



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

COGNITION

composing a south african identity

B. A. do Vale 21118851

University of Pretoria
Department of Architecture
November 2007

Mentor: R. C. Fisher

Submitted in the fulfillment of part of the requirements for the degree of Magister in Architecture (Professional) in the faculty of
E n g i n e e r i n g , B u i l t E n v i r o n m e n t a n d I n f o r m a t i o n T e c h n o l o g y .



Abstract	007
Problem Statement	009
Client Profile	014
Funding Agency	014

Introduction	018
Composing	
Architecture	019
The Rhythm	
of Architecture	020
Music as a Device	
of social ordering	021

Macro Context	027
Tshwane Inner	
City Spatial	035

History of Pretoria	046
Significant Buildings	047
Life in Pretoria	048
Important Events	048
Traffic and Transport	049
Economy	050
Land Use	050
Site Description	051
Site Choice Motivation	052
Public Square	056
House Jansen	058
Sun Study	060
Site Analysis	063

list of figures

Introduction 06

theoretical investigation 12

macro context study 03

micro context study 04

Context



The First Concept 091
The Second Concept 094

Baseline, Newtown 077
Baracity Market and Taxi Rank, Soweto 078
University of Pretoria Law Faculty 080
Casa da Musica, Oporto 082

precedent studies 05

design development 06

Structural Composition 101
Flooring Materials 102
Roof Systems 103
Passive Control Systems 105
Material Selection 107
Solar Control and Lighting
Requirements 111
Acoustics 112
Fire Control 114
Inclusive Design 114

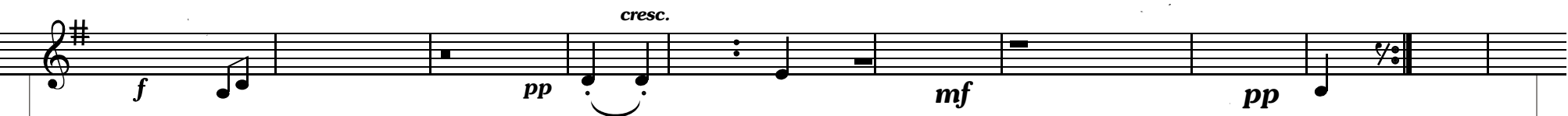
technical investigation 07

technical documentation 08
bibliography 09



LIST OF FIGURES/ILLUSTRATIONS

- 01** FIG. 1.1 Cornelius Cardew (AA Files 53: 44)
FIG. 1.2 City Blocks. By author (2007).
FIG. 1.3 Circuit board. (Original image edited by author; http://www.flickr.com/photo_zoom.gne?id=182393031&size=l 2007)
FIG. 1.4 Street musician donations. Image from http://www.flickr.com/photo_zoom.gne?id=65467021&size=l
FIG. 1.5 Children playing violin. Image from http://www.flickr.com/photo_zoom.gne?id=1006327174&size=l
FIG. 1.6 Street musician playing paint drums Image from http://www.flickr.com/photo_zoom.gne?id=521003169&size=o
FIG. 1.7 Gallo Records corporate logo. Image from <http://www.mio.co.za/imageview.php?image=917>
FIG. 1.8 Johnnic Communications corporate logo. Image from <http://www.johnniccommunications.com>
- 02** FIG. 2.1 Eleven Echoes of autumn. By George Crumb. (AA Files 53: 43)
FIG. 2.2 Painted facade of the Schmidt Music Building, Minnesota. Image from http://www.flickr.com/photo_zoom.gne?id=240175396&size=o
FIG. 2.3 Painted facade of the Schmidt Music Building, Minnesota. Image from http://www.flickr.com/photo_zoom.gne?id=189323001&size=o
FIG. 2.4 Painted facade of the Schmidt Music Building, Minnesota. Image from [Http://www.flickr.com/photo_zoom.gne?id=23949645&size=o](http://www.flickr.com/photo_zoom.gne?id=23949645&size=o)
FIG. 2.5 Piano Piece for David Tutor. By Ussotti. (AA Files 53: 39)
FIG. 2.6 Equalizer board. Image from http://www.flickr.com/photo_zoom.gne?id=160521929&size=l
FIG. 2.7 Pennywhistlers. Photograph by Jurgen Schadeberg. (SELIMOVIC 2002: 25)
FIG. 2.8 Township workshop session. Photograph by Val Adamson. (SELIMOVIC 2002: 62)
FIG. 2.9 Ice cream truck. Photograph by author (2007).
FIG. 2.10 iPod post card hand outs (2006).
FIG. 2.11 iPod post card hand outs (2006).
FIG. 2.12 iPod post card hand outs (2006).
FIG. 2.13 iPod post card hand outs (2006).
FIG. 2.14 iPod Advertising campaign in Hong Kong. Image from http://www.flickr.com/photo_zoom.gne?id=62168417&size=l
- 03** FIG. 3.1 View over Inner City. Photo by Author. (2007)
FIG. 3.2 South Africa in a global context. (Original image edited by author: http://www.sonyericsson.com/spg.jsp?cc=za&lc=en&ver=4000&template=pm1_1&zone=pm&mcid=173 2007).
FIG. 3.3 Satellite photograph of South Africa. Original image edited by author; Google Earth (2007).
FIG. 3.4 Satellite photograph of Pretoria (Original photo edited by author; MrSid GeoViewer 2007).
FIG. 3.5 Satellite photograph of the chosen site (Original photo edited by author; MrSid GeoViewer 2007).
FIG. 3.6 City blocks. By author: (2007)
FIG. 3.7 Sheet music. Drawn by author. (2007)
FIG. 3.8 Major vehicle routes and township nodes. (Original photo edited by author; Nothnagel 2007)



