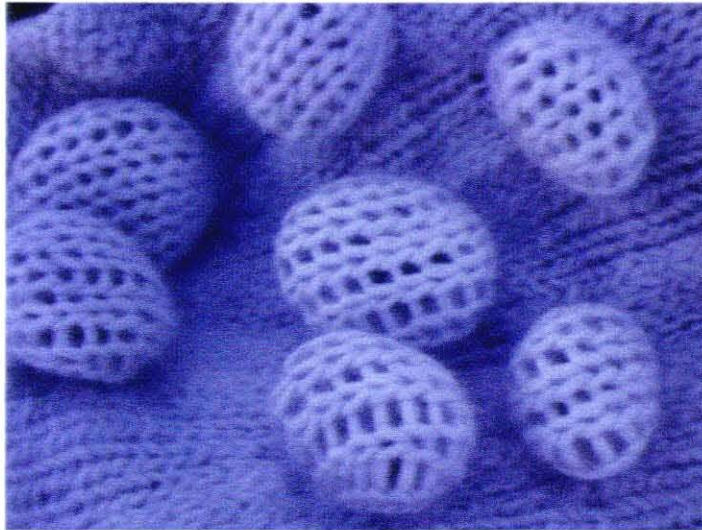


Figure 4.11: Erna Lourens, *Pebble Effect*, 2010. Merino Wool. Robertson.

The pebble effect was used to impart to the nature narrative of my practical component. The hollow pebble effect also creates an interesting three-dimensional texture for the girls to touch and with which to interact, thus stimulating their tactile sense. Figure 4.11 is a close-up of the pebble effect.

Since the blankets are originally designed for the stone furniture, a grey undertone and hints of purple and violet were chosen for the colour scheme. According to Leatrice Eiseman (Executive Director of the Pantone Colour Institute) purple is a passionate colour and can raise the temperature of a room (Eiseman, 2010). It is therefore an appropriate colour for a blanket. Since the blankets are quite large, the grey undertone will prevent the purple from becoming neurotic and unsettling to the eye (Mahnke, 1996: 64). The blankets are also very subtly tie-dyed to unite the whole range of the soft furniture and add some playfulness to the range.



#### 4.7 Product 4: Water Carpet



Figure 4.12: Erna Lourens, *Existing Carpet*, 2010. Photo. Worcester.

Since comfort is the main experience I want to create for the living room, a very soft, luxurious and textured carpet will be a very appropriate product. The existing carpet of the hostel is also not appropriate for teenagers. It is dull, dated and uncomfortable to lie or sit on as seen in Figure 4.12.

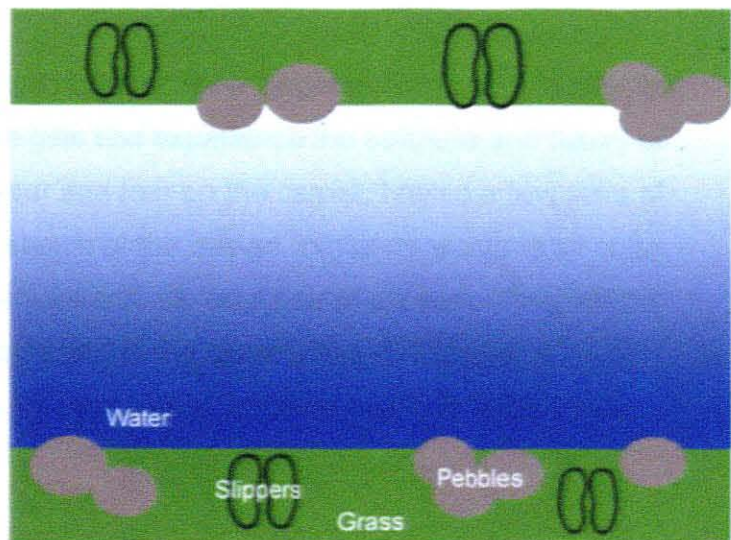


Figure 4.13: Erna Lourens, *Mock-up & Layout of Carpet*, 2010. Photo & Photoshop. Robertson.

My carpet will be the centrepiece of the room. It depicts an image of a flowing river in a stylized and contemporary manner. It also links up with the soft furniture and pebble blankets. The carpet is made from 100% merino-wool roving felted into cords. The blue and turquoise cords are woven in a manner to represent flowing water. Blue was chosen to correspond with water and creates a sense of calm and security (Mahnke, 1996:63). Turquoise was added to the colour scheme, because most people respond positively to it, according to Leatrice (a colour expert). It is a colour of deep compassion, healing and restfulness. Turquoise can also create a sense of spaciousness and is simultaneously comforting and compelling (Eiseman, 2010).

The hues of the cords also vary to correspond with the uneven colours created with tie-dying of the fabric covering the other pieces of furniture. The spirals represent the currents of the river and add a bit of stylization to the carpet. The green grass and grey pebbles are included to make the carpet design more realistic and to add other colours to the dominant blue. Too much blue usually creates a sense of depression (Mahnke, 1996: 64). Since the carpet is still being made, I am unable to include a photograph of the final product. Figure 4.13 contains a mock-up of the carpet and a technical sketch of the design.

