

CHAPTER

3



*The art of healing comes from nature, not from the physician.
Therefore the physician must start from nature, with an open
mind.*

(Illich, 1976)

INTRODUCTION

The process of healing and growth in a patient can be affected by the environment they find themselves in. People have a pre-conceived idea as to what such an environment is like, and a part of changing this preconception is to create a new building typology which can house the healing process.

An environment that facilitates the healing process has many functions and roles that it needs to fulfill. It should be an environment that does not in any way hinder the healing process (see Chapter 2), it must be a safe place and haven for the patients, it must facilitate the healing and growth processes of patients, it must aid in supporting and strengthening patients through their various levels of recovery and it must also fulfill certain functional requirements.

A change from the idea of a sub-acute facility to a *Centre for Healing* is required, however, the *Centre for Healing* still needs to provide the functional requirements of a sub-acute facility in order to provide the necessary medical care.

The idea and use of sub-acute facilities is a relatively new concept adopted in the health care industry world wide and is an even younger idea in South Africa. This chapter will introduce the reader firstly to a short history surrounding sub-acute facilities and then into what exactly a sub-acute facility is and what it should provide to the public as well as the statutory requirements regarding such facilities. Information and theories will be explored that highlight the relevance of such facilities

in general as well as the direct relevance to South Africa in 2010.

A BRIEF HISTORY OF SUB-ACUTE FACILITIES

As mentioned before, the idea and use of sub-acute facilities from the care of hospitals is a fairly new concept in South Africa as well as in the rest of the world, with popularity growing greater and greater each year with the increase in benefits this type of facility provides.

Sub-acute facilities first became popular in the United States of America in the 1960s as a plea to relieve bed space demands in hospitals. Only in 1994 did American health care plans start to pay for sub-acute care of geriatric patients, and in 1995 they extended this to all non-geriatric patients. In 1996, access into sub-acute facilities was made easier, where patients no longer required a *certificate of need* to be admitted into such facilities.

In 1997, Clayton Christenson coined the phrase “disruptive innovation” to describe innovations that interrupt a commonly accepted idea which, as an outcome, produces an improved product or service. In 2001, the idea of releasing patients from the hospital into sub-acute facilities is explored where patients can receive continued specialised care. In 2002, an increased demand for sub-acute beds was experienced and in 2009, Clayton Christenson along with two doctors applied the idea of “disruptive innovation” to the health care industry describing the sub-acute facility as such an interruption.

WHAT IS A SUB-ACUTE FACILITY?

According to a definition set out by the South African DoH, a sub-acute facility is a licensed facility with the relevant Provincial DoH in terms of Regulation 158 of the National Health Act which operates 24/7 in accordance with the relevant Certificate of Registration also issued by the Provincial DoH. After meeting a minimum set of criteria and standards, a Practice Number is awarded to the sub-acute facility by the Board of Healthcare Funders of Southern Africa (BHF).

There are four variations of sub-acute facilities that are recognized by the DoH and the BHF, and these should be differentiated from frail care units in old age homes. These four types are:

- General sub-acute facility
- Post-natal sub-acute facility
- Rehabilitation sub-acute facility
- Psychiatric sub-acute facility

Such a facility provides inpatient care (whether it be paediatric or adult care) following, or forming the latter part of a hospital stay/episode in which the patient has already been investigated, diagnosed and is in a stable condition. A treatment plan would have been set out by the hospital or physician which requires ongoing specialised nursing and rehabilitative care at a lower cost and for a period of no more than 90 days.

Such facilities are more commonly known as ‘step-down’ facilities due to the fact that they act as a facility that the hospital can ‘pass down’ the patients into. The

WHAT IS A SUB-ACUTE FACILITY?

registered term is however ‘sub-acute’ as it is a facility that can also treat patients that are currently being treated at the high cost of an acute facility (hospital). As mentioned before, this dissertation will refer to the facility as a ‘*Centre for Healing*’ as a new building typology.

The patients found within such a facility would normally not have been released from hospital, however due to the fact that the facility has specialised and controlled nursing and rehabilitative services, they are able to be released into the care of the physicians and staff of the sub-acute facility. In the hierarchy of health care in South Africa, sub-acute facilities find themselves between the general hospital ward and the home-based care environment (see fig. 3.1)

Common practice for such facilities in South Africa has been to specialize a portion of the hospital for rehabilitative and sub-acute care. However, through the precedent studies it will become clear that these environments are often still too hospital-like and have the ability to impede recovery in patients. Another common practice is that of old age homes and retirement villages applying for sub-acute licenses within their frail care units. On closer inspection, it has been noticed that

such units still only provide frail care and not sub-acute care to patients. Frail care is simply the ‘care-giving’ and nurturing of older individuals, care that does not necessarily need to be given by nurses. Sub-acute care requires the specialised care of nurses, rehabilitation staff and check ups by doctors on a daily basis. This situation is clearly not ideal as the patients do not receive the correct after care that they require at the frail care facility. According to Riaan van der Watt, it is believed that frail care units apply for the license and the name of a sub-acute facility because medical aids do not pay for frail care stays, however, they do pay for sub-acute stays (van der Watt, 2010). It is believed that the facility is able to allow patients to claim from medical aids on the terms of sub-acute care, while still getting the frail care treatment that they desire.

Clearly, the two scenarios mentioned above as to where a sub-acute facility is housed are not ideal. This dissertation proposes that such facilities be provided off site, however they should still be linked to the care and doctors of a particular hospital. The facility should however be relatively close to the hospital that it is linked to so that patients in uncomfortable conditions do not have to travel far, and so that the doctors who will make their rounds at the facility will not have to travel too much further after being at the hospital.

