

# **AIDS AND ARCHITECTURE**

## **THE STUDY OF AN INTERACTION**

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### **ARCHITECTURAL RESPONSES TO THE DEVELOPMENT OF THE HIV / AIDS EPIDEMIC IN KWAZULU-NATAL**

**BY**

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# **DECLARATION**

Submitted in fulfilment of the requirements for the degree  
of Master of Architecture, in the Graduate Programme in  
Humanities, Development and Social Sciences,  
University of KwaZulu-Natal,  
Durban, South Africa.

I declare that this dissertation is my own unaided work. All citations, references and borrowed ideas have been duly acknowledged. It is being submitted for the degree of Master of Architecture in the Faculty of Humanities, Development and Social Science, University of KwaZulu-Natal, Durban, South Africa. None of the present work has been submitted previously for any degree or examination in any other University.

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Student name

28 November 2008

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Date

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The preparation of this thesis has afforded the author the opportunity to reaffirm his faith in mankind, to share in the suffering of some and to strive for the hopes and dreams of others.

The time spent on this research has brought the author into contact with a number of dedicated and caring beings, whose unrelenting drive, goodwill and determination have endeavoured to make the lives of those affected by the HIV/ AIDS epidemic as positive as possible.

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To the people living with HIV/AIDS whom I met - we live in hope.

Cover Photograph: Mosaic wall by people living with AIDS under guidance from Jane du Rand: Sinikitheba, McCord Hospital, Overport, Durban. (Photograph by author)

# FOREWORD

## TITLE

AIDS and Architecture: The Study of an Interaction – Architectural Responses to the Development of the HIV/AIDS Epidemic in KwaZulu-Natal.

## INTRODUCTION

Through my architectural experience in practice working on a number of hospitals and medical facilities in both South Africa and the United Kingdom, I developed an interest in the rising impact that HIV<sup>1</sup>/AIDS<sup>2</sup> was having on facilities caring for the infected and affected. I began documenting this information in 1998 and registered the topic for a Master of Architecture dissertation by research in the same year.

Months of research, interviews<sup>A</sup> and documentation of findings followed and it was through this broadening of personal knowledge specific to the topic and coupled with my architectural qualification that led to my being the co-author of the *AIDS Brief for Professionals: Architects* (1998) Ed. Whiteside. I was later appointed as consultant to McCord Hospital and the Highway Hospice for their ventures into the provision of accommodation for their patients living with AIDS, some of which are recorded in this document. Ongoing experimentation with the modification of existing buildings, the use of alternative structures and materials for the construction of facilities for AIDS clinics and developing proposals for new facilities ensued. Through my position as a Lecturer in the Architecture Programmes at the University of KwaZulu-Natal (formerly Natal University), I introduced AIDS related architectural design projects involving student research into the 3rd Year Studios<sup>B</sup>, so broadening the students' knowledge in preparation for their having to deal with these issues in practice. Some students followed

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<sup>1</sup> HIV - Human Immunodeficiency Virus

<sup>2</sup> AIDS – Acquired Immune Deficiency Syndrome

this topic through into their Design Thesis projects which I supervised in their 5th Year of study. Surveys were carried out at the semester ends to gauge the project's success.<sup>c</sup>

Through the local chapter of the *South African Institute for Architecture* I coordinated two workshops on AIDS and Architecture and presented papers at both. I also presented papers on this topic at the 1999 *Royal Institution of Chartered Surveyors Conference* held at the University of Salford, Manchester, United Kingdom, the *13th World AIDS Conference* held in Durban, South Africa in 2000 and the *2nd University of Natal AIDS Conference* held in the same year.

I too was fortunate to be invited to guest edit the *KwaZulu-Natal Institute for Architecture's Journal* Issue 2/2002 [(Peters, W. (Ed.)) dealing with *AIDS and Architecture*.

Work and time pressures at the University due to a reduction in the staff complement and an added workload and my subsequent appointment in 2005 as the Academic Coordinator for the two Programmes in Architecture, resulted in a hiatus in this research. Having withdrawn from academia in 2008 and resuming full-time architectural practice, has enabled me to continue with this dissertation. Its resumption has created an interesting reflection on early statistical data acknowledging the epidemic's impact and the initial solutions sought to accommodate the infected, through a journey over the past decade looking at a range of creative interventions attempting to shelter the vast numbers of people concerned.

Time has moved on, as has the focus of the dissertation. However the facts remain the same – the Virus remains with us and thousands of people are dealing with the effects of its ravages each and every day. This dissertation documents selected architectural responses to the AIDS problem within the province of KwaZulu-Natal over the period 1998 – 2008.

# ABSTRACT

AIDS has established itself over more than three decades as a major international pandemic<sup>3</sup>. While initial cases of the disease were documented in 1981 in the USA and Europe, cases in Africa became known at around the same time. It is however probable that the disease existed in Africa long before this time (Pratt, 1986:17).

Due to the prominence of the AIDS epidemic and its related opportunistic diseases in South Africa and most acutely in KwaZulu-Natal (Smith, 2002 and South African Department of Health Report 2006), the associated impact of the need for care of those living with and those affected by the virus has been brought to the fore. The accommodation of these persons occurs in a variety of building forms and types, and may vary depending on the stage within the individual's health cycle related to the impact of the virus. With the advent of medication, termed anti-retroviral therapy, designed to retard the development of the virus, life expectancy has been extended, but with no confirmed cure and viral resistances, death is inevitable.

While those living with the virus may continue to live productive lives for some time, the infirm largely seek care within medical facilities. Should access to formal health services be difficult due to remoteness or a lack of transport, such people are often cared for within the homes of surviving family members – often by children - or by their community. With the largest impact on the population being found within the 20 – 29 age bracket in the late 1990's (Smith, 1999: HIV Positive Results, June 1998), shifting to the 25 – 34 age bracket from 2003 onwards (South African Department of Health Report 2006), tertiary education institutions, through their clinics, have increasingly dealt with the management of student and staff health. Other building types affected by the AIDS epidemic<sup>4</sup> include prisons and mortuaries, while care for those remaining behind after the death of family members to AIDS is usually within children's homes or street shelters.

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<sup>3</sup> *Pandemic* - "a pandemic describes epidemics of world-wide proportions, such as influenza in 1918 or HIV/AIDS today" (Barfield, 1997, p.150).

<sup>4</sup> *Epidemic* - "a rate of disease that reaches unexpectedly high levels, affecting a large number of people in a relatively short time. Epidemic is a relative concept: a small absolute number of cases

The impact of AIDS on the built environment professions will permeate its way to all involved. Through selected case studies one will observe the impact of the epidemic on existing facilities and examine current methods employed to accommodate the problem. Architects, through the modification of existing structures or through the design of new facilities, are assisting in the struggle. New methods of dealing with the care of patients are being considered as well as alternative and innovative design approaches. This includes the need for flexibility of building layouts and universal design. Most proposals in the researched context require cost effective and workable solutions.

Hope for the future lies with the management of the virus through medication, enabling the extension of life expectancies. Architects need to adapt to the incumbent problem while medical researchers develop a workable vaccine to confine HIV/ AIDS to the history books with the likes of Bubonic Plague, Smallpox and Typhus. It is through good architectural design and detailing that Architects can assist in the AIDS fight. This can be achieved firstly through research – gaining an understanding of the AIDS Brief – then designing for the specific needs for the infected and affected. These needs will include comfort, accessibility, anthropometrics, ease of maintenance, affordability, ventilation and illumination conducive to good health, and sustainability.

Architects therefore have a major role to play within this epidemic.

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<sup>A</sup> See Appendix A – Questionnaire addressed at interviews with building users. (BINGHAM, K. 1998)

<sup>B</sup> See Appendix B – AIDS Brief – *Cato Manor AIDS Centre*. (BINGHAM, K. 1998)

<sup>C</sup> See Appendix C – AIDS & Architectural Education – Survey – November 2000. (BINGHAM, K. 2000)

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of a disease is considered an epidemic if the disease incidence is usually very low” (Barfield, 1997, p.150).

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Drawing 0.1.A - Map of KwaZulu-Natal Province

(Source - [http://chemweb.unp.ac.za/chemistry/Travel/KZN\\_map.htm](http://chemweb.unp.ac.za/chemistry/Travel/KZN_map.htm))

# RESEARCH PROPOSAL

## Hypothesis

This dissertation aims to prove that the HIV/AIDS epidemic will have a major impact on numerous building types located within the area of study. This impact will be realised mainly in 2 ways: firstly there will be those buildings that are impacted upon through an increase in user numbers, and secondly, there will be those that are impacted upon through a reduction in user numbers. Both will require architectural intervention. To accommodate an increase in user numbers, more facilities will need to be created e.g. health, research and care facilities, while to facilitate the ongoing operation of facilities where numbers are reduced, modifications to existing prototypical structures will need to occur e.g. there will be fewer teachers so therefore there will be the need to merge classes in school classroom blocks.

The above will be the initial responses. New medical centres will quickly outgrow their envisaged capacities and thereafter, due to the economic and social constraints of the context, adaptation of existing structures will be needed. These too will cater for the fortunate few while others will be cared for by their communities within their homes. However, as with other epidemics that have impacted upon populations and continents over mankind's recorded past, most see general infection rates in the order of a third of the population (Smith, 2002) – with health care management and through good architectural design principles and the creation of facilities adapted to the care of the infected will see this and other future epidemics through to their final control or eradication.

## Background and Research Context

It has been reported that the spread of HIV/AIDS has had a major impact on the economies of the world, in particular those of developing countries. This impact has

been realised on a broad base, ranging from individual households, to the macro-economy of a nation. While steps are being taken to halt the spread of the virus and scientists are engaged in the development of vaccines, the true impact of the epidemic is only now being understood. The relatively lengthy incubation period associated with the virus, and the attributing of the cause of death to associated illnesses, often results in imprecise statistics being made available.

This document aims to show the consequences that the epidemic will have on the provision of building types for the communities of KwaZulu-Natal and highlights the need for a reassessment of both government and provincial policies on building procurement and delivery. Consequently, an awareness and understanding of the implications that this epidemic has on the built environment is of prime importance to architects and associated consultants. It is the intention that this research will offer further clarity and advice which in some way will assist with guiding those tasked with the meeting of the needs of accommodating the increasing population of those affected by the epidemic, until such time as a cure is found.

## **Key Aims and Objectives**

The aims and objectives of this dissertation are:

- to inform all of the dire impact that the HIV/AIDS epidemic has had upon the people of the province of KwaZulu-Natal and the buildings that they occupy;
- to affirm the statistical impact that HIV/AIDS is having in upon the populations of the world with particular reference to South Africa and the KwaZulu-Natal province;
- to consider the implications of the epidemic for the built environment professions, in particular architecture, and to select a range of building types that may be used as appropriate examples to illustrate the impact;
- to document case studies of various examples of the selected building types to record the effects that HIV/ AIDS has had;

- to review the development of architectural responses to the epidemic in the province;
- to explore new departures in AIDS care and architectural responses to the epidemic;
- to equip the reader with a greater insight into the problem and offer direction to possible design solutions to their own AIDS related projects via studying the examples and case studies presented in this document;
- to draw parallels between existing building types caring for the infirm and immobile, and buildings suitable for the care of people living with HIV/AIDS;
- to draw conclusions and establish hope for the future.

## **Theoretical Framework**

This research will take the form of an empirical study using both primary and text data. The framework sets out to establish the statistical impact that AIDS has on the study community and to then document the impact on health facilities treating the infected. Thereafter a study of selected new facilities set up to deal with the AIDS problem will show the attempt by the community to deal with the increasing reality of numbers of infected persons. The hypothesis holds that an inadequacy in the ability of these facilities to manage the epidemic together with the economic constraints found in this context will result in the need for adaptation of existing structures. As found in most developing countries, international benefactors fund supportive facilities through for example, centres of research and health care. It is deemed that this will also be the case in the AIDS environment. The theoretical framework will be supported by the author's documentation of his own experiences in architectural consultation for AIDS related facilities.

This method of research is deemed the most appropriate for this dissertation due to the lack of information and secrecy involved in disclosure in the late 1990's. The hypothesis, although formulated in 1998, remains the same in 2008. The path taken over the decade may have seen diversions in foci but the outcomes in support of the hypothesis remain the same.

## Research Methodology and Methods

The research methodology employed to fulfill the above-mentioned objectives is as follows:

- a) Literary Search - AIDS as a disease is defined through a literary search with the statistical impact being documented through reports from journals, newspaper articles, and statistics made available to the public by research and medical institutions. In 1998, at the initial stages of gathering information, very little literature on the topic existed – hence the large reliance on empirical data gathering;
- b) Study Areas - Government, both national and local, provides funding in a variety of sectors involving the provision of buildings to serve the community. These portfolios include Health, Welfare, Correctional Services, Education and Housing. The hypothesis' stance that there will be an impact on buildings is set around the building types associated with these portfolios. This does not preclude privately or otherwise funded facilities and a number of these are reviewed. The author holds that the above-mentioned portfolios cover the vast majority of building types occupied by people living with HIV/AIDS.

The building types considered are:

- Health – Hospitals, Hospices, Laboratories and Mortuaries
  - Welfare – Street Shelters and Children's Homes
  - Correctional Services – Prisons
  - Education – Schools and Universities
  - Housing
- c) Case Studies - a number of selected building types falling within the above categories are documented. These are based upon interviews with management, staff and where possible, people living with HIV/AIDS. General observations are made and problem areas due to the effect that HIV/AIDS is having upon the users and consequently the buildings is noted, with recommendations for the



future. Where available, drawings of floor plans and photographs accompany the text to offer some brevity and precedent on the various studies.

- d) Architectural Solutions - Examples of architectural intervention relating to the adaptation of existing buildings, the design of new buildings and innovative responses to the accommodation of the affected are evaluated.
  - e) Alternative Proposals - Alternative medical responses to caring for the infected and the associated architectural responses are explored through the joint development of proposals for care centres involving the author and medical institutions. Accessibility, detail design and parallels with frail care facilities are established.
  - f) Conclusions aimed at guidance for future architectural development within this epidemic will be explored. These are to be supported by reference to sound architectural principles and recognised references in healthcare design.
-

# CHAPTER 1

## THE AIDS PROBLEM

### 1.0 Introduction

This chapter introduces the disease and the impact the pandemic is having on the world; its epidemiology<sup>5</sup> and demographics<sup>6</sup> with particular reference to the KwaZulu-Natal province of South Africa.

### 1.1 What is AIDS

Acquired Immune Deficiency Syndrome (AIDS) and its causative agent, the Human Immunodeficiency Virus (HIV) were recognised in the United States of America in the early 1980's and HIV infections have subsequently been identified in most parts of the world. As the distribution of these infections amongst and within countries, and even within sectors of communities is uneven, this means that the global HIV/AIDS pandemic is in reality composed of numerous individual epidemics. Each of these epidemics has its own distinct origin - geographically, chronologically and within specific population groups. Based on these characteristics, three distinct types of epidemics have been described. (Health Dept. 1990)

1. The "Type 1" HIV / AIDS epidemic which is found primarily in the developed world. It is recognised as a containable epidemic limited to a select group of individuals engaged in high-risk practices including gay relationships and intravenous drug abuse. There is therefore only a limited impact on the broader society.

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<sup>5</sup> *Epidemiology* - "The study of the distribution and determinants of health-related conditions and events in populations" (Katzenellenbogen et al., 1997:5)

<sup>6</sup> *Demographics* - "refers to when a goal selected population characteristics as used in government, marketing or opinion research, or the demographic profiles used in such research." (<http://en.wikipedia.org/wiki/Demographics>)

2. In contrast, the “Type 2” epidemic, dominant in the developing world, tends to be widespread, involves individuals from heterosexual relationships, has a higher female prevalence and a peak incidence between 15 and 40 years. The effects of this epidemic extend beyond the individuals and result in extreme social and economic consequences, impacting on society at large.

3. The “Type 3” epidemic is an enigma<sup>7</sup> and refers to the type of epidemic found in those countries or communities where HIV /AIDS is present at levels which are so low as to defy reasonable explanation. These include remote islands, the Islamic and some Asian countries. (McKerrow, 1998: 1-2)

In sub-Saharan Africa the association of poverty, natural disasters, violence and social chaos form a fertile environment for the transmission of HIV infections. These factors have resulted in the rapid spread of the “Type 2” HIV epidemic throughout the continent.

## 1.2 Epidemics Through Time

A number of major epidemics have befallen man over the centuries; most notably the bubonic plague circa 1347, cholera in the 1800s and influenza in 1918-1919 affecting Europe (Herdt and Lindenbaum, 1992: 4). It was however the Europeans who took their diseases to far-reaching parts of the world in the 15<sup>th</sup> to the 17<sup>th</sup> centuries and in many cases decimated large parts of the indigenous populations of the Americas, Australasia and parts of Africa (Barnett and Whiteside, 2002: 25).

The new world pandemic, AIDS, can first be traced back to 1979 (Herdt and Lindenbaum, 1992: 3), and is believed to originate “from a non-pathogenic primate retrovirus, which made a ‘species jump’ from the African green monkey to humans,” However, initial documentation of the disease only began in America, Europe and Africa in 1981 (Pratt, 1986: 17). These early observations were as a result of doctors recording the occurrence of previously rare diseases including *Kaposi’s sarcoma*, a type of cancer, and *pneumocystis carinii*, a pneumonia carried by birds (Barnett and Whiteside, 2002: 28).

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<sup>7</sup> *Enigma* - An enigma is a puzzle, something mysterious or inexplicable, or a riddle or difficult problem. (<http://en.wikipedia.org/wiki/enigma>)

Initially the cause of these diseases was unknown, as was their means of transmission. Medical staff regularly refused to tend to the infected (Pratt, 1986: viii-ix) and at that stage it was largely regarded as a disease for homosexual men (Herdt and Lindenbaum, 1992: 3).

Years have passed, as has the profile of the infected. AIDS has become a global concern with the numbers of infected having dramatically increased. With its related opportunistic diseases e.g. cancers and tuberculosis<sup>8</sup>, AIDS has over the past two-and-a-half decades entrenched itself as a major killer of the population of Sub-Saharan Africa. The discovery of an effective vaccine has eluded researchers for years, while various claims made by traditional healers remain unsubstantiated. Issues over ethical and constitutional matters arising out of the provision or withholding of HIV related prescription drugs to pregnant mothers dominated the South African news and press for much of 1999 and raised heated public debates. While the politicians argued and the international pharmaceutical industry refused appeals for a reduction in supply costs to countries most in need of their drugs, the AIDS epidemic briskly permeated into all aspects of life.

For years HIV/AIDS was treated purely as a medical problem. People contracted the virus and medical facilities generally treated and cared for them by whatever means possible. The rapid spread of the virus has meant that all sectors of society have become impacted upon to varying degrees. Apart from the obvious impact on medical facilities due to additional patients and their requirements for medication, there are major implications for the social and economic structures within countries where HIV/AIDS has taken hold.

The KwaZulu-Natal (KZ-N) province within the Republic of South Africa was reported in 1999 to be home to a third of the country's over three million HIV infected people, and statistics showed that between sixteen and seventeen hundred new infections were occurring daily (*Sunday Tribune* 26 September 1999). In 2006 the estimated HIV

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<sup>8</sup> *Tuberculosis* – "a common and often deadly infectious disease caused by mycobacteria, mainly *Mycobacterium tuberculosis*. Tuberculosis usually attacks the lungs" (<http://en.wikipedia.org/wiki/tuberculosis>)

prevalence rate among antenatal clinic attendees in KZ-N had risen to over 39%. (Department of Health Report - 2006)

Many of the infected are active role-players in society and in the economy of the region. Whatever their role in society, these people create and occupy buildings that support their needs for shelter and security. Logic would have it that due to the explosion in HIV prevalent numbers there will be an associated implication for the provision of certain building types and that this could possibly mean a reduction or increase in the need for certain of these building types. This parallel association will form part of the focus of this research as an architectural response to the development of HIV/AIDS.

### **1.3 Infection and Transmission of HIV**

One is infected with the HI-virus through the transmission of contaminated “body fluids, with the highest concentration in blood, semen and vaginal secretions” and has “to breach the skin or mucosal barriers” (Barnett and Whiteside, 2002: 37).

Transmission of the virus is through the following modes:

- Unsafe sex
- Transmission from infected mother to child
- Use of infected blood or blood products
- Intravenous drug use with contaminated needles
- Other modes of transmission involving blood; for example, bleeding wounds.

(Barnett and Whiteside, 2002: 38)

HIV attacks the human bodies CD4 cells, the cells tasked with organising the body's immune system and its response to infection. The T-Lymphocytes are one of two main types of CD4 cells and their status in terms of number count is the recognised measure of a patient's AIDS status.

### **1.3.1 The Patient's Health Cycle**

After the initial infection, the virus replicates itself, destroying body cells and infecting other CD4 cells. This is commonly referred to as the 'window period' and its time duration can be between a few weeks to several months. At this time standard HIV tests are unable to detect the patient's infection status. The patient is however highly contagious. They will usually experience a flu-like illness at the end of the window period but, due to its nature, in most cases will not alarm the infected person to the nature of their infection (Barnett and Whiteside, 2002: 30-31).

The second phase is a long incubation stage (ordinarily between 8 - 10 years in duration) in which the virus develops rapidly with reproduction of the viral cells and those they are attacking, in an attempt to defeat each other. The viral cells eventually overcome the body's immune cells and the person's CD4 count begins to fall. Ordinarily a healthy person will have around 1200 CD4 cells per microlitre of blood. When the person's CD4 count falls below 200 they contract opportunistic infections (Barnett and Whiteside, 2002: 31-32) and at this stage the person transcends from having HIV to having full-blown AIDS. These diseases include cancers, intestinal and respiratory infections, and fungal, viral and bacterial infections. In South Africa at present, AIDS is diagnosed when the patient tests positive to two AIDS indicators. For example, a patient will be classified as having AIDS if they test HIV positive and concurrently have an AIDS related illness e.g. TB. This coincides with the low CD4 count. The life expectancy if no treatment is offered to the AIDS patient is 12 to 24 months.

With all of the opportunistic diseases, patients require medical care, and in particular pain relief medication for those inflicted with cancer. Other specialist requirements needed in the treatment of those with full-blown AIDS would include facilities catering for assistance with respiration and rehydration. In most cases, assistance is needed with feeding and cleaning.

Even though there is at present no cure for AIDS, the production and distribution of anti-retroviral drugs has in many instances staved off the progression of the virus to the AIDS stage and this has increased the numbers of people living with the virus. Unfortunately the costs of such drugs are in most instances beyond the means of those residing in the

developing world. In South Africa, in terms of the government's antiretroviral roll-out programme, patients may generally only receive the medication once their CD4 count has receded to below 200, at which point the patient's health has irrevocably deteriorated.

A particular point of note with concern to life cycle is that the average life expectancy in South Africa reduced from 63,2 years in 1993 to 53,5 years in 1998 (Barnett & Whiteside, 2002:180). The United Nations released statistics for 2004 stating that life expectancy for males had reduced to 45,1 years and 50,7 years for females. However the *Business Times* of November 13, 2008 has the leader "SA life expectancy lower than rest of Africa" and follows with:

*"The life expectancy of South Africans is lower than the average in Africa and that of war-ravaged Iraq, a UN Population Fund report showed. The data is contained in a report on the state of the world population in 2008 which was released by the United Nations Population Fund on Tuesday. Beeld newspaper reported that, worldwide, men are expected to live until 65 and women until almost 70. But in Africa, men are expected to live until 52 and women until 54. In South Africa, the life expectancy for men is 49 and for women 50."*

## **1.4 The Spread of AIDS**

Although AIDS is thought to have originated in Africa, its spread has left no part of the world unaffected. Statistics on the number of HIV infected persons vary from source to source and argument and debate occurs at every release of new data. This is mainly due to the allegations that governments and health officials attempt to cover up the true extent of the problem.

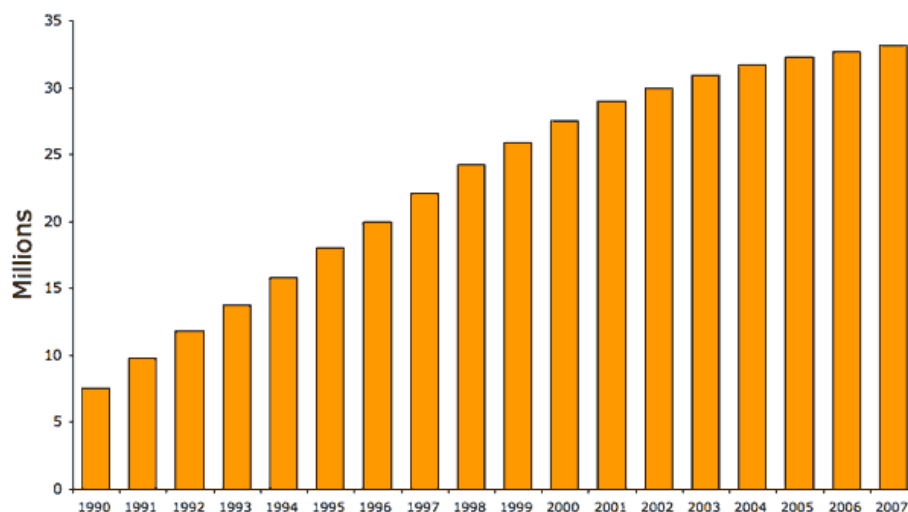
However, what does show unambiguously is that there has been a steady increase in infections worldwide.

## 1.4.1 Statistics

### 1.4.1.1 The Global Impact of AIDS

The UNAIDS *Report on the global HIV/ AIDS epidemic* of June 2000 recorded estimates of 5,4 million new infections in 1999, 34,3 million persons living with HIV/ AIDS and 2,8 million AIDS related deaths in that year. More than 18 million had succumbed to the disease.

In 2001 there were 36 million living with AIDS worldwide (Barnett and Whiteside, 2002), while in 2003 that number had grown to 37,8 million (UNAIDS, 2004). It is to be noted that more recent publications based upon UNAIDS and World Health Organisation (WHO) data reflect statistical ranges and in fact show the growth of the epidemic as being more gradual.



Graph 1.4.A – UNAIDS/WHO graph showing the increase in persons infected with HIV/AIDS universally. (Source: [www.avert.org](http://www.avert.org) - 2008)

Interestingly these statistics have leveled out with an estimate of 33 million (range 30.3 – 36.1 million) people living with HIV/AIDS in 2007 and only 2,7 million new infections estimated during that year (UNAIDS, 2007).



#### 1.4.1.2 The South African Epidemic

The South African epidemic was first recognised in 1982 and was classed as a Type 1 epidemic. However the spread of the Type 2 epidemic within the country was swift, and since 1990 the Type 2 epidemic has been dominant (Health Dept. 1990).

The South African public is bombarded on a weekly basis by the daily newspapers as to the statistical impact HIV/AIDS is having on the country. While their readers may have become resilient to the incessant gloom, the facts are none the less chilling. Nearly a decade ago the Sunday Tribune of March 7, 1999 reported:

- “About 3,6 million South Africans - or 8,6% of the population - were HIV-positive in 1998;
- The infection is spreading at a rate of about sixteen hundred people per day, and
- Three million South Africans will die of the disease in the next eight years.”

An estimate of between 4,8 – 6,6 million persons infected with HIV in South Africa in 2002 was published by the HSRC in 2002 (SHISANA, O. & SIMBAYI, L. 2002:45). Findings published of *The Demographic Impact of HIV/ AIDS in South Africa for 2004* as reported in the Independent on Saturday of 4 December 2004 (Schmidt, M, 2004: 3) indicate that “*five million of 46 million South Africans are HIV-positive.*” This equates to 10,6% of the population. The same report states that 311 000 people had died of AIDS in the year and projected that “the total of South Africans infected with HIV is expected to peak at ‘just more than 5,4 million’ in 2003.”

*The Independent on Saturday* (Makkink, D, 2004:7) reported earlier in the year “that over 1,5 million victims had already died (of AIDS) and 5,6 million are infected.” The report went on to state that projections indicated that the AIDS death toll would be 5 million by the year 2010 and that at that time the number of infected would reach 10 million.

South African Professor of gynaecology and in 2004 the Vice-Chancellor of the Durban Institute of Technology (now Durban University of Technology), D.J. Ncayiyana, was quoted as saying that “South Africa carries 10% of the world’s burden of HIV/ AIDS yet only 1% of the world’s population lived here.” (Sunday Tribune, 19 September 2004)

Year of death	Age (years)					Total
	0-9	10-24	25-49	50+	Unspecified	
1997	35,441	22,636	92,796	160,058	5,574	316,505
1998	41,172	25,799	114,215	178,763	5,104	365,053
1999	41,834	27,686	129,881	178,877	2,704	380,982
2000	42,802	29,463	150,149	189,118	2,204	413,736
2001	44,876	31,408	172,963	201,738	1,911	452,896
2002	50,741	34,381	200,844	211,504	2,024	499,494
2003	56,593	37,363	228,819	227,280	2,770	552,825
2004	62,212	38,054	242,066	222,231	2,925	567,488
2005	67,559	38,221	250,043	232,168	3,222	591,213
Increase 1997-2005	91%	69%	169%	45%	-42%	87%

Table 1.4.B - Reported deaths from all causes, 1997 to 2005  
(Reference: [www.avert.org](http://www.avert.org) - Department of Health Report, 2006)

Department of Health Report (2006) figures show an 87% increase in deaths between 1997 and 2005. Even though this is from all causes, the increase is attributed largely to AIDS deaths. At the end of 2007, there were approximately 5.7 million people living with HIV in South Africa, and almost 1,000 AIDS deaths occurring every day. (UNAIDS: 2008)

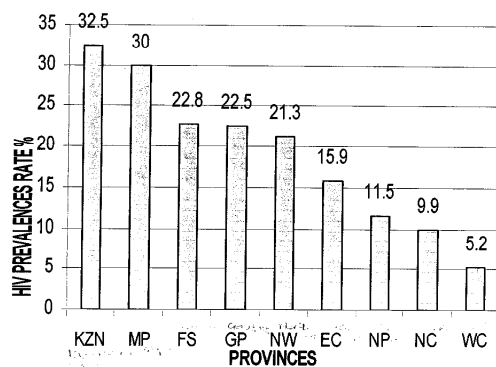
Reasons for the rampant spread in South Africa have been due to a number of factors including:

- poor socio-economic conditions;
- a lack of efficient National Health Department intervention;
- the stigma and secrecy surrounding the epidemic;
- low moral standards within the country;
- unacceptably high rape figures;
- the subservient role of the female in certain ethnic and cultural groupings;
- the notion amongst some that HIV/AIDS can be cured by having intercourse with a virgin, and
- migrant labour

### 1.4.1.3 The Epidemic in KwaZulu-Natal

HIV seroprevalence<sup>9</sup> figures have been routinely monitored since the late 1980's. The University of KwaZulu-Natal's Medical School under the Head of Virology, Professor Alan Smith, has collected HIV statistics from antenatal clinics, showing over a number of years that the KwaZulu-Natal (KZ-N) province heads the prevalence lists.

