

CHAPTER

8



I just refer to myself as being Spirit, Mind and Body like everybody else and working toward the mastery of my natural divinity and the healing of my emotional mind.
(Orr, 1998)

CONCLUSION

CONCLUSION

The aim of this study was to investigate the design possibilities of creating a therapeutic environment for the long-term care of patients after they have been treated at the Louis Pasteur Private Hospital.

The design of a therapeutic environment is inherently a highly complex exercise. It is a process through which the environment, peoples' mind sets, patients' wellbeing and the aims, goals and organizational structure of the specific facility come together to form an environment that meets the requirements and desires of all the users. Therefore, care has been taken to keep the focus on the therapeutic nature of the environment throughout the design process highlighted through the choice of theories explored, forming a solid architectural concept of creating *layers of healing and growth for recovery within a therapeutic city block*. This concept informed the decision-making processes in the design of the facility in terms of programme, function, aesthetics and technical resolutions, while attempting to create a precedent for the way in which such facilities can be designed in the future as well as the way in which people would regard such medical facilities as an increasingly desired and necessary facet of medical care programmes in South Africa.

Such an environment should be meaningful to the patients, visitors as well as the medical personnel, allowing the healing, spatial qualities of the facility to be experienced through different individual users and by all the five senses of the human body; the body being the

central core from which all healing occurs.

Choosing a site with existing therapeutic qualities was necessary to create a sheltered environment where patients can heal and recover.

Recovery is not a result, it is a process through layers of human healing and growth (Burney, 1995)

The building can be regarded as the host or platform for the different stages of healing that occur in patients in a quantitative and qualitative meaningful manner. Not all patients are similar as they are all in different levels of the healing process and they should therefore not all be housed in the same sterile way. The architecture should therefore allow for these differences in the healing process.

Such a facility should in its structure, design and management create support (as columns may support a building) and protection for the patients. A multi-faceted/layered result should therefore be provided for, highlighting the patients' journey to recovery and control, mediated by the architecture and its spatial qualities.

At first, a patient is fragile and intense treatment, stability and support need to be provided by healthcare professionals. As a patient recovers, the intensity of necessary support decreases until the patient only needs minimal support and guidance. Finally, the patient is discharged from the facility into the comfort of home

care.

As this process of recovery progresses, so the need for intense support from the staff lessens. However, less intensive support does not mean a reduced level of quality in the physical or psychological environment that the facility provides.

The following principles have been highlighted and utilized as design tools throughout this dissertation to ensure the quality of the physical surroundings are not compromised:

- Consider the existing urban setting.
- Develop pedestrian friendly sidewalks and environments within the city.
- Provide active street edges and 24 hour observation on the street for safety.
- Design a public building that still incorporates the privacy needs of patients.
- Incorporate and enhance any existing therapeutic qualities of the surroundings.
- Create a visual connection between the facility and Burgers Park.
- Design a building that adds another layer to the history and rich environment surrounding it.
- Climatic and geographic factors need to be considered and incorporated in the design process.
- The architecture of this facility should articulate its identity within its specific context.
- Make all individuals feel welcome in the facility and not just a destination for patients.
- Relate the technological aesthetic adopted to the

ideas and intentions set out.

With the implementation of the above mentioned principles and intentions, a final solution in the form of a new mind set and architecture has been created through this dissertation. By viewing these principles and intentions in a variety of ways, the three dimensional conceptual, design and technical aspects of the entire facility were explored and expressed in such a way that persons can engage fully with the building, with its dynamic play on spaces. It is believed that by doing this, an environment has been created that aids the healing of patients at the facility, as well as becoming a safe haven and social space for both patients and the general public to interact.

BIBLIOGRAPHY

Healing yourself is connected with healing others
(Ono, 2004)

BIBLIOGRAPHY

BOOKS

ALEXANDER, C. (1977) *A Pattern Language: towns, buildings, construction*. New York, Oxford University Press.

BACHELARD, G. (1994) *The Poetics of Space*. Boston, Beacon Press.

BLOOMER, K.C., MOORE, C.W. (1977) *Body, Memory, and Architecture*. New Haven, Yale University Press.

BURNEY, R. (1995) *The dance of wounded souls*. Cambria, Joy to you and me enterprises.