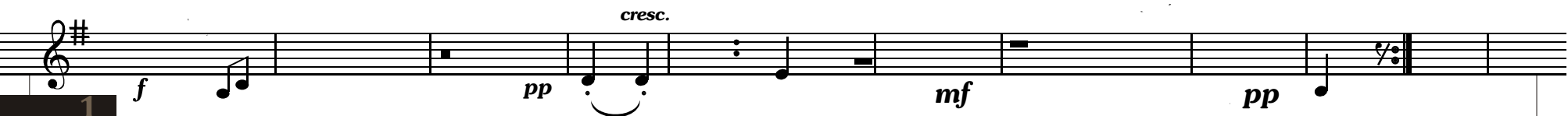


- FIG. 3.9 Green Spaces. (Nothnagel 2007)
- FIG. 3.10 Pedestrian and vehicle traffic. By GAPP Architects and Urban Planners. (TICP SDP 2 February 2006)
- FIG. 3.11 Movement corridors. By GAPP Architects and Urban Planners. (TICP SDP 2 February 2006)
- FIG. 3.12 Government Boulevard. By GAPP Architects and Urban Planners. (TICP SDP 2 February 2006)
- FIG. 3.13 Activity Spine By GAPP Architects and Urban Planners. (TICP SDP 2 February 2006)
- FIG. 3.14 Diagrammatic map of nodes around Church Square. (Nothnagel 2007)
- FIG. 3.15 Diagrammatic map of public spaces. (Nothnagel 2007)
- FIG. 3.16 Site in relation to other proposed projects (Nothnagel 2007)
- FIG. 3.17 Cultural Installations map. (Original aerial photo edited by author; MrSid GeoViewer 2007)
- FIG. 3.18 Site Locality Map (Original photo edited by author; MrSid GeoViewer)
- FIG. 3.19 Aerial view of site and surrounding buildings (Original photo edited by author; TICP-Phase 2 Spacial Development Framework Executive report)
- FIG. 3.20 Inner city skyline from chosen site. Panoramic photograph by author (2007).
- 04** FIG. 4.1 Circuit board. (Original image edited by author; http://www.flickr.com/photo_zoom.gne?id=182393031&size=l 2007)
- FIG. 4.2 View of tram line along Paul Kruger Street. Photograph from private collection of Machiel Erasmus. Date unknown
- FIG. 4.3 Statue of Paul Kruger at Church Square. Image from <http://www.flickr.com>
- FIG. 4.4 Clustering of buildings along Paul Kruger Street and Church Square. (Wilson 2007)
- FIG. 4.5 Ticket parody. Image from http://www.flickr.com/photo_zoom.gne?id=291865031&size=l
- FIG. 4.6 Aerial photograph of chosen site. (Original photo edited by author; MrSid GeoViewer 2007).
- FIG. 4.7 Photograph of chosen site. By author: (2007).
- FIG. 4.8 Artistic impression of the new Department of Education. (Pretoria News: August 7 2007)
- FIG. 4.9 Front page of the Pretoria News. (Pretoria News: August 7 2007)
- FIG. 4.10 Pieces for David Tudor. (AA Files 53: 44)
- FIG. 4.11 View of the Civitas building from house Jansen. Photograph by author: (2007)
- FIG. 4.12 Drawing of the eastern facade of House Jansen. By author (2007).
- FIG. 4.13 House Jansen Tower. Photograph by author (2007).
- FIG. 4.14 Computer generated 3D of proposed public square sun study. By author (2007).
- FIG. 4.15 Computer generated 3D of proposed public square sun study. By author (2007).
- FIG. 4.16 Computer generated 3D of proposed public square sun study. By author (2007).
- FIG. 4.17 Computer generated 3D of proposed public square sun study. By author (2007).
- FIG. 4.18 Computer generated 3D of proposed public square sun study. By author (2007).
- FIG. 4.19 Computer generated 3D of proposed public square sun study. By author (2007).
- FIG. 4.20 Computer generated 3D of proposed public square sun study. By author (2007).
- FIG. 4.21 Computer generated 3D of proposed public square sun study. By author (2007).
- FIG. 4.22 Computer generated 3D of proposed public square sun study. By author (2007).
- FIG. 4.23 Computer generated 3D of proposed public square sun study. By author (2007).





