rehabilitate

body, nature and architecture

sports rehabilitation centre Groenkloof campus

Submitted in fulfilment of part of the requirements for the degree Magister In Architecture (Professional) in the Faculty of Engineering, Built Environment and Information Technology, University of Pretoria. 2008

Mentor . Study Leader.

Gary White
Nicholas Clarke

by david schalk van der merwe
list of figures

chapter 1_introduction

figure 1.1_ edited photo of campus, author.
figure 1.2_ edited photo of Telkom tower from Fort Klapperkop, author.
figure 1.3_ edited photo of Telkom tower from Leyds street, author.
figure 1.4_ edited photo of
figure 1.5_ edited photo of images edited

chapter 2_theoretical framework

figure 2.2_ hand drawn sketches of man and nature relationships based on theoretical concept, author.
figure 2.3_ hand drawn sketches of different approaches based on theoretical concept, author.
figure 2.5_ edited Autocad drawings of Groenkloof campus, author.
figure 2.6_ hand drawn sketches of relational ap-
proaches based on theoretical concept, author.
figure 2.7_ hand drawn sketches redemption based on theoretical concept, author.
figure 2.8_ hand drawn sketches of conclusion based on theoretical concept, author.
figure 2.9_ edited hand and contour image, author.

chapter 3_urban complexion

figure 3.1_ Gross photos of Pretoria, Africana photo collection, Africana museum, Pretoria, Tshwane.
figure 3.2_ edited photos of the city of Pretoria from various angles depicting the modern city, author.
figure 3.5_ sketch of geological soil profiles, Carruthers, V. 2007.
figure 3.6_ photo collage of the environmental characteristics for winter and summer, author.
figure 3.7_ photos illustrating the urban environment within the given context of Groenkloof,
chapter 4_the body

figure 4.2_ photo of Groenkloof campus from Telkom tower, author.
figure 4.3_ Gross photos of Pretoria, Africana photo collection, Africana museum, Pretoria, Tshwane.
figure 4.4_ aerial photographs of Pretoria redrawn by author, [http://www.up.ac.za/dspace/handle/2528](http://www.up.ac.za/dspace/handle/2528), accessed on the 5 March 2008.
figure 4.5_ aerial photographs of Pretoria redrawn by author, [http://www.up.ac.za/dspace/handle/2528](http://www.up.ac.za/dspace/handle/2528), accessed on the 5 March 2008.
figure 4.6_ edited Autocad drawings of Groenkloof campus, author.
figure 4.7_ sketches depicting the contextual characteristics as seen from various places on Groenkloof campus, author.
figure 4.8_ hand drawn sections of Groenkloof campus illustrating the land form, author.
figure 4.9_ photos of problematic functions of buildings on Groenkloof campus, author.
figure 4.10_ photos of dysfunctional facilities on Groenkloof campus, author.
figure 4.11-24_ various stitched photographs illustrating the visual analysis of the proposed site on Groenkloof campus, author.

chapter 5_design framework

figure 5.1_ photos of Coromandel estate, Lydenburg, Mapumalanga, author.
figure 5.2_ photos of Hammanskraal campus buildings, author.
figure 5.3 _ precedent study images, DOORDAN, D.P. 2000, p. 150,151,257,258.
figure 5.4 _ precedent study images, ASENSIO, P. 2002, p. 54,56.
figure 5.5 _ precedent study images, ROBSON, D. 2004, p. 150.
figure 5.6 _ photo of runners on Groenbloof campus and sketch illustrating the concept of movement, author.
figure 5.7a-c _ edited and stitched range of photos took on Groenbloof campus on two runners moving through the site along a small foot path, author.
figure 5.8 _ sketch illustrating the concept basic principles of the design programme, author.
figure 5.9 _ sketches indicating the integration of the programme, author.
figure 5.10 _ sketches illustrating the placing of the functions diagrammatically, author.
figure 5.11 _ sketch plan of building programme, author.
figure 5.12 _ sketches of building and landscape placing exploration, author.
figure 5.14 _ photos of model exploration during the design process, author.
figure 5.15 _ sketches illustrating the building and land form exploration also a sectional sketch illustrating the climatic integration in the design, author.
figure 5.16 _ sketch plan on site with climatic conditions illustrated, author.
figure 5.17 _ diagrammatically illustration of social responses of the design, author.
figure 5.18 _ photos of model and a sketch illustrates the solid and void exploration of the design, author.
figure 5.19 _ 3D model showing the solid and void exploration of the design, author.
figure 5.20 _ edited image of the building and landscape illustrating the integration, author.
figure 5.21-24 _ 3D model section, aerial and interior views of design proposal illustrates the various responses, author.