CANTER, D., CANTER, S. (1979) *Designing for Therapeutic Environments: a review of research*. Chichester, John Wiley & Sons.

CAREY, D.A. (1986) *Hospice Inpatient Environments: compendium and guidelines*. New York, Van Nostrand Reinhold Company.

CARPMAN, J.R., GRANT, M.A. (1993) *Design That Cares: planning health facilities for patients and visitors*. USA, American Hospital Publishing, Inc.

CLAYSON, A. (2004) *Woman: the incredible life of Yoko Ono*. Surrey, Chrome Dreams Publications.

COUSINS, N. (1979) *Anatomy of an illness as perceived by the patient: reflections on healing and regeneration*. New York, Bantam Books.

COX, A., GROVES, P. (1990) *Hospitals and Health-Care Facilities: a design and development guide*. London, Butterworth Architecture.

CUMMINGS, A., CUMMINGS, C. (1964) *Behaviour Research and Therapy*. London, Elsevier Science Ltd.

DE PREE, M. (1989) *Leadership is an art*. New York, Dell Pub.

DEWAR, D. UYTENBOGAART, R. (1991). *South African Cities: a manifesto for change*. Cape Town, Problems Research Unit, University of Cape Town.

DODDS, G., TAVENOR, R. (2002) *Body and Building: essays on the changing relation of body and architecture*. Cambridge, MIT Press.

ORR, L. (1998) *Breaking the Death Habit: the science of everlasting life*. Berkley, Frog Ltd.

PALLASMAA, J. (2005) *The Eyes of the Skin: architecture and the senses*. West Sussex, John Wiley & Sons Ltd.

RASMUSSEN, S. (1989) *Experiencing architecture*. Massachusetts, MIT Press.

REMEN, R.N. (2000) *My grandfathers blessings*. New York, Riverhead Books.

SCHAEF, A.W. (1995) *Native wisdom for white minds*. New York, One World Ballantine Books.

WAITE, A.E. (1894) *The hermetic and alchemical writings of Paracelsus*. London, MIT Press

ARTICLES

DIGBY-JONES, P. (2004) State of assembly. *Architectural Review*, vol.8, pp.50-55.

DUNCAN, D., WUNKER, S. (2009) Health Plans: disrupt and prosper. *Managed Care*, pp.26-28.

FOURIE, I., PRELLER, F. (2008) The potential role of sub-acute hospitals and public-private partnerships in the South African private health sector. *M-care*, pp.2-6.

HUNTER, K. et al. (1994) The therapeutic qualities of nature. *The Architects' Journal*, 4 August 1994, pp.29-36.

ILLICH, I. (1976) Health as a virtue. *Medical Nemesis*, pp.273-275.

KAMIN, B. (2006) Hyatt centre. *Architectural Record*, vol.03.06, pp.132-137.

KLINGHARDT, D. (2005) The 5 levels of healing. *Explore*, vol.14, no.4, pp.1-7.

LAUGHLIN, M. (2009) Healing and Recovery: an interview with David R. Hawkins, MD, PhD. *Unified Health*, vol.5, Winter 2009, pp.18-21.

LEVINSON, N. (2006) MIT Brain and Cognitive Sciences Complex. *Architectural Record*, vol.07.06, pp.138-143.

LUBELL, S. (2006) Parliament library. *Architectural Record*, vol.03.06, pp.120-125.

MARCILLE, J. (2009) Network-Model Health Plans May Be Tomorrow's Dinosaurs. *Managed Care*, pp.22-25.

RYAN, R. (2004) Primal Therapy. *Architectural Review*, vol.8, pp.42-49.

SEIRLIS, J. (2010) Building Regulations: fire alarm bells are finally ringing. *Rolling Inspiration*, January/February 2010, pp.14.

STEVENS-HUFFMAN, L. (2007) Health care: the value of sub-acute care. *Smart Business Orange County*, February 2007, pp.77-78.

WEATHERSBY, W. (2006) Flex physical therapy and fitness. *Architectural Record*, vol.03.06, pp.188-193.