- FIG. 4.24 Computer generated 3D of proposed public square sun study. By author (2007).
FIG. 4.25 Computer generated 3D of proposed public square sun study. By author (2007).
FIG. 4.26 Computer generated 3D of proposed public square sun study. By author (2007).
FIG. 4.27 Computer generated 3D of proposed public square sun study. By author (2007).
FIG. 4.28 Computer generated 3D of proposed public square sun study. By author (2007).
FIG. 4.29 Site analysis map 1. (Original photo edited by author; MrSid GeoViewer 2007).
FIG. 4.30 Northern facade of Zoo Corner café in relation to Paul Kruger Street. Photograph by author (2007).
FIG. 4.31 Pretoria snake park and aquarium. Photograph by author (2007).
FIG. 4.32 Site analysis map 2. (Original photo edited by author; MrSid GeoViewer 2007).
FIG. 4.33 Second hand cars dealership. Photograph by author (2007).
FIG. 4.34 Eastern street elevation of VR Printers. Photograph by author (2007).
FIG. 4.35 Southern facade of House Jansen. Photograph by author (2007).
FIG. 4.36 Western elevation of Civitas building from site. Photograph by author (2007).
FIG. 4.37 Wholesalers building on the corner of Paul Kruger and Bloed Street. Photograph by author (2007).
FIG. 4.38 Street elevation of Jewish synagogue. Photograph by author (2007).
FIG. 4.39 Site analysis map 3. (Original photo edited by author; MrSid GeoViewer 2007).
FIG. 4.40 Paul Kruger Street. Photograph by author (2007).
FIG. 4.41 North-eastern elevation of Civitas building. Photograph by author (2007).
FIG. 4.42 Site analysis map 4. (Original photo edited by author; MrSid GeoViewer 2007).
FIG. 4.43 Wholesalers Paul Kruger Street elevation. Photograph by author (2007).
FIG. 4.44 Struben Street towards the Union Buildings. Photograph by author (2007).
FIG. 4.45 Panagos Building. Photograph by author (2007).
FIG. 4.46 Panoramic photograph of Bloed Street - Southern. Photograph by urban analysis group 8 (2007).
FIG. 4.47 Panoramic photograph of Paul Kruger Street - Western. Photograph by urban analysis group 8 (2007).
FIG. 4.48 Panoramic photograph of Bloom Street - Northern. Photograph by urban analysis group 8 (2007).
FIG. 4.49 Panoramic photograph of Bloed Street - Northern. Photograph by urban analysis group 8 (2007).
05 FIG. 5.1 Main stage. Photo by author (2007)
FIG. 5.2 Statue of Brenda Fassie at Bassline. Photograph by author (2007). Main stage. Photo by author (2007)
FIG. 5.3 Baracity taxi rank. Photograph by author (2007).
FIG. 5.4 Baracity market area. Photograph by author (2007).
FIG. 5.5 Street facade of library, University of Pretoria Law Faculty, Pretoria, South Africa. Architects: Krugerroos Architects and Urban Designers. Photograph by author (2006).
FIG. 5.6 Paving detail, University of Pretoria Law Faculty, Pretoria, South Africa. Architects: Krugerroos Architects and Urban Designers. Photograph by author (2006).
FIG. 5.7 Library lift, University of Pretoria Law Faculty, Pretoria, South Africa. Architects: Krugerroos Architects and Urban Designers. Photograph by author (2006).
FIG. 5.8 Pedestrian walkways. University of Pretoria Law Faculty, Pretoria, South Africa. Architects: Krugerroos Architects and Urban Designers. Photograph by author (2006).