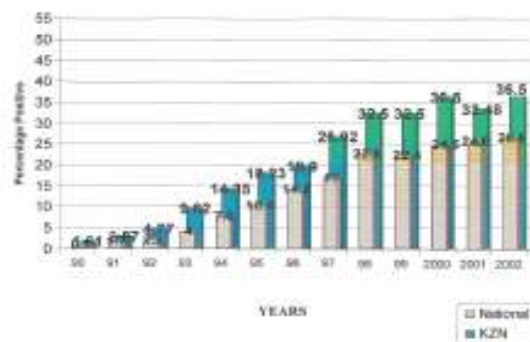
#### NATIONAL SURVEY 1998



Professor A.N.Smith, Department of Virology, University of Natal

Graph 1.4.C - (Smith A, 1999) National Survey of HIV Prevalence Rates in Antenatal Clinics in 1998 Showing Demography across the Nine Provinces

#### National & KZN HIV Prevalence Antenatal Clinics



Professor Alan Smith – HOD of Virology - UNO

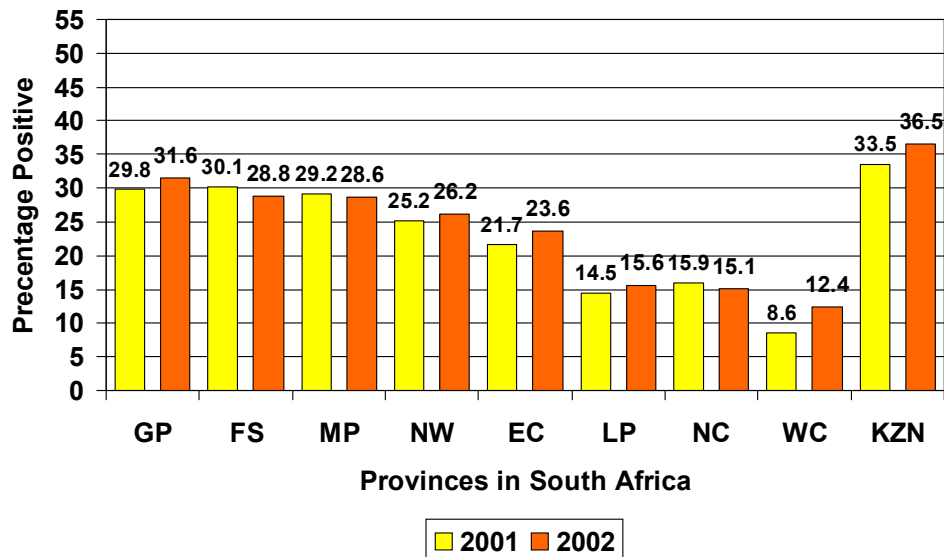
Graph 1.4.D - (Smith A, 2002) National and KwaZulu-Natal HIV Prevalence in Antenatal Clinics, 1990-2002

Testing is carried out on expectant mothers at antenatal clinics, and unless requested, is performed on an anonymous basis. Graph 1.4.C. based on 1998 statistics, shows that 32,5% of KZ-N women visiting these clinics are HIV positive. This compares with the 1998 national average of the nine provinces being at 22.8% (Graph 1.4.D).

<sup>9</sup> Seroprevalence – "the number of persons in a population who test positive for a specific disease based on serology (blood serum) specimens". (<http://en.wikipedia.org/wiki/seroprevalence>)

# National Antenatal survey 2002

## Province distribution



Graph 1.4.E - (Smith A, 2003) National HIV Prevalence in Antenatal Clinics, 2001-2002

A steady rise in positive testing of mothers has been recorded over the years 1990 to 2002 (Graph 1.4.D), ranging from 1,61% in 1990 to the 36,5% of 2002. While Graph 1.4.C. shows a KZ-N antenatal prevalence rate of 32,5% in 1998, Graphs 1.4.D and 1.4.E. show an increase to 33,5% in 2001 and 36,5% in 2002. This growth in numbers escalated dramatically in the relatively short space of time increasing to 40,7% in 2004 and levelling at 39.1% in 2005 and 2006 (Table 1.4.F). The South African Department of Health Study of 2006 estimated that 29,1% of pregnant women in South Africa were living with AIDS. All studies indicate that the KZ-N province has the greatest number of HIV+ pregnant mothers.

Of interest is that the KZ-N graph seems to have peaked while the national average continues to edge upwards, albeit at a reduced pace.

<b>Province</b>	<b>2001 prevalence %</b>	<b>2002 prevalence %</b>	<b>2003 prevalence %</b>	<b>2004 prevalence %</b>	<b>2005 prevalence %</b>	<b>2006 prevalence %</b>
KwaZulu-Natal	33.5	36.5	37.5	40.7	39.1	39.1
Mpumalanga	29.2	28.6	32.6	30.8	34.8	32.1
Free State	30.1	28.8	30.1	29.5	30.3	31.1
Gauteng	29.8	31.6	29.6	33.1	32.4	30.8
North West	25.2	26.2	29.9	26.7	31.8	29.0
Eastern Cape	21.7	23.6	27.1	28.0	29.5	29.0
Limpopo	14.5	15.6	17.5	19.3	21.5	20.7
Northern Cape	15.9	15.1	16.7	17.6	18.5	15.6
Western Cape	8.6	12.4	13.1	15.4	15.7	15.2
National	24.8	26.5	27.9	29.5	30.2	29.1

Table 1.4.F - Estimated HIV prevalence among antenatal clinic attendees, by Province.

Reference: [www.avert.org](http://www.avert.org) - Department of Health Report (2006)

Antenatal clinic data is considered to be a reliable indicator of infection demographics within the broader community. Provinces vary in population numbers - KZ-N having the greatest population of all the provinces (Health Systems Trust 2007) – and percentages are not indicative of numbers. Data is often difficult to retrieve due to either protective restrictions imposed by institutions or organisations, or constitutional rights legislation of the patients. This has however been made easier of late with Internet and Web access to published statistics and reporting on the epidemic.

When one studies the breakdown of the composition of the statistics reviewed thus far, it is clear that the greatest impact the epidemic has had is on the "Black" population group and on the age groups across the 20 – 34 range. Figures obtained in June 1998 (Table 1.4.G) show that 5739 people in KZ-N tested HIV positive.

97,5% of these were "Black".

53,7% fell within the 20 – 34 age groupings.

10,4% were babies under 4 years of age.

KWAZULU NATAL    MONTHLY REPORT ON HIV SEROLOGY    JUNE    1998 POSITIVE RESULTS PUBLIC HOSPITALS AND PRIVATE SECTOR LABORATORIES
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ELISA POSITIVES	MALE	FEMALE	SEX NOT STATED	TOTAL
BLACK	2293	3184	122	5599
INDIAN	13	21	0	34
COLOURED	3	0	0	3
WHITE	7	6	0	13
NOT STATED	42	38	10	90
TOTALS	2358	3249	132	5739

AGE DISTRIBUTION

AGE (YEARS)	MALE	FEMALE	SEX NOT STATED	TOTALS
0 - 4	296	271	35	602
5 - 9	24	9	0	33
10 - 14	16	22	3	41
15 - 19	29	257	4	290
20 - 24	234	773	13	1020
25 - 29	466	684	10	1160
30 - 34	418	480	9	907
35 - 39	317	302	5	624
40 - 44	194	135	6	335
45 - 49	114	75	2	191
50 - 54	49	36	1	86
55 - 59	36	21	0	57
60 - 64	11	8	0	19
65 - PLUS	6	5	0	11
UNSTATED AGE	148	171	44	363
TOTALS	2358	3249	132	5739

COMPILED BY THE DEPARTMENT OF VIROLOGY, UNIVERSITY OF NATAL  
 KING EDWARD ANTENATAL HIV PREVALENCE 25.55 % 81/317 FOR THE MONTH.

Table 1.4.G – UKZN (formerly Natal University) Virology Dept., 1999 HIV Statistics, June 1998

These percentages identify that antenatal patients fall within the highest risk grouping. Researchers compiling the South African National HIV Survey (2005) estimated that 10,8% of all South Africans over 2 years old were living with HIV in 2005. Among those between 15 and 49 years old, the estimated HIV prevalence was 16,2%.

<b>Sex and Race</b>	<b>Number surveyed</b>	<b>Prevalence %</b>
Male	6,342	8.2
Female	9,509	13.3
African	9,950	13.3
White	1,173	0.6
Coloured	3,382	1.9
Indian	1,319	1.6
National	15,851	10.8

<b>Province</b>	<b>Number surveyed</b>	<b>Prevalence %</b>
KwaZulu-Natal	2,729	16.5
Mpumalanga	1,224	15.2
Free State	1,066	12.6
North West	1,056	10.9
Guateng	2,430	10.8
Eactern Cape	2,428	8.9
Limpopo	1,570	8.0
Northern Cape	1,144	5.4
Western Cape	2,204	1.9
Total	15,851	10.8

Table 1.4.H - Estimated HIV prevalence among South Africans aged 2 years and older, by sex and race and by province - Department of Health Report (2006)  
(<http://www.avert.org/safricastats.htm>)

<b>Age (years)</b>	<b>Male prevalence %</b>	<b>Female prevalence %</b>
2-4	4.9	5.3
5-9	4.2	4.8
10-14	1.6	1.8
15-19	3.2	9.4
20-24	6.0	23.9
25-29	12.1	33.3
30-34	23.3	26.0
35-39	23.3	19.3
40-44	17.5	12.4
45-49	10.3	8.7
50-54	14.2	7.5
55-59	6.4	3.0
60+	4.0	3.7
Total	8.2	13.3

Table 1.4.J - Estimated HIV prevalence among South Africans, by age - Department of Health Report (2006) (<http://www.avert.org/safricastats.htm>)

## 1.5 Summary

The impact of the universal pandemic is clear. HIV/AIDS has taken a firm grasp on the people of the world. However mankind has dealt with other diseases over the past centuries and although the battle has been fierce with much loss of life, it has always been won. There is therefore hope that the same will hold true for the HIV/AIDS battle.

In the interim the world is attempting to deal with accommodating those infected and affected by the pandemic. This includes, particularly in developing countries, the role of the Architect and other Built Environment professionals, whose skills are critical to the success of the provision of suitable accommodation for these people. The extension of the life expectancy due to the supply of antiretroviral drugs has added a further dimension of major relevance to these professionals: the need to provide additional care facilities within which the specific needs of the infected are catered for.

“The vast majority – about 95% - of all the people living with HIV/ AIDS live in developing countries” (MAP, 2002: 3). The research proves that KwaZulu-Natal is the epicentre of the epidemic in South Africa and the number of infected people has increased steadily over the decade of data capture. This increase has however slowed and has levelled out in the data obtained from antenatal clinics at around 39%. This corroborates the fact that most epidemics affect about a third of the population demographics. We do see however that only 16,2% of those tested in KZ-N in the 2006 Health Department report tested positive for HIV. This is probably due to the low sample number surveyed and it would be realistic to assume that this number is in fact higher. KZ-N is therefore the region in which the most work needs to be done in addressing the care of people living with AIDS.

This dissertation proceeds to explore an aspect of the AIDS impact on the Province – the effect on selected buildings occupied by the infected and affected. This aims to lead to a definitive role for Architects in the fight against AIDS.

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# **CHAPTER 2**

## **THE IMPACT OF HIV/ AIDS ON BUILDINGS**

### **2.0 Introduction**

This chapter considers the relationship between the epidemic and the role of the Architect in the provision of a built environment to house the infected and affected.

### **2.1 The Association between HIV/ AIDS, Architects and their Buildings**

Questions to be considered:

“What impact can HIV/ AIDS have upon architecture and the built form?” the question is asked. “After all, HIV/AIDS is a medical condition”, it may be argued, “and how can this possibly have a bearing upon architecture and the construction industry”?

As it is the built form that shelters people in all spheres of life: whether at work, home, play or the infirm, the increase in prevalence of HIV/ AIDS will have an impact on this range of building types. If one takes the statistical data reflecting the South African AIDS epidemic at face value, the rapid spread of the epidemic is beyond question. The vast increase in numbers affected and the ongoing projections of those to be affected either directly or indirectly by the epidemic are also evident. (Makkink, D. 2004:7)

As users of buildings, spaces and facilities, it is people that determine the need for the supply of particular building types. Should this need change for any reason, either due to an increase in users or a decrease in user numbers, the supply and demand of building types is sure to alter. In the KwaZulu-Natal context, where up to one in three of the population is infected with the HI-Virus, it follows that urgent steps need to be taken to address the crisis and for Architects to engage with their role in this need.

## **2.2 How the HIV/AIDS Epidemic Affects Building Types?**

The increase in HIV infections will lead to an impact upon the functioning, allocation and provision of buildings in the following manner:

- a) Those infected with the disease will ordinarily seek medical care through health practitioners, clinics, hospitals, hospices and ultimately burial or cremation. The increase in usage of these facilities will require increased access to such care through either a restructuring of existing facilities or the provision of new facilities;
- b) Access to and within such facilities will require architectural design consideration for the ease of accessibility and possible impaired user mobility;
- c) In situations where access to health facilities is difficult or impossible due to distance, affordability, assistance, stigma or ignorance, care will need to be offered in the home. Highly infected communities will, with the rising death tolls, need to band together to provide support for extended families and extended neighbourhoods in the care for one another. Future planning of homes in infected areas will need to take the interrelationship of homes and accessibility to one another into account, but for the most part within the communities of the poor, access of the caregiver from one home to another will require consideration;
- d) Apart from the infected, many will be affected by the epidemic. This is particularly relevant where parents contract the disease and pass away leaving their children to fend for themselves. The need to house these orphans in children's homes, street-shelters or in the homes of relatives or foster-parents will gain impetus;
- e) Persons who are incarcerated run the risk of being infected by HIV positive inmates due to high-risk sexual interaction, rape and sodomy. Violence within prisons can also lead to the spread of the virus. Space for the care of vast numbers of infected and the reconfiguration of spaces within existing prisons will require attention;

- f) In certain instances, usage of particular building types may reduce due to less people occupying such buildings. For example, buildings housing educational functions will be affected: Statistics indicate that the majority of people found to be HIV-positive fall within two main age groups, namely children under the age of five and adults aged between fifteen and forty years. An increase in the child mortality rate will reduce school learner numbers, whilst the deaths of junior teachers, who also fall into the high-risk category, will impact on the entire education system. So too will the country's tertiary education system be impacted upon due to a drop in numbers. (Department of Health Report: 2006)

## **2.3 Building Types Affected by the Epidemic**

This dissertation will test its hypothesis through case studies on the effect that the HIV/AIDS epidemic is having on the following building types:

- Medical Facilities – Hospitals (including clinics) and hospices
- Mortuaries
- Care Centres – Children's homes and street shelters
- Prisons
- Educational Facilities – Universities
- Housing

## **2.4 The HIV/ AIDS Cycle & Its Impact on Building Usage**

'*The Patient's Health Cycle*' is discussed in Chapter 1.3.1. This cycle may take one of two possible courses:

- The person infected with HIV who receives no treatment or is diagnosed late in the progression of the disease may realise a life expectancy of 7-10 years. This may extend to 12 years "in the rich world" (Barnett and Whiteside, 2002: 32-33)

- The person infected with HIV who receives an early diagnosis and receives antiretroviral treatment may realise a “normal” life expectancy.

It follows that the associated life cycle of existing buildings and the provision of new facilities in terms of accommodating the infected and affected will result in:

- the ever changing needs requiring flexibility of spaces to accommodate a changing scenario;
- the need for a greater provision of care facilities;
- A development of home-based care alternatives;
- The provision of "Centres" for pharmaceutical dispensing;
- The need for greater ease of accessibility to facilities.

## **2.5 The Impact of HIV/ AIDS on the Construction Industry**

“A reduced volume of work, diverted funding and a loss of trained skills, will affect the industry adversely.” (Bingham & Harber 1998:4) With predictions of a zero population growth due to the epidemic by 2010 and the consequential cutback in the provision of housing, most construction will be within the medical-care field, with the reuse of existing disused structures, for alternative functions.

“Many major construction projects have inadvertently stimulated the spread of HIV due to workers being relocated and housed in compounds for the duration of the project.” (Bingham & Harber 1998:4)

## **2.6 The Impact of HIV/AIDS on the Role of the Architect**

The profession of Architecture and its allied disciplines have the unique responsibility of creating and guiding the construction of practically all the formal buildings housing activities performed by the various sectors of the community.

Depending on where they practice, some Architects may never be faced first-hand with the need to incorporate AIDS related considerations into their designs. However, this epidemic will sooner or later have a bearing on detail design and the volumes of certain building types produced by South African Architects. Therefore, as a major role-player in the creation of the built environment, the Architect must come to terms with the factors HIV/AIDS will bring to bear on their role as the creators of space, as the needs of those requiring care are essential components of all future planning and design decisions, if flexibility of usage is an essential ingredient.

The emphasis of both the past and the present has been to provide certain building types en masse to meet the needs of the ever-multiplying population. The statistics tabled within this research on the prevalence of HIV/AIDS will demand that architects shift their emphasis to other building types to meet with the new accommodation requirements that this epidemic will incur.

South African Architects will also realise the impact of AIDS upon their staff. The exposure to HIV for the architectural worker under normal circumstances would be no greater than for any other professional person. However, the risk of contracting HIV may be increased due to work performed away from the home/office e.g. contract work and site supervision. (Bingham & Harber, 1998: 2)

## **2.7 Summary**

The HIV/AIDS epidemic will have a direct bearing on the architectural and built environment professions and the future provision of buildings in areas impacted upon by the disease.

An increase in HIV infections will lead to:

- a greater demand on existing facilities;
- the need to reallocate space, staff and resources to deal with a shifting focus;
- the growth of design professionals in the health care fields;

- possible reduced spending in other built environment sectors of the economy to meet the HIV/ AIDS need.

The greatest developmental requirement in the architectural arena will be:

- the need to address the needs of the people living with AIDS;
  - to gain insight into the effects of the progression of the illnesses associated with the epidemic;
  - to develop architectural briefs and designs tailored to flexibility through the easy reconfiguration of divisional spaces, and
  - a critical eye for detail with regard ease of access and anthropometrical considerations;
  - to design cost effective facilities based on good architectural principles.
-

## **CHAPTER 3**

# **CASE STUDIES OF SELECTED BUILDINGS AFFECTED BY THE AIDS EPIDEMIC**

*"We are all temporary leaves on the tree of life. We all must fall someday".*

Buckingham R. (1983)

### **3.0.0 Introduction**

In this chapter case studies are used to gather information on the impact that HIV/AIDS is having on a range of building types. It begins with studies on health care facilities, being the building type addressing the initial response to the infected person's search for help. This is followed with hospices, dealing with the final hours of the infected persons lives. Thereafter child care facilities and a selection of other building types considered to be high risk facilities dealing with persons living with AIDS will be studied.

The impact upon each facility is evaluated in terms of either increased or decreased usage and architectural interventions put in place to address the problems facing the individual institutions. It must be noted that the initial case studies were carried out in 1998 and 1999 with follow up studies in most of the facilities, some in 2004 and some in 2008.

### **3.1.0 Health Care Facilities**

The major burden of the epidemic will fall upon the health sector. Hospitals are already overcrowded and economic constraints restrict the extent of quality care and equipment at the disposal of medical staff. The *Daily News* of Tuesday October 21, 2008 (Attwood, V. 2008) states "State Hospitals in Crisis" and "KZ-N's health care on verge of collapse".

Whereas in the past, the age profile of patients within hospital care would decrease after birth and only increase again towards the more senior years, this research has shown

that the HIV/AIDS impact has developed a new curve in the profile around the nineteen to thirty-five age groupings. The increase in numbers is having an impact on resources.

The general belief that HIV/AIDS specific facilities will not be frequented by affected people due to the attached stigma is slowly losing credibility, although communities have been known to banish such people, e.g. in one South African case, a woman being burned to death for divulging her HIV-status. With increased numbers and community awareness through educational means, there has been a broadening of the understanding and "acceptance" of the epidemic. While initial screening may be at general community health facilities or hospitals, centres with HIV/AIDS specific services are able to better manage specialised care.

### **3.1.1 Hospitals**

With average life expectancy at between seven and ten years after contracting the virus (Barnett and Whiteside, 2002: 31-32) and current statistics showing in the order of sixteen hundred people being affected with the virus in South Africa each day, already stretched and under-funded health facilities cannot cope with the spiralling numbers. Any increase will have an impact on staffing, beds and pharmaceuticals.

Other than the opportunistic diseases attacking the patients weakened immune system, ailments including diarrhoea, acrid septic sores, vomiting and thrush, borne by the AIDS sufferer, have an impact on the care of the patient and their association with others housed in their vicinity.

Hospitals are already overcrowded; within areas such as Hlabisa in the north of the province, up to three persons share a single bed (Drysdale, S. 1999). A restrictive health budget precludes much in the way of new facilities, so medical staff members are forced to adapt their admissions procedures and limit entry to emergencies and short-term in-patients. A patient with TB, who in the past would have been treated for up to a month within a hospital, has had their stay reduced to one to two days if unaccompanied by a relative, or if accompanied, is turned away with medication to be administered by the relative (McDonald, K. 1999).



Ideally new facilities would be the answer to the problem. However, due to the lack of funding, suitable staff, and poor locality planning and resources, a number of clinics do lie vacant. (Chatuary, A. 1998)

Two hospitals were visited for assessment, one rural the other urban, viz., Hlabisa Hospital in the north of the province, in 1999, and McCord hospital in Durban from 1999 to 2008. The research facility at the University of KwaZulu-Natal's Nelson Mandela Medical School is linked to the King Edward Hospital, and is also the source of much of the compiled statistics presented in Chapter 1.

### **3.1.1.1 Hlabisa Hospital, Northern KwaZulu-Natal**

[Based on a visit to the hospital and an interview with the Medical Superintendent - Dr Sean Drysdale: 22.07.99]

The town of Hlabisa is situated about three hundred kilometres north-east of Durban and about seventy kilometres inland from the Indian Ocean. The Hlabisa district covers an area of around 5000 km<sup>2</sup> and is home to a population of some 250 000 people. In 1999 the hospital had three hundred beds while accommodating on average four hundred and twenty patients. The Hlabisa region has in particular a high prevalence of Tuberculosis (TB), and this is a predominant manifestation of HIV/AIDS in the area.

Admissions at the hospital rose by eighty-one percent from 1991 to 1998, with TB admissions having risen by three hundred and sixty percent over the same period. Prevalence of the HIV infection in TB patients rose as follows:

1993 - 35%    1995 - 58%    1997 - 65%

The January – March 2005 show the estimated HIV infection figures for TB patients to be 80%. (KZN Department of Health, 2005)

HIV prevalence in medical ward admissions in 1998 was as follows:

Overall - 54,3%

This had increased to 73% in the Female Medical wards and 80% in the Male Medical wards in 2005 (KZN Department of Health, 2005)

Staff members have also been impacted upon by TB and HIV. The number of cases of TB in staff rose from two in 1991/1992 to twenty in 1995/1996. More recently staff figures have become independently unavailable and have been incorporated into the general hospital numbers.

HIV prevalence rates have risen steeply and the rising demand on the hospital will continue. The 2005 report on the hospital paints a dismal picture of over-subscribed wards, high mortality rates and staff stretched to manage the everyday running of the wards. The construction of additional facilities began at the hospital in 2004 and this has gone some way to alleviate the pressures.

In 2000/2001 the construction of the Africa Centre (Peters, W. 2002:7-10) at the neighbouring town of Somkhele added new impetus to the Hlabisa Hospital due to international research interests and associated funding. However little health system funding has made its way to the Hospital and high mortality rates of both patients and staff within this high-risk district bodes poorly for the future.

### **3.1.1.2 McCord Hospital, Durban**

[Based on interviews with Dr Val Patton in 1999/ 2000 and Dr Janet Giddy on 23 August 2004 and 2 October 2007]

McCord Hospital, founded in 1910, is situated on the Ridge overlooking Durban and is a privately funded hospital.

The hospital recorded an increase in the number of HIV positive cases being referred to its Social Workers over the initial study period of September 1999 – January 2000:

September '99	-	315
October '99	-	329
November '99	-	427
December '99	-	386
January 2000	-	506 (Patton. 2000: Interview)

Of interest is that the infected patients during this period were merely referred to the social workers for counselling as it was considered that there was no hope for them. This approach changed shortly afterwards with the proposal of an AIDS centre, medication and a greater understanding of the disease. The average number of people seen per month in 2003 was 600 with 265 patients starting on antiretroviral medication since 1999 – of these 187 are still alive (Annual Report, 2003, Sinikithemba HIV/ AIDS Care Centre, McCord Hospital). In 2007 McCord hospital had over 1000 patients on antiretroviral therapy.

The sharp increase in HIV prevalence prompted the Hospital to open the Sinikithemba Centre in 2000 (Peters, W. 2002:4), which deals with the plight of HIV/AIDS sufferers. This centre quickly outgrew itself and a number of revisions to the accommodation were carried out over subsequent years by the author. The proposal for a training hospice as a new departure in AIDS care models, presented by the author in a paper to the 13th World AIDS Conference in Durban in 2000, is discussed in detail in Chapter 5.

The hospital has in the short term and out of necessity needed to redefine spaces within their various buildings to accommodate increased HIV infections. Further major additions to the hospital are planned for 2009 onwards, including an HIV/AIDS research centre and additional accommodation for paediatrics, pharmacy services, consultancy and counselling at the Sinikithemba Centre.

### **3.1.1.3 Summary of the Impact on Hospitals**

It is clear that hospitals have been at the forefront of the HIV/AIDS epidemic. The north of the Province has been worst hit and this corresponds with the greater impact on the Hlabisa Hospital. Facilities at this hospital are inadequate for their patient numbers, buildings are in a poor state of repair and beds are oversubscribed. Some of the wards reviewed were in a poor state of repair with insufficient ablution facilities. New building work has not kept pace with the effects of the epidemic and there is a sense of limited staff compliment having to 'make do' with what they have both in medical and accommodation terms.

The urban example of McCord Hospital has coped better with the increase in numbers brought on by the epidemic. Greater access to international donor funding, a relatively wealthier community and better facilities planning has enabled the facility to adapt to the changes required. The hospital has developed new programmes and independent facilities to accommodate those living with the virus and this has worked well in terms of hospital flow.

The levelling off of new HIV infections should have a positive effect on both medical institutions in that future construction and better spatial planning as well as adaptation of existing spaces should see them coping better with their patient intakes.

### **3.1.2 Hospices**

Hospice facilities have been playing an ever-increasing role in the care of people dying of AIDS. While traditionally the care centre for those terminal patients dying usually from cancer, hospices have noted an increase in the request for AIDS beds over the past decade, and this accommodation is being provided to a limited extent in certain cases without compromise to non-AIDS patients. The hospice is not a hospital for the dying. It is a place of comfort and support for both patient and family, where assistance can be offered during the difficult period associated with death.

Two hospice facilities have been consulted. Through these links, the opportunity has been afforded to the author to play a role in two outreach programmes in the form of architectural consultation. These are discussed below.

The rural nature of most of the province and vast distances, preclude the use of motor vehicles to certain outlying areas. Patients are often wheeled – sometimes in wheelbarrows - or carried to such hospice facilities on their care days. These centres of care, usually associated with a clinic or church, have proven to be vital cogs in the treatment of HIV/AIDS patients in the Province.

### **3.1.2.1 Highway Hospice, Durban**

[Based on interviews with Matron Helen Loudon, Sr. Karen Hinton, Sr. Lesley van Zyl and Ms. Nkosazana Ngidi in 1998 and 1999. Follow up meeting in 2004 with L. van Zyl and telephone and email discussions with Sr. A. Joseph 17.11.2008]

The Highway Hospice is situated in Sherwood, a suburb of Durban. It is a modern and comfortable facility, funded by private donations and fund-raising efforts. Governmental funding is limited to "AIDS beds"; this amounts to three beds of the total of sixteen beds the hospice offers, being "reserved" for terminally ill AIDS patients. Increasing the total number of beds is not an option for two reasons:

- i) between twelve and sixteen beds has been proven to be the best in economic terms for the running of a hospice;
- ii) as stated above, the hospice is not a hospital, and the maintenance of the homely scale and atmosphere is important.

This facility offers a number of support functions to terminally ill patients and their families. As discussed above, hospices have traditionally cared largely for cancer sufferers. The day-care facility offers the families of these patients the opportunity to drop the patient off at the hospice for a morning, afternoon or day, to enable the family to tend to other matters. While at the day-care centre, the patients may busy themselves with handicrafts, talk to friends or merely rest in a chair or on a bed. A lunchtime meal and teas are served. All patients are fetched and returned home during the same day i.e. there are no in-patients.

Home-based care is the preferred option considered by most hospice management bodies. This is a vastly more cost efficient means (around a seventh of the cost) of caring for the terminal patient while offering them the comforts and familiarity of their own home. The Highway Hospice has thirteen home-care nurses based in an open-plan office within the hospice complex. Each of these nurses cares for between twenty to twenty-five patients. This care is in the form of daily telephone calls or visits, depending on the condition and needs of the individual. Due to the suburban context of the facility, most of the patients under home-care are easily accessible. The staff are provided with transport to make house calls.

A wing of the hospice accommodates 16 beds for terminal patients. Here patients in the final stages of their ailments are brought to live out their last hours. Until recently only three of the sixteen beds were assigned to AIDS patients. This limit was placed to enable the servicing of cancer patients who have been the bulk of patients since its inception. There have however been up to five AIDS patients in the facility at times. The facility has on average a 69% occupancy, and the balance of the beds are available for use by both AIDS or AIDS-free patients. While Matron Helen Loudon reported in 1999 that the facility has not seen the rise in numbers of AIDS patients that the staff had expected (attributing this to either a lack of marketing on their behalf or the perception that this facility is reserved for cancer patients), in 2004 Sr. van Zyl said that they were treating greater numbers of AIDS patients but that home-based care remained the preferred means of care.

The impact of HIV/AIDS on this facility to date may be summarized as follows:

Data available from the Highway Hospice was limited during the initial stages of this research. Over the period 1995 - 1998 HIV statistics showed a steady increase, with 4 cases in 1995, 46 in 1996, 103 in 1997 and 121 in 1998. AIDS patients made up 9,5% of the patient numbers in 1998. These numbers increased steadily as follows –

<b>Year</b>	<b>No. new AIDS patients</b>	<b>% intake AIDS VS other</b>
1999	136	16
2000	159	17
2001	194	22
2002	159	20
2003	304	33
2004	440	43
2005	304	36
2006	375	42
2007	258	33
2008	163* (196)	27* (Joseph, A. 2008)

\* Limited to January – October 2008, the time of data collection (Projected number)

There was a steady rise in numbers up until 2004; thereafter it levelled out and has decreased in 2007 and 2008. There are 2 main reasons for this viz. the government's role-out plan for antiretroviral medicines and secondly the greater emphasis on home-based care.

Duration of internment for inpatients may be from as little as a few hours to a number of weeks. Should the patient's condition improve, they are generally returned home. The average duration of stay for AIDS patients is documented as between 4 and 6 days.

Staff have recorded a number of needle-stick injuries but prompt treatment with antiretroviral drugs has possibly been the reason for these persons not having become infected. A number of staff have died of AIDS related illnesses, but most of these were not ward staff and therefore infection occurred outside the facility.

There is no differentiation between the care offered to HIV/AIDS patients and other patients. All materials are treated as infectious. Staff have expressed concern about the high percentages of the AIDS virus present in the blood of AIDS patients shortly before death, possibly increasing the risk of contamination. All waste is treated as contaminated and stored in sealed waste bins to be retrieved by an independent waste removal company.