chapter 6 _ technical investigation

figure 6.1 _ edited drawing illustrates the proposed building, author.
figure 6.2 _ plan of the structure and grid, author.
figure 6.3 _ 3D model illustrating the structure and primary services within the building, author.
figure 6.4a-c _ images of a plan and views indicates the placement of services within the building, author.
figure 6.5a-b _ sections illustrate the ventilation and climatic responses explored for the design, author.
figure 6.6_ precedent study images, LEGRUYER, A. 2001, p. 32,33.
figure 6.7_ site plan illustrating the landscape response of the design, author.
figure 6.8a-d_ 3D images depicting the opening exploration through the design, author.
figure 6.9c_ Renzo Piano’s shading mechanisms for doors, ASENSIO, P. 2002, p. 10.
figure 6.10a&b_ sections illustrates the sun angle movement and responses over the facades of the design, author.
figure 6.11_ glazed roof structure by Renzo Piano, ASENSIO, P. 2002, p. 18&19
figure 6.12_ plan of the roof structure of the design, author.
figure 6.13a&b_ technical details for the roof structure, author.
figure 6.14-16_ photos of materials and textures found on the site, author.
figure 6.17_ photo illustrating required concrete patterns for the design, author.
figure 6.18_ photo illustrating required brick finish for the design, author.
figure 6.20a&b_ photos of Brooklyn mall, Pretoria interior illustrating the roof and ventilation systems, author.
figure 6.21a&b_ analytical system sketches made for precedent study within Virgin Active gyms, author.

chapter 7_conclusion
figure 7.1_ edited photos and images of site interaction, author.
figure 7.2_ edited photos and images of site interaction, author.

chapter 8_appendix
figure 8.3_ letterhead regarding building plans, archives, University of Pretoria, Tshwane.
figure 8.4_ existing landscape and building profile, archives, University of Pretoria, Tshwane.
figure 8.5_ site plan with rubbish dump areas indicated, archives, University of Pretoria, Tshwane.
figure 8.6_ sections indicating soil and rubbish areas, archives, University of Pretoria, Tshwane.
figure 8.7_ proposal model, archives, University of Pretoria, Tshwane.
figure 8.8_ proposal model, archives, University of Pretoria, Tshwane.
figure 8.9-12_ various stitched photographs illustrating the visual analysis of the proposed site on Groenkloof campus, author.
figure 8.13_ precedent study drawings of disabled design, author.

chapter 10_technical drawings

figure 10.1_ design proposal Autocad site plan drawing, author.
figure 10.2_ design proposal Autocad basement plan drawing, author.
figure 10.3_ design proposal Autocad ground floor plan drawing, author.
figure 10.4_ design proposal Autocad first floor plan drawing, author.
contents

1. introduction
   - list of figures
   - contents
   - prologue

2. theoretical framework
   - 2.1 living inter-dependence
   - 2.2 dream of arcadia
   - 2.3 redemption

3. urban complexion
   - 3.1 introduction
   - 3.2 historical city
   - 3.3 regional urban structures
     - ecological
     - social
     - economical
   - 3.4 conclusion

4. the body
   - 4.1 site proposal
   - 4.2 historical context
   - 4.3 site analysis
     - plans & sections
     - photo elevations

5. design framework
   - 5.1 introduction
   - 5.2 precedent studies
   - 5.3 design principles
     - activities and movement
     - orientation
     - solids and voids
   - 5.4 conclusion
6. Technical investigation

7. Conclusion

8. Appendix

9. Bibliography

10. Technical drawings
“We did not inherit this land from our ancestors, but are rather borrowing it from our children.” (VAN LILL, D. 2005:69)

Man and nature...captured within a relational existence. Theoretically this document disputes the man-nature-relationship with the emphasis on architectural participation, in an attempt to redefine their interdependency.

Architecture creates a new landscape - despitess its inherent character. (NESBIT 1996:461)

And if the true problem is acknowledged - that of our social arrangements, then we’ll be able to see our alienation from nature as a failure, for nature shouldn’t be shaped around our needs but we should rather strive towards a harmonious co-existence. (KATZ & KIRBY 1991:263)
Humans receive the recognition that they are “of nature” yet they also poses a “second nature” due to their capability of objective reason. (NESBIT 1996:461)

By analysing man’s way of living over a lifetime, a better understanding can be drawn to what the ideal relationship should be. In turn this will be used in the present context and measured against current situations. The function of the urban framework will also be defined and the site characteristics identified within this understanding.

"Our troubled planet can no longer afford the luxury of pursuits confined to the ivory towers.” (WATSON 1984:121)

Based on this, an attempt will be made to redefine this relationship between man and nature within an existing context. Identifying a model relationship and practically applying it to the given context. At best it will attempt to give a better solution for some of the current issues related to this topic.
“Human life is not intended to oppose nature and endeavour to control it, but rather to draw nature into an intimate association in order to find union with it.” (NESBIT 1996:460)