AMALGAM: A FUSION OF THE BUILT AND BIOPHYSICAL ENVIRONMENTS

ETHNOBOTANIC RESEARCH CENTRE
PRINSHOF, PRETORIA

ANDREW BUTCHER 22355482 MArch (Prof)
MENTOR: Prof. R. C. FISHER
Submitted in fulfilment of part of the requirements for the degree of Magister in Architecture (professional) in the Faculty of Engineering, Built Environment and Information Technology at the University of Pretoria, Pretoria, South Africa.
Overview

This dissertation explores the fusion of the built and biophysical environments within the context of the city. In doing so, the biophysical environment contributes to the operation of the architecture in terms of microclimate control, containment, form and aesthetic. The building houses the programme of an Ethnobotanic Research Centre (EBRC), which serves as a place of research into the medicinal properties of indigenous plants and propagation thereof. The building also becomes a point of intervention to prevent the encroachment of the city on the greenbelts of Pretoria.
# University of Pretoria etd - Butcher, A (2003)

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction</td>
<td>5.6</td>
</tr>
<tr>
<td>1.1 Concern</td>
<td>5.7</td>
</tr>
<tr>
<td>1.2 Client</td>
<td>5.8</td>
</tr>
<tr>
<td>1.4 Ethnobotanic Research Centre [EBRC]</td>
<td>5.9</td>
</tr>
<tr>
<td>1.5 Business</td>
<td>5.10</td>
</tr>
<tr>
<td>2. Context</td>
<td>5.11</td>
</tr>
<tr>
<td>2.1 Macro Analysis</td>
<td>5.12</td>
</tr>
<tr>
<td>2.2 Meso Analysis</td>
<td>5.13</td>
</tr>
<tr>
<td>2.2.1 Green open spaces</td>
<td>5.14</td>
</tr>
<tr>
<td>2.2.2 Urban Spaces</td>
<td>5.15</td>
</tr>
<tr>
<td>2.2.3 Cultural Installations</td>
<td></td>
</tr>
<tr>
<td>2.3 Urban Form</td>
<td>6.1</td>
</tr>
<tr>
<td>2.4 Site</td>
<td>6.2</td>
</tr>
<tr>
<td>2.5 Sunshine</td>
<td>6.3</td>
</tr>
<tr>
<td>2.6 Wind</td>
<td>7.1</td>
</tr>
<tr>
<td>2.7 Apies River</td>
<td>7.2</td>
</tr>
<tr>
<td>2.8 Temperature</td>
<td>7.3</td>
</tr>
<tr>
<td>2.9 Imageability</td>
<td>7.4</td>
</tr>
<tr>
<td>2.10 Social</td>
<td>7.5</td>
</tr>
<tr>
<td>2.11 Movement</td>
<td>7.6</td>
</tr>
<tr>
<td>2.12 Pollution</td>
<td>7.7</td>
</tr>
<tr>
<td>2.13 Environmental</td>
<td></td>
</tr>
<tr>
<td>2.14 Buildings</td>
<td></td>
</tr>
<tr>
<td>2.15 Hove’s Drift</td>
<td></td>
</tr>
<tr>
<td>3. Urban Design</td>
<td></td>
</tr>
<tr>
<td>3.1 The Role of the EBRC within the ‘Nature Corridors’</td>
<td></td>
</tr>
<tr>
<td>3.2 Existing Frameworks</td>
<td></td>
</tr>
<tr>
<td>3.2.1 ISDF</td>
<td></td>
</tr>
<tr>
<td>3.2.2 ARUDF</td>
<td></td>
</tr>
<tr>
<td>3.3 Proposed Framework</td>
<td></td>
</tr>
<tr>
<td>3.3.1 Environmental</td>
<td></td>
</tr>
<tr>
<td>3.3.2 Movement</td>
<td></td>
</tr>
<tr>
<td>3.3.3 Imageability</td>
<td></td>
</tr>
<tr>
<td>3.3.4 Cultural</td>
<td></td>
</tr>
<tr>
<td>4. Precedent Studies</td>
<td></td>
</tr>
<tr>
<td>4.1 Linked Environments</td>
<td></td>
</tr>
<tr>
<td>4.2 Cultural Identity</td>
<td></td>
</tr>
<tr>
<td>4.3 Inclusive Function</td>
<td></td>
</tr>
<tr>
<td>5. Baseline Criteria</td>
<td></td>
</tr>
<tr>
<td>5.1 Principle</td>
<td></td>
</tr>
<tr>
<td>5.2 Occupant Comfort</td>
<td></td>
</tr>
<tr>
<td>5.3 Inclusive Environments</td>
<td></td>
</tr>
<tr>
<td>5.4 Access to Facilities</td>
<td></td>
</tr>
<tr>
<td>5.5 Participation &amp; Control</td>
<td></td>
</tr>
</tbody>
</table>

---

Appendix A
Appendix B
Appendix C
Appendix D
Appendix E
Referred works
1.1 Asclepias fruticosa. Van Wyk, 1997, p46.

2.1 Apies River link to Pretoria. ARUDF, 1999, p1.
2.2 View south over Groenkloof nature reserve from Salvokop. Photo by author, 2003.
2.6 Combined maps showing linkage and place. By author, 2003.
2.10 Pretoria Map 1889. J Van Vloeren and J H Oerder ().
2.12 Site overview from the south. ARUDF, 1999, p73.
2.13 Site overview from the east. ARUDF, 1999, p73.
2.21 Average winds in Pretoria.
2.27 Boundary wall on Dr Savage Street. Photo by author, 2003.
2.29 Pedestrian link at Dr Savage Street. Photo by author, 2003.
2.32 New road proposals on the site. ARUDF, 1999, p78.
2.34 Dr Savage Street and taxi terminus. Photo by author, 2003.
2.36 North west view of the Zoological gardens and old College of Nursing. Photo by author, 2003.

3.5 Precinct boundaries. ISDF, 1999, p13.
3.8 Movement around the site. By author, 2003.
3.14 Cultural assets along the Apies River. ARUDF, 1999, p9-36.

4.7 Internal vegetation at the Institute for Forestry. Betsky, 2002, p120.

5.3 Perspective [concept model 02]. By author, 2003.
5.10 Views through the EBRC. By author, 2003.
5.11 Proximity of other facilities to the EBRC. By author, 2003.
5.12 Conceptual 3D Max model indicating horizontal movement through the EBRC. By author, 2003.
5.21 Perspective of office set 03 [concept model 04]. By author, 2003.
5.32 Perspective of terrariums and the labs behind [concept model 04]. By author, 2003.

6.1 South-East Coast and Sub-Tropical climatic zone. Holm, 1996, p49.
6.5 Ptaeroxylon obliquum. Van Wyk, 1997, p204.
8.3 Maki's 'megaform', an open ended structure whereby linkage is imposed. Tranckl, 1986, p107.
8.7 Wines' concept of 'Passages'. Wines, 1985, p36
8.8 Elevation showing line components. Model by author, 2003.