Some of the rehabilitative services that are commonly provided for at such a facility are:

- Specialised 24 hour nursing care
- Physiotherapy

- Biokineticist
- Occupational therapy
- Speech therapy
- Psychology
- Social worker services
- Gymnasium for physical rehabilitative services

It should be noted that sub-acute care does not relate to the care of individuals undergoing rehabilitative care for substance abuse. Such patients would normally find themselves in a specialised rehabilitation unit for a specific addiction.

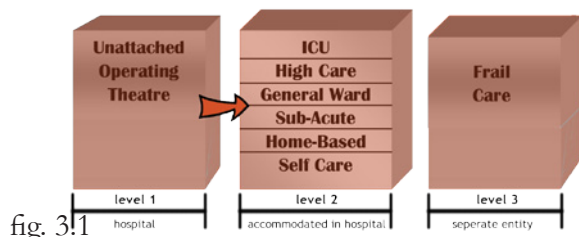


fig. 3.1

CURRENT & LOCAL RELEVANCE

NORMATIVE POSITION

Economic changes or influences within any country affect what type of buildings are required. Clayton Christenson talks of a “disruptive innovation” that occurs within various economic fields in the world that forces a shift in the way we think and what we need in today’s society. To be able to achieve new types of architecture to address these changes and needs, we need to assess the influencing patterns that the city currently has that will dictate where and how such a change can occur (Duncan & Wunker, 2009:26-28).

The relevance of sub-acute facilities will firstly relate internationally to the theory of “disruptive innovation” as a world wide phenomenon. After that, the relevance of such a facility in South Africa in 2010 will be addressed and finally the relevance of creating a new building typology for such a facility, that which is different to the current mind set, that of a ‘design that cares’ will be examined.

INTERNATIONAL RELEVANCE OF SUB-ACUTE FACILITIES - “DISRUPTIVE INNOVATION”

“Disruptive technology” or “disruptive innovation” is a phrase coined by Harvard professor Clayton Christensen in 1997 in his book *“The Innovator’s Dilemma: When New Technologies Cause Great Firms to Fail”*. The phrase refers to a theory that was, and is still, used to describe the impact of new technologies on a variety of fields, explaining how established industry leaders are continuously on a path of sustainable innovations and leave themselves open for disruptive technologies to

bury them. These companies are so fixed on receiving the high profit margins of their current established techniques that they do not see, or do not want to see, that a new technology is emerging, that may not at first yield a high profit because it is new, but that will eventually bury the existing concept. For example, telephones took over telegraphy, plastic is taking over items like metal, wood and glass, light-emitting diodes are taking over ordinary light bulbs, and so forth (Duncan & Wunker, 2009:26-28).

None of the leading companies in these industries saw the shift coming, however the vision that such innovations are out there, that can improve a product or service in ways that the market does not expect, typically by being lower priced or designed for a different set of consumers. The author calls for people to acknowledge these possible shifts.

In 2006, Christenson (along with Jason Hwang (MD) and Jerome Grossman (MD)) applied this theory to the run away health care industry in their book *“Innovator’s Prescription: A Disruptive Solution for Health Care”*. There is a problem with the high cost and inaccessibility of health care, and we need to create a ‘disruption’ within this system to provide services and products that are affordable and easily accessible to all. Christenson’s reason for health care being so expensive and inaccessible is that it has “not yet been disrupted”.

The authors refer to sub-acute facilities in their argument to make the health care industry more affordable

and accessible to individuals and at the end of the day will also yield a higher quality of care. At the moment, medical aids are refusing to pay the exceptionally high rates that hospitals charge after a certain amount of days after a patient’s operation. This is usually to the detriment of the patient as he/she may not be ready to move out of the care of nurses and doctors just yet, but cannot afford to stay on their own account. Medical aid companies are in the process of negotiating with the hospital groups in South Africa for them to create ‘sub-acute’ facilities where patients can go after their original recovery in hospital and where they will still be given the care by nurses and check ups by doctors they require, however at about a 40% lower cost to the medical aid companies and patients. Christenson believes, if we have a precise diagnosis and rules based therapy, this can be possible in the hands of nurses on a day to day basis rather than the very expensive care of doctors.

Christenson also argues that if such facilities exist, the staff there would be more specialised in their type of care giving and therefore would produce better results at the end of the day.

Conclusion:

Are sub-acute facilities a viable option in South Africa? Should designers be creating architecture for such specific purposes? With all the above information, it is believed that it is viable to create such facilities as it is a relevant issue that the country is facing at the moment, and if someone does not start designing for the ‘disruptive innovation’ in the health care industry, that has been

predicted, it will be too late to quickly throw such a facility together (Stevens-Huffman, 2007:77-78)

We will not (reduce costs) and improve access to private healthcare by reducing doctors' consulting fees or regulating private hospital tariffs; what we need is a different delivery mechanism)

(Neville Koopowitz, 2009)

Discovery Health

LOCAL RELEVANCE OF SUB-ACUTE FACILITIES "THE POTENTIAL ROLE OF SUB-ACUTE HOSPITALS AND PUBLIC-PRIVATE PARTNERSHIPS IN THE SOUTH AFRICAN PRIVATE HEALTH SECTOR"

In a study done by the Council for Medical Schemes it was concluded that the increased cost of private hospital stays in South Africa was the key contributor to medical scheme cost increases (Fourie & Peller, 2008:2-6). Private hospitals in South Africa were found to run against international utilisation patterns due to the following reason: there is a higher ratio of beds to the number of people in the population that are insured; competition between hospitals to attract specialised doctors; market concentration in the private hospital sector; and an increased demand for a higher technological diagnosis and treatment for patients.