INTERNET

AUDEN, W. H. (Unknown) *WH Auden quotes*. [Online]. Available: <http://www.brainyquotes.com/quotes/authors/w/whauden386373.html> [24 May 2010]

CHAMBERS, B. (2009) *The Victorian rehabilitation centre*. [Online]. Available: <http://www.healthscopehospitals.com.au/info/general/HospitalHome/get/20/hospitalId> [17 March 2010]

DUCAT, V. (2009) The bath house. [Online]. Available: <http://kahntrentonbathhouse.org/index.php> [21 March 2010]

GEFFEN, J. R. (2010) *Alternative cancer treatment - healing and transforming the whole person*. [Online] Available: <http://healing.about.com/od/cancer/a/7levelshealing.html> [21 April 2010]

HARRIS, J. R. (2009) *The five levels of healing*. [Online]. Available: <http://www.jeffharrisnd.com> [21 April 2010]

HIPPOCRATES. (c.400BC) *Hippocrates quotes*. [Online]. Available: <http://www.brainyquotes.com/quotes/authors/h/hippocrates.html> [06 May 2010]

HIROTA, N. (1997) *What is disruptive innovation*. [Online]. Available: http://www.12manage.com/methods_christenson_disruptive_innovation.html [19 February 2010]

KRUGER, C. (2000) *Life New Kensington Clinic*. [Online]. Available: <http://www.lifehealthcare.co.za/hospitals/DisplayHospital.aspx?nHospitalId=57> [17 March 2010]

SMITH, R. (2008) *Therapeutic environments*. [Online]. Available: <http://www.wbdg.org/resources/therapeutic.php> [24 April 2010]

THAM, M. (1995) *Writing tips: Report and Thesis Layout*. [Online] Available: <http://lorien.ncl.ac.uk.htm> [19 February 2010]

UNKNOWN AUTHOR (2009) *Support needed for sub-acute facilities*. [Online]. Available: <http://www.edoc.co.za/modules.php?name=News&file=article&sid=1610> [24 April 2010]

UNKNOWN AUTHOR (2009) *Groenkloof retirement village*. [Online]. Available: <http://www.southernhealthcare.co.za/great-brak.html> [17 March 2010]

WEBSITES

www.gautrain.gov.za
www.greenbuilding.co.za
www.physiorehabcentre.co.uk
www.tshwane.gov.za
www.louispasteur.co.za

INTERVIEWS

DE KLERK, Dudley. (2010) [Personal communication]. August 30.

MAHONGA, Beatrice (2010) [Personal communication]. March 10.

VAN DER WATT, Riaan. (2010) [Personal communication]. February 19.

WOOLLS-KING, B. (2010) E-mail to confirm certain mechanical and electrical requirements in a hospital. [E-mail]

OTHER

AMERICAN HEALTH CARE ASSOCIATION. (1996) *Nursing facility sub-acute care: the quality and cost-effective alternative to hospital care*. USA. [Course notes]

CITY OF TSHWANE. (2006) *Tshwane inner city development and regeneration strategy (abridged version)*. Tshwane metropolitan municipality. Tshwane.

CITY OF TSHWANE. (2005) *The city of Tshwane compaction and densification strategy*. The metropolitan planning section - City of Tshwane. Tshwane.

DERMAN, W. E. (1999) *Cardiac rehabilitation in South Africa*. Cape Town: UCT [Review of research and identification of essential health research priorities]

GAUTENG DEPARTMENT OF HEALTH (2008) *Sub-acute beds in retirement centres* [Information document compiled by the Gauteng DoH in October]

GAUTENG DEPARTMENT OF HEALTH (2008) *Standards and criteria for awarding the status of an approved private sub-acute facility* [Information document compiled by the Gauteng DoH]

KRUGER, H. (2009) Letter from the Board of Healthcare Funders of SA to the board of trustees, 10 December

NATIONAL DEPARTMENT OF HEALTH (2006) *Health facility definitions* [Information document compiled by the national DoH in November 2006]

NATIONAL DEPARTMENT OF HEALTH (1996) R158: regulations governing private hospitals and unattached operating theatre units

SABS. (1990). *SABS 0400 - South African Standard Code of Practice for the application of the National Building Regulations*. The Council of the South African Bureau of Standards. Pretoria.