AIDS patients may suffer from dementia, diarrhoea and/or vomiting, and in these cases patients are isolated. Anyone near death or with unsightly infections is also isolated. Multi-bed wards are only used where patients are well enough to welcome interaction or are admitted for symptom control.

Highway Hospice wards have shared ablution facilities though Matron Loudon felt that en-suite toilets, if affordable, would be ideal. The Matron also highlighted the new resistant strain of TB that had presented itself in local communities, and noted the experiments that had been done with ultraviolet lighting in TB wards to neutralise the risk of infection. Another precaution discussed was the installation of an adequate filtered extraction system from areas of aerosol contamination.

The Highway Hospice is involved in a number of out-reach projects within the greater formerly disadvantaged communities of Durban. In all cases the aim is to create facilities accessible to the local population at little or no cost to the users. The author has been fortunate to be involved in two such facilities. One facility has been operational since 1998, the other from 2001, after awaiting lengthy bureaucratic approval. Both of these facilities are reviewed in Chapter 4. Of interest is that the Hospice's Psychosocial Department is assisting AIDS orphans and other children made vulnerable due to the epidemic. In October 2008 the Hospice was assisting 418 of these children.

### **3.1.2.2 Ethembeni Care Centre, Richards Bay**

[Based on interviews with Lana & Lew Oatway (Managers): 1999 and website updates of 2003 & 2006]



Photograph 3.1.A - The Ethembeni Care Centre (1st Site) viewed from the north (Source: Author)

The Ethembeni hospice was initially situated off the N2 National Road between Richards Bay and KwaMbonambi, in north-eastern KwaZulu-Natal.

Major businesses in the region became aware of the fact that many of their staff were ill due to the effects of HIV and set up the centre in December 1997. Due to labour legislation, companies are forced to assist in the care of their employees. The Centre relies heavily on the funding of these businesses. In 1999 the facility had a ten-bed in-patient programme, and operated a drop-in day centre, home-based care and a



conference facility. The building was an old farm house and relates to the recommended preference for a hospice feeling like a home rather than an "acute hospital" (Kidd, B. 1987)

There were six staff members on duty during the day and two at night. Two of the staff were professional nurses, the others being community health workers. During this period the facility was seventy percent full. There were four wards – 3 three-bed wards and a single-bed isolation ward.

The facility was quickly outgrown and was relocated under new management in 2002 to Amangwe Village, situated on 10 acres of land and supported by the local business community. In December 2003 a new 18-bed Centre was opened for HIV Patients bringing the Centre's adult care capacity along with the existing accommodation to 45 beds. Also within this village, 54 existing disused workers' cottages within the compound owned by Mondi Paper Mills were converted into homes for AIDS orphans. There is also an 18-bed paediatric centre.

Whereas the original facility offered counselling and Doctor's visits were only twice weekly, the new facility offers daily pre-counselling, testing and post-counselling services, with healthcare professionals on hand. There is also a training facility.

In 1999, 2 staff members visited the homes of the infected to train designated caregivers. These caregivers (six in 1999), assisted the AIDS patients within their own homes. Today the Hospice works in conjunction with Ngwelezane Hospital and has expanded on a range of services to the community.

Of note is that there is need for security in the area. Staff have been attacked and equipment stolen.

AIDS is rife in the area. The nearby Ngwelezane hospital (outside Empangeni) regularly registers 100 percent HIV prevalence at its antenatal clinic. Therefore the 63-bed facility has been a positive response to the needs of that area and of the needs of the companies that fund the facility, through the adaptation of existing disused buildings and the development of new buildings suited to the patient's needs.

### **3.1.2.3 Summary of Impact on Hospices**

As Hospices are constrained in the operations and services that they can offer due to the availability of donor funding, the intake of patients in most hospices is limited. The Highway Hospice has struggled at times throughout the past decade to continue offering their services due to a lack of funding. This problem has been addressed through improved marketing, the opening of 2nd hand shops to sell donated goods, the opening of satellite facilities in former township areas attracting benefactor funding and improved means of income generation. The Sherwood facility has reached its maximum potential in terms of buildings on its current site and they manage their limited intake of patients well through a greater emphasis being placed on home-based care.

The Ethembeni Hospice has grown from strength to strength and with its financial backing from business in the area, the future of HIV/AIDS care in this high-risk area, along with the much needed antiretroviral dispensing, seems positive.

Other considerations for the future success of Hospice planning includes:

- a greater dependency on home-based care;
- the development of more “Hospice”-type facilities including day-care centres;
- as there is also an impact on the service elements associated with medical facilities, additional provision will need to be made for counselling, dispensing of pharmaceuticals, hazardous waste disposal and physiotherapy particularly in high-risk areas. The development of the Psychosocial Department at Highway Hospice and its satellite projects is a case in point;
- the expansion and relocation of the Ethembeni Hospice to a disused workers' compound offers insight for future proposals of adaptation of existing structures for use by people living with AIDS.

### **3.2.0 Child Care Facilities**

As not all babies born to HIV-positive mothers are themselves HIV-positive, it follows that a large percentage of children will be orphaned within the first eight years of their lives. However some babies may be infected after birth via breast-feeding. Most of the orphaned children require state-funded accommodation and care. The problems of orphan's is multi-faceted - after the basic needs of housing, clothing and nourishment have been addressed, their upbringing, education and eventual placement as contributing members of society will need attention.

The governments of developing countries' are hard pressed to maintain current rates of state funding and the orphan crisis will have a continued effect on overburdened coffers. There is little solution in sight for the plight of these children, and further urgent attention on this matter from all quarters is required.

Few would disagree that institutionalised life is far from ideal for these children and that time spent in these facilities should be kept to a minimum. Where possible, the emphasis should be on smaller "family" units, where house-mothers care for in the order of eight children within house-like units situated in a residential setting. Meals are taken with their 'family' members at their unit and not within large impersonal dining halls (Bingham; 1999).

There are an estimated 150 000 AIDS orphans in KwaZulu-Natal, and the number is expected to escalate to 472 699 by 2010. (HEARD. 2000)

#### **3.2.1 Children's Homes (Orphanages)**

A number of Children's Homes are maintained throughout the KwaZulu-Natal province. However, standards of comfort differ and this is largely due to the funding made available. In all cases the incidence of HIV/AIDS has been acknowledged by staff, although, in some cases, the impact of the epidemic is deferred to local hospitals.

Three homes were studied:

1) William Clark Gardens - Situated within Sherwood, a suburb of Durban, this facility houses orphaned or abandoned children and is run by Durban Child Welfare;

2) Lily of the Valley - Situated near Eston, ninety kilometres west-north-west of Durban, this facility caters only for children born of HIV/AIDS parents and is privately funded;

3) SOS Children's Village - Situated in a suburb of Pietermaritzburg north-west of Durban, this facility caters for orphaned or abandoned children who could not be placed in foster or adoptive care. It is largely funded by international donors.

The above Children's Homes are discussed individually below:

### **3.2.1.1 William Clark Gardens, Durban**

[Primary interviews with the Home's manager, Mrs. Preller (20.01.1999) and their Architect Mr. John Frost.] [Follow up interview with Ms. Ngwane (2004) and Ms. A. Govender 19.11.2008]

This Children's Home falls under the auspices of Durban Child Welfare and is primarily State funded. The home can cater for up to two hundred children (resident numbers vary between 130 and 200) between the ages of birth to 18. There is a staff compliment of around 56.

At the time of the primary interview the home was caring for 30 babies below 2 years of age, 25 toddlers of between 3 to 6 years of age, and up to 70 children of school-going age. Included in these numbers were 8 children of between birth and 8 years of age resident in the special care ward and suffering from AIDS related complications.

Around the time of the 2nd interview, the facility was divided into 2 separate entities, the first (William Clark Gardens) dealing with the older children of school going age (6-18 year olds) and the other Edith Benson Home) dealing with younger children (birth to 6 years of age).

This joint establishment is fortunate to be set in grounds of over 3 hectares (Drawing 3.2.A) and comprises a number of buildings including administration facilities, service buildings, recreational spaces and residential accommodation. Accommodation for the children is in a variety of forms:

Deaths from AIDS initially increased with seven HIV related deaths over the period 1996 – 1998 and then four deaths over the two months December 1998 and January 1999. This number continued to grow until the approval of the use of antiretroviral therapy for the children. In 2007 only 1 child died of AIDS and there were no deaths between January and November 2008. At this latter time there were 24 children infected with HIV living in the Edith Benson section (Govender, A. 2008).

Drawing 3.2.A - Plan Layout of William Clark Gardens Children's Home  
(Courtesy of Interarc Architects 1999) - Drawing not to scale.

Children infected with HIV are not segregated from their peers. There are however sufficient numbers of infected children in the Edith Benson Home (33,8% in 2008) to have dormitories of solely infected children together. The following observations were made:

- The variety in the provision of residential accommodation types ranging from community dormitories for the toddlers to family-unit cottages for the older school-going children was reported to be a success.
- Children are only isolated from their healthy peers when at an advanced stage of AIDS largely due to their susceptibility to illness from others, with this being an added risk to their own lives. They however are kept in contact with other infected children in the high-care unit where they share wards.
- In 1999 Mrs. Preller stated that the health of HIV/AIDS children improves under suitable care. An example of this she cited was where a toddler was admitted to the home “with days to live”. The child, through the care offered by the centre improved and at the time of the interview was attending school three years after admission to the Centre. This has also been verified in the much publicised case of Nkosi Johnson (WOOTEN, J. 2004). The more recent access to antiretroviral drugs has proved successful in extending lifespan.



Drawing 3.2.B - Plan Layout of a Typical Residential Cottage at William Clark Gardens (courtesy of Interarc Architects - 1999)



### 3.2.1.2 SOS Children's Village, Pietermaritzburg



Photograph 3.2.D – Showing the layout of the houses (Courtesy of Alexander Gabriel)

The KwaZulu-Natal SOS Children's Village is situated in the capital of the Province, Pietermaritzburg, 90km inland from Durban. Funded largely by international donors, this facility is well equipped, well planned and very comfortable. With all 13 houses free-standing, the village accommodates up to 130 children, 10 per house with 2 additional houses for the youth who have progressed through the village and are in search of alternative accommodation. Each house has a resident housemother living in one of the bedrooms. Of interest at this facility is the employment of an "Aunt" who tends over three houses. This person acts as back-up for the mother and will assume the mother's role in times of illness or while the mother is away. The village has its own well-equipped pre-school.

Management, while recognising that HIV/AIDS is an increasing problem within the community, initially had no plans for this eventuality. Ailing children are referred to a local General Practitioner, who refers the patient to a local hospital. There is no medical facility within the village. "Since 2002, an SOS Social Centre has been coordinating an HIV/AIDS community-based child care and support programme. HIV/AIDS affected families receive material and medical support, education and counseling, and they are supported with income generating activities. Besides, HIV/AIDS awareness and prevention campaigns are organized." (SOS Children's Village Website 2008)



### **3.1.2.3 Summary of Impact on Children's Homes**

It was initially believed that the existing model of the children's home would be brought into question as government-aid cuts would require that they either seek funding from alternative donors. There has been little impact on existing children's homes due to limitations on their capacity – they have however seen an increase in new intakes being HIV Positive. This increase has been accommodated internally in both of the institutions researched and there has not been any recent addition to the existing building stock.

The SOS Children's Village, due to their international links, has weathered the financial crunch. The William Clark Gardens/Edith Benson Home has also survived on governmental, municipal and benefactor funding.

There is an ever increasing demand for new accommodation for AIDS orphans and Child Welfare is working tirelessly to create homes for these children or seek their repatriation with extended family members, if they are able to be located. The reuse of other building types e.g. vacant schools, disused houses etc. for conversion to suit the needs of orphanages, is an essential option. The Amangwe Village discussed in Chapter 3.1.2.2 is a fine example of this adaptation.

Consideration for the needs of the children who have contracted the virus, in the form of provision of special care wards, is essential and is present at Edith Benson Home. AIDS patients are at risk from contracting any illness from their HIV-negative friends and therefore need to be isolated at times when their immunity is low. They should however be in visual contact with others so the special care ward should be annexed to a busy space.

Other models of foster-care are being researched e.g. The Community-Family Care Homes on Cato Manor where new accommodation for foster parents and 6 orphans has been constructed. (Peters, W. 2002)

The control of the city's street children is viewed in many quarters as a losing battle in the context of a developing country and in particular one ravaged by AIDS. Many of the street children are themselves HIV Positive.

### **3.3.0 Other Buildings Impacted upon by AIDS**

#### **3.3.1 Educational Facilities**

Statistics indicate that the majority of people found to be HIV-positive fall within two main age groups, namely children under the age of five and adults aged between fifteen and forty years. An increase in the child mortality rate will reduce pupil numbers, whilst the deaths of junior teachers, who also fall into the high-risk category, would impact on the entire education system. Likewise the country's tertiary education system will be impacted upon due to a drop in numbers. This drop in numbers in schools will be due to:

- children being born HIV-positive and not surviving to a school-going age;
- children contracting the virus via breast-feeding and not surviving to adulthood; or
- there being fewer mothers of childbearing age, there will hence be lower birth rates.

However with the development of antiretroviral drugs, the transmission rate from mother to child is diminishing. It is more likely that Educator numbers will decrease and due to the associated illnesses, the absentee rate amongst Educators will increase. *The Independent on Saturday* of January 13 2001 reported:

"A shocking study commissioned by the Department of Education revealed this week that up to 16% of teachers in other provinces – and 20% in KwaZulu-Natal – were HIV-positive."

The Vice-Chancellor of the University of KwaZulu-Natal in a newsletter dated November 2000 stated:

"of the 80 000 teachers in this province [KwaZulu-Natal], about 25 000 (and probably more) will die in the next five to ten years. There are only some 380 first-year students in the entire College of Education sector in the province."

The *Sunday Times* of 23 November 2008 reports:

"By 2015, at least 18 000 teachers are expected to die of AIDS-related illnesses" and "We are starting to enter a critical period where those infected (with HIV/AIDS) are now dying." (Govender, P. 2008)

Therefore flexibility in the design of the learning spaces should be considered. With a lack of locum staff, one teacher may be called upon to manage two or more class

groups. Inter-leading spaces, partitioned by movable doors or room dividers could facilitate this necessity.

Discussions with educators at the primary and secondary levels reveal that there will be very little impact on the buildings housing these functions due to the HIV infection of the learners. In most instances children born HIV-positive will not survive to attend school. Those who do live to reach school-going age, attend school on an ad hoc basis as and when their health permits. When unable to attend, children are kept at home or in alternative care.

Those who contract HIV while at school will do so through two means:

- a) where the child is sexually abused by a HIV-positive person; or
- b) where the child becomes sexually active and contracts the virus from an infected person.

However, in the past a person infected with the HI-Virus could live for between five and seven years and in some instances longer without any adverse health complications. This has been extended with the dispensing of antiretroviral drugs. Therefore very little impact will be felt in the classroom up to fourteen years of age, but that there will be some impact in senior grades of adolescents between fifteen and nineteen years of age.

### **3.3.1.1 University of KwaZulu-Natal**

The University's Campus Health Services located in Durban, Westville and Pietermaritzburg provide amongst their services, HIV testing for students and staff. In 2000, unlinked testing of students with sexually transmitted diseases (STD) showed that of two hundred and forty students with STDs 13,4% of males and 16,3% of females tested HIV positive. It is difficult to determine how representative this is of the entire university population as many students and most staff are on medical aid and would not necessarily make use of this facility. Only one case of the death of a staff member had been confirmed as AIDS related at that stage (Freese, I. 2000).

A study carried out in 1992 "indicated that living in residence, gender and race were particularly strongly associated with high risk behaviour." Some students, particularly those in the medical and health fields are at risk to HIV infection. Forty-seven students who were exposed to the risk of HIV infection during 1997 and 1998, were HIV-negative when tested.

Due to the uncertainty of numbers, it is difficult for the university to plan for the epidemic. This has to be based on projections under different scenarios. Under the "best estimate" scenario, prevalence amongst students on the Durban campus alone in 2000 was estimated to be 10,6%, but may have varied between 7 and 13,4% (Freese, I. 2000). A survey carried out at the university's Westville campus in March 1999 comprised a test group of three hundred and eighty students. Seroprevalence amongst the female students tested was 28,14% while for males the figure was 14,09%. Analysts were cautious over the results for males as they believe that participation for high-risk male students may have been low. The average figure for the entire university for all the campuses was however estimated at 16% (Mthethwa, B. 2006). HIV prevalence amongst staff was estimated in 1999 to be between 2,3% and 3,4%, with potential for rise to between 8,7% and 10% by 2009. The most serious impact is expected to be on the lower-skilled staff, with concern also for the junior-level teaching staff.

In 2005 the programme provided voluntary counselling and testing for HIV for 2257 students out of a student population of more than 40000 (Mthethwa, B. 2006). It was predicted in 2000 that if behavioral patterns persisted, between 1 in 5-6 students would be HIV-positive (Freese, I. 2000). This prediction has materialised.

Reports show a clear indication of the high infection rate present amongst students. The impact on the university has been felt in a number of ways:

- There have been student and staff losses due to AIDS;
- There has been a limited drop in class attendance due to HIV related illnesses;
- Financial assistance may not be repaid once the student dies or is unable to secure employment to repay the loan;
- A greater load is being placed on the university's health services.

### **3.3.2 Street Shelters**

A number of street shelters exist throughout the province, sited almost solely in the urban areas. These are run by religious aligned groups, funded by donations, or in the case of shelters for children, usually under the control of Child Welfare. They cater for a wide population of all race groups and of varying ages. Residents are largely of a high-risk population, being one or a combination of the following: homeless, destitute, alcoholic, drug dependent or involved or having been involved in prostitution.

In the case of children, a variety of sociological causes may result in the relocation of a child from its 'family unit' to the streets, usually within a commercial centre. Whatever individual causes may be, once on the streets these children become associated in crime, substance abuse and prostitution either out of necessity or peer pressure. Street children are becoming an ever increasing phenomenon on South African streets, and municipalities, child welfare organisations and certain church groups have developed safe havens, in most instances modified from disused buildings. Most of these facilities offer accommodation, meals, and in some instances some form of education whether it is a trade or placement in a local school.

Essentially it is desirable to relocate these young people back into the communities from whence they came after the appropriate counselling of both the child and the community members who will provide ongoing support for that child. This requires monitoring by the welfare organisation concerned.

Older members of the community, some of whom may be accompanied by their children, who have fallen on hard times or opted out of society, may seek protected shelter in a number of church or donor supported facilities located in the cities. These can be found usually in adapted buildings and are covered in Chapter 4 of this dissertation.

### **3.3.3 Housing**

While on the one hand, large sectors of the population strive for some form of formal shelter in which to reside, and on the other, predictions of mass fatalities due to the AIDS epidemic are foretold, one might conclude that with the drop in population growth, there too would be a subsequent reduction in the need for new residential housing. While this viewpoint is short-sighted, it highlights the fact that government and planners need to consider the impact of the epidemic and the possible shift in housing requirements to accommodate the consequential needs of those affected. Current trends and demands from the electorate are one house: one plot; a move away from communal living and the extended family structure.

The usual progression of events after the mother and /or father in the household have succumbed to AIDS is that the eldest female child is withdrawn from school to care for the family. If relatives are at hand, the younger of the children would usually pass into their care, or if alive, a grandparent. Older children may move to the cities to seek subsistence. With entire communities becoming infected, the care-giving role will need to fall upon members within these communal structures to provide the needed care (Barnett, T. & Whiteside, A. (2002). This being the case, cluster housing with easy access to all areas would surely be the solution. This model will hopefully gain support, as the institutionalisation of AIDS sufferers offers both a lesser quality of life and increases the burden on local and regional government.

The housing and comfort of terminal AIDS patients will arguably become the new front on which Architects will face the reality of the epidemic. Current hospital, clinic and Hospice facilities cannot cope with the additional patient numbers brought about by the virus without expansion, and the associated costs of patient care are crippling. The most viable solutions are:

- Home-based care, entailing the care of patients within their family homes by family or community members, with regular visits by suitably qualified, medically trained persons, and
- Day-care facilities, where patients may spend a number of hours within a day or week, being cared for while family members are at work.

### **3.3.4 Prisons**

[Based on a visit to the Westville Prison and an interview with Messrs. Marais, Nxumalo, Sr. Dladla and Ms. Dhlamini of the Prison Hospital: 1999 and 2004 and internet research.]

Westville Prison, outside Durban, is reportedly the biggest facility of its kind in the Southern Hemisphere. Housing up to ten thousand inmates in four sections, the Institution has recorded a dramatic increase in HIV/AIDS over the past decade. As it is illegal to separate HIV-positive and HIV-negative prisoners or to identify infected patients, the inmates do run the risk of becoming infected while in the prison.

HIV/AIDS prisoners requiring specialist medical care are transferred from all over the province to the hospital facilities at this prison, as smaller prisons are not equipped to deal medically with the virus.

Until HIV/AIDS becomes notifiable, exact numbers are unavailable. However earliest records held by the 'Medium B' Section of the prison reveal that from 1986 to 1989 only two cases of possible AIDS related deaths occurred. The Prison changed its policy from 1990 and relocated all confirmed and suspected HIV/AIDS patients to the 'Medium A' Prison hospital. Between 1990 and 1995 there were eight deaths, according to hospital staff, attributed unofficially to AIDS.

The Prison began to specify AIDS as a cause of death on its records from 1996. 'Medium B' AIDS related death records reflect that in 1996: 3 deaths; 1997: 14 deaths; 1998: 44 deaths. These numbers have steadily risen to more than 110 in 2005.

Again, these figures do not reflect the total number of deaths, as the Prison has a policy of releasing some terminal patients into the care of their families. This has in some instances in the past proved dangerous, as it is not uncommon that the patient's health improves and they could infect others within the community. Today such terminal patients are only released if it is medically certain that there is no hope of recovery.

Often it is found that families refuse to care for these relatives due to the attached stigma or economic reasons.

The 'Medium B' medical facility houses forty-eight beds. Two six-bed "terminal" wards deal with patients requiring twenty-four hour high-care. Patients in these wards are predominantly infected with AIDS related illnesses. Seven single-bed wards cater for patients who are either infectious or in the final hours of their lives. These patients are moved here to avoid traumatising others in their ward. Apart from isolation wards for psychiatric patients, all other patients are in 14 bed wards.

Upon death, AIDS patients are treated no differently from HIV negative deaths. Bodies are transferred to the state mortuaries in Pinetown or Chatsworth for collection by the families, or in cases where the prisoner had been transferred from another area in the province, the State will arrange the transferal of the body to the state mortuary in that area. Where a family refuses to retrieve the body, the state will fund a cremation.

Twenty-nine staff are employed to care for the medical needs of in the order of ten thousand prisoners.

Statistics show a great increase in AIDS related deaths since 1997. Although numbers are on the increase, the Prison Hospital has managed to contain the problem by discharging patients more rapidly and returning them to the general cells for recuperation. This makes way for the more serious HIV related illnesses.

Changes have been made to the ward configurations to make allowance for the movement of wheelchairs and trolleys into and out of the high-care wards. This has resulted in a decrease in bed numbers from fourteen to six in a number of the wards. The Staff foresee an accommodation problem as numbers rise.

The Treatment Action Campaign represented by the AIDS Law Project took the Government to court in an attempt to have antiretroviral (ARV's) dispensed to prisoners. The Government disregarded a High Court ruling of 26 June 2006 enabling the provision of these drugs to the prisoners, and appealed against the ruling. (TAC. 2006)



### **3.3.5 Mortuaries and Cemeteries**

Deaths due to AIDS related illnesses will have impacted on existing funeral parlours, crematoria and graveyards. Evidence of this has manifested itself in a number of countries in sub-Saharan Africa. The major impact is the increase in the numbers of deaths over a shorter period of time.

While the need for an increase in the number of funeral parlours and crematoria could be seen as favourable by role-players in those industries, the allocation of prime land for graveyards, especially within developed or rapidly developing urban precincts, is proving difficult. Many cultures and religions are opposed to the cremation process and are thus reliant on the provision of graveyards for the burial of their people.

Graveyards usually fall under the control of Local Councils, and their Urban Planners will need to take cognisance of this within their revised briefs. (Bingham & Harber;1998:2)

#### **3.3.5.1 Mortuaries**

As the resultant effect of the HIV/AIDS epidemic is death, a tremendous impact will be felt by the facilities that handle the bodies of the deceased.

Existing mortuary refrigerators are incapable of handling the numbers of bodies and in places bodies are being stacked three per refrigerator drawer or laid on the floor of the mortuary. Some hospitals such as the one at Eshowe in the north of the province have dispensed with the need for a post-mortem area and have air conditioned the entire mortuary to make it “suitable” for the interim storage of bodies (McDonald, 1999)

Cultural and tribal practices also come into play. Certain cultures, which solely practice burial, only bury their dead on weekends. This places pressure on the mortuaries to store the bodies until the Friday or Saturday for retrieval. Cremation is taboo in some

cultures and with the projected increase in deaths due to the epidemic, land will need to be allocated for new graveyards.

The risk of mortuary staff and medical personnel who perform postmortems contracting HIV / AIDS and its related diseases, is very high. Contamination may be via direct contact with HIV / AIDS infected blood or from aerosols contained within the mortuary space, present due to spread by rotary cutting tools. Hepatitis B, HIV and TB are the three main possible infections.

The mortuary at King Edward Hospital and the University of KwaZulu-Natal Medical School handles cadavers from that hospital as well as referrals from other hospitals in the region. The State mortuary, situated in Gale Street, Durban, deals with cases where death is due to unnatural causes.

Postmortems are performed by two departments associated with the university's Medical School, namely Forensic Medicine and Histo. Pathology.

### **3.3.5.2 Forensic Medicine**

[Based on an interview with Professor M A Dada of the Forensic Medicine Department, Natal University Medical School: 13.01.99 and Professor S R Naidoo: 2004]

This department deals only with cases where death is due to unnatural causes, e.g. stabbing, gunshot, motor vehicle accidents, drowning etc. The facilities at the State mortuary do comply with universal precaution standards.

The autopsies are performed by medical staff, with the South African Police Department provides the support facilities e.g. cleaning. Although risk of infection for the medical staff is limited, there is a real risk for the mortuary staff due to attitudes. Medical personnel are equipped with uncontaminated visors, masks, head-wear, theatre garments and rubber boots and generally wear two pairs of gloves to avoid erroneous incisions or needle-stick injuries. Wire mesh gloves are available and are often worn in conjunction with the conventional latex gloves.

Reports indicate that the attitude of the mortuary staff to the possible dangers present, are far from clinical. The cleaning of the mortuary is by high-pressure hose and this does not guarantee the removal of all contaminants and in some instances assists in their spread. Tuberculosis can be contracted through aerosols contained within the mortuary and the rate of extraction of air from this facility is said to be insufficient.

The spread of contaminated matter is exacerbated by the movement of people into and out of the dissection areas, spreading blood under foot to other areas of the facility.

0.3 persons die of unnatural causes for every 1000 deaths in KwaZulu-Natal. A disturbingly high and increasing seroprevalence rate has been detected: There has been a steady increase in the general rate doubling around every 3 years – 26,7% in 1995; 43,4% in 1998 and more recently figures of up to 100% have been recorded. The forensic rate for autopsy studies for HIV seroprevalence in the 20-29 year age group grew much more rapidly having reached 54,5% in 1997.

### **3.3.5.3 Histo-Pathology<sup>10</sup>**

[Based on an interview with Professor P K Ramdial - Histo. Pathology Department, University of KwaZulu-Natal Medical School: 13.01.99 and correspondence 24.11.2008]

General autopsies are authorised by the King Edward Hospital (KEH) Manager and the family of the deceased. The autopsies are conducted to determine/ confirm the cause of death. These are performed at the hospital mortuary, which is associated with the University of KwaZulu-Natal's Medical School. All cadavers are tested for HIV / AIDS prior to their autopsies. In 1999 it was revealed that the Department's staff refused to perform postmortems on any HIV / Aids infected bodies as they considered the facilities and precautions inadequate, and the risk of infection to themselves too great. Mortuary staff at times did not heed precautions. Cultural matters were in some instances the cause. No dress code was enforced within the mortuary and this lead to some staff wearing open sandals while others handled the bodies without gloves.

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<sup>10</sup> Histo-Pathology – The study of tissues. (Oxford Concise Dictionary)

In 1999, the body storage capacity at the KEH mortuary was fifty, although at times this number had been exceeded, when bodies were stacked one upon another. Up to eighty-one at a single time had been recorded. It was reported by the medical staff that the hospital and mortuary drainage systems made little provision for the sterilisation of HIV infected blood passing into the system. Architectural changes planned in 1999 for this facility included the division of areas, especially in the lecture theatre, where glazed screens were required to protect the observers from risk of contamination.

The laundry service was at times been plagued by labour strikes. This had an effect on the provision of sterile garments and the medical school had to make alternative arrangements during these occurrences. Rubber boots had been in short supply and staff had to resort to using fabric shoe-covers as used in theatres.

Areas in 1999 that needed attention included:

1. The spread of HIV / AIDS due to –
  - a. needle-stick injury or accidental incisions (this was being addressed at the time);
  - b. improper or inadequate sterilisation of facilities after use.
2. The spread of AIDS related illnesses, specifically Tuberculosis - through insufficient extraction of air within theatres.

General recommendations included:

3. Education of staff on the risks of their occupation;
4. Enforcement of dress code;
5. Supervision during cleaning; and

Architectural recommendations included:

6. Demarcation of contamination areas (no-go areas);
7. Glazed screening between mortuary tables and lecture theatre areas;
8. The provision of air extract systems with no recycling of contaminated air; "Lamina flow".
9. Chlorination of effluent from drainage systems.

The review of 2008 showed that improvements have been made to KEH which now has a highly infectious disease room with downdraught ventilation facilities, an automated table and a division between clean and dirty areas. The Nkosi Albert Luthuli Hospital in Cato Manor, Durban was completed around 2000 and has modern facilities within its laboratory block and the mortuary has state-of-the-art equipment. (Hathorn, J. 2004)

The facilities are now under-utilised due to a shortage "requested and consented to" autopsies. Staff are comfortable to work in the new safe environments.

#### **3.3.5.4 Cemeteries**

The Durban newspaper, *The Mercury* of Monday 18 January 2001 reported:

"The HIV/AIDS pandemic is taking a hold on Durban's cemeteries. The rising number of deaths has led to a serious shortage of graves. The department of cemeteries and crematoria said", and "there was only enough burial space left at Umlazi's Zwelethu Cemetery to last until January 14" (2001) "The department said the metro council would not be able to provide new cemeteries as there was almost no land available."

In response to this space shortage, it has been suggested that graves are reused or that people opt for cremation. As it is contrary to African custom to consider any method other than to inter their bodies in a grave, graves will need to be sought further a field to meet the demand.

#### **3.4.0 Summary of Case Study Findings**

The findings of the above research show conclusively that there is a definite impact on the functions of these building types due to the HIV/AIDS epidemic. In line with the dissertation's hypothesis, medical facilities have faced the initial brunt of the problem, while other institutions have had to address the growing problem.