The study the Council for Medical Schemes carried out was to investigate the potential role of sub-acute facilities and public-private partnerships in the South African health care sector and to compare this to the escalating high costs of private hospital stays.

In total, there are 41 registered sub-acute facilities in

South Africa with a total number of 838 beds. Most of these facilities that have less than 12 beds are linked to frail care facilities, which effectively reduces the number of 'true' sub-acute beds to about 762 (Fourie Preller 2008:4) due to the fact that such facilities provide more frail care beds rather than true sub-acute beds.

In Gauteng alone, there are 13 237 acute beds and only 442 sub-acute beds. Acute beds cost on average R1003.80 - R1750.00 per day, whereas a sub-acute bed costs about R752.20 - R833.30 per day. This shows the difference in cost of the expensive hospital bed per day versus the cheaper sub-acute bed per day.

There are various problems and challenges that face the incorporation of sub-acute facilities in South Africa:

- The absence of a South African footprint and network of sub-acute facilities to follow.
- Lack of interest in buying into and negotiating the concept by private hospital groups.
- Lack of managerial skills for such a facility.
- Lack of clarity as to where the line should be drawn between sub-acute and frail care units.
- The high capital margins required for set up versus the low margins of profit.

From the above information, it is obvious that medical schemes and patients can save large amounts of money if sub-acute facilities are adopted in the health care industry. It is also obvious that the placement of sub-acute facilities needs to be considered. Gauteng has a 30:1 ratio of acute : sub-acute beds while a province like

the Northern Cape doesn't even have sub-acute beds.

It was the conclusion of the Council for Medical Schemes (and for this dissertation) to recommend that a National Network of sub-acute facilities be developed as soon as possible as a cost effective alternative to long term hospital stays. (Fourie & Peller, 2008:2-6)

A NEW TYPOLOGY - DESIGN THAT CARES

A NEW TYPOLOGY - DESIGN THAT CARES

In their book *'Design that cares: Planning Health Facilities for Patients and Visitors'*, Janet Carpman and Myron Grant wanted to create a tool for planning medical settings that would assist and support the healing of patients rather than simply contain the therapeutic process. The book focuses on the consumer and the use of informed support and design, which makes it more relevant today than it was when it was first written in 1951 (Carpman Grant, 1993:1). Competition in the health sector is a detrimental factor to the planning of health care facilities in the sense that highly efficient designs need to be created. However, designers need to look at the quality of design; that of an environment for a better informed, choice-conscious & newly empowered consumer/user.

Health care facilities and the patients that they house have a long and varied relationship. The early European hospitals created environments to accommodate dying rather than those for healing. With a modern age and new way of thinking in the 20th century, came the image of grand hospitals, those of clean, sterile and well-designed spaces which served as a community space for healing. Hereafter came the illusion of health care facilities as elaborate facilities where diagnosis and therapy on a large scale could occur. Through all of these perceptions of what a health care facility is, the user/patients has simply been an object rather than the core for the design of these facilities. Carpman and Grant hope to alter this perception and they call for designers to consider the patients, staff and visitors as

key aspects of the design.

The two emphasize that the idea of considering the patient is important, however, how do designers translate this into the practical applications of design? They state that it is easy for one to expose the importance of sensitivity to the users, but it is quite a different task to come up with practical solutions as to how to achieve this (Carpman Grant, 1993:1-3). They therefore proposed to take the design process of a facility that they were busy with and apply the patients needs and perspectives into the design process as another layer.

The book is separated into three parts. The first part deals with the research into what the current trends are in health care facility design and how these affect the users. The second part of the book focuses on the role that facility design can have on the healing process. The third part of the book focuses on user participation in the design process to allow a final product that addresses the needs of the users.

“PART 1”

There is a need in the design of health care facilities to create a humanistic, information based design. If designers do not explore the current trends, and highlight the problems that occur within these current trends, they cannot expect to solve the problems and create an architecture that is accessible, comfortable and legible to all. Through this exercise, designers can examine where we have been in terms of design, where we are now, and from that draw conclusions about where we are headed.

It is therefore an important aspect of this dissertation to examine similar health care facilities in South Africa, and abroad, to see what the current trends and problems are with such facilities to be able to draw on what could be improved upon.

Carpman and Grant highlight a few key aspects that could be considered to improve on the design of such facilities:

- “New-age” health care where competition is vital and various facilities need to compete on various levels could create an interesting typology.
- Designs that show a component of high quality care through satisfying demands of new medical technology, flexible spaces and provide for a full range of activities, not just hospital activities and treatments.
- Focus on the design for patients and visitors, not just staff efficiency in terms of way finding, physical comfort, social contact and designing with symbolic meanings in mind.
- Include all user groups in the design process, decision making and design review stages.

Research is a tool that lets hospitals and other health care organizations know what consumers think and desire
(Carpman & Grant, 1993:18)

“PART 2”

The journey from home to the facility can be complex and unfamiliar for patients and visitors. This includes travelling to the facility, finding parking, locating the

entrance and moving through the building to a destination. As mentioned before (Chapter 2, Theory 3), if a patient feels disoriented, it can hinder the healing process, it is therefore important that we examine the transition through spaces as a patient would move through the building. It is important in design to consider spaces not in isolation but rather as a series of events that the users will eventually read as a journey through the facility (Carpman & Grant, 1993).

