

learn live live

The re-use of the UP Mamelodi campus and the stitching together of landscapes as a vehicle for empowerment





Ida Breed, for your patience, encouragement, dedication and advice.

Nico Botes, for your uncanny ability to inspire and provide direction even when it felt as though there was none. I always leave your office feeling like 'I can'.

Dr. Vosloo, for your perpetual ability to be amused by my thoughts and drawings, and for your patience when helping me to increase their believability.

Ella and J, for your never-ending willingness to lend a helping a hand. I would never have reached this point without you both.

Elana, for picking me up when I was at my lowest and providing me with the stepping stones I needed to continue. Thank you for being there even when you were far.





learn live learn

The re-use of the UP Mamelodi campus and the stitching together of landscapes as a vehicle for empowerment

by Mirella Bandini

Study leader: Ida Breed Mentor: Nico Botes

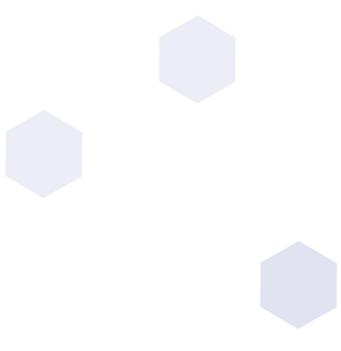
Submitted in partial fulfilment of the requirements for the degree Masters in Landscape Architecture, ML(Prof) Faculty of Engineering, the Built Environment and Information Technology.

Pretoria University of Pretoria Architecture Department

2008







Mamelodi is a multi-cultural township located 20kms east of the Tshwane city centre. It is a vibrant and complex place, alive with opportunity, diversity, talent and creativity. It is also however, afflicted by many problems, especially those of a social and economic nature, like unemployment, poverty, poor living conditions, and so on. Mamelodi therefore, is a place where the implementation of appropriate design could make a real difference in the lives of its inhabitants.

The University of Pretoria Mamelodi campus, due to its prime location and inherent qualities, has the opportunity to contribute significantly to the upliftment and transformation of the people around it, and to become a place of value and pride. It is however, missing this opportunity for a number of reasons: the isolation and segregation of the campus, its anonymity and lack of local identity, as well as the inaccessibility of the campus to local residents. One possible solution would be the full integration of the campus into the surrounding community, thereby enabling the empowerment of people on both a physical and psychological level.

Both of these types of empowerment can be achieved through modifications to the University boundaries and the reworking of the open buffer zone into an area of common ground – a transition zone where the University and the community can come together and be of value to one another. There are two levels of value – quantitative, which can be achieved through the implementation of a cultivated landscape, and qualitative, which is made possible through the creation of a maieutic landscape.

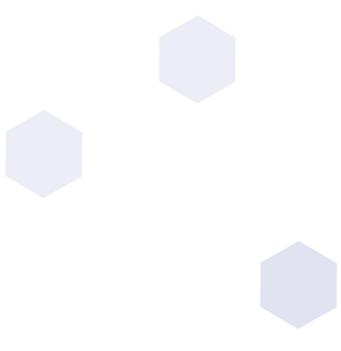
In order to achieve a continuous, integrated urban fabric, this study primarily investigates the creation of a large-scale framework design that considers the site in its entirety. The organising element in this regard was the existing storm water system which was also regarded as a missed opportunity. The study then progresses to a more detailed level in an area which was deemed to possess challenging and diverse options.

The space chosen is located at the entrance to the UP Mamelodi campus library, in the transition zone between University and community, where it functions as a public square. Both the principles of integration and maieusis were applied here in a bid to create an empowering landscape that is immersed in its context, that is accessible, and that is therefore used and appreciated by many.