Hospitals have had to address the epidemic with the little resources they have and have needed to make contingency plans for the future. In the rural example, due to a lack of finance, the hospital has been forced to make do with what space they have by re-organising layouts or even patients sharing beds. New facilities or additions to existing structures are costly and the provision thereof slow - it is noted that it is the privately funded rather than the government funded institutions that have the greatest propensity for development and acclimatisation to the effects of the epidemic.

The levelling off of new HIV infections and AIDS deaths due to better education and ARV treatment respectively will see hospitals better cope with the problem as they gain experience through time and are able to refine their facilities planning arrangements. The increase in numbers of those living with the virus due to the extension of life that ARV's offer will need to be accommodate – this will largely be through medicines dispensing facilities, care centres, hospice facilities and residential accommodation suited to this need.

Hospices are ideal for palliative and supportive care. Success of their value to their communities has been proven and through their home-based care functions, they have managed to keep the expansive need for new hospices to a minimum and have kept operational costs down.

The largest growth area due to the epidemic has been that of AIDS orphans. Those institutions reviewed are limited in capacity but have success in the care of those they are able to accommodate. Other facilities reviewed all showed signs of the HIV/AIDS impact. Most affected was the Westville Prison. While new prisons are being constructed and others upgraded, the impact on the existing prison's hospitals has been marked. Initial reorganisation of hospital bed layouts could not cope with the numbers of infected inmates. The resorting to regular cells utilised as medical wards has been their answer.

Of interest in the early stages of this investigation was that there was a general unpreparedness in all but those institutions dedicated to the HIV/AIDS cause. It is also important to note that all interviewed (excluding health workers) see some sort of health facility being the solution to the problem - this follows from the supposition that if you are ill, you need a hospital. Herein lays the problem - while it is true that the AIDS patient is

in need of medical attention and counselling, the statistical data shows an ever-increasing number of those being infected with the virus. As there is a limited budget for health care, it would seem that there will be no marked relief from government funding in the future. It is not ideally the role of the hospitals to tend to the dying. Currently, hospice organisations fulfil this role and are excellently equipped for this sort of care.

The challenges faced by AIDS Planners have been centred around the availability of funding for new facilities. The limited funding in most cases has precluded the construction of new facilities and has led to adaptation of existing buildings, in many instances under the guidance of Architects, to suit the individual needs of that institution. Innovation in the re-use of structures and materials in the creation of space for HIV/AIDS care has also come to the fore. For the Built Environment consultants within this context, it has meant learning to accommodate people in a changing environment with a review of methods of design, planning and procurement.

In an area where economic constraints preclude first-world solutions and design flexibility is a prerequisite, the success or failure of the built environment in accommodating the effects of this epidemic on its inhabitants, lies within the hands of building consultants (and politicians).

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# CHAPTER 4

## CREATIVE SOLUTIONS IN SOLVING THE AIDS ACCOMMODATION PROBLEM

*"At this Ark, there are no doves, only flocks of pigeons and there are few olive branches."* (HUTTON, N. 2008)

### 4.0 Introduction

People working in the AIDS realm are out of necessity finding ways to deal with their own needs for space, accommodation and in some instances, basic shelter. Borne out of this necessity and following the adage 'necessity is the mother of invention', caregivers have in many instances resorted to inventive means, some without architectural assistance, to turn existing structures into suitable accommodation for those affected by the epidemic. Many buildings within the province become abandoned or are not used for a variety of reasons. Usages change over time to accommodate changing needs and trends within society, and these changes often result in opportunities for the attainment of 'new' accommodation to house the AIDS cause.

In architectural terms, the two methods of providing accommodation are via adaptation of existing structures or the creation of new structures specifically for the purpose, the latter being either permanent or temporary. Selected examples of both are described within this chapter under the headings 'Adaptive Intervention' and 'Custom Design'. *Adaptive Intervention* reviews selected examples of recent creative methods of redefining the usage of commercial and residential buildings for use by people living with AIDS. *Custom Design* looks at a recent addition to the province's AIDS facilities – one housing AIDS orphans. Finally, an example of innovation in design is considered. While all of the facilities discussed in this dissertation are considered innovative, the example discussed under the heading 'Innovation' is considered so for its reuse in terms of materials, planning and design.



## **4.1 Adaptive Intervention**

The following examples show successful solutions of facilities housing those affected and infected by HIV/AIDS through the reuse and modification of existing buildings originally designed to house another function.

### **4.1.1 Sinikithemba AIDS Centre, McCord Hospital, Durban**



Photograph 4.1.A – North East view of Ridge House circa. 2001 prior to adaptation  
(Source – Author)

Pressured by increasing HIV/ AIDS statistics at McCord Hospital in 1999, a small team of dedicated Doctors and Social Workers dreamed of opening a centre to attend to the needs of the AIDS infected. Glaswegian Doctors Val and Mike Patton, walking to work at the hospital each day had eyed out the grand Ridge House at the crest of McCord Road. They prayed that this would one day become the home of this AIDS Care Centre. (Bingham 2002)

The author was approached by Dr. Val Patton to assist in their quest. So began months of planning interspersed with visits to Hospices up and down the KZ-N coastline.

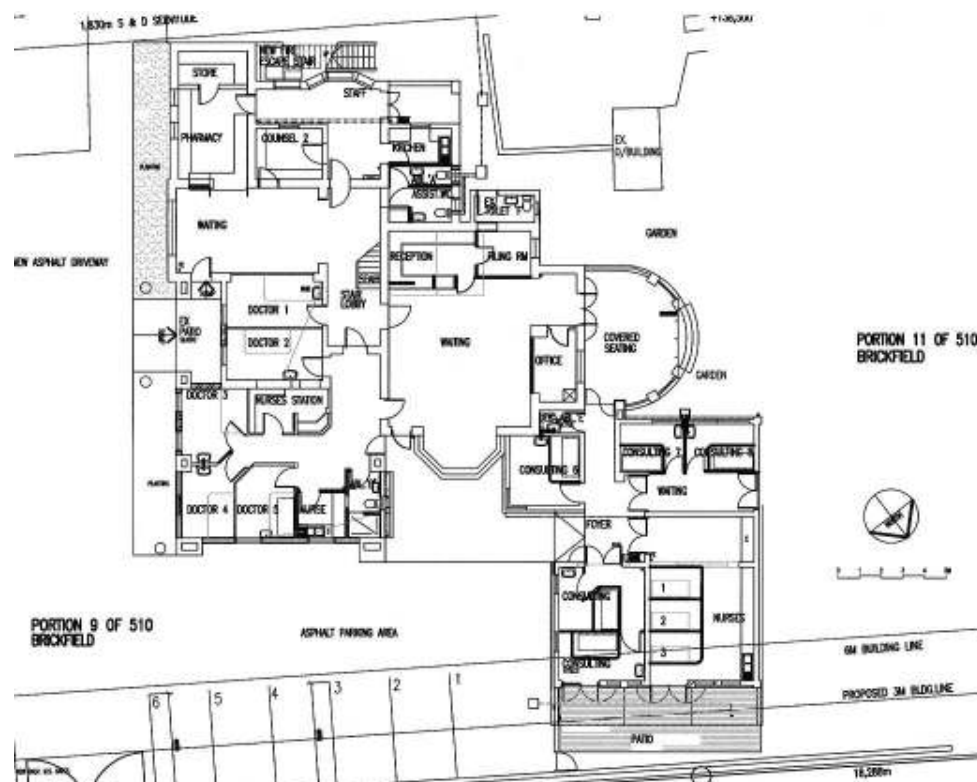
Phase One of the vision was realised in 2002 – the existing double-storey dwelling was converted into counselling, consultation and training facilities with a spectacular, roof-lit and bay windowed, room being converted into a multi-purpose facility doubling as a chapel. There is also an AIDS specific pharmacy on the lower level. Added to the existing building are medical consultation rooms and a “drop-in” centre, catering for day visitors including children and craft workers. People living with the virus create beadwork and handicrafts through organised facilities at the hospital, and this offers added companionship and a sense of self-worth, in turn assisting in improving their health. (Bingham, K. 2002)

The architectural style of the addition is domestic, in keeping with the hospice ethos (Kidd, B. 1987) comprising a facebrick plinth, plastered and painted walls, all under an aluminium sheet roof. A monopitch roof over the “drop-in” centre allows clerestory south lighting into the upper volumes of these busy spaces, while broad-roofed verandas spill out into the sub-tropical garden. (Bingham, K. 2002)



Photograph 4.1.B – View of the new Sinikithemba Drop-In Centre from the east  
(Source – Author)

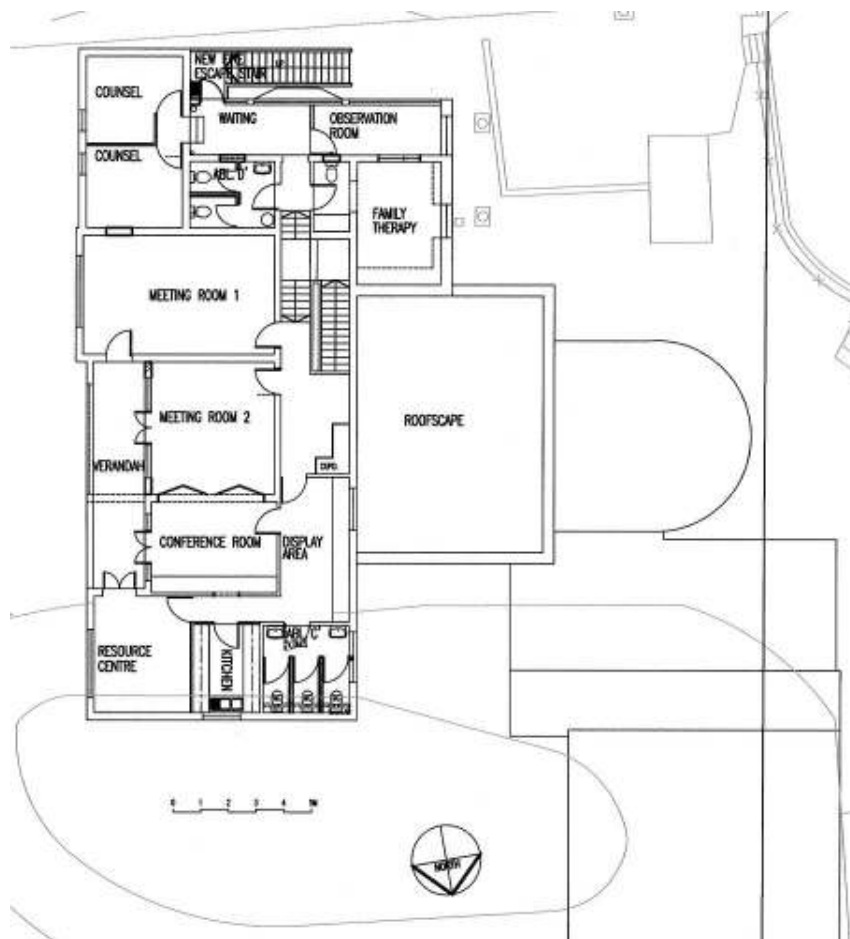
The adaptation of this facility has been a success. The grand scale of the original dwelling was particularly well suited to the new usage of the building with high volumes being found in most of the congregational areas. Interior spaces were opened up with the use of lintels and beams and the existing lower level interior sliding folding doors were relocated to the upper level training spaces to facilitate the division of spaces. New divisional spaces were created with partition walling and where existing openings were required to be closed, this too was done with partitioning. This was done due to the ever changing requirements of medical, and particularly AIDS care, to enable ease of future adaptation. Architecturally new windows were designed in the same proportions as those of the original dwelling while differentiating old from new through modern domestic scale intervention.



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The Sinikithemba Centre quickly became swamped with patients and through operational experience, spaces internally have been inter-changed. Areas requiring rapid increase in area were:

1. The Waiting Area and Admissions area – 3 registration booths were incorporated to speed up the admissions process;
2. There has been the need for more Consulting Rooms to deal with increased numbers;
3. The Pharmacy needed rapid expansion after initial reliance on the Main Hospital's dispensary for daily supplies.



Drawing 4.1.C – Sinikithemba First Floor Plan – not to scale (Source – Author)

In 2009 there are planned additions to the Sinikithemba Centre awaiting the necessary municipal approval and donor funding. These additions are mainly consulting rooms, a paediatrics facility and research offices and laboratories.

### 4.1.2 Chesterville Community Hospice



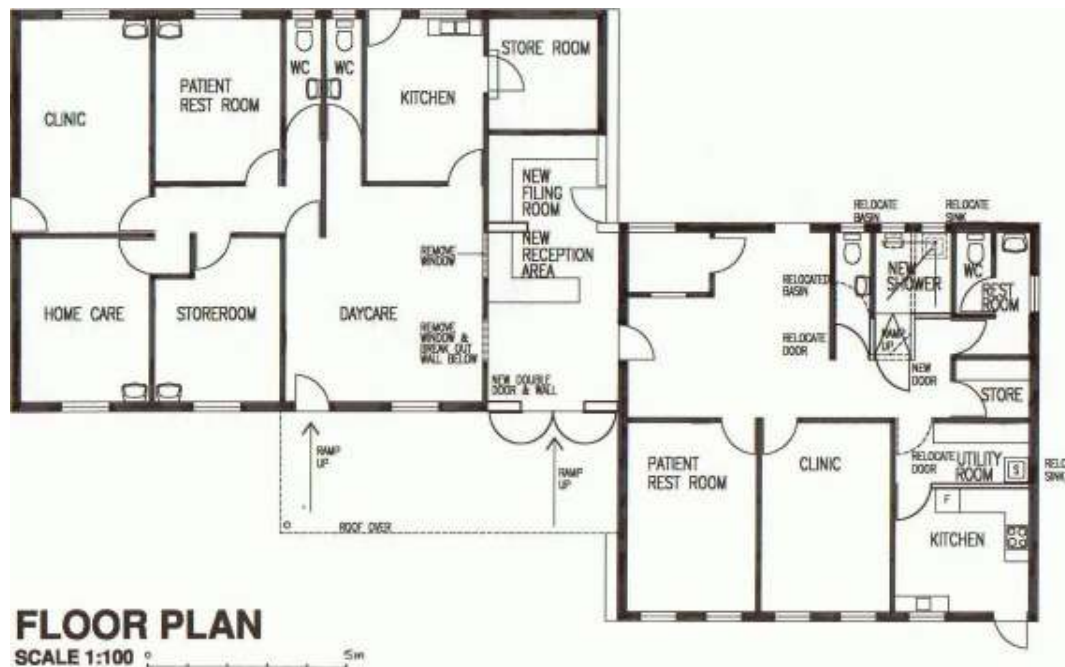
Photograph 4.1.D – View of the Chesterville Community Hospice from the north  
(Source – Author)

Chesterville is a former township suburb situated 8km to the west of Durban, housing some of the poorer socio-economic residents of the city. In 2003 the Durban City Health Department donated two buildings standing adjacent to one another, originally used for staff accommodation, for the establishment of a hospice-type facility, to be run by the Highway Hospice (Photograph 4.1.D). In 2004, clinic and day-care facilities were offered on a once-a-week basis by two staff members. This has more recently been extended to 2 days per week. The numbers of patients has varied over the years:

2002	-	22	2006	-	50
2003	-	46	2007	-	38
2004	-	67	2008	-	25 (up to October)
2005	-	35			

Again one notices the spike in patients in 2004 with a levelling out thereafter and over 2007 and 2008 a reduction in patient numbers.

Most patients display HIV/AIDS related infections. This facility has not witnessed the impact of patients that the staff expected. This is probably due to the associated stigma and concerns of victimisation by the community and the relatively close proximity of the residential area to the city.



Drawing 4.1.E – Plan Layout of the Chesterville Hospice Buildings (Source – Author)

Due to the slow nature of fund-raising exercises and the financing of capital ventures, the occupation and refurbishment of the facility has been incremental. Initially only one of the buildings was occupied. Minor alterations were performed through consultation with the author, to firstly ensure accessibility to the building for those in wheelchairs and secondly to provide easy access to the ablution facilities for patients and their assistants.

Patients arrive at the Hospice in the morning, are then registered and wait in the Waiting Area. All have a general check-up in the Clinic with records taken. Patients requiring rest are assigned to the Patient Rest Room in which there are 2 beds. Others sit communally and engage in handicrafts or conversation.

Meals are prepared at the Highway Hospice and transported to the Chesterville Hospice. Some meals are prepared in-house in the Kitchen.

There is no twenty-four hour care at Chesterville, and all patients are retrieved from the facility or return home at closing time.

The adaptation of this building from a worker's accommodation facility to a Day Care Centre has been simple. The existing rooms are in the order of 13 square metres in area and are suited to uses as 2-Bed Wards or Consulting Rooms. The existing Kitchen and Ablutions have been easily converted. The reconfigured Shower Room has had a gradual ramp graded up to the edge of the shower floor and then graded away down to the floor drainage outlet. The entire floor is laid to falls to the outlet for ease of hosing down during cleaning. Staff indicated that there was no need for wheelchair access to toilets, their reasoning being that such patients would be assisted to the toilet. An assisted toilet is however a necessity and at least 1 should be accommodated in any future alteration.

The lean-to roof linking the 2 buildings offers the possibility of a linking node for the 2 wings of the facility, viz. Consultation/ Counselling to the right and Home-Based Care and Day Care to the left. It is envisaged that this alteration will soon be implemented.

### **4.1.3 The Dream Centre, Pinetown**

The Dream Centre in Pinetown, 15km west of Durban, was established in 1999. The building had previously housed the redundant Morton Hall, a home for the aged. *The Independent on Saturday* of 31 October 1998 reported beatings of the elderly residents by some of the Home's staff. After video evidence was presented corroborating the reports, the Home for the Aged was duly closed down. (Robinson, K. 1998)

The birth of the Dream Centre as a "step-down-care" facility created excitement in the AIDS care field as this was a new building type in the provision of care for those living



with AIDS. The step-down-care is an "intermediary between hospitals and home-based care" (Irin, 2004).



At the visit to the Dream Centre of 2004 there were 70 of the 240 available beds occupied with it being envisaged that patient numbers would be increased in 3 month cycles to reach the total capacity within 12 months (McDonald, N. 2004). This growth has been far slower due to poor transport access between hospitals and the Centre and reportedly due to the stigma attached to the Virus. This facility fills a valuable niche in the care of people with AIDS.

Photograph 4.1.F – View of the Dream Centre from the west. (Source – Author)

The Centre offers care to those who are no longer able to stay in hospital but are too ill to return home or need to receive training, preferably along with a family member or community member, in their own home-based care. The Dream Centre also offers palliative care for those patients in their final days of life. All care is free of charge and funded by the Department of Health.



Photographs 4.1.G and 4.1.H – Wards at the Dream Centre. (Source – Author)



The adaptation of a Home for the Aged is particularly suited to its redesign into a facility for AIDS care. Care has been taken in the design of the Home for the Aged to accommodate:

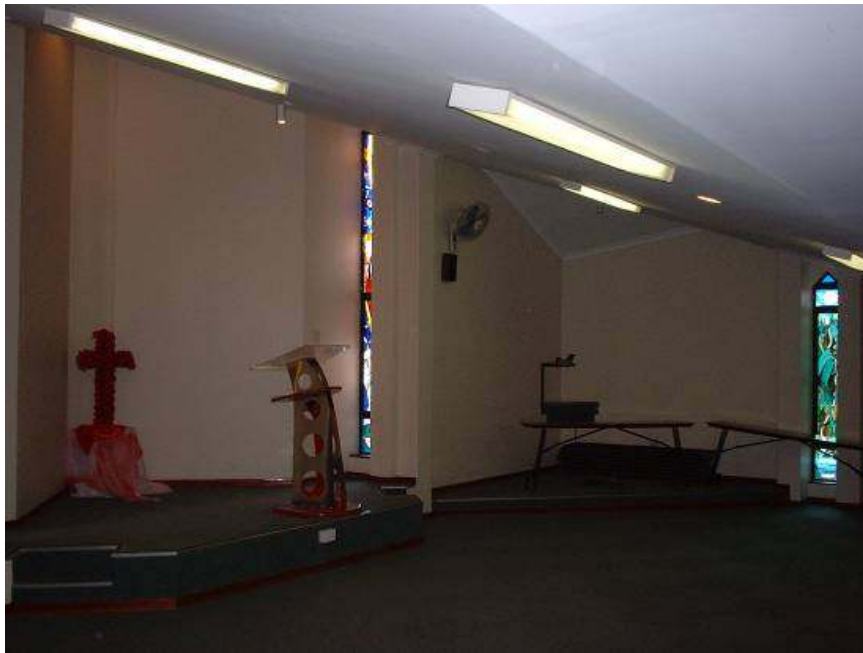
- Easy navigation throughout the building with lifts for vertical circulation and broad corridors with rails for horizontal circulation;
- Continuous levels throughout the various floors with no intermediate changes in level;
- Light and airy rooms with adequate natural ventilation and easily washable surfaces;
- Existing communal facilities including dining hall, kitchen and storage, lounge areas, ablutions, administration and in this instance, a Chapel;
- Existing consideration for ease of ablution washing through the provision of floor drains within the ablution areas.



Photograph 4.1.J –View of a Bathroom showing the floor drain (Source – Author)

Provision exists at the rear of the building and in the lower ground floor area for storage and retrieval of bodies by mortuary staff.

It is envisaged that with time, this AIDS related building type will prosper in terms of user numbers. The author views this adaptation as a success and its cost effectiveness due to the limited number of alterations that had to be carried out on the building make its conversion affordably viable.



Photograph 4.1.K –Interior view of the Chapel (Source – Author)

The Dream Centre featured in the *Sunday Times* of November 23, 2008, due to its association with the KZ-N's Health MEC and her support of experimentation with traditional medicines for AIDS patients (Cullinan, K. 2008)

#### **4.1.4 Lily Of The Valley, Eston**

A centre established solely for AIDS orphans, called the "Rose of Sharon", was opened by Mr and Mrs Keyser at Pinetown, near Durban, in 1993. Funding for the centre was private. The Keyzers, recognising that many of their orphans were being relocated from the Midlands region, purchased a fifty-nine acre plot near Eston in 1994. The previous

owners had bred dogs and rabbits on the property, and apart from the existing dwelling which was in a state of poor repair, structures originally housing these animals were the only other buildings in existence. The "Rose of Sharon" was closed down in 1997 to enable the Keyzers and their Advisory Board to consolidate their efforts at the new facility, which was named the "Lily of the Valley".

This new Children's Home was registered to care for thirty-five children, with a total staff compliment of twenty-five.



Photograph 4.1.L – View of the converted barn from the west (source – Author)

The existing rabbit breeding facility (Photograph 4.1.L) was converted into accommodation for children aged from birth to six years. There are five bedrooms with the 5 and 6 year olds sharing 2 of the bedrooms (Photograph 4.1.M), and the younger toddlers sharing the remaining 3 rooms (Photograph 4.1.N). Other rooms include ablutions, a laundry, kitchen and dining room, a playroom and office and storage space. Within the interior of this accommodation one is unable to recognise the former use of the building. It is only externally that one reads the modular bays into which windows have now been placed. The accommodation is well maintained and comfortable. The children are cared for on a twenty-four hour basis and attend a pre-school on the premises.



Photograph 4.1.M - Multi-bed wards for older children within the converted rabbit-breeding shed (Source – Author)



Photograph 4.1.N - Multi-bed wards for toddlers within the converted rabbit-breeding shed (Source – Author)



Photograph 4.1.P - A view of the upper part of the site from the south showing the buildings in their context. (Source – Author)



Photograph 4.1.Q – A view from the north-west of the building housing the pre-school, training centre and sewing room. (Source – Author)

The pre-school (Photograph 4.1.Q) is housed in one of a number of new buildings that have been constructed on the small-holding (Photograph 4.1.P). The Keysers remodelled a dwelling for themselves at the lower end of the property, while near the plot's entrance, a training centre (Photograph 4.1.Q), a clinic (Photograph 4.1.R) and in 2008, 23 residential "houses" (Photograph 4.1.S) have been built. The Training Centre is for AIDS awareness and educational programmes. The lecture room seats twenty-five people. Other facilities beneath this shared roof are a Sewing Room (Ref. Floor Plan - Appendix E.2), the pre-school classroom, and ablution and kitchen facilities<sup>E</sup>. The sewing education programme is aimed at empowering the local community and in

particular those living with HIV, while the pre-school serves the young AIDS orphans living on the premises, and operates in the mornings with two teachers giving the lessons.



Photograph 4.1.R – View of the Clinic from the south-west. (Source – Author)

The clinic, which serves the local community, unfortunately closed its doors over a lengthy period, due to crime. The facility consists of two consulting rooms, two counselling rooms, a waiting room, kitchen and ablutions (Ref. Floor Plan - Appendix E.1). The criminal element used the clinic visits as opportunities for perusing items of value, and returning after-hours to thief. An electrified fence was subsequently erected.

In 1998, accommodation for up to sixty older children was envisaged in this setting. 4 of the standard plan homes were built but stood empty due to a governmental ruling that stated that every housemother was required to be a trained nurse and that it was not adequate to merely operate with one registered nurse within the facility. A petition was then lodged with the then State President's Office.



Photograph 4.1.S – View of a Family Unit from the south-west. (Source – Author)

Each house has three bedrooms (Ref. Floor Plan - Appendix E.3). Those houses accommodating the younger school-going children have one of the rooms dedicated to a house-mother, with the other two rooms housing four children; two boys and two girls. Teenagers will not have a resident housemother, but will be over-seen by one of the adjacent housemothers.



Interestingly accommodation numbers have been increased in the individual houses from 4 to 6 children. The success of this venture is shown through the growth of accommodation over the past decade. In 1998, apart from the toddler's accommodation, there were only 3 self-contained 'family unit' homes. This increased to a total of 12 in 1999 and a further 11 were added in 2004. The Clinic was reopened on 6 August 2008.

In summary, this centre caters only for AIDS orphans. Numbers have grown confidently over the past decade with accommodation for a total of 138 children in the facility. In 2004 the Centre purchased the adjacent 200 acre farm sited between the centre and the Mophela Township and is envisioned as the area for future expansion.

Not all of the children resident at Lily of the Valley are HIV positive, although no testing is done to determine their HIV status, and individuals are treated accordingly on presentation of symptoms. Children dying of AIDS are not separated from the other children and are incorporated as far as possible into the daily routine. These children are generally carried on the backs of staff.

There are a number of significant aspects to note in this facility:

- the reuse of an existing building totally dissimilar in function has proven successful. While indications of the former use are in evidence externally, the interior of the infant's home is warm, bright and comfortable.
- funding of the facility is by private means. A Board oversees the control of the allocations, while the Centres management initiates proposals.

While the existing facility adequately offers its wards a comfortable lifestyle, a number of aspects of an architectural and planning nature could be improved upon:

- the orientation of the buildings has not been considered, and hence solar loss and gain have not been exploited. The gradient of the site has however determined the positioning of the elements.

- costs could be reduced by joining adjacent dwellings, perhaps into pairs with a sharing of plumbing and electrical reticulation, and some reduction in the cost of the external envelope.
- in light of the AIDS orphan crisis, the original plan of one house-mother per four children was extravagant. The 1 per 6 is realistic in terms of the accommodation unit sizes, though in most KZ-N cases one per eight children is the norm with in some instances this being extended up to one per twelve. Current house designs could be reconfigured with the construction of a housemother's room located between two houses.

#### **4.1.5 The Ark Christian Ministries - Durban**

In the 1980's and 1990's Pastors Derich and Judy De Nysschen, set up a number of street shelters throughout the country. The shelter in Durban (established 1982) was sited in a disused worker's compound off Point Road. Although derelict and in bad repair, the ministry admirably reused the buildings to accommodate up to, at times, 800 homeless people.



Photograph 4.1.T - The courtyard at the ARK is used for building skills training for residents



This Shelter was scheduled to move in 1999, awaiting the refurbishment of new premises in the Albert Park area, where a number of buildings had been purchased for this purpose. Much controversy accompanied this proposal, as the residents of Albert Park were concerned it would bring an unwanted element into their neighbourhood. This proposal was then placed on hold.

The planned renaissance of the Point area through the Point Waterfront Development Company pushed the Durban authorities to expedite the ejection of the Shelter and another property was earmarked in the Montclair area, south of Durban, for the relocation. The eviction notice was served 16 December 2003 and in early 2004 the shelter was relocated (Bisetty, V. 2003).

In terms of HIV/AIDS, the impact on the Shelter has been enormous. Records from the clinic showed yearly increases in HIV positive cases escalating at over 300% year on year in the late 1990's (Botha, W. 1999). As testing is voluntary, precise numbers infected with the virus are uncertain. Clinic staff estimate a 62 to 75 percent HIV positive status across all residents. The shelter manages a two-fold operation of health care: 1.) a 24-hour clinic and 2.) in-patient facilities comprising five wards, four for men and one for women. This ratio reflects the general ratio of men to women in the shelter. One of the male wards is utilised for terminal male patients, while the single female ward is a general ward. There are a maximum of nine beds per ward. These wards are at times filled to capacity, especially over the Christmas period, with mattresses being laid on the floors and in the passages too accommodate surplus numbers. There are 8 clinic staff with training of new staff on an ongoing basis.

As inhabitant numbers in this facility are changeable from day to day and accommodation for the infirm being a priority, housing such patients has not been a problem to date. The increase in AIDS cases has however seen an increased burden being placed on the Clinic. Chronic cases are referred to local hospitals and hospices.

Conditions at the Point Shelter were poor, with the building, although designed for migrant workers, found to be poorly ventilated due to screening introduced into the spaces for privacy.