To facilitate this journey through the building from arrival to departure, specific elements have been highlighted that can be focused on in the design process to help patients, staff and visitors with orientating themselves within the facility:

- The facility should be clearly identifiable from the outside as well as convey an identity.
- Clearly identified entrances and wayfinding elements (see fig. 3.2) (natural, signage or architectural elements).
- Dedicated, identifiable spaces and a sense of arrival should be created for all users and various transport means.
- Drop-off area with easy & clear access to parking area.
- Easy access for all people, and seating provided at the entrance to allow spaces for people waiting for a lift etc. (see fig. 3.4)
- Clear introduction as you enter the building to the interior wayfinding system.
- Provide ample space & seating in the waiting area to accommodate disorientated or confused people.

- Clearly identify information/reception (see fig. 3.5).
- Admissions to be clearly identifiable and accessible with ample privacy provided.
- Visitor information centre - This should be close to the entrance so that less people need to move through the more private areas of the hospital where patients are housed.
- Provide a wayfinding map for visitors, supported by signage and architectural elements.
- Number floors, wards and rooms in a logical order that anyone can easily understand.
- Use familiar terms, symbols and pictographs to identify and explain.
- Allow features like corridors, windows, stairs, doors, light and shadow, textures, colour and placement of furniture to highlight where one should be moving without having to read signs.
- Avoid long, bland corridors, and where necessary, try to break the monotony with architectural elements.
- Use of carpet in corridors can be a way to soften the harsh clinical environment.
- Lighting to be used to create a specific ambiance as well as a way-finding technique. Do not over light a corridor, shine light into patients eyes, create a tunnel effect with light. Do use light to highlight important spaces and signage.
- Provide handrails and seating with easy access to vertical circulation points.
- Create private spaces along corridors for patients left on a bed (see fig. 3.6)
- Allow for places of patient and family education,

and places for children to play.

- Allow access to the outside world for patients; physical access, telephones, internet access, clocks indicating time, also bring the outdoors inside.
- Refreshment and rest room facilities for patients, visitors and staff are important to consider.
- Treatment areas are often high stress areas and should cater for any special needs of patients, have private dressing rooms, privacy in treatment rooms and between rooms. Try minimise noises and bright lights. Use background therapeutic music, provide comfort for patients, provide distractions and allow for a family member or companion to accompany the patient.
- When it comes to the patient's room, the following should be considered; size, number of occupants in one room, accommodation for privacy as well as interaction when desired (sound and visual), views to the outside, accommodation of visitors, allowance for a personal touch (see fig. 3.7), colour, natural and un-natural lighting, bathrooms and toilets, comfort of the environment.
- Provide for special needs of injured or physically impaired patients, visitors and staff members by highlighting spatial experiences for all the senses.
- Provide for special rooms with special purposes, for example, grieving rooms, emergencies, inpatient lounges, patient and visitor library, food services, chapel, overnight accommodation of family members, child care, hair care.

“PART 3”

Going beyond the general guidelines of health care facilities, Carpman and Grant highlight the need for user participation in the design process and evaluation of a facility (see fig. 3.3). The patients, visitors and staff are the individuals who use the facility on a daily basis, and it is therefore imperative to include them and their ideas in the design of such facilities. If the needs of these users are not met, the architecture could be a disaster at the end of the day.

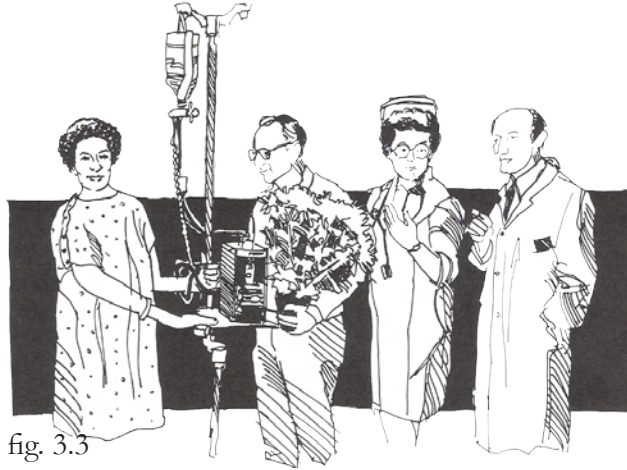


fig. 3.3

- fig. 3.2 Create an easily accessible way finding technique
- fig. 3.3 The user groups: patients, visitors, nurses (staff) and doctors
- fig. 3.4 Seating provided at an easily identified entrance
- fig. 3.5 Clearly identifiable information/ reception

