



Chapter
2

Re thinking Design Methodology

“We had been given the task of designing the future, or at least what was possible if we dared to dream of a future where our buildings no longer took from the environment but were

restorative”
Jason McLennan
(McLennan. 2005 p27)

Architecture seems to be at contrast when it attempts to enhance the natural environment through the creation of space that promotes human well-being. This design investigation questions man, nature and society in an attempt to reconcile different objectives into a single functional and aesthetic expression.

Architecture needs to be informed by context, ultimately answering the question of appropriate response. The design process needs to be informed by the collective. The product could then represent more than a singular expression.

The world at large is undoubtedly faced with an environmental crisis. The question now is not who to blame, but rather what can be done to ensure that the current impact will not adversely effect future generations.

Environmental philosophers tend to romanticise the past; specifically vernacular architecture and the related ways of life (Snyman L, 2006). Vernacular architecture was shaped through a

dialogue between man and landscape that has lasted countless years. Potentially, the connection between site and nature could be restored to its former importance. However, the principles relative to the social and cultural environments need to be investigated in order to reinterpret them within the contemporary urban context.

McDonough (2005, p3) gives a strong argument that the natural world can act as an informant and determinant of architecture: “How many modern designs are as elegant and sophisticated as a tree? How many buildings have humans designed that produce oxygen? Is a high-tech building one that destroys air quality or enhances it?”

The current environmental crisis offers architects an opportunity to challenge existing design and thought processes. In the authors opinion the architect should address the amount of energy and resources that are consumed by his/her buildings, both during the construction phase and the post occupancy stage.

Architecture that relates to its physical, social, cultural, economical and environmental context will be more than “the technological and stylistic gloss of current fashion’. (McDonough, 2005, p5) An interactive dialogue between site, man and nature should create appropriate and liveable spaces. The building will then be able to exist in harmony with its site and those using it.

If we can begin to shift our conceptions of the purpose and process of development to one that heals human and natural communities, uses nature as a mentor and addresses occupants’ physiological and psychological needs, then we will be on our way to integrating ecology and real estate

William D Browning
(Browning 2005, p.60)

The existing context of Marabastad was first evaluated on a macro scale. The research was executed by the 2007 final year architecture students (M Prof Arch). This resulted in an urban framework that informed site selection as well as design decisions.

Learning from the vernacular

“The tendency from the beginning of the 20th Century until the early 1980’s was to regard tradition or vernacular architecture as primitive, quaint and unsophisticated: picturesque, perhaps, but certainly not worthy of serious research, or of informing

contemporary form”
James Steele
(Steele.2005,p15)

A thorough study of the vernacular architecture found within a specific area should inform design intervention. The work of Hassan Fathy, Charles Correa and Balkrishna Doshi amongst others, serve as an example. They were successful in applying principles of their respective vernacular to inform an appropriate

response within a contemporary social context, albeit not in the same climatic conditions.

“For most indigenous people, land is not viewed as a commodity to be bought and sold in impersonal markets, but rather a substance endowed with sacred meanings which defines their existence and identity”

James Steele
(Steele.2005,p15)

The cultural diversity of South Africa makes it difficult to identify a single vernacular. This is equally true of Marabastad. Therefore the focus will be on an Ndebele architecture and culture, because it has historically assimilated well with others, without losing any individual identity. “Ndebele art and architecture show uniquely how a minority group existing in a multi-cultural milieu (exposed to both traditional tribal and twentieth-century Western influence) can through adaptation and appropriation develop a unique hybrid artistic and architectural expression as part of a quest to claim their cultural identity.”(Rich.1995)

As with many African tribes, the settlement patterns and spatial structures seemed to form around the cattle kraal and the polygamous societal structure. While maintaining individual privacy, the wives courtyards are defined not by large walls or imposing structures but rather suggestive gradients in the form of , “layering of the courtyard walls” (Rich.1995), formal gardens or clearly defined entrances allowing interaction of

each building to the others and to the surroundings. Common daily routines were accommodated in courtyard fronting home(s), relating to the streets that are formed by the “left right relationship of wives homesteads” (Rich.1995) leading to the mans dwelling.