List of Figures	l - VIII
Chapter 1: Introduction. Part 1: Setting the scene Part 2: The real world problem Part 3: Research goal and problem statement Part 4: Sub-problems / Research questions Part 5: Hypothesis Part 6: Assumptions and delimiters Part 7: Touchstone	1 1 2 5 6 6 6 7
Chapter 2: Theoretical Investigation Part 1: Introduction Part 2: The importance of designed public open space Part 3: The importance of identity Part 4: Community involvement and participation Part 5: Rethinking the idea of a University	9 9 10 12 13
Chapter 3: Appropriating Theory. Part 1: Two levels of value Part 2: The cultivated landscape Part 3: The maieutic landscape Part 4: Conclusion	.17 18 19 20 27
Chapter 4: Analysis Part 1: The context Part 2: Climate, soil and vegetation Part 3: The site Part 4: Brief Part 5: Precedents	.29 29 33 34 40 41
Chapter 5: Design Development. Part 1: Conceptual framework Part 2: Masterplan design concepts and process	.45 45 51
Chapter 6: Detail Design Part 1: Introduction Part 2: Plan Development and Process Part 3: Design Principles Part 4: Conclusion	.71 71 72 74 103
Chapter 7: References	.105 - 107
Chapter 8: Appendices.	.109 - 113









- Page 1: Figure 1: "With a dustbin bag, twigs and string..." (Adrian de Kock, 2008:7)
 - Figure 2: Informal settlement across from the UP Campus (Author, 2008)
 - Figure 3: The informal edge of Hans Strydom Road (Author, 2008)
 - Figure 4: There are numerous informal vendors in and around Mamelodi (Author, 2008)
 - Figure 5: Diversity in Mamelodi (Author, 2008)
- Page 2: Figure 6: Green open spaces around the UP Mamelodi Campus (Google map manipulated by author, 2008)
 - Figure 7: Vast, inhospitable, littered and neglected open spaces with no elements of human scale (Author, 2008)
 - Figure 8: Open spaces that contain no designed elements or creative thought are uncared for by community members (Author, 2008)
- Page 3: Figure 9: Open, anonymous buffer zone surrounding the University (Mr SID aerial photo digitally manipulated by author, 2008)
 - Figure 10: View from inside the University of the boundary fence across the buffer zone (Author, 2008)
 - Figure 11: Dumping ground right outside the University's secondary gate (Author, 2008)
 - Figure 12: The campus with its lack of character and local identity (Author, 2008)
- Page 4: Figure 13: General layout of the UP Mamelodi campus (Google map digitally manipulated by author, 2008)
 - Figure 14: General layout of the University of Johannesburg Vista campus (Google map digitally manipulated by author, 2008)
 - Figure 15 & 16: Landmark buildings on both the Port Elizabeth NMMU Vista campus and the UP Mamelodi campus are identical (Nelson Mandela Metropolitan University, www.nnmu.co.za, [S.a.]) (Author, 2008)
- Page 5: Figure 17: An example of community engagement already in practice at the UP Mamelodi campus (Author, 2008)
 - Figure 18: Community engagement ensures that the students benefit from the practical experience, while at the same time providing the community with free legal advice (Author, 2008)
- Page 9: Figure 19: An illustration of the various needs of all human beings (Author, 2008)
- Page 10: Figure 20: Relaxing under the shade of a tree in Church Square (Author, 2007)
 - Figure 21: Enjoying the sunshine and people watching in Strijdom Square (Author, 2007)
 - Figure 22: Impromptu puppet show in Church Square (Author, 2007)
- Page 11: Figure 23: Contact with nature enables us to understand and appreciate its power and grace (Author, 2008)
 - Figure 24: Spending time in nature gives us the opportunity to reflect and relax (Author, 2007)
- Page 12: Figure 25: Public park Guarapiranga promotes community integration, pride and a sense of ownership (Hindes & Osman, 2005:61)
 - Figure 26: Camden Town, London The shops, people, clothing, decor everything speaks the same language and has the same identity (Author, 2008)
- Page 13: Figure 27: Participation of the community in the design and construction of Thokoza Park, Soweto provides an aesthetic that people can identify with (Author, 2008)
 - Figure 28: Community painted murals in Ivory Park, Ekhuruleni foster a sense of pride and ownership (Author, 2008)