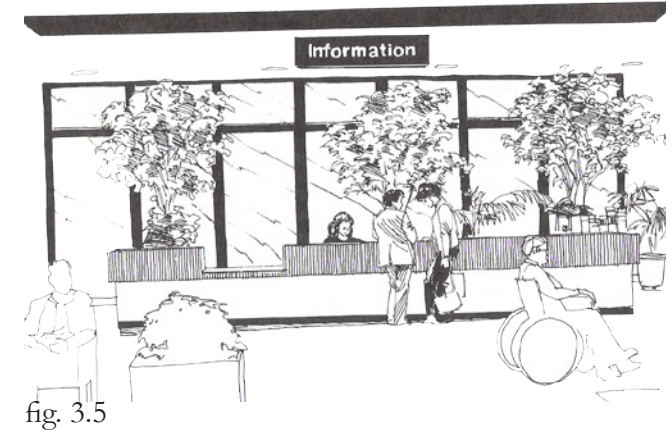


fig. 3.5

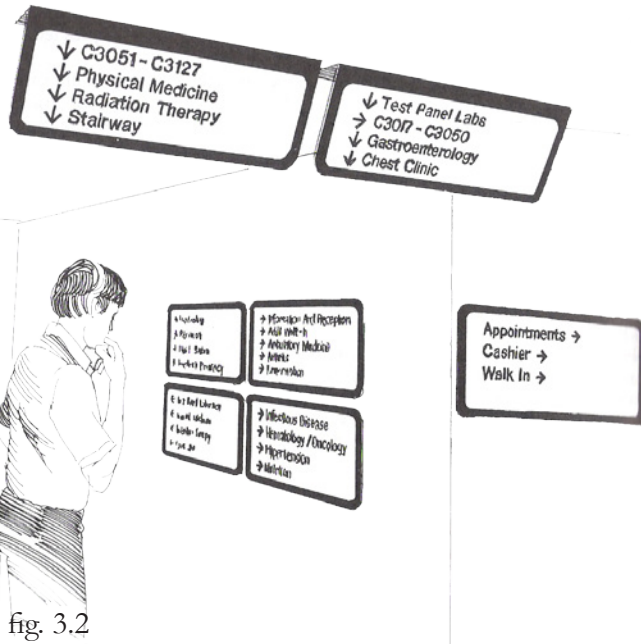


fig. 3.2



fig. 3.4

fig. 3.6 Create private space along corridors for patients on beds
 fig. 3.7 Allow room for the patients' personal touch in their room

STATUTORY REQUIREMENTS

When it comes to designing a building that facilitates the healing process and houses individuals with post-operative ailments, there are more regulations and statutory requirements that need to be met than the building regulations of South Africa (SABS 0400). It is therefore important to know what these are before the design of the building can be finalized.

NATIONAL DoH

On a national level, the DoH has specific definitions for what a health care facility of this type should offer. The National Health Facility Definition allows one to identify what type of facility and license will need to be applied for. In the dissertation, the following fully describes the centre for healing that will be designed: *An unsubsidised rehabilitation unit as provided by a joint venture, which provides specialised services for inpatient sub-acute care* (National Department of Health, 2006).

GAUTENG DoH

As mentioned before, the Provincial DoH is responsible, in terms of Regulation 158 of the National Health Act, to award the relevant Certificate of Registration for the facility specifying its number of beds awarded. Based on the Certificate that has been awarded, plans need to be submitted to this department within one year for approval. This is required before building commences and it is also the responsibility of the Provincial DoH to check that these plans have been followed through to the built form (National Department of Health, 2006).

Provincial DoH which need to be followed in order for the plans to be approved by the department. This is quite an in depth document and states items such as specific rooms that are required, minimum room sizes, patient to staff ratios, patient to ablution facility ratios, engineering services to be provided, infection control, security, patients' rights, and so forth.

SANS 10400 PART 5

This section from the South African National Standards (SANS) is of high importance in any building that is designed. This section is the one that deals with accessibility and ease of use of buildings for disabled people. It sets out many minimum standards that need to be complied with in regards to the design for disabled people, however, these minimum requirements are usually still quite unfriendly and the items in this section of SANS should be carefully critiqued to be able to create an environment that will, for the majority of the time, house people with physical ailments and difficulties (SABS, 1990)



fig. 3.6

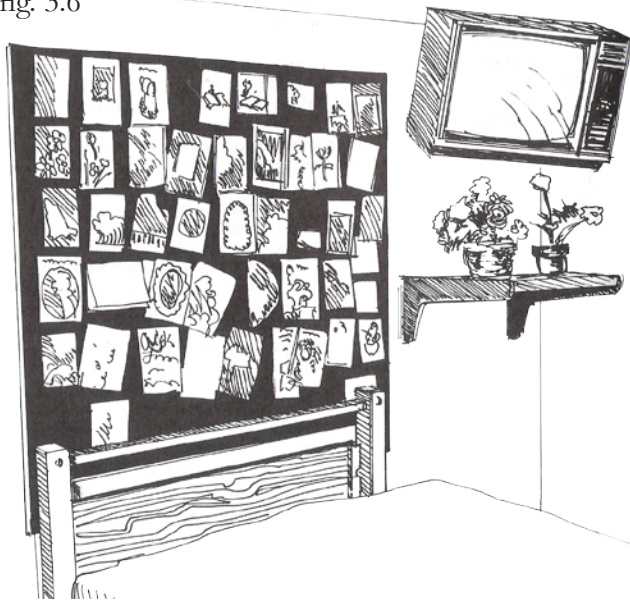


fig. 3.7

There are specific standards and criteria set out by each

ACCOMMODATION SCHEDULE

ACCOMMODATION SCHEDULE

With all the above information and functional precedents considered, the table alongside has been compiled to consider the accommodation of individual spaces required within the Centre for Healing. Sizes are a rough indication of minimum sizes required by the R158.

In this thesis however, the use of minimum sizes for design are seen as one of the problems that creates clinical, undesirable environments that are currently produced. These sizes are therefore to be considered as the bare minimum and not the desired amounts.

NUMBER OF BEDS

To be able to evaluate the number of beds that may or may not be approved by the DoH, there are two methods of calculation that can be considered. The first is to consider the average sized facilities within a specific country of area. In South Africa, the average sub-acute facility houses 20 beds (20 patients at any given time), while a more developed country like the United States of America (USA) and Australia have facilities that average up to 106 beds. This is quite a difference in facility size and accommodation of patients, and as discussed previously, the latter situation is more ideal to achieve the desired results and price cuts for such a facility. Therefore, a facility averaging around about 100 beds is the desired amount.