A Ndebele matriarch proclaims “We see what we want to see and make it our own”

Peter Rich
(Rich.1995)

Unfortunately, the vernacular loses its meaning and origin when it is thoughtlessly imposed. In order to successfully implement principles of the vernacular architecture, a deeper understanding for the reasons for the architecture needs to be developed. This should result in a shifting of the focus, from architecture (or product) to the dialogue between man and his surroundings.

Urbanism & Ecology

A thorough understanding of the contemporary city, together with its place in a global village is necessary when any relationship with the environment is formed. This should allow the urban dweller (and architect) to fully grasp the impact of urbanism on the environment

Technology has always been a controversial topic in the arena of sustainable development. Whilst its main aim is possibly “to make life easier” it is exerting more pressure on society and

resources alike to achieve higher levels of productivity. It could be argued that the more technology develops, the more is expected from the individual. The reality of a modern day urban experience is drawing closer to the schemes of Eric Owen Moss, where sealed buildings are connected only by tar roads and computers (Steele.2005, p.28). In general, contemporary lifestyle has separated man from his natural surroundings

According to James Steele the electronic age:” has radically changed our pace of our lives as well as our expectations, to the extent that younger generations, who have experienced nothing else, seem to abhor reflection and the complete silence that it requires and always need electronic distraction instead” (Steel 2005, p.9). This lack of introspection and engagement with the outside world is perpetuating the separation from nature, and in turn the destruction thereof.

Steele further describes the impact of the current social situation on mans relationship to history and context: “The accelerating pace of change has erased the moment, destroying previous distinctions between now and then, past and present, and essentially weakening our relationship to history and context” (Steel 2005, p.262). Existing ties to history, the natural environment and context, have been extensively severed.

Current debate

The terms “sustainable development” or “green architecture” is highly contentious, not only within the architectural fraternity, but the world at large. In an attempt to come to terms with these ideologies Steel (1997, p.18) argues we need to clarify and understand the terms themselves.

Sustainable architecture can broadly be defined as architecture that delivers present needs, without jeopardizing the environment and ultimately future generations. This research attempts to look further into the matter in order to gain a more holistic view as to the wider impacts and opportunities within the movement.

In capitalist utilitarian reality little value is placed on the intrinsic worth of the natural world and its resources. It would be rather naive to expect this to change. A more realistic attempt could be to change the perceptions about environmentally friendly architecture.

In general, perceptions surrounding green architecture vary. Often it depends on exposure to this form or type of architecture. Perceptions include statements like primitive architecture not appropriate in a commercial context. Another point of view that is often raised is the capital outlay that is deemed higher than the conventional equivalent (Browning 2005, p.60).

In a study entitled Cost of Green Revisited, David Langdon states that “there is no significant cost difference between the cost for green buildings as compared to non green buildings.”(Langdon 2007, p.2) Langdon furthermore states that until design teams realize that green design is not a retrofit to a conventional building, it will be near impossible to overcome the notion that green design is more expensive.

The pricing gap between sustainable and conventional architecture is closing. Together with social and political pressures for sustainable development, the demand for the relevant skills in the construction sector will increase proportionately.

In the quest for an architecture that restores the environment, the natural environment needs to inform the generation of form. The built environment as a whole, together with processes and methodology needs to be questioned, in order to create a sustainable future for architecture.

10 Shades of Green

In *Ten Shades of Green* Peter Buchanan highlights different aspects of sustainable architecture. The various concerns that need to be addressed in the design process are as follows:

(Buchanan 2005, p.39)

1.Low Energy/High Performance

Using the climatic context to maximise use of natural ventilation and lighting, passive cooling, layering facades and solar heating. This is shaping a building and using technology to work with nature's systems and principles.