- UNIVERSITEIT VAN PRETORIA Page 15: Figure 29: Sensory stimulation using fresh and dried herbs - interactive educational experience. Sussex, England (A UNIVERSITY OF PRETORIA YUNIBESITHI YA PRETORIA Figure 30: Interesting facts and tips for medicinal use increases the educational value. Sussex, England (Author, 20)
- Page 17: Figure 31: Conceptual ideas on the improvement and integration of the UP Mamelodi campus (Author, 2008)
- Page 18: Figure 32: The UP Mamelodi campus can become of value to its community in more than just an educational sphere (Author, 2008)
- Page 19: Figure 33: Diagrammatic representation of how the cultivated landscape could work and expand on a conceptual level (Author, 2008)
 - Figure 34: The empowerment of many (Anglo Platinum Kotula Trust, 2008:16)
- Page 20: Figure 35: Conceptual idea of how a maieutic landscape can influence a person's experience of a place (Author, 2008)
 - Figure 36: Diagrammatic representation of the meaning of 'maieutic' (Author, 2008)
- Page 21: Figure 37: Man and nature become one (Digitally manipulated by author, 2008)
- Page 22: Figure 38 & 39: The ephemeral nature of plants vegetation that changes its patterns, textures, colours, size, smell, etc. (Acacia xanthophloea. Author, 2007) (The Ephemeral Garden, Paris, France. Hohenadel, 2008)
- Page 23: Figure 40: Public art in Dublin city centre, Ireland (Author, 2006) Figure 41: Singing Ringing Tree (Richardson, 2007:98)
- Page 24: Figure 42: Diagram exploring the effect of distance on sensory experience (Author, 2008)
 - Figure 43: The more senses one stimulates, the more intense the experience becomes (Author, 2008)
 - Figure 44 and 45: Distance defines shape, texture and detail (Author, 2007)
- Page 25: Figure 46: Gesture a linear statement in the landscape (Running Fence, 1972-6 -- Christo, Ruby, 2006)
 - Figure 47: Movement and speed affect our perception of the world around us (Author, 2008)
 - Figure 48: Gesture enables us to look at the landscape in a new way (Spiral Jetty, www.at.or.at, 2003))
- Page 26: Figure 49: Mosaic carpets a good example of hardening and flattening of the surface (Carpets, Austria. Andraschek, 2005)
 - Figure 50: Seriality is an important element in the design of The Citadel, California (Cooper & Taylor, 2000:31)
 - Figure 51: An explosion of culture (Digitally manipulated by author, 2008)
- Page 27: Figure 52: A network of systems functioning as a single city (Mural in Brighton, U.K. Author, 2007)
 - Figure 53: A balanced ecosystem natural and man-made in harmony (Mural in Brighton, U.K. Author, 2007)
- Page 28: Figure 54: Mamelodi within its greater context (Author, 2008)
 - Figure 55: Location of Mamelodi within Tshwane (Author, 2008)
- Page 29: Figure 56: The greater Mamelodi area (Author, 2008)
 - Figure 57: Zoning Mamelodi and its surrounds (Author, 2008)





Figure 67: Aerial photo of UP Mamelodi campus and surrounds (University of Pretoria, 2008)

Figure 68: Municipal zoning of areas adjacent to the UP Mamelodi campus (Council map, digitally manipulated by author, 2008)

Page 33: Figure 69, 70, 71 & 72: Cussonia sp.; Rhus Karee alongside a large poplar growing inside the stormwater channel; Acacia xanthophloea and Acacia sieberiana - all photographed on the UP Mamelodi campus (Author, 2008).

Figure 73 & 74: Precipitation & Average Temperatures in Mamelodi (Author, 2008)

Figure 75: Students relaxing under the shade of an Acacia karroo on the UP Mamelodi campus (Author, 2008)

Page 34: Figure 76: Diagram analysing the opportunities and constraints of the UP Mamelodi campus (Author, 2008)

Page 35: Figure 77: Informal vendors located at the entrance to the University and along Hans Strydom Road (Author, 2008)

Figure 78: Gladys - lives opposite the University entrance and rents rooms out to students (Author, 2008)

Figure 79: On weekdays, throngs of school children move along the University's southern edge (Author, 2008)