Another way to consider the amount of beds required (and what may be approved) is to compare the ratio of hospital beds to that of the sub-acute beds in two

facilities which are linked to one another. Hospital:sub-acute beds in Pretoria have a ratio of 1:0.3, whereas a country like USA has a ratio of 1:1.8. As is clear, the South African ratio is extremely low yet again, with the USA ratio being more desirable.

Louis Pasteur Private Hospital has 240 beds. If the above mentioned desired ratio of 1:1.8 is used, the amount of beds required in the sub-acute facility that links to this hospital would be 432. As mentioned before, the South African standard for such a facility only has 20 beds, therefore this number would be too large a leap in the standards and understanding within South Africa at the moment. Due to this, the facility will rather follow the before mentioned number of ± 100 beds. As Louis Pasteur Private Hospital has 240 beds, a reasonable number to consider would be 50% of the beds at the hospital, which would result in a 120 bed facility to accommodate the post-operative needs and care of patients from this particular hospital. This dissertation will focus on the design of a first phase for the *Centre for Healing* where a new main building (housing the first ± 50 beds, the administration department and the gymnasium) will be developed that can later be extended into a site or building alongside the facility.

The site chosen for the dissertation will therefore need to accommodate the first phase of development as well as have the potential to facilitate the desired future development of a 120 bed facility.

See figure 3.8 and Chapter 6.

fig. 3.8

ACCOMMODATION SCHEDULE for a 120 bed sub-acute facility			
Site Area = 1143m ² (for 50-60 beds)			
AREA IN BUILDING	ROOM TYPE	AMOUNT REQUIRED	MINIMUM AREA (m ²)
WARD UNITS (± 6)	wards + ablutions	60 - 120	10m ² /ward
	unit manager offices	1/unit = 6	10m ² /each
	ward kitchen	1/unit = 6	4m ² /each
	treatment room	1/unit = 6	10m ² /each
	clean linen	1/unit = 6	4m ² /each
	sluice, hmc, dirty linen	1/unit = 6	9m ² /each
	equipment store	1/unit = 6	5m ² /each
	staff toilet	1/unit = 6	2m ² /each
	staff rest	1/unit = 6	10m ² /each
	nurses station	1/unit = 6	10m ² /each
	sterile store	1/unit = 6	5m ² /each
	store room	1/unit = 6	4m ² /each
CONSULT ROOMS	offices	7	10m ² /each
	dietry testing, exercise testing, blood room, quiet room	4	5m ² /each
ADMINISTRATION	offices	4	10m ² /each
	training facilities	1	25m ² /each
	boardroom	1	25m ² /each

te facility, 12-36 beds in each unit, therefore ±6 units required

AMOUNT (EACH)	TOTAL AREA REQUIRED	PRIVACY FACTOR	AMBIENCE REQUIRED
1	600-1200m ² average - 900m ²	private	homelike, relaxed, personalised
1	60m ²	semi-public	typical office, meeting spaces, inviting
1	24m ²	semi-private	
1	60m ²	private	
1	24m ²	semi-private	
1	54m ²	semi-private	
1	30m ²	private	
1	12m ²	private	
1	60m ²	semi-private	
1	60m ²	public	
1	30m ²	private	
1	24m ²	private	
1	70m ²	semi-private	therapeutic treatment spaces, relaxed
1	20m ²	private	
1	40m ²	semi-public	typical office, administration offices
1	25m ²	semi-public	
1	25m ²	private	

ACCOMMODATION SCHEDULE for a 120 bed sub-acute facility, 12-36 beds in each unit, therefore ±6 units required

Site Area = 1143m² (for 50-60 beds)

AREA IN BUILDING	ROOM TYPE	AMOUNT REQUIRED	MINIMUM AREA (EACH)	TOTAL AREA REQUIRED	PRIVACY FACTOR	AMBIENCE REQUIRED
	counselling hall	1	25m ² /each	25m ²	private	
	admin & reception	1	150m ²	150m ²	public	
GYM/TREATMENT	gym with 6 treatment areas and quiet gym	1	270m ²	270m ²	semi-public	
	respiratory room	1	10m ² /each	10m ²	private	
PUBLIC FACILITIES	information centre	1	150m ² /each	150m ²	public	inviting, open, social interaction, information area
	sports activity area	1	150m ² /each	150m ²	public	
	dining area	1	150m ² /each	150m ²	semi-public	
	recreational, activity, conference areas	1 (divided)	200m ²	200m ²	public	
SERVICES	workshop	1	100m ² /each	100m ²	semi-private	
	laundry	1	100m ² /each	100m ²	semi-private	
	kitchen	1	100m ² /each	100m ²	semi-private	

TOTAL AREA REQUIRED = 2923m² + 10% = **3215.3m²**
MINIMUM AREA REQUIRED PER FLOOR (WITH GF + 6 FLOORS) = 3215.3m²/7 = **±460m² per floor**
POSSIBLE COVERAGE = 0.4

FUNCTIONAL PRECEDENTS

FUNCTIONAL PRECEDENTS

The precedents found under this chapter are those examples of similar facilities in South Africa and around the world that help resolve spatial planning and technical aspects related to the design, however they are also used to highlight the problems that still need to be addressed in the design of a therapeutic architecture.

