



AN UNTOLD NARRATIVE OF MAGAZINE HILL

For my Heavenly Father...

*"I am man.
Shaped, formed and crafted by the hand of God.
An entity created by a power far greater than any being will ever perceive.*

*Knowing only moments.
Knowing only the days perceived in minutes.
Matter among the physical form with the inherit infinite strength.
And when my time comes, I will not perish.*

*My form will perceive a strength and space among the spiritual.
A soul will sing among the infinite life.
An invisible space..."*

(Author, April 2017)

Fort Commeline
FROM RUINS TO SUBSTANCE

by

Heinrich Eduard Jansen van Rensburg

Study Leader:
Derick de Bruyn

Course Coordinator:
Dr. Arthur Barker

Research Field:
Heritage and Cultural Landscapes

Submitted in partial fulfillment of the requirements for the degree Magister of Architecture (Professional) in the Faculty of Engineering, Built Environment and Information Technology.

University of Pretoria, 2018

The Site
Fort Commeline
John Keevy Drive
Pretoria Townlands 351-Jr
Magazine Hill
South Africa

-25°76'85.92"S 28°17'43.14"E

The Client:
The Heritage Portal and SANDF

Edited by:
Gert Hendrik Jansen van Rensburg

Figure 1.1
The trench walls ascending towards the ruins of Fort Commeline (Author, 2018)

Declaration

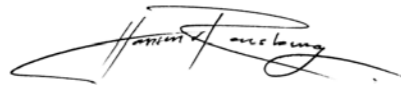
In accordance with Regulation 49(c) of the general Regulations (G.57) for dissertations and theses, I declare that this thesis, which I hereby submit for the degree Master of Architecture (Professional) at the University of Pretoria, is my own work and has not yet previously been submitted by me for a degree at this or any other tertiary institution.

I further state that no part of my thesis has already been, or is currently being, submitted for any such degree, diploma or other qualification.

I further declare that this thesis is substantially my own work. Where reference is made to the works of others, the extent to which that work has been used is indicated and fully acknowledged in the text and list of references.

Signed by the Author:

Heinrich Eduard Jansen van Rensburg



Acknowledgment

This thesis has become a reality with the kind of support and help of many individuals. I hereby extend my sincere thanks to all whom provided their support and guidance throughout this year as well as my journey as architect.

Foremost, I would like to thank my heavenly Father for blessing me with this gift and responsibility of craftsmanship that I might serve as greater purpose of transformation and to participation in the crafting of this world we live in.

To my loving parents, family and friends who walked this great journey with me and supported me every step of the way.

I hereby also thank those who challenged me and provided the stepping stones as developing architect throughout my years as developing architect.

And lastly but not least, to Derick de Bruyn and Dr. Arthur Barker for their infinite commitment and investments during the year.

Abstract

Hidden in the southern outskirts of Pretoria city lies the ruins of what used to be one of the guardians of the South, also known as 'Fort Commeline'. This dissertation investigates and identifies the fragmented narrative among the historical landscapes of Magazine Hill and poses to address the fragile connection that exists among the historical built fabric and cultural landscape that developed and transformed through the progression of time.

It considers the existing isolation and ruination of structure within the highly contrasted continuums of memory and change as a result of time. By rehabilitating this forgotten ruin, Fort Commeline might awaken the narratives of the past and evoke the mysteries whispered of Magazine Hill (Panagos, 2006: 1-7).

The proposed program forms part of the weathered continuum aimed to re-establish the relationship between heritage of architecture and time. Hereby considering the normative of architecture towards an evolution, deterioration and revolution of the built fabric, that progresses and deteriorates, or in this case, rehabilitates itself over time (Heidegger, 1996: 41-267).

In addition, a Historical Performance Centre is proposed that would encourage contextual event architecture as a 'live museum' and would serve as network of heritage nodes. Consequently, the performance of history would result in the celebration of the normative. Serving as a mediator between man and ruin of history, restoring and re-viving the relationship between the narrated architecture, that would form an inclusive construct of the layering of memory, a product restricted by time.