## **4.2.0 Custom Design**

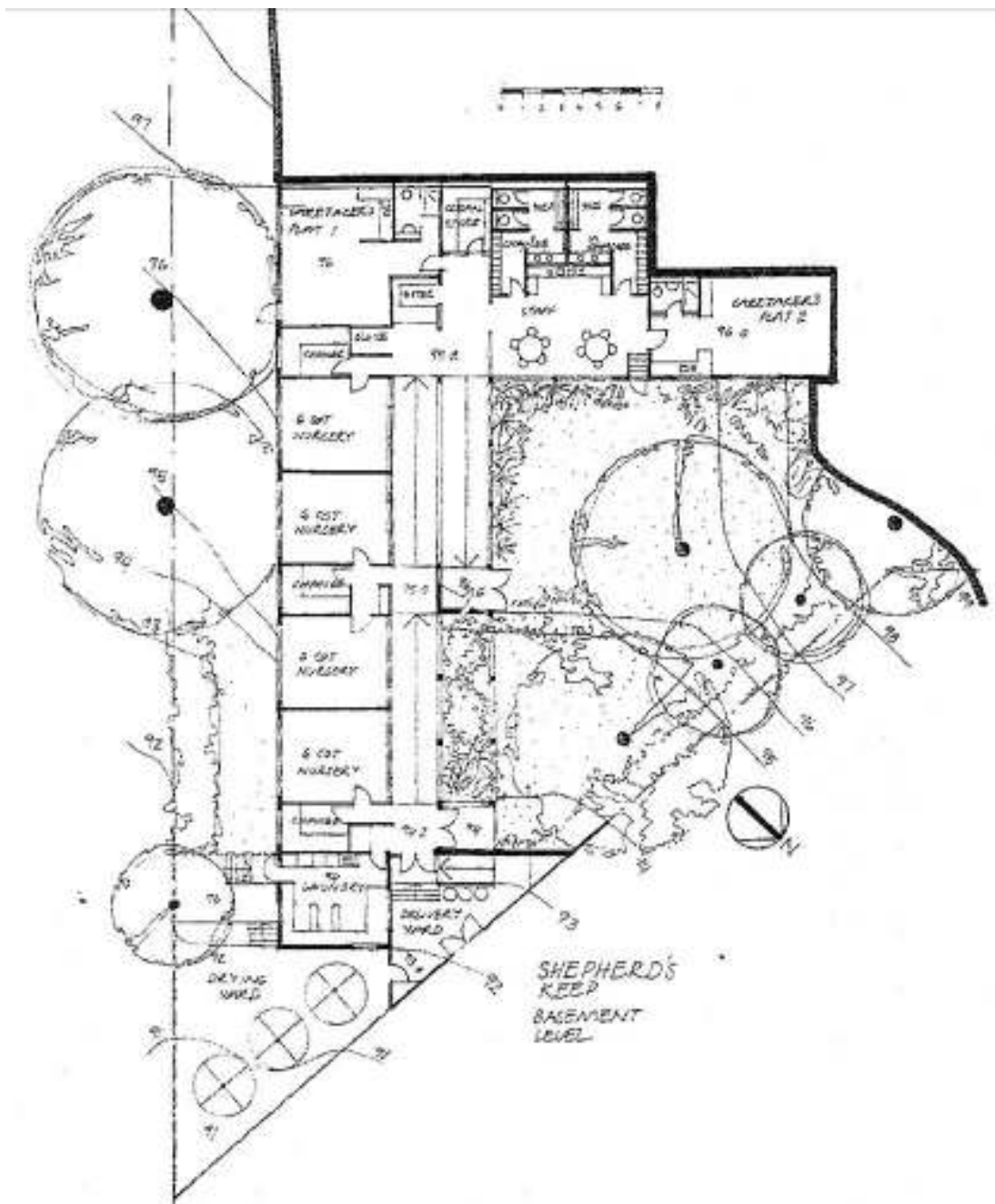
The construction of new facilities is ongoing and this too holds true for buildings associated with the AIDS epidemic. While most of the accommodation for persons living with AIDS over the past decade has been in structures adapted from other uses to suit the AIDS needs, a few good examples of custom design in the Province are worth documentation. One such project is the *Shepherd's Keep* home for abandoned babies, situated in the residential area of Durban's Bluff.

### **4.2.1 Shepherd's Keep, Bluff**

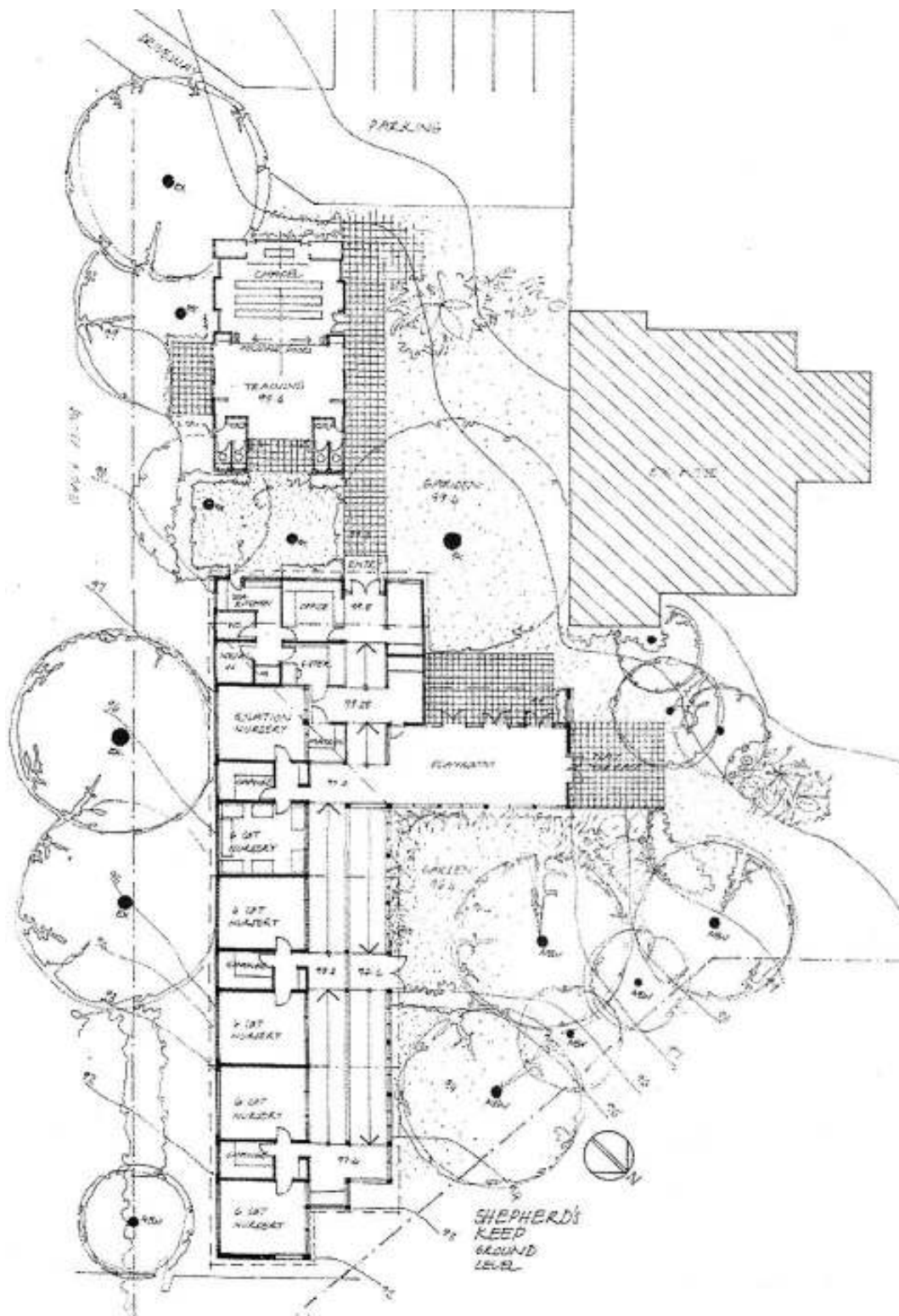
In 1999 the author was requested to assist in the development of a proposal for the construction of a new home for abandoned babies, to be situated on the residential property owned by a couple who were at the time caring for a limited number of these babies within their home. The babies are cared for by the management and a small compliment of nursing staff. Many abandoned babies are HIV positive having contracted the virus through their mothers. However the Home has recorded good success through proper care in seeing the majority of these babies converting to HIV negative.

An Architect was appointed with the brief to include 10 Nurseries, Play Areas and associated service facilities on a steeply sloping site. On the upper level there is a small Chapel and a Training Room. Planning of the facility is dictated by the ramp addressing the changes in level across the buildings length. The use of expansive areas of windows for natural light and ventilation is commendable and the louvered panels to the north-west facade are appropriately suited to the Durban climate.

The Home has integrated the indoor-outdoor linkages well with access to the lush garden possible from both levels of the building. Servicing of the building is kept away from the main entrance at the lower level and through a separate entrance. Due to the minimal budget available for this facility, the construction was kept simple, rectilinear and the choice of building materials was "cheap". The Chapel and Training Room are separated by an operable door enabling flexibility of usage and expansion [(Lead, A. 2002): Peters, W. (Ed.) 2002].



Drawing 4.2.A – Shepherd's Keep, Basement Plan (Source - Courtesy Amanda Lead Architect)  
 Ref: Peters, W. (Ed.): KZNIA Journal 2/2002



Drawing 4.2.B – Shepherd's Keep, Upper Ground Floor Plan (Source - Courtesy Amanda Lead Architect). Ref: Peters, W. (Ed.): KZNIA Journal 2/2002



## 4.3 Innovation

The Shepherd's Keep Home discussed in Chapter 4.2.1 showed that often the Client has little knowledge or insight with regard the costs of their dreams or, where promised funding from donors, they sometimes sense that they have an open cheque book. This can prove time-wasting and frustrating for the Architect and may result in instances of conflict with the Client.

There are however times where there is little or no money to provide the facilities required in the context of a developing nation facing the ravages of AIDS. In such cases the people concerned have to make do with what they have, with what they can find and with what they can have donated to them. The author was fortunate to be involved in one such project. It is discussed under the heading *Innovation* as it was through consultation between the author and the Client and the good fortune that donated shipping containers, being used on another site for construction storage becoming available, that the idea was born.

### 4.3.1 Inanda "C" Community Hospice

Inanda is a suburb situated to the northwest of Durban. Residents generally come from disadvantaged backgrounds. An established clinic operated by the Durban City Health Department attends to the needs of the community. With an increase in the number of HIV/AIDS cases visiting the clinic, management recognised the need for the specialised care and counselling of the terminally ill.

The Highway Hospice was approached by the Inanda Clinic and after much bureaucracy in seeking the approval of the local authority on property over which they had no jurisdiction, the Health Department approved the development of a small facility on the Clinic's premises. A small area of land at the northwest corner of the Clinic site was allocated for this purpose. [(Bingham, K. 2002): Peters, W. (Ed.) 2002].

Through consultation with the Staff of the Highway Hospice, sketch plans (Drawing 4.3.C) and a model (Photographs 4.3.A and 4.3.B) were prepared proposing the use of 2 metal shipping containers covered by an over-sailing roof, being positioned on the allocated area after the containers' refurbishment. After approval was granted by the Client, the installation was effected in 2001.

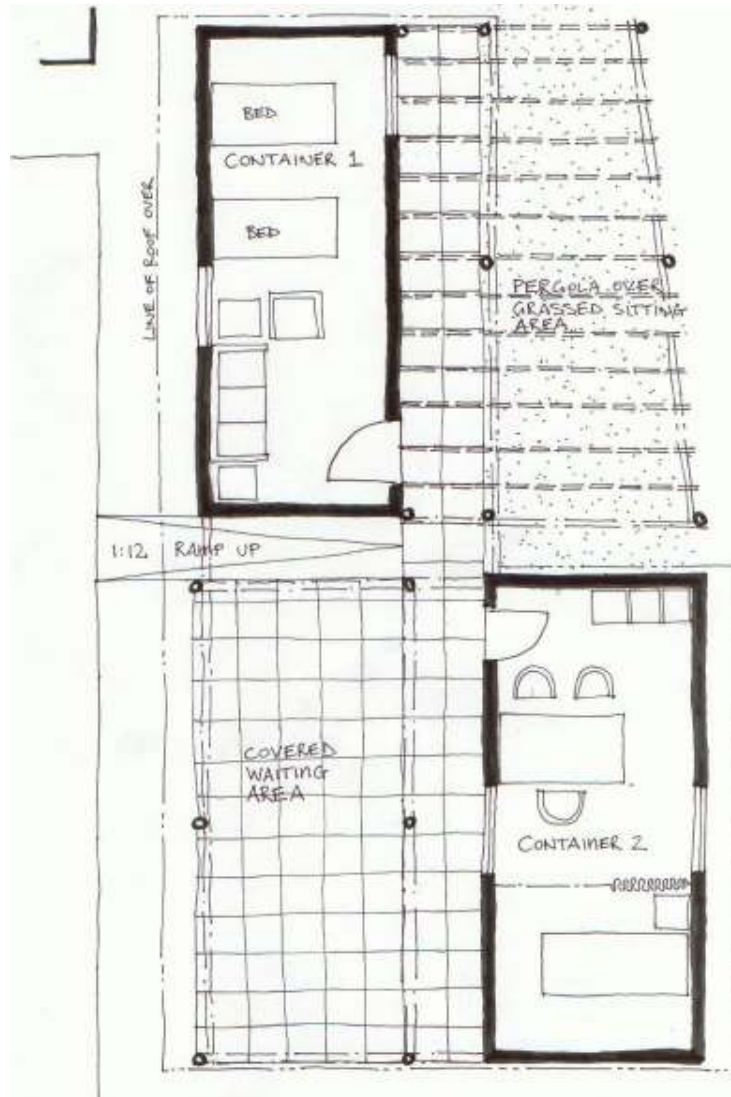
The one container is used as an Interview/Consultation Room with the adjacent exterior space covered with a roof providing a Waiting Area. This latter area is access by a short ramp from the adjacent parking area. The other container has a multi-functional use, being a small ward containing 2 beds, or an indoor sitting area or a space for meetings. External to this container is a seating area covered with a timber pergola. Here handicrafts, rest or meetings take place. The 2004 the request for the addition of translucent roof sheeting over this rear pergola offered added shelter in inclement weather.



Photographs 4.3.A and 4.3.B - Working Model of the Inanda Container Hospice by the Author [Model by Bingham Associate Architects in association with Mr. T. Chisvo]

This facility has been a success with patient numbers having increased in line with those at the other hospices studied. The need to provide additional accommodation has been reviewed – the covering of the rear pergola area enable additional storage space in Container 2 but conditions were still cramped.

More recently the Hospice has been notified that the land they occupy is required for the expansion of the Municipal Clinic. The area's Ward Counsellors were approached and a vacant property, with the exception of a few demolished structures, near to the existing facility, was offered to the Hospice. Plans have been prepared by the author awaiting final approval before the relocation of the Hospice.



Drawing 4.3.C – Sketch Plan Layout of Inanda Container Hospice by Author



Photograph 4.3.D – Hospice viewed from the south



Photograph 4.3.E – Hospice viewed from the east showing the entrance





Photograph 4.3.F – View showing vegetable patch



Photograph 4.3.G – Interior view

[All photographs by the Author]

Innovation is not limited solely to the installation of prefabricated movable objects. The adaptation of existing structures could also in certain circumstances be deemed as innovative. However, often in dealing with innovation, other interventions need to be introduced to enable their operational success. In this example, the addition of the sheeted roof fixed to a simple gum-pole structure afforded the containers some shading and hence cooling. The stepped layout of the 2 containers provided 2 anti-spaces giving both a degree of privacy and independency of usage. The materials choice of slender timber laths is both economical and easily repairable when maintenance is required. The same material used as a pergola offers filtered light and a degree of shading to an outdoor area.

## 4.4 Summary

The need to provide new accommodation due to the inability of conventional care facilities to cope with the increasing numbers of those impacted upon by the AIDS epidemic needing care, has resulted in a number of architecturally creative and operationally successful solutions being constructed throughout the Province.

Three methods of providing buildings for the infected and affected have been reviewed: adaptation, new creation and innovation.

Adaptation of existing buildings has proved very successful. A change in purpose for a disused building and the recycling of it into a much needed new use adds value to the original construction. This added value can be environmental through recycling; economic through cost-savings in the re-use of space, materials and time, and extends the life of a building while minimising the ever-growing footprint the built form takes upon the land.

The examples of adaptive intervention reviewed showed that there was ease of transferral of use from one function to another. Those with original functions most like the new needed function obviously worked best - this proved the case in the *Chesterville Hospice* facility where worker accommodation dwellings easily converted into day-time accommodation for the AIDS' frail and infirm. The existing dwelling originally known as Ridge House also easily took on its new persona as *Sinikithemba* AIDS Centre. This was largely due to the grand scale of the original building and the suitability of a domestic residence to reuse as a suburban medical facility.

The study of the *Dream Centre* gave insight into the similarities of providing care for the aged and care for people living with AIDS. This was without doubt the best-fit solution in terms of adaptation. In fact, the two functions are so akin that no substantial changes were necessary. The *Lily of the Valley's* toddlers' accommodation is also an exemplary example of innovation in adaptation – the original breeding shed was maintained, windows added and the interiors made hygienic and liveable.

Most of the adaptations resulted in new additions being added necessity due to expansion. This is an important element for noting as all building designs for AIDS purposes should make provision for future growth and the design of the building must easily be able to accommodate this later addition.

Ease of access is important for the infirm patient and particularly to those areas that the he or she must frequent on a regular basis. Much can be gleaned from literature on

*universal design* with regard anthropometrics, heights of fixtures and fittings, accessibility, optimum room layouts and accessories for ambulatory assistance.

Ease of maintenance with regard the cleaning and general washing down of areas was evident in some of the buildings reviewed – floor drains in the ablution areas is essential, particularly in the AIDS environment where diarrhoea may be present.

The provision for generous natural lighting and ventilation has two advantages; there is less reliance on artificial mechanisms and it is beneficial to the care and health of the patient

The now defunct *Ark Shelter* off Point Road in Durban did all that good environmental design should not do. While the building offered refuge to the homeless the old workers compound was packed to the brim in some spaces with beds divided by mere hessian drapes. Natural ventilation of the larger rooms was impeded by the drapes and partitions and some areas had no direct access to light or ventilation.

The custom designed *Shepherd's Keep* has taken good design principles and incorporated these into a simple, well articulated shelter well in tune with its environment. Its questionable orientation to the north-west and south-east is dictated by topographical constraints and is protected through the addition of solar screening.

The use of shipping containers covered by a parasol roof is only one of numerous possibilities in seeking innovative and affordable methods for providing a facility for people living with AIDS. The relative ease of relocation of these facilities is of benefit, and the self containment of the containers is a benefit.

In all of the facilities reviewed, it was noted that there was the ongoing need for change within the spaces due to changes in operational emphases. There too was the need for expansion. With this in mind it is important to approach the design of an AIDS facility with flexibility and growth in mind. These topics are discussed further in Chapter 6.

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<sup>E</sup> See Appendix E – Lily of the Valley: Plan layouts of AIDS Orphan's accommodation.

# CHAPTER 5

## NEW DEPARTURES IN AIDS CARE AND ARCHITECTURAL RESPONSES TO THE EPIDEMIC

*Like all good movements the impact of the Hospice movement does not depend on bricks and mortar but on the interest its ideas generate and the changes in practical care which these have brought about. (Buckingham, R. 1983: Quotation by Sir George Young)*

### 5.0 Introduction

While the primary needs for the AIDS infirm are shelter and care, the mere provision of these basic requirements, through either traditional means at institutions such as hospitals and hospices, or through new or adapted facilities, perhaps does not go far enough in striving for better solutions. The search for improved answers to a problem, and in this case the HIV/AIDS problem, will assist in paving the way forward for the patient, the care-giver, the scientist and the researcher, all hoping to see an end to the epidemic. While the scientist seeks out a vaccine for the virus it is important that the infected and affected are cared for as well and comfortably as possible and that they have suitable accommodation for this purpose. Buildings housing these new functions in the fight against the epidemic must be developed alongside the idea. Innovative methods of care, research and treatment will lead to new avenues of architectural responses.

This chapter reviews three new departures considered to be meaningful contributions to the development of architectural solutions for the AIDS battle. The projects, two of which were proposals that have as yet not come to fruition, are architectural collaborations attempting to set new standards and seek alternatives in the provision of buildings for the future.

The projects are:

1. A Training Hospice – a short-stay facility for AIDS training and care;
2. A Medical Research Centre situated at the heart of the AIDS problem in the Province, and
3. A combined Traditional and Western Medicines Hospital.

## **5.1.0 The Training Hospice**

For an Architect to comprehensively understand the complexities of the building that they are tasked to design they must research their Client's requirements and gain an understanding of the proposed use of the intended building. Through this a design brief and schedule of accommodation is derived. At times, particularly where buildings are complex, this task can prove to be extremely difficult. Where the Client has no brief and merely an innovative idea based on logic and supposition, the task can be even more difficult. To design a Training Hospice requires an understanding of the concept – it is therefore important to digest the proposed operational model and its elements before considering the building components.

Current models in palliative care for the terminally ill give rise to constant debate on the pros and cons of hospital care, hospice care or home care. Home care is the usual victor in the debate but in the AIDS context in this Province, if the patient is left at home without appropriate care, Home-based care would be the worst possible choice.

Doctors and Social Workers involved in AIDS research, treatment and care at McCord Hospital, in Durban, formulated the model for a Training Hospice. The author was invited by this group to assist them with the architectural and planning issues pertinent to such a facility. This assistance took the form of a briefing on the proposal to the author and a number of visits to other hospice facilities within the KwaZulu-Natal province. The facilities visited were:

- Highway Hospice, Sherwood, Durban;
- Ethembeni Hospice, Richards Bay, and
- South Coast Hospice at Port Shepstone.

These visits included interviews with the management and staff with the aim of assessing how their facility was run, problems they had encountered and their views on the proposed Training Hospice Model. Thereafter, the author prepared sketch drawings of the proposal for discussion and refinement.

Due to a subsequent shift in emphasis in the Hospital's provision for AIDS Medical Consultancy and the allocation of funding for this need, the proposal was shelved. The author believes that the uncertainty of the success of the untested proposal was also a factor in its termination. While the Hospice was never constructed, the model described hereafter has become a guide for 'step-down' facilities, an example of which is described in Chapter 4.1.3.

### **5.1.1 The Motivation for the Formation of the Training Hospice Model**

The increase in the numbers of people affected with HIV/AIDS is clear. So too is the impact that the epidemic is having upon the various building types discussed in this dissertation. General discussion with managers of the various buildings researched indicated that at some stage the HIV infected person occupying their building type would need to be cared for in either a Hospice-type environment or at home. The available medical accommodation in most cases barely meets the needs of present users and an increase in user numbers, especially those that require specialist bed-care, is impractical.

The hospitals studied were stretched to capacity. Their purpose is to offer shelter and medical care to the infirm and then to discharge such patients once they are sufficiently recuperated. The role of the hospital in the South African context with its high AIDS statistics cannot be one of caring for the terminally ill, as funding and accommodation are lacking. This role has traditionally been undertaken by hospices, most often situated in the more affluent areas, or at home by an unemployed relative, as is common in the less affluent and rural areas of the Province. Hospices operate on limited funding, mostly obtained from the private sector and via donations through fund-raising efforts.

It follows that a combination of:

- An increase in numbers of terminal patients due to HIV/AIDS;
  - A reduced number of trained care-givers due to loss to AIDS (Drysdale, S. 1999)
  - An insufficient number of existing hospice facilities; and
  - A lack of funding for new facilities,
- will require that a new model (or a combination of various models) of palliative care be developed.

### **5.1.2 The Proposed Training Hospice Model**

Few would argue against the fact that the home-based method of care for terminal patients is as ideal as one might offer people during their final days. There are obvious advantages in this method. Firstly, as patient comfort in palliative care is very important, patients are cared for in the familiar surroundings of their own homes or in that of a relative or neighbour. This reduces the stress experienced by the patient, which may otherwise exacerbate the confusion experienced by those with AIDS induced dementia. Secondly it is more economical to sustain a person outside of the hospital/hospice situation - home-based care costs are limited to travel expenses, staff salaries, telephone calls (where available), medicines and treatment materials (Loudon, K. 2000). This cuts out the encumbrance of residency and staff costs applicable to twenty-four hour care centres. The only negative aspect that has been raised in relation to home-based care is funding. Aid agencies, municipalities and government departments are weary about the possibility of fraudulent organisations setting up accommodation centres supported by their funding and the monitoring of such malpractices requires great effort (Macleod, L. 2000). This it is believed can be overcome by stringent registration policies.

Based on the premise that home-based care (or a similar type facility, structured around a home or group of homes) is a model appropriate for the care of AIDS patients, the following questions on the functioning of a facility to accommodate the education and

training of care-givers, ordinarily it is proposed, accompanied by their HIV infected relative, require addressing:

- With the large volume of people infected, who cares for these people?
- Who trains the caregivers: how and where?
- What facilities are required for the training of these caregivers?
- What duration of training is required?
- Can the caregiver be deployed in other situations?
- Who funds such training and accommodation?

While these questions require hospital management decisions through experience and research, it is important that the Architect understand the functional relationship between the Educator, the Care-giver and the Patient while within the proposed facility. The answers to these questions will determine the outline for the Architect's brief and through the understanding of the functioning of such a facility the determination of spatial requirements may be begin.

### **5.1.3 The Care-Giver**

If the infected person is to be kept within his or her own home or in that of a friend or relative, it is preferable that a family member or acquaintance of the patient be the prime candidate to fill the caregiver role. Various obstacles may preclude this from occurring:

- All relatives and acquaintances may be employed and are economically unable to terminate such employment;
- Relatives and acquaintances may themselves have succumb to AIDS;
- Surviving children may be too young to offer care;
- The patient may have been ostracised by their family and community.

Of course, it is not essential that the caregiver be known to the patient. However, economic constraints preclude most acts of charity and it is rarely the case that a stranger would attend to the needs of a patient without some form of remuneration.



### **5.1.4 Training**

Associations such as the Robin Trust based in the Western Cape Province, offer training to would-be caregivers in all provinces for a nominal fee. Their curriculum is aligned to the country's nursing qualifications and modules are accredited to enable the graduate to further their education in the nursing field. The trustees have gained approval from the Education Department to implement introductory courses into the school's curriculum, thus enabling school leavers entering a depleted job-market to have a basic knowledge in health care and simultaneously address the shortage of care-givers and the AIDS education issues. The duration of the course offered is four months (Macleod, L. 2000).

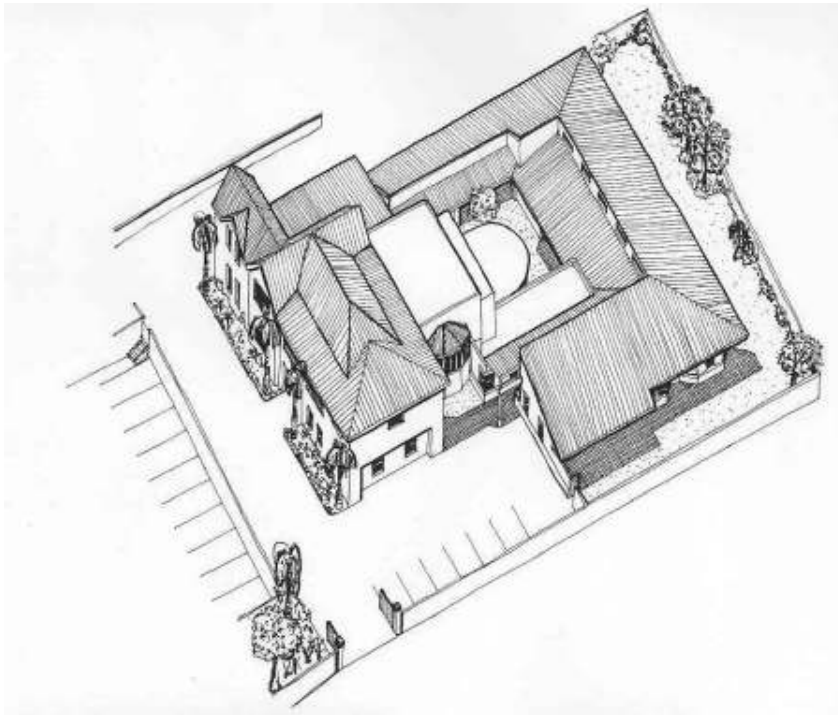
The Robin Trust has trained a resident of the town of Vryheid in KwaZulu-Natal, in AIDS care and aim to support this woman in furthering the education process, while eventually constructing a modest hospice and training centre. From this location, future caregivers will be trained. The Trust maintains a register of graduates and arranges placement for them on request from the public.

The Training Hospice Model intends however to progress this one step further. Where possible, the related caregiver will be accommodated with the HIV/AIDS patient within the facility for a number of days while training is in progress. Training will be centred on "their" patient, with lectures being given to supplement their practical applications. Caregivers will be trained in methods of care, administering medication, general hygiene and the necessary in-the-home functions for attending to the needs of the AIDS patient, including preparation of their meals, bed changing and sanitation. Hereafter, the patient and caregiver return to their home. Support for this family unit is via an outreach network programme, with visitations where necessary (Patton, V. 2000).

### **5.1.5 Duration of Training**

McCord Hospital has suggested that a three-day period of stay would be appropriate. This should be sufficient time to settle the patient and caregiver into the facility, tutor them, and then observe their proficiency at caring for the patient.

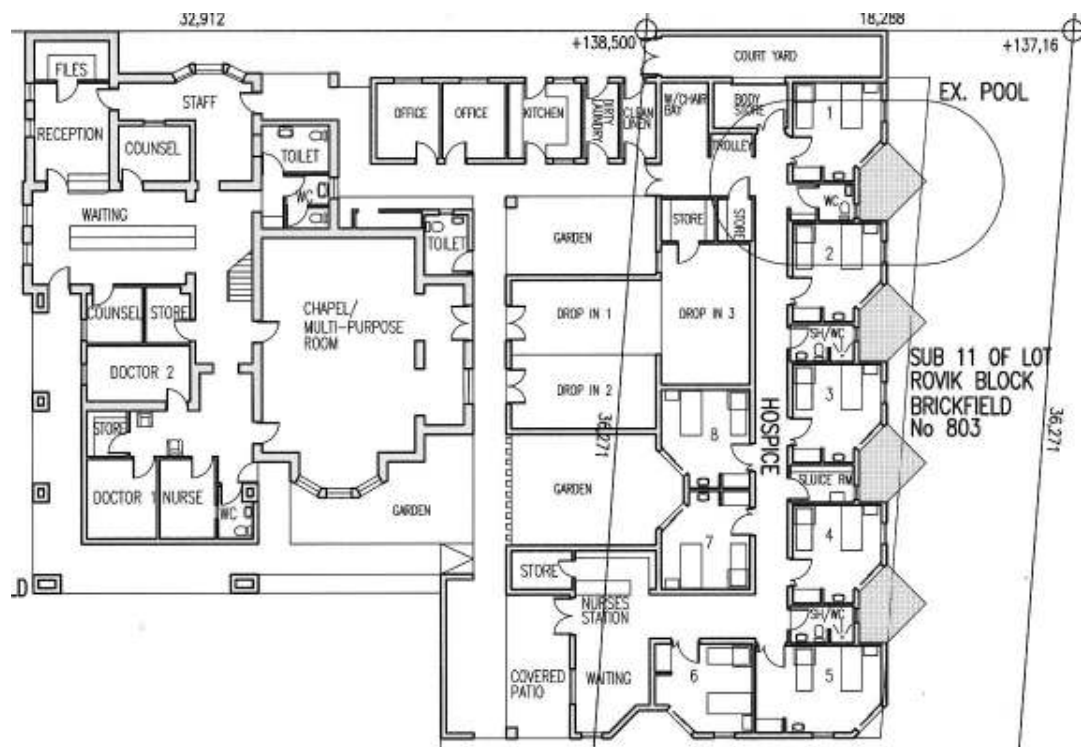
### 5.1.6 The Facilities



Drawing 5.1.A – Axonometric view of the proposed Training Hospice for Sinikithemba  
(Source – author)

Facilities may vary in scale, accommodation, appearance and functional detail, but all should offer adequate scope for:

- the training of care-givers,
- the counselling of patients and care-givers;
- the accommodation of care-givers and patients during the training period;
- consulting and testing facilities;
- spiritual upliftment;
- day-care for visitors (optional)
- support facilities e.g. ablutions, kitchen, laundry etc.
- body storage and retrieval
- retail outlet (not necessarily within the same building)



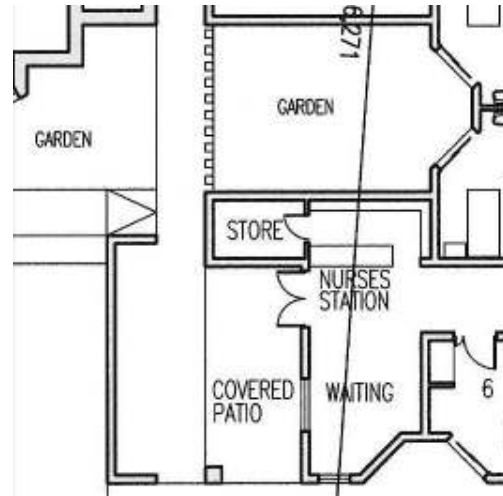
Drawing 5.1.B – Floor Plan of the proposed Training Hospice for Sinikithemba  
(Source – author)

The proposed Sinikithemba facility comprises the following areas:

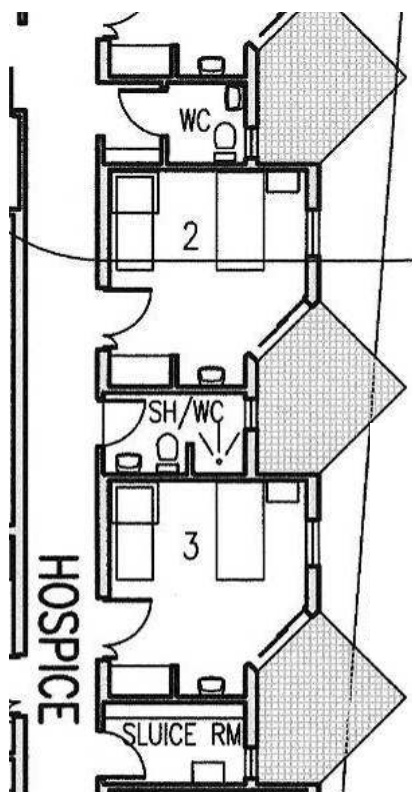
- A reception area with a Nurses Station, Store and Waiting Area;
- 8 bedrooms accommodating both the patient and the care-giver;
- 2 Staff Offices;
- A small Kitchen;
- Dirty Laundry and Clean Linen storage;
- 3 Drop-in Centre Recreation Rooms;
- A Body Store with external access to an enclosed yard for mortuary vehicles;
- Wheel chair and general storage.