MORNINGSIDE MEDI-CLINIC

Meiring van der Lecq Thomas & Ronga (original)
SV Architects (renovations to rehab gym)
Sandton, Johannesburg, South Africa
1984 (original)
2003 (renovations)

The history:

Morningside Medi-Clinic has, over the many years it has been in practice, received numerous local and international patients. The hospital has a specialised cardio-thoracic and heart catheterization theatre for which a specialised rehabilitation centre has been created within the hospital building.

The building:

Built in the 1980s this hospital plays host to the specialised rehabilitation unit linked to the hospital. Patients are able to utilise the recently renovated facility while they are still hospitalized as well as after they have been discharged from the hospital.

The rehabilitation unit is conveniently situated on the ground floor near the parking lot to allow easy access for outpatients, while linking on the other side to the hospital corridors so that inpatients also have easy

access to the facility. The rehabilitation area consists of a general rehab gym (visually accessible to the public) with various exercise spaces and a large treadmill, a rehab pool for hydrotherapy, 21 consulting/treatment rooms, change rooms and ablution facilities for both patients and staff, visual and physical access to the gardens around the hospital, a separate reception, waiting area and administration area with offices, a boardroom/conference room and staff rest facilities.

The gym area is situated centrally in the facility with windows around it allowing natural day light in as well as visual access to the outdoors while exercises are being conducted allowing the patients not to feel isolated.



fig. 3.9

fig. 3.9 Plan of Morningside rehabilitation facility
fig. 3.10 - 3.12 The separate entrance and waiting area facilities at the rehabilitation facility

Conclusion:

The gym and treatment facilities at Morningside Medi-Clinic are lovely, open, well lit spaces that create a feeling of wellness and recovery. There are however no sub-acute beds at this hospital and most patients that use the rehabilitation unit still have to be hospitalized.



fig. 3.13 Plan of the rehabilitation centre at Muelmed Medi-Clinic

fig. 3.14 Exterior view of Muelmed Medi-Clinic

fig. 3.15-3.16 The rehabilitation gymnasium

MUELMED MEDI-CLINIC

TW Baker (original architect)

VH Architects (renovations to rehab centre)

Arcadia, Pretoria, South Africa

1984 (original)

2006 (renovations)

The history:

This 222 bed multi-disciplinary hospital is known for having opened the first private trauma unit in Pretoria. Muelmed Medi-Clinic offers a broad spectrum of professional medical services and is well known for its rehabilitation unit - *Just @ Muelmed*

The building:

The hospital building at Muelmed is linked to another hospital just to the south of it - Astrid Medi-Clinic. These two buildings were originally designed to be a hotel in the city of Pretoria and were converted into a hospital many years ago with numerous renovations

being done to both buildings.

The rehabilitation centre is situated in the Astrid building and has provided rehabilitative care and exercise for inpatients and outpatients since 2006 (the hospital having 20 registered sub-acute beds). The following services are provided for at the rehabilitation centre:

- Physiotherapy
- Occupational therapy
- Psychology
- Sexology

The portion of the building that facilitates the rehab unit is again ideally situated on the ground floor of the building on the eastern side of the block, with its public entrance on a street for easy access for outpatients. Patients that use the rehab facility that stay in the hospital are situated in the Muelmed building which has only

recently had a closed bridge linking it to Astrid creating an indoor access between the two facilities.

The rehabilitation facility has the following accommodations; a large gym area, a quiet gym, separate administration offices, reception and waiting areas, discussion and conference areas, 6 consulting/treatment rooms as well as the required supportive services.

Conclusion:

The new rehabilitation facilities at Muelmed Medi-Clinic are lovely, open spaces that encourage physical development in patients. It does not however hold therapeutic qualities that may be required on a mental level of recovery. The rooms for the patients form a ward within the existing hospital and therefore do not cater for the special long term needs of patients (albeit they do provide medically and spatially).

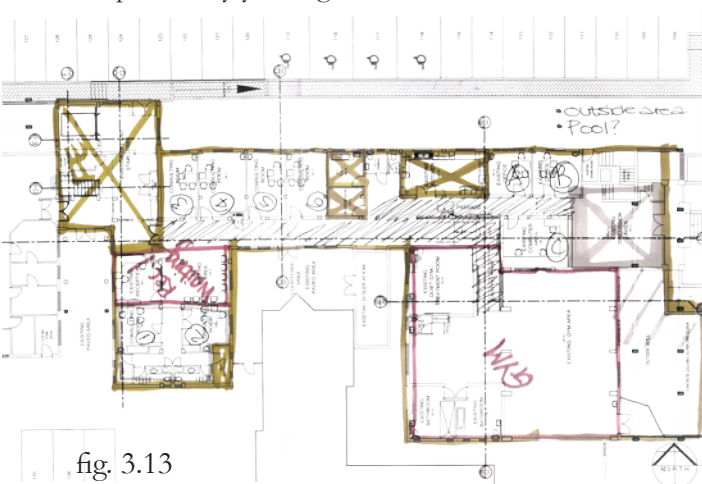


fig. 3.13



fig. 3.14



fig. 3.15



fig. 3.16

- fig 3.17 Exterior of Lynnmed Clinic
- fig. 3.18 Typical Lynnmed Clinic ward
- fig. 3.19 Rehabilitation taking place in a patients ward
- fig. 3.20 Balconies from patient wards at Lynnmed Clinic
- fig. 3.21 Entrance hall at Lynnmed Clinic

LYNNMED CLINIC
Pretoria, Gauteng, South Africa

The facility:

Lynnmed Clinic believes in adopting a multi-disciplinary team approach when working with a patient. The treating physician on admission will assess each patient, and the necessary therapists will be involved in the treatment plan. Founded in 1992 this 21 bed facility offers:

- Occupational therapy
- Physiotherapy
- Speech therapy
- Wound care

Conclusion:

This facility offers a more home-like friendly environment for patients which should be adopted in other facilities of this nature.



fig. 3.17

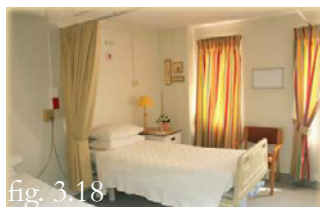


fig. 3.18



fig. 3.19

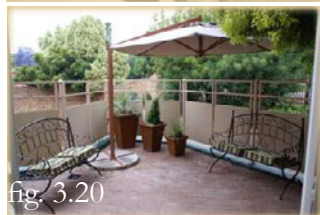


fig. 3.20

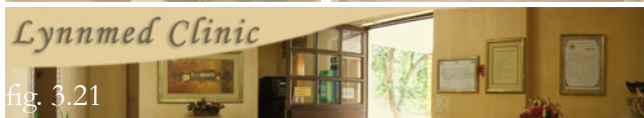


fig. 3.21

fig 3.22 Exterior of Groenkloof retirement village flats

GROENKLOOF RETIREMENT VILLAGE
Groenkloof, Eastern Cape, South Africa

The facility:

The Care Unit at the Groenkloof Retirement Village at Great Brak River consists of 22 frail care beds and 28 sub-acute beds. The Care Unit is managed by Southern Healthcare with services provided to the residents at the Groenkloof Retirement Village as well as the general public, which include:

- Short term medical care (after operations)
- Long term frail care
- 24 hour nursing and a resuscitation room
- Doctors on 24-hour standby
- Three meals daily and two tea times
- Laundry and cleaning services
- Lounge and community centre with a library/sitting room and braai facilities
- Physio-, occupational- and speech- therapy
- Specialized wound care
- Hair and nail care

Conclusion:

This facility offers a comfortable, homelike environment, however the problem of mixing frail care and sub-acute care together occurs in this situation.



fig. 3.22

- fig 3.23 Exterior of Clayton House
- fig. 3.24 Clayton House rehabilitation gym
- fig. 3.25 Clayton House recreational room
- fig. 3.26 Typical Clayton House ward

CLAYTON HOUSE
Johannesburg, Gauteng, South Africa

The facility:

Clayton House is an independent private rehab facility which makes use of a multidisciplinary team approach. This includes the services of physiotherapy, occupational therapy, speech therapy, dietetics, neuropsychology, a social worker and a rehab doctor. The philosophy is aimed at achieving the best outcomes possible within each patient's individual scope of abilities. Clayton House delivers modern medicine, quality nursing care and specialised paramedical services.

Conclusion:

This facility is very run-down and hospital-like showing no therapeutic qualities in it's environment.



fig. 3.23



fig. 3.24



fig. 3.25



fig. 3.26

fig. 3.27 Rehabilitation gym at the Victorian Rehab Centre
 fig. 3.28 Typical patient ward at the Victorian Rehab Centre
 fig. 3.29 Treatment room at the Victorian Rehab Centre

fig. 3.30 Exterior view of the Physiotherapy Rehab Centre
 fig. 3.31 Logo for the Physiotherapy Rehab Centre
 fig. 3.32 Treatment room
 fig. 3.33 Entrance to the Physiotherapy Rehab Centre

CONCLUSION

THE VICTORIAN REHABILITATION CENTRE Glen Waverley, Victoria, Australia

The facility:

The Victorian Rehabilitation Centre has more than 30 years of experience, particularly in the area of trauma. The aim is to create a relaxed, healing environment where patients and visitors can feel at home. The Victorian Rehabilitation Centre is a 82-bed rehabilitation facility that offers a wide range of inpatient and extensive outpatient services.

Specialties include:

- multi-trauma & pain management
- orthopaedics
- stroke & cardiac rehabilitation
- acquired brain injury
- respiratory rehabilitation

Conclusion:

The gymnasium and treatment facilities at this centre are good examples of therapeutic environments, however the rooms are still hospital like, although an effort to make it more home-like is obvious.



PHYSIOTHERAPY REHABILITATION CENTRE Llanelli, Carmarthenshire, England

The facility:

“Welcome to a part of the world where you can discover ways and means of improving your health, independence and fitness”. The Physiotherapy Rehabilitation Centre is an established physio clinic located in Llanelli. The Physiotherapy Rehabilitation Centre recognizes that each person has an individual level of activity that is occasionally challenged by one’s lifestyle, resulting in injury or illness. The Physiotherapy Rehabilitation Centre aims to help patients overcome these challenges so that they may once again enjoy life to the fullest.

Conclusion:

This facility creates a home-like setting in this smaller environment which provides more one on one care. However, the facility is a bit run down.



CONCLUSION

The building that facilitates the healing process, provides support for patients and caters for the functional requirements of a sub-acute facility should not be a static structure that assumes all patients are the same and that they are all in the same level of the healing process as the next patient.

Such a facility should in its structure, design and management create support (as columns may support the roof of a building) and protection for the patients. A layered process of structure should be provided for and the patients’ journeys to recovery and control should be highlighted through the architecture and the representation of spaces.

At first, a patient is fragile and intense treatment, stability and support need to be given by healthcare professionals. As the patient stabilizes, so can the supports in the system, until finally the patient only needs minimal support and guidance, and then is eventually released from the facility into the comfort of home care. As the process of recovery occurs in a patient, so should the staff and the physical surroundings adapt and change to accommodate these changes and needs.