APPENDIX

Healing may not be so much about getting better, as about letting go of everything that isn't you - all of the expectations, all of the beliefs - and becoming who you are.
(Remen, 2000)

APPENDIX 1

APPENDIX 1 - SOUTHERN PRECINCT SWOT ANALYSIS					
STUDY FIELD	STRENGTH	WEAKNESS	OPPORTUNITY	THREAT	FRAMEWORK APPLIC.
PHYSICAL CONTEXT	<ul style="list-style-type: none"> •High density residential stock •Easy access to the city & other public/private transport routes to other areas (eg. JHB) •Central to Tshwane area •Tourist attractions •City boundaries are contained by the mountains 	<ul style="list-style-type: none"> •Lack of activity on ground floor levels •Buildings do not respond to the sidewalks and activities •No cross programming •Many dilapidated buildings •Semi-private open spaces in need of attention •Clay in area makes construction expensive 	<ul style="list-style-type: none"> •We can increase the density of sites by building higher •Increase the number of residential buildings •Restore buildings & bring life to them •Adaptive re-use of ground floors •Create a commercial 'hub' within the city 	<ul style="list-style-type: none"> •Buy in from the social and private sector is minimal, every one wants to move east of the CBD 	<ul style="list-style-type: none"> •Proposing higher buildings •Increased residential zoning •Restoration and re-use of industrial buildings to the west •Increase of commercial activities on ground floor level
SOCIAL CONTEXT	<ul style="list-style-type: none"> •Social & cultural diversity •Variety of income levels •Tourists in the area •Museum mall 	<ul style="list-style-type: none"> •The social diversity is not utilized to its full potential •No 24 hour activities •Commercial activities along Paul Kruger street are interrupted 	<ul style="list-style-type: none"> •Economic opportunities •Extending Museum mall to the Apies River •Make the most of tourist trade •Providing facilities/activities for a wider range of income levels •Creating 24 hour activities 	<ul style="list-style-type: none"> •Government policies and •Bureaucracy 	<ul style="list-style-type: none"> •Improved infrastructure •Allowance made for various income and social groups •Mixed use development where 24 hour eyes will be on the street •Extension of Museum Mall
STAKE HOLDERS	<ul style="list-style-type: none"> •Government has a vested interest in uplifting the area •Strong residential development •Influx of people into the Burgers Park vicinity as a residential area 	<ul style="list-style-type: none"> •Council has no money to maintain buildings •Owners do not want to spend money fixing up buildings to the west •There is little/no interest in occupying the west 	<ul style="list-style-type: none"> •Create catalytic activities to promote development and economic growth in the area •Bringing a wider range of users into the area 	<ul style="list-style-type: none"> •Buy in from the social and private sector is minimal, every one wants to move east of the CBD •Financial •Threat of lower income groups being 'pushed out' 	<ul style="list-style-type: none"> •Increased/improved residential facilities •Maintaining Burger's Park as a utilised open green space •Increase activities in the area to encourage people to move here
HERITAGE	<ul style="list-style-type: none"> •Strong heritage component in the area: Modern buildings, synagogue, city hall etc. 	<ul style="list-style-type: none"> •Many heritage buildings are run down and dilapidated, but are still protected •Break in city fabric due to these buildings having lower densities 	<ul style="list-style-type: none"> •Tourism opportunities •Upgrade heritage buildings into functional uses – adaptive re-use •Create and promote cultural heritage in Pretoria 	<ul style="list-style-type: none"> •Some heritage buildings hinder new/positive development due to protection •Structural decay •Creation of superficial environments 	<ul style="list-style-type: none"> •Museum Mall •Upgrading of heritage buildings with adaptive re-use
CURRENT USES	<ul style="list-style-type: none"> •Paul Kruger Street is rich in commercial activity 	<ul style="list-style-type: none"> •Little/no mixed use development 	<ul style="list-style-type: none"> •Adaptive re-use 	<ul style="list-style-type: none"> •Zoning can conflict with heritage 	<ul style="list-style-type: none"> •Highlight Paul Kruger Street as an interactive commercial node