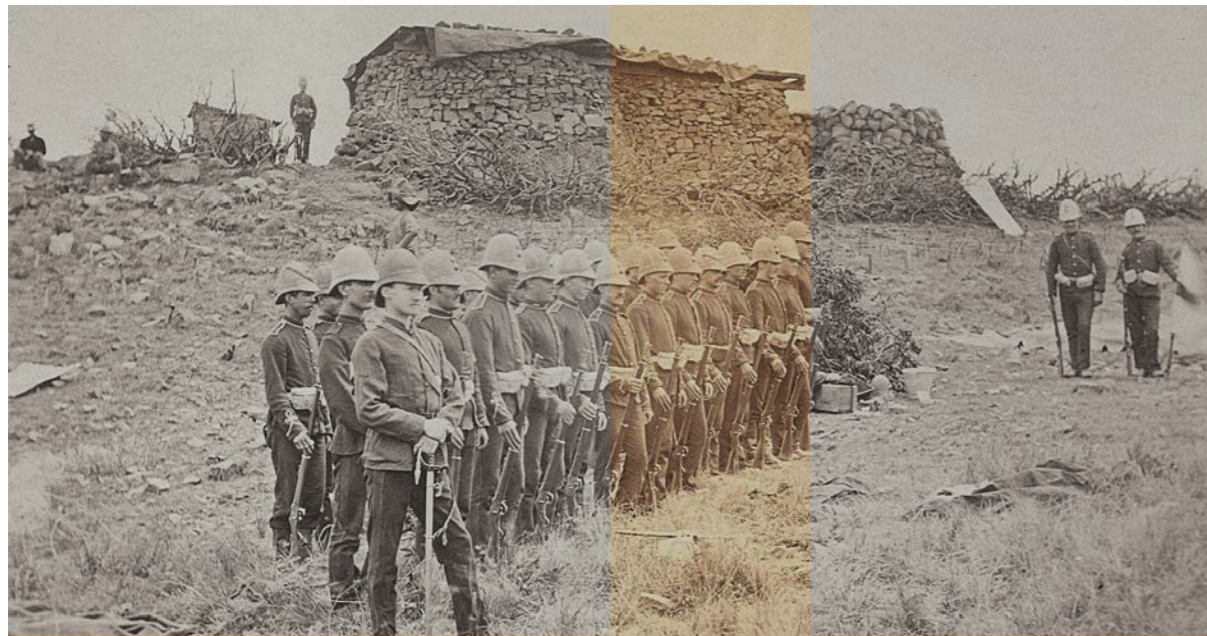


Figure 1.2
Fort Commeline with the British Garrison
in 1880 (Du Val, 1880-1881)

Keywords

Substance, character, being, disrupt, regenerative, structure, Invisible space, reuse, tectonic, poetic, normative, sustainable, response, reclaim, rehabilitate, cradle to cradle, hedonistic, rehabilitative vernacular architecture

Ekserp

Versteek in die suidelike buitewyke van Pretoria stad lê die ruïnes van wat een van die wagt van die Suide was, ook bekend as 'Fort Commeline'. Hierdie tesis ondersoek en identifiseer die gefragmenteerde verhaal onder die historiese landskappe van Magasynheuvel en stel die delikate verband wat bestaan tussen die historiese geboue weefsel en kultuur landskap wat deur die progressie van tyd ontwikkel en verander het, aangespreek.

Dit beskou die bestaande isolasie en verwoesting van struktuur binne die hoogs kontrasterende kontinuums van geheue en verandering as gevolg van tyd. Deur hierdie vergete ondergang te herstel, kan Fort Commeline die verhele van die verlede ontwaak en die geheimnisse wat van Magasynheuvel gefluister word, oproep.

Die voorgestelde program vorm deel van die verweerde kontinuum wat daarop gemik is om die verhouding tussen erfenis van argitektuur en tyd te herstel. Hierdeur word die normatief van argitektuur oorweeg na 'n evolusie, agteruitgang en rewolusie van die ingeboude materiaal wat bevorder en verweer, of in hierdie geval, wat self rehabiliteer met verloop van tyd.