The proposed Training Hospice is linked to the existing Sinikithemba AIDS Centre where counselling, consultations, training and dispensing take place.

It is envisaged that the registration of Training Hospice patients will be at the main admissions area, with only the patient's file being stored at the Nurse's Station (Drawing 5.1.C). A small Waiting Area is located adjacent to the arrivals area with a covered waiting area externally for sheltered waiting. Finishes are to be hardwearing, durable and easy washable - (Total area of Nurses Station + Waiting = 24m<sup>2</sup>)



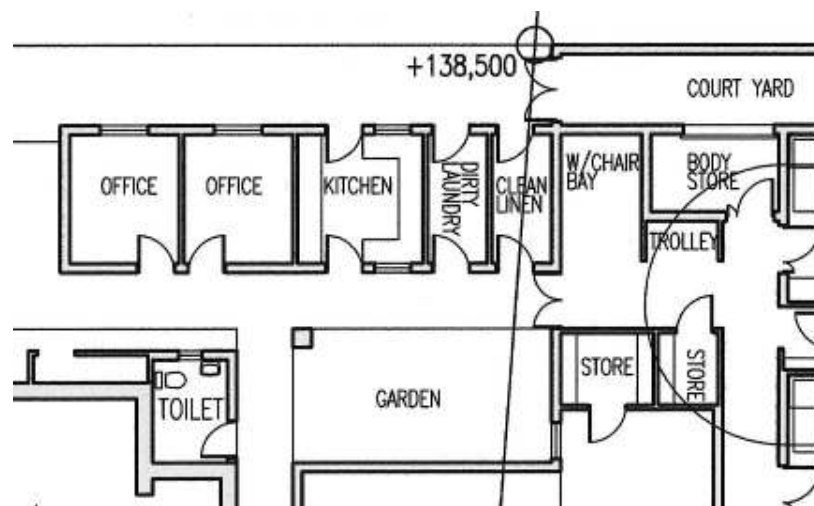
Drawing 5.1.C – Plan showing the Nurse's Station and Waiting area.  
(Source – author)



Drawing 5.1.D – Part Floor Plan showing Typical Bedrooms (Source – author)

Eight Bedrooms (Wards) form the core around which this facility operates. Each Bedroom is in the order of 14,5m<sup>2</sup> in area and accommodates the patient on a hospital bed with the care-giver (usually a family member) accommodated alongside on a sleeper-couch. The individuality offers privacy which is recommended in hospice care. (Hellman, L. 1987 and Tetlow, K. 1992). Each room has a built-in cupboard and wash-hand basin. All Bedrooms open onto the garden spaces via small patios. Small windows open towards the north-west orientation with large picture sliding doors orientated to the north. Again finishes should be easily washable and floor finishes with seamless joints.

Ablutions are shared. This decision was made by the Medical Staff who believed that it was preferable to not have the luxury of en-suite bathrooms as this would probably not be the case once the patient and care-giver return home. Bathrooms have their entire floor areas sloping to the shower outlet to facilitate ease of cleaning. There is therefore no step up into the showers. The ablution area housing a WC, hand basin and shower is 7m<sup>2</sup>. One wheelchair access toilet is provided at 3m<sup>2</sup>. A compact Sluice Room at 6m<sup>2</sup> caters for the servicing of the 8 Bedrooms.



Drawing 5.1.E – Part Floor Plan showing Staff Offices, Kitchen, Laundry, Storage & Body Store (Source – author)

Two Offices have been provided at 10m<sup>2</sup> each. These offices are for the Training Hospice's administrator and the other is a general rest room for staff. The adjoined Sinikithemba Centre has other staff facilities and most nursing staff reside in the McCord Hospital Nurse's Home.

While meals for the Hospice are prepared in the main hospital kitchen and trolleyed the short distance to this facility, the Kitchen is used for the re-heating of meals. It is also used for educational purposes for teaching the Care-givers methods of preparing healthy meals for their patients so that they may use these recipes once having returned to their communities. The kitchen is 15m<sup>2</sup>.

The washing of linen is done at the Hospital's laundry. The Hospice facility however has a holding facility of 6m<sup>2</sup> for dirty laundry and a room of equal dimension for the storage of clean linen. There are 2 small Stores, one for medicines (3m<sup>2</sup>) and the other is adjoined to the Drop-in centre (5m<sup>2</sup>) for the storage of handicraft materials.

The Drop-in facility spaces are multi-functional rooms opening onto garden spaces. They may be used for group discussions, craft-making, rest and sitting rooms or as games rooms. There are 3 inter-leading Drop-in rooms each 22m<sup>2</sup> in area.

The Body Store (7m<sup>2</sup>) is a holding room accessible to the exterior through a roller-shutter door. In the event of a death, the deceased is covered then wheeled in their hospital bed into the Body Store awaiting the arrival of the mortuary ambulance (Sudjic, D. 1981). To reduce the emotional stress to the other patients during this time, the doors to the other rooms are generally closed until the deceased has been relocated.

The Wheelchair Bay (8m<sup>2</sup>) comfortably accommodates the 8 wheelchairs required for the Hospice.

The proposed construction of the Hospice is in masonry brickwork with smooth plastered and painted walls. All paint finishes are to be washable (Davidsen, J. 1990). All floors are to be screeded and finished preferably in linoleum or vinyl sheeting with welded joints. Ceilings should be of smooth plasterboard with skimmed joints. The roof is of corrugated aluminium sheeting with thermal insulation over a well ventilated roof void.

It is important that there is ample fenestration for natural ventilation and lighting. It will be noted that most rooms open onto external gardens or internal courtyards. This link to the exterior is important in the reinforcing of the homely ambiance of the hospice as opposed to the clinical nature of most hospitals while offering a tranquil setting (Hellman, L. 1987).

Should the need arise for the care of an HIV infected child, the adjoined Sinikithemba Centre has a day crèche at which the child may spend some time socialising with others his or her own age (Spring, M. 1997). Infected mothers resident at the Training Hospice

may need to have their children with them and again the day-time care could be offered by the associated crèche (Hellman, L. 1987).

Spiritual support is offered by the Sinikithemba Pastor and prayers and small religious services may be held in the Sinikithemba chapel (Sudjic, D. 1981).

### **5.1.7 The Role of the Caregiver after the Death of the Patient**

It would be wasteful for the caregiver to terminate this function on the death of their patient. It is envisaged that the training and the experience gained would be put to further use, preferably on a remuneration basis, in the home of an AIDS patient who has no support base. The caregiver's name will be stored in a database ready for retrieval and contact and placement ensue.

### **5.1.8 Funding**

A number of medical facilities have been commissioned in the Province over recent years and have never operated due to a lack of operational funding (Chatuary, A. 1998). Any such facility requires adequate funding for survival. Establishment costs are generally relatively easily attained from international donor organisations, but a sound business plan backed by ongoing funding either by public or private donations and supplemented by user payments (where possible) or medical aid supplementation, is essential. The establishment of fund generating schemes within such facilities will also assist to offset costs. This could be in the form of handicrafts, trades or educational courses to public and business entities. Examples presently in practice are:

- beadwork items made by People With AIDS (PWA) at McCord Hospital;
- Second-hand shops selling donated clothing and furniture as at the Highway and South Coast Hospices;

- Financial backing from large industrial companies who fund such facilities to care for their staff with AIDS, as legislation prevents retrenchment on the grounds of HIV/AIDS.

McCord Hospital is not a government institution and as such is reliant on donor funding and patient charges. These charges are maintained at a nominal rate. In discussion, it was felt that some charge should be levied upon the patient and caregiver for the duration of their stay at the proposed facility. It was argued that possibly a refund of a part or the whole of this amount be given on the departure of the patient and their return to their homes. This was viewed as an incentive to counter desertion.

### **5.1.9 Perceived Problematic Considerations**

As this proposed model has not been tested, a number of considerations need to be taken into account for the eventuality that it may not work in its present planned configuration, and what steps to take should this occur.

Important questions asked were:

- What if the AIDS patient is deserted by the caregiver at the hospice as they do not want the responsibility of caring or are unable to care for the patient back at the home?

The McCord Team recognised that this may happen, as in most cases the facilities offered by the proposed Hospice would be far superior to those both patient and caregiver are accustomed to in their own homes. They however felt that this occurrence would be limited due to the patients being largely referred to the Hospice via the Hospital. It was hoped that, in most cases, they would have some background knowledge of the patient by the time of their referral and that this should ensure the successful repatriation of the patient to their home.



- What if the Hospice is unable to attract caregivers?

Should this occur, the Training Hospice will need to function as a conventional hospice or assume some other function as determined by the hospital staff. Therefore the facility should be designed in such a way that it is multi-functional and loose-fit. Rooms that are designed to accommodate a patient and caregiver should be able to be used as a single or double ward or even possibly an office.

- Remuneration for Caregivers?

In 5.1.7 above, consideration for the redeployment of caregivers is discussed. It is probable that there would be no money available for payment of their services by the majority of AIDS sufferers. To alleviate the waste of valuable know-how through non-deployment of these experienced persons, a method of financing their efforts could be subsidised through the funding projects discussed in 5.8 above.

## **5.2.0 Medical Research Facility**

The *Africa Centre* for health and population studies is situated at Somkhele, near Mtubatuba, north of Richards Bay. Situated in the heart of the AIDS epidemic the Centre is funded by international donors and is a joint venture between the local Medical Research Council and the University of KwaZulu-Natal. Designed by East Coast Architects and constructed in 2001, the Centre has grown from humble beginnings into a universally recognised institution and a forerunner in AIDS research. Architect Derek van Heerden describes the "genesis" of the "design concept" as originally being one temporary in nature, with design considerations based around "impermanence and resale" (Van Heerden, D. 2004). This was due to the original facility being a pilot project with uncertainty on the future of the epidemic and sustained financial support. The Architects decided that the choice of materials and site layout should mimic that of the surrounding buildings so as to blend into the regional context. The growth of the Centre was so great that this concept was later disregarded as its scale became too great to

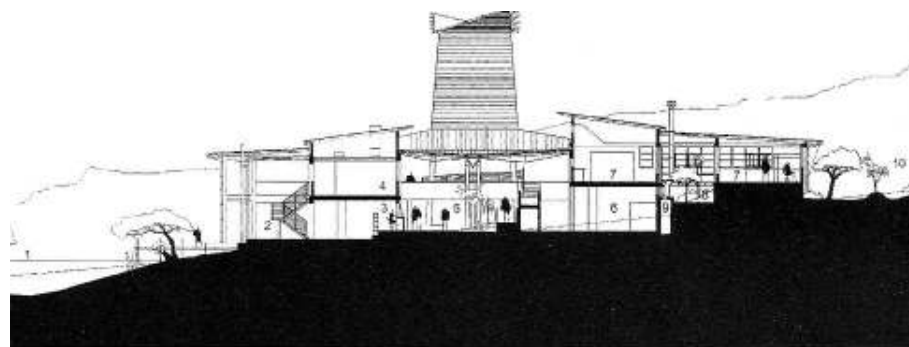
hide. With growth the new building's design in terms of visual concept became "a symbolic iconic structure" (Van Heerden, D. 2004).



Photograph 5.2.A and 5.2.B – Views of the Africa Centre from the north and north-east respectively. (Source – author)

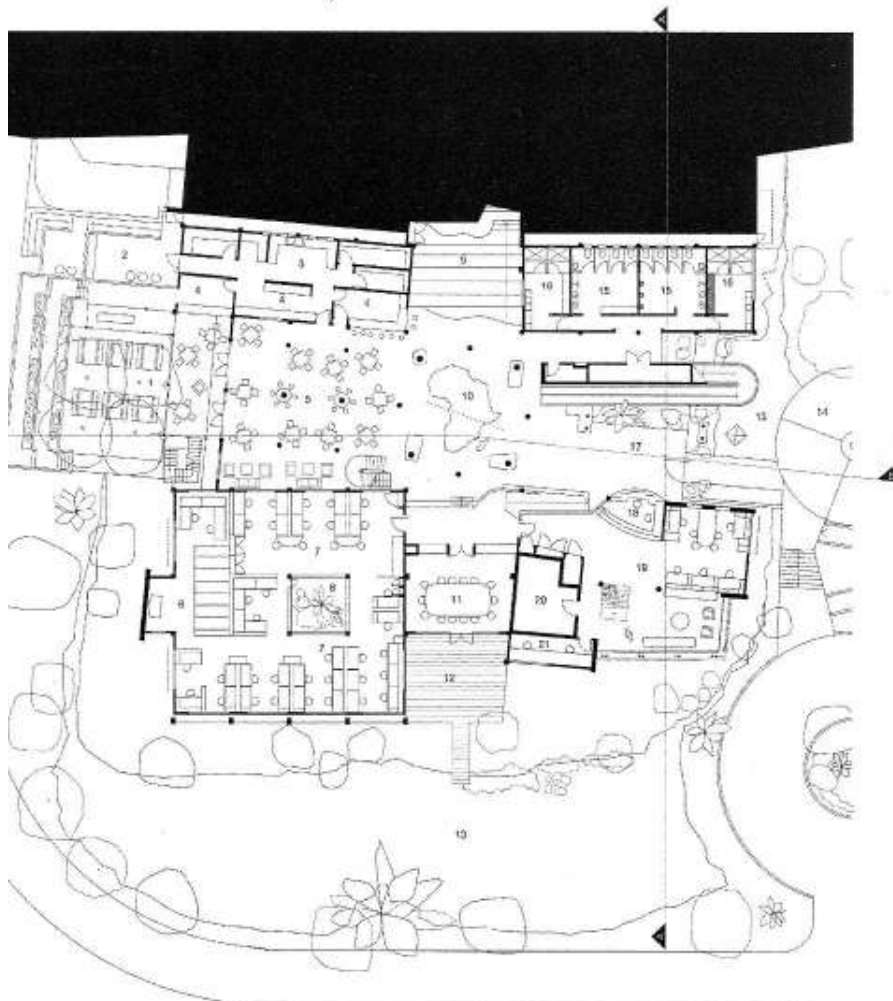
The facility's birth, growth and possible future development are based on sound design and planning ideologies that will see the building live on to cope with the epidemic and later be adaptable into another use. These design decisions included:

- community involvement in decision making and construction;
- make planning provision for future expansion;
- use materials that are indigenous to the region and use construction methods and detailing that expose the manner in which the building is held together;
- create facilities that locate themselves around communal spaces and organising elements such as stairs, ramps and a tower;
- structures interior spaces around courtyards and light-wells to enable that all spaces have direct contact with natural light and ventilation;
- modular design for ease of replication and cost savings;
- concerns for optimum orientation for solar control and design to facilitate comfortable interiors through solar screening and shading;
- water conservation;
- a loose-fit solution for ease of adaptation.



SECTION A-A  
0 2 4 6 8 10m

- |                     |                   |                           |
|---------------------|-------------------|---------------------------|
| 1 Wetlands          | 5 Entrance foyer  | 9 Service duct            |
| 2 Community liaison | 6 Ablutions       | 10 Future research office |
| 3 Reception         | 7 Research office |                           |
| 4 Library           | 8 Atrium          |                           |



LOWER FLOOR PLAN  
0 2 4 6 8 10m

- |                   |                   |                      |
|-------------------|-------------------|----------------------|
| 1 Western court   | 8 Atrium          | 15 Ablutions         |
| 2 Bin area        | 9 Northern steps  | 16 Showers           |
| 3 Kitchen         | 10 Tower over     | 17 Foyer/Gallery     |
| 4 Servery         | 11 Meeting room   | 18 Reception         |
| 5 Canteen         | 12 Deck           | 19 Community liaison |
| 6 Archives        | 13 Wetlands       | 20 Computer server   |
| 7 Research office | 14 Eastern piazza | 21 Computer staging  |

Drawing 5.2.C – Section and Ground Floor Plan of the Africa Centre [Source – Peters, W. (Ed.) 2002 – courtesy of East Coast Architects]

To visit this Centre is an invigorating experience. The building is visible from afar in the landscape. The walk to the building's main entrance through herb gardens and decorated wall surfaces heightens the anticipation of the purpose and experience of the facility and the double volume entrance and communal foyer connects one to all the components of the building.



Photograph 5.2.D – View of Reception Area.  
(Source – author)

Mosaic decoration of interior columns and African Craft-works adorning the interior walls remind the visitor that they are in the African context. Surfaces are unpretentious and colours are vibrant. There is a mix of 1st and 3rd worlds in choice of materials and detailing cleverly adding to the mix of accents contained within the research spaces within.



Photograph 5.2.E – View of Entrance.  
(Source – author)

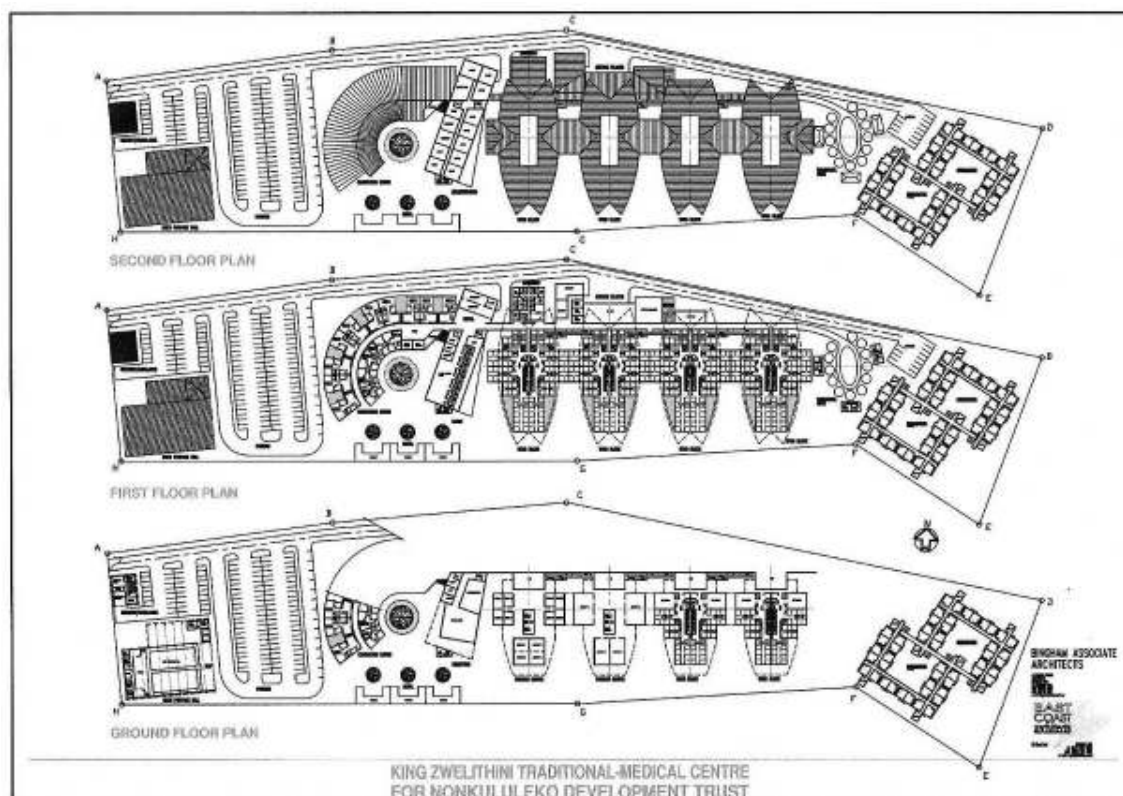
This is a successful architectural award winning solution to the AIDS problem.



Photograph 5.2.F – View of interior columns.  
(Source – author)

### 5.3.0 Proposed Combined Traditional and Western Medicines Hospital

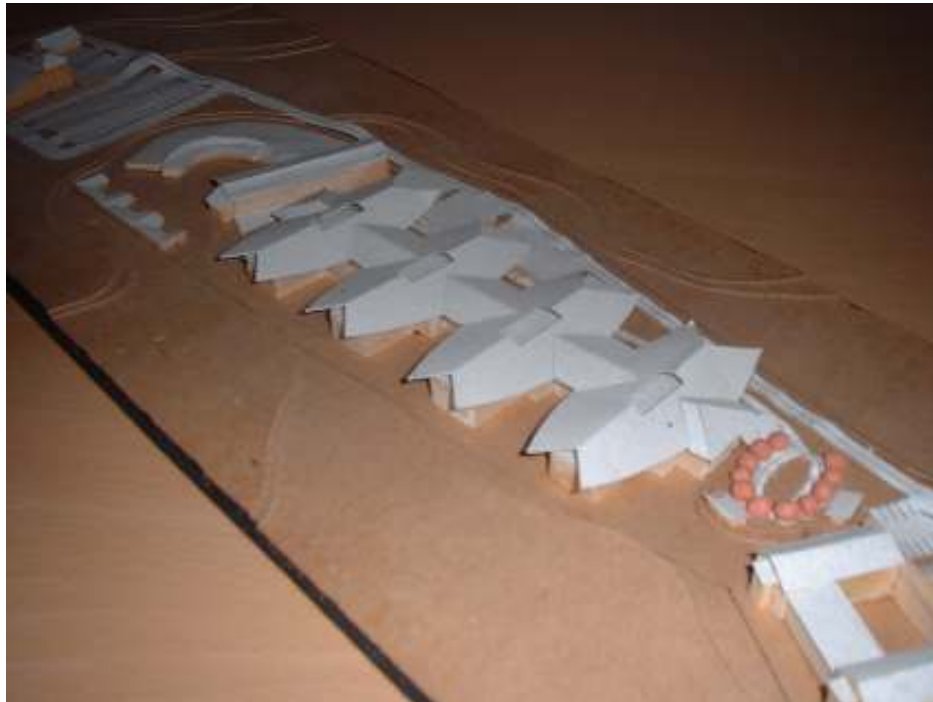
The Author was approached in the late 1990's by a Traditional Healer who wanted to establish a large hospital on the KZN South Coast. Her vision for this facility encompassed both Traditional African medicines and Western medicines and the new hospital was to incorporate facilities for consultants in both fields of medicine. Her focus centred on the AIDS epidemic, the effects of which were decimating the community in which the hospital was to be constructed. The proposed facility was to rival the newly constructed Inkosi Albert Luthuli Hospital in size and a site near Adam's Mission, inland from Amanzimtoti, had been promised for the building by the tribal leaders.



Drawing 5.3.A – Floor Plans of the proposed Traditional Medical Centre (Source – author in association with East Coast Architects)

The author under the style of Bingham Associate Architects worked in association with East Coast Architects to design a hospital to be built over 3 levels with Medical Suites, 4 Ward Blocks, Operating Theatres, Maternity, a Traditional Healers 'kraal' of thatched huts and its associated ablutions for patient vomiting, and a Nurse's Home. There was also to be a community hall on the property.

Project Managers were also tasked with compiling a cost report which was to be presented to various financial backers. The Client later informed the professional team that the project had the blessing of the regional King and that the hospital was to bear his name. Presentations were made to the local community and local and provincial leaders. Great hope shone in all their eyes as the author presented his vision of the Client's dream.



Photograph 5.3.B – Model of the proposed hospital showing L-R the Community Hall, Parking, Medical Consulting Suites, Administration, 4 Ward Blocks, Traditional Healers Kraal and Nurse's Home. (Source – author in association with East Coast Architects)

Sadly this project never developed beyond the sketch plan stage and after many attempts to resurrect it, the Traditional Healer retreated back to her business of selling packaged traditional medicines she claimed could cure AIDS.

## 5.4.0 Summary of Findings

The AIDS epidemic in the Province has spawned new ideas in developing methods of dealing with the problem. In architectural terms these new departures address the accommodation of people living with AIDS, create new buildings housing research institutes in their fight against the epidemic and look at new approaches in a coming together of medicinal treatments under a combined roof.

The Training Hospice proposal while never constructed, gave rise to another approach to AIDS care – the step-down facility. The manager of the Dream Centre in Pinetown was part of the McCord Hospital staff before taking over the running of this valuable care centre. The award winning Africa Centre's success in architectural terms is through good design principles allowing flexibility for change and future development. The idea behind the combined medicines hospital has found its way into research laboratories throughout the Province. Trials on the effectiveness of both medicinal types in treating the Virus continue while apprehension and cultural restrictions in terms of the recognition of AIDS as a notifiable cause of death remain largely concealed (LeClerc-Madlala, S. 2004).

This chapter highlights a number of architectural guidelines deemed to be appropriate for the design of buildings associated with AIDS. These are:

- Buildings should be designed for 'loose-fit' solutions – this requires that the building be easily adaptable into a new function, one that could easily be accommodated with little or no redesign necessary. This includes interior fixtures and fittings, which should be easily inter-changeable and removable. This ensures that the building can have a long life while wearing different guises;
- Modular design using local dimensional standards also facilitates the ease of modification and cost savings in production costs;
- Design approach must make allowances for master-planning for future expansion. This expansion should be able to occur with minimal disruption to the existing building;

- It is preferable to make use of local labour and materials for the construction of the buildings. This ensures the support of the community for the facility, uplifts the local population financially and the use of local materials reduces costs.
  - Good design principles ensures a good building solution, and good buildings promote good health. Careful consideration in providing ample sources of natural light and ventilation will assist in positively promoting the patient's health and comfort;
  - Finally, the appropriate design for the context in which the building is situated is important. The blending in through choice of materials, colour, and style make for a successful contextual solution. This does not mean that the building cannot be iconic, nor that its scale cannot rise up above that of its surroundings. Contextual design includes proportion, choice of materials, culture, colour and a sense of belonging.
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# **CHAPTER 6**

## **CONCLUSIONS**

### **6.0 Introduction**

The impact of AIDS has had a major effect in the study area and all of the building types researched showed that their functioning had been impacted upon by the epidemic. It is clear that in the first instance traditional care buildings (hospitals, hospices) bore the brunt of the impact. This was largely due to the marked increase in numbers needing health care. After initial attempts to accommodate AIDS patients in hospitals, where possible these institutions shifted their foci and sought other means of dealing with the problem. These included the creation of new or larger out-patient clinics and AIDS Centres, dealing specifically with AIDS, in an attempt to relieve the burden on hospital wards. The logic was that patients could be consulted, counselled, medicated and sent home. This response initially worked well for the health facilities but almost immediately supply could not keep pace with demand. Rapid growth saw the need for expansion and where this was not possible, for redesign, allowing flexibility to deal the changing face of the problem.

Hospices by their nature, being traditionally care facilities for terminally ill patients while in the final hours of their lives, also saw a marked influx of AIDS patients. With the limitation on bed numbers, most were turned away, some receiving home-based care. Some large industrial role-players saw the need to establish their own hospices to deal with the new AIDS impact on their workforce and as a means of dealing with the stringent labour laws ensuring that ailing workers are not dismissed.

The increased mortality in young adults, specifically the 20 – 29 age group, saw an increase in the number of orphans. Most rural homesteads affected by AIDS became child or grandparent-headed families. In urban areas, existing children's homes have dealt with the AIDS problem in differing manners – some established AIDS care wards for the infected; others passed their problem on by having the children relocated to another institution, usually a hospital.

The rapid growth in numbers infected by the virus resulted in the lack of ability to cope with the problem in the aforementioned and other traditional health and residential care institutions. Those involved in providing care for these persons were forced to look beyond the norm – this led to the adaptation of existing buildings for this purpose. In most cases the buildings that were subject to a renaissance in function were in poor condition. Interesting and innovative solutions were evident, particularly the *Lily of the Valley's* conversion of the rabbit pens into a crèche and orphaned children's accommodation.

Adaptation has been by far the leading means of coping with the need for care facilities. However those organisations that were fortunate to gain access to donor funding were able to, with in some instances the guidance of an Architect, construct new accommodation. The example of the *Shepherd's Keep* home for abandoned babies chosen to demonstrate this newly created facility stumbled into existence over a rocky road of fund sourcing, government and local authority departmental red tape and a perceived naivety on behalf of the client through inexperience in such matters.

A lack of funding and available space required an innovative solution at the Inanda C Hospice and the opportunity to make use of two shipping containers, used previously for contractor's storage, has enabled the AIDS infected residents of the area access to palliative care. As with most of the case studies this facility quickly outgrew its original special requirements.

The Training Hospice model was mooted around 2000 but never saw fruition due to concerns around the short term accommodation of patients and their care-givers. It was seen as being too risky in terms of the management of the arrival and departure of the patients – some believed that the facility would become a dumping ground for patients by family members; others were concerned that after the care and facilities experienced at the training hospice it would be difficult for the patient's care-giver to replicate this in their homes.

Perhaps the best example of architecture purpose-built for the AIDS epidemic is the *Africa Centre*. The growth of the Centre developed alongside the growth of the epidemic

in an area rife with AIDS. Appropriate choices in planning layouts, spatial considerations, materials usage and recognition of environmental sustainability have made this a worthy precedent for others to reference. Another thought provoking proposal was the combined traditional and western medicines hospital. This project was championed by a Sangoma<sup>11</sup> with little or no experience in the provision of health care facilities and even with the keen assistance of the professional team, funding was never realised.