Merino felt is not really an appropriate fabric for a carpet in terms of durability, but I still decided to use it so that the girls can experience the softness and luxury of handmade felt. To reduce the wear and tear on the carpet, I felted a few pairs of slippers. Figure 4.14 is a rough sketch of the design. Whoever wants to sit or lie on the carpet can remove their shoes and slip on a pair of slippers. They will be left on the carpet (the slippers form part of the carpet design) to prevent them from getting lost and will always be available to whoever wants to relax on the carpet.



Figure 4.14: Erna Lourens, *Rough Sketch of Grass Slippers*, 2010. Felt. Robertson.

#### 4.8 Product 5: Creeper Trellis

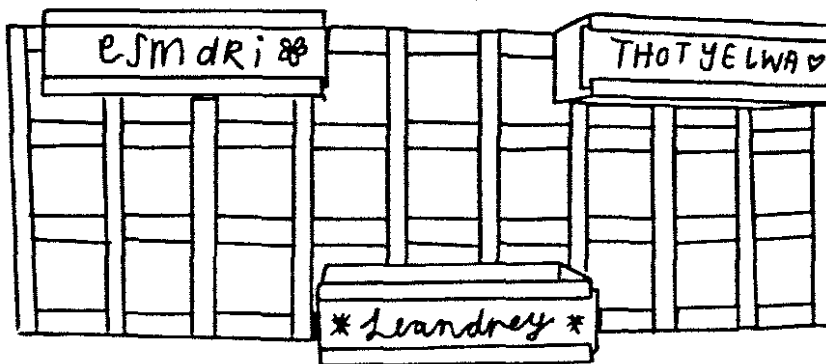


Figure 4.15: Erna Lourens, *Technical Sketch of Creeper Trellis*, 2010. Coral Draw. Robertson.

The interactive wall-covering was designed for various reasons. The first reason is to stimulate the sense of smell of the residents and to bring real plant-life in a fun and creative manner into their living area. Herbs were chosen because of their pleasant smell. Every now and then the existing herbs can be replaced with others to bring new aromas into the living area. The "old" herbs can either be given to the hostel's kitchen staff to add flavour to meals or go to the De La Bat nursery which is also on campus.

Each girl has her own box with herbs to care for while staying at the hostel. They do not have to share (as they have to do with all the other products) and this makes them feel special and unique. At the same time having their own plants to care for teaches them responsibility. Figure 4.16 is a close-up of the boxes.

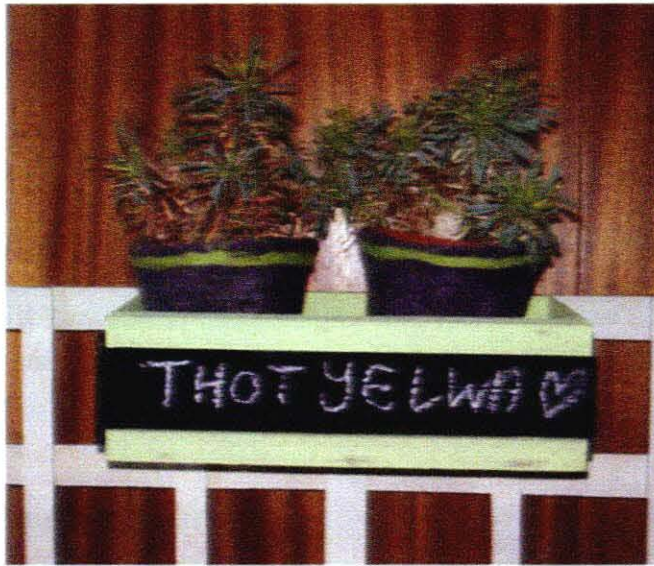


Figure 4.16: Erna Lourens, *Creepers Box*, 2010. Wood. Robertson.

Each girl can choose the colour in which she wants her box to be painted as long as the colours blend in with the overall colour scheme. This will make the box more personal and it will make them feel that they also contribute to the renovation of the living area. The front sliding panel of the box is painted with blackboard paint so that each girl can write and rewrite their names on it as many times as they like. When it is time for someone to leave the hostel, her name can be wiped off and the box given to the new teenager moving in.

The felted creepers (as seen in Figure 4.17) are designed to make the trellis look more realistic and to complement all the other felted products. Each herb will also have a hand-felted cover for its container to contribute to the softness and warmth. The girls can also choose the colours of their herb covers. The colours of the creeper flowers also blend in with the colours of the other products.





Figure 4.17: Erna Lourens, *Felted Creeper*, 2010. Felt. Robertson.

#### 4.9 Product 6: Sleeper Couches

Since there are 17 girls living at *Huis Soekie*, more furniture was required. Two sleeper couches were chosen, since four people can sit comfortably on one sleeper couch. It can also be used for a bed if additional sleeping space is ever needed.

I printed my own design on bull denim and refurbished these two couches. Bull denim was chosen, because it is a very durable fabric for furniture according to Maryna Bezuidenhout (Fashion lecturer and designer). I drew inspiration from cacti for my textile design to have a common theme running through all the pieces of furniture. The designs are quite stylized to give it a contemporary edge suitable for teenagers. The same colour scheme of green, purple and grey was chosen for the textile design to unify all the products designed for the room.

#### 4.10 Product 7: Scatter Cushions

I designed a range of scatter cushions for the sleeper couches, because no felt was used for these pieces of furniture. Since felt is visible and a common denominator in all my other designs, handmade felt was chosen for the scatter cushions. The girls sitting on the sleeper couches will therefore also be able to feel and interact with felt while relaxing on the sleeper couches.

Designs and textures of my other products were repeated in most of the scatter cushions to unify my whole interior product range. Another reason why I chose to repeat the textures is that the scatter cushions can also be used for the soft furniture or carpet.

##### 4.10.1 Ruffles Cushions



Figure 4.19: Erna Lourens, *Ruffles Coleus*, 2010. Photo. Robertson.

As the name suggest these cushions were inspired by the plant Ruffles Coleus. Figure 4.19 is an example. The shapes of the leaves are very interesting and aesthetic. Each shape of each natural leave varies as well, so I used a few different shapes for my cushions. By combining many of these different shapes, an interesting textured effect is created to stimulate the tactile sense. The bright



colours of the plant also link up with my colour scheme. I tie-dyed the felt of the leaves to link up with my other products and needle-felted accent colours onto the leaves to correspond with the real plant.

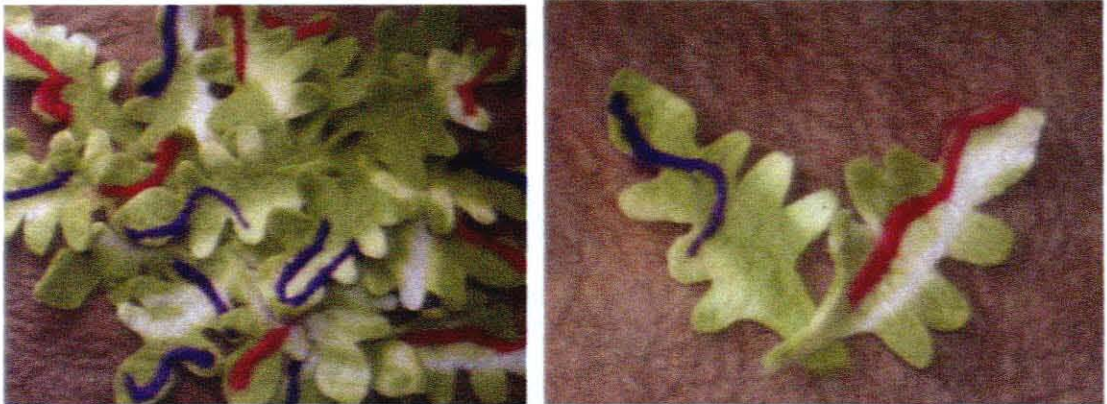


Figure 4.20: Erna Lourens, *Ruffles Cushion*, 2010. Felt. Robertson.

#### 4.10.2 Pebble Cushions



Figure 4.21: Erna Lourens, *Pebble Cushion*, 2010. Merino Wool. Robertson.

The hand knitted pebble cushions were designed to complement the handknitted effect of the pebble blankets. The colour scheme of purple white and green was chosen to compliment the textile print of the sleeper couches. The cushions are provided with zippers so that the cushion can be opened to push the wool pebbles back into shape.

### 4.10.3 Creeper Cushions

The Creeper Cushions were designed to link up with the Creeper Trellis. Green was chosen for the creeper to complement the textile design of the sleeper couch and grey was chosen for the trellis to correspond with the soft stone furniture. The flowers were inspired by the creeper *Bougainvillea Spectabilis*. Figure 4.22 is an example.



Figure 4.22: Erna Lourens, *Bougainvillea*, 2010. Photo. Robertson.

#### 4.11 Summary

De La Bat School for the Deaf and its staff compensate as family for the residents of *Huis Soekie*. Since the girls spend most of their developmental stage at this institution, it should be as memorable and joyful as possible. An interior setting with elements to stimulate the different senses is an environment that leads to positive experiences and memories for the people who interact with the room. To contribute to a more relaxing environment in the living room, secondary research was done in Chapter Three on how nature can have a positive effect on human emotions and considered in the development of an appropriate product. According to Vineet, being close to nature lowers stress levels and helps with reducing depressing feelings (Vineet, 2007).

Although the other deaf children and staff members of De La Bat are their family, the girls are still seeking warmth and comfort from soft products to compensate for the lack of love while being away from their parents and homes.

These soft products have a lot of different textures, since deaf girls are very tactile and like to touch objects. The products are spacious and comfortable, for them to be able to have enough space to act out and express themselves.

The right choice of colours for these products is very important, since colour is one of the strongest stimuli humans receive from the outside world and so influences our emotions more than we think it does. The correct combination of colour will therefore stimulate the residents' visual sense in a positive manner.

A summary of this research follows, together with an evaluation of this endeavour in the conclusion of this dissertation.

## **CHAPTER 5**

# **Business Outline**

### **NATURE AS NARRATIVE**

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## **1. Executive Summary**

*Nature as Narrative* is a non-profit organization that has the opportunity to make an impact on the lives of underprivileged children and teenagers. This organization can also create job opportunities for unemployed people and teach them the necessary skills to create their own extra income through craftsmanship.

It is an organization that provides a service to institutionalized children and teenagers with special needs and disabilities. Its main focus is to source institutions that are in desperate need of interior renovations, to gather information regarding the special needs of the residents and to design an appropriate interior environment that caters specifically for these handicapped children. The organization relies on sponsors and donations for funding.

The organization will start by renovating the hostels of The De La Bat School for the Deaf. There are six hostels in desperate need of renovation. After completion of the first project and the firm establishment of the organization, the main aim will be to tackle all the institutions (with handicapped children in the Western Cape region) in dire need of renovation. As the organization grows, a major milestone would be to spread the message throughout South Africa and change children's lives.

## **2. DESCRIPTION OF BUSINESS**

*Nature as narrative* is a non-profit organization that provides a service to institutionalized children and teenagers with special needs and disabilities. Its main focus is to source institutions that are in desperate need of interior renovations, to gather information regarding the special needs of the residents and to design an appropriate interior environment that caters specifically for these handicapped children. The organization relies on sponsors and donations for funding.

The main purpose of this organization is to uplift the emotional environment of these institutions through interior design and thus create a better place for these children and teenagers in which to grow up. A better living environment enhances the chance of these children becoming self-sufficient adults.

*Nature as Narrative* will be run by Erna Lourens (Surface designer), Tina Gerber (Architect and Interior designer) and Johan du Toit (Accountant). These three people will accept the fiduciary responsibility of the organization (CIPRO, 2008). Erna Lourens will serve as managing director and will be working very closely with the qualified staff of the institutions involved in order to create the best possible interior environment for the children and teenagers. Johan du Toit (Financial manager) will look after the finances of the company and Tina Gerber (Marketing manager) will be responsible for funding and marketing and will help with design decisions.

Erna Lourens has done her degree on designing for institutionalized deaf girls. She spent a year working on this project and gained a lot of experience during her research. At this time she realized a need for such an organization as *Nature as Narrative*. Tina Gerber was part of a design team who redesigned a house for a paraplegic. As a qualified architect she is able to design for any special needs

clients may have (Gerber, 2010). Johan du Toit is very successful in being in charge of Robertson Shell's finances (du Toit, 2010).

Before considering starting this organization, information and advice was gathered by enquiring from other non-profit organizations. Jane Phillips (the general manager of Hospice in Robertson) was very helpful and gave useful guidelines to follow. According to Jane the first step was to do a needs assessment and find people who are interested in helping (Phillips, 2010).

*This organization will be successful, since Nature as Narrative has done the necessary needs assessment in the Western Cape and came to the conclusion that there are many institutions in need of renovations. From the research gathered there is ample proof to substantiate the above-mentioned conclusion. Sourcing employees was conducted through contacting the local advertising agency. According to Martha Lourens (advertisement representative of Die Soekertjie) there are at least 10 people a week looking for jobs. These people are willing to start at low wages as they are desperate for money (Lourens, 2010).*

### **3. THE MARKET**

As mention in the executive summary this organization will reach out to institutions accommodating children with disabilities. *Nature as Narrative's* first project is to reach out to the De La Bat School for the Deaf. Erna Lourens already renovated one of their hostels. The remaining six hostels will be next in line. Each hostel will be tackled separately, starting with *Huis Gawie de la Bat*. *This hostel accommodates 13 boys and 7 girls, all between the ages of 3 and 8 years (Cook, 2010). There are currently 7 staff members caring for them and they will assist Nature as Narrative.*

A list of the other six hostels with their complement of deaf children and staff members follows:



### **1. Huis Jonkheer**

- 16 boys
- Ages 14-19yrs
- 2 staff members

### **2. Huis Klaradyn**

- 15 girls
- Ages 15-16 yrs
- 2 staff members

### **3. Huis Nou-of-Nooit**

- 16 boys
- Ages 13-16 yrs
- 4 staff members

### **4. Huis Saamstaan**

- 11 boys
- 7 girls
- Ages 11-18 yrs
- 3 staff members

### **5. Huis Trompie**

- 19 boys
- Ages 7-14yrs
- 3 staff members

### **6. Huis Poplap**

- 11 girls
- Ages 7-11 yrs
- 3 staff members

(Cook, 2010).

An analysis will be done to determine in which sequence the other hostels are to be renovated, starting with the ones in most need of restoration.

#### **4. MARKETING (4 x P's)**

##### **1. Products**

This organization will design appropriate interior products for children and teenagers with disabilities. A product common denominator is to use nature as inspiration. (This is where the name of the organization originated.) The reason being that nature can have a positive effect on human emotions. According to Sing Vineet (an Indian aspirant writer on Health) being close to nature lowers stress levels and helps with reducing depressing feelings (Vineet, 2007). The correct use of colour for the products will be chosen very carefully, since colour also has a huge impact on people's emotions (Mahnke, 1996: 18). The whole idea behind these products is therefore to enhance the institutions' living environment emotionally.

The products designed for the one deaf hostel all have elements of multi-sensory design incorporated. When one or more of the five human senses are not fully developed, the other senses become better developed (McCallaghan, 2010). Therefore designing for the deaf girls' other senses results in their stronger experience with the products.

An example is one of the soft pieces of furniture designed for the deaf girls. These girls (institutionalized children) seek warmth and comfort from soft products to compensate for the lack of love as they are away from their parents and homes. There is nothing better than hand-made felt to portray warmth and comfort.

The piece of furniture was made from 100% merino felt and consists of textured adornments to stimulate their tactile sense. When someone sits on the furniture wonderful aromas are released from the potpourri pouches placed inside to stimulate their sense of smell. By giving the institutionalized children these products, they will experience the wonderful feeling of receiving brand-new things instead of hand-me-downs. Added to that, they will experience being

appreciated, because they will know those items were specially designed and made for them.

## 2. Place / Distribution

34 Adderley Street, Robertson, 6705

This building used to be a clothing store and is now available to rent. It consists of one medium-sized room to be used for an office and a very large room for a work space. A small kitchen and bathroom are also included. No immediate renovations will be necessary, since the owner of the clothing store used to do her own sewing. Appropriate electrical wiring for the sewing machines is already in place. The extent of the building is 40 square metres and the owner is Alida Bruwer (Van Tonder, 2010).

Other businesses in the area consist of a cafe, a fisheries take-a-way, an estate agency and a bookshop. A Guest House with a Restaurant is also nearby.

Adderley Street was chosen, since the rent is the cheapest per square metres. It costs R35 per square metre per month (Van Tonder, 2010). *Nature as Narrative's* office does not have to be situated in an upmarket area, because in this line of business clients do not frequent the office. The area is still safe for the people working there (Van Tonder, 2010).

The first project of the business is situated in Worcester, which is 50km from Robertson. At the start several visits to the institution will be necessary to gather enough information on the residents. Fuel costs will therefore amount to extra expenditure.

Since the institutions to be renovated are spread all over the Western Cape, Robertson was chosen as starting-point, since the rent is cheaper per square meter than in other parts of the Western Cape (Van Tonder, 2010). If the organization grows, the business can easily move to a more central and known

location, because no special requirements are needed for any building where *Nature as Narrative* is to be located.

### **3. Price**

These products will be donated to the relevant institutions (free of charge).

However if people are interested in buying some of the products, the following prices will be applicable. The profits will be ploughed back into the business.

#### **Gentle Prickle Furniture**

<b>ITEM</b>	<b>QTY</b>	<b>P/P UNIT</b>	<b>TOTAL</b>
INDUSTRIAL FELT	1.5	R 45.00	R 67.5
MERINO FELT	0.1	R 170.00	R 17.00
TEXTILE DYING	2	R 20.00	R 40.00
ENFORCER	0.125	R 45.00	R 5.70
POLYSTERENE STUFFING	0.75	R 45.00	R 33.75
LABOUR	5	R 20.00	R 100.00
PROFIT	100%	100%	R 262.95
<b>TOTAL</b>			<b>R 525.90</b>

#### **Soft Stone Furniture**

<b>ITEM</b>	<b>QTY</b>	<b>P/P UNIT</b>	<b>TOTAL</b>
INDUSTRIAL FELT	1.5	R 45.00	R 67.50
MERINO FELT	0.6	R 170.00	R 102.00
TEXTILE DYING	3	R 20.00	R 60.00
ENFORCER	0.25	R 45.00	R 11.25
POLYSTERENE STUFFING	0.75	R 45.00	R 33.75
LABOUR	7.5	R 20.00	R 150.00
PROFIT	100%	100%	R 424.50
<b>TOTAL</b>			<b>R 849.00</b>

### Pebble Blankets

<u>ITEM</u>	<u>QTY</u>	<u>P/P UNIT</u>	<u>TOTAL</u>
MERINO WOOL	15	R 20.00	R 300.00
MERINO FELT	0.02	R 170.00	R 3.40
TEXTILE DYING	2	R 20.00	R 40.00
LABOUR	5	R 20.00	R 100.00
PROFIT	100%	100%	R 443.40
<b>TOTAL</b>			<b>R 886.80</b>

### Pebble Cushions

<u>ITEM</u>	<u>QTY</u>	<u>P/P UNIT</u>	<u>TOTAL</u>
MERINO WOOL	5	R 20.00	R 100.00
MERINO FELT	0.21	R 170.00	R 35.70
TEXTILE DYING	1	R 20.00	R 20.00
STUFFING	1	R 20.00	R 20.00
ZIP	1	R 3.30	R 3.30
LABOUR	3	R 20.00	R 60.00
PROFIT	100%	100%	R 239.00
<b>TOTAL</b>			<b>R 478.00</b>

### Ruffles cushion

<u>ITEM</u>	<u>QTY</u>	<u>P/P UNIT</u>	<u>TOTAL</u>
MERINO FELT	0.7	R 170.00	R 119.00
TEXTILE DYING	1	R 20.00	R 20.00
STUFFING	1	R 20.00	R 20.00
ZIP	1	R 3.30	R 3.30
LABOUR	2.5	R 20.00	R 50.00
PROFIT	100%	100%	R 212.30
<b>TOTAL</b>			<b>R 424.60</b>

### Creepers Cushion

<u>ITEM</u>	<u>QTY</u>	<u>P/P UNIT</u>	<u>TOTAL</u>
MERINO FELT	0.27	R 170.00	R 45.90
STUFFING	1	R 20.00	R 20.00
ZIP	1	R 3.30	R 3.30
LABOUR	1.5	R 20.00	R 30.00
PROFIT	100%	100%	R 99.20
<b>TOTAL</b>			<b>R 313.20</b>

### Water Carpet

<u>ITEM</u>	<u>QTY</u>	<u>P/P UNIT</u>	<u>TOTAL</u>
MERINO FELT	10	R 170.00	R 1,700.00
INDUSTRIAL FELT	1	R 20.00	R 20.00
ENFORCER	2	R 45.00	R 90.00
EMBROIDERY THREAD	5	R 5.00	R 25.00
LABOUR	10	R 20.00	R 200.00
PROFIT	100%	100%	R 2,035.00
<b>TOTAL</b>			<b>R 4 070.00</b>

### Creeper Trellis

<u>ITEM</u>	<u>QTY</u>	<u>P/P UNIT</u>	<u>TOTAL</u>
WOODEN BOXES (PAINTED)	17	R 80.00	R 1,360.00
WOODEN TRELLIS	1	R 1 740.00	R 1 730.00
PROFIT		30%	R 927.00
<b>TOTAL</b>			<b>R 4 017.00</b>

## 4. Promotion

This organization relies solely on funding and donations from other businesses and the general public, therefore good advertising is essential for the business.

Advertising will be done by approaching advertising companies, requesting free advertisements. Opportunities such as "mind your own business" from Five FM is an example. The local newspapers in Robertson and Worcester are willing to place prominent free advertisements (Viljoen & De Wet, 2010). Therefore every local newspaper in the area where the relevant institutions are located will be approached for free advertising.

*Die Burger*, a nation-wide newspaper, will give 30% discount on any advertisements placed by non-profit organizations (Schultz, 2010).

Free internet sites, such as Facebook, Twitter and Gumtree will also be used for advertising.

Personal e-mails and letters will be sent to various local businesses. If possible, individual appointments will be made with the CEOs of companies. This business plan will be used to persuade investors and companies to get involved.

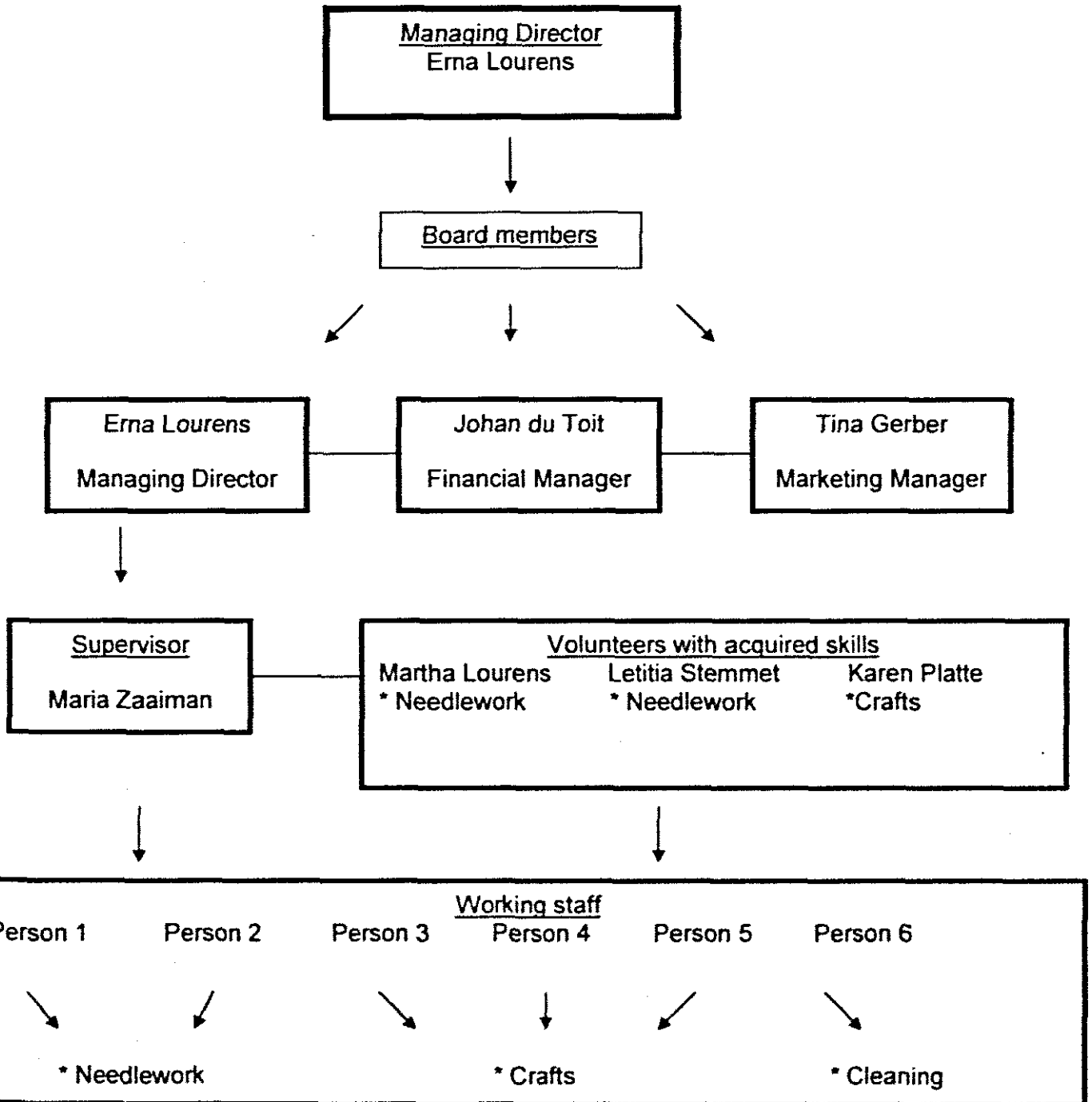
Larger non-profit organizations such as Khulisa Services will be approached to help with raising funds. Lesley-Ann van Selm, the Managing Director of the company, thinks *Nature as Narrative* is a great initiative and she is interested in applying for a joint funding application once she gets to know the people involved (Van Selm, 2010).

As little as possible should be spent on advertising, so that the maximum amount of money can go towards the renovation of the institutions.

## **5. COMPETITION**

Since *Nature as Narrative* is a non-profit organization, there is no competition.

**6. MANAGEMENT**





## **7. STAFF**

During the first project five unemployed women will be trained by volunteers with the necessary skills and experience. Two people will be trained to sew and the other three persons will receive training in several other crafts. Felting techniques will be the main craft taught during the first project. The reason for this is because Erna Lourens already knows more or less which fabrics and techniques are required. This information and techniques were acquired while doing research for her degree.

A local advertising agency has the contact details of many unemployed people who are job-hunting in Robertson. These people will initially be paid R100 a day (minimum wage). The management will provide the start-up capital for this organization. As the skills of these workers improve their wages will increase accordingly. This will also depend on the amount raised by sponsors as well as donations received. Should enough money be raised, more unemployed people will be given the opportunity to be trained.

## 8. SWOT ANALYSIS

### Inside the business:

Strengths: *Nature as Narrative* has at its disposal people with the necessary qualifications and skills to make the business successful. The people involved are willing to work for very small wages until the organization is properly established. The management already has a number of contacts in the business world to enable them to buy the required raw materials at discounted prices.

Weaknesses: The organization relies solely on funding from sponsors and therefore no fixed income can be determined. *Nature as Narrative* also depends on other companies to be able to exist.

### Outside the business:

Opportunities: This organization has the opportunity to make an impact on the lives of underprivileged children and teenagers. *Nature as Narrative* can also create job opportunities for unemployed people and teach them the necessary skills to create their own extra income through craftsmanship.

Threats: Not enough companies to sponsor sufficient funds to make the organization successful.

## 9. FINANCIAL INFORMATION

### 9.1 Set-up costs:

<u>Item</u>	<u>Quantity</u>	<u>Price/unit</u>	<u>Total</u>
Sewing machines	5	R3 000.00	R15 000.00
Sewing equipment	*	*	R 2 000.00
Chairs	10	R500.00	R5 000.00
Large work benches	3	R1 500.00	R4 500.00
Computers	1	R 4 000.00	R 4 000.00
Tables	3	R 500.00	R 1 500.00
Washing machine	1	R2 500.00	R2 500.00
Signage	1	R 2 195.00	R 2 195.00
Building deposit		R 3 500.00	R 3 500.00
<b><u>Total</u></b>			<b><u>R 40 195.00</u></b>

### 9.2 Working Capital:

<u>Expenses</u>	<u>Monthly costs</u>
Wages	TBA
Salaries	R 4,000.00
Communication	R 800.00
Rent	R 1,750.00
Water&Electricity	R 700.00
Advertising	R 1,000.00
<b><u>Total</u></b>	<b><u>R 8,250.00</u></b>

Wages: Labourers will work only on contract basis.

Salaries: Full-time supervisor

### **9.1 Extra information**

It is not necessary for this organization to register at SARS and therefore VAT is not applicable. Since *Nature as Narrative* is a non-profit organization the organization does not have to pay income tax (Hayward Lourens, 2010).

The three board members will each invest R10 000.00 from personal accounts.

The money will go towards the set-up costs of the organization.

Quotes per item will be requested from 3 different suppliers and suppliers will be chosen based on price, guarantees and after-sales service offered.

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## **CONCLUSION**

The practical component of this dissertation will be donated to *Huis Soekie*, a hostel that accommodates 17 deaf girls between the ages of 11 and 15 years, in the rural town of Worcester in the Western Cape. This hostel's interior environment is neglected due to inadequate funding from government, resulting in a negative living environment.

Since only a few months were allowed to complete this dissertation, it was decided to focus on the hostel's living room, where the residents spend most of their time. Like all modern teenagers, they do not want to play outside but prefer to stay indoors and entertain themselves in the living room (Dorien, 2010). I wanted to create an emotional environment for this room that is warm, comfortable and relaxing. According to Frank Vodvarka and Joy Manice Malnar, sensory experiences are a vital element that shapes humans' response to spaces (Vodvarka, 2004: 24) and therefore multi-sensory design was used as inspiration to change the emotional environment of the living room.

The research statement was the enhancement of deaf teenage girls' institutional environment through multi-sensory design and the research was executed by dividing it into three sub-questions.

The first question was: What are the effects of an institutionalized environment on the well-being of the residents? The question was answered by investigating the effects the living environment at an institution has on its occupants.

Child psychiatrists, Dr Micheal Rutter and Dr David Quinton believe that institutionalization has a more negative effect on the social development than on the intellectual development when the child reaches adulthood. The authors concluded that not all the negative effects of institutionalization can be prevented, but with the necessary funding to purchase, design and provide products and

materials in a context of social interaction some of the negative effects of the social development of institutionalized children can be avoided.

It was therefore decided to raise funds in order to renovate the institutionalized girls' living room where social interaction amongst these girls mostly occurs. Social interaction amongst the Deaf is also very important, because they can be a source of comfort and guidance one to another (Nieman, 2004: 74). Deaf people also feel a close bond to each other, because they face the same problems and share a similar way of communicating (Nieman et al., 2004: 140).

Since the deaf girls' visual, haptic and smelling senses are better developed (McCallaghan, 2010), information on multi-sensory design was gathered from the work of Frank Vodvarka and Joy Manice Malnar to determine how multi-sensory design should be applied for the practical component of this dissertation.

Research on deafness and deaf culture were also executed to answer the next question: *What are the benefits of a multi-sensory design approach when applied to deaf teenage girls?*

Sight is most important to deaf people, since they listen and learn with their eyes (Nieman, 2004: 21). They often use touch to communicate with each other or to gather information. Sometimes movements and looks can take the place of a word or sign (Nieman, 2004: 16). The Deaf often rely on their sense of smell to remind them of a romantic or pleasant or memorable experience. Therefore deaf people rely on their senses to find meaning in the world (Deafsa, 2009) and a *multi-sensory design approach will be beneficial.*

Secondary research was also done on how colour can influence peoples' emotions. Colour is one of the strongest stimuli humans receive from the outside world and so influences our emotions more than we think it does (Mahnke, 1996: 55). By using the right choice of colours I can add to an optimistic emotional



experience with the practical component and stimulate the girls' visual sense in a positive manner.

To contribute to a more relaxing environment in the living room, secondary research was done on how nature can positively effect humans' emotions. Singh Vineet, an Indian aspirant writer on Health, believes that being close to nature lowers personal stress levels and helps with reducing depressing feelings (Vineet, 2007). Since nature helps towards a calming affect, it was used as inspiration for all the surface adornments and shapes of the practical component. Real plant-life was also incorporated into some of the products to strengthen the interaction with nature.

The third and final question asked was: To which type of design language do girls between the ages of 11-15 relate to and how do I develop one that will be significant and aesthetically sustainable?

To answer the above-mentioned question primary research was gathered by visiting girls at Robertson Primary School, between the ages of 11 and 15 years, to find which designs and colours they preferred. Most of the teenage girls like a bold and stylized design language with bright and cheerful colours.

Primary research was also gathered through observing the deaf girls of *Huis Soekie* in their social environment, casual conversations with them and three informal interviews with their house mother, with the De La Bat principle and with the school's child psychiatrist.

A common denominator between the deaf girls was an intense need for soft and comfortable things, such as *blankets and cushions*. Then I realised where and how I could make their social environment better. The girls seek warmth and comfort from soft products to compensate for the lack of love while being away from their parents and homes. These soft products should have a lot of different

textures, since deaf girls are very tactile. The products should also be spacious and comfortable, for them to be able to act out and express themselves.

The practical component was done, by designing a variety of interior products specifically for these deaf girls. Multi-sensory design was used as inspiration, because this type of design should be beneficial to the Deaf, because their other four senses are better developed than those of able people (McCallaghan, 2010). This should also enhance their experience of the products.

At the end of this dissertation, all the existing furniture and other interior decorations will be removed from *Huis Soekie's* living room, it will be repainted and the new multi-sensory products will be arranged in their predetermined locations. According my research the result should be a new uplifting environment for the residents of *Huis Soekie*. Hopefully these alterations will make their stay at the hostel much more enjoyable. By achieving this I have applied design as a change agent to create a better emotional environment for these deaf girls.

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