Daarbenewens word 'n Historiese Prestasie-sentrum voorgestel wat kontekstuele gebeurtenisargitektuur as 'lewende museum' aanmoedig en as netwerk van erfenisnodusse dien en deur die uitwerking van die geskiedenis, tot die viering van die normatiewe lei. Dienend as 'n bemiddelaar tussen die mens en die bouvalle van die geskiedenis, herstel en herleef die verhouding tussen die vertelde argitektuur, wat 'n inklusiewe konstruksie van die lae van herdenking sal vorm, 'n produk wat deur tyd begrens word.



Figure 1.3
The remnants of Fort Commeline's
prominent trench walls (Author, 2018)

Kernwoorde

Stof, karakter, wese, ontwig, regeneratiewe, struktuur, onsigbare ruimte, hergebruik, tektoniese, poësie, normatief, volhoubaarheid, reaksie, herwinning, rehabilitasie, bron tot bron, hedonisties, rehabiliteerde volkstaal argitektuur

Declaration	6
Acknowledgment	7
Abstract	8
Keywords	8
Ekserp	9
Kernwoorde	9
TABLE OF CONTENTS	

Chapter One

INTRODUCTION	
1.1 Proposed Context	18
1.2 The research problem	20
1.3 The research question	20
1.4 Research Intentions	22
1.5 Research methodology	25
1.6 Delimitations & Assumptions	33

Chapter Two

THE NARRATED HERITAGE	
2.1 Pretoria during the War	36
2.2 The Guardians of Pretoria	56
2.3 The First Anglo Boer War	62
2.4 News of the Camp	70
2.5 Fort Commeline	76
2.6 An untold narrative of Magazine Hill	88
2.7 The Vision	106
2.8 A fear of ruination	117

Chapter Three

THEORY	
3.1 The character of architecture	120
3.2 A theory on architecture	124
3.3 Grounding the theory	130
3.4 Conclusion	131
3.5 Precedent Studies	132
3.6 Conclusion	139

Chapter Four

CONCEPT & DESIGN DEVELOPMENT	
4.1 The Rehabilitative Strategy	142
4.2 The Heritage Transformation	145
4.3 Design Concept	146
4.4 Experiencing the site	148
4.5 Iteration One	151
4.6 Iteration Two	159
4.7 Iteration Three	169

Figure 1.4
The ruins of Fort Commeline
(Author, 2018)

TABLE OF Contents

Chapter Five

TECHNÉ	
5.1 A heritage and theoretical driven concept	176
5.2 Tectonic and Stereotomic as catalyst	178
5.3 Structural Systems	180
5.4 Structure and Materiality	182
5.5 Environmental Strategies	184

Chapter Six

FINAL DESIGN

Chapter Seven

CONCLUSION

Reflection	241
References	242

Chapter Eight

ARTICLE

List of Figures

Figure 1.1
The trench walls ascending towards the ruins of Fort Commeline (Author, 2018)

Figure 1.2
Fort Commeline with the British Garrison in 1880 (Du Val, 1880-1881)

Figure 1.3
The remnants of Fort Commeline's prominent trench walls (Author, 2018)

Figure 1.4
The ruins of Fort Commeline (Author, 2018)

TABLE OF CONTENTS

Chapter One
INTRODUCTION

Figure 1.5
The ruins of Fort Commeline (Author, 2018)

Figure 1.6
Urban Relationship with Fort Commeline (Author, 2018)

Figure 1.7
Visual analysis of the ruins of Fort Commeline (Author, 2018)

Figure 1.8
Fort Commeline (Author, 2018)

Figure 1.9
The Green Magazine (Gouws, 2011)

Figure 1.10
West Fort (Gouws, 2011)

Figure 1.11
Fort Wonderboompoort (Gouws, 2011)

Figure 1.12
Visual analysis of the SAPS radio technical unit, east of Fort Commeline (Author, 2018)