The hypothesis has been proven. Numbers of HIV infected people have levelled off and match the ceiling evident in pandemics of the past (Smith, A. 1998). The Built Environment struggled to maintain pace in the provision of shelter at the outset of the study, but with the stabilisation in numbers of new infections and the availability of antiretroviral drugs maintaining the health of the infected, catch-up has been made possible. *The Independent on Saturday* of 29 November 2008 reported that clinical testing on two South African developed HIV vaccines are due to begin in the United States of America. While this is a very positive milestone, it too will give Architects the opportunity to reflect on their AIDS work in the future beyond the time of the epidemic. Their buildings will be tested on the success or otherwise of efficiently providing for a new functional adaptation of a building designed for AIDS.

## 6.1 The AIDS and Architecture Life-Cycle

The cycle of the epidemic over the decade 1998 - 2008 has seen a growth in the number of infected up to a peak in 2004, then a levelling off in numbers followed by a slow decline in 2007 and 2008. This cycle has been followed in architectural terms by the initial need to create new facilities, the adaptation of old buildings to suit the AIDS needs and new ideas for building types associated with the epidemic. What has occurred for Architects over this period will undoubtedly have been the experience of Architects during past epidemics experienced around the world e.g. the Black Death of the 14th to 18th centuries and the Influenza pandemic of the early 20th century. Architects must take the lessons learned from this experience and design appropriately for the future.

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<sup>11</sup> Sangoma – "a practitioner of herbal medicine, divination and counselling in traditional Nguni societies of Southern Africa". (<http://en.wikipedia.org/wiki/Sangoma>)

## **6.2 Guidelines for Architects**

Much has been explored and much learned in this experience. There has been new territory covered for those involved in the design and provision of these facilities. Patient management conditions may have varied but all have called for the need for a versatile and flexible space, well designed to accommodate the needs and comfort of the patient. Many design guide handbooks exist for the design of medical facilities and hospices. However none take into consideration the provision for a change in usage of the building once the need for that building type no longer exists. Design considerations for future developments particularly in the health care realm should consider the following design guidelines:

### **6.2.1 Flexibility and Inter-Changeability of Layout Design and Planning for Re-Use**

The research has shown that most of the spaces adapted for re-use had to be modified with new construction to suit the new AIDS Care function. The only facility in which this did not happen was the Dream Centre, previously a home for the aged. This example suited the AIDS care function perfectly. In the case of the Sinikithemba Centre at McCord Hospital, the adaptation of an existing dwelling and building addition were reconfigured to specifically suit the Client's brief. Almost immediately after the occupation of the building their needs changed due to growing numbers, and alternative methods of dealing with the management of the AIDS problem from the hospital's perspective were needed. There are therefore obvious costs and time benefits in designing buildings for flexible re-planning and re-use with inter-changeable interiors laid out around fixed core elements housing wet services.

The construction methods of internal divisions in larger medical facilities have over the study period been seen to move towards stud partitioning,

thus facilitating little disruption and mess when change is required. This construction method should be used throughout health care and health consultancy buildings due to the ever changing need requirements that these facilities endure. There has been a stigma attached to the use of partitioning in the South African context over the past century, developed through the residential property market's move from wood and iron structures to masonry exteriors with partitioned interiors in the early 1900's and on to solely masonry structures. Today's composite partition walling can match masonry walling in terms of ordinary resistance to wear and tear and sound attenuation properties, and they are easily cleaned and durable. This is also in line with construction practices internationally.

The design for a loose-fit solution and the end to tailor-made buildings therefore allows the flexibility needed for adaptation at a later stage. Buildings have to be designed for ease of future expansion enabling as little disruption as possible when the time comes to do the additional work.

## **6.2.2 Long-Life Building Solutions**

In a throw-away society promoted by consumerism, and in a world where spiralling costs see the development of quick-fix options, cheaper solutions in material choices and a general reduction in quality, we will have to reassess the lifespan for which a building is designed to endure. Current trends dictated by financial arrangements usually agree on a "write-off" of a building over a period of 20 years. We know that most well constructed building have a far greater lifespan than this, but there is no reason why the shell of building constructed hence forth should not stand for eternity with the interiors being reworked as and when a functional change is required.

Care must therefore be taken to ensure that durable materials appropriate to the building's context are used and that construction methods are

sound. This holds true for the servicing of the buildings too – service supplies to the buildings should be of durable materials, conveniently reticulated out of the way of risk if damage, and easy to access for maintenance.

Long-life options should include low-maintenance solutions and finishes that are durable, washable and hard-wearing – vinyl sheeted or epoxy screeded surfaces fare best on the floor with washable surfaces wherever possible. Modern washable wallpapers applied to internal partitioning walls are suitable to the task. Architects may wish to consider low maintenance finishes to the exterior as opposed to high-maintenance plaster and paint.

When AIDS has been confined to history, new buildings designed for the epidemic will need to live on in new functions and will hopefully not be reduced to rubble due to tailor-made inability for change or high renovation costs.

### **6.2.3 Modular Planning**

Inter-changeability has been determined as a necessity in design planning for health care facilities. It therefore follows that a modular grid, from which multiple modules enable the creation of suitable space requirements for health facilities and/or modules derived from practical standard building material dimensions, would be best suited to this need. The Nkosi Albert Luthuli Hospital in Durban is constructed on a 1100mm grid with column layouts at 6600mm centres (Hathorn, J. 2004). This has proved to be ideal giving modular workspaces, wards and laboratory bays of 3300 and 6600mm in width. The only negative that was encountered with this module was the matching of ceiling tiles as these are in 600mm modules. This was overcome as a local ceiling manufacturer continues to stock and market 1500x550mm tiles as these are based upon previously used imperial dimensions.

The other appropriate choice of module is 1200mm. This is better suited to standard building material modules and can accommodate structural grids of 6000mm, 7200mm or 8400mm, the latter suited to comfortable parking grids below making allowances for columns.

Modular design provides for ease of inter-changeability, cost savings in production and a convenient certainty that in the future, refits of the building are possible.

## **6.2.4 Accessibility**

Consideration for the ease of access of persons within buildings should permeate through all building types. The loose-fit principle will mean that all buildings will need to facilitate ease of movement into and within them, so providing the platform for future re-use. Persons frail from disease or aged persons may have poor mobility, immobility or a reduced functional ability. Design considerations for dealing with these conditions require that spaces are legible (Evans, G and McCoy, J. 1998) and clearly laid out in an uncluttered, orderly manner facilitating easy orientation for the patient and ease of maintenance and cleaning for the management.

Accessibility into and around the ablutions of care-facilities are a critical area of design. Wheelchair access should be possible where patients are independent and in smaller institutions the provision of at least one wheelchair accessible toilet should be made. Steps into showers must be avoided and can be eliminated through the floor-to-fall solution. Bathing of patients is best achieved only in showers with flap-down wall-mounted seats or through bed-baths. The entire bathing and toilet areas should be able to be hosed down to a floor drain. This is best achieved through the ablution floor being screeded to fall to the drainage point, usually the shower outlet.

### **6.2.5 Day-Lighting**

Day-lighting and the access to it are argued by Sweitzer to be most critical to terminal patients (Sweitzer, G. 1997). Patients confined to bed often have little or no control over their interior environments and hence the direct access to natural lighting with controlled access to bedside artificial lighting is the ideal. Ordinarily high levels of artificial lighting within medical wards cancels out the ambient lighting of the exterior. Especially in palliative care facilities it is recommended to provide large windows with controlled solar ingress to the west, north (southern hemisphere) and east, allowing the patient the experience of the sun's movement across the day. Blinds or curtains can be used to control excess day-lighting. Window sills should be kept low to enable those on beds or seated in their rooms the possibility of visibility out to the garden externally (Hicks, C. 1993).

### **6.2.6 Ventilation**

The rapid spread of Multi Drug Resistant Tuberculosis in the province is resulting in the disease being transmitted from the infected to other HIV infected patients in the waiting rooms of health facilities. It is therefore essential that aerosols are quickly removed from the shared atmosphere and restricted from moving between departments (Kaushal, V, Saini, P and Gupta, A. 2004). This is best achieved through a forced ventilation filtered extract system in specific high-risk areas where effective natural ventilation is inadequate. Forced extraction points are best sited at regular intervals above the heads of patients and not located on one wall of the room, drawing air over other patients.

Laboratories and operating theatres dealing with AIDS related conditions have developed laminar flow systems to extract air away from the adjacent staff through filtered systems, down through the operating table



in the case of a mortuary, or via fume cupboards in laboratories (Ramdial, P. 2008).

Mechanical systems for ventilation must however not be the first line of defence. Ample provision of natural ventilation must be provided. Waiting rooms should be arranged with patients seated with their backs to walls and not seated opposite other patients but rather with an opening to the exterior ahead of them. The isolation of patients infected with respiratory diseases must be immediate.

## **6.2.7 Low Energy Solutions**

While the preceding paragraph promotes the use of forced ventilation systems, the entire building should be designed with low energy solutions in mind. The 21st century has brought with it imminent ends to sources of energy, particularly oil. Alternative "green" solutions must be implemented into all buildings.

The extraction system described in 6.2.6 above can be assisted by wind or solar generated power through wind turbines or photovoltaic cells via battery storage. Consideration could also be given to the construction of thermally driven convection stacks, particularly where the building is of a height suited to the optimum operation of this system.

Simple solutions such as the gathering of rain water run-off from roofs and storing it in holding tanks for use in gardens or the recycling of grey water can be achieved. The heating of water can also be done through solar panels located optimally on the building's roof-scape.

Good design for contextual climatic conditions, including the building's orientation, appropriate materials and adequate fenestration, will see a reduction in heating and cooling costs (Thermie. 1999:39.)

The care of the sick and infirm cannot be excluded from the need to provide low energy solutions. Rather these buildings designed to give good health to the patients should be the forerunners in achieving healthy environmental conditions within their own buildings.

### **6.2.8 Good Universal Design Principles**

In essence, the care of people infected with AIDS requires from Architects nothing more than good age old logical design principles, considering the future adaptation of the spaces to suit any need. Thomas Gordon Smith (2003) in his book *Vitruvius on Architecture* describes the "ideals of architectural design" – "Firmitas, utilitas and venustas" known to Architects the world over as strength, function and beauty or firmness, commodity and delight. These principles are taught to students of architecture the world over and should be implemented in all work they produce. "Firmitas" has been debated earlier in this chapter – the Architect must provide a building of a durable, long-lasting nature; "Utilitas" requires that the Architect delivers a building that is well suited for its intended purpose. This dissertation extends this principle further asking that the building be adaptable for many functions. "Venustas" is the beauty of well created architecture. This beauty should extend to the interior where spatial design adds comfort to the lives of the inhabitants. Should these principles be achieved, the Architect will have achieved good architecture.

It has long been held that good buildings promote good health. Christopher Day argues that value should be afforded to good design. (Day, C. 2004) In his books *Spirit and Place* and *Places of the Soul*, Day promotes the benefits of green open spaces, the introduction of nature into the interiors via atria and views and deals with issues of green architecture. Day also asks that Architects create a building with "soul" – this can be achieved through a deep understanding of the brief, the difficulties faced by the patient occupying the space and the careful

detailing of the space to create a healthy environment. It is this "soul" that Day describes that Architect's must seek to achieve in their work.

## **6.3 Errors of the Past and Hope for the Future**

So many lives could have been saved if South African politicians had acted more quickly and wisely. The newspaper articles referenced in the preparation of this dissertation make a clear statement as to where the blame should fall. Examples of headlines read:

"Leadership responsible for AIDS escalation", "Dithering as AIDS mounts", "War of words cannot hide rising AIDS toll", "AIDS solution is foiled by an evil spell of silence" and most disconcertingly "The AIDS plan that never saw the light of day".

The South African government for some time swept AIDS "under the carpet" through an ineffective Health Department and mixed and confusing statements to the public regarding the epidemic and methods of combating it. These misleading statements, particularly those involving treatment through herbal remedies alone, were reinforced by the country's leadership. So too was the government's fight to stave the distribution of antiretroviral medicines. Another political leader stated in a court of law that he believed that a shower after intercourse with an HIV infected person would cleanse him of the viral risk.

It is reported that the end of the epidemic is in sight. Two vaccines are being tested December 2008 (The Independent on Saturday:2008) and it is hoped that whoever reads this document will do so in a time free of AIDS or at least in a world where the AIDS epidemic has been brought under control.

Architects have played a valuable role in the AIDS story – they must continue to take the lessons learnt and wisely implement these into the future.

## GLOSSARY OF TERMS

<b><i>AIDS</i></b>	Acquired Immune Deficiency Syndrome
<b><i>Demographics</i></b>	"refers to when a goal selected population characteristics as used in government, marketing or opinion research, or the demographic profiles used in such research." ( <a href="http://en.wikipedia.org/wiki/Demographics">http://en.wikipedia.org/wiki/Demographics</a> )
<b><i>Disease</i></b>	n. "Morbidity condition of body," "or some part", "illness or sickness" (The Concise Oxford Dictionary).
<b><i>Endemic</i></b>	In contrast to an <i>epidemic</i> , "a disease (such as malaria) is considered endemic if it is continuously present in a population but at low or moderate levels" (Barfield, 1997, p.150).
<b><i>Enigma</i></b>	An enigma is a puzzle, something mysterious or inexplicable, or a riddle or difficult problem. ( <a href="http://en.wikipedia.org/wiki/enigma">http://en.wikipedia.org/wiki/enigma</a> )
<b><i>Epidemic</i></b>	"a rate of disease that reaches unexpectedly high levels, affecting a large number of people in a relatively short time. Epidemic is a relative concept: a small absolute number of cases of a disease is considered an epidemic if the disease <i>incidence</i> is usually very low" (Barfield, 1997, p.150).
<b><i>Epidemiology</i></b>	"The study of the distribution and determinants of health-related conditions and events in populations" (Katzenellenbogen et al., 1997:5)
<b><i>HIV</i></b>	Human Immunodeficiency Virus
<b><i>Incidence</i></b>	The number of new infections over a given period of time

**Opportunistic Diseases** General diseases such as cancer, TB etc. that may become prevalent should the immune system become vulnerable

**Pandemic** “a *pandemic* describes epidemics of world-wide proportions, such as influenza in 1918 or HIV/AIDS today (Barfield, 1997, p.150).

**Prevalence** The absolute number of people infected at a given time

**Seroprevalence** "is the number of persons in a population who test positive for a specific disease based on serology (blood serum) specimens; often presented as a percent of the total specimens tested or as a proportion per 100,000 persons tested. As positively identifying the occurrence of disease is usually based upon the presence of antibodies for that disease (especially with viral infections such as Herpes Simplex and HIV), this number is not significant if the specificity of the antibody is low."  
(<http://en.wikipedia.org/wiki/seroprevalence>)

**TB** see *Tuberculosis*

**Tuberculosis** "(abbreviated as **TB** for *tubercle bacillus* or **Tuberculosis**) is a common and often deadly infectious disease caused by mycobacteria, mainly *Mycobacterium tuberculosis* <sup>[1]</sup>. Tuberculosis usually attacks the lungs (as pulmonary TB) but can also affect the central nervous system, the lymphatic system, the circulatory system, the genitourinary system, the gastrointestinal system, bones, joints, and even the skin. Other mycobacteria such as *Mycobacterium bovis*, *Mycobacterium africanum*, *Mycobacterium canetti*, and *Mycobacterium microti* also cause tuberculosis, but these species are less common. The typical symptoms of tuberculosis are a chronic cough with blood-tinged sputum, fever, night sweats, and weight loss..."  
(<http://en.wikipedia.org/wiki/Tuberculosis>)

# BIBLIOGRAPHY

## Books

BARNETT, T and WHITESIDE, A. (2002) *AIDS in the Twenty-First Century: Disease and Globalisation*. Basingstoke: Palgrave Macmillan.

BARFIELD, T. (ed.) (1997) *The Dictionary of Anthropology*. Oxford: Blackwell.

BUCKINGHAM, R. (1983) *The Complete Hospice Guide*. New York: Harper & Row.

CREWE, M. (1992) *AIDS in South Africa: The Myth and the Reality*. "Penguin Forum Series", edited by ORKIN, M. London. The Penguin Group.

DAY, C. (2002) *Spirit and Place: Healing our environment*. Oxford: Architectural Press

DAY, C. (2004) *Places of the Soul: Architectural and Environmental Design as a Healing Art*. Oxford: Architectural Press

GOLDSMITH, S. (2000) *Universal Design*. Oxford: Architectural Press.

HERDT, G and LINDENBAUM, S. (1992) *The Time of AIDS: Social Analysis, Theory, and Method*. London: Sage Publications.

PRATT, R. (1987) *AIDS: A Strategy for Nursing Care*. London: Edward Arnold (Publishers) Ltd.

MORGAN, M. (translator)(1960) *Vitruvius: The Ten Books on Architecture*. New York. Dover Publications, Inc.

S.A.B.S. 0400 (1990) *South African Standard Code of Practice for the Application of the National Building Regulations*. Part SS2(a)(i).

SMITH, T. (2003) *Vitruvius on Architecture*. New York: The Monacelli Press, Inc.

THERMIE (1999) *A Green Vitruvius*. London: James and James.

WOOTEN, J. (2004) *We Are All the Same*. Johannesburg: Penguin Press.

## **Published Conference Papers**

BINGHAM, K. (1999) The Challenge of Change. London. *The Royal Institution of Chartered Surveyors*. Pgs. 149-160.

## **Brochures, Leaflets and Reports**

BINGHAM, K and HARBER, R. (1998) AIDS Brief for Professionals: Architects in AIDS Briefs: Whiteside, A. (Ed.) University Durban: Pgs. 1-4.

DEPARTMENT OF NATIONAL HEALTH AND POPULATION DEVELOPMENT. (1999) *The Truth About AIDS: Epidemiological Comments*. 17(2): Pgs. 4-11.

DEPARTMENT OF NATIONAL HEALTH AND POPULATION DEVELOPMENT. (1999) *The Truth About AIDS: Epidemiological Comments*. 17(3): Pgs. 3-14.

DEPARTMENT OF NATIONAL HEALTH (2007) National HIV and Syphilis Antenatal Sero-prevalence Survey in South Africa, 2002 – 2006.

EVANS, G and McCoy, J. (1998) When buildings don't work: The role of architecture in human health. *Journal of Environmental Psychology*, (18): Pgs. 85-94.

GOURLEY, B. (2000) Vice-Chancellor's Newsletter. *University of Natal*, Durban. November.

HEARD. (2000) *KZ-N Town and Regional Planning commission report*: Durban

HICKS, C. (1993) The Hospice Information Fact Sheet. *Building a New Hospice*. No.17: Pgs. 1-19.

KAUSHAL, V, SAINI, P and GUPTA, A. (1994) Environmental control including ventilation in hospitals. Vol.6. No.4: Pgs. 229-232.

SMITH, A. (1999) Department of Virology, University of Natal. *Monthly Report on HIV Serology: June*.

SMITH, A. (1999) Department of Virology, University of Natal. *National Survey 1998*.

SMITH, A. (1999) Department of Virology, University of Natal. *National and KZN HIV Prevalence*.

UNAIDS (2001) *Report on the Global HIV/AIDS Epidemic*, Geneva.

UNAIDS (2004) *Report on the Global HIV/AIDS Epidemic*. Bangkok.

UNAIDS (2008) *Report on the Global AIDS Epidemic*

## **Manuscript**

McKERRROW, N. (1998) *The Current Status, Anticipated Sequelae and Implications of and the Response to the South African HIV/AIDS Epidemic*. Pgs. 1-2.

## **Journal Articles**

BINGHAM, K. (2002) Sinikithemba Centre. *KZ-NIA Journal*, Issue 2: Pg. 4.

DAVIDSEN, J. (1990) AIDS Hospice. *Interior Designer*, March: Pgs. 204-205.



F.J.A. (Initials) Author Unknown - (1991) L.A. Care. Architectural Review, February: Pgs. 34-39.

HELLMAN, L. (1987) St. Oswald's Hospice, Gosforth, UK. *The Architect's Journal*, 25 February: Pgs. 29-43.

HELLMAN, L. (1987) First AIDS. *The Architect's Journal*, 23 September: Pgs. 22-25.

HOOK, M. (1993) A flexible, low-key hospice for residents and day-care. *The Architect's Journal*. 16 June: Pgs. 17-18.

KIDD, B. (1987) Aldersgate Village. *Architecture Australia*, May: Pg. 93.

LECLERC-MADLALA, S. (1997). Infect one, infect all: Zulu youth response to the AIDS epidemic in South Africa. *Medical Anthropology*, 17(4), Pgs. 363-380

LECUYER, A. (1987) Building in a modern spirit. *Architect's Journal*, July: Pgs. 24-27.

LINN, C. (1994) A Place of Healing. *Architectural Record*. July: Pgs. 78-80.

PETERS, W. (ed.) (2002) AIDS & Architecture. *KZ-NIA Journal*. Issue 2: Pgs. 1-10.

SAUNDERS, N. (2002) Pilot Project: Community-Family Care Homes, Cato Manor. *KZ-NIA Journal*, Issue 2: Pg. 3.

SPRING, M. (1997) Caring Community. *Building*, 24 October: Pgs. 54-56.

SUDJIC, D. (1981) St. Ann's Hospice. *Architect and Builder*, July: Pgs. 22-27.

SWEITZER, G. (1997) The need for adjustable lighting in palliative care. *European Journal of Palliative Care*, 4(3): Pgs. 83-84.

TETLOW, K. (1992) Hospice Care. *Architecture*, March.

VAN HEERDEN, D. (2002) Medical Research Facilities at Somkhele. *KZ-NIA Journal*, Issue 2: Pg. 4.

## **Interviews**

BOTHA, W. (1999) The Ark Christian Ministeries, Durban.

CHATUARY, A. (1998) Department of Health, Pietermaritzburg. Interviewed at the Community Health Department, University of Natal, Durban (23.01.1998).

CLARK, B. (2004) Department of Histo-pathology. University of KwaZulu-Natal, Durban. Interview 16.08.2004.

DADA, M A. (1999) Head of Department: Forensic Medicine. University of Natal, Durban. Interview 13.01.1999.

DRYSDALE, S. (1999) Medical Superintendent, Hlabisa Hospital, KwaZulu-Natal. Interview 22.07.1999.

FREESE, I. (2000) Medical Sister-in-Charge, Campus Health Clinic, University of Natal, Durban. Interview 24.01.2000.

FROST, J (1999) Architect: Additions and Alterations - William Clark Gardens Children's Home, Durban. Interview 22.01.1999.

GIDDY, J. (2004) HIV Programmes Co-ordinator. McCord Hospital, Durban. Interview 12.08.2004.

GIDDY, J. (2007) HIV Programmes Co-ordinator. McCord Hospital, Durban. Interview 02.10.2007

GLOVER, M. (2004) Matron, Highway Hospice, Durban. Interview 13.08.2004.

HATHORN, J. (2004) Specialist Architect: Nkosi Albert Luthuli Hospital Mortuary. Partner – FGG Architects, Durban. Interview 10.09.2004.

HINTON, L, LOUDOUN, K, NGIDI, N AND VAN ZYL, L. (1998/1999) Senior Medical Staff, Highway Hospice, Durban. Primary interview 1998

JOSEPH, A. (2008) Highway Hospice, Durban. Telephonic Interview 17.11.2008

KEYSER, A. Lily of the Valley, AIDS Orphan's Home, Eston, KwaZulu-Natal. Interview 1998

MACLEOD, L. (2000) Robin Trust, Cape Town.

MARAIS, NXUMALO, DLADLA AND DHLAMINI. (1999) Prison Staff, Westville Prison, Durban. Interview 05.07.1999 and 2004.

McDONALD, K. (1999) Medical Superintendent, Eshowe Hospital, KwaZulu-Natal.

McDONALD, N. (2004) Administrator: The Dream Centre, Pinetown. Interview 09.09.2004.

NAIDOO, S. (2004) Head of Department: Forensic Medicine. University of KwaZulu-Natal, Durban. Interview 30.08.2004.

OATWAY, L AND L. (1999) Managers, Ethembeni Care Centre, Richards Bay. Interview

PATTON, V. (2000) McCord Hospital, Durban, KwaZulu-Natal.

PRELLER. (1999) William Clark Gardens Children's Home, Durban. Interview 20.01.1999.

RAMDIAL, P. (1999 and 2008) Head of Department: Histo-pathology. University of KwaZulu-Natal, Durban. Interview 13.01.1999 and 11.2008.

SMITH, A. (1999 & 2004) Head of Department: Virology. University of KwaZulu-Natal Medical School, Durban.

VAN ZYL, L. (2004) General Manager: Highway Hospice, Durban. Interview 20.08.2004.

## **Newspaper Articles**

ATTWOOD, V. (2008) *State Hospitals in Crisis*. Durban: Daily News, October 21 2008: 1

BARBEAU, N. (2004) Poor prognosis for Health Care. Sunday Tribune, 19 September: Pg. 10.

BISETTY, V. (2003) Ark People may be Homeless for Christmas. *The Independent on Saturday*, 12 December.

BOLOWANA, A and KHAN, F. (2005) Poll shows high HIV prevalence in teachers. *The Mercury*, 1 April: Pg. 3.

CULLINAN, K. (2008) Health MEC Punts Herbal Remedies for AIDS. *Sunday Times*, 23 November : Pg. 11.

EDITOR. (1999) AIDS is Already Way out of Control! *Sunday Tribune*, 7 March.

EDITOR. (2004) Dithering as AIDS mounts. *Sunday Tribune*, 10 October: Pg. 24.

EDITOR (2005) 6.2 million infected with HIV last year. *The Mercury*, 12 July: Pg. 6.

EDITOR (2008) HIV vaccine test. The Independent on Saturday, 29 November: Pg. 2.

GOVENDER, P. (2008) Wanted Now: 94 000 Teachers. *Sunday Times*, 23 November: Pg. 1.

LECLERC-MADLALA, S. (2004) AIDS solution is foiled by an evil spell of silence. *The Sunday Independent*, 3 October.

LOXTON, L. (2004) War of words cannot hide rising AIDS toll. *Sunday Business Report*, 26 September: Pg. 2.

MAKKINK, D. (2004) Leadership responsible for AIDS escalation. *Independent on Saturday*, 9 October: Pg. 7.

MEYER, J. (2004) The AIDS plan that never saw light of day. *Sunday Tribune*, 10 October: Pg. 8.

MKHWANAZI, S. (2004) AIDS Prisoners Freed. *Daily News*, 14 September: Pg. 1.

MTHETHWA, B. (2006) Major Setback for University's AIDS Treatment Program. *Sunday Times*, 5 February.

NARAN, J. (2004) ARV roll-out in KZN too slow. *Tribune Herald*, 26 September: Pg. 1.

NARAN, J. (2004) Chats Hospice Alarm over AIDS Admissions. *Tribune Herald*, 29 August: Pg. 1.

PARSONS, N. (2004) AIDS Dementia threat looming. *Sunday Tribune*, 19 September: Pg. 5.

PARSONS, N. (2004) Hope comes to Hlabisa Hospital. *Sunday Tribune*, 19 September: Pg. 13.

ROBINSON, K. (1998) Brutal abuse in old-age home. *The Independent on Saturday*: 31 October.

SCHMIDT, M. (2004) AIDS Cases Near Peak. *The Independent on Saturday*, 4 December: Pg. 3.

ZULU, X. (2005) KZN AIDS shocker. *The Mercury*, 28 February: Pg. 4.

## **Web Pages** (reviewed 1999 – 2008)

AIDS FOUNDATION OF SOUTH AFRICA

<http://www.aids.org.za/index.htm>

AVERT: South African HIV/AIDS Statistics

<http://www.avert.org/safricastats.htm>

DREAM CENTRE, Pinetown

<http://www.thedreamcentre.net/index.htm>

DURBAN CHILDREN'S SOCIETY

<http://www.durbanchildren.org.za/>

HEALTH SYSTEMS TRUST (2007)

<http://www.hst.org.za/healthstats/3/data>

HIGHWAY HOSPICE:

[www.hospice.co.za/](http://www.hospice.co.za/)

HUTTON, N. (2005) *The Ark*. Durban:

<http://2point8.co.za/arkstory.html>

INTEGRATED REGIONAL INFORMATION NETWORKS (2004) South Africa: HIV/AIDS care centre not being fully utilised. 8 October.

<http://www.irinnews.org/report.aspx?reportid=51631>

KZN HEALTH DEPARTMENT (2005) Hlabisa Hospital Quarterly Mortality & Morbidity Report.

<http://www.kznhealth.gov.za/hlabisa/report.pdf>

LILY OF THE VALLEY CHILDREN'S HOME

<http://www.lilyofthevalley.org.za/index.php>

NATIONAL DEPARTMENT OF HEALTH: National HIV and AIDS and TB Unit, Pretoria.

<http://www.doh.gov.za/aids/index.html>

NELSON MANDELA/HSRC STUDY OF HIV/AIDS 2002

[http://lnw.creamermedia.co.za/articles/attachments/00287\\_hivreport.pdf](http://lnw.creamermedia.co.za/articles/attachments/00287_hivreport.pdf)

NCAYIYANA, D. (2004) Research at Durban Institute of Technology Vol.2. No.4.

<http://research.dut.ac.za/dut/2004/october2004.pdf>

NKOSI JOHNSON

<http://zar.co.za/nkosi.htm>

ROBIN TRUST:

[www.icon.co.za/~robintrust](http://www.icon.co.za/~robintrust)

SHEPHERDS KEEP, Durban

<http://www.shepherdskeep.org.za/index.htm>

SHISANA, O. & SIMBAYI, L. (2002) *Nelson Mandela/HSRC Study of HIV/AIDS*.

[http://196.4.93.10/compress/e-](http://196.4.93.10/compress/e-library/HIV%20AIDS%20Report%20Executive%20Summary%20for%20web.pdf)

[library/HIV%20AIDS%20Report%20Executive%20Summary%20for%20web.pdf](http://196.4.93.10/compress/e-library/HIV%20AIDS%20Report%20Executive%20Summary%20for%20web.pdf)

SINIKITHEMBA, McCord Hospital, Durban

[http://www.mccordhospital.org.za/cgi-](http://www.mccordhospital.org.za/cgi-bin/giga.cgi?cmd=cause_dir_custom&cause_id=1294&page=home)

[bin/giga.cgi?cmd=cause\\_dir\\_custom&cause\\_id=1294&page=home](http://www.mccordhospital.org.za/cgi-bin/giga.cgi?cmd=cause_dir_custom&cause_id=1294&page=home)

SOS CHILDREN'S VILLAGE, Pietermaritzburg

[http://www.sos-childrensvillages.org/Where-we-help/Africa/South-](http://www.sos-childrensvillages.org/Where-we-help/Africa/South-Africa/Pietermaritzburg/Pages/default.aspx)

[Africa/Pietermaritzburg/Pages/default.aspx](http://www.sos-childrensvillages.org/Where-we-help/Africa/South-Africa/Pietermaritzburg/Pages/default.aspx)

TREATMENT ACTION CAMPAIGN (2006) Westville Prison Case. 23 August.

(<http://www.tac.org.za/community/node/2192>)

#### UNAIDS

<http://www.unaids.org/>

[http://www.unaids.org/bangkok2004/GAR2004\\_html/GAR2004\\_00\\_en.htm](http://www.unaids.org/bangkok2004/GAR2004_html/GAR2004_00_en.htm)

<http://www.unaids.org/en/KnowledgeCentre/HIVData/GlobalReport/2008/>

WORLD HEALTH ORGANISATION: Epidemiological Fact Sheet on HIV/AIDS – South Africa 2008 Update

[http://www.who.int/globalatlas/predefinedReports/EFS2008/full/EFS2008\\_ZA.pdf](http://www.who.int/globalatlas/predefinedReports/EFS2008/full/EFS2008_ZA.pdf)

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## APPENDIX A

kevin/masters/quest199

# QUESTIONNAIRE

NAME

DEPT.