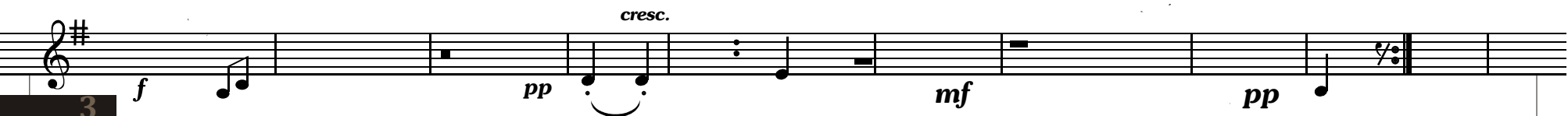


- FIG. 5.9 Main auditorium of the Casa da Musica, Oporto, Portugal, 2005. Architects: OMA. Image from http://lacomunidad.elpais.com/blogfiles/arquitectura/11361_1175_1_1000OMACasa1.jpg
- FIG. 5.10 Overflow area of the Casa da Musica, Oporto, Portugal, 2005. Architects: OMA. Image from http://lacomunidad.elpais.com/blogfiles/arquitectura/11361_1175_1_1000OMACasa7.jpg
- FIG. 5.11 Visual axis with park. Casa da Musica, Oporto, Portugal, 2005. Architects: OMA. Image from Http://lacomunidad.elpais.com/blogfiles/arquitectura/11361_1175_1_1000OMACasa3.jpg
- 06** FIG. 6.1 Concept drawing. By author (2007).
- FIG. 6.2 Concept sketches drawn by author (2007).
- FIG. 6.3 Concept sketch drawn by author (2007).
- FIG. 6.4 Photograph of first concept model: Auditorium in relation to House Jansen. By author (2007).
- FIG. 6.5 Photograph of first concept model: Paul Kruger Street facade. By author (2007).
- FIG. 6.6 Photograph of first concept model: Music boxes in relation to light shaft. By author (2007).
- FIG. 6.7 Photograph of first concept model: Pedestrian ramp to auditorium. By author (2007).
- FIG. 6.8 Photograph of first concept model: Southern facade along public square. By author (2007).
- FIG. 6.9 Photograph of first concept model: Aerial view looking east. By author (2007).
- FIG. 6.10 Concept drawing by author (2007).
- FIG. 6.11 Photograph of second concept model: Pedestrian ramps linking practice rooms to auditorium. By author (2007).
- FIG. 6.12 Sketch of auditorium by author (2007).
- FIG. 6.13 Photograph of second concept model: South-west perspective. By author (2007).
- FIG. 6.14 Photograph of second concept model: Music boxes within steel structure. By author (2007).
- FIG. 6.15 Photograph of second concept model: Music boxes within steel structure. By author (2007).
- FIG. 6.16 Photograph of second concept model: South-east perspective. By author (2007).
- FIG. 6.17 Photograph of second concept model: Roof plan. By author (2007).
- FIG. 6.18 Photograph of second concept model: Practice rooms along southern facade. By author (2007).
- 07** FIG. 7.1 Structural layout and materials. 3D model by author (2007).
- FIG. 7.2 Paving detail, University of Pretoria Law Faculty, Pretoria, South Africa. Architects: Krugerroos Architects and Urban Designers. Photograph by author (2006).
- FIG. 7.3 Paving detail. Hector Pieterse Museum, Soweto, South Africa. Architects: Rose Mashebane Architects. Photograph by author (2006).
- FIG. 7.4 Screed finish. Photograph by author (2005).
- FIG. 7.5 Timber. Photograph by author (2007).
- FIG. 7.6 Paving detail. Photograph by author (2007).
- FIG. 7.7 Paving detail. Photograph by author (2007).
- FIG. 7.8 Mentis grill. Photograph by author (2007).
- FIG. 7.9 Roof systems. 3D model by author (2007).
- FIG. 7.10 Planted roof. Apartheid museum, Johannesburg, South Africa. Architects: Rose Mashebane Architects. Photograph by author (2006).