Figure 1.13
Left opposite: Locality plan of Magazine Hill in relation to popular sites (Author, 2011)

Figure 1.14
The Military Defect Exhibition and Museum west of the Flame-tracer Building and former Red Magazine (Author, 2018)

Figure 1.15
Magazine Hill in relation to popular sites (Author, 2018)

Chapter Two
THE NARRATED HERITAGE

Figure 2.1
The ruins of Fort Commeline (Author, 2018)

Figure 2.2
The British Garrison Office and Staff (Du Val, 1880-1881)

Figure 2.3
The British 'Colours'

(Du Val, 1880-1881)

Figure 2.4
Commissariat and transport (Du Val, 1880-1881)

Figure 2.5
The eastern view over Pretoria in 1880 (Du Val, 1880-1881)

Figure 2.6
Pretoria Rifles in the Convent Redoubt (Du Val, 1880-1881)

Figure 2.7
Early morning in the Convent Redoubt (Du Val, 1880-1881)

Figure 2.8
Hay-making outside the Camp (Du Val, 1880-1881)

Figure 2.9
The Pretoria Carbineers in the 1880's (Du Val, 1880-1881)

Figure 2.10
The Nourse's Horse in the 1880's (Du Val, 1880-1881)

Figure 2.11
Cattle guard at Elandsfontein ridge (Du Val, 1880-1881)

Figure 2.13
Volunteers of the Pretoria Rifles and Woodcutting (Du Val, 1880-1881)

Figure 2.14
Members of the Boer rebellion in 1900 (le Roux, 2018)

Figure 2.15
The heavily armed British forces utilising French armament (le Roux, 2018)

Figure 2.16
Members of the Boer rebellion in 1900 (le Roux, 2018)

Figure 2.17
The Lee Enfield .303 rifle that the Boer rebellion obtained from the British in the Second Anglo-Boer War (le Roux, 2018)

Figure 2.18
The Lee Enfield .303 rifle that the Boer rebellion obtained from the British in the Second Anglo-Boer War (le Roux, 2018)

Figure 2.19
The British firing the Maxim gun in the Second Anglo-Boer War (le Roux, 2018)

Figure 2.20
The tragedy of the Second Anglo-Boer War. Photograph was taken after the battle of Spioenkop (le Roux, 2018)

Figure 2.21
The defensive plan of Pretoria in relation to Fort Commeline: illustration by Author and with assistance of Warwick Manley

Figure 2.22
Bottom: Fortifications of 1880-1881: original drawing obtained from (Van Wyk, 2012): Illustrated and reinterpreted by the (Author, 2018)

Figure 2.23

Bottom: Fortifications of 1896-1898: original drawing obtained from (Van Wyk, 2012): Illustrated and reinterpreted by the (Author, 2018)

Figure 2.24
Top: Parti-diagram illustrating the current condition of the fortifications (Author, 2018)

Figure 1.25
Bottom: Fortifications of 1900-1902: original drawing obtained from (Van Wyk, 2012): Illustrated and reinterpreted by the (Author, 2018)

Figure 2.26
Fortification diagram: original drawing obtained from (Van Wyk, 2012): Illustrated and reinterpreted by (Author, 2018)

Figure 2.27
The Royal Scots Fusiliers (Du Val, 1880-1881)

Figure 2.28
Western view of the Military Camp (Du Val, 1880-1881)

Figure 2.29
View over Pretoria with the Military Camp in the left corner (Du Val, 1880-1881)

Figure 2.30
Fort Royal with the British Garrison in front (Du Val, 1880-1881)

Figure 2.31
Fort Commeline (Du Val, 1880-1881)

Figure 2.32
Fort Tullichewan (Du Val, 1880-1881)

Figure 2.33
The British Mounted Infantry with Fort Commeline on the hill behind (Du Val, 1880-1881)

Figure 2.34
Time Line of Fort Commeline that birthed from Magazine Hill (Author, 2018)

Figure 2.35
News of the Camp headquarters (Du Val, 1880-1881)

Figure 2.37
Above: Du Val and his team leaving Durban, Natal, en route to the Transvaal in 1880 (Du Val, 1880-1881)