	<ul style="list-style-type: none"> •Burger's Park is well utilised and maintained •Variety of uses in the area, which attracts different people 	<ul style="list-style-type: none"> •Most buildings are not utilized to their full potential •Industrial buildings to the west are not utilised •Skinner Street island is a dead space 	<ul style="list-style-type: none"> •Encourage further commercial activity on ground floor level •Create mixed use buildings •Focus on activities to improve economic growth and increase density 	<ul style="list-style-type: none"> •Existing zoning is one dimensional •Current zoning hinders commercial activity 	<ul style="list-style-type: none"> •Maintaining Burger's Park •Increased mixed use development •Upgrading and adaptive re-use of industrial buildings to the west •Intervention to cross Skinner Street safely
AXES	<ul style="list-style-type: none"> •Paul Kruger Street (government walk) in the centre of the study area 	<ul style="list-style-type: none"> •Skinner Street is a barrier, not an axis 	<ul style="list-style-type: none"> •Emphasize the link between the Station and Church Square 	<ul style="list-style-type: none"> •Skinner street 	<ul style="list-style-type: none"> •Paul Kruger emphasised as a strong pedestrian and commercial route/axis •Allow for safe crossing of Skinner Street
VISUAL LINKS	<ul style="list-style-type: none"> •Freedom Park •Church Square 	<ul style="list-style-type: none"> •Sign board outside the station limits views 	<ul style="list-style-type: none"> •Re-emphasise the visual link between the Station and Church Square and Freedom Park 	<ul style="list-style-type: none"> •Views from ground floor level is limited 	<ul style="list-style-type: none"> •Emphasise the link between Church Square and the Station •Remove sign board outside the station •Other visual links also emphasised
TOPOGRAPHY	<ul style="list-style-type: none"> •Flat topography allows easy pedestrian movement 	<ul style="list-style-type: none"> •Limited opportunities for views 	<ul style="list-style-type: none"> •Create more pedestrian friendly streets 	<ul style="list-style-type: none"> •We can't change the topography, therefore views will always be hindered 	<ul style="list-style-type: none"> •Increase pedestrian movements through the city
PEDESTRIAN ROUTES	<ul style="list-style-type: none"> •Minnaar, Visagie and Bosman Streets have physical strengths 	<ul style="list-style-type: none"> •Minnaar Street is under utilised •Skinner Street does not allow for pedestrian use •All streets are unfriendly to pedestrians 	<ul style="list-style-type: none"> •Create pedestrian friendly side walks to encourage walking •Create safe pedestrian crossings etc. at Skinner Street •Development on the island at Skinner Street 	<ul style="list-style-type: none"> •Skinner Street will likely always be a fast vehicular route through the city 	<ul style="list-style-type: none"> •Improvement of existing pavements and pedestrian routes •Strengths of Minnaar, Visagie and Bosman streets emphasised •Intervention to allow safe pedestrian crossing of Skinner Street
VEHICULAR/TRAIN ROUTES	<ul style="list-style-type: none"> •Proposed BRT system •Easy access to transport nodes •Gautrain 	<ul style="list-style-type: none"> •The city is predominantly designed for vehicles and not pedestrians 	<ul style="list-style-type: none"> •Gautrain will make Paul Kruger etc. a main tourist area •BRT route could reduce the need for private transport and increase pedestrian movement •Reduce number of parking lots •Create bicycle friendly lanes 	<ul style="list-style-type: none"> •There is no immediate solution, you cannot design a city with no cars, only try and manage them 	<ul style="list-style-type: none"> •Allowance made for the BRT •Station emphasised as an important transport node •Design for fewer cars and slowing down traffic, however not the forced removal of cars •Off street parking limited and parking lots removed