- FIG. 7.11 Massing. 3D model by author (2007).
FIG. 7.12 Brickwork of the Freedom Charter memorial, Walter Sisulu Square, Soweto, South Africa. Architects: StudioMas. Photograph by author (2007).
FIG. 7.13 Concrete finish of the entrance feature wall, Tokara Winery, Stellenbosch, South Africa. Architects: Van Biljon and Visser architects. Photograph by author (2007).
FIG. 7.14 Steel work of the market area tower, Walter Sisulu Square, Soweto, South Africa. Architects: StudioMas. Photograph by author (2007).
FIG. 7.15 Timber walkway of the beach house, Plettenberg Bay, South Africa, 2007. Architects: OMM Design Workshop. Photograph by author (2007).
FIG. 7.16 Perforated plywood. Image from http://www.flickr.com/photo_zoom.gne?id=13064214&size=l
FIG. 7.17 Glass work of the Casa da Musica, Oporto, Portugal, 2005. Architects: OMA. Image from [Http://farm2.static.flickr.com/1131/709652775_14897f7b26_o.jpg](http://farm2.static.flickr.com/1131/709652775_14897f7b26_o.jpg)
FIG. 7.18 Perforated Copper. Image from http://www.flickr.com/photo_zoom.gne?id=91181102&size=l
FIG. 7.19 Woven steel screen. Photograph by author (2007).
FIG. 7.20 Stainless steel mesh. Image from http://www.flickr.com/photo_zoom.gne?id=478742922&size=l
FIG. 7.21 Sun angles. Computer drawing by author (2007).
FIG. 7.22 Auditorium. Computer drawing by author (2007).
FIG. 7.23 Emergency escape routes. Computer drawing by author (2007).
FIG. 7.9 Emergency routes. 3D model by author (2007).
08 FIG. 8.1 House Jansen eastern elevation. Photograph by author (2007).
FIG. 8.2 3D digital model of the final design by author (2007).
FIG. 8.3 3D digital model of the final design by author (2007).
FIG. 8.4 3D digital model of the final design by author (2007).
FIG. 8.5 3D digital model of the final design by author (2007).
FIG. 8.6 3D digital model of the final design by author (2007).
FIG. 8.7 3D digital model of the final design by author (2007).
FIG. 8.8 3D digital model of the final design by author (2007).
FIG. 8.9 3D digital model of the final design by author (2007).
FIG. 8.10 3D digital model of the final design by author (2007).
FIG. 8.11 3D digital model of the final design by author (2007).
FIG. 8.12 3D digital model of the final design by author (2007).
FIG. 8.13 3D digital model of the final design by author (2007).





LIST OF ABBREVIATIONS

- CBD** Central Business District
- LRT** Light Rail Transit
- SABS** South African Bureau of Standards
- SAHRA** South African Heritage Resources Act
- NBR** National Building Regulations