Figure 2.36
Right opposite: The front page of News of the Camp (Du Val, 1880-1881)

Figure 2.38
Right: The preface of News of the Camp (Du Val, 1880-1881)

Figure 2.39
Right opposite: The news page of News of the Camp (Du Val, 1880-1881)

Figure 2.40
Fort Commeline with its Garrison in 1880

(Du Val, 1880-1881)

Figure 2.41
The Convent Redoubt and the 'Tronk' (Du Val, 1880-1881)

Figure 2.42
The Convent redoubt Garrison (Du Val, 1880-1881)

Figure 2.43
Fort Tullichewan (Du Val, 1880-1881)

Figure 2.44
Members of the Royal Engineers (Du Val, 1880-1881)

Figure 2.45
Fort Commeline's original floor plans and sections by the Royal Engineers (Van Vollenhoven, 1992)

Figure 2.46
'The covered way': Parallel stone trench walls leading from the magazines to Fort Commeline (Panagos, 1991).

Figure 2.47
A depiction of heliography used during the wars of 1880-1902 (le Roux, 2018)

Figure 2.49
The ruins of Fort Commeline (Author, 2018)

Figure 2.50
The redoubt structure of Fort Commeline (Author, 2018)

Figure 2.48
Right opposite: The conceptual and topographical analysis of the ruins of Fort Commeline (Author, 2018)

Figure 2.51
The remnants after the explosion of the Grand Magazine (NMDA, 1945)

Figure 2.52
The former layout of the Magazine precinct (NMDA, 1945)

Figure 2.53
The newspaper article reflecting on the tragic explosion (NMDA, 1945)

Figure 2.54
The remnants after the explosion (NMDA, 1945)

Figure 2.55
The remnants after the explosion (NMDA, 1945)

Figure 2.56
The remnants after the explosion (NMDA, 1945)

Figure 2.57
The steel I-beam that landed next to the fort on the hill (Panagos, 2003).

Figure 2.58
The devastation after the explosion (NMDA, 1945)

Figure 2.59
The devastation of the Hospital after the explosion (NMDA, 1945)

Figure 2.60

The stairwell running up to the Grand Magazine (Author, 2018)

Figure 2.61
A structure west of the Red Magazine that burned down (Author, 2018)

Figure 2.62
The re-roofed flame-tracer building west of the Red Magazine (Author, 2018)

Figure 2.63
The "Grand Magazine Explosion Victims" (NMDA, 1945)

Figure 2.64
The Munitions Defect Exhibition and Museum west of the Flame-tracer Building and former Grand Magazine (Author, 2018)

Figure 2.65
The Munitions Defect Exhibition and Museum west of the Flame-tracer Building and former Grand Magazine (Author, 2018)

Figure 2.66
One of the Magazines munition stores at the northern foot of the hill, north of the Flame-tracer Building (Author, 2018)

Figure 2.67
One of the Magazines munition stores at the northern foot of the hill, north of the Flame-tracer Building (Author, 2018)

Figure 2.68
The SAPS Radio Technical Unit entrance insignia (Author, 2018)

Figure 2.69
The SAPS Radio Technical Unit in 1965: obtained from the office (Author, 2018)

Figure 2.70
The SAPS Radio Technical Unit today (Author, 2018)

Figure 2.71
The SAPS Radio Technical Unit plaque: obtained from the office (Author, 2018)

Figure 2.72
A representation of the horrific suicide event (Author, 2018)

Figure 2.74
View over Voortrekker Monument as perceived from the RTU (Author, 2018)

Figure 2.75
View over Pretoria central as perceived from Fort Commeline (Author, 2018)

Figure 2.73
Opposite: The precinct mapping illustrating the important heritage relations as well as the soft and hard landscapes of the precinct: Illustration by (Author, 2018)

Figure 1.3
The proposed precinct vision presented as collaboration with Cliff (Gouws, 2012) Illustration by (Author, 2018)

Figure 2.76
Opposite: The proposed precinct vision presented as collaboration with Cliff