SCALE & PROPORTION	<ul style="list-style-type: none"> •Variety of scale along Paul Kruger Street •Proportions of city blocks (N/S acceptable) 	<ul style="list-style-type: none"> •Some streets do not utilise the correct heights •Too many 1 storey buildings between 5-6 storey buildings •City blocks are too long in E/W direction 	<ul style="list-style-type: none"> •Increasing of densities due to open pieces of land and current height of buildings •Arcades could reduce dimension of blocks in the E/W direction 	<ul style="list-style-type: none"> •Heritage buildings are of a much lower scale than the density required 	<ul style="list-style-type: none"> •New buildings to relate to the existing scales and proportions of their neighbours •Create walkways through the blocks to limit the E/W length of blocks •Increase heights of lower buildings where allowed
MATERIALS & TEXTURES	<ul style="list-style-type: none"> •Variety of materials & textures in the area 	<ul style="list-style-type: none"> •Road surface harsh •Sidewalks need attention , except in Minnaar Street 	<ul style="list-style-type: none"> •There is a rich dialogue in which we can take part •Sidewalks to be improved and easily accessible 	<ul style="list-style-type: none"> •Lack of context analyses 	<ul style="list-style-type: none"> •Try to refer to the rich dialogue of textures and colours that make up the city
ASPATIAL	<ul style="list-style-type: none"> •Minnaar street – flush, enjoyable walk •Residential area still has many trees •Paul Kruger is vibrant 	<ul style="list-style-type: none"> •Skinner Street – dead, inaccessible space to pedestrians 	<ul style="list-style-type: none"> •To create vibrant, energetic environments which are accessible and democratic 	<ul style="list-style-type: none"> •Decay & litter •Excessive allowance for private car use 	<ul style="list-style-type: none"> •Commercial activity/buzz created •Creation of 24 hour activity environments
LEGISLATION	<ul style="list-style-type: none"> •60 year protection of historically rich buildings •Zoning of the area allows for increased density 	<ul style="list-style-type: none"> •Too many frameworks exist that do not link the area as a whole •The frameworks that exist are too vague in their solutions 	<ul style="list-style-type: none"> •Government will provide incentives to occupy this part of the city (eg. Tax breaks) •Increase density •Create one framework for all people to follow rather than having many different ones 	<ul style="list-style-type: none"> •Municipalities are unwilling to make and implement bold decisions 	<ul style="list-style-type: none"> •Rezoning to allow increased densities
LANDSCAPING	<ul style="list-style-type: none"> •Minnaar Street has lovely vegetation leading to Burger's Park 	<ul style="list-style-type: none"> •No trees in Paul Kruger makes for a harsh & hot environment •Fences around public green spaces make areas inaccessible •Not enough green pockets within walking distance to one another 	<ul style="list-style-type: none"> •City Hall Square •Opening up public gardens to the public •Take advantage of the good qualities at Burgers park •Increase green spaces within the city 	<ul style="list-style-type: none"> •The fact that you can't plant new Jacaranda trees in the Jacaranda city 	<ul style="list-style-type: none"> •Increased number of trees on pavements etc. •Fences around public and semi-private zones to be removed and not allowed •Development of city hall square

APPENDIX 2

APPENDIX 2 - PARKING CALCULATIONS				
	PARKING RATIO	NUMBER OF BEDS / AREA	PARKINGS REQUIRED	PARKINGS PROVIDED
PARKINGS REQUIRED:				
SUB-ACUTE FACILITY	1 PARKING/BED	51	51	
CONSULTING ROOMS	6 PARKINGS /100m ²	405m ²	24	
OFFICES	6 PARKINGS / 100m ²	230m ²	14	
TOTAL PARKINGS REQUIRED			89	
PARKINGS PROVIDED:				
BASEMENT PARKING				40
OFF-STREET PARKING				5
ON NEIGHBOURING SITE				83
TOTAL PARKINGS PROVIDED				173
CONCLUSION	There are more parkings provided than what are required by the Tshwane Council, this allows for the proposed future extension of the facility into the building that borders it on the eastern side.			