Figure 80: Aerial photo of UP Mamelodi campus (University of Pretoria, 2008)

Page 36: Figure 81: Intimidating double wire + palisade fence surrounding the campus (Author, 2008)

Figure 82: The palisade fence and open buffer zone are not a welcoming site (Author, 2008)

Figure 83a: The entrance to the campus is walled off and secured by a guarded boom gate. There are no seating / waiting areas and trees are non-existent (Author, 2008)

Figure 83b: View of the University from Hans Strydom Road (Author, 2008)

Page 37: Figure 84: Hydrology in context (Author, 2008)

Figure 85: Site drainage (Author, 2008)

Figure 86: Storm water runs in a vegetation-lined permeable channel on the eastern side (Author, 2008)

Figure 87: Channelised water on site (Author, 2008)

Figure 88: Storm water runs in a concrete-lined channel on the western side of the campus (Author, 2008)

Page 38: Figure 89: Northern elevation of the UP Mamelodi campus (Author, 2008)

Figure 90: Southern elevation of the UP Mamelodi campus (Author, 2008)

Figure 91 - 98: Various buildings on campus (Author, 2008)

Figure 100: Interior view of the library building (Author, 2008)

Figure 101: The library building is almost completely visually impermeable (Author, 2008)

Figure 102: Vertically exaggerated, diagrammatic plan & section of library building (Author, 2008)

Figure 103: Situated in the centre of a ring of buildings, the library is visually dominant (Author, 2008)

Page 41: Figure 104 & 105: Community-owned food gardens (Author, 2008)

Figure 106: Cabbage plantation with irrigation (Author, 2008)

Figure 107: Informal market just outside food garden for the sale of produce (Author, 2008)

Page 42: Figure 108: Bold, sculptural focal elements (Author, 2008)

Figure 109: Soccer field used as a walk-through (Author, 2008)

Figure 110: Water course - littered and eroded (Author, 2008)

Figure 111: Amphitheatre (Author, 2008)

Figure 112: Neglect and degradation (Author, 2008)

Figure 113: Standardised play elements (Author, 2008)

Page 43: Figure 114: Family picnic under a large shady tree (Author, 2008)

Figure 115: Soccer on a Sunday afternoon (Author, 2008)

Figure 116: Gum-pole play structure (ILASA Merit Awards, 2005)

Figure 117: Bridges can become sculptural elements (Author, 2008)

Figure 118: Community-designed mosaic (Author, 2008)

Figure 119: Community participation (ILASA Merit Awards, 2005)

Figure 120: Skills transfer enables people to find gainful employment (ILASA Merit Awards, 2005)

Page 45: Figure 121 & 122: Conceptual exploration of possible interventions on the UP Mamelodi campus (Author, 2008)

Figure 123: The infectious impact of a catalyst (Author, 2008)

Page 48: Figure 124: The spread of knowledge (Author, 2008)

Figure 125: Edible Schoolyard, USA. 1994 - present (Cumberlidge & Musgrave, 2007:78)

Page 49: Figure 126: Green, growth, growing (Author, 2008)

Figure 127: University as a catalyst (Author, 2008)

Page 50: Figure 128: Live, work, play, grow, eat, learn, love (Author, 2008)

Page 51: Figure 129: Masterplan attempt # 1 (Author, 2008)

Figure 130: Masterplan attempt # 2 (Author, 2008)

Figure 131: Masterplan attempt # 3 (Author, 2008)

Figure 132: Masterplan attempt # 4 (Author, 2008)

Figure 133: Masterplan attempt # 5 (Author, 2008)

Figure 134: Final masterplan (Author, 2008)







Figure 136: Existing site plan (Author, 2008)

Page 54: Figure 137: Phase 1 (Author, 2008)

Page 55: Figure 138: Phase 2 (Author, 2008)

Figure 139: Phase 3 (Author, 2008)

Page 56: Figure 140: Completed Masterplan (Author, 2008)

Page 57: Figure 141: Vehicular circulation (Author, 2008)

Figure 142: Pedestrian circulation (Author, 2008)