(Gouws, 2012):
Illustration by (Author, 2018)

Figure 2.77
The diagrammatic representation of the Public, Client and Precinct relation proposed by the Intercession (Author, 2018)

Figure 2.78
The areal photo of the proposed study area: not to scale (Author, 2018)

Figure 2.79
The diagrammatic representation of the Historical Performance Centre's main program (Author, 2018)

Figure 2.80
The diagrammatic illustration of the knitting of spacial relation of the Public, Client and the Precinct (Author, 2018)

Chapter Three THEORY

Figure 3.1
The ruins of Fort Commeline (Author, 2018)

Figure 3.2
Right opposite: An illustration of the character of architecture obtained on the front page of "The dancing Column" [Edited by the Author] (Rykwert, 1998)

Figure 3.3
Photograph of the Caryatids taken by Dimitrios Constantin [Edited by the Author] (Constantin, 1858-1860)

Figure 3.4
Drawings illustrating the defining of 'The Life-cycle of Architecture' (Author, 2018)

Figure 3.5
Drawings illustrating the 'Defining of Architecture' (Author, 2018)

Figure 3.6
Drawings illustrating the defining of 'disruptive design' (Author, 2018)

Figure 3.7
Drawings illustrating the defining of 'rehabilitative vernacular' (Author, 2018)

Figure 3.8
A drawing illustrating the the exploration of lines knitting spaces (Rogers, 2018)

Figure 3.9
The pathways narrating history of Freedom Park, with Fort Commeline at the peak of the hill (Jacobs, 2016: 89-100)

Figure 3.10
An analysis of Freedom Park neighboring Magazine Hill by Barend Spies, 2018

Figure 3.11
The Ningbo Museum (Shu, 2006: 1-22)

Figure 3.12
The Ningbo Museum's 'free design' wall (Shu, 2006: 1-22)

Figure 3.13

17 Glen serving as mediator between structure and earth (StudioMASS, 2018)

Figure 3.14
17 Glen's facade reflecting the surrounding nature (StudioMASS, 2018)

Figure 3.15
The Neslon Mandela Museum details (Cohen and Garson, 2018)

Figure 3.16
The Neslon Mandela Museum structure (Cohen and Garson, 2018)

Figure 3.17
The Neslon Mandela Museum structure (Cohen and Garson, 2018)

Figure 3.18
The Neslon Mandela Museum display (Cohen and Garson, 2018)

Chapter Four CONCEPT & DESIGN DEVELOPMENT

Figure 4.1
The ruins of Fort Commeline (Author, 2018)

Figure 4.2
Opposite: The initial survey of the remnants of Fort Commeline (Author, 2018)

Figure 4.3
Above: The conceptual and analytical survey of the ruins of Fort Commeline with reference to its topography (Author, 2018)

Figure 4.4
Above: The conceptual design approach to restore the ruins of Fort Commeline with reference to the initial survey (Author, 2018)

Figure 4.5
Drawings illustrating the defining of the design concept (Author, 2018)

Figure 4.6
Drawings illustrating the defining of the contextual, theoretical and architectural approach (Author, 2018)

Figure 4.7
Fort Commeline platform concept (Author, 2018)

Figure 4.8
Historical Performance Centre theatre concept (Author, 2018)

Figure 4.9
Drawings illustrating the design development of Fort Commeline (Author, 2018)

Figure 4.10
A conceptual drawing of the Historical Performance Centre (Author, 2018)

Figure 4.11
A conceptual drawing of the Historical Performance Centre (Author, 2018)

Figure 4.12
A conceptual drawing of the Historical Performance Centre (Author, 2018)

Figure 4.13
A conceptual drawing of Fort Commeline (Author, 2018)

Figure 4.14
The conceptual approach towards the communication tower (Author, 2018)

Figure 4.15
A conceptual drawing of Fort Commeline (Author, 2018)

Figure 4.16
A conceptual drawing of Fort Commeline (Author, 2018)