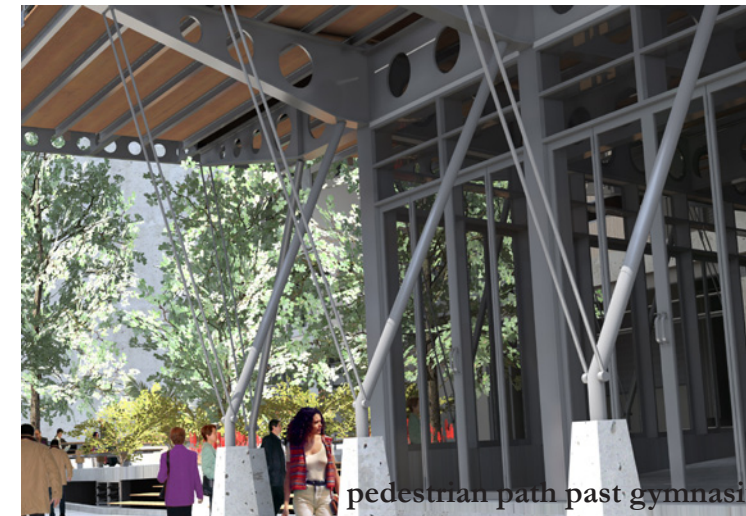
APPENDIX 3

APPENDIX 3 - TOTAL NUMBER OF SANITARY FITTINGS PROVIDED					
SANITARY FITTING	NUMBER OF BEDS	NUMBER OF WARDS/ROOMS	MINIMUM RATIO REQUIRED	TOTAL PROVIDED	RATIO PROVIDED
ACCORDING TO R158					
GROUND FLOOR - GYM					
	0	0			
PATIENT TOILETS			1 WC/8 BEDS	3	NA
PATIENT TOILET WHB			1 WHB/8 BEDS	3	NA
WARD WHB			1 WHB/1 WARD	0	NA
BATHS / SHOWERS			1 B/SHR / 12 BEDS	2	NA
FIRST FLOOR - PAEDIATRIC WARD					
	8	6			
PATIENT TOILETS			1 WC/8 BEDS	4	1 WC / 2 BEDS
PATIENT TOILET WHB			1 WHB/8 BEDS	5	1 WHB / 1.6 BEDS
WARD WHB			1 WHB/1 WARD	6	1 WHB / 1 WARD
BATHS / SHOWERS			1 B/SHR / 12 BEDS	5	1 B/SHR / 1.2 BEDS
SECOND FLOOR - GENERAL WARD					
	9	6			
PATIENT TOILETS			1 WC/8 BEDS	5	1 WC / 1.8 BEDS
PATIENT TOILET WHB			1 WHB/8 BEDS	6	1 WHB / 1.5 BEDS
WARD WHB			1 WHB/1 WARD	6	1 WHB / 1 WARD
BATHS / SHOWERS			1 B/SHR / 12 BEDS	5	1 B/SHR / 1.8 BEDS
THIRD FLOOR - NEUROSURGICAL WARD					
	9	6			
PATIENT TOILETS			1 WC/8 BEDS	5	1 WC / 1.8 BEDS
PATIENT TOILET WHB			1 WHB/8 BEDS	6	1 WHB / 1.5 BEDS
WARD WHB			1 WHB/1 WARD	6	1 WHB / 1 WARD
BATHS / SHOWERS			1 B/SHR / 12 BEDS	5	1 B/SHR / 1.8 BEDS
THIRD FLOOR - CARDIO-THORACIC WARD					
	4	4			
PATIENT TOILETS			1 WC/8 BEDS	4	1 WC / 1 BEDS
PATIENT TOILET WHB			1 WHB/8 BEDS	4	1 WHB / 1 BEDS
WARD WHB			1 WHB/1 WARD	4	1 WHB / 1 WARD

SANITARY FITTING	NUMBER OF BEDS	NUMBER OF WARDS/ROOMS	MINIMUM RATIO REQUIRED	TOTAL PROVIDED	RATIO PROVIDED
BATHS / SHOWERS			1 B/SHR / 12 BEDS	4	1 B/SHR / 1 BEDS
FOURTH FLOOR - CARDIO-THORACIC WARD	9	6			
PATIENT TOILETS			1 WC/8 BEDS	5	1 WC / 1.8 BEDS
PATIENT TOILET WHB			1 WHB/8 BEDS	6	1 WHB / 1.5 BEDS
WARD WHB			1 WHB/1 WARD	6	1 WHB / 1 WARD
BATHS / SHOWERS			1 B/SHR / 12 BEDS	5	1 B/SHR / 1.8 BEDS
FOURTH FLOOR - NEUROSURGICAL WARD	4	4			
PATIENT TOILETS			1 WC/8 BEDS	4	1 WC / 1 BEDS
PATIENT TOILET WHB			1 WHB/8 BEDS	4	1 WHB / 1 BEDS
WARD WHB			1 WHB/1 WARD	4	1 WHB / 1 WARD
BATHS / SHOWERS			1 B/SHR / 12 BEDS	4	1 B/SHR / 1 BEDS
FIFTH FLOOR - ORTHOPAEDIC WARD	4	4			
PATIENT TOILETS			1 WC/8 BEDS	4	1 WC / 1 BEDS
PATIENT TOILET WHB			1 WHB/8 BEDS	4	1 WHB / 1 BEDS
WARD WHB			1 WHB/1 WARD	4	1 WHB / 1 WARD
BATHS / SHOWERS			1 B/SHR / 12 BEDS	4	1 B/SHR / 1 BEDS
SIXTH FLOOR - ORTHOPAEDIC WARD	4	4			
PATIENT TOILETS			1 WC/8 BEDS	4	1 WC / 1 BEDS
PATIENT TOILET WHB			1 WHB/8 BEDS	4	1 WHB / 1 BEDS
WARD WHB			1 WHB/1 WARD	4	1 WHB / 1 WARD
BATHS / SHOWERS			1 B/SHR / 12 BEDS	4	1 B/SHR / 1 BEDS
ACCORDING TO SABS					
PUBLIC TOILETS (MALE)	NA	NA	3(wc)+4(urinal)	10	3 extra provided
PUBLIC TOILET WHB (MALE)	NA	NA	4	15	9 extra provided
PUBLIC TOILET (FEMALE)	NA	NA	6	10	4 extra provided
PUBLIC TOILET WHB (FEMALE)	NA	NA	4	15	9 extra provided