Figure 143: Taxi's are one of the main methods of transport in Mamelodi (Author, 2008)

Figure 144: Walk, walk, walk (Author, 2008)

Page 58: Figure 145: Mini sluice gate (Author, 2008)

Figure 146: Main feeding channels with smaller irrigation channels (Author, 2008)

Figure 147: Multi-celled amelioration dam (Author, 2008)

Figure 148: Water seeps into soil from irrigation channel (Nel, [S.a.]:30)

Figure 149: Food gardens provide people with food, something to be proud of and a place to interact with others (Author, 2008)

Figure 150: Advantages of storm water (Author, 2008)

Figure 151: Aquaduct supplies water to food garden areas as well as becoming a landmark element (Author, 2008)

Figure 152: Hardscaped channel where people can go to play, admire and meet - channel becomes the focal element, e.g. Exchange Square - Manchester (Author, 2008)

Page 59: Figure 153: Diagrammatic representation of water circulation on site (Author, 2008)

Page 60: Figure 154: Diagrammatic representation of the water flowing annually through the storm water system proposed in the framework (Author, 2008)

Page 61: Figure 155: From surface to aquaduct (Author, 2008)

Figure 156: The functioning of a playpump (Playpumps International, 2008)

Figure 157 & 158: Both water collection tank and aquaduct can be used as focal elements that provide a place with a specific character and identity. They have the potential to become landmarks within Mamelodi, and a source of community pride (Author, 2008) (Musgrave & Cumberlidge, 2007:14)

Figure 159: The aquaduct is a unifying element which can support different functions (Author, 2008)

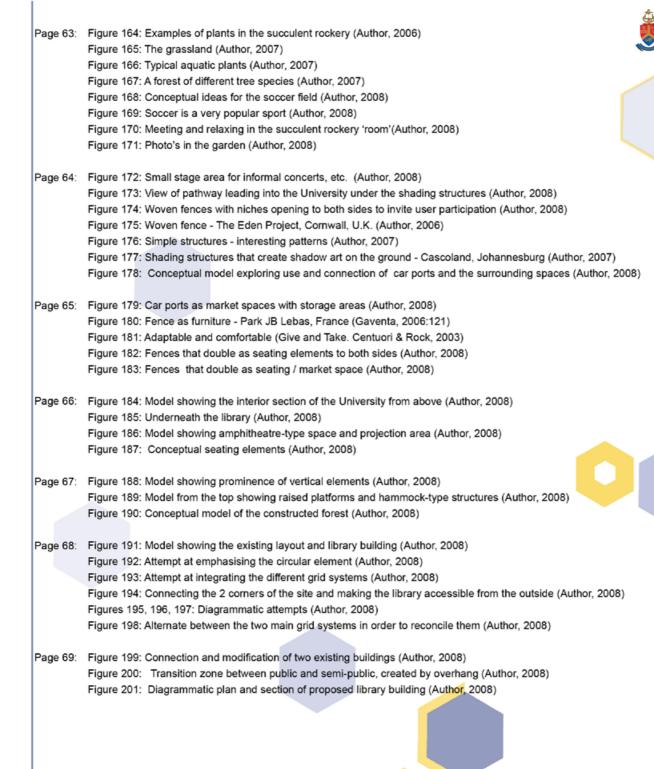
Page 62: Figure 160: Medicinal gardens are supported and irrigated by aquaduct structure (Digitally modified by author, 2008)

Figure 161: Vertical landscapes create tranquil private spaces (Margolis & Robinson, 2007:30)

Figure 162 & 163: Plastorgan (Ferment, [S.a.]))









UNIVERSITEIT VAN PRETORIA

UNIVERSITY OF PRETORIA YUNIBESITHI YA PRETORIA



Page 71: Figure 202: Circulation in and around the University (Author, 2008).

Figure 203: Square will be used by young and old alike (Author, 2008).

Figure 204: Ordinary everyday life (Author, 2008).

Page 72: Figure 205: Attempt to reconcile grid systems present on site(Author, 2008)

Figure 206: Incorporation of food gardens and apprenticeship workshops (Author, 2008)

Figure 207: Incorporation of water, aquaduct and raised spaces (Author, 2008)

Figure 208: Model showing progression of green, water and raised areas (Author, 2008)
Figure 209: ALmost there - central section around figs still too rigid and static (Author, 2008)

Page 73: Figure 210: Final plan for library square (Author, 2008)

Page 74: Figure 211: Basketball today (Author, 2008)

Figure 212: Gathering space tomorrow (Author, 2008)

Figure 213: Vegetation and softer elements increase towards the residential and food garden areas (Author, 2008)

Page 75: Figure 214: Wind mobiles throw changing patterns on the ground and frame changing vistas (Author, 2008)

Figure 215: Changes in levels - space creation (Author, 2008)

Figure 216: Plaza de Dali, Spain (Mangado, 1996))

Page 76: Figure 217: Sensory stimullation - vodacom advert (Wallpaper Magazine, 2006)

Figure 218: Sensory walkway at different levels (Author, 2008)

Figure 219: Examples of tactile, visual and aromatic elements found in planters along sensory walkway (Author, 2008)

Figure 220: Colour scheme (Author, 2008)

Page 77: Figure 221: Platforms for play (Opie, 1994:16)

Figure 222: Build forts, create secret spaces, stimulate the imagination (Coppard, 2003)

Figure 223: Looking out from the library (Author, 2008)

Page 79: Figure 224: Examples of trees to be used (Author, 2007) (Venter, 2005)

Page 80: Figure 225: The journey of water through the site (Author, 2008)

Page 82: Figure 226: Sections through paving edges (Author, 2008)

Page 83: Figure 227: Longitudinal section through pedestrian bridge (Author, 2008)

Figure 228: Cross section through pedestrian bridge (Author, 2008)

Page 85: Figure 229: Blown up detail of section through bentonite - lined dam (Author, 2008)

Page 86: Figure 230: Chalk on board - local children - community artwork (Author, 2008)

Figure 231: Members of the community and students at the University (Author, 2008)

Page 88: Figure 232: Section through walkway narrative (Author, 2008)

Figure 233: Narrative strip in concrete leads one towards the library (Author, 2008)

Figure 234: Wind mobile - ephemeral shadows (Author, 2008)

Figure 235 & 236: Surface decoration skills (Author, 2008)



Figure 241: Shading structure (Unknown, [S.a.])

Figure 238: Section through road edge (Author, 2008) Figure 239: Connection of cable to column (Author, 2008)

Page 89: Figure 237: Aeolian harp (Nieheimer Kunstpfad, 2000)

Page 92: Figure 242: Blown-up section through stormwater channel (Author, 2008)

Page 94: Figure 243 & 244: Sectional exploration into constructing and fixing the sculptures(Author, 2008)

Figure 235: Plastic bag dress (mygreenchicago.com, 2007))

Figure 236: Exploration into construction and clothing of female sculpture (Author, 2008)

Figure 237: Metal figures - Cullinan (Author, 2007)

Figure 238: Steel frame figure - CSIR - Gianfanelli (Author, 2007)
Figure 239 & 240: Nstee, Haute Magazine, FashionAfrica.com [S.a])

Page 95: Figure 241: Sculptures visible at night (Author, 2008)

Figure 242: Illuminated seating (Author, 2008) Figure 243: Luminaire security (Author, 2008)

Page 97: Figure 244: Conceptual exploration of female sculptures - materials, construction, etc. (Author, 2008)

Page 98: Figure 245: Children can play, climb and hide in their 'garden of imagination' (Author, 2008)

Figure 246: A place of relaxation and reflection where one can commune with nature(Author, 2008)

Page 100: Figure 247: Aquaduct particulars (Author, 2008)

Figure 248: Multi-functional fig (Author, 2008)

Figure 249: Conceptual model of space around ficus trees (Author, 2008)

Page 101: Figure 250: Family of furniture to be used where suited (Author, 2008)

Figure 251: Sections through fixing details of bench - concrete to steel (Author, 2008)