Figure 4.17
The Site Plan of the Second Design iteration presented as collaboration with Cliff Gouws (Author, 2018)

Figure 4.18
A conceptual drawing of the Historical Performance Centre (Author, 2018)

Figure 4.19
The First Floor Plan of the Second Design iteration (Author, 2018)

Figure 4.20
The Ground Floor Plan of the Second Design iteration (Author, 2018)

Figure 4.21
A conceptual drawing of the Historical Performance Centre (Author, 2018)

Figure 4.22
A conceptual drawing of the Memory wall (Author, 2018)

Figure 4.23
A conceptual drawing of Fort Commeline (Author, 2018)

Figure 4.27
Opposite: The Second Design iterations of Fort Commeline (Author, 2018)

Figure 4.24
The Second Design iterations of the Historical Performance Centre (Author, 2018)

Figure 4.25
The Second Design iterations of the Historical Performance Centre (Author, 2018)

Figure 4.26
The Second Design iterations of the Historical Performance Centre (Author, 2018)

Figure 4.28
The Second Design iterations of the Cable car/Funicular House (Author, 2018)

Figure 4.29
The third design iterations of Fort Commeline (Author, 2018)

Figure 4.30
The Site Plan of the Third Design iteration presented as collaboration with Cliff Gouws (Author, 2018)

Figure 4.31
The First Floor Plan of the Third Design iteration (Author, 2018)

Figure 4.32
The Ground Floor Plan of the Third Design iteration (Author, 2018)

Figure 4.33
The Fort's Floor Plan of the Third Design iteration (Author, 2018)

Figure 4.34
The main detail of the Fort (Author, 2018)

Figure 4.35
The main detail of the Theatre (Author, 2018)

Chapter Five TECHNÉ

Figure 5.1
The ruins of Fort Commeline (Author, 2018)

Figure 5.2
The Materiality (Author, 2018)

Figure 5.3
A detail of the Fort Commeline's roof (Author, 2018)

Figure 5.4
A detail of the Fort Commeline's footings (Author, 2018)

Figure 5.5
Opposite: Detail A (Author, 2018)

Figure 5.6
Opposite: Detail B (Author, 2018)

Figure 5.7
Fort Commeline - Section A (Author, 2018)

Figure 5.8
A detail of the Theater's retaining wall (Author, 2018)

Figure 5.9
The Historical Performance Centre - Section B (Author, 2018)

Figure 5.10
A conceptual iteration of the sustainable acoustic absorption (Author, 2018)

Figure 5.12
Fort Commeline - Section A (Author, 2018)

Figure 5.13
The Historical Performance Centre - Section B (Author, 2018)

Figure 5.11
Acoustic calculations: Assisted by Gert Jansen van Rensburg (Author, 2018)

Figure 5.5
Bottom: SBAT Analysis (Author, 2018)

Figure 5.6
Opposite: Daylight analysis (Author, 2018)

Chapter Six FINAL DESIGN

Figure 6.1
Final iteration of Fort Commeline (Author, 2018)

Figure 6.2
Final presentation: Tech crit (Author, 2018)

Figure 6.3
Final presentation: Design crit (Author, 2018)

Figure 6.4
Masters exhibition and presentation (Author, 2018)

Figure 6.5
Initial contour model planning (Author, 2018)

Figure 6.6
Model building (Author, 2018)

Figure 6.7
Finalised model (Author, 2018)

Figure 6.8
Final model scale 1:500 (Author, 2018)

Figure 6.9
Final model scale 1:500 (Author, 2018)

Figure 6.10
Marquette model scale 1:1000 (Author, 2018)

Figure 6.11
Fort Commeline (Author, 2018)

Figure 6.12
Historical Performance Centre (Author, 2018)

Figure 6.13
Historical Performance Centre and Performance School (Author, 2018)

Figure 6.14
Memory Wall (Author, 2018)

Chapter Seven CONCLUSION

Figure 7.1
The ruins of Fort Commeline (Author, 2018)

Chapter Eight ARTICLE

Figure 8.1
The ruins of Fort Commeline (Author, 2018)