APPENDIX 4

APPENDIX 4 - 3D MODEL PERSPECTIVES





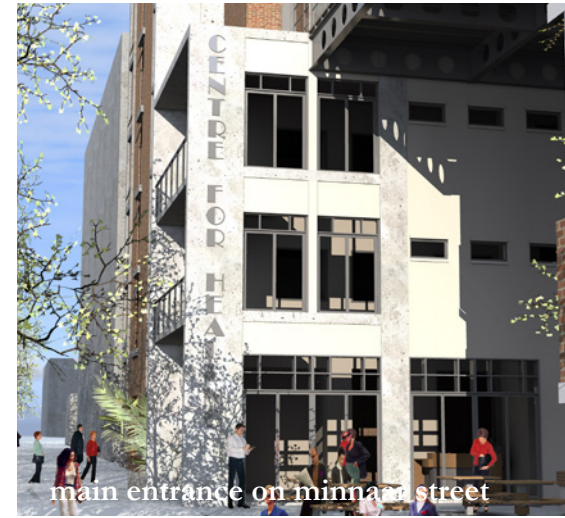
new up minnaar street



main entrance on minnaar street



off street area of respite



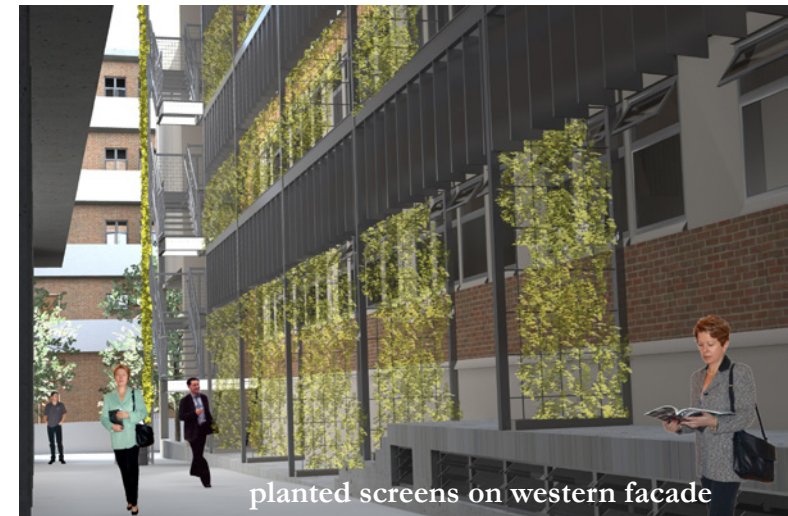
main entrance on minnaar street



gymnasium entrance



aerial view of facility from north east



planted screens on western facade

APPENDIX 5

APPENDIX 5 - FINAL MODEL



overall view of model - photo taken from north east



aerial view - photo taken from south east



view of the facility from the east



view of the facility from the north



facility entrance



facility entrance



western facade



eastern facade



overall view of model - from the east