2.Replenishable Sources

Harvesting of non-depletable ambient energies such as the sun, wind, waves gravity, geo-thermal power and even magnetism.

3.Recycling

Reuse of old building materials and reuse of brown field sites.

4. Embodied Energy

Choosing materials with low embodied energy (sum of energy used in manufacturing, processing and transporting) such as timber or brick rather than aluminium

5. Long Life, Loose Fit

Designing a building that easily accommodates change and ages well in

order to save on the energy needed to construct a new building in its place.

6.Total Life Cycle Costing

Involves more than initial costing, includes running costs well as social and environmental costing aspects

7.Embedded in Place

Seamlessly integrating a building into its site, drawing on local and imperial climate data.

8. Access and Urban Context

In order for a development to be sustainable it needs to have access to public transport infrastructure.

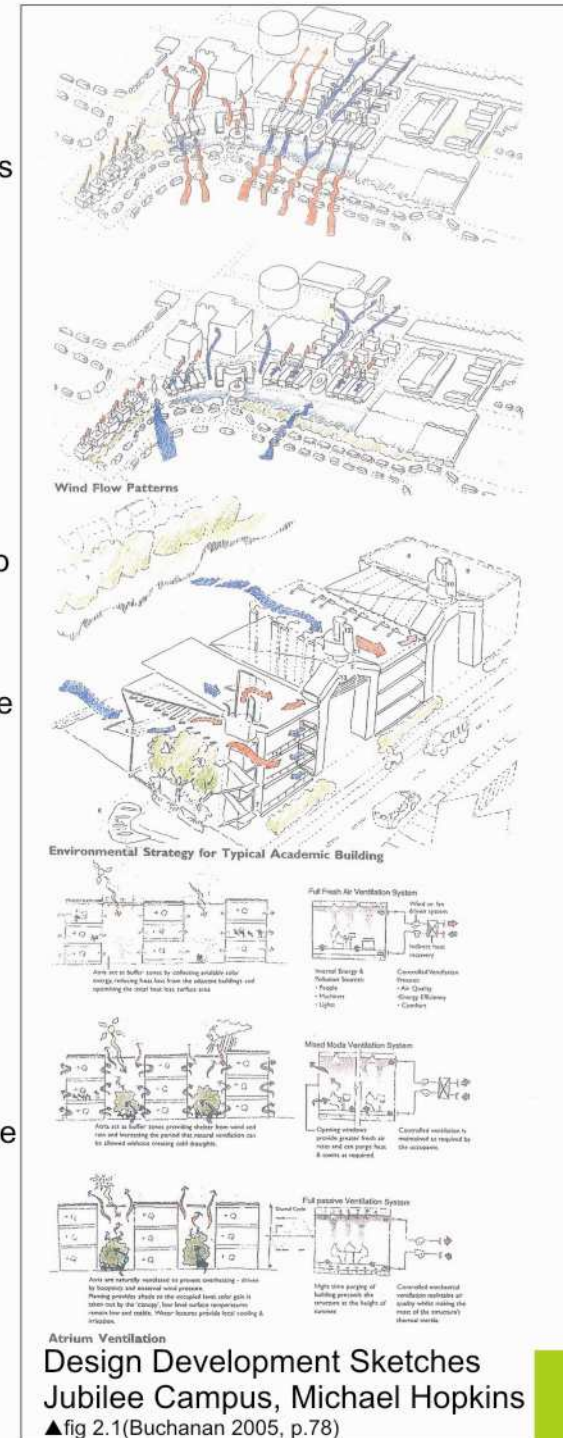
9.Health and Happiness

Natural light, fresh air and contact with the outdoors have shown to increase staff productivity.

10.Community and Connection

A green building needs to regenerate a sense of community and connection to nature

In the course of the design development this dissertation will aim to address the above mentioned aspects as well as some of the other matters addressed in this chapter



Atrium Ventilation
Design Development Sketches
Jubilee Campus, Michael Hopkins
▲ fig 2.1(Buchanan 2005, p.78)