TELEPHONE

FAX

DATE

---

BUILDING TYPE

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What effect (if any) has HIV / Aids had on the building type?

Has there been an increase or decrease in user numbers due to AIDS?

Please refer to documentation in support of this.

What measures have been taken / are planned to compensate for this change in user capacity?

Are any other precautions being implemented that may require modifications to the building type?

Are the present facilities "up to date" technologically or is upgrading necessary? How out of date? Can existing structures be modified to accommodate upgrades?

## APPENDIX B

SCHOOL OF ARCHITECTURE  
UNIVERSITY OF NATAL

ARCHITECTURAL DESIGN  
PROGRAMME 3.1

# CATO MANOR AIDS CENTRE

## 1.0 General

"HIV / AIDS is one of the greatest challenges facing the world today and will be for the next twenty years at least. Most countries have responded ineffectively".

*National AIDS Convention of South Africa.*

It is estimated that there are 30 million people in the world who are HIV positive, 20 million of who live in sub-Saharan Africa. In 1997 there were an estimated 2,3 million deaths in the world from AIDS related illnesses, of which 1,8 million of this number occurred in sub-Saharan Africa.

*"Get on TRAC" Convention, Durban February 1998*

"Women infected with HIV have a 30% chance of passing on the virus to their babies during pregnancy or childbirth. Most of these children will die before the age of five". "70% are not infected with HIV. As their mothers and - as is usually the case - their fathers, die of AIDS, these children are being orphaned." "The World Health Organisation estimates that worldwide more than 10 million children under ten years of age who are not infected with HIV will be orphaned during the 1990's. At least 9 million of these orphans will be in sub-Saharan Africa."

*Strategies for Hope No.5 (Nov. '93)*

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## 2.0 Your Client, their Brief and the Background

The Greater Durban Metropolitan Council, having realised the proportions of the HIV/AIDS epidemic in the area, have agreed to fund a Centre for AIDS Prevention and Care. A site has been earmarked adjacent to the New Durban Academic Hospital in Cato Manor, its position being ideal due to its accessibility to national and major traffic routes, and its close proximity to a training hospital and the city.

A number of organisations exist at present each doing their part for the cause. It has for long been thought that an AIDS Centre would not be utilised, due to the stigma attached to the disease by certain communities. However this perception is changing and one such Centre is presently operating with success in the Hlabisa area in north-east KwaZulu-Natal.

The Cato Manor centre is to be multi-functional: as mentioned, it is to serve both as 1) an education facility with outreach programmes and 2) as a care facility offering support to all in the community affected by HIV/AIDS.

Although set out in detail in the Schedule of Accommodation, and outline of the facilities required are as follows:

1. An administration wing including educational and home-care structures
2. A counselling and testing facility with a small laboratory facility
3. A day care and therapy facility for clients
4. A 24 hour care facility for terminal patients
5. A temporary home for AIDS orphans
6. Associate service areas for the above.

---

### 3.0 Objectives

- To encourage a commitment to assisting the community in which we live by the use of the skills with which we are blessed;
- To develop an understanding of the needs of our society and the urgent attention required in the fields of health, education and housing;
- To study the boundaries of suitable human comfort, and to establish guidelines for the integration of such findings into our designs;
- To explore the various aspects contained within the brief and to develop an awareness and understanding of health facility's architecture;
- To fulfill and benefit from the requirements of the fifth semester programme.

---

### 4.0 The Site

The site is 13 247 sq.m. in extent and is bounded by the New Durban Academic Hospital to the north and west, a Temple to the south and the Umbaan Road to the east. The site rises at an approximate gradient of 1:8 from Umbaan Road up to what is planned to become a new feeder road running below the Academic Hospital. Access to the site can be taken off either of these two roads. (See attached site plans). As the site is large, you have the option of possibly subdividing it for say a future commercial venture, or give it over to landscaping.

---

### 5.0 Schedule of Accommodation

5.1	<u>Administration Facilities</u>	Approx. Areas
	Waiting Area / Lecture Hall	
	Seating for 100 people	160 m <sup>2</sup>
	Administration and Records (4 staff)	25 m <sup>2</sup>
	Administrator's Office	15 m <sup>2</sup>
	Matron's Office	15 m <sup>2</sup>
	Home Care Unit for 16 staff	
	with meeting room table and 2 cubicles	35 m <sup>2</sup>
	Staffroom with bed	30 m <sup>2</sup>
	Tea Kitchen	5 m <sup>2</sup>
	Staff Ablutions	25 m <sup>2</sup>
	Public Ablutions	40 m <sup>2</sup>
		350 m <sup>2</sup>
5.2	<u>Preventive Facilities</u>	
	Sub-waiting Area	30 m <sup>2</sup>

Consultation / Counseling Rooms	
3 Offices with desks and chairs	
Curtained off area with couch	
20 m <sup>2</sup> each	60 m <sup>2</sup>
Testing Laboratory and Store	
Should be close to the consultation rooms. Possibly linked by hatches or an independent corridor.	30 m <sup>2</sup>
	120 m <sup>2</sup>
5.3 <u>Day-Care Centre</u> (approx. 30 clients/day)	
Handy-craft Room	50 m <sup>2</sup>
Sitting room with adjacent verandah	50 m <sup>2</sup>
Rest-room with three beds	25 m <sup>2</sup>
Ablutions (provision for wheel-chair)	25 m <sup>2</sup>
Store	5 m <sup>2</sup>
	155 m <sup>2</sup>
5.4 <u>24 hour-Care Centre</u>	
16 rooms with verandahs @ 18 m <sup>2</sup> each	288 m <sup>2</sup>
2 Bathrooms with toilets & assisted showers @ 10m <sup>2</sup> ea.	20 m <sup>2</sup>
Sluice Room	5 m <sup>2</sup>
Nurses Station	9 m <sup>2</sup>
Family Room	25 m <sup>2</sup>
Store	5 m <sup>2</sup>
Body Store	8 m <sup>2</sup>
	360 m <sup>2</sup>
5.5 <u>Orphans' Home</u> (20 children)	
(this is a temporary shelter for AIDS orphans until such time they can be reunited with relatives, or placed in appropriate care)	
2 No. Dormitories @ 55 m <sup>2</sup> each	110 m <sup>2</sup>
Ablutions	30 m <sup>2</sup>
Dining Area	30 m <sup>2</sup>
Living/Recreation Room with store	60 m <sup>2</sup>
House Mother's apartment with ablutions	25 m <sup>2</sup>
	255 m <sup>2</sup>
5.6 <u>Service Elements</u>	
Bulk Store	80 m <sup>2</sup>
Kitchen and Stores	50 m <sup>2</sup>
Laundry	20 m <sup>2</sup>
Pharmaceutical Store	25 m <sup>2</sup>
Gate House with w.c.	10 m <sup>2</sup>
	185 m <sup>2</sup>
5.7 <u>Other Considerations</u>	
Ambulance bay	Bin areas
Parking (2 bays per 100 m <sup>2</sup> )	Standby generator
Landscaped Gardens	Allow for future expansion

## 6.0 Research

The Highway Hospice Association has been given the long lease of two adjacent buildings in Chesterville. They have requested that you advise them on an economical revamp of the buildings to suit the needs of the local population and the functions of the Hospice.

You are to provide:

- A reception/ waiting area
- An area for administration (records and filing)
- An office for the visiting Practitioner
- A staff room
- Kitchen facilities with storage, for staff and day-care
- Staff ablutions
- A consulting room with table, chairs, screened couch and dispensing facility
- A home care unit for 8 staff with meeting room table and 2 cubicles
- A day-care area (with two beds for resting patients)
- A sluice room
- Ablution and wash facilities for patients
- Adequate storage for all facilities (medicines, linen, kitchen, hand-crafts etc.)
- An secure external bin area
- Indicate the position of an ambulance / loading bay.

Where possible, reuse (work around) existing structure, positions of sanitaryware etc.

You are required to produce a sketch plan of your proposal. Presentation is left to your discretion, but should be neat, annotated and definition of structure (existing & new) and area functions, clear. You are encouraged to present in freehand. Your plan is to be to a scale of 1:100 on A3 paper with a title block.

---

## **7.0 Submission**

Closure communication must explain all design and technical aspects of the proposal, such as evidence of resolution of the framework of ideas, how the proposal meets the requirements of the brief, responds to the site, context and technical demands of the project. Your submission should therefore communicate the following:

Framework of ideas	Massing & Facades (all facades must be communicated)
Context (response to & inclusion of)	Environment & Services
Site Planning	Structure
Planning Layouts (show all equipment)	Detail & Materials
Spatial Exploration	

**NOTE:** Submission times and dates to be determined by the Course Co-ordinator.

This brief serves as a guide. Individuals or the group may redraft it's contents with the co-ordinator's consent.

**Reference material:** Abbott G.- Primary health care facilities - design guide

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## APPENDIX C

### AIDS & ARCHITECTURAL EDUCATION - SURVEY - NOVEMBER 2000

- 1) Has the introduction of an AIDS related architectural project heightened your personal awareness of the HIV/AIDS situation in South Africa?

Yes	No
-----	----

Comments:

- 2) Do you see relevance in offering AIDS related architectural projects in your architectural education?

Essential	Should know something on the topic	Not essential
-----------	------------------------------------	---------------

- 3) What (if any) areas of design and detailing have you had to address differently in your development of this AIDS specific brief from any other design briefs you have dealt with thus far?

Comments:

- 4) What would you consider should be done to further inform your architectural education on this topic?

Comments:

## APPENDIX D

### D.0 INTERNATIONAL PRECEDENT

#### D.1 Hospices

*Hospice is an old term for a relatively new building type. Originally it meant a home of refuge for travellers, usually run by monks or nuns. The contemporary version is a hybrid - part cottage hospital and part nursing home - a refuge for terminally ill patients on a temporary or permanent basis. (Hellman, AJ, 1987)*

The hospice movement founded by Dame Cicely Saunders in 1967 was a voluntary sector initiative to make provision for the dying, away from the general hospital ward.

Local precedent for hospices has been dealt with in the case studies reviewed under chapter 4 of this document. A number of international examples are reviewed below.

##### D.1.1 General Hospices

#### **Minneapolis Pathways, Minneapolis, Minnesota, USA**

**Architects: Anmahian Winton Architects**

**Architectural Record, July 1994**

**Review by Charles Linn**

This centre responds to the needs of "people who are faced with serious life-threatening illnesses", and offers "alternative health care in terms of physical treatment".

The users of the building had out-grown their existing building, a Victorian house, which they felt had ideally offered the atmosphere suited for patients in this type of care. Their brief to the architects had included the words "non-institutional" and "non-threatening". The Architects "did believe the building should project its identity as a non-residential

structure to the street", while the exterior scale was to be in keeping with the surrounding neighbourhood. The exterior finish is austere, as the Architects felt that its users came from all walks of life, and for this reason does not define any one genre. The interior has a residential scale and feel.

This facility, unlike others of its kind, does not offer residential accommodation to its users. There is one residential apartment at the upper level accommodating a caretaker. The focus of the setting is a garden onto which the reception area, lecture room and library open.

The external appearance does not offer a sense of homeliness, portrayed by most hospice type buildings. However, the difference here lies in that this is viewed as a place of healing and not necessarily a place catering for terminal patients. Hence patients merely visit the centre for assistance and do not reside here. The elevation speaks of a low-key public building, possibly a suburban branch library. The internal treatment is successful: warm interiors, views onto the private garden, and in places, high raked ceilings with galleries overlooking from the upper level.

## **St. Oswald's Hospice, Gosforth, UK**

**Architects: Jane & David Darbyshire**

**Architectural Journal, 25 February 1987**

**Appraisal by Louis Hellman**

"This hospice provides bedroom accommodation at ground floor level for 29 patients and there are day care facilities for up to 15 persons. At first floor level three study/bedrooms are available for either patients, relatives or visiting medical staff, plus offices and other staff facilities. There is a generous provision of space throughout; all bedrooms, single or otherwise, have attached bathrooms to which wheelchair access is available, as it is to all other parts of the accommodation."(Barbrook, AJ, 1987)

- The designers opted for a mix of six four-bed rooms and five single rooms. The matron is reported to feel that there should have been more single rooms, as "hospice guests need more privacy".



- Hellman states that around thirty guests seems to be the optimum number for hospices, but Sister Karen Hinton of the Highway Hospice in Durban stated that the optimum manageable and economic number of guests is between twelve and sixteen.
- Hellman poses the question as to what the appropriate architectural character for a hospice should be. He suggests that a monastic, contemplative and inward looking design may be too morbid, and if a hospice depends on the quality of its care, would not a "high-tech steel and plastic shed in primary colours open to the world be just as appropriate?" Hellman in his appraisal of this facility, concludes by ignoring the characteristic design intentions and judges this facility on its merits - he has high regard for this scheme, commending its "cheerful courtyard design in fashionable vernacular style".
- A crèche has been included in the facility to care for the children of visiting relatives and for the children of staff and volunteers. This has been sited near the entrance and away from the bedroom wing. This will assist in the containment of noise and allow visitors their undivided attention.
- The single bedrooms are large enough to accommodate a second bed for a relative to spend the night. This can be a comfort to both patient and visitor. A number of hospices make available a visitor's room with a fridge, sink and cooking/heating facilities for the preparation of meals.

The scheme is planned around three courtyards: an entrance courtyard, a courtyard with a covered ambulatory onto which the chapel looks and the third in the form of a garden onto which the bedrooms look. This has proven to be a successful formula in that it offers a tranquil setting visible from all sectors of the facility, while maintaining the domestic atmosphere essential to a hospice.

The initial experience of the hospice is that of the carpark and service avenues for vehicles. This could, in the context of the site, have been accommodated in smaller pockets around the periphery of the site. The Architects have however screened areas of parking with walls.

Externally the random stonewalling under pantiles with natural timber frames is archetypal of modern welfare vernacular in the British context. It is successful in that it creates an aura of comfort and homeliness. Interior finishes are domestic in scale, colour and texture.

## **St. Ann's Hospice, Little Hulton, Manchester, UK.**

**Architect: Rod Hackney**

**Architect and Builder, July 1981**

**Review by Deyan Sudjic**

This facility provides beds for twenty-six terminal patients. All facilities are at ground level and the layout is around a central courtyard. Five four-bed wards, each with their own toilets, open onto the gardens around the periphery of the facility, the male and female wings being separated by the six single-bed wards, which also open to the external garden.

External finishes are bright orange bricks under dark red tiles, complemented both externally and internally by the extensive use of timber.

- The chapel leads directly off the entrance foyer. This may result in the disruption of regular daily functions if a crowd gathers in the foyer space.
- The body store has been sited directly alongside the main driveway entrance, but allowance has been made for a small service area off the road and to the rear of the building, for screening of body retrieval.
- The internal courtyard seems wasted with few openings into the space, and being enclosed largely by service rooms.
- Separation of male and female is only necessary where multi-bed wards are used.

## **Aldersgate Village, Adelaide, Australia**

**Architect: Brian Kidd**

**Architecture Australia, May 1987**

**Article based on a paper presented by the Architect**

Although not a hospice, this nursing home facility addresses some important concerns in the care of the aged. The relevance of this study lies in the frail care aspect and the possibility of frailty in AIDS sufferers. The Architect has developed a unit housing sixteen single bedrooms, all under the roof of what could be likened to "a large old Adelaide house". Kidd argues that the nursing home should be based on the concept of a home rather than an "acute hospital". He suggests that people in need of care require to be in a place that addresses their senses in a familiar manner (hence the house imagery) and not that of an institution. The single rooms offer a continued sense of individuality and independence.

While not all hospice residents are old and especially so in the case of AIDS, all experience some degree of a declining range of faculties. It is therefore important that in consideration of the architectural environment, elements such as domestic scale and detailing enable residents to relate to a "familiar setting". Kidd does away with nursing stations and the "hierarchical separation of staff and residents". In his emulation of the typical homely character, he introduces elements such as bay windows and verandahs. Natural lighting is introduced at points where directional decisions need to be made.

Kidd writes "Space, light, architectural details, decor and furnishings are all intended to minimise problems of physical frailty, sensory losses and mental confusion. The intention is for each resident to be able to identify with her or his own room, both from inside and outside the building." Kidd achieves this goal by means of architectural detail, e.g. differing floor textures, door panels and wall treatment.

Of interest in the plan form are the following aspects:

- Individuality is given to rooms by means of shape and door positioning;

- Residents are encouraged to integrate their own artifacts into their rooms to further their individuality;
- Four doors are grouped around a small lobby;
- Passages have been kept to a minimum length;
- Space has been provided for wheelchairs adjacent to bedroom doors;
- The emphasis of the design is on the single room; four rooms share lobby and ablution facilities, eight rooms share a living room and sixteen rooms share a dining room and kitchen.
- Service elements have been sited within the central core of the plan form.

## **Lions Hospice, Dartford, London, UK.**

**Architects: Architects Design Partnership**

**The Architect's Journal, 16 June 1993**

**Article by Michael Hook**

This facility offers home-based and day-care facilities with ten beds for resident patients. The plan is T-shaped, with the three wings meeting at what has been likened to a "village green". This focal point is the meeting place for all patients, visitors and for communal activities. Of interest is that this double-volume space can be divided by means of moveable screens to accommodate a number of varying functions including reception, dining and sitting areas. The configuration of the wards is one male four-bed ward, one female four-bed ward and two single-bed wards.

This hospice has a teaching facility situated at first floor and within its walled perimeter are three gardens each with its own distinct design and layout. The sunken garden situated furthest from the buildings offers places for sitting, reflection and introspection.

- Hook highlights that there has been debate over whether the day-care facilities should have been separated from the other functions, with a separate access. This he feels would assist in the management practicalities. The main advantage of the

separation is that the bustle associated with day-care does not interfere with the serenity of the accommodation wing.

- Storage facilities should be ample. This was not the case in this facility.
- All wards have their own toilet facilities. The difference in this example to say the Highway Hospice (see Chapter 4.1.2.1) is that access to the ablution facilities is directly off the wards whereas Highway Hospice takes its ablution access off the corridors. The former layout is preferable as it reduces the movement of patients along the passages.

### **D.1.2 Child-Specific Care**

#### **Naomi House, Sutton Scotney, Hampshire, UK**

**Architects: Wildblood MacDonald**

**Building, 24 October 1997**

**Article by Martin Spring**

Naomi House has been designed and constructed to accommodate children with incurable diseases. The idea arose from the need for the parents of such children to take short breaks away from the stresses involved in maintaining the high care required in these cases. Accommodation is for ten children.

The plan has been constructed in a horseshoe shape, orientating all ten bedrooms onto the concave side, each with its own patio. "The Architect explains that "The gentle curve embraces the children and gives a feeling of being equal and together".

Rooms for support functions clip onto the opposite side of the central corridor at the rear.

The building is in the arts-and-crafts revival style, constructed of hand-made bricks, rustic roof tiles and natural timber, the intention being to create a non-institutional entity

that is both welcoming and functional. The scale of the building is suited to the child in that it is of a domestic nature and even though it is essentially a double storey structure, the upper level is well concealed between the low eaves and the sweeping roof.

This is another example in which we see that the doorways to the children's bedrooms have been recessed so that two rooms are accessed off a smaller lobby.

## **The Starbright Pavilion Project, Los Angeles, USA**

**Architects: Kaplan McLaughlin Diaz**

**Architectural Review, February 1991**

The Starlight Foundation has been reviewed to consider the various architectural and structural interventions that may be incorporated within a caring-type environment catering for children. The Foundation is an international charity founded by entertainment and sports celebrities, whose aim it is to fulfill the wishes of seriously ill children. "Following the principle that positive mental health may boost the immune system and promote healing, Starbright is to combine healthcare and research with a bombardment of entertainments, in the overriding pursuit of making its patients happy." The project consists of a freestanding pavilion in the grounds of the existing LA County Hospital and aims to be the "antithesis of the traditionally tranquil convalescent home", "with the aim of distracting children totally from hospital experiences".

Children visiting the centre are taken on a fun-filled adventure where everything is larger than life. Forms are simple and colours bright. Overlooking a four-level atrium, the treatment rooms, offices and therapy areas are disguised with colourful shopfronts. Filling the atrium is an inclined lift, aviaries, a zoo and an aquarium. An auditorium caters for movies and theatre productions for the children.

Another feature of the centre is a transmission mast that enables audio-visual material to be transmitted to the many Starbright children located around the world.

### **D.1.3 Aids Specific Hospices**

#### **London Lighthouse Centre, UK**

**Architects: First Architecture plc.**

**Architectural Journal, 23 September 1987**

**Review by Louis Hellman**

The first of its kind in Europe, the Lighthouse Centre caters for the needs of HIV/AIDS patients. The brief to the Architects stated that "the building should provide a counselling, information and training service for AIDS sufferers, including families and friends and those working in the statutory and voluntary services, a home support service, a residential unit with nursing facilities and a day care centre to provide support to counter the isolation experienced by those affected by AIDS".

As with a great number of architectural tasks, the problem of site and the reuse or otherwise of existing buildings on the site came into play here. An existing three-storey building, too small for the required function had to be incorporated in the design. The three floors have roughly been divided as follows:

Ground Floor: Reception, multi-purpose hall, dining room and kitchen;

Mezzanine Level: Body store and viewing room;

First Floor: Counselling, workshops and administration;

Second Floor: Twenty-six bed spaces (seven single rooms, one two-bed ward, one three-bed ward, one four-bed ward, and one ten-bed ward), with en-suite showers and WCs, and other support service facilities.

The redesign is rather institutional in elevational and massing treatments and fails to impart a homely feeling. Of interest is their allocation of only ten square metres per single room, which could hamper the accessibility of wheelchairs depending on room content and configuration. As discussed in Chapter 5.4 above, the proposed model requires space for a minimum of two beds in each ward. Room areas are discussed in more detail later in this document.

## **D.2 Interior Design for an AIDS Hospice**

**Mission Hill AIDS Hospice, Boston, USA**

**Interior Designer, March 1990**

**Article by Judith Davidsen**

The AIDS Hospice at Mission Hill received assistance from a group of Interior Designers who offered their services to decorate the facility. Under the direction of Interior Designers William Hodgins and Charles Spada, "a set of guidelines based on personal experience with dying friends" was drawn up.

The Interior design brief was as follows:

- "The design must not complicate hospice work or create additional chores".
- "The materials must be easy to maintain and durable enough to age gracefully".
- "There must be no mirrors" ("in the final stages, it does not help to see yourself").
- "Colours must be upbeat, but soft", and a lot of ornamentation and fabric is not advisable.
- Storage for wall hangings should be provided so that a patient may prefer to bring their own ornamentation.
- "The floor plan should be flexible so that, for instance, a corner bed can be made easily accessible from all sides when necessary for critical care".
- The atmosphere must maintain individuality and not be institutional.

Access to mirrors should be optional. Mirrors should preferably be kept out of the bedrooms but should be available, if required, in the ablution facilities. This would assist those people who are still able to shave unassisted or for general neatness. Curtains could screen washroom mirrors, be affixed to the rear of a cabinet door or at the end of a retractable arm.



## **Bailey-Boushay House, Seattle, Washington, USA**

**Architects: The Bumgardner Architects**

**Architecture, March 1992**

**Article by Karin Tetlow**

Located in an older neighbourhood of houses and small retail shops, this facility, after some objections by the community, incorporates such requests as "retail space, landscaping and parking" into the design. The buildings three storeys are divided as follows: the ground floor houses communal spaces including offices, nap rooms, dining/kitchen and activity spaces for the day care centre, while the first floor accommodates eighteen bedrooms and a meditation room. The top floor contains seventeen bedrooms, a greenhouse, and support facilities. Both the upper floors have two solariums, one at each end of the building.

- All bedrooms are single. This facilitates individuality and privacy while the adjacent common areas allow for interaction and fellowship, to counter the deep sense of isolation HIV/AIDS patients often feel.
- All bedrooms have en-suite toilets and wash basins, with a sink within the room. However only two of the bedrooms per floor have a shower. A communal shower is housed in the "tub room" and offers room for assistance by staff and for wheelchair access. In most cases where the patient is too weak to move unassisted, they will receive a bed bath or be ferried to the tub room for washing.
- The request for retail facilities is important for the funding of such a hospice, especially in the context of the developing world. As discussed in Chapters 5.3 and 5.8 above, income from associated retail facilities will assist in the funding of day-to-day running costs of such a centre.

## **Bill Austin Day-Treatment and Care Centre, Washington, D.C. USA**

**Architects: Acanthus Architects**

**Architecture, March 1992**

**Article by Karin Tetlow**

Although this centre does not offer residential care, its study is important in that the Architects have created a carefully crafted facility with the attention to detail (while working within a limited budget) offering patients an oasis within a sombre situation. Walls counter the orthogonal grid, unusual colours and rich materials have been selected to add delight, a library added for day-care occupation and a comfortable living room centred around a fireplace.

Of interest is the provision of a personal-care room off the day-care room; here a haircut or shave is offered. These services could however be performed in the privacy of one's ward in facilities offering longer-term care.

## **Easler House, Gloucester, Massachusetts, USA**

**Architect: Payette Associates**

**Architecture, March 1992**

**Article by Karin Tetlow**

This facility has been established in a former seaman's flophouse and although modest offers two solutions to room configuration. The first is a two-room unit with en-suite bathroom. The smaller room (2440 x 2745mm) houses a sofa that converts into a bed for use by a caregiver. A folding table in the patient's bedroom (3650 x 3960mm) enables the worktop to be folded neatly up against the wall, so giving over more space to the room.

The second bedroom type is a studio type, but larger in size (3650 x 5485mm). This room has a bed that folds up into the wall panelling.

- The foldaway bed would however not be of use if it were the only bed in the room as the terminal patient requires immediate access to their bed.

### **D.3 Other General Points of Interest**

- Create supportive settings;
- "The cyclical and ongoing nature of HIV illnesses; the fact that adults with AIDS are usually in the prime of their life, and therefore more mobile and sociable than other patients; the need for psychological and family support; plus associated debilitation's such as loss in body weight and strength, vision impairment and dementia, demand a wide range of environmental supports both for patients and staff."
- "The most successful new facilities are housed within homelike settings."
- "If the facility offers medical services, additional provisions for handling infectious waste and HVAC systems with sufficient capacity are required to prevent the spread of airborne infections such as tuberculosis. For example, rooms dedicated for administering aerosolised pentamidine, one of the primary drugs for treating AIDS-related pneumonia, require twenty to thirty air changes per hour to protect clients and medical staff."
- "The major criteria for housing people with HIV-related illnesses, is developing a sense of home..." - Martin Cohen, New York health facilities consultant.
- The facility must address "the root concepts of home - dignity, autonomy, community, and physical comfort". The setting must be supportive and "organised from the user's perspective. Because residents are suffering from feelings of loss of home, job, and health, their environment should help give them back a sense of autonomy by being

totally accessible and comfortable." (Olsen RV, New your environmental Psychologist and AIDS researcher)

- Residents can gain a sense of control through details, such as lightweight doors, a stool to sit on while shaving, directly assessable bathrooms, light dimmers for those bothered by glare or with vision problems, remote operated window blinds.

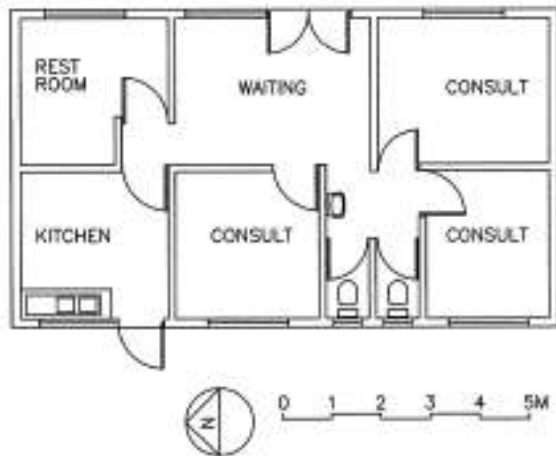
## **D.4 Conclusions Drawn from International Precedent Studies**

Although conclusions and points of note have been drawn under the reviews above, a number of design and planning related issues predominate most of the reviews or it is felt that they are worthy of note. In conclusion, these items are highlighted below.

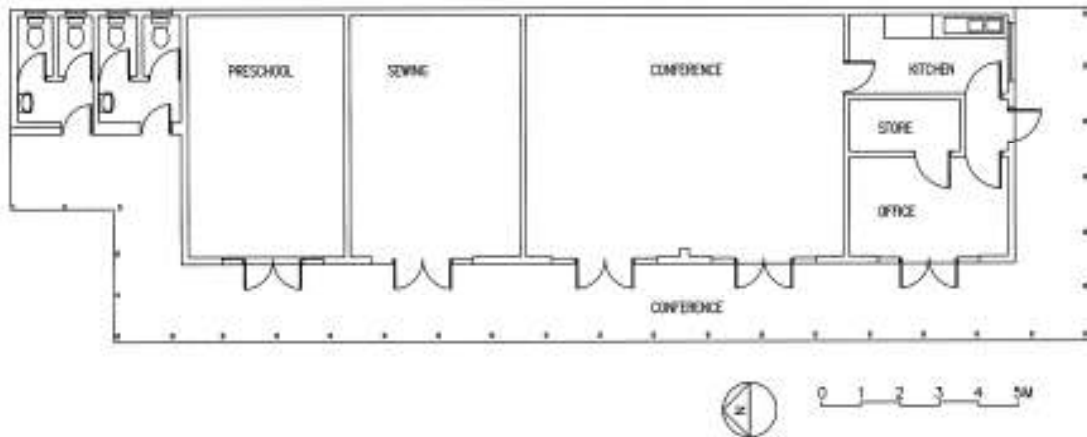
- There is support for the provision of single rooms that offer privacy, individuality and independence. This does not preclude multiple bed wards and where possible, a combination of the two should be on offer to cater for all preferences. In the case of the proposed model, the individuality, trust and unique relationship between patient and caregiver is the focus. The sharing of problems and ideas will be saved for training sessions.
  - The hospice experience should not be unsettling for the patient. This can be achieved through design and planning resolution. The facility should have a residential feel, creating a place familiar to the senses. Domestic scale is preferable should this be able to be achieved. The clustering of rooms around a courtyard is widely utilised. This offers the opportunity of views and possibly access onto a garden, while creating a sense of community.
  - Most importantly, it is noted that there is no particular difference in architecture for AIDS as opposed to the provision for any other existing building type. This means that an AIDS patient can be accommodated within any existing health care facility catering for that patient's AIDS complication, as these complications are common ailments encountered in society. As the AIDS sufferer experiences the same symptoms as the HIV-negative person, care and treatment are equal.
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## APPENDIX E

### Lily of the Valley: Plan layouts of AIDS Orphan's accommodation.



E.1 Plan layout of the Clinic (Source – Author)



E.2 Plan layout of the Pre-School, Sewing Room and Training Facility (Source – Author)



E.3 Typical plan layout of a 'Family Unit' (